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David Pogue is a *New York Times* technology columnist, bestselling author, and creator of the Missing Manual series.

US $34.99 CAN $43.99
ISBN: 978-0-596-80244-8

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CSS

THE MISSING MANUAL

The book that should have been in the box®

CSS

Second Edition

David Sawyer McFarland

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CSS: The Missing Manual, Second Edition
by David Sawyer McFarland

Published by O'Reilly Media, Inc., 1005 Gravenstein Highway North, Sebastopol, CA 95472.

Printing History:

August 2006:	First Edition.
August 2009:	Second Edition.

This book uses RepKover™, a durable and flexible lay-flat binding.

ISBN: 978-0-596-80244-8
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The Missing Credits

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In addition to building websites, David is also a writer, trainer, and instructor. He's taught web design at the UC Berkeley Graduate School of Journalism, the Center for Electronic Art, the Academy of Art College, Ex'Pressions Center for New Media, and the Art Institute of Portland. He currently teaches in the Multimedia Program at Portland State University. He's written articles about web design for *Practical Web Design*, *Macworld* magazine and *CreativePro.com*.

David is also the author of *Dreamweaver: The Missing Manual*, and *JavaScript: The Missing Manual*.

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Acknowledgements

Many thanks to all those who helped with this book, including my students, who always help me see complex concepts through beginners' eyes. Thanks to my technical editors, Christopher Schmitt and Tony Ruscoe, who saved me from any embarrassing mistakes, and Zoe Gillenwater whose valuable advice for the first edition of this book lives on. Also, we all owe a big debt of gratitude to the many web designers who have broken new ground by using CSS in creative ways, and shared their discoveries with the web design community.

Finally, thanks to David Pogue whose unflagging enthusiasm and endurance is inspiring; Nan Barber for refining my writing, fixing my mistakes and keeping me on track; my wife, Scholle, for her love and support; my son, Graham, who suggested that I'd get this book done a lot faster if I just typed "Blah, blah, blah, blah, BOO!" for each chapter; my wonderful daughter, Kate, whose smile is always a great pick-me-up; and to my family: Mom, Doug, Mary, David, Marisa, Tessa, Phyllis, Les, Del, Patricia, and Mike.

—David Sawyer McFarland

The Missing Manual Series

Missing Manuals are witty, superbly written guides to computer products that don't come with printed manuals (which is just about all of them). Each book features a handcrafted index; cross-references to specific pages (not just chapters); and RepKover, a detached-spine binding that lets the book lie perfectly flat without the assistance of weights or cinder blocks.

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Introduction

Cascading Style Sheets—CSS for short—give you creative control over the layout and design of your web pages. Using them, you can dress up your text with eye–catching headings, drop caps, and borders, just like the ones you see in glossy magazines. You can also arrange images with precision, create columns and banners, and highlight your text links with dynamic rollover effects.

Anything that can do all that must be pretty complicated, right? Au contraire! The purpose of CSS is to streamline the process of styling web pages. In the next few pages, you'll learn about the basics of CSS. In Chapter 1, you'll get right to work creating a CSS-powered web page.

How CSS Works

If you've used styles in word processing programs like Microsoft Word or page layout programs like Adobe InDesign, CSS will feel familiar. A *style* is simply a rule describing how to format a particular portion of a web page. A style *sheet* is a set of these styles.

CSS works with HTML, but it's not HTML. It's a different language altogether. While HTML provides structure to a document by organizing information into headers, paragraphs, bulleted lists, and so on, CSS works hand-in-hand with the web browser to make HTML *look* good.

For example, you might use HTML to turn a phrase into a top-level heading, indicating that it introduces the content on the rest of the page. However, you'd use CSS to format that heading with, say, big and bold red type and position it 50 pixels from the left edge of the window. CSS is all about changing—and improving—the appearance of the HTML.

You can also create styles specifically for working with images. For instance, a style can align an image along the right edge of a web page, surround the image with a colorful border, and place a 50-pixel margin between the image and the surrounding text.

Once you've created a style, you can apply it to text, images, headings, or other elements on a page. For example, you can select a paragraph of text and apply a style to instantly change the text's size, color, and font. You can also create styles for specific HTML tags, so, for example, all first-level headings (<h1> tags) in your site are displayed in the same style, no matter where they appear.

The Benefits of CSS

Before CSS, web designers were limited to the layout and styling options of HTML. And if you surfed the Web in 1995, then you understand the emphasis on *limited*. HTML still forms the foundation of all pages on the World Wide Web, but it's simply not a design tool. Sure, HTML provides basic formatting options for text, images, tables, and other web page elements, and patient, meticulous webmasters can make pages look pretty good using only HTML. But the result is often sluggish web pages laden with clunky code.

CSS, in contrast, offers the following advantages:

- Style sheets offer far more formatting choices than HTML. With CSS, you can format paragraphs as they appear in a magazine or newspaper (the first line indented and no space between each paragraph, for example) and control the *leading* (the space between lines of type in a paragraph).
- When you use CSS to add a background image to a page, you get to decide whether and how it *tiles* (repeats). HTML can't even begin to do that.
- Even better, CSS styles take up much less space than HTML's formatting options, such as the much-hated <font> tag. You can usually trim a lot of kilobytes from text-heavy web pages using CSS. As a result, your pages look great *and* load faster.
- Style sheets also make updating your site easier. You can collect all of your styles into a single external style sheet that's linked to every page in your site. Then, when you edit a style, that change immediately ripples through your site *wherever* that style appears. You can completely change the appearance of a site just by editing a single style sheet.

Note: HTML is so long in the tooth design-wise that the World Wide Web Consortium (W3C), the organization responsible for defining standards for the Web, has already *deprecated* (phased out) many HTML formatting tags (the <font> tag, for example). (For a list of other obsolete tags, see *www.codehelp.co.uk/html/deprecated.html*.)

What You Need to Know

This book assumes you've already got some knowledge of HTML (and maybe some CSS experience as well). Perhaps you've built a site or two (or at least a page or two) and have some familiarity with the sea of tags—<html>, <p>, <h1>, <table>, and so on—that make up the Hypertext Markup Language. CSS can't do anything without HTML, so to move forward you need to know how to create a web page using basic HTML.

If you've used HTML in the past to create web pages, but feel like your knowledge is a bit rusty, the next section provides a basic refresher.

Tip: If you're just getting your feet wet learning HTML, then check out these free online tutorials: HTML Dog (*www.htmldog.com/guides/htmlbeginner/*) and W3Schools (*www.w3schools.com/html/*). If you're a printed page fan, then you may want to pick up a copy of *Creating a Web Site: The Missing Manual, Second Edition* or *Head First HTML with CSS & XHTML* (O'Reilly).

HTML: The Barebones Structure

HTML (Hypertext Markup Language) uses simple commands called *tags* to define the various parts of a web page. For example, this HTML code creates a simple web page:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/
html4/strict.dtd">
<html>
<head>
<title>Hey, I am the title of this web page</title>
</head>
<body>
<p>Hey, I am a paragraph on this web page.</p>
</body>
</html>
```

It may not be exciting, but this example has all the basic elements a web page needs. You'll notice something called a DOCTYPE declaration at the very beginning of the code, followed by *html* (between brackets), a head, a body, and some stuff—the actual page contents—inside the body, ending in a final </html>.

How HTML Tags Work

In this simple example, as in the HTML code of any web page you look at, you'll notice that most commands appear in pairs that surround a block of text or other commands. Sandwiched between brackets, these *tags* are instructions that tell a web browser how to display the web page. Tags are the "markup" part of the Hypertext Markup Language.

The starting (*opening*) tag of each pair tells the browser where the instruction begins, and the ending tag tells it where the instruction ends. Ending or *closing* tags always include a forward slash (/) after the first bracket symbol (<).

For a web page to work, you must include at least these four elements:

- The first line of a web page is the **DOCTYPE declaration**, which isn't actually an HTML tag. Instead, this line tells the web browser what type of HTML the page uses. There are several different types of HTML, including the XML-based XHTML (discussed in the next section). You can leave out the DOCTYPE declaration, but your web site will look worse for it. As you'll learn on page 26, having a doctype is an important requirement to make sure your CSS designs work in all browsers.
- The <**html**> tag appears once at the beginning of a web page and again (with an added slash) at the end. This tag tells a web browser that the information contained in this document is written in HTML, as opposed to some other language. All of the contents of a page, including other tags, appear between the opening and closing <html> tags.

  If you were to think of a web page as a tree, the <html> tag would be its roots. Springing from the trunk are two branches that represent the two main parts of any web page: the *head* and the *body*.
- The web page's *head*, surrounded by opening and closing <**head**> tags, contains the title of the page. It may also provide other, invisible information (such as search keywords) that browsers and search engines can exploit.

  In addition, the head can contain information that the web browser uses to display the web page and add interactivity. You put Cascading Style Sheets, for example, in the head of the document. You can also declare JavaScript scripts, functions, and variables in the head.
- The *body*, as set apart by its surrounding <**body**> tags, contains all the content that appears inside a browser window—headlines, text, pictures, and so on.

Within the <body> tag, you commonly find tags like these:

- You tell a web browser where a paragraph of text begins with a <**p**> (opening paragraph tag), and where it ends with a </p> (closing paragraph tag).
- The <**strong**> tag emphasizes text. When you surround some text with it and its partner tag, , you get boldface type. The HTML snippet Warning! tells a web browser to strongly emphasize the word "Warning!"

- The <a> tag, or anchor tag, creates a *hyperlink* in a web page. When clicked, a hyperlink—or *link*—can lead anywhere on the Web. You tell the browser where the link points by putting a web address inside the <a> tags. For instance, you can type *Click here!*.

  The browser knows that when your visitor clicks the words "Click here!" it should go to the Missing Manual website. The *href* part of the tag is called an *attribute,* and the URL (the Uniform Resource Locator or web address) is the *value*. In this example, *http://www.missingmanuals.com* is the *value* of the *href* attribute.

XHTML: HTML for the New Era?

Newcomers continually vie for the web language throne. HTML 4.01, which was created in the last century (granted, that's just 10 years ago), has had its detractors. HTML has always been a somewhat sloppy language that allows, among other things, uppercase, lowercase, or mixed case letters in tags (<body> and <BODY> are both correct, for example), and permits unclosed tags (so you can use a single tag without the closing to create a paragraph). While this flexibility may make page writing easier, it also makes life more difficult for web browsers, PDAs, and other places you may want to display your pages.

Enter XHTML 1.0—an improved form of HTML that's coming into widespread use. If you're used to using HTML, don't worry—XHTML isn't a revolutionary new language that takes years to learn. It's basically HTML, but was created as an XML-based language. Like HTML, XML is a tag-based language that lets you organize data in a clear, easy-to-understand way so different computers, operating systems, and programs can quickly and easily exchange data. However, unlike HTML, XML isn't limited to a handful of tags. In fact, XML provides a set of rules for defining your own tags. In addition to forming the basis of XHTML, XML can create everything from RSS feeds to iTunes playlists and then some.

The hot debate is whether HTML 4.01 or XHTML 1.0 is the best approach. Judging by some of the online discussions, you'd think HTML and XHTML are completely different languages, which they aren't. You can build snazzy and functional websites with HTML 4.01 now, and they'll continue to work for years in the future.

If you continue using HTML, be sure to follow the guidelines in Chapter 1. In particular, you must give your HTML page the correct doctype (page 26), or your CSS will fall apart in certain browsers. Also, you must validate your page (page 24) to ensure there aren't any typos or other mistakes that can mess up how your HTML displays. You need to do those same things for XHTML, but XHTML is stricter in that it enforces rules that make sure the page works. For example, HTML doesn't absolutely require a doctype; XHTML does.

Tip: If you really want to delve into the innards of XHTML, then check out W3 Schools' XHTML Tutorial at *www.w3schools.com/xhtml/default.asp*.

The HTML page on page 3 would look like *this* in XHTML:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<head>
<title>Hey, I am the title of this web page.</title>
<meta http-equiv="Content-Type" content="text/html; charset="utf-8" />
</head>

<body>
<p>Hey, I am some body text on this web page. </p>
</body>
</html>
```

As you can see, this code looks a lot like HTML. To make an XHTML file comply with XML, however, there are a few strict rules to keep in mind:

- **Begin the page with a document type (DOCTYPE) declaration**. That's the first two lines in the code above. You saw a doctype in the HTML example, but if you look closely, you'll see that the exact code is a bit different—in this case specifying a type of XHTML called XHTML 1.0 Transitional. You'll learn much more about document types—and their importance to CSS—in Chapter 1.
- **Tags and tag attributes must be lowercase**. Unlike with HTML, typing the tag <BODY> is a no-no; when you're writing XHTML, capitalized tags aren't invited to the party.
- **Quotation marks are required for tag attributes**. For example, a link written like this: <a href=http://www.missingmanuals.com> is valid in HTML, but won't work in XHTML. You have to enclose the value of the href property in double quotes: <a href="http://www.missingmanuals.com">.
- **All tags (even empty tags) must be closed**. To create a paragraph in XHTML, for example, you must begin with and end with . Trouble is, some tags don't come in pairs. These tags, called *empty tags,* have no closing tag. The line break tag is one example. To close an empty tag in XHTML, include a space and a forward slash at the end of the tag, like this: <br />.

HTML 5: The Wheel Turns Again

The future of the Web stretches beyond XML and XHTML. In fact, when this book's first edition was published in 2006, the World Wide Web Consortium (W3C) was busy working on XHTML 2—a new, more powerful version of XHTML that looked like it would completely change how web designers created web pages. Unfortunately, that was just the problem: It was beginning to look like you had to have a Computer Science degree just to create a web page. As it turns out, since most of the browser creators such as Mozilla (Firefox) and Apple (Safari) said they simply weren't going to build browsers to work with XHTML 2, the W3C changed course and formed a group to develop yet another new standard—HTML 5.

That's right. HTML will rule once again…but not until sometime like 2022 (honest!). In other words, you don't really have to worry about learning new HTML or XHTML for a while.

In the meantime, feel free to use either HTML 4.01 or XHTML 1.0. All browsers understand them, so if you can create a web page with those, you're good to go. In the next chapter, you'll learn some ways to make your HTML (or XHTML) better for working with CSS.

Software for CSS

To create web pages made up of HTML and CSS, you need nothing more than a basic text editor like Notepad (Windows) or Text Edit (Mac). But after typing a few hundred lines of HTML and CSS, you may want to try a program better suited to working with web pages. This section lists some common programs; some of them are free, and some you have to buy.

Note: There are literally hundreds of tools that can help you create web pages, so the following isn't a complete list. Think of it as a greatest-hits tour of the most popular programs that CSS fans are using today.

Free Programs

There are plenty of free programs out there for editing web pages and style sheets. If you're still using Notepad or Text Edit, then give one of these a try. Here's a short list to get you started:

- **jEdit** (Windows, Mac, Linux; *http://jedit.org*). This free, Java-based text editor works on almost any computer and includes many features that you'd find in commercial text editors, like syntax highlighting for CSS.
- **Notepad++** (Windows; *http://notepad-plus.sourceforge.net/*). A lot of people swear by this fast text editor. It even has built-in features that make it ideal for writing HTML and CSS, like syntax highlighting—color coding tags and special keywords to make it easier to identify the page's HTML and CSS elements.

- **HTML-Kit** (Windows; *www.chami.com/html-kit/*). This powerful HTML/XHTML editor includes lots of useful features like the ability to preview a web page directly in the program (so you don't have to switch back and forth between browser and editor), shortcuts for adding HTML tags, and a lot more.
- **TextWrangler** (Mac; *www.barebones.com/products/textwrangler/*). This free software is actually a pared-down version of BBEdit, the sophisticated, well-known Mac text editor. TextWrangler doesn't have all of BBEdit's built-in HTML-tools, but it does include syntax highlighting, FTP (so you can upload files to a web server), and more.

Commercial Software

Commercial website development programs range from inexpensive text editors to complete website construction tools with all the bells and whistles:

- **EditPlus** (Windows; *www.editplus.com*) is an inexpensive ($35) text editor that includes syntax highlighting, FTP, auto-complete, and other wrist-saving features.
- **skEdit** (Mac; *www.skti.org*) is an inexpensive ($35) web page editor, complete with FTP/SFTP, code hints, and other useful features.
- **Coda** (Mac; *www.panic.com/coda/*) is a full-featured web development toolkit ($99). It includes a text editor, page preview, FTP/SFTP, and graphic CSS-creating tools for creating CSS.
- **Dreamweaver** (Mac and Windows; *www.adobe.com/products/dreamweaver/*) is a visual web page editor ($399.) It lets you see how your page looks in a web browser. The program also includes a powerful text-editor and excellent CSS creation and management tools. Check out *Dreamweaver CS4: The Missing Manual* for the full skinny on how to use this powerful program.
- **Expression Web 2** (Windows; *www.microsoft.com/expression*) is Microsoft's newest entry in the web design field ($299). It replaces FrontPage and includes many professional web design tools, including excellent CSS tools.

Note: The various types of software discussed in this section are general-purpose programs that let you edit both HTML/XHTML and CSS. With them, you need to learn only one program for your web development needs. But if you already have a beloved HTML/XHTML editor that doesn't do CSS, then you may want to check out one of the CSS-specific editing programs covered in Appendix CSS Resources.

About This Book

The World Wide Web is really easy to use. After all, grandmothers in Boise and first graders in Tallahassee log onto the Web every day. Unfortunately, the rules that govern how the Web *works* aren't so easy to understand. The computer scientists and other techie types who write the official documentation aren't interested in explaining their concepts to the average Joe (or Joanne). Just check out *www.w3.org/TR/CSS21/* to get a taste of the technical mumbo-jumbo these geeks speak.

There's no manual for Cascading Style Sheets. People just learning CSS often don't know where to begin. And CSS's finer points can trip up even seasoned web pros. The purpose of this book, then, is to serve as the manual that should have come with CSS. In this book's pages, you'll find step-by-step instructions for using CSS to create beautiful web pages.

CSS: The Missing Manual is designed to help readers at every technical level. To get the most out of this book, you should know a sampling of HTML and maybe even CSS. So if you've never built a web page before, then check out the tutorial that starts on page 39. The primary discussions in these chapters are written for advanced-beginners or intermediates. But if you're new to building web pages, special boxes called "Up to Speed" provide the introductory information you need to understand the topic at hand. If you're an advanced web page jockey, on the other hand, then keep your eye out for similar boxes called "Power Users' Clinic." They offer more technical tips, tricks, and shortcuts for the experienced computer fan.

UP TO SPEED

The Different Flavors of CSS

Like operating systems and iPods, CSS spins off new versions continuously (well, not as frequently as iPod models). CSS 1, introduced in 1996, laid the groundwork for Cascading Style Sheets. The basic structure of a style, the selector concept (Chapter 3), and most of the CSS properties in this book were all in that very first version.

CSS 2 added new features, including the ability to target your CSS to different printers, monitors, and other devices (page 395). CSS 2 also added new selectors and the ability to precisely position elements on a web page.

This book completely covers CSS 2.1, which is the current accepted standard. It incorporates all of CSS 1, adds several new properties, and corrects a few problems with the CSS 2 guidelines.

CSS 2.1 isn't a radical change from version 2, and most web browsers have adapted to the new rules just fine, thank you. (A notable exception is Internet Explorer 6 for Windows–that's why you'll find helpful workarounds for dealing with browser differences sprinkled throughout this book. Thankfully, Internet Explorer 7 fixed most of the hair-pulling bugs of its predecessor, and Internet Explorer 8 finally follows almost all CSS 2.1 rules correctly.)

CSS 3 is just around the corner. Although the W3C still has to finalize this standard, some web browsers are already adopting a few of its new guidelines and features. Safari's ability to add multiple images to the background of a single element, for example, is thanks to CSS 3. In fact, enough CSS 3 is trickling into current web browsers that, there's a whole chapter dedicated to the subject (Chapter 16). One good resource for following the constant evolution of CSS 3 is the CSS3.info site (*www.css3.info*).

Note: This book periodically recommends other CSS books, covering topics that are too specialized or tangential for a manual. Sometimes the recommended titles are from Missing Manual series publisher O'Reilly–but not always. If there's a great book out there that's not part of the O'Reilly family, we'll let you know about it.

About the Outline

CSS: The Missing Manual is divided into four parts, each containing several chapters:

- **Part One: CSS Basics**, shows you how to create style sheets and provides an overview of key CSS concepts, like inheritance, selectors, and the cascade. Along the way, you'll learn the best HTML/XHTML writing practices when working with CSS. Four tutorials reinforce the part's main concepts and give you a good taste of the power of CSS.
- **Part Two: Applied CSS**, takes you into the real world of web design. You'll learn the most important CSS properties and how to use them to format text, create useful navigation tools, and enhance your page with graphics. This section also provides advice on how to make web pages look better when printed and how to make attractive tables and forms.
- **Part Three: CSS Page Layout**, helps you with one of the most confusing, but most rewarding, aspects of CSS: controlling the placement of elements on a page. You'll learn how to create common designs (like 2- and 3-column layouts) and how to add sidebars. You'll also learn about floats and positioning—two common CSS techniques for controlling page layout.
- **Part Four: Advanced CSS**, teaches you how to make web pages look good when printed and covers advanced techniques for using CSS more effectively and efficiently. You'll also see where the future of CSS is headed and learn about some cutting edge CSS 3 that you can start using today (at least in some browsers).
- **Part Five: Appendixes**, provides three sets of resources. The CSS Property Reference summarizes each CSS Property in small, easy-to-digest chunks so you can casually brush-up on what you already know or quickly learn about other useful CSS properties that you may not remember. The last two appendices cover tools and resources for creating and using CSS, from how to create CSS in Dreamweaver to lists of helpful websites and books.

Living Examples

This book is designed to get your work onto the Web faster and more professionally. It's only natural, then, that half the value of this book lies on the Web.

As you read the book's chapters, you'll encounter a number of *living examples*—step-by-step tutorials that you can build yourself, using raw materials (like graphics and half-completed web pages) that you can download from *www.sawmac.com/css2e/*. You may not gain very much by simply reading these step-by-step lessons while relaxing in your porch hammock. But if you take the time to work through them at the computer, you'll discover that these tutorials give you insight into the way professional designers build web pages.

You'll also find, in this book's lessons, the URLs of the finished pages, so that you can compare your work with the final result. In other words, you won't just see pictures of how the web pages *should* look; you'll find the actual, working web pages on the Internet.

About MissingManuals.com

At *http://missingmanuals.com*, you'll find articles, tips, and updates to *CSS: The Missing Manual*. In fact, we invite and encourage you to submit such corrections and updates yourself. In an effort to keep the book as up-to-date and accurate as possible, each time we print more copies of this book, we'll make any confirmed corrections you've suggested. We'll also note such changes on the website, so that you can mark important corrections into your own copy of the book, if you like. (Go to *http://missingmanuals.com/feedback*, choose the book's name from the pop-up menu, and then click Go to see the changes.)

Also on our Feedback page, you can get expert answers to questions that come to you while reading this book, write a book review, and find groups for folks who share your interest in CSS.

We'd love to hear your suggestions for new books in the Missing Manual line. There's a place for that on missingmanuals.com, too. And while you're online, you can also register this book at *www.oreilly.com* (you can jump directly to the registration page by going here: *http://tinyurl.com/yo82k3*). Registering means we can send you updates about this book, and you'll be eligible for special offers like discounts on future editions of *CSS: The Missing Manual*.

The Very Basics

To use this book, and indeed to use a computer, you need to know a few basics. You should be familiar with these terms and concepts:

- **Clicking**. This book gives you three kinds of instructions that require you to use your computer's mouse or trackpad. To *click* means to point the arrow cursor at something on the screen and then—without moving the cursor at all—to press and release the clicker button on the mouse (or laptop trackpad). A right-click is the same thing using the right mouse button. (On a Mac, press Control as you click if you don't have a right mouse button.)

- To *double-click* means to click twice in rapid succession, again without moving the cursor at all. And to *drag* means to move the cursor *while* pressing the button.

  When you're told to ⌘*-click* something on the Mac, or *Ctrl-click* something on a PC, you click while pressing the ⌘ or Ctrl key (both of which are near the space bar).

- **Menus**. The *menus* are the words at the top of your screen or window: File, Edit, and so on. Click one to make a list of commands appear, as though they're written on a window shade you've just pulled down. This book assumes that you know how to open a program, surf the Web, and download files. You should know how to use the Start menu (Windows) or the Dock or menu (Mac), as well as the Control Panel (Windows) or System Preferences (Mac OS X).

- **Keyboard shortcuts.** Every time you take your hand off the keyboard to move the mouse, you lose time and potentially disrupt your creative flow. That's why many experienced computer fans use keystroke combinations instead of menu commands wherever possible. When you see a shortcut like Ctrl+S (⌘-S) (which saves changes to the current document), it's telling you to hold down the Ctrl or ⌘ key, and, while it's down, type the letter S, and then release both keys.

If you've mastered this much information, you have all the technical background you need to enjoy *CSS: The Missing Manual*.

About → These → Arrows

Throughout this book, and throughout the Missing Manual series, you'll find sentences like this one: "Open the System → Library → Fonts folder." That's shorthand for a much longer instruction that directs you to open three nested folders in sequence, like this: "On your hard drive, you'll find a folder called System. Open that. Inside the System folder window is a folder called Library; double-click it to open it. Inside *that* folder is yet another one called Fonts. Double-click to open it, too."

Similarly, this kind of arrow shorthand helps to simplify the business of choosing commands in menus, as shown in Figure I-1.

Figure I-1:
In this book, arrow notations help simplify menu instructions. For example, View → Text Size → Increase is a more compact way of saying, "From the View menu, choose Text Size; from the submenu that then appears, choose Increase.

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1

Part One: CSS Basics

CHAPTER
1

Rethinking HTML for CSS

To get the most out of CSS, your HTML code needs to provide a solid, well-built foundation. This chapter shows you how to write better, more CSS-friendly HTML. The good news is that when you use CSS throughout your site, HTML actually becomes *easier* to write. You no longer need to worry about trying to turn HTML into the design maven it was never intended to be. Instead, CSS offers most of the graphic design touches you'll likely ever want, and HTML pages written to work with CSS are easier to create since they require less code and less typing. They'll also download faster—a welcome bonus your site's visitors will appreciate (see Figure 1-1).

HTML: Past and Present

As discussed in the Introduction, HTML (or XHTML) provides the foundation for every page you encounter on the World Wide Web. When you add CSS into the mix, the way you use HTML changes. Say goodbye to repurposing awkward HTML tags merely to achieve certain visual effects. Some HTML tags and attributes—like the <font> tag—you can forget completely.

Note: Throughout this chapter, everything you read about HTML applies equally to XHTML. There are almost as many variants of HTML and XHTML as there are colors in the rainbow, though, and in the end you must pick a type and make sure your web page identifies which one you're using. Otherwise, your visitors' browsers may gunk up your painstakingly crafted page. You'll learn how to tell CSS which flavor of HTML/ XHTML you're using later in this chapter.

Figure 1-1: *CSS-driven web design makes writing HTML easier. The two designs pictured here look similar, but the top page is styled completely with CSS, while the bottom page uses only HTML. The size of the HTML file for the top page is only 4k, while the HTML-only page is nearly 4 times that size at 14k. The HTML-only approach requires a lot more code to achieve nearly the same visual effects: 213 lines of HTML code compared with 71 lines for the CSS version.*

HTML Past: Whatever Looked Good

When a bunch of scientists created the Web to help share and keep track of technical documentation, nobody called in the graphic designers. All the scientists needed HTML to do was structure information for easy comprehension. For example, the <h1> tag indicates an important headline, while the <h2> tag represents a lesser heading, usually a subheading of the <h1> tag. Another favorite, the <ol> (ordered list) tag, creates a numbered list for things like "Top 10 reasons not to play with jellyfish."

But as soon as people besides scientists started using HTML, they wanted their web pages to look good. So web designers started to use tags to control appearance rather than structure information. For example, you can use the <blockquote> tag (intended for material that's quoted from another source) on any text that you want to indent a little bit. You can use heading tags to make any text bigger and bolder—regardless of whether it functions as a heading.

In an even more elaborate workaround, designers learned how to use the <table> tag to create columns of text and accurately place pictures and text on a page. Unfortunately, since that tag was intended to display spreadsheet-like data—research results, train schedules, and so on—designers had to get creative by using the <table> tag in unusual ways, sometimes nesting a table within a table within a table to make their pages look good.

Meanwhile, browser makers introduced new tags and attributes for the specific purpose of making a page look better. The <font> tag, for example, lets you specify a font color, typeface, and one of seven different sizes. (If you're keeping score at home, that's about 100 fewer sizes than you can get with, say, Microsoft Word.)

Finally, when designers couldn't get exactly what they wanted, they often resorted to using graphics. For example, they'd create a large graphic to capture the exact font and layout for web page elements and then slice the Photoshop files into smaller files and piece them back together inside tables to recreate the original design.

While all of the above techniques—using tags in creative ways, taking advantage of design-specific tag attributes, and making extensive use of graphics—provide design control over your pages, they also add a lot of additional HTML code (and more wrinkles to your forehead than a lifetime in the sun).

HTML Present: Scaffolding for CSS

No matter what content your web page holds—the fishing season calendar, driving directions to the nearest IKEA, or pictures from your kid's birthday party—it's the page's design that makes it look like either a professional enterprise or a part-timer's hobby. Good design enhances the message of your site, helps visitors find what they're looking for, and determines how the rest of the world sees your website. That's why web designers went through the contortions described in the previous section to force HTML to look good. By taking on those design duties, CSS lets HTML go back to doing what it does best—structure content.

Using HTML to control the look of text and other web page elements is obsolete. Don't worry if HTML's <h1> tag is too big for your taste or bulleted lists aren't spaced just right. You can take care of that later using CSS. Instead, think of HTML as a method of adding structure to the content you want up on the Web. Use HTML to organize your content and CSS to make that content look great.

Writing HTML for CSS

If you're new to web design, you may need some helpful hints to guide your forays into HTML (and to steer clear of well-intentioned, but out-of-date HTML techniques). Or if you've been building web pages for a while, you may have picked up a few bad HTML-writing habits that you're better off forgetting. The rest of this chapter introduces you to some HTML writing habits that will make your mother proud—and help you get the most out of CSS.

Think Structure

HTML adds meaning to text by logically dividing it and identifying the role that text plays on the page: For example, the <h1> tag is the most important introduction to a page's content. Other headers let you divide the content into other, less important, but related sections. Just like the book you're holding, for example, a web page should have a logical structure. Each chapter in this book has a title (think <h1>) and several sections (think <h2>), which in turn contain smaller subsections. Imagine how much harder it would be to read these pages if every word just ran together as one long paragraph.

Note: For a good resource on HTML/XHTML check out *HTML & XHTML: The Definitive Guide* by Chuck Musciano and Bill Kennedy (O'Reilly), or visit *www.w3schools.com* for online HTML and XHTML tutorials. For a quick list of all available HTML and XHTML tags, visit *www.w3schools.com/tags/*.

HTML provides many other tags besides headers for *marking up* content to identify its role on the page. (After all, the M in HTML stands for *markup*.) Among the most popular are the <p> tag for paragraphs of text and the <ul> tag for creating bulleted (non-numbered) lists. Lesser-known tags can indicate very specific types of content, like <abbr> for abbreviations and <code> for computer code.

When writing HTML for CSS, use a tag that comes close to matching the role the content plays in the page, not the way it looks (see Figure 1-2). For example, a bunch of links in a navigation bar isn't really a headline, and it isn't a regular paragraph of text. It's most like a bulleted list of options, so the <ul> tag is a good choice. If you're saying, "But items in a bulleted list are stacked vertically one on top of the other, and I want a horizontal navigation bar where each link sits next to the previous link," don't worry. With CSS magic you can convert a vertical list of links into a stylish horizontal navigation bar as described in Chapter 9.

Two New HTML Tags to Learn

HTML's motley assortment of tags doesn't cover the wide range of content you'll probably add to a page. Sure, <code> is great for marking up computer program code, but most folks would find a <recipe> tag handier. Too bad there isn't one. Fortunately, HTML provides two generic tags that let you better identify content, and, in the process, provide "handles" that let you attach CSS styles to different elements on a page.

```
<p>
<strong>
<font color="#0066FF" size="5" face="Verdana,
Arial, Helvetica, sans-serif">Urban Agrarian
Lifestyle</font></strong>
<br />
<font color="#FF3300" size="4" face="Georgia,
Times New Roman, Times, serif">
<em>
<strong>A Revolution in Indoor Agriculture
<br /></strong></em></font>
Lorem ipsum dolor sit amet...</p>
```


```
<h1>The Urban Agrarian Lifestyle</h1>
<h2>A Revolution in Indoor Agriculture</h2>
<p>Lorem ipsum dolor sit amet...</p>
```

Figure 1-2:
Old School, New School. Before CSS, designers had to resort to the <font> tag and other extra HTML to achieve certain visual effects (top). You can achieve the same look (and often a better one) with a lot less HTML code (bottom). In addition, using CSS for formatting frees you up to write HTML that follows the logical structure of the page's content.

GEM IN THE ROUGH

Simple HTML Is Search Engine Friendly

Once you take the mental leap of picturing HTML as the way to structure a document's content, and CSS as the tool for making that content look good, you'll discover additional benefits to writing lean, mean HTML. For one thing, you may boost your search-engine ranking as determined by sites like Google, Yahoo, and MSN. That's because when search engines crawl the Web, indexing the content on websites, they must go through *all* the HTML on a page to discover the actual content. The old HTML way of using special tags (like <font>) and lots of tables to design a page gets in the way of a search engine's job. In fact, some search engines stop reading a page's HTML after a certain number of characters. When you use a lot of HTML just for design, the search engine may miss important content on the page or even fail to rank it at all.

By contrast, simple, structured HTML is easy for a search engine to read and index. Using an <h1> tag to indicate the most important topic of the page (as opposed to just making the text big and bold) is smart strategy: Search engines give greater weight to the contents inside that tag while indexing the page.

To see Google's suggestions for building search-friendly websites, visit *www.google.com/webmasters/guidelines.html*.

For tips on writing HTML that can help your search-engine rankings visit *www.digital-web.com/articles/seo_and_your_web_site/*.

The <*div*> tag and the <*span*> tag are like empty vessels that you fill with content. A div is a block, meaning it has a line break before it and after it, while a span appears inline, as part of a paragraph. Otherwise, divs and spans have no inherent visual properties, so you can use CSS to make them look any way you want. The (for *division*) tag indicates any discrete block of content, much like a paragraph or a headline. But more often it's used to group any number of *other* elements, so you can insert a headline, a bunch of paragraphs, and a bulleted list inside a single block. The tag is a great way to subdivide a page into logical areas, like a banner, footer, sidebar, and so on. Using CSS, you can later position each area to create sophisticated page layouts (a topic that's covered in Part 3 of this book).

The tag is used for *inline* elements; that is, words or phrases that appear inside of a larger paragraph or heading. Treat it just like other inline HTML tags such as the <a> tag (for adding a link to some text in a paragraph) or the tag (for emphasizing a word in a paragraph). For example, you could use a tag to indicate the name of a company, and then use CSS to highlight the name using a different font, color, and so on. Here's an example of those tags in action, complete with a sneak peek of a couple of attributes—*id* and *class*—frequently used to attach styles to parts of a page.

```
<div id="footer">
<p>Copyright 2006, <span class="bizName">CosmoFarmer.com</span></p>
<p>Call customer service at 555-555-5501 for more information</p>
</div>
```

This brief introduction isn't the last you'll see of these tags. They're used frequently in CSS-heavy web pages, and in this book you'll learn how to use them in combination with CSS to gain creative control over your web pages (see the box on page 54).

HTML to Forget

CSS lets you write simpler HTML for one big reason: You can stop using a bunch of tags and attributes that only make a page better looking. The <font> tag is the most glaring example. Its sole purpose is to add a color, size and font to text. It doesn't do anything to make the structure of the page more understandable.

Here's a list of tags and attributes you can easily replace with CSS:

- Ditch <**font**> for controlling the display of text. CSS does a much better job with text. (See Chapter 6 for text-formatting techniques.)
- Stop using <**b**> and <**i**> to make text bold and italic. CSS can make any tag bold or italic, so you don't need these formatting-specific tags. However, if you want to *really* emphasize a word or phrase, then use the <**strong**> tag (browsers display text as bold anyway). For slightly less emphasis, use the <**em**> tag (browsers italicize content inside this tag).

Note: To italicize a publication's title, the <cite> tag kills two birds with one stone. It puts the title in italics *and* tags it as a cited work for search engines' benefit. This one's a keeper.

- Skip the <**table**> tag for page layout. Use it only to display tabular information like spreadsheets, schedules, and charts. As you'll see in Part 3 of this book, you can do all your layout with CSS for much less time and code than the table-tag tango.
- Eliminate the awkward <**body**> tag attributes that enhance only the presentation of the content: **background, bgcolor, text, link, alink**, and **vlink** set colors and images for the page, text, and links. CSS gets the job done better (see Chapter 7 and Chapter 8 for CSS equivalents of these attributes). Also trash the browser-specific attributes used to set margins for a page: **leftmargin, topmargin, marginwidth, marginheight**. CSS handles page margins easily (see Chapter 7).
- Don't abuse the <**br**> tag. If you grew up using the <br> tag (
 in XHTML) to insert a line break without creating a new paragraph, then you're in for a treat. (Browsers automatically—and sometimes infuriatingly—insert a bit of space between paragraphs, including between headers and <p> tags. In the past, designers used elaborate workarounds to avoid paragraph spacing they didn't want, like replacing a single <p> tag with a bunch of line breaks and using a <font> tag to make the first line of the paragraph *look like* a headline.) Using CSS's margin controls you can easily set the amount of space you want to see between paragraphs, headers, and other block-level elements.

Note: In the next chapter, you'll learn about a technique called a "CSS Reset" which eliminates the gaps browsers normally insert between paragraphs and other tags (see page 102).

As a general rule, adding attributes to tags that set colors, borders, background images, or alignment—including attributes that let you format a table's colors, backgrounds, and borders—is pure old-school HTML. So is using alignment properties to position images and center text in paragraphs and table cells. Instead, look to CSS to control text placement (see page 130), borders (page 160), backgrounds (page 164), and image alignment (page 187).

Tips to Guide Your Way

It's always good to have a map for getting the lay of the land. If you're still not sure how to use HTML to create well-structured web pages, then here are a few tips to get you started:

- Use only one <**h1**> tag per page, and use it to identify the main topic of the page. Think of it as a chapter title: You only put one title per chapter. Using <h1> correctly has the added benefit of helping the page get properly indexed by search engines (see the box on page 21).

UP TO SPEED

Validate Your Web Pages

HTML follows certain rules: For example, the <html> tag wraps around the other tags on a page, and the <title> tag needs to appear within the <head> tag. XHTML provides an even more strict set of rules to follow. It's easy to forget these rules or simply make a typo. Incorrect (or *invalid*, as the geeks would say) HTML causes problems like making your page look different in different web browsers. More importantly, you can't create valid CSS with invalid HTML. Fortunately, there are tools for checking whether the HTML in your web pages is correctly written.

The easiest way to check—that is, *validate*—your pages is on the W3C's website at *http://validator.w3.org/* (see Figure 1-3). Get the Web Developer extension for Firefox (*http://chrispederick.com/work/web-developer*); it provides a quick way to test a page in the W3C validator.

The W3C, or World Wide Web Consortium, is the organization responsible for determining the standards for many of the technologies and languages of the Web, including HTML, XHTML, and XML.

If the W3C validator finds any errors in your page, it tells you what those errors are. If you use Firefox, you can download an extension that lets you validate a web page directly in that browser, without having to visit the W3C site. It can even attempt to fix any problems it encounters. You can get the extension here: *http://users.skynet.be/mgueury/mozilla/*. A similar tool is available for the Safari browser as well: *www.zappatic.net/safaritidy/*.

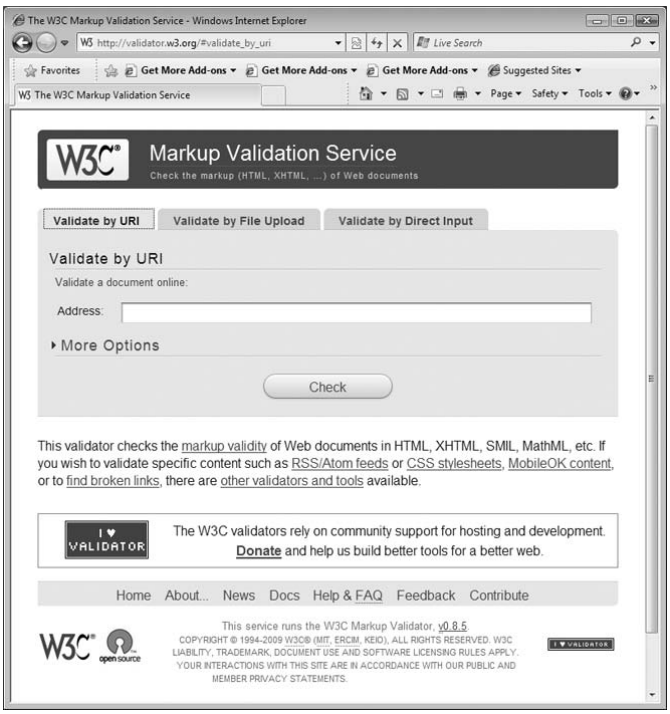


Figure 1-3:
The W3C HTML validator located at http://validator.w3.org *lets you quickly make sure the HTML in a page is sound. You can point the validator to an already existing page on the Web, upload an HTML file from your computer, or just type or paste the HTML of a web page into a form box and then click the Check button.*

- Use headings to indicate the relative importance of text. Again, think outline. When two headings have equal importance in the topic of your page, use the same level header on both. If one is less important or a subtopic of the other, then use the next level header. For example, follow an <h2> with an <h3> tag (see Figure 1-4). In general, it's good to use headings in order and try not to skip heading numbers. For example, don't follow an <h2> tag with an <h5> tag.

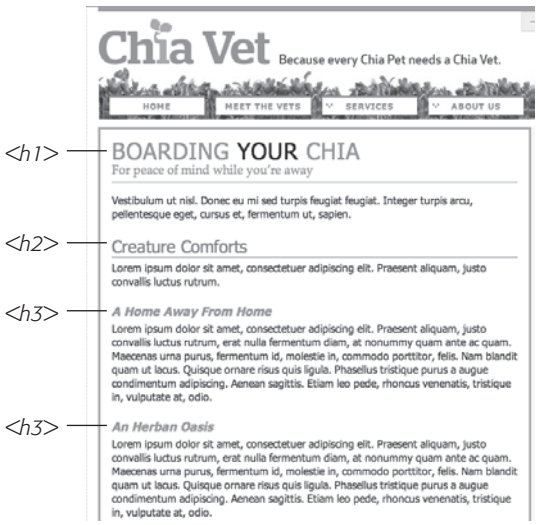


Figure 1-4:
Use the headline tags (<h1>, <h2>, and so on) as you would if you were outlining a school report: Put them in order of importance, beginning with an <h1> tag, which should shout "Listen up! This is what this whole page is about."

- Use the <**p**> tag for paragraphs of text.
- Use unordered lists when you've got a list of several related items, such as navigation links, headlines, or a set of tips like these.
- Use numbered lists to indicate steps in a process or define the order of a set of items. The tutorials in this book (see page 143) are a good example, as is a list of rankings like "Top 10 websites popular with monks."
- To create a glossary of terms and their definitions or descriptions, use the <**dl**> (definition list) tag in conjunction with the <**dt**> (definition term) and <**dd**> (definition description) tags. (For an example of how to use this combo, visit *www.w3schools.com/tags/tryit.asp?filename=tryhtml_list_definition*.)
- If you want to include a quotation like a snippet of text from another website, a movie review, or just some wise saying of your grandfather's, try the <**blockquote**> tag for long passages or the <**q**> tag for one-liners.
- Take advantage of obscure tags like the <**cite**> tag for referencing a book title, newspaper article, or website, and the <**address**> tag to identify and supply contact information for the author of a page (great for a copyright notice).

- As explained in full on page 22, steer clear of any tag or attribute aimed just at changing the appearance of a text or image. CSS, as you'll see, can do it all.
- When there just isn't an HTML tag that fits the bill, but you want to identify an element on a page or a bunch of elements on a page so you can apply a distinctive look, use the <**div**> and <**span**> tags (see page 26). You'll get more advice on how to use these in later chapters (for example, page 312).
- Don't overuse tags. Some web designers think all they need are tags, ignoring tags that might be more appropriate. For example, to create a navigation bar, you could add a tag to a page and fill it with a bunch of links. A better approach would be to use a bulleted list (<ul> tag). After all, a navigation bar is really just a list of links.
- Remember to close tags. The opening tag needs its partner in crime (the closing tag), as do all other tags, except the few self-closers like <br> and <img> (
 and <img /> in XHTML).
- Validate your pages with the W3C validator (see Figure 1-3 and the box on page 24). Poorly written or typo-ridden HTML causes many weird browser errors.

The Importance of the Doctype

As discussed in the box on page 24, HTML follows certain rules—these rules are contained in a *Document Type Definition* file, otherwise known as a DTD. A DTD is an XML document that explains what tags, attributes, and values are valid for a particular type of HTML. And for each version of HTML, there's a corresponding DTD. By now you may be asking, "But what's all this got to do with CSS?"

Everything—if you want your web pages to appear correctly and consistently in web browsers. You tell a web browser which version of HTML or XHTML you're using by including what's called a *doctype declaration* at the beginning of a web page. This doctype declaration is the first line in the HTML file, and not only defines what version of HTML you're using (such as HTML 4.01 Transitional) but also points to the appropriate DTD file on the Web. When you mistype the doctype declaration, you can throw most browsers into an altered state called *quirks mode*.

Quirks mode is browser manufacturers' attempt to make their software behave like browsers did circa 1999 (in the Netscape 4 and Internet Explorer 5 days). If a modern browser encounters a page that's missing the correct doctype, then it thinks "Gee, this page must have been written a long time ago, in an HTML editor far, far away. I'll pretend I'm a really old browser and display the page just as one of those buggy old browsers would display it." That's why, without a correct doctype, your lovingly CSS-styled web pages may not look as they should, according to current standards. If you unwittingly view your web page in quirks mode when checking it in a browser, you may end up trying to fix display problems that are related to an incorrect doctype and not the incorrect use of HTML or CSS.

Note: For more (read: technical) information on quirks mode, visit *www.quirksmode.org/css/quirksmode.html* and *http://hsivonen.iki.fi/doctype/*.

Fortunately, it's easy to get the doctype correct. All you need to know is what version of HTML you're using. In all likelihood, you're already creating web pages using HTML 4. You may even use XHTML for your websites (see page 5).

The most popular versions of HTML and XHTML these days are HTML 4.01 Transitional and XHTML 1.0 Transitional. These types of HTML still let you use presentational tags like the <font> tag, thereby providing a *transition* from older HTML to the newer, stricter types of HTML and XHTML. Although it's best not to use these tags at all, they still work in the Transitional versions, so you can phase out these older tags at your own pace. In the strict versions of HTML and XHTML, some older tags don't work at all.

Note: In general, the strict versions of both HTML and XHTML disallow tags and attributes aimed at making a page look good, like the <font> tag and a paragraph's center attribute. They also disallow a number of once-popular properties like a link's target property, which lets you make a link open in a new window.

If you're using HTML 4.01 Transitional, type the following doctype declaration at the very beginning of every page you create:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.
w3.org/TR/html4/loose.dtd">
```

The doctype declaration for XHTML 1.0 Transitional is similar, but it points to a different DTD. It's also necessary to add a little code to the opening <html> tag that's used to identify the file's XML type—in this case, it's XHTML—like this:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.
w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
```

Note: If you're using frames for your web pages, then you need to use a doctype intended for framesets. See the W3C site for a list of proper doctypes: *www.w3.org/QA/2002/04/valid-dtd-list.html*.

If this entire discussion is making your head ache and your eyes slowly shut, just make sure you use the proper doctype listed above, and *always* make it the first line of your HTML file (before even the opening <html> tag). Also it's easy to make a typo in this long-winded bit of code, so always make sure you validate the page (see the box on page 36) to make sure your doctype is correct. In fact, it's a good idea to have a blank HTML page with the proper doctype somewhere on your computer, so you can make a copy of it whenever you need to create a new web page. In the tutorial files available from *www.sawmac.com/css2e*, you'll find four basic HTML files—one for each of the four main doctypes in use on the Web today.

Note: Most visual web page tools like Dreamweaver and Expression Web automatically add a doctype declaration whenever you create a new web page, and many HTML-savvy text editors have shortcuts for adding doctypes.

Getting the Most out of Internet Explorer 8

Thanks to Microsoft's auto-update feature, the new Internet Explorer 8 has gained a healthy share of the browser market. Fortunately for web designers, IE 8 is the most standards-compliant version of the browser yet. It fixes the bugs that have plagued IE 6 and even IE 7, and works almost perfectly with version 2.1 of CSS. That means your carefully crafted web designs should look nearly the same in IE 8, Firefox, Safari, and Opera with little or no tinkering. As you'll read later in this book (for example, pages 184 and 223), you can't say the same about IE 6 or IE 7, which require some browser-specific code to make many designs look right.

However, IE 8 is sort of like a chameleon: It can take on the appearance of a different version. If you're not careful, it may not display your web pages the way you want it to. For example, and most importantly, you must include a proper doctype. As mentioned in the previous section, without a doctype, browsers switch into quirks mode. Well, when IE 8 goes into quirks mode, it tries to replicate the look of IE 5 (!?).

But wait—there's more! IE 8 can also pretend to be IE 7. When someone viewing your site in IE 8 clicks a "compatibility view" button, IE 8 goes into IE 7 mode, displaying pages without IE 8's full CSS 2.1 goodness. The same thing happens if Microsoft puts your website onto its Compatibility View List—a list of sites that Microsoft has determined look better in IE 7 than in IE 8. If you're designing a site using the guidelines in this book, you won't want IE 8 to act like IE 7…*ever*.

Fortunately, there's a way to tell IE 8 to stop all this nonsense and just be IE 8. Adding a single META tag to a web page instructs IE 8 to ignore Compatibility View and the Compatibility View List and always display the page using its most standards-compliant mode:

```
<meta http-equiv="X-UA-Compatible" content="IE=edge" />
```

Put this instruction in the page's <head> section (below the <title> tag is a good place). This tag will work for future versions of IE, too: The "IE=edge" part of the tag will instruct versions of Internet Explorer that are released after IE 8 to also display web pages in their standard mode. Unfortunately, you must do this on every page of your site.

Now that your HTML ship is steering in the right direction, it's time to jump into the fun stuff (and the reason you bought this book): Cascading Style Sheets.

UP TO SPEED

Cross Browser Testing

There are a lot of web browsers out there. If you use Windows, you automatically get Internet Explorer and can install additional browsers like Firefox, Safari, Opera, or Google's Chrome. On a Mac, you can stick with the already-installed Safari browser, or run Firefox 3 or Chrome 1. While the very latest browsers are mostly comparable when displaying CSS-driven web pages, you can't say the same for IE 6, which is still in widespread use. Even IE 7 has its share of peculiarities.

To really make sure your sites work for the largest audience, you need a way to test your designs in as wide a range of browsers as possible. Here are a few techniques:

Windows. Normally, Windows computers can only run one version of IE. In other words, you can't test in IE 6, IE 7, and IE 8 on the same computer. Well, normally you can't, but thanks to a nifty little program named IETester, you can actually see what a web page looks like in IE 5.5, IE 6, IE 7, and IE 8, all running side-by-side at the same time. Download this great program from *www.my-debugbar.com/wiki/IETester/HomePage*.

You should also install the other major browsers on your computer: Firefox, Safari, Opera, and Chrome. Fortunately, you don't necessarily need a Mac for testing, since Apple's browser—Safari—is also available for Windows.

Mac. Testing is a bit trickier for Mac people. You *have* to test in Internet Explorer—it's still the most used browser in the world, and the display problems in IE 6 and IE 7 mean that your painstakingly crafted design might look great for you, but fall apart in IE. You have a few options: First, you can buy (or borrow) a Windows machine; second, if you have an Intel Mac you can install Windows using Apple's Boot Camp software (*www.apple.com/macosx/features/bootcamp.html*); a third option is to install virtualization software like VMWare Fusion or Parallels Desktop on your Mac. This software lets you run a virtual Windows machine, side-by-side with the Mac OS. You can jump between Mac and Windows to test in various browsers in both operating systems. It's the most efficient testing technique for Mac users. Both Boot Camp and virtualization software require a copy of the Windows OS.

Everyone. Another option that works for both Windows and Macs and doesn't require installing extra software is one of the many cross-browser testing services that let see what your pages look like in many different operating systems and browsers. Most of these are commercial services that cost money. Litmus (*http://litmusapp.com/*) takes screenshots of your pages in a ton of different browsers; CrossBrowserTesting.com (*www.crossbrowsertesting.com*) lets you remotely view another computer—in other words, you can actually interact with a Windows machine, running Internet Explorer 8, 7, and 6, plus Firefox and Safari. This scheme not only lets you test the visual design, but also lets you interact with the page and test how your JavaScript programming works in that browser. One of the original services, Browsercam (*www.browsercam.com*), offers a wide range of services including both screenshots (like Litmus) and remote access to real computers (like CrossBrowserTesting).

CHAPTER
2

Creating Styles and Style Sheets

Even the most complex and beautiful websites, like the one in Figure 2-1, start with a single CSS style. As you add multiple styles and style sheets, you can develop fully formed websites that inspire designers and amaze visitors. Whether you're a CSS novice or a Style Sheet Samurai, you need to obey a few basic rules about how to create styles and style sheets. In this chapter you'll start at square one, learning the basics of creating and using styles and style sheets.

Tip: Some people learn better by doing rather than reading. If you'd like to try your hand at creating styles and style sheets first and then come back here to read up on what you just did, then turn to page 39 for a hands-on tutorial.

Anatomy of a Style

A single style defining the look of one element on a page is a pretty basic beast. It's essentially just a rule that tells a web browser how to format something on a web page—turn a headline blue, draw a red border around a photo, or create a 150-pixel-wide sidebar box to hold a list of links. If a style could talk it would say something like, "Hey Browser, make *this* look like *that*." A style is, in fact, made up of two elements: the web page element that the browser formats (the *selector*) and the actual formatting instructions (the *declaration block*). For example, a selector can be a headline, a paragraph of text, a photo, and so on. Declaration blocks can turn that text blue, add a red border around a paragraph, position the photo in the center of the page—the possibilities are endless.

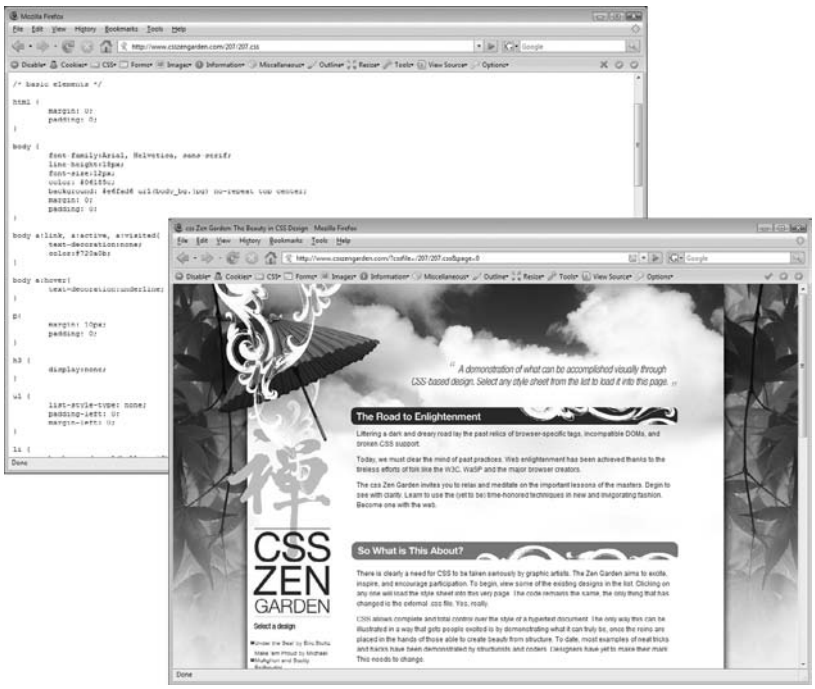


Figure 2-1: *Every CSS-driven web page starts with a single CSS style. Here, a basic style (left) sets the groundwork for the body of the entire page (right).*

Note: Technical types often follow the lead of the W3C and call CSS styles *rules.* This book uses the terms "style" and "rule" interchangeably.

Of course, CSS styles can't communicate in nice clear English like the previous paragraph. They have their own language. For example, to set a standard font color and font size for all paragraphs on a web page, you'd write the following:

```
p { color: red; font-size: 1.5em; }
```

This style simply says, "Make the text in all paragraphs—marked with <p> tags—red and 1.5 ems tall." (An *em* is a unit of measurement that's based on a browser's normal text size. More on that in Chapter 6.) As Figure 2-2 illustrates, even a simple style like this example contains several elements:

- **Selector.** As described earlier, the selector tells a web browser which element or elements on a page to style—like a headline, paragraph, image, or link. In Figure 2-2, the selector (p) refers to the <p> tag. This selector makes web browsers format all <p> tags using the formatting directions in this style. With the wide range of selectors that CSS offers and a little creativity, you'll master your pages' formatting. (The next chapter covers selectors in depth.)

- **Declaration Block.** The code following the selector includes all the formatting options you want to apply to the selector. The block begins with an opening brace ({) and ends with a closing brace (}).
- **Declaration.** Between the opening and closing braces of a declaration block, you add one or more *declarations,* or formatting instructions. Every declaration has two parts, a *property* and a *value,* and ends with a semicolon.
- **Property.** CSS offers a wide range of formatting options, called *properties.* A property is a word—or a few hyphenated words—indicating a certain style effect. Most properties have straightforward names like *font-size, margin-top,* and *text-align.* For example, the *background-color* property sets—you guessed it—a background color. You'll learn about oodles of CSS properties throughout this book.

Tip: Appendix A has a handy glossary of CSS properties.

- **Value.** Finally, you get to express your creative genius by assigning a *value* to a CSS property—by making a background blue, red, purple, or chartreuse, for example. As upcoming chapters explain, different CSS properties require specific types of values—a color (like *red,* or *#FF0000*), a length (like *18px, 200%,* or *5em*), an URL (like *images/background.gif*), or a specific keyword (like *top, center,* or *bottom*).

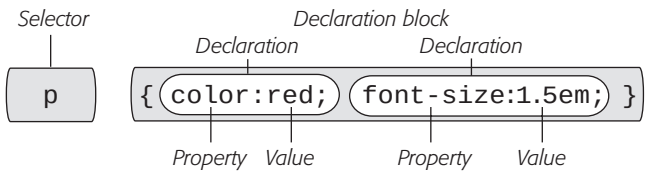


Figure 2-2:
A style (or rule) is made of two main parts: a selector, which tells web browsers what to format, and a declaration block, which lists the formatting instructions that the browsers use to style the selector.

You don't need to write a style on a single line, as pictured in Figure 2-2. Many styles have multiple formatting properties, so you can make them easier to read by breaking them up into multiple lines. For example, you may want to put the selector and opening brace on the first line, each declaration on its own line, and the closing brace by itself on the last line, like so:

```
p {
    color: red;
    font-size: 1.5em;
}
```

Web browsers ignore spaces and tabs, so feel free to add them to make your CSS more readable. For example, it's helpful to indent properties, with either a tab or a couple of spaces, to visibly separate the selector from the declarations, making it easy to tell which is which. In addition, putting one space between the colon and the property value is optional but adds to the readability of the style. In fact, you can put as much white space between the two as you want. For example, *color:red,* *color: red,* and *color: red* all work.

Note: Don't forget to end each property/value pair with a semicolon:

```
color: red;
```

Leaving off that semicolon can trip up browsers, breaking your style sheet and ruining the look of your web page. Don't worry, this mistake is very common–just make sure you use a CSS validator, as described in the box on the next page.

Understanding Style Sheets

Of course, a single style won't transform a web page into a work of art. It may make your paragraphs red, but to infuse your websites with great design, you need many different styles. A collection of CSS styles comprises a *style sheet.* A style sheet can be one of two types—*internal* or *external,* depending on whether the style information is located in the web page itself or in a separate file linked to the web page.

Internal or External–How to Choose

Most of the time, external style sheets are the way to go, since they make building web pages easier and updating websites faster. An external style sheet collects all your style information in a single file that you then link to a web page with just a single line of code. You can attach the same external style sheet to every page in your website, providing a unified design. It also makes a complete site makeover as easy as editing a single text file.

On the receiving end, external style sheets help web pages load faster. When you use an external style sheet, your web pages can contain only basic HTML—no byte-hogging HTML tables or <font> tags and no internal CSS style code. Furthermore, when a web browser downloads an external style sheet, it stores the file on your visitor's computer (in a behind-the-scenes folder called a *cache*) for quick access. When your visitor hops to other pages on the site that use the same external style sheet, there's no need for the browser to download the style sheet again. The browser simply downloads the requested HTML file and pulls the external style sheet from its cache—a significant savings in download time.

Note: When you're working on your website and previewing it in a browser, the cache can work against you. See the box on page 35 for a workaround.

WORKAROUND WORKSHOP

Don't Get Caught in the Cache

A browser's cache is a great speed-boost for Web surfers. Whenever the cache downloads and stores a frequently used file—like an external CSS file or an image—it saves precious moments traveling the relatively sluggish highways of the Internet. Instead of re-downloading the next time it needs the same file, the browser can go straight to the new stuff—like a yet-to-be-viewed page or graphic.

But what's good for your visitors isn't always good for you. Because the web browser caches and recalls downloaded external CSS files, you can often get tripped up as you work on a site design. Say you're working on a page that uses an external style sheet, and you preview the page in a browser. Something doesn't look quite right, so you return to your web editor and change the external CSS file. When you return to the web browser and reload the page, the change you just made doesn't appear! You've just been caught by the cache. When you reload a web page, browsers don't always reload the external style sheet, so you may not be seeing the latest and greatest version of your styles.

To get around this snafu, you can *force reload* a page (which also reloads all linked files) by pressing the Ctrl (⌘) key and clicking the browser's Reload button; Ctrl+F5 also works on Windows for Internet Explorer; and Ctrl+Shift+R (⌘-Shift-R) is Firefox's keyboard shortcut.

Internal Style Sheets

An internal style sheet is a collection of styles that's part of the web page's code. It always appears between opening and closing HTML <style> tags in the page's <head> portion. Here's an example:

```
<style type="text/css">
h1 {
  color: #FF7643;
  font-family: Arial;
}
p {
  color: red;
  font-size: 1.5em;
}
</style>
</head>
<body>

<!-- The rest of your page follows... -->
```

Note: You can place the <style> tag and its styles after the <title> tag in the head of the page, but web designers usually place them right before the closing </head> tag as shown here. If you also use JavaScript in your pages, add the JavaScript code *after* the style sheet. Many JavaScript programs rely on CSS, so by adding your CSS first, you can make sure the JavaScript program has all the information it needs to get its job done.

The <style> tag is HTML, not CSS. But its job is to tell the web browser that the information contained within the tags is CSS code and not HTML. Creating an internal style sheet is as simple as typing one or more styles between the <style> tags.

Internal style sheets are easy to add to a web page and provide an immediate visual boost to your HTML. But they aren't the most efficient method for designing an entire website composed of many web pages. For one thing, you need to copy and paste the internal style sheet into each page of your site—a time-consuming chore that adds bandwidth-hogging code to each page.

But internal style sheets are even more of a hassle when you want to update the look of a site. For example, say you want to change the <h1> tag, which you originally decided should appear as large, green, bold type. But now you want small, blue type in the Courier typeface. Using internal style sheets, you'd need to edit *every* page. Who has that kind of time? Fortunately, there's a simple solution to this dilemma—external style sheets.

Note: It's also possible (though rarely advisable) to add styling information to an individual HTML tag without using a style sheet. The tutorial on page 39 shows you how to perform that maneuver using an *inline* style.

External Style Sheets

An external style sheet is nothing more than a text file containing all your CSS rules. It never contains any HTML code—so don't include the <style> tag. In addition, always end the file name with the extension .css. You can name the file whatever you like, but it pays to be descriptive. Use *global.css, site.css*, or *main.css,* for example, to indicate a style sheet used by every page on the site, or use *form.css* to name a file containing styles used to make a web form look good.

UP TO SPEED

Validate Your CSS

Just as you should make sure you've correctly written the HTML in your web pages using the W3C HTML validator (see the box on page 24), you should also check your CSS code to make sure it's kosher. The W3C provides an online tool for CSS checking as well: *http://jigsaw.w3.org/css-validator/*. It operates just like the HTML validator: You can type the URL of a web page (or even just the address to an external CSS file), upload a CSS file, or copy and paste CSS code into a web form and submit it for validation.

It's easy to make a typo when writing CSS, and one small mistake can throw all of your carefully planned designs out of whack. When your CSS-infused web page doesn't look as you expect, a simple CSS error may be the cause. The W3C CSS validator is a good first stop when troubleshooting your designs.

You can also do a quick check using Firefox. Load the page that has the CSS you want to check and choose Tools → Error Console. Click the Warnings button, and you'll see listed any CSS code that Firefox doesn't understand.

Tip: If you have a page with an internal style sheet but want to use an external style sheet, then just cut all of the code between the <style> tags (without the tags themselves). Then create a new text file and paste the CSS into the file. Save the file with a .css extension–*global.css,* for example–and link it to your page, using one of the techniques described next.

Once you create an external style sheet, you must connect it to the web page you wish to format. You can attach a style sheet to a web page using HTML's <link> tag or CSS's own @import directive—a command that basically does the same thing as the link tag. All current web browsers treat these two techniques the same, and both let you attach style sheets to a web page, so choosing one is mostly a matter of preference.

Note: The @import directive can do one thing the <link> tag can't: attach external style sheets to an external style sheet. This advanced technique is discussed on page 38.

Linking a Style Sheet Using HTML

The most common method of adding an external style sheet to a web page is to use the HTML <link> tag. You write the tag slightly differently depending on whether you're using HTML or XHTML. For example, here's HTML:

```
<link rel="stylesheet" type="text/css" href="css/global.css">
```

Here's XHTML:

```
<link rel="stylesheet" type="text/css" href="css/global.css" />
```

The only difference is how you end the tag. The link tag is an empty element, since it has *only* an opening tag and no matching, closing </link> tag. In XHTML, you need to add a closing slash (like this: />) to terminate the tag; HTML doesn't require the extra slash.

Otherwise, the link tag is the same in HTML and XHTML and requires three attributes:

- **rel="stylesheet"** indicates the type of link—in this case, a link to a style sheet.
- **type="text/css"** lets the browser know what kind of data to expect—a text file, containing CSS.
- **href** points to the location of the external CSS file on the site. The value of this property is a URL and will vary depending on where you keep your CSS file. It works the same as the *src* attribute you use when adding an image to a page or the *href* attribute of a link pointing to another page.

Tip: You can attach multiple style sheets to a web page by adding multiple <link> tags, each pointing to a different style sheet file. This technique is a great way to organize your CSS styles, as you can see in Chapter 15.

Linking a Style Sheet Using CSS

CSS includes a built-in way to add external style sheets—the @import directive. You add the directive inside of an HTML <style> tag, like so:

```
<style type="text/css">
@import url(css/global.css);
</style>
```

Unlike HTML's <link> tag, @import is part of the CSS language and has some definite un-HTML-like qualities:

- To make the connection to the external CSS file, you use *url* instead of *href* and enclose the path in parentheses. So in this example, *css/global.css* is the path to the external CSS file. Quotes around the URL are optional, so *url(css/global.css)* and *url("css/global.css")* both work.
- As with the <link> tag, you can include multiple external style sheets using more than one @import:

```
<style type="text/css">
@import url(css/global.css);
@import url(css/forms.css);
</style>
```

- You can add regular CSS styles after the @import directives if you want to create a rule that applies just to that one page, but still use the site's global design rules to format the rest of the page.

Note: You'll learn how rules interact and how you can create a rule that overrides other rules on page 100. You can even create an external CSS file that contains only @import directives linking to *other* external style sheets, a technique often used to help organize your styles (see page 398).

Here's an example:

```
<style type="text/css">
@import url(css/global.css);
@import url(css/forms.css);
p { color:red; }
</style>
```

Technically, you should place all the @import lines *before* any CSS rules, as shown here, but it's okay if you forget. Web browsers are supposed to ignore any style sheets you import after a CSS rule, but all current web browsers ignore that restriction.

Which to use? Although both methods work, the <link> tag is more common. In a few cases, using the @import technique can slow your style sheets' download speed (visit *www.stevesouders.com/blog/2009/04/09/dont-use-import/* to find out when this can happen and why). So, if you don't have a strong preference for either, just use the <link> method described on page 44.

Tutorial: Creating Your First Styles

The rest of this chapter takes you through the basic steps for adding inline styles, writing CSS rules, and creating internal and external style sheets. As you work through this book, you'll work through various CSS designs, from simple design elements to complete CSS-enabled web page layouts. To get started, download the tutorial files located on the book's companion website at *www.sawmac.com/css2e/*. Click the tutorial link and download the Zip archive containing the files (detailed instructions for unzipping the files are on the website as well). Each chapter's files are in a separate folder, named *02* (for chapter 2), *03* (for chapter 3), and so on.

Next, launch your favorite web page editing software, whether it's a simple text editor, like Notepad or TextEdit, or a visually oriented program, like Dreamweaver or Microsoft Expression Web (for information on selecting an editor, see page 7).

Note: If you use Dreamweaver, check out Appendix B to learn how to use that program to create styles and style sheets. Dreamweaver, along with many other HTML-editing programs, also lets you work on the raw HTML code by switching to Code View. Give that a shot for this tutorial.

Creating an Inline Style

When you type a CSS rule (like the ones described on page 31) directly into a page's HTML, you're creating an *inline* style. Inline styles offer none of the time-and bandwidth-saving benefits of style sheets, so the pros hardly ever use them. Still, in a pinch, if you absolutely must change the styling on a single element on a single page, then you may want to resort to an inline style. (For example, when creating HTML-formatted email messages, it's usually best to use inline styles. That's the only way to get CSS to work in Gmail, for instance.) And if you do, you at least want the style to work properly. The important thing is to carefully place the style within the tag you want to format. Here's an example that shows you exactly how to do it:

1. **In your web page editing program, open the file *02* → *basic.html*.**

   This simple-but-elegant XHTML file contains a couple of different headings, a few paragraphs, and a copyright notice inside an <address> tag. You'll start by creating an inline style for the <h1> tag.

2. **Click inside the opening <h1> tag and type *style="color: #C7AA8D;"*.**

   The tag should look like this:

   ```
   <h1 style="color: #C7AA8D;">
   ```

   The style attribute is HTML, not CSS, so you use the equals sign after it and enclose all of the CSS code inside quotes. Only the stuff inside the quotes is CSS. In this case, you've added a property named color—which affects the color of text—and you've set that property to #C7AA8D (a hexadecimal code for defining a color that's grayish/brown). You'll learn more about coloring text on page 118. The colon separates the property name from the property value that you want. Next you'll check the results in a web browser.

3. **Open the *basic.html* page in a web browser.**

   For example, start up your favorite web browser and choose File → Open File (or press Ctrl-O [⌘-O] and select the *basic.html* file in the *02 tutorial* folder from your computer. (Or just drag the file from the desktop—or wherever you've saved the tutorial files—into an open browser window.) Many HTML editors also include a "Preview in Browser" function, which, with a simple keyboard shortcut or menu option, opens the page in a web browser. It's worth checking your program's manual to see if it includes this timesaving feature.

   When you view the page in a browser, the headline is now a dusty brown. Inline styles can include more than one CSS property. You'll add another property next.

4. **Return to your HTML editor, click after the semicolon following #C7AA8D and type *font-size: 3em;*.**

   The semicolon separates two different property settings. The <h1> tag should look like this:

   ```
   <h1 style="color: #C7AA8D; font-size: 3em;">
   ```

5. **Preview the page in a web browser. For example, click your browser window's Reload button (but make sure you've saved the XHTML file first).**

   The headline is now massive in size. And you've had a taste of how labor-intensive inline styles are. Making all the <h1> headings on a page look like this one could take days of typing and add acres of HTML code.

6. **Return to your page editor and delete the entire style property, which returns the heading tag back to its normal <h1>.**

   Next, you'll create a style sheet within a web page. (You'll find a finished version of this part of the tutorial in the *02_finished* folder in a file named *inline.html*.)

Creating an Internal Style Sheet

A better approach than inline styles is using a style sheet that contains multiple CSS rules to control multiple elements of a page. In this section, you'll create a style that affects all top-level headings in one swoop. This single rule automatically formats every <h1> tag on the page.

1. **With the file *basic.html* open in your text editor, click directly after the closing </title> tag. Then hit Enter (Return) and type <*style type="text/css"*>.**

   The HTML should now look like the following (the stuff you've added is in bold):

   ```
   <title>CSS:The Missing Manual -- Chapter 2</title>
   <style type="text/css">
   </head>
   ```

The opening <style> tag marks the beginning of the style sheet. It's always a good idea to close a tag right after you type the opening tag, since it's so easy to forget this step once you jump into writing your CSS. In this case, you'll close the <style> tag before adding any CSS.

2. **Press Enter twice and type *</style>*.**

   Now, you'll add a CSS selector that marks the beginning of your first style.

3. **Click between the opening and closing <style> tags and type *h1 {* .**

   The h1 indicates the tag to which the web browser should apply the upcoming style.

   The weird bracket thingy after the h1 is called an opening brace, and it marks the beginning of the CSS properties for this style. In other words, it says, "The fun stuff comes right after me." As with closing tags, it's a good idea to type the closing brace of a style before actually adding any style properties.

4. **Press Enter twice and type a single closing brace: *}* .**

   As the partner of the opening brace you typed in the last step, this brace's job is to tell the web browser, "This particular CSS rule ends here." Now time for the fun stuff.

5. **Click in the empty line between the two braces. Hit the Tab key, and type *color: #C7AA8D;*.**

   You've typed the same style property as the inline version—*color*—and set it to #C7AA8D. As explained in the note on page 34, the final semicolon marks the end of the property declaration.

Note: Technically, you don't have to put the style property on its own line, but it's a good idea. With one property per line, it's a lot easier to quickly scan a style sheet and see all the properties for each style. Also, the tab is another helpful visual organizing technique (you can also insert a few spaces instead). The indentation makes it easy to discern all of your rules at a glance, since the selectors (like h1 here) line up along the left edge, with the properties spaced a bit out of the way.

---

6. **Press Enter again and add three additional properties, like so:**

```
font-size: 3em;
font-family: "Arial Black", Arial, sans-serif;
margin: 0;
```

   Make sure you don't leave off the semicolon at the end of each line, otherwise the CSS won't display correctly in a browser.

   Each of these properties adds a different visual effect to the headline. The first two assign a size and font to the text, while the third removes space from around the headline. Part 2 of this book covers all these properties in detail.

Congratulations—you've just created an internal style sheet. The code you've added should look like the bolded text:

```
<title>Basic Web Page</title>
<style type="text/css">
h1 {
  color: #C7AA8D;
  font-size: 3em;
  font-family: "Arial Black", Arial, sans-serif;
  margin: 0;
}
</style>
</head>
```

7. **Save the page and preview it in a web browser.**

   You can preview the page by opening it in a web browser as described in step 3 on page 40, or, if the page is still open in a browser window, then just click the Reload button.

   Next you'll add another style.

Note: Always remember to add the closing </style> tag at the end of an internal style sheet. When you don't, a web browser displays the CSS style code followed by a completely unformatted web page–or no web page at all.

---

8. **Back in your text editing program, click after the closing brace of the h1 style you just created, press Enter, and then add the following rule:**

```
p {
  color: #616161;
  line-height: 150%;
  margin-top: 10px;
  margin-left: 80px;
}
```

   This rule formats every paragraph on the page. Don't worry too much right now about what each of these CSS properties is doing. Later chapters cover these properties in depth. For now, just practice typing the code correctly and get a feel for how to add CSS to a page.

9. **Preview the page in a browser.**

   The page is starting to shape up and should look like Figure 2-3. You can see what stylistic direction the page is headed in. You can see a completed version of this tutorial by opening the *internal.html* file in the *02_finished* folder.

The process you've just worked through is CSS in a nutshell: Start with an HTML page, add a style sheet, and create CSS rules to make the page look great. In the next part of this tutorial, you'll see how to work more efficiently using external style sheets.

Figure 2-3: *CSS easily formats text in creative ways, letting you change fonts, text colors, font sizes, and a lot more as you'll see in "Creating an External Style Sheet" below.*

Creating an External Style Sheet

Since it groups all of your styles at the top of the page, an internal style sheet is a lot easier to create and maintain than the inline style you created a few pages ago. Also, an internal style sheet lets you format any number of instances of a tag on a page, like every <p> tag by typing one simple rule. But an external style sheet gets even better—it can store all of the styles for an *entire website.* Editing one style in the external style sheet updates the whole site. In this section, you'll take the styles you created in the previous section and put them in an external style sheet.

1. **In your text editing program, create a new file and save it as *main.css* in the same folder as the web page you've been working on.**

   External style sheet files end with the extension .css. The file name *main.css* indicates that the styles contained in the file apply throughout the site. (But you can use any file name you like, as long as it ends with the .css extension.)

   Start by adding a new style to the style sheet.

2. **Type the following rule into the *main.css* file:**

```
body {
  background-color: #CDE6FF;
  background-image: url(images/bg_body.png);
  background-repeat: repeat-x;
  padding-top: 100px;
}
```

This rule applies to the body tag—the tag that holds all the content visible in a web browser window—and adds a background image to the page. Unlike a similar property in HTML, the CSS background-image property can display the graphic in many different ways—in this case, tiled horizontally across the top of the page. You can read more about background image properties on page 188. This style also adds a color to the page's background and scoots its contents down 100 pixels from the top of the browser window. When you preview the page, you'll see that this extra space moves the headline out of the way of the background graphic.

Instead of recreating the work you did earlier, just copy the styles you created in the previous section and paste them into this style sheet.

3. **Open the *basic.html* page that you've been working on and copy all of the text *inside* the <style> tags. (Don't copy the <style> tags themselves.)**

   Copy the style information the same way you'd copy any text. For example, choose Edit → Copy or press Ctrl-C (⌘-C).

4. **In the *main.css* file, paste the style information by selecting Edit → Paste or pressing Ctrl-V (⌘-V).**

   An external style sheet never contains any HTML—that's why you didn't copy the <style> tags.

5. **Save *main.css*.**

   Now you just need to clean up your old file and link the new style sheet to it.

6. **Return to the *basic.html* file in your text editor and delete the <style> tags and all of the CSS rules you typed in earlier.**

   You no longer need these styles, since they're in the external style sheet you're about to attach.

7. **In the space where the styles used to be (between the closing </title> tag and the closing </head> tag) type the following:**

   ```
   <link href="main.css" rel="stylesheet" type="text/css" />
   ```

   The <link> tag is one way to attach a style sheet to a page; another option is the CSS @import directive, as discussed on page 38. The link tag specifies the location of the external style sheet. (You can read up on the two other attributes—*rel* and *type*—on page 37.)

Note: In this example, the style sheet file is in the same folder as the web page, so using the file's name for the href value provides a simple "document-relative" path. If it were in a different folder from the page, then the path would be a bit more complicated. In either case, you'd use a *document-* or *root-relative* path to indicate where the file is. The routine is the same as when you create a link to a web page or set a path to an image file when using the HTML <img> tag. (For a brief primer on document- and root-relative links visit: *www.communitymx.com/content/article.cfm?cid=230AD*.)

---

8. **Save the file and preview it in a web browser.**

   It should look similar to the page in step 9 on page 42, with the addition of a blue background and a silhouetted image of grass and flowers at the top of the page (thanks to the CSS you added in step 2). The CSS rules in this external style sheet are the same as the ones from the internal style sheet; they're just located in a different place. To demonstrate how useful it can be to keep your styles in their own external file, you'll attach the style sheet to another web page.

Note: If the web page doesn't have any formatting (for example, the top headline isn't big, bold, and dusty brown), then you've probably mistyped the code from step 6 or saved the *main.css* file in a folder other than the one where the *basic.html* file is. In this case, just move the *main.css* into the same folder.

---

9. **Open the file *02 → another_page.html.***

   This page contains some of the same HTML tags—h1, h2, p, and so on—as the other web page you've been working on.

10. **Click after the closing </title> tag and press Enter (Return).**

    You'll now link to the style sheet.

11. **Type the same <link> tag you did in step 7.**

    The web page code should look like this (the code you just typed appears in bold):

```
<title>Another Page</title>
<link href="main.css" rel="stylesheet" type="text/css" />
</head>
```

12. **Save the page and preview it in a web browser.**

    Ta-da! Just one line of code added to the web page is enough to instantly transform its appearance. To demonstrate how easy it is to update an external style sheet, you'll do so by editing one style and adding another.

13. **Open the *main.css* file and add the CSS declaration *font-family:* "Palatino Linotype", Baskerville, serif; at the beginning of the p style.**

    The code should look like this (the bold text is what you've just added):

```
p {
  font-family: "Palatino Linotype", Baskerville, serif;
  color: #616161;
  line-height: 150%;
  margin-top: 10px;
  margin-left: 80px;
}
```

    Last but not least, create a new rule for the h2 tag.

14. **Click at the end of the p style's closing }, press Enter, and add the following rule:**

```
h2 {
  color: #B1967C;
  font-weight: normal;
  font-family: "Palatino Linotype", Baskerville, serif;
  font-size: 2.2em;
  border-bottom: 2px white solid;
  background: url(images/bullet_flower.png) no-repeat;
  padding: 0 0 2px 80px;
  margin: 0;
}
```

Some of these CSS properties you've encountered already. Some are new—like the *border-bottom* property for adding a line underneath the headline. And some—like the *background* property—provide a shortcut for combining several different properties—in this case, the *background-image,* and *background-repeat*—into a single property. Don't worry about the specifics of these properties, you'll learn them all in great detail in upcoming chapters (Chapter 6 covers font properties; Chapter 8 covers backgrounds; Chapter 7 covers padding and margins).

The styles you've created so far affect mainly tags—the h1, h2, and p—and they affect every instance of those tags. In other words, the p style you created formats every single paragraph on the page. If you want to target just one paragraph, you need to use a different kind of style.

15. **Click at the end of the h2 style's closing }, press Enter, and add the following rule:**

```
.intro {
  color: #6A94CC;
  font-family: Arial, Helvetica, sans-serif;
  font-size: 1.2em;
  margin-left: 0;
  margin-bottom: 25px;
}
```

If you preview the *basic.html* page in a web browser, you'll see that this new style has no effect…yet. This type of style, called a *class selector,* formats only the specific tags you apply the class to. In order for this new style to work, you need to edit some HTML.

16. **Save the file *main.css* and switch to the *basic.html* file in your text editor. Locate the opening <p> tag following the <h1> tag and add *class="intro"* so the opening tag looks like this:**

```
<p class="intro">
```

You don't have to add a period before the word *intro* as you did when you created the style in step 15 (you'll learn why in the next chapter). This little extra HTML applies the style to the first paragraph (and only that one paragraph).

Repeat this step for the *another_page.html* file—in other words add *class="intro"* to the first <p> tag on that page.

17. **Save all the files and preview both the *basic.html* and *another_page.html* files in a web browser. Figure 2-4 shows the completed *another_page.html* file.**

Notice that the appearance of both pages changes, based on the simple edits you made to the CSS file. Close your eyes and imagine your website has a thousand pages. Aaaahhhhhhh, the power. (You'll find a completed version of this tutorial in the *02_finished* folder.)

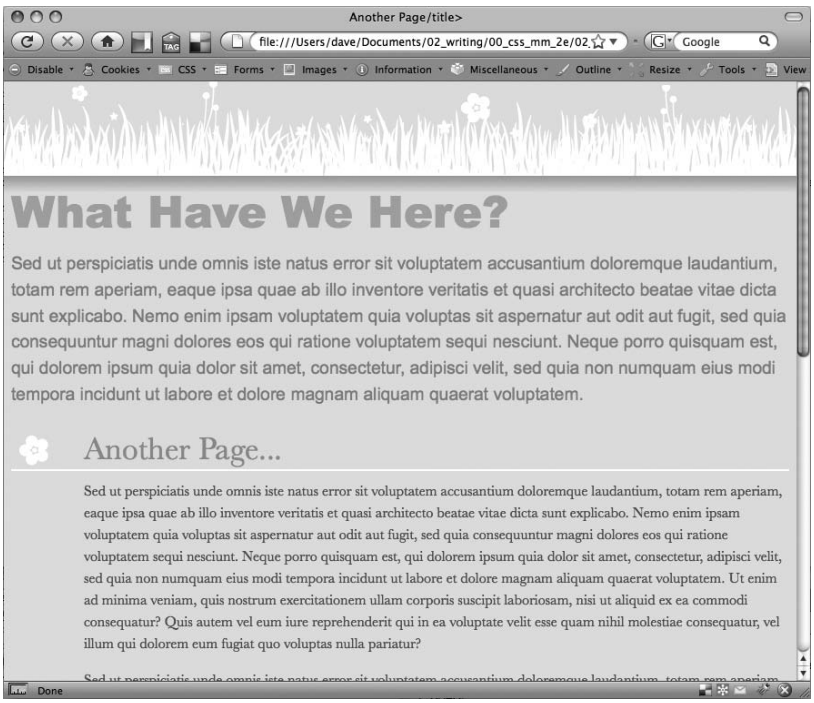


Figure 2-4: *Using an external style sheet, you can update an entire site's worth of web pages by editing a single CSS file. In addition, by moving all of the CSS code out of an HTML document and into a separate file, you cut down on the file size of your web pages so they load faster.*

CHAPTER
3

Selectors: Identifying What to Style

Every CSS style has two basic parts: a selector and a declaration block. (And if that's news to you, go back and read the previous chapter.) The declaration block carries the formatting properties—text color, font size, and so on—but that's just the pretty stuff. The magic of CSS lies in those first few characters at the beginning of every rule—the selector. By telling CSS *what* you want it to format (see Figure 3-1), the selector gives you full control of your page's appearance. If you're into sweeping generalizations, then you can use a selector that applies to many elements on a page at once. But if you're a little more detail oriented (OK, a *lot* more), other selectors let you single out one specific item or a collection of similar items. CSS selectors give you a lot of power: This chapter shows you how to use them.

```
h1 {
    font-family: Arial, sans-serif;
    color: #CCCCFF;
}
```

Figure 3-1:
The first part of a style, the selector, indicates the element or elements of a page to format. In this case, h1 stands for "every heading 1, or <h1>, tag on this page."

Note: If you'd rather get some hands-on experience before studying the ins and outs of CSS selectors, then jump to the tutorial in the next section on page 70.

Tag Selectors: Page-Wide Styling

Tag selectors—sometimes called *type* or *element* selectors—are extremely efficient styling tools, since they apply to every occurrence of an HTML tag on a web page. With them, you can make sweeping design changes to a page with very little effort. For example, when you want to format every paragraph of text on a page using the same font, color, and size, you merely create a style using *p* (as in the <p> tag) as the selector. In essence, a tag selector redefines how a browser displays a particular tag.

Prior to CSS, in order to format text, you had to wrap that text in a <font> tag. To add the same look to every paragraph on a page, you often had to use the <font> tag multiple times. This process was a lot of work and required a lot of HTML, making pages slower to download and more time-consuming to update. With tag selectors, you don't actually have to do anything to the HTML—just create the CSS rule, and let the browser do the rest.

Tag selectors are easy to spot in a CSS rule, since they bear the exact same name as the tag they style—*p, h1, table, img,* and so on. For example, in Figure 3-2, the *h2* selector (top) applies some font styling to all <h2> tags on a web page (bottom).

```
h2 {
  font-family:"Century Gothic", "Gill Sans", sans-serif;
  color:#000000;
  margin-bottom:0;
}
```

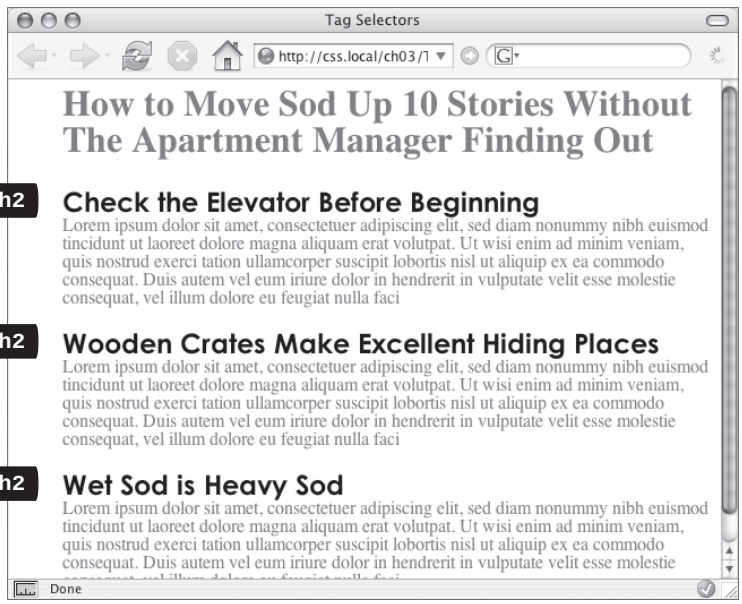


Figure 3-2: *A tag selector affects every instance of the tag on the page. This page has three <h2> tags (indicated by the black labels at the left edge of the browser window). A single CSS style with a selector of h2 controls the presentation of every <h2> tag on the page.*

Note: As Figure 3-2 makes clear, tag selectors don't get the less than (<) and greater than (>) symbols that surround HTML tags. So when you're writing a rule for the <*p*> tag, for example, just type the tag's name–*p*.

Tag selectors have their downsides, however. What if you want *some* paragraphs to look different from other paragraphs? A simple tag selector won't do, since it doesn't provide enough information for a web browser to identify the difference between the <p> tags you want to highlight in purple, bold, and large type from the <p> tags you want to leave with normal, black text. Fortunately, CSS provides several ways to solve this problem—the most straightforward method is called a *class selector*.

Class Selectors: Pinpoint Control

When you want to give one or more elements a look that's different from related tags on a page—for example, give one or two images on a page a red border while leaving the majority of other images unstyled—you can use a *class* selector. If you're familiar with styles in word-processing programs like Microsoft Word, then class selectors will feel familiar. You create a class selector by giving it a name and then applying it to just the HTML tags you wish to format. For example, you can create a class style named *.copyright* and then apply it only to a paragraph containing copyright information, without affecting any other paragraphs.

Class selectors also let you pinpoint an exact element on a page, regardless of its tag. Say you want to format a word or two inside of a paragraph, for example. In this case, you don't want the entire <p> tag affected, just a single phrase inside it. You can use a class selector to indicate just those words. You can even use a class selector to apply the same formatting to multiple elements that have different HTML tags. For example, you can give one paragraph and one second-level heading the same styling—perhaps a color and a font you've selected to highlight special information, as shown in Figure 3-3. Unlike tag selectors, which limit you to the existing HTML tags on the page, you can create as many class selectors as you like and put them anywhere you want.

Note: When you want to apply a class selector to just a few words contained inside another tag (like the middle paragraph in Figure 3-3), you need a little help from the tag (page 26). See the box on page 54 for more detail.

You've probably noticed the period that starts every class selector's name—such as *.copyright* and *.special*. It's one of a few rules to keep in mind when naming a class:

- All class selector names must begin with a period. That's how web browsers spot a class selector in the style sheet.
- CSS permits only letters, numbers, hyphens, and underscores in class names.

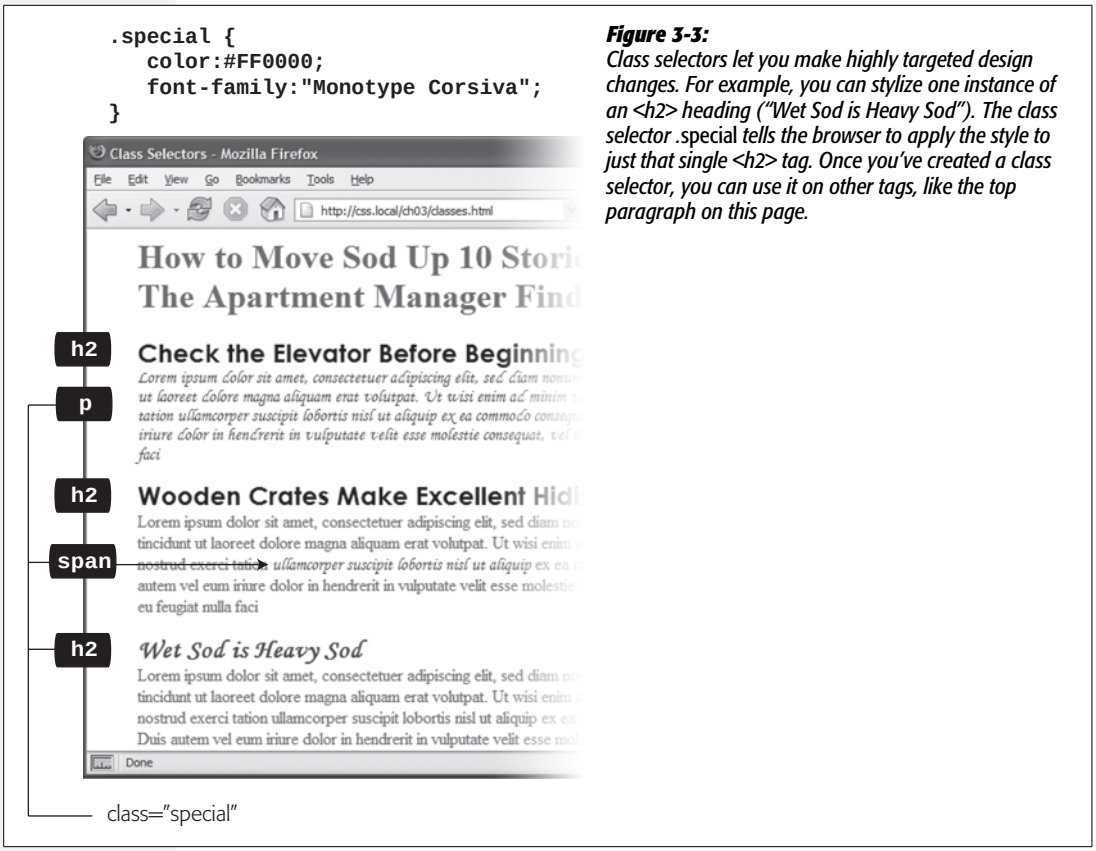


Figure 3-3:
Class selectors let you make highly targeted design changes. For example, you can stylize one instance of an <h2> heading ("Wet Sod is Heavy Sod"). The class selector .special *tells the browser to apply the style to just that single <h2> tag. Once you've created a class selector, you can use it on other tags, like the top paragraph on this page.*

- After the period, the name must always start with a *letter*. For example, *.9lives* isn't a valid class name, but *.crazy8* is. You can have classes named *.copy-right* and *.banner_image,* but not *.-bad* or *._as_bad.*
- Class names are case sensitive. For example, CSS considers *.SIDEBAR* and *.sidebar* two different classes.

Apart from the name, you create class styles exactly like tag styles. After the class name, simply slap on a declaration block containing all of the styling you desire:

```
.special {
  color:#FF0000;
  font-family:"Monotype Corsiva";
}
```

Because tag styles apply across the board to all tags on a web page, you merely have to define them in the head of the page: The HTML tags that make them work are already in place. The extra freedom you get with class styles, though, comes with a little more work. Using class selectors is a two-step process. After you create a class rule, you must then indicate *where* you want to apply that formatting. To do so, you add a class attribute to the HTML tag you wish to style.

Say you create a class *.special* that you'll use to highlight particular page elements. To add this style to a paragraph, add a class attribute to the <p> tag, like so:

```
<p class="special">
```

Note: In the HTML, as part of the class attribute, you *don't* put a period before the class name. The period is only required for the class selector name in a *style sheet*.

When a web browser encounters this tag, it knows to apply the formatting rules contained in the *.special* style to the paragraph. You can also apply class formatting to only part of a paragraph or heading by adding a tag, as described in the box below.

Once you create a class style, you can apply it to just about any tag on the page. In fact, you can apply the same class to different tags, so you can create a *.special* style with a specific font and color and apply it to <h2>, <p>, and <ul> tags. Although they give you almost limitless formatting possibilities, classes aren't always the right tool when using CSS for laying out a page. Enter the ID selector, which lets you designate a formatting rule for one specific use on a page, as described next.

ID Selectors: Specific Page Elements

CSS reserves the ID selector for *identifying* a unique part of a page, like a banner, navigation bar, or the main content area. Just like a class selector, you create an ID by giving it a name in CSS, and then you apply it by adding the ID to your page's HTML code. So what's the difference? As explained in the box on page 55, ID selectors have some specific uses in JavaScript-based or very lengthy web pages. Otherwise, compelling reasons to use IDs over classes are few.

When deciding whether to use a class or an ID, follow these rules of thumb:

- To use a style several times on a page, you must use classes. For example, when you have more than one photo on your page, use a class selector to apply styling—like a border—to each <img> tag you wish to style.
- Use IDs to identify sections that occur only once per page. CSS-based layouts often use ID selectors to identify the unique parts of a web page, like a sidebar or footer. Part 3 shows you how to use this technique.
- Consider using an ID selector to sidestep style conflicts, since web browsers give ID selectors priority over class selectors. For example, when a browser encounters two styles that apply to the same tag but specify different background colors, the ID's background color wins. (See page 92 for more on this topic.)

Note: Although you should apply only a single ID to a single HTML tag, a browser won't blow up or set off alarm bells if you apply the same ID to two or more tags on the same page. In fact, most browsers will apply the CSS from an ID style correctly in this case. However, your HTML won't validate (see page 26), and your web designer friends may stop talking to you.

GEM IN THE ROUGH

Divs and Spans

Chapter 1 introduced you to and , two generic HTML tags that you can bend to your CSS wishes. When there's no HTML tag that exactly delineates where you want to put a class or ID style you've created, use a or to fill in the gaps.

The div tag identifies a logical *division* of the page, like a banner, navigation bar, sidebar, or footer. You can also use it to surround any element that takes up a chunk of the page, including headings, bulleted lists, or paragraphs. (Programmer types call these *block-level* elements because they form a complete "block" of content, with line breaks before and after them.) The tag works just like a paragraph tag: Type the opening , add some text, a photo, or some other content inside it, and then end it with the closing .

The div tag has the unique ability to contain *several* block-level elements, making it a great way to group tags that are logically related such as the logo and navigation bar in a page's banner or a series of news stories that compose a sidebar. Once grouped in this way, you can apply specific formatting to just the tags inside the particular div or move the entire div-tagged chunk of content into a particular area, such as the right side of the browser window (CSS can help you control the visual layout of your pages in this manner, as described in Part 3 of this book).

For example, say you added a photo to a web page; the photo also has a caption that accompanies it. You could wrap a tag (with a class applied to it) around the photo and the caption to group both elements together:

```
<div class="photo">
<img src="holidays.jpg"
 alt="Penguins getting frisky"/>
<p>Mom, dad and me on our yearly trip
 to Antarctica.</p>
</div>
```

Depending on what you put in the declaration block, the *.photo* class can add a decorative border, background color, and so on to both photo and caption. Part 3 of this book shows you even more powerful ways to use tags–including nested divs.

A tag, on the other hand, lets you apply a class or ID style to just *part* of a tag. You can place tags around individual words and phrases (often called *inline* elements) within paragraphs to format them independently. Here, a class called *.companyName* styles the inline elements "CosmoFarmer.com," "Disney," and "ESPN":

```
<p>Welcome to <span class="companyName">
CosmoFarmer.com</span>, the parent
company of such well-known corporations
as <span class="companyName">Disney
</span> and <span class="companyName">
ESPN</span>...well, not really.</p>
```

Should you decide to use an ID selector, creating one is easy. Just as a period indicates the name of a class selector, a pound or hash symbol identifies an ID style. Otherwise, follow the exact same naming rules used for classes (page 51). This example provides a background color and a width and height for the element:

```
#banner {
  background: #CC0000;
  height: 300px;
  width: 720px;
}
```

Applying IDs in HTML is similar to applying classes but uses a different attribute named, logically enough, *id*. For example, to indicate that the last paragraph of a page is that page's one and only copyright notice, you can create an ID style named *#copyright* and add it to that paragraph's tag:

```
<p id="copyright">
```

Note: As with class styles, you use the # symbol only when naming the style in the style sheet. You leave the # off when using the ID's name as part of an HTML tag: * *.

POWER USERS' CLINIC

Proper IDs

ID selectors have a few powers that class selectors lack. These benefits actually have nothing to do with CSS, so you may never need an ID. But if you're curious:

- JavaScript programming utilizes ID selectors to locate and manipulate parts of a page. For example, programmers often apply an ID to a form element like a text box for collecting a visitor's name. The ID lets JavaScript access that form element and work its magic–like making sure the field isn't empty when the visitor clicks Submit.
- IDs also let you link to a specific part of a page, making long web pages quicker to navigate. If you have an alphabetic glossary of terms, then you can use an ID selector to create links to the letters of the alphabet. When your visitors click "R," they jump immediately to all the "R" words on the page. You don't actually need to create any CSS for this–it works purely with HTML. First, add an ID attribute to the spot on the page you wish to link to. For example, in a glossary you can add an h2 tag with a letter from the alphabet followed by the glossary listings–perhaps in a definition list or a series of paragraphs. Just add an appropriate ID to each of those h2 tags: *<h2 id="R">R</h2>*. To create the link in HTML, add the pound symbol and the ID name to the end of the URL, followed by the ID name–*index.html#R*. This link points directly to an element with the ID of *#R* on the page *index.html*. (When used this way, the ID behaves just like a named anchor–*R*–in HTML.)

Styling Groups of Tags

Sometimes you need a quick way to apply the same formatting to several different elements. For example, maybe you'd like all the headers on a page to share the same color and font. Creating a separate style for each header—h1, h2, h3, h4, and so on—is way too much work, and if you later want to change the color of all of the headers, then you have six different styles to update. A better approach is to use a *group* selector. Group selectors let you apply a style to multiple selectors at the same time.

Constructing Group Selectors

To work with selectors as a group, simply create a list of selectors separated by commas. So to style all of the heading tags with the same color, you can create the following rule:

```
h1, h2, h3, h4, h5, h6 { color: #F1CD33; }
```

This example consists of only tag selectors, but you can use any valid selector (or combination of selector types) in a group selector. For example, here's a selector that applies the same font color to the <h1> tag, the <p> tag, any tag styled with the *.copyright* class, *and* the tag with the *#banner* ID.

```
h1, p, .copyright, #banner { color: #F1CD33; }
```

Tip: If you want a bunch of page elements to share *some* but not all of the same formatting properties, then you can create a group selector with the shared formatting options and also create individual rules with unique formatting for each individual element. In other words, two (or more) different styles can format the same tag. The ability to use multiple styles to format a single element is a powerful CSS feature. See Chapter 5 for details.

The Universal Selector (Asterisk)

Think of a group selector as shorthand for applying the same style properties to several different page elements. CSS also gives you a sort of über group selector—the *universal* selector. An asterisk (*) is universal selector shorthand for selecting *every single* tag.

For example, say you want all the tags on your page to appear in bold type. Your group selector might look something like the following:

```
a, p, img, h1, h2, h3, h4, h5 ...yadda yadda... { font-weight: bold; }
```

The asterisk, however, is a much shorter way to tell CSS to select *all* HTML tags on the page:

```
* { font-weight: bold; }
```

You can even use the universal selector as part of a descendent selector, so you can apply a style to all of the tags that descend from a particular page element. For example, *#banner* * selects every tag inside the page element to which you've applied the *#banner* ID. (You'll read about descendent selectors next.)

Since the universal selector doesn't specify any particular type of tag, it's hard to predict its effect on an entire website's worth of pages all composed of a variety of different HTML tags. To format many different page elements, web page gurus rely on *inheritance*—a CSS trait discussed in depth in the next chapter.

Styling Tags Within Tags

Choosing whether to style your page with tag selectors or class selectors is a tradeoff. Tag selectors are fast and easy, but they make every occurrence of a tag look the same, which is fine—if you want every <h2> on your page to look exactly like all the rest. Class and ID selectors give you the flexibility to style individual page elements independently, but creating a new CSS style just to change one heading's font takes a heck of a lot more work—and HTML code. What you need is a way to combine the ease of tag selectors with the precision of classes and IDs. CSS has just the thing—*descendent selectors.*

You use descendent selectors to format a whole bunch of tags in a similar manner (just like tag selectors), but only when they're in a particular part of a web page. It's like saying, "Hey you <a> tags in the navigation bar, listen up. I've got some formatting for you. All you other <a> tags, just move along; there's nothing to see here."

Descendent selectors let you format a tag based on its relationship to other tags. To understand how it works, you need to delve a little bit more deeply into HTML. On the bright side, the concepts underlying descendent selectors help you understand several other selector types, too, as discussed later in this chapter.

Note: Descendent selectors can be confusing at first, but they're among the most important techniques for efficiently and accurately applying CSS. Take the time to master them.

The HTML Family Tree

The HTML that forms any web page is akin to a family tree, where the HTML tags represent various family members. The first HTML tag you use on a page—the <html> tag—is like the grandpappy of all other tags. The <html> tag surrounds the <head> tag and the <body> tag, which makes <html> the *ancestor* of both. Similarly, a tag inside of another tag is a *descendent.* The <title> tag in the following example is the <head> tag's descendent:

```
<html>
 <head>
  <title>A Simple Document</title>
 </head>
 <body>
  <h1>Header</h1>
  <p>A paragraph of <strong>important</strong>text.</p>
 </body>
</html>
```

You can turn the above HTML code into a diagram, like Figure 3-4, showing the relationships between the page's tags. First there's the <html> tag; it's divided into two sections represented by the <head> and <body> tags. Those two tags contain other tags that in turn may contain other tags. By seeing which tags appear inside which other tags, you can diagram any web page.

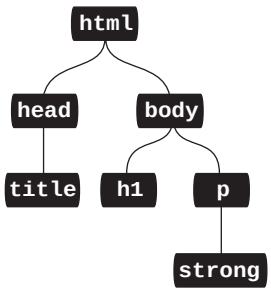


Figure 3-4:
HTML consists of nested tags—tags within tags within even more tags. The relationship between these tags—how they're nested within each other—forms a kind of family tree.

Tree diagrams help you figure out how CSS sees the relationship of one element on a page to another. Many of the selectors in this chapter, including descendent selectors, rely on these relationships. The most important relationships are:

- **Ancestor.** As explained at the beginning of this chapter, an HTML tag that wraps around another tag is its ancestor. In Figure 3-4, the <html> tag is an ancestor of all other tags, while the <body> tag is an ancestor for all of the tags *inside* of it—the <h1>, <p>, and tags.
- **Descendent.** A tag inside one or more tags is a descendent. In Figure 3-4, the <body> tag is a descendent of the <html> tag, while the <p> tag is a descendent of *both* the <body> and <html> tags.
- **Parent.** A parent tag is the *closest* ancestor of another tag. In Figure 3-4, a parent is the first tag directly connected to and above another tag. Thus, the <html> tag is the parent of the <head> and <body> tags, but of no other tags. And, in this diagram, the <p> tag is the parent of the tag.
- **Child.** A tag that's directly enclosed by another tag is a child. In Figure 3-4, both the <h1> and <p> tags are children of the <body> tag, but the tag isn't—since that tag is directly wrapped inside the <p> tag.
- **Sibling.** Tags that are children of the same tag are called *siblings,* just like brothers and sisters. In an HTML diagram, sibling tags are next to each other and connected to the same parent. In Figure 3-4, the <head> and <body> tags are siblings, as are the <h1> and <p> tags.

Thankfully, that's where CSS draws the line with this family metaphor, so you don't have to worry about aunts, uncles, or cousins. (Though rumor has it CSS 10 *will* include in-laws.)

Building Descendent Selectors

Descendent selectors let you take advantage of the HTML family tree by formatting tags differently when they appear inside certain other tags or styles. For example, say you have an <h1> tag on your web page, and you want to emphasize a word within that heading with the tag. The trouble is, most browsers display

both heading tags and the tag in bold, so anyone viewing the page can't see any difference between the emphasized word and the other words in the headline. Creating a tag selector to change the tag's color and make it stand out from the headline isn't much of a solution: You end up changing the color of *every* tag on the page, like it or not. A descendent selector lets you do what you really want—change the color of the tag *only when* it appears inside of an <h1> tag.

The solution to the <h1> and dilemma looks like this:

```
h1 strong { color: red; }
```

Here *any* tag inside an h1 is red, but other instances of the tag on the page aren't affected. You could achieve the same result by creating a class style—*.strongHeader,* for example—but you'd then have to edit the HTML by adding *class="strongHeader"* to the tag inside the header. The descendent selector approach adds no HTML and no more work beyond creating the style!

Descendent selectors style elements that are nested inside other elements, following the exact same pattern of ancestors and descendents as the tags in the HTML family tree. You create a descendent selector by tacking together selectors according to the part of the family tree you want to format, with the most senior ancestor on the left and the actual tag you're targeting on the far right. For example, in Figure 3-5, notice the three links (the <a> tag) inside of bulleted list items and another link inside of a paragraph. To format the bulleted links differently than the other links on the page, you can create the following descendent selector:

```
li a { font-family: Arial; }
```

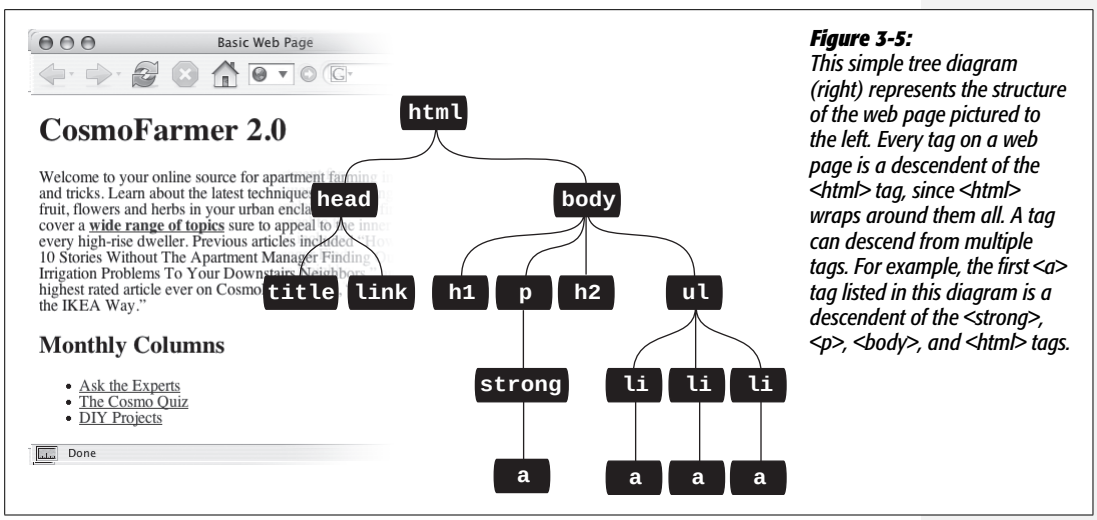


Figure 3-5: *This simple tree diagram (right) represents the structure of the web page pictured to the left. Every tag on a web page is a descendent of the <html> tag, since <html> wraps around them all. A tag can descend from multiple tags. For example, the first <a> tag listed in this diagram is a descendent of the , <p>, <body>, and <html> tags.*

This rule says, "Format all links (*a*) that appear inside a list item (*li*) by using the Arial font." A descendent selector can contain more than just two elements. The following are all valid selectors for the <a> tags inside of the bulleted lists in Figure 3-5:

```
ul li a
body li a
html li a
html body ul li a
```

Note: While, in general, it's best to write as short a descendent selector as possible, one reason you would tack on additional descendent selectors is if you've written several different rules that simultaneously format a tag. Formatting instructions from a long-winded descendent selector can override simple class or tag styles. More on that in the next chapter.

These four selectors—all of which do the same thing—demonstrate that you don't have to describe the entire lineage of the tag you want to format. For instance, in the second example—*body li a*—*ul* isn't needed. This selector works as long as there's an <a> tag that's a descendent (somewhere up the line) of an <li> tag (which is also a descendent of the <body> tag). This selector can just as easily apply to an <a> that's inside an tag, that's inside a tag, that's inside an <li> tag, and so on.

You're not limited to just tag selectors, either. You can build complex descendent selectors combining different types of selectors. For example, suppose you want your links to appear in yellow only when they're in introductory paragraphs (which you've designated with a class style named *intro*). The following selector does the trick:

```
p.intro a { color: yellow; }
```

Quick translation: Apply this style to every link (*a*) that's a descendent of a paragraph (*p*) that has the *intro* class applied to it. Note that there's no space between *p* and *.intro*, which tells CSS that the *intro* class must be applied specifically to the <p> tag (<*p class="intro"*>) for this style to work.

If you add a space, you get a different effect:

```
p .intro a { color: yellow; }
```

This seemingly slight variation selects an <a> tag inside of any tag styled with the .*intro* class, which is itself a descendent of a <p> tag.

Leaving off the ancestor tag name (in this case the *p*) provides a more flexible style:

```
.intro a {color: yellow; }
```

This selector indicates any <a> tag inside of *any other* tag— , <h1>, <table>, and so on—with the *.intro* class applied to it.

Descendent selectors are very powerful weapons in your CSS arsenal. You can find many more powerful ways to use them throughout this book, and Chapter 15 includes a section devoted to effective techniques using descendent selectors.

Pseudo-Classes and Pseudo-Elements

Sometimes you need to select parts of a web page that don't have tags per se, but are nonetheless easy to identify, like the first line of a paragraph or a link as you move your mouse over it. CSS gives you a handful of selectors for these doohickeys—*pseudo-classes* and *pseudo-elements*.

Styles for Links

Four pseudo-classes let you format links in four different states based on how a visitor has interacted with that link. They identify when a link is in one of the following four states:

- **a:link** selects any link that your guest hasn't visited yet, while the mouse isn't hovering over or clicking it. This style is your regular, unused web link.
- **a:visited** is a link that your visitor has clicked before, according to the web browser's history. You can style this type of link differently than a regular link to tell your visitor, "Hey, you've been there already!"
- **a:hover** lets you change the look of a link as your visitor passes the mouse over it. The rollover effects you can create aren't just for fun—they can provide useful visual feedback for buttons on a navigation bar.

  You can also use the *:hover* pseudo-class on elements other than links. For example, you can use it to highlight text in a <p> or when your guests mouse over it. In that case, instead of using *a:hover* (which is for links) to add a hover effect, you can create a style named *p:hover* to create a specific effect when someone mouses over any paragraph. If you just want to style tags with a specific class of *highlight* applied to them, then create a style named *.highlight:hover*.

Note: In Internet Explorer 6 and earlier, *:hover* works only on links. For a JavaScript workaround, see the box on page 64. (If IE 7 isn't in standards mode (page 26)–that is, the page is missing the proper doctype–it also won't obey *:hover* on anything but links.)

- **a:active** lets you determine how a link looks *as* your visitor clicks. In other words, it covers the brief nanosecond when someone's pressing the mouse button, before releasing it.

Chapter 9 shows you how to design links using these selectors to help your visitors click their way around your site.

Note: You can live a long, productive life without reading about the selectors in the next few sections. Many web designers never use them. The selectors you've learned so far–tag, class, ID, descendent, group, and so on–let you build absolutely beautiful, functional, and easily maintained websites. If you're ready for the fun stuff–designing web pages–then skip to the tutorial on page 70. You can always finish reading this discussion some cold, rainy night by the fire.

Styling Paragraph Parts

The typographic features that make books and magazines look cool, elegant, and polished didn't exist in the early web era. (After all, when did scientists ever worry about looking cool?) CSS provides two pseudo-elements—*:first-letter* and *:first-line*—that give your web pages the design finesse that print has enjoyed for centuries.

The *:first-letter* pseudo-element lets you create a drop cap—an initial letter that jumps out from the rest of the paragraph with bigger or bolder font formatting, as at the beginning of a book chapter.

Styling the *:first-line* of a paragraph in a different color keeps your reader's eye moving and makes text appear appealing and fresh. (If you're intrigued, Chapter 6 is all about formatting text, and page 133 covers these two pseudo-elements in depth.)

More Pseudo-Classes and -Elements

The CSS guidelines define several powerful pseudo-class and -element selectors besides the ones covered so far. Unfortunately, the still-common Internet Explorer 6 doesn't recognize them. So most web surfers can't appreciate any design elements you create with these selectors (at least until they upgrade to IE 8 or switch to Firefox or Safari—or trade in their PCs for Macs). Meanwhile, you can work around this problem using JavaScript, as described in the box on page 64.

:before

The *:before* pseudo-element does something no other selector can: It lets you add content preceding a given element. For example, say you wanted to put "HOT TIP!" before certain paragraphs to make them stand out, like the boxes in this book that say "UP TO SPEED" and "POWER USERS' CLINIC." Instead of typing that text in your page's HTML, you can let the *:before* selector do it for you. This approach not only saves on code, but also if you decide to change the message from "HOT TIP!" to, say, "Things to know," then you can change every page on your site with one quick change to your style sheet. (The downside is that this special message is invisible to browsers that don't understand CSS or don't understand the *:before* selector.)

First, create a class (*.tip*, say) and apply it to the paragraphs that you want to precede with the message, like so: *<p class="tip">*. Then, add your message text to the style sheet:

```
p.tip:before {content: "HOT TIP!" }
```

FREQUENTLY ASKED QUESTION

Should I Care About IE 6?

If you're a web designer, you've probably got the latest version of Firefox, Opera, Safari, or Internet Explorer on your computer. Unfortunately, a surprising number of the world's web surfers still use IE 6 (otherwise known as the bane of web design). According to Net Applications, a company that tracks browser usage, around 17% of people still were using IE 6 in May 2009 (*http://marketshare.hitslink.com/browser-market-share.aspx?qprid=0*). While that percentage will continue to drop, IE 6 will still be around for a while.

Some people don't like to upgrade their software, so they still use IE 6 even though better options exist. Still other people are limited by their corporate IT setups and, at least at work, don't have an option to upgrade. So like it or not, unless you're building websites visited only by the technically savvy who upgrade their browsers frequently, you should still keep an eye on IE 6 as you build your sites. There are some crippling IE 6 bugs that can completely destroy the look of your site for that web browser—in some cases even hiding content or making it impossible to read the web page. You'll want to fix those kinds of bugs, and this book describes how to overcome the most devastating bugs in IE 6 (and 7).

But that doesn't mean that your site has to look *exactly the same* in IE 6 (or even in every other web browser). Due to the slight (and sometimes not so slight) differences between browsers, you'll often find at least some small visual difference between how a web page looks in Firefox versus Safari or IE. That's life as a web designer.

Your main goal should be to make sure that everyone has access to your site's content: If IE 6 users can get to your content, view it, read it, or download it without any hassles, then you've done your job. After that, you can worry about how much you want your site to match across browsers.

You can do lots of cool things with CSS that IE 6 just doesn't understand. For example, the *:focus* selector (page 65) lets you change the style of a text box in a form when a visitor tabs into that field–that's a cool way to highlight an input field. But IE 6 and 7 don't understand that selector. You can use JavaScript to fix some of that (see the box on page 64), but you can also ignore those kinds of differences. Even if someone visiting your site with IE 6 can't see a highlighted text field, he can still effectively use your site and fill out that form. Feel free to explore some more advanced CSS features that work in the newest web browsers. In other words, if your site looks fine and works for IE 6, but looks even better in IE 8, Firefox, Safari, and Opera, there's no harm in exploring the coolest effects CSS has to offer. (Chapter 16 discusses some of the latest cutting-edge CSS features and techniques.)

Whenever a browser encounters the *.tip* class in a <p> tag, it dutifully inserts the text "HOT TIP!" just before the paragraph.

The technical term for text you add with this selector is *generated content*, since web browsers create (generate) it on the fly. In the page's HTML source code, this material doesn't exist. Whether you realize it or not, browsers generate their own content all the time, like the bullets in bulleted lists and numbers in ordered lists. If you want, you can even use the *:before* selector to define how a browser displays its bullets and numbers for lists.

Neither IE 6 nor IE 7 understand the CSS *content* property, so you probably won't see wide use of the *:before* or *:after* (discussed next) pseudo-elements. However, Internet Explorer 8 and all other major browsers do, so you'll find full instructions for using it on page 484 in Chapter 16.

:after

Exactly like the *:before* selector, the *:after* pseudo-element adds generated content—but after the element, not before. You can use this selector, for example, to add closing quotation marks (") after quoted material.

POWER USERS' CLINIC

Getting Internet Explorer 6 Up to Speed

Internet Explorer 6 is old, and it doesn't recognize the latest (and even not so latest) CSS techniques. But you don't have to give up all the cool selectors discussed on these pages, such as *:before, :after,* and *:hover*. Believe it or not, with a little help from JavaScript and several pioneering and stubborn programmers before you, you can write scripts that teach IE how to handle these types of selectors.

For example, CSSHOVER teaches Internet Explorer 6 for Windows what to do with the *:focus* (below) and *:hover* selectors (when applied to elements other than links). You can read about and download this quick, simple script at *www.xs4all.nl/~peterned/csshover.html.* This nifty bit of JavaScript simplifies the creation of CSS-based drop-down navigation menus. You can read about these menus at *http://sperling.com/examples/menuh.*

In addition, you can use the jQuery JavaScript library (*www.jquery.com*) to essentially make IE 6 understand any CSS selector. The trick is to create two styles: one using the advanced selector that IE 7, Firefox, and other browsers understand; and another style, a class style, with the same CSS properties. You can then use jQuery to dynamically apply the class in IE 6. One of jQuery's fabulous powers is the ability to select any element on a page using a CSS selector and then applying a class to that element.

The advantage to using advanced selectors–like the attribute selector described on page 67–is that you don't have to do anything to your HTML to get it to work. For example, you don't need to add a class to a whole bunch of HTML tags. By using jQuery and a little programming, you can get the same ease of use for IE 6 as well. You can read more about this technique at *http://somedirection.com/2007/06/10/using-jquery-to-avoid-classitis-in-ie6.*

:first-child

Going back to the HTML family tree analogy for a moment, recall what a child tag is: any tag directly enclosed by another tag. (For example, in Figure 3-5, <h1>, <p>, <h2>, and <ul> are all children of the <body> tag.) The *:first-child* pseudo-element lets you select and format just the *first* of however many children an element may have.

A <ul> tag, for example, which creates a bulleted list, can have many list items as children. (In Figure 3-5, the <ul> tag has three <li> children.) To format just the first list item (in boldface), you can write this rule:

```
li:first-child { font-weight: bold; }
```

Because the *:first-child* selector includes only the name of the child element, never the parent, this style formats any <li> tag that's the first child of *any* other tag, not just <ul>. List items always fall within lists, so you know the selector *li:first-child* affects all lists on the page—unordered or ordered. With other tags, however, the

:first-child selector gets a little tricky. For example, in Figure 3-5, the selector *p:first-child* would have no effect at all, since the <p> tag is a child of the <body> tag, but it isn't the *first* child—the <h1> tag is.

Since the HTML parent-child relations can change each time you edit a web page, it's hard to predict how the *:first-child* selector will behave as you develop your website. Also, this selector doesn't work at all in Internet Explorer 6 or earlier versions—another reason to avoid it unless you've got a really good use for it.

:focus

The *:focus* pseudo-class works much like the *:hover* pseudo-class. While *:hover* applies when a visitor mouses over a link, *:focus* applies when the visitor does something to indicate her attention to a web page element—usually by clicking or tabbing into it. In programmery lingo, when a visitor clicks in a text box on a web form, she puts the *focus* on that text box. That click is a web designer's only clue as to where the visitor is focusing her attention.

The *:focus* selector is mostly useful for giving your visitor feedback, like changing the background color of a text box to indicate where he's about to type. (Single-line text fields, password fields, and multi-line <textarea> boxes are common targets for the *:focus* selector.) This style, for example, adds a light yellow color to any text box a visitor clicks or tabs into:

```
input:focus { background-color: #FFFFCC; }
```

The *:focus* selector applies only while the element's in focus. When a visitor tabs into another text field or clicks anywhere else on the page, she takes the focus—and the CSS properties—away from the text box. Unfortunately, neither IE 6 nor IE 7 understand the *:focus* selector, but you can still use it to add visual interest or highlight form fields for other browsers. (IE 6 and 7 won't know what they're missing, and you don't have to tell them.)

Tip: Learning how to write selectors can sometimes feel like learning hieroglyphics. To translate a selector into straightforward language, visit the Selectoracle at *http://gallery.theopalgroup.com/selectoracle*. This great resource lets you type in a selector and spits out a clear description of which page elements on a page the style affects.

Advanced Selectors

The CSS 2 guidelines provide a few more powerful selectors that give you even finer control over web page styling. Like some of the selectors you've seen previously, the selectors in this section don't work in Windows Internet Explorer 6 and earlier. (But you can try the JavaScript workaround in the box on the previous page.)

Child Selectors

Similar to the descendent selectors described earlier in this chapter, CSS lets you format the children of another tag with a *child* selector. The child selector uses an additional symbol—an angle bracket (>) to indicate the relationship between the two elements. For example, the selector *body > h1* selects any <h1> tag that's a child of the <body> tag.

Unlike a descendent selector, which applies to *all* descendents of a tag (children, grandchildren, and so on), the child selector lets you specify which child of which parent you mean. For example, in Figure 3-6, there are two <h2> tags. Using a plain old descendent selector—*body h2*—selects both <h2> tags. Even though both <h2> tags are inside of the <body> tag, only the second one is a child of the <body> tag. The first <h2> is directly inside of a tag, so its parent is . Since the two <h2> tags have different parents, you can use a child selector to get at them individually. To select only the second <h2> tag, your child selector looks like this: *body > h2*. If you want the first <h2> tag, then you must use this child selector instead: *div > h2*.

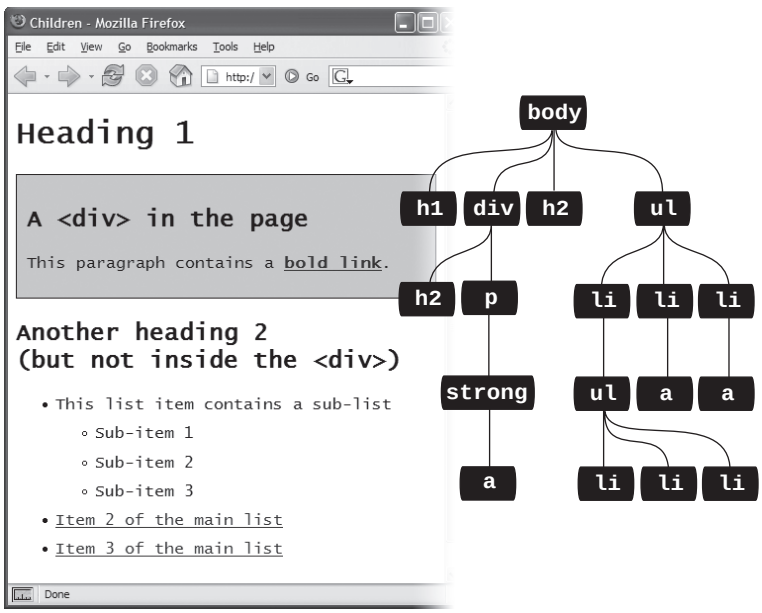


Figure 3-6:
The diagram (right) shows the relationship between HTML tags (left).

Adjacent Siblings

Parent-child relationships aren't the only ones in the HTML family tree. Sometimes you need to select a tag based not on its parent tag but on its surrounding siblings—the tags that share a common parent. A tag that appears immediately after another tag in HTML is called an *adjacent sibling*. In Figure 3-6, the tag is the adjacent sibling of the <h1> tag, the <p> tag is the adjacent sibling of the <h2> tag, and so on.

FREQUENTLY ASKED QUESTION

Making Lists Look Great

When would I ever use a child selector? Just from reading this chapter, I already know enough selectors to get at just about any page element, so why learn another?

There's one design challenge where child selectors can't be beat–and it comes up in more websites than you think. Any time you have an unordered list with one or more unordered lists nested inside (as in Figure 3-6), you can use child selectors to visually organize these categories and subcategories of information. You can format the first level of list items one way, and the second level of list items another way. Content presented in this manner looks neat, professional, and readable (and your visitors will love you for it).

First, create a class style for the outermost nested level in your list and call it, say, *.mainList*. For this top level, you might use a sans-serif font, a little larger than your other text, perhaps in bold or a different color. Subsequent categories can be smaller, in a serif font like Times for easiest reading. When you have a lot of text, styling each subcategory level a bit differently helps visually orient your visitors in the material.

Apply the *.mainList* class style to the first <ul> tag: *<ul class="mainList">*. Then use a child selector (*ul.mainList > li*) to select just the first set of list items, and add your desired text styling for the first subcategory. This styling applies only to the <li> tags that are children of the <ul> tag with the *.mainList* style applied to it. The child <li> tags of any subsequent nested <ul> tags are unaffected, so you can style them independently with the proper child selectors. For example, to style the <li> tags of the first nested list, use this selector *ul.mainList > li > ul > li.* (A descendent selector like *ul li,* by contrast, selects the list items of all unordered lists on the page–nested ones and all.)

Using an adjacent sibling selector, you can, for example, give the first paragraph after each heading different formatting from the paragraphs that follow. Suppose you want to remove the margin that appears above that <p> tag so that it sits right below the heading without any gap. Or perhaps you want to give the paragraph a distinct color and font size, like a little introductory statement.

The adjacent sibling selector uses a plus sign (+) to join one element to the next. So to select every paragraph following each <h2> tag, use this selector: *h2 + p* (spaces are optional, so *h2+p* works as well). The last element in the selector (*p*, in this case) is what gets the formatting, but only when it's directly after its brother <h2>.

Attribute Selectors

CSS provides a way to format a tag based on any attributes it has. For example, say you want to place borders around the images on your page—but only around the important photos. You don't want to include your logo, buttons, and other little doodads that also have an <img> tag. Fortunately, you realize that you've given all the photos descriptions using the *title* attribute, which means you can use an *attribute selector* to identify just the important images.

Tip: The HTML *title* attribute is a great way to add tooltips (pop-up messages) to links and images on a page. It's also one way to inform search engines about the useful information on a web page. Learn more about it at *http://webdesign.about.com/od/htmltags/a/aa101005.htm.*

With attribute selectors, you can single out tags that have a particular property. For example, here's how to select all <img> tags with a title attribute:

```
img[title]
```

The first part of the selector is the name of the tag (*img*) while the attribute's name goes in brackets: [*title*].

CSS doesn't limit attribute selectors to tag names: You can combine them with classes, too. For example, *.photo[title]* selects every element with the *.photo* class style and an HTML title attribute.

To get more specific, you can select elements that not only share a particular attribute but also have an exact value set for that attribute. For example, when you want to highlight links that point to a particular URL, create an eye-catching attribute selector, like so:

```
a[href="http://www.cosmofarmer.com"]{ color:red; font-weight:bold; }
```

Adding a value to an attribute selector is very useful when working with forms. Many form elements have the same tag, even if they look and act differently. The checkbox, text box, Submit button, and other form fields all share the <input> tag. The type attribute's value is what gives the field its form and function. For example, *<input type="text">* creates a text box, and *<input type="checkbox">* creates a checkbox.

To select just text boxes in a form, for example, use this selector:

```
input[type="text"]
```

The attribute selector is very versatile. It lets you not only find tags that have a specific value for an attribute (for example, find all form fields with a type of checkbox) but even select elements with an attribute value that *begins with, ends with,* or *contains* a specific value. While this might sound like overkill, it's actually quite handy.

For example, suppose you want to create a specific style to highlight external links (links that point outside of your own website) to indicate, "Hey, you'll leave this site if you click this." Assuming you don't use absolute links to link to any pages in your own site, you can assume that any external link begins with *http://*—the first part of any absolute link.

If that's the case, the selector would look like this:

```
a[href^="http://"]
```

The ^= translates to "begins with," so you can use this selector to format any link that begins with http://. You can use it to style a link that points to *http://www.google.com* as well as a link to *http://www.sawmac.com*. In other words, it selects any external link.

Note: This selector won't work for any secure connections over SSL—in other words any links that begin with https://. To create a style that affects those as well, you could create a group selector (page 56) like this:

```
a[href^="http://"], a[href^="https://"]
```

Similarly, there are times when you want to select an element with an attribute that *ends* in a specific value. Again, links are handy for this task. Say you want to add a little document icon next to any links that point to a PDF file. Since PDF documents end in .pdf, you know a link pointing to one of those files will end in .pdf—for example, *<a href="download_instructions.pdf">*. So to select just those types of links, you'd create a selector like this:

```
a[href$=".pdf"]
```

The full style might look something like this:

```
a[href$=".pdf"] {
  background-image: url(doc_icon.png) no-repeat;
  padding-left: 15px;
};
```

Don't worry too much about the particular properties in this style—you'll learn about padding on page 153 and background-images on page 188. Just pay attention to that cool selector: *$=* translates to "ends with." You can use this selector to format links that point to Word docs (*[a href$=".doc"]*), movies (*[a href$=".mov"]*), and so on.

Finally, you can even select elements with attributes that contain another value. For example, say you like to highlight photos of your employees throughout the site. You might want all of those photos to have a common style, like a thick green border and a gray background. One way to do this is to create a class style—*.headshot,* for example—and manually add a class attribute to the appropriate <img> tags. However, if you name the photos consistently, then there's a faster method.

For example, say you name each of those images with the word *headshot* in them—for example *mcfarland_headshot.png, mccord_headshot.jpg, headshot_albert.jpg,* and so on. Each of these files has the word *headshot* somewhere in the file, so the src attribute of the <img> tag used to insert each image also contains the word *headshot*. You can create a selector for just those images like this:

```
img[src*="headshot"]
```

This translates to "select all images whose src attribute has the word *headshot* somewhere in it." It's a simple, elegant way to format just those images.

Internet Explorer 6, of course, doesn't understand attribute selectors, so use them only if the missing style won't drastically affect how IE 6 displays the page. In many cases, you can use attribute selectors just to add a little eye-candy for those with modern browsers.

Note: The CSS 3 guidelines promise even more variations on selectors. Chapter 16 covers some of the most promising selectors (and ones that you'll actually find in real web browsers).

Tutorial: Selector Sampler

In the rest of this chapter, you'll create a variety of selector types and see how each affects a web page. This tutorial starts with the basic selector types and then moves on to more advanced styles.

To get started, you need to download the tutorial files located on this book's companion website at *www.sawmac.com/css2e/*. Click the tutorial link and download the files. All of the files are enclosed in a ZIP archive, so you'll need to unzip them first. (Detailed instructions for unzipping the files are on the website.) The files for this tutorial are contained inside the folder named *03*.

INDIGNANTLY ASKED QUESTION

Keeping It Internal

Hey, what's up with the internal style sheet in this tutorial? Chapter 2 *recommends using external style sheets for a bunch of reasons.*

Think you're pretty smart, eh? Yes, external style sheets usually make for faster, more efficient websites, for all the reasons mentioned in Chapter 2. However, internal style sheets make your life easier when you're designing a single page at a time, as in this tutorial. You get to work in just one web page file instead of flipping back and forth between the external style sheet file and the web page.

Furthermore, you can preview your results without constantly refreshing your browser's cache; flip back to the box on page 35 for more on that quirkiness.

Many hotshot web designers like to begin their designs with an internal style sheet, since it's faster and avoids any problems with all that cache nonsense. Here's their secret: Once they've perfected their design, they simply cut the code from the internal style sheet, paste it into an external style sheet, and then link the style sheet to their site's pages as described on page 34.

1. **Open *selector_basics.html* in your favorite text editor.**

   This page is made of very basic HTML tags. The most exciting thing about it is the graphic banner (see Figure 3-7). But you'll liven things up in this tutorial. You'll start by adding an internal style sheet to this file.

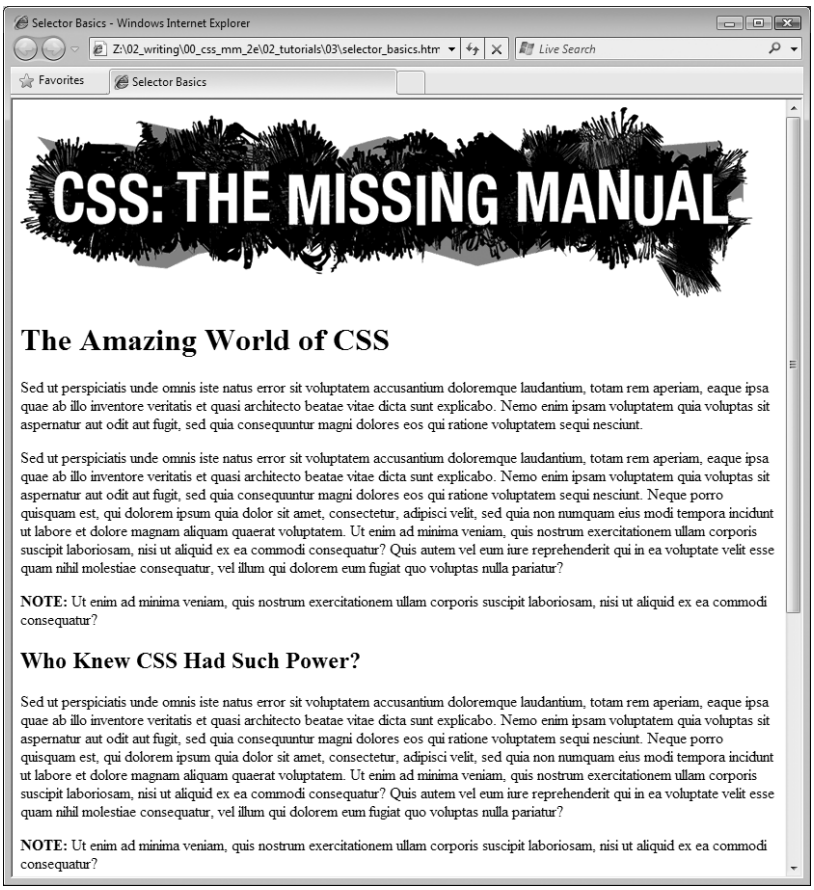


Figure 3-7: *Plain HTML looks cold and monotonous in a web browser. But with a little CSS, you can turn drab (left) into fab (Figure 3-10) in 31 easy steps.*

2. **Click directly after the closing </title> tag, hit Enter (Return) and type *<style type="text/css">*. Press Enter twice and then type *</style>*.**

   These are the opening and closing style tags—it's a good idea to type both tags at the same time, so you don't accidentally forget to add the closing </style> tag. Together, these two tags tell a web browser that the information between them is Cascading Style Sheet instructions. The HTML should now look like this (the stuff you added is in bold):

```
<title>Selector Basics</title>
<style type="text/css">

</style>
</head>
```

   Type selectors—such as the tag selector you're about to create—are the most basic type of selector. (If you completed the tutorial in the last chapter, you've already created a few.)

3. **Click between the opening and closing style tags you just added and type *p {*, hit return twice and type the closing *}*.**

   As mentioned on page 41, it's a good idea to always add the closing brace immediately after typing the opening brace, just so you don't forget. To create a tag selector, simply use the name of the HTML tag you wish to format. This style applies to all paragraphs of text within <p> tags.

4. **Click between the style's opening and closing braces ({ }) and add the following four CSS properties to supply the style's formatting—color, size, font, and left indent:**

```
p {
  color: #505050;
  font-size: 1em;
  font-family: "Helvetica Neue", Arial, Helvetica, sans-serif;
  margin-left: 100px;
}
```

   Press Enter to place each CSS property on its own line. It's also a good idea to visually organize your CSS code by indenting each property with the Tab key.

Note: These property names and their values may look unfamiliar. For now, just type them as is. You'll learn what 1em and 100px mean, along with all the ins and outs of text-formatting properties, in Chapter 6.

Your style sheet is complete. Time for a look-see.

5. **Open the page in a web browser to preview your work.**

   Unless you tinker with the preference settings, most browsers display black text in a standard serif font like Times. If your CSS style works properly, then you should see seven indented paragraphs in a sans-serif font in a darkish gray color.

Creating a Group Selector

Sometimes you'll want several different elements on a page to share the same look. For instance, you may want all your headings to have the same font and color for a consistent style. Instead of creating separate styles and duplicating the same property settings for each tag—<h1>, <h2>, and so on—you can group the tags together into a single selector.

1. **Return to your text editor and the *selector_basics.html* file.**

   You'll add a new style below the <p> tag style you just created.

2. **Click at the end of the closing brace of the tag selector, press Enter to start a new line, and then type *h1, h2, h3 {* .**

   As explained earlier in this chapter, a group selector is simply a list of selectors separated by commas. This rule applies the same formatting, which you'll add next, to all <h1>, <h2>, and <h3> tags on the page.

3. **Hit Enter, and then add five CSS properties:**

```
color: #BD8100;
font-family: Baskerville, "Palatino Linotype", Times, serif;
border-top: 2px solid #86A100;
padding-top: 7px;
padding-left: 100px;
```

   There's a lot going on here, but basically you're setting the color and font type for the headlines, adding a border line above the headlines for visual interest, and controlling the top and left spacing using the padding property. In a nutshell, this property adds space from the edges of an element without affecting a background or border—in other words, you're scooting the headline text in from the left and down from the top without moving the border line that spans the entire page.

4. **Finally, hit Enter, and then type the closing brace to complete this style. It should look like this:**

```
h1, h2, h3 {
  color: #BD8100;
  font-family: Baskerville, "Palatino Linotype", Times, serif;
  border-top: 2px solid #86A100;
  padding-top: 7px;
  padding-left: 100px;
}
```

5. **Save the file, and preview it in a web browser.**

   The <h1> heading near the top of the page and the <h2> and <h3> headings lower on the page all have the same font and font color as well as green border along their tops (see Figure 3-8).

Creating and Applying a Class Selector

Tag selectors are quick and efficient, but they're a bit indiscriminate in how they style a page. What if you want to style a single <p> tag differently than all the other <p> tags on a page? A class selector is the answer.

1. **Return to your text editor and the *selector_basics.html* file.**

   Add a new style below the group selector style you just created.

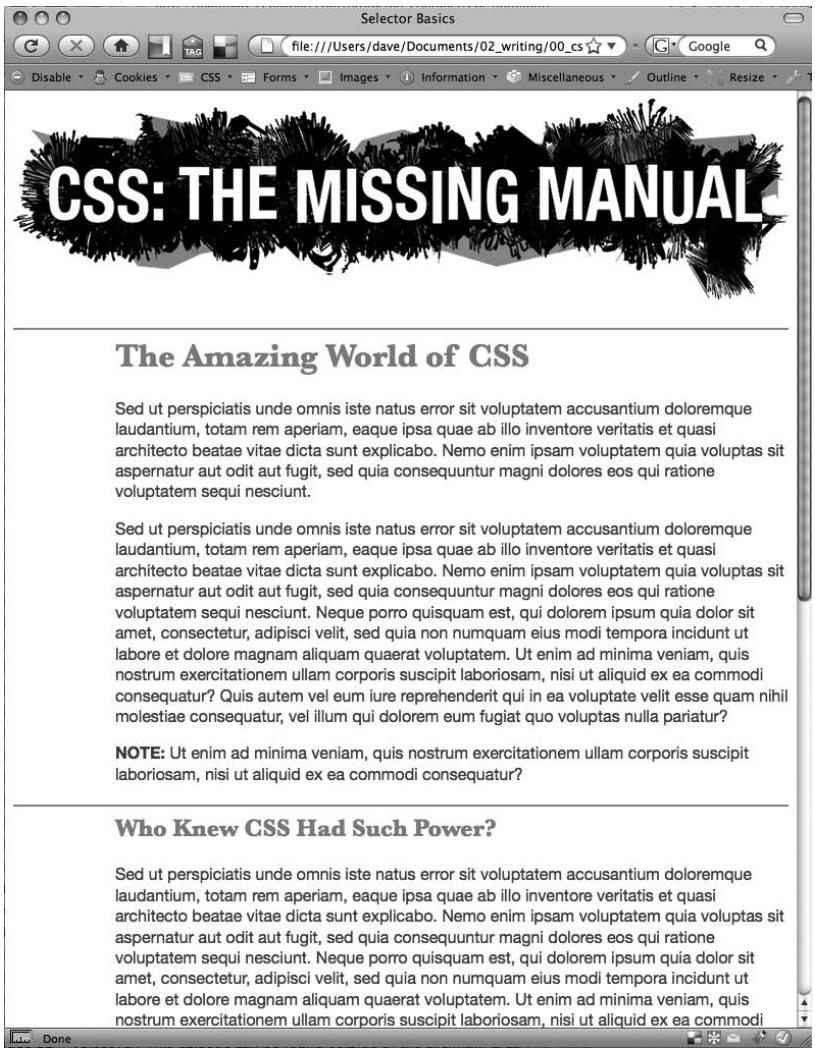


Figure 3-8:
A simple tag selector can completely transform the appearance of every instance of a tag, making quick work of styling all the paragraphs of text on a page. And in this case a group selector does even more by formatting every instance of three different headline tags!

2. **Click at the end of the closing brace of the *h1, h2, h3* selector, press Enter (Return), and then type *.note {*.**

   This style's name, *note*, indicates its purpose: to highlight paragraphs that contain extra bits of information for your site's visitors. Once you create a class style, you can apply it wherever these notes appear—like the second paragraph, in this case.

3. **Hit Enter, and then add the following list of properties to the style:**

```
color: #333;
border: 2px dashed #BD8110;
background-color: #FBF8A9;
margin-top: 25px;
margin-bottom: 35px;
padding: 20px;
```

Most of these properties should look familiar by now, but the background-color property may be new to you. Logically enough, it adds a color to the background of the element.

4. **Finally, complete the style by pressing Enter and typing the closing brace. The completed class style should look like this:**

```
.note {
  color: #333;
  border: 2px dashed #BD8110;
  background-color: #FBF8A9;
  margin-top: 25px;
  margin-bottom: 35px;
  padding: 20px;
}
```

If you preview the page now, you see no changes. Unlike tag selectors, class selectors don't have any affect on a web page until you apply the style in the HTML code.

5. **In the page's HTML, there are two <p> tags that begin with the word "Note" inside tags.**

To apply a class style to a tag, simply add a *class* attribute, followed by the class selector's name—in this case, the *note* style you just created.

6. **Click just after the "p" in the first <p> tag, and then type a space followed by *class="note"*. The HTML should now look like this (what you just typed is in bold):**

```
<p class="note"><strong>NOTE:</strong> Ut enim ad
```

Be sure *not* to type *class=".note"*. In CSS, the period is necessary to indicate a class style name; in HTML, it's verboten. Repeat this step for the second paragraph (it's just above the <h3> tag with the text "Not Me!").

Note: There's no reason you can't add this class to other tags as well, not just the <p> tag. If you happen to want to apply this formatting to an <h2> tag, for example, then your HTML would look like this: *<h2 class="note">*.

---

7. **Save and preview the web page in a browser.**

   The two note paragraphs are nicely highlighted on the page (see Figure 3-9).

Figure 3-9: *You can make detailed formatting changes with class selectors. A class style gives selected paragraphs different formatting from all other paragraphs on the page. The distinctive note box pictured here uses a class style to stand out from the crowd.*

Note: If your page doesn't look like Figure 3-9, then you may have mistyped the name of a property or its value. Double-check your code with the steps on pages 71–73. Also, make sure to end each declaration–*property:value* combination–with a semicolon and conclude the style with a closing brace at the very end. When your style is not working correctly, missing semicolons and closing braces are frequent culprits.

Creating a Descendent Selector

On the *selectors_basics.html* page, you applied the *note* class to two paragraphs. Each of those paragraphs begins with the word "Note:" in bold—actually the word is wrapped inside the HTML tag, which all browsers display as bolded text. But what if you want to format those bolded words in bright orange? You could create a tag style for the tag, but that would affect all tags on the page, and you only want to change the strong tag inside those note boxes. One solution would be to create a class style—*.noteText*, for example—and apply it to each of the tags inside the note boxes. But that's work, and you might forget to apply the class if you have a lot of pages with those notes.

A better method is to create a descendent selector (page 57), which targets only the tag when it's inside one of these note boxes. Fortunately, that's easy to do.

1. **Return to your text editor and the *selector_basics.html* file. Create a new empty line for the descendent selector style.**

   If you just completed the previous steps, click after the closing brace of the *.note* style, and then hit Enter (Return).

2. **Type *.note strong {***

   The last tag in the selector—*strong*—is the element you ultimately want to format. In this case, the style formats the tag only when it's *inside* another tag with the class *note* applied to it. It has no effect on tags inside other paragraphs, lists, or heading tags, for example.

3. **Hit Enter, type *color: #FC6512;*, and then hit Enter (Return) again to create another blank line. Finish the style by typing the closing brace character.**

   The finished style should look like this:

```
.note strong {
  color: #FC6512;
}
```

4. **Save the page and preview it in a web browser.**

   The word "Note:" should appear in orange in each of the note boxes on the page.

Descendent selectors are among the most powerful CSS tools. Professional web designers use them extensively to target particular tags without littering the HTML with CSS classes. This book uses them routinely, and you can learn a lot more about descendent selectors in Chapter 15.

Creating and Applying an ID Selector

You can apply class selectors to multiple elements on a page. For example, earlier you created a *.note* class style and applied it to two paragraphs, but you could apply it to even more paragraphs (or even other tags) if you wanted to. ID selectors look and act just like classes, but you can apply an ID only *once* per page. Web designers frequently use ID selectors to indicate unique sections of a page, as explained on page 53.

In this exercise, you'll create a style that sets a specific width for a web page's content, centers it in the middle of the browser window and adds a decorative background image to the page. You'll apply the ID to the page's <body> tag to indicate a unique page design.

1. **Return to your text editor and the *selector_basics.html* file.**

   You'll add a new style below the *.note strong* class style you created before.

2. **Click after the previous style's closing bracket (}), hit Enter (Return) to create a new line, and then type *#article {* .**

   ID selectors always begin with the pound symbol (#). The style's name indicates which type of page this is—it's common on websites to have different designs for different types of web pages. For example, the home page will look different from a page advertising a product, which may look different from a page with the text of a blog post. In this case, you're going to identify this page as an "article" (as in a newspaper) by creating and applying an ID to the <body> tag.

3. **Hit Enter again, and then type:**

```
background-color: #FDF8AB;
background-image: url(images/bg_page.png);
background-repeat: repeat-y;
background-position: center top;
padding: 0;
margin: 0 auto;
width: 760px;
```

   There are a lot of properties here, but basically you're adding a color to the page, inserting an image in the background (and controlling how it's positioned), removing space around the browser window's edges, setting a fixed width for the page's content, and centering everything in the middle of the page.

4. **Finish the style by typing the closing brace. The whole thing should look like this:**

```
#article {
  background-color: #FDF8AB;
  background-image: url(images/bg_page.png);
  background-repeat: repeat-y;
  background-position: center top;
  padding: 0;
  margin: 0 auto;
  width: 760px;
}
```

   Just as with a class, this style doesn't *do* anything until you apply it to the page. So you'll add an ID attribute to the page's HTML, indicating where you want the ID style to apply.

5. **Find the page's opening <body> tag and add *id="article"* so that the tag looks like this (your changes are in bold):**

```
<body id="article">
```

Now the <body> tag reflects the formatting defined in the #article style. As with all things CSS, there are many ways to arrive at the same destination: You can instead use a class style and apply it to the <body> tag (as long as you don't apply it more than once on the page). You can even create a plain *body* element style with the same formatting properties as long as all the other pages on your site share these same formatting choices. But in this case, you're using an ID selector since the point of this style—identifying the type of page—is in keeping with the general notion of ID selectors.

6. **Save the page, and preview it in a browser.**

   Everything on the page, the logo and all of the text, now have a set width and float in the center of the browser window. Even if you resize the browser window—try it!—the content remains centered. In addition, a drop shadow appears on either side of the content, thanks to the handy *background-image* property (you'll learn about that cool property in depth on page 188).

Finishing Touches

For fun, you'll add one more advanced style—an adjacent sibling selector discussed on page 66—to format the paragraph immediately following the first headline on the page. (You can achieve the same effect by creating a class style and applying it to that paragraph, but the adjacent sibling selector requires no changes to your HTML.)

1. **Return to your text editor and the *selector_basics.html* file. Create a new empty line for a new style.**

   If you just completed the previous steps, click after the closing brace of the *#article* style, and then hit Enter (Return).

2. **Type *h1+p {*.**

   This style will apply to any paragraph that *immediately* follows an <h1> tag—in other words, the first paragraph after the top headline on the page. It won't apply to the second or any subsequent paragraphs. This selector provides an easy way to create a unique look for an introductory paragraph to set it off visually and highlight the beginning of an article.

3. **Hit Enter, and then add the following list of properties to the style:**

```
color: #FF6600;
font-size: 1.2em;
line-height: 140%;
margin-top: 20px;
```

   Here you're changing the font color and size as well as adding a bit of space above the paragraph. The *line-height* property (which you'll read about on page 128) controls the space between lines in a paragraph (also know as *leading*).

4. **Finally, complete the style by pressing Enter and typing the closing brace. The completed class style should look like this:**

```
h1+p {
  color: #FF6600;
  font-size: 1.2em;
  line-height: 140%;
  margin-top: 20px;
}
```

If you preview the page now, you'll see that the top paragraph is orange and the text is larger and there's more space between each line of text (see Figure 3-10). If you actually deleted this paragraph in the HTML, you'd see that the remaining paragraph would suddenly be orange with larger text, since it would be the new adjacent sibling of the <h1> tag.

Note: Internet Explorer 6 doesn't understand adjacent sibling selectors, so in that browser, the first paragraph will look just like all the others on the page.

And there you have it: a quick tour through various selector types. You'll get familiar with all of these selectors (and more) as you go through the tutorials later in the book, but by now, you should be getting a hang for the different types and why you'd use one over the other.

Note: You can see a completed version of the page you've just created in the *03_finished* folder.

Figure 3-10: *The page has really come together. The set width, the drop shadow effect, and the typographic details have really improved the look of the boring HTML page you started with.*

CHAPTER
4

Saving Time with Style Inheritance

Children inherit traits from their parents—eye color, height, male-pattern baldness, and so on. Sometimes, we inherit traits from more distant ancestors, like grandparents or great-grandparents. As you saw in the previous chapter, the metaphor of family relations is part of the structure of HTML as well. And just like humans, HTML tags can inherit CSS properties from their ancestors.

What Is Inheritance?

In a nutshell, inheritance is the process by which some CSS properties applied to one tag are passed on to nested tags. For example, a <p> tag is always nested inside of the <body> tag, so properties applied to the <body> tag get inherited by the <p> tag. Say you created a CSS tag style (page 50) for the <body> tag that sets the *color* property to a dark red. Tags that are descendents of the <body> tag—that is, the ones inside the <body> tag—will inherit that color property. That means that any text in those tags—<h1>, <h2>, <p>, whatever—will appear in that same dark red color.

Inheritance works through multiple generations as well. If a tag like the or tag appears inside of a <p> tag, then the and the tags also inherit properties from any style applied to the <body> tag.

Note: As discussed in Chapter 3, any tag inside of another tag is a *descendent* of that tag. So a <p> tag inside the <body> tag is a descendent of the <body>, while the <body> tag is an *ancestor* of the <p> tag. *Descendents* (think kids and grandchildren) inherit properties from ancestors (think parents and grandparents).

Although this sounds a bit confusing, inheritance is a *really* big time saver. Imagine if no properties were passed onto nested tags and you had a paragraph that contained other tags like the tag to emphasize text or the <a> tag to add a link. If you created a style that made the paragraph purple, 24px tall, using the Arial font, it would be weird if all the text inside the tag reverted to its regular, "browser boring" style (see Figure 4-1). You'd then have to create another style to format the tag to match the appearance of the <p> tag. What a drag.

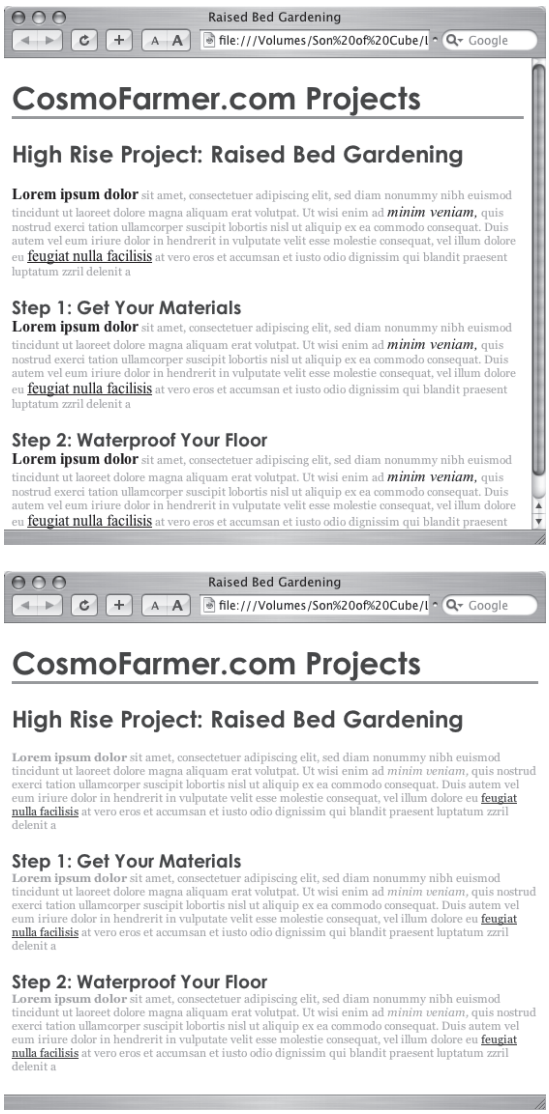


Figure 4-1:
Inheritance lets tags copy properties from the tags that surround them.

Top: The paragraph tag is set with a specific font-family, size, and color. The tags inside each paragraph inherit those properties so they look like the rest of the paragraph.

Bottom: If inheritance didn't exist, the same page would look like this figure. Notice how the strong, em, and a tags inside the paragraph retain the font-family, size, and color defined by the browser. To make them look like the rest of the paragraph, you'd have to create additional styles–a big waste of time.

Inheritance doesn't just apply to tag styles. It works with any type of style; so when you apply a class style (see page 51) to a tag, any tags inside that tag inherit properties from the styled tag. Same holds true for ID styles, descendent selectors, and the other types of styles discussed in Chapter 3.

How Inheritance Streamlines Style Sheets

You can use inheritance to your advantage to streamline your style sheets. Say you want all the text on a page to use the same font. Instead of creating styles for each tag, simply create a tag style for the <body> tag. (Or create a class style and apply it to the <body> tag.) In the style, specify the font you wish to use, and all of the tags on the page inherit the font: *body { font-family: Arial, Helvetica, sans-serif; }*. Fast and easy.

You can also use inheritance to apply style properties to a *section* of a page. For example, like many web designers, you may use the tag (page 26) to define an area of a page like a banner, sidebar, or footer. By applying a style to a tag, you can specify particular CSS properties for all of the tags inside just that section of the page. If you want all the text in a sidebar to be the same color, you'd create a style setting the *color* property, and then apply it to the . Any <p>, <h1>, or other tags inside the inherit the same font color.

Note: You'll find lots more uses for the tag when laying out a page using CSS in Part 3.

The Limits of Inheritance

Inheritance isn't all-powerful. Many CSS properties don't pass down to descendent tags at all. For example, the *border* property (which lets you draw a box around an element) isn't inherited, and with good reason. If it were, then every tag inside an element with the *border* property would also have a border around it. For example, if you added a border to the <body> tag, then every bulleted list would also have a box around it, and each bulleted item in the list would also have a border (Figure 4-2).

Note: There's a complete list of CSS properties in Appendix A, CSS Property Reference, including details on which ones get inherited.

Here are examples of times when inheritance doesn't strictly apply:

- As a general rule, properties that affect the placement of elements on the page or the margins, background colors, and borders of elements aren't inherited.

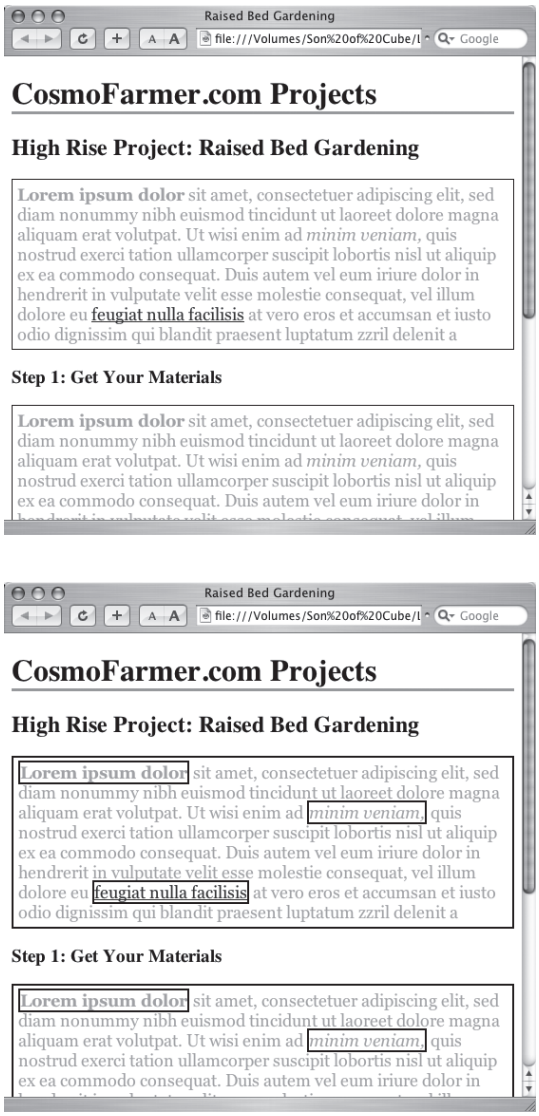


Figure 4-2:
Fortunately, not all properties are inherited. The border applied to the paragraphs at top isn't inherited by the tags inside those paragraphs. If they were, you'd end up with an unattractive mess of boxes within boxes within boxes (bottom).

- Web browsers use their own inherent styles to format various tags: Headings are big and bold, links are blue, and so on. When you define a font-size for the text on a page and apply it to the <body> tag, headings still appear larger than paragraphs, and <h1> tags are still larger than <h2> tags. It's the same when you apply a font color to the <body>; the links on the page still appear in good old-fashioned, web-browser blue.

Note: It's usually a good idea to eliminate these built-in browser styles–it'll make designing sites that work consistently among different browsers easier. In the next chapter, on page 102, you'll learn how to do that.

- When styles conflict, the more specific style wins out. In other words, when you've specifically applied CSS properties to an element—like specifying the font size for an unordered list—and those properties conflict with any inherited properties—like a font-size set for the <body> tag—the browser uses the font size applied to the <ul> tag.

Note: These types of conflicts between styles are very common, and the rules for how a browser deals with them are called the *cascade*. You'll learn about that in the next chapter.

Tutorial: Inheritance

In this three-part tutorial, you'll see how inheritance works. First, you'll create a simple tag selector and watch it pass its characteristics on to nested tags. Then, you'll create a class style that uses inheritance to alter the formatting of an entire page. Finally, you'll see where CSS makes some welcome exceptions to the inheritance rule.

To get started, you need to download the tutorial files located on this book's companion website at *www.sawmac.com/css2e*. Click the tutorial link and download the files. All of the files are enclosed in a Zip archive, so you'll need to unzip them first. (Detailed instructions for unzipping the files are on the website.) The files for this tutorial are contained in the folder named *04*.

A Basic Example: One Level of Inheritance

To see how inheritance works, start by adding a single tag style and see how it affects the tags nested inside. The next two parts of this tutorial will build upon your work here, so save the file when you're done.

1. **Open the file *inheritance.html* in your favorite text editor.**

   Now add an internal style sheet to this file.

Note: In general, it's better to use external style sheets for a website, for reasons discussed in Chapter 2 (page 34). But sometimes it's easier to start your CSS-based design in an internal style sheet, as in this example, and turn it into an external style sheet later.

2. **Click directly after the closing </title> tag. Hit Enter (Return), and then type *<style type="text/css">*. Press Enter twice, and type the closing tag—*</style>*—to indicate the end of the style sheet.**

   These tags mark the area where CSS instructions go.

   Now, you'll create a style that applies to all <p> tags.

3. **Click in the empty line between the opening and closing <style> tags and type *p {* . Hit Enter twice and type the closing brace: *}* .**

   You've created a tag selector that applies to all <p> tags on the page.

4. **Click between the two braces and type *color: #FF6600;*. The completed style should look like this:**

```
p {
  color: #FF6600;
}
```

   As you've seen in the previous tutorials, the *color* property sets the color of text. Your style sheet is complete.

5. **Open the page in a web browser to preview your work.**

   The color of the page's four paragraphs has changed from black to orange (see Figure 4-3).

But notice how this <p> tag style affects *other* tags: Tags *inside* of the <p> tag also change color. For example, the text inside the and tags inside each paragraph also changes to orange while maintaining its italic and bold formatting. This kind of behavior makes a lot of sense. After all, when you set the color of text in a paragraph, you expect *all* the text in the paragraph—regardless of any other tags inside that paragraph—to be the same color.

Without inheritance, creating style sheets would be very labor intensive. If the , <a>, and tags didn't inherit the color property from the <p> tag selector, then you'd have to create additional styles—perhaps descendent selectors like *p em* and *p strong*—to correctly format the text.

Using Inheritance to Restyle an Entire Page

Inheritance works with class styles as well—any tag with any kind of style applied to it passes CSS properties to its descendents. With that in mind, you can use inheritance to make quick, sweeping changes to an entire page.

1. **Return to your text editor and the *inheritance.html* file.**

   You'll add a new style below the <p> tag style you created.

2. **Click at the end of the closing brace of the p selector. Press Enter (Return) to create a new line, and then type *.pageStyle {* . Hit Enter twice, and type the closing brace: *}* .**

   You're about to create a new class style that you'll apply to the body tag.

3. **Click between the two braces, and then add the following list of properties to the style:**

```
font-family: "Helvetica Neue", Arial, Helvetica, sans-serif;
font-size: 18px;
```

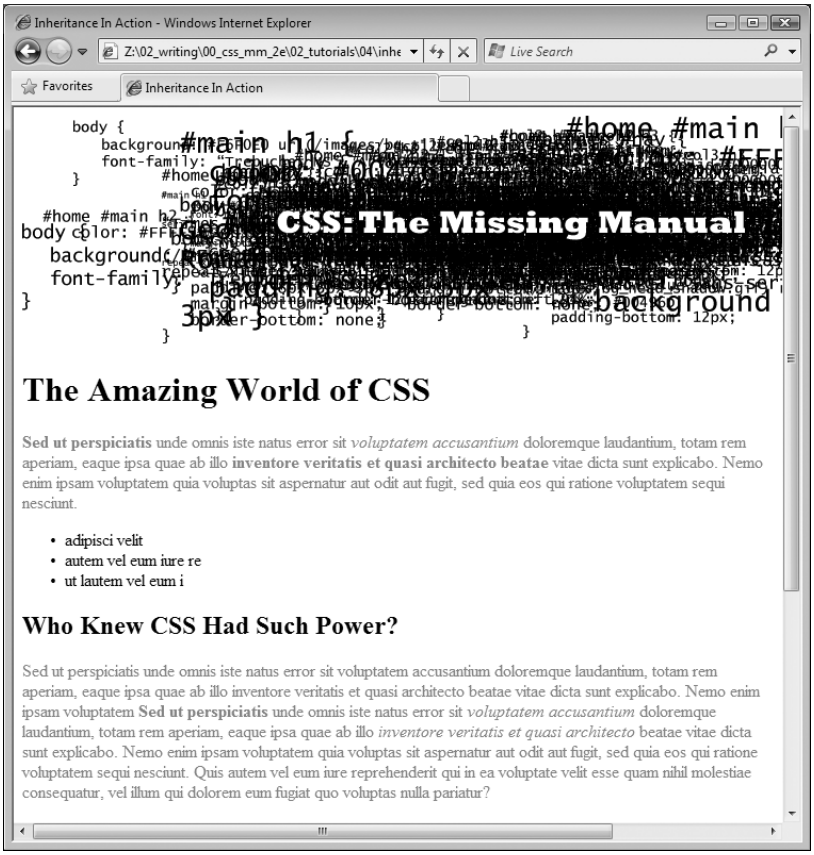


Figure 4-3: *Inheritance in action! Tags inside of a styled tag–the bold, italicized text–display the same color applied to the <p> tag surrounding them.*

```
    color: #BD8100;
    width: 900px;
    margin: 0 auto;
```

The whole thing should look like this:

```
.pageStyle {
  font-family: "Helvetica Neue", Arial, Helvetica, sans-serif;
  font-size: 18px;
  color: #BD8100;
  width: 900px;
  margin: 0 auto;
}
```

This completed class style sets a font, font-size, and color. It also sets a width and centers the style on the page (you saw this trick in the previous tutorial on page 78 for creating a fixed, centered area for a page's content).

4. **Find the opening <body> tag (just a couple lines below the style you just created), and then type *class="pageStyle"*.**

   The tag should now look like this: *<body class="pageStyle">*. It applies the class to the body tag. Thanks to inheritance, all tags inside of the body tag (which are also all the tags visible inside a browser window) inherit this style's properties and therefore use the same font.

5. **Save and preview the web page in a browser.**

   As you can see in Figure 4-4, your class style has created a seamless, consistent appearance throughout all text in the body of the page. Both headings and paragraphs inside the <body> tag have taken on the new font styling.

The page as a whole looks great, but now look more closely: The color change affected only the headings and the bulleted list on the page, and even though the style specified an exact font-size, the headline text is a different size than the paragraphs. How did CSS know that you didn't want your headings to be the same 18-pixel size as the body text? And why didn't the nested <p> tags inherit your new color styling from the <body> tag?

Figure 4-4: *A style applied to the body tag passes its properties onto all the tags you see in the web browser, making it easy to apply global formatting effects to a page.*

Note: Why use a class–pageStyle–instead of a tag style–body–to redefine the look of the page? Well, in this case, a tag style would work fine. But, applying a class (or ID) to the <body> tag is a great way to customize the look of different pages on your site. For example, if all pages on your site share the same external style sheet (page 36), a body tag style would apply to the <body> tag of every page on your site. But by creating different classes (or IDs) you can create a different style for the <body> tag for different sections of the site or different types of pages.

You're seeing the "cascading" aspect of Cascading Style Sheets in action. In this example, your <p> tags have two color styles in conflict—the <p> tag style you created on page 86 and the class style you created here. When styles collide, the browser has to pick one. As discussed on page 96, the browser uses the more specific styling—the color you assigned explicitly for <p> tag. You'll learn much more about the rules of the cascade in the next chapter.

Inheritance Inaction

Inheritance doesn't always apply, and that isn't necessarily a bad thing. For some properties, inheritance would have a negative effect on a page's appearance. You'll see another example of inheritance *in action* in the final section of this tutorial. Margins, padding, and borders (among other properties) don't get inherited by descendent tags—and you wouldn't want them to, as you'll see in this example.

1. **Return to your text editor and the *inheritance.html* file.**

   You'll expand on the p tag style you just created.

2. **Locate the *p* style, click at the end of the color property *(color : #FF6600;)*, and then press Enter (Return) to create a new line.**

   You'll indent the paragraphs on the page by adding a left margin.

3. **Add three properties to the style so that it looks like this:**

```
p {
  color: #FF6600;
  margin-left: 50px;
  margin-left: 50px;
  padding-left: 20px;
  border-left: solid 25px #BD8100;
}
```

   The margin-left property indents the paragraph 50 pixels from the left; the padding property indents the paragraph text 20 pixels from the border.

4. **Save the file and preview it in a web browser.**

   Notice that all of the <p> tags are indented 50px from the left edge of the browser window and that they each have a thick brown border on the left. However, the tags *inside* the <p> tag (for example, the tag) don't have any additional indentation or border (see Figure 4-5). This behavior makes sense: It would look weird if there were an additional 50px of space to the left of each and each tag inside of a paragraph!

   To see what would happen if those properties were inherited, edit the p selector so that it looks like this: *p, p **, which makes it into a group selector (page 56). The first part is just the p selector you already created. The second part—p *—means "select all tags inside of a p tag and apply this style to them." (The *, or universal selector, is described on page 56.)

Figure 4-5: *While most properties are inherited (like font color), there are plenty–like margins, padding and borders–that don't pass on to nested tags. The CSS Property Reference in Appendix A indicates which properties are and are not inherited.*

Note: You can find a completed version of the page you created in this tutorial in the *04_finished* folder.

CHAPTER
5

Managing Multiple Styles: The Cascade

As you create increasingly complex style sheets, you'll sometimes wonder why a particular element on a page looks the way it does. CSS's inheritance feature, as discussed in the previous chapter, creates the possibility that any tag on a page is potentially affected by any of the tags that wrap around it. For example, the <body> tag can pass properties on to a paragraph, and a paragraph may pass its own formatting instructions on to a link within the paragraph. In other words, that link can inherit CSS properties from *both* the <body> and the <p> tag—essentially creating a kind of Frankenstyle that combines parts of two different CSS styles.

Then there are times when styles collide—the same CSS property is defined in multiple styles, all applying to a particular element on the page (for example, a <p> tag style in an external style sheet and another <p> tag style in an internal style sheet). When that happens, you can see some pretty weird stuff, like text that appears bright blue, even though you specifically applied a class style with the text color set to red. Fortunately, there's actually a system at work: a basic CSS mechanism known as the *cascade*, which governs how styles interact and which styles get precedence when there's a conflict.

Note: This chapter deals with issues that arise when you build complex style sheets that rely on inheritance and more sophisticated types of selectors like descendent selectors (page 54). The rules are all pretty logical, but they're about as fun to master as the tax code. If that's got your spirits sagging, consider skipping the details and doing the tutorial on page 103 to get a taste of what the cascade is and why it matters. Or jump right to the next chapter which explores fun and visually exciting ways to format text. You can always return to this chapter later, after you've mastered the basics of CSS.

How Styles Cascade

The *cascade* is a set of rules for determining which style properties get applied to an element. It specifies how a web browser should handle multiple styles that apply to the same tag and what to do when CSS properties conflict. Style conflicts happen in two cases: through inheritance when the same property is inherited from multiple ancestors, and when one or more styles apply to the same element (maybe a <p> tag style in an external style sheet and another <p> tag style in an internal style sheet).

Inherited Styles Accumulate

As you'll read in the last chapter, CSS inheritance ensures that related elements—like all the words inside a paragraph, even those inside a link or another tag—share similar formatting. It spares you from creating specific styles for each tag on a page. But since one tag can inherit properties from *any* ancestor tag—a link, for example, inheriting the same font as its parent <p> tag—determining why a particular tag is formatted one way can be a bit tricky. Imagine a font family applied to the <body> tag, a font size applied to a <p> tag, and a font color applied to an <a> tag. Any <a> tag inside of a paragraph would inherit the font from the body and the size from the paragraph. In other words, the inherited styles combine to form a hybrid style.

The page shown in Figure 5-1 has three styles: one for the <body>, one for the <p> tag, and one for the tag. The CSS looks like this:

```
body { font-family: Verdana, Arial, Helvetica, sans-serif; }
p { color: #F30; }
strong { font-size: 24px; }
```

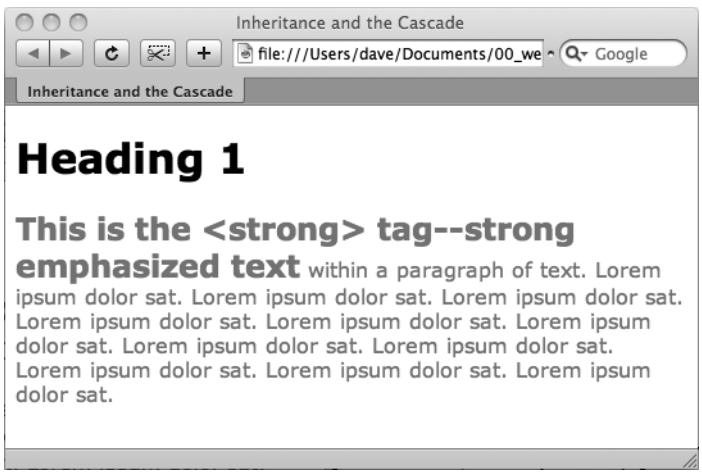


Figure 5-1:
Thanks to inheritance, it's possible for multiple styles to affect the appearance of one tag. Here the tag has a specific color, font family, and font size, even though only a single property is applied directly to that tag. The other two formatting options were inherited from the tag's ancestors: the <body> and the <p> tags.

The tag is nested inside a paragraph, which is inside the <body> tag. That tag inherits from both of its ancestors, so it inherits the font-family property from the body and the color property from its parent paragraph. In addition, the tag has a bit of CSS applied directly to it—a 24px font size. The final appearance of the tag is a combination of all three styles. In other words, the tag appears exactly as if you'd created a style like this:

```
strong {
  font-family: Verdana, Arial, Helvetica, sans-serif;
  color: #F30;
  font-size: 24px;
}
```

Nearest Ancestor Wins

In the previous example, various inherited and applied tags smoothly combined to create an overall formatting package. But what happens when inherited CSS properties conflict? Think about a page where you've set the font color for both the body and paragraph tags. Now imagine that within one paragraph, there's a tag. Which color gets applied to text inside the tag? The color inherited from the body or the paragraph? Ladies and gentleman, we have a winner: the paragraph. That's because the web browser obeys the style that's closest to the tag in question.

In this example, any properties inherited from the <body> tag are rather generic. They apply to all tags. A style applied to a <p> tag, on the other hand, is much more narrowly defined. Its properties apply only to <p> tags and the tags inside them.

In a nutshell, if a tag doesn't have a specific style applied to it, then, in the case of any conflicts from inherited properties, the nearest ancestor wins (see Figure 5-2, number 1).

Here's one more example, just to make sure the concept sinks in. If a CSS style defining the color of text were applied to a <table> tag, and another style defining a *different* text color were applied to a <td> tag inside that table, then tags inside that table cell (<td>) such as a paragraph, headline, or unordered list would use the color from the <td> style, since it's the closest ancestor.

The Directly Applied Style Wins

Taking the "nearest ancestor" rule to its logical conclusion, there's one style that always becomes king of the CSS family tree—any style applied directly to a given tag. Suppose a font color is set for the body, paragraph, *and* strong tags. The paragraph style is more specific than the body style, but the style applied to the tag is more specific than either one. It formats the tags and only the tags, overriding any conflicting properties inherited from the other tags (see Figure 5-2, number 2). In other words, properties from a style specifically applied to a tag beat out any inherited properties.

This rule explains why some inherited properties don't appear to inherit. A link inside a paragraph whose text is red still appears browser-link blue. That's because browsers have their own predefined style for the <a> tag, so an inherited text color won't apply.

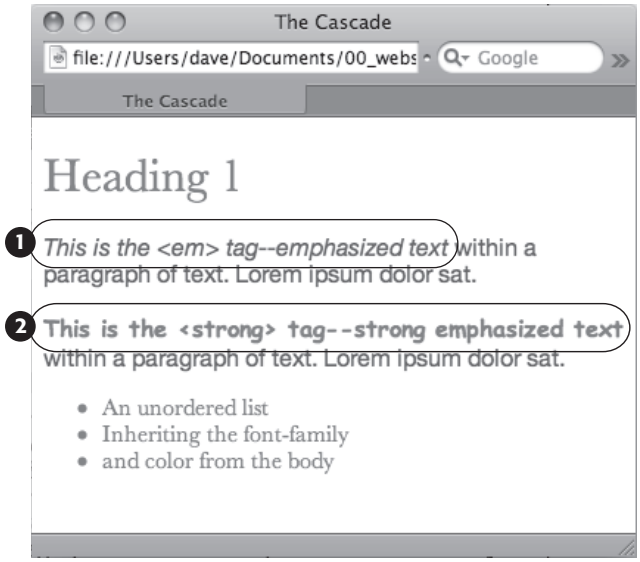


Figure 5-2:
Here's how web browsers figure out which properties to display when inherited properties conflict: The tag in the first paragraph (1) inherits the font family and color from both the <body> tag and the paragraph. But since the body and paragraph have different fonts and colors applied to them, the tag uses the font and color specified for its closest ancestor–the <p> tag. When a style applies directly to a tag–the font-family and color are specified for the tag (2)–browsers ignore conflicting inherited properties.

Note: You can learn how to overcome preset styles for the <a> tag and change link colors to your heart's content. See page 228.

One Tag, Many Styles

Inheritance is one way that a tag can be affected by multiple styles. But it's also possible to have multiple styles apply *directly* to a given tag. For example, say you have an external style sheet with a <p> tag style and attach it to a page that has an internal style sheet that *also* includes a <p> tag style. And just to make things really interesting, one of the <p> tags on the page has a class style applied to it. So for that one tag, three different styles directly format it. Which style—or *styles*—should the browser obey?

The answer: It depends. Based on the types of styles and the order in which they're created, a browser may apply one or more of them at once. Here are a few situations in which multiple styles can apply to the same tag:

- **The tag has both a tag selector and a class style applied to it.** For example, a tag style for the <h2> tag, a class style named *.leadHeadline* and this HTML: <h2 class="leadHeadline">Your Future Revealed!</h2>. Both styles apply to this <h2> tag.

Note: Hold onto your hat if you're worried about what happens when these multiple styles conflict; details to follow.

- **The same style name appears more than once in the style sheet.** There could be a group selector (page 56), like *.leadHeadline, .secondaryHeadline, .newsHeadline,* and the class style *.leadHeadline* in the same style sheet. Both of these rules define how any element with a class of *leadHeadline* looks.
- **A tag has both a class and an ID style applied to it.** Maybe it's an ID named *#banner,* a class named *.news,* and this HTML: . Properties from both the *banner* and *news* styles apply to this tag.
- **There's more than one style sheet containing the *same* style name attached to a page.** The same-named styles can arrive in an external style sheet via @import or link and an internal style sheet.
- **There are complex selectors targeting the same tag.** This situation is common when you use descendent selectors (page 57). For example, say you have a div tag in a page (like this: * *), and inside the div is a paragraph with a class applied to it: *<p class="byline">*. The following selectors apply to this paragraph:

  #mainContent p

  #mainContent .byline

  p.byline

  .byline

If more than one style applies to a particular element, then a web browser combines the properties of all those styles, *as long as they don't conflict.* An example will make this concept clearer. Imagine you have a paragraph that lists the name of the web page's author, including a link to his email address. The HTML might look like this:

```
<p class="byline">Written by <a href="mailto:jean@cosmofarmer.com">JeanGraine
de Pomme</a></p>
```

Meanwhile, the page's style sheet has three styles that format the link:

```
a { color: #6378df; }
p a { font-weight: bold; }
.byline a { text-decoration: none; }
```

The first style turns all <a> tags powder blue; the second style makes all <a> tags that appear inside a <p> tag bold; and the third style removes the underline from any links that appear inside an element with the *byline* class applied to it.

All three styles apply to that very popular <a> tag, but since none of the properties are the same, there are no conflicts between the rules. The situation is similar to the inheritance example (page 92): the styles combine to make one überstyle containing all three properties, so this particular link appears powder blue, bold, *and* underline-free.

Note: Your head will really start to ache when you realize that this particular link's formatting can also be affected by inherited properties. For example, it would inherit any font family that's applied to the paragraph. A few tools can help sort out what's going on in the cascade. (See the box on page 98.)

Specificity: Which Style Wins

The previous example is pretty straightforward. But what if the three styles listed on page 92 each had a *different* font specified for the *font-family* property? Which of the three fonts would a web browser pay attention to?

As you know if you've been reading carefully so far, the cascade provides a set of rules that helps a web browser sort out any property conflicts; namely, *properties from the most specific style win.* But as with the styles listed on page 92, sometimes it's not clear which style is most specific. Thankfully, CSS provides a formula for determining a style's *specificity* that's based on a value assigned to the style's selector—a tag selector, class selector, ID selector, and so on. Here's how the system works:

- A tag selector is worth **1 point.**
- A class selector is worth **10 points.**
- An ID selector is worth **100 points.**
- An inline style (page 39) is worth **1,000 points.**

Note: The math involved in calculating specificity is actually a bit more complicated than described here. But this formula works in all but the weirdest cases. To read how web browsers actually calculate specificity visit *www.w3.org/TR/CSS21/cascade.html#specificity*.

The bigger the number, the greater the specificity. So say you create the following three styles:

- a tag style for the <img> tag (specificity = 1)
- a class style named *.highlight* (specificity = 10)
- an ID style named *#logo* (specificity = 100)

Then, say your web page has this HTML: **. If you define the same property—such as the border property—in all three styles, then the value from the ID style (*#logo*) always wins out.

Note: A pseudo-element (like *:first-child* for example) is treated like a tag selector and is worth 1 point. A pseudo-class (*:link*, for example) is treated like a class and is worth 10 points. (See page 62 for the deal on these pseudo-things.)

Since descendent selectors are composed of several selectors—*#content p*, or *h2 strong*, for example—the math gets a bit more complicated. The specificity of a descendent selector is the total value of all of the selectors listed (see Figure 5-3).

selector	id	class	tag	total
p	0	0	1	1
.byline	0	1	0	10
p.byline	0	1	1	11
#banner	1	0	0	100
#banner p	1	0	1	101
#banner .byline	1	1	0	110
a:link	0	1	1	11
p:first-line	0	0	2	2
h2 strong	0	0	2	2
#wrapper #content .byline a:hover	2	2	1	221

Figure 5-3: *When more than one style applies to a tag, a web browser must determine which style should "win out" in case style properties conflicts. In CSS, a style's importance is known as specificity and is determined by the type of selectors used when creating the style. Each type of selector has a different value, and when multiple selector types appear in one style–for example the descendent selector* #banner p*–the values of all the selectors used are added up.*

Note: Inherited properties don't have any specificity. So even if a tag inherits properties from a style with a large specificity–like #banner–those properties will always be overridden by a style that directly applies to the tag.

The Tiebreaker: Last Style Wins

It's possible for two styles with conflicting properties to have the same specificity. ("Oh brother, when will it end?" Soon, comrade, soon. The tutorial is coming up.) A specificity tie can occur when you have the same selector defined in two locations. You may have a <p> tag selector defined in an internal style sheet and an external style sheet. Or two different styles may simply have equal specificity values. In case of a tie, the style appearing last in the style sheet wins.

Here's a tricky example using the following HTML:

```
<p class="byline">Written by <a class="email" href="mailto:jean@cosmofarmer.
com">Jean Graine de Pomme</a></p>
```

In the style sheet for the page containing the above paragraph and link, you have two styles:

```
p .email { color: blue; }
.byline a { color: red; }
```

Both styles have a specificity of 11 (10 for a class name and 1 for a tag selector) and both apply to the <a> tag. The two styles are tied. Which color does the browser use to color the link in the above paragraph? Answer: Red, since it's the second (and last) style in the sheet.

FREQUENTLY ASKED QUESTION

Get a Little Help

My head hurts from all of this. Isn't there some tool I can use to help me figure out how the cascade is affecting my web page?

Trying to figure out all the ins and outs of inherited properties and conflicting styles confuses many folks at first. Furthermore, doing the math to figure out a style's specificity isn't even your average web designer's idea of fun, especially when there are large style sheets with lots of descendent selectors.

Fortunately, you have a few tools that can figure the cascade out for you. Dreamweaver (*www.adobe.com*) includes a helpful CSS panel. A glance at it tells you which styles apply to any selected element and the end result of the cascade. In other words, you get an element's ultimate list of applied properties–its "Frankenstyle."

Then there's the free Firefox extension, View Formatted Source (*https://addons.mozilla.org/extensions/moreinfo.php?application=firefox&id=697*). It lets you view which styles apply to a particular element (though it doesn't show you any of the inherited styles).

Finally there's Apple's web browser, Safari, for both Mac and Windows. A Web Inspector feature provides a wealth of information about a web page, its CSS, and the effect of the cascade on the page's tags. You just need to turn on the "Show Develop Menu" option under the Advanced tab of the Preferences window. For more information on using the Web Inspector, visit *http://tinyurl.com/web-inspector*.

Now suppose that the style sheet looked like this instead:

```
p .email { color: blue; }
.byline a { color: red; }
```

In this case, the link would be *red.* Since *.byline a* appears after *p .email* in the style sheet, its properties win out.

What happens if you've got conflicting rules in an external and an internal style sheet? In that case, the placement of your style sheets (within your HTML file) becomes very important. If you first add an internal style sheet using the <style> tag (page 34) and *then* attach an external style sheet farther down in the HTML using the <link> tag (page 36), then the style from the external style sheet wins. (In effect, it's the same principle at work that you just finished reading about: *The style appearing last wins.*) The bottom line: Be consistent in how you place external style sheets. It's best to list any external style sheets first, and then include any internal styles.

Note: Any external style sheets attached with the @import rule have to appear before internal styles within a <style> tag. See page 34 for more information on external and internal style sheets.

GEM IN THE ROUGH

Overruling Specificity

CSS provides a way of overruling specificity entirely. You can use this trick when you absolutely, positively want to make sure that a particular property can't be overridden by a more specific style. Simply insert *!important* after any property to shield it from specificity-based overrides.

For example, consider the two following styles:

```
#nav a { color: red; }
a { color: teal !important; }
```

Normally, a link inside an element with the ID of #nav would be colored red since the *#nav a* style is much more specific than the *a* tag style.

However, including *!important* after a property value means that specific property always wins. So in the above example, all links on the page–including those inside an element with the *#nav* id–are teal.

Note that you apply *!important* to an individual property, not an entire style. Finally, when two styles both have *!important* applied to the same property, the more specific style's *!important* rule wins.

Internet Explorer 6 and earlier sometimes has trouble with *!important* rules and occasionally completely ignores them.

Controlling the Cascade

As you can see, the more CSS styles you create, the greater the potential for formatting snafus. For example, you may create a class style specifying a particular font and font size, but when you apply the style to a paragraph, nothing happens! This kind of problem is usually related to the cascade. Even though you may think that directly applying a class to a tag should apply the class's formatting properties, it may not if there's a style with greater specificity.

You have a couple of options for dealing with this kind of problem. First, you can use *!important* (as described in the box above) to make sure a property *always* applies. The *!important* approach is a bit heavy handed, though, since it's hard to predict that you'll never, ever, want to overrule an *!important* property someday. Read on for two other cascade-tweaking solutions.

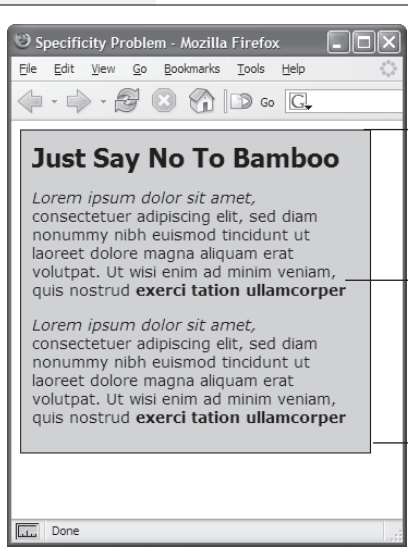
Changing the Specificity

The top picture in Figure 5-4 is an example of a specific tag style losing out in the cascade game. Fortunately, most of the time, you can easily change the specificity of one of the conflicting styles and save *!important* for real emergencies. In Figure 5-4 (top), two styles format the first paragraph. The class style—*.intro*—isn't as specific as the *#sidebar p* style, so *.intro*'s properties don't get applied to the paragraph. To increase the specificity of the class, add the ID name to the style: *#sidebar .intro*.

Note: If you're into math, the *#sidebar p* style has a specificity of 101 (100 for the ID, and 1 for the tag selector), while the *.intro* style has a specificity of 10 (10 points for a class selector). Since 101 is greater than 10, *#sidebar p* takes precedence. Changing *.intro* to *#sidebar .intro* changes its specificity to 110.

Selective Overriding

You can also fine-tune your design by *selectively* overriding styles on certain pages. Say you've created an external style sheet named *global.css* that you've attached to each page in your site. This file contains the general look and feel for your site—the font and color of <h1> tags, how form elements should look, and so on. But maybe on your home page, you want the <h1> tag to look slightly different than the rest of the site—bolder and bigger, perhaps. Or the paragraph text should be smaller on the home page, so you can wedge in more information. In other words, you still want to use *most* of the styles from the *global.css* file, but you simply want to override a few properties for some of the tags (<h1>, <p>, and so on).




```
#sidebar p {
font-family: Verdana;
font-size: .9em;
}

.intro {
font-family: Georgia;
font-size: 1.25em;
}

<div id="sidebar">
<p class="intro">
</div>
```


```
#sidebar p {
font-family: Verdana;
font-size: .9em;
}

#sidebar .intro {
font-family: Georgia;
font-size: 1.25em;
}

<div id="sidebar">
<p class="intro">
</div>
```

Figure 5-4: *Even though a class is applied to a specific tag—like the first paragraph in the top image—its properties may not always have an effect. In this case, the paragraph is inside a tag with an ID of* #sidebar*, so the descendent selector* #sidebar p *is more specific than the* .intro *class. The solution: Make the* .intro *class more specific by adding the ID before it—*#sidebar p.intro*—as in the bottom example.*

One approach is to simply create an internal style sheet listing the styles that you want to override. Maybe the *global.css* file has the following rule:

```
h1 {
  font-family: Arial, Helvetica, sans-serif;
  font-size: 24px;
  color: #000;
}
```

You want the <h1> tag on the home page to be bigger and red. So just add the following style in an internal style sheet on the home page:

```
h1 {
  font-size: 36px;
  color: red;
}
```

In this case, the <h1> tag on the home page would use the font Arial (from the external style sheet) but would be red and 36 pixels tall (from the internal style).

Tip: Make sure you attach the external style sheet *before* the internal style sheet in the <head> section of the HTML. This ensures that the styles from the internal style sheet win out in cases where the specificity of two styles are the same, as explained on page 96.

Another approach would be to create one more external style sheet—*home.css* for example—that you attach to the home page in addition to the *global.css* style sheet. The *home.css* file would contain the style names and properties that you want to overrule from the *global.css* file. For this to work, you need to make sure the *home.css* file appears *after* the *global.css* file in the HTML, like so:

```
<link rel="stylesheet" type="text/css" href="css/global.css" />
<link rel="stylesheet" type="text/css" href="css/home.css" />
```

Tip: Another way to fine-tune designs on a page-by-page basis is to use different ID names for the <body> tag of different types of pages–for example *#review, #story, #home*–and then create descendent selectors to change the way tags on these types of pages look. This technique is discussed on page 77.

Starting with a Clean Slate

As discussed on page 84, browsers apply their own styles to tags: for example, <h1> tags are bigger than <h2> tags, and both are bold, while paragraph text is smaller and isn't bold; links are blue and underlined; and bulleted lists are indented. There's nothing in the HTML standard that defines any of this formatting: Web browsers just add this formatting to make basic HTML more readable. However, even though browsers treat all tags roughly the same, they don't treat them identically.

For example, Safari and Firefox use the *padding* property to indent bulleted lists, but Internet Explorer uses the *margin* property. Likewise, you'll find subtle differences in the size of tags across browsers and an altogether confusing use of margins among the most common web browsers. Because of these inconsistencies, you can run into problems where, for instance, Firefox adds a top margin, while Internet Explorer doesn't. These types of problems aren't your fault—they stem from differences in the built-in browser styles.

To avoid cross-browser inconsistencies, it's a good idea to start a style sheet with a clean slate. In other words, erase the built-in browser formatting and supply your own. The concept of erasing browser styling is called *CSS reset*. This section gives you a working introduction.

In particular, there's a core set of styles you should include at the top of your style sheets. These styles set a baseline for properties that commonly are treated differently across browsers.

Here's a bare-bones CSS reset:

```
html, body, h1, h2, h3, h4, h5, h6, p, ol, ul, li, pre, code, address,
variable, form, fieldset, blockquote {
  padding: 0;
  margin: 0;
  font-size: 100%;
  font-weight: normal;
}
ol {
  margin-left: 1.4em;
  list-style: decimal;
}
ul {
  margin-left: 1.4em;
  list-style:square;
}
img {
  border: 0;
}
```

The first style is a very long group selector (page 56) that takes the most common tags and "zeros" them out—removing all the padding and margins, setting their base text size to 100% and removing bold text formatting. This step makes your tags look pretty much identical (see Figure 5-5), but that's the point—you want to start at zero and then add your own formatting so that all browsers apply a consistent look to your HTML.

Note: You don't have to type all this code yourself. You'll find a file named *reset.css* in the *05* tutorial folder at *www.sawmac.com/css2e* that contains a basic CSS reset file. Just copy the styles from this file and paste them into your own style sheets. A more comprehensive CSS reset (discussed on page 423) is available in the Chapter 15 tutorial files inside the *15* folder.

The second and third styles (the ol and ul tag styles), set a consistent left margin and style (page 143 introduces list styling), and the last style removes a border that some browsers add to images that are links.

Tutorial: The Cascade in Action

In this tutorial, you'll see how styles interact and how they can sometimes conflict to create unexpected results. First, you'll look at a basic page that has the CSS reset styles mentioned above plus a couple of other styles that provide some simple layout. Then, you'll create two styles and see how some properties are inherited and how others are overruled by the cascade. Then, you'll see how inheritance affects tags on a page and how a browser resolves any CSS conflicts. Finally, you'll learn how to troubleshoot problems created by the cascade.

To get started, you need to download the tutorial files located on this book's companion website at *www.sawmac.com/css2e*. Click the tutorial link and download the files. All of the files are enclosed in a Zip archive, so you'll need to unzip them first. (Go to the website for detailed instructions on unzipping the files.) The files for this tutorial are contained inside the folder named *05*.

Resetting CSS and Styling from Scratch

First, take a look at the page you'll be working on.

1. **In a web browser, open the file named *cascade.html* located in the *05* tutorial folder (see Figure 5-5).**

   The page doesn't look like much—two columns, one with a blue background and a lot of same-looking text. There are a few styles already applied to this file, so open the CSS up in a text editor and have a look.

2. **Using your favorite text or web page editor, open the file *main.css* located in the *05* folder.**

   This file is the external style sheet that the *cascade.html* file uses. It has six styles already in it—the first four are the CSS reset styles discussed on the previous page. They eliminate the basic browser styles, which is why all of the text currently looks the same. You'll create your own styles to make this page look great soon).

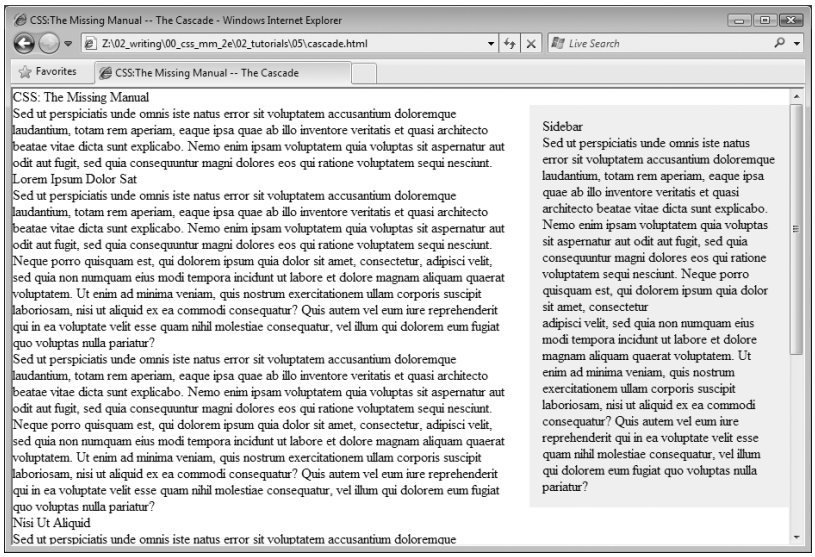


Figure 5-5: *The basic "CSS reset" styles on this page eliminate the subtle differences in how different browsers display basic HTML tags. They also eliminate any difference between how the tags look. Your job is to take this empty canvas and style the tags so they look the way you want them to.*

The last two styles—the ID styles *#main* and *#sidebar*—create the two columns you saw in Figure 5-1. The HTML is divided into two tags, each with its own ID. The ID styles here essentially position the two divs so they appear side-by-side as columns. (You'll learn exactly how ID styles work when you get into CSS layout in depth, starting in Chapter 10.)

You'll first add a couple of styles to improve the page's basic appearance and its top headline.

3. **In the *main.css* file, add these two styles at the bottom of the style sheet following the last } of the *#sidebar* style:**

```
body {
  color: #B1967C;
  font-family: "Palatino Linotype", Baskerville, serif;
  padding-top: 100px;
  background: #CDE6FF url(images/bg_body.png) repeat-x;
  width: 800px;
  margin: 0 auto;
}
h1 {
  font-size: 3em;
  font-family: "Arial Black", Arial, sans-serif;
}
```

The first style adds a background image and color to the page, and also sets a fixed width for the page. If you save this file and preview the *cascade.html* file in a web browser (see Figure 5-6), you'll notice that these attributes aren't inherited by the other tags—the same image, for example, isn't repeated behind the heading or paragraph tags.

The *font family* and *color* properties, on the other hand, are inherited, so other tags on the page now use that font and have a brownish color. However, you'll see that although the top headline is the same color as the other text on the page, it uses a different font—here's the cascade in action. The h1 tag style doesn't have a color assigned to it, so that heading inherits the brown color applied to the body tag. But, since the h1 tag style specifies a font family, it overrides the inherited font from the body tag style.

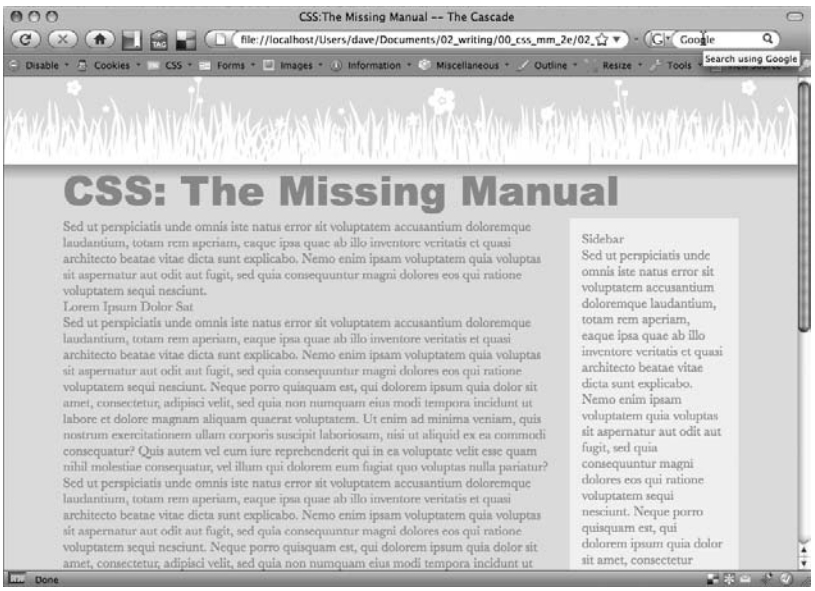


Figure 5-6: *Inheritance and the cascade in action: the <h1> tag at the top of this page inherits its font color from the body tag style, but gets its size and font family from the specific h1 tag style.*

Creating a Hybrid Style

In this example, you'll create two styles. One style formats all the second level headlines of the page; and another, more specific style reformats just those headings in the larger, main column of the page.

1. **In the *main.css* file, add the following style to the end of the style sheet:**

```
h2 {
  font-size: 2.2em;
  color: #AFC3D6;
  margin-bottom: 5px;
}
```

This style simply changes the text color and increases the size of the h2 tag and adds a little bit of space below it. If you view the file in a web browser, you'll see that the h2 tags in the main column and the one h2 tag in the right sidebar now look alike.

Next, you'll create a style to just format the second-level headlines in the main column.

2. **Return to your web page editor and the *main.css* file, click directly after the end of the new <h2> tag style, and press Enter (Return) to create an empty line. Add the following style:**

```
#main h2 {
  color: #E8A064;
  border-bottom: 2px white solid;
  background: url(images/bullet_flower.png) no-repeat;
  padding: 0 0 2px 80px;
}
```

You've just created a descendent selector (page 57) that formats all <h2> tags that appear *inside* of a tag with an ID of *#main* applied to it. The two columns of text on this page are enclosed in tags with different ID names applied to them. The larger, left-hand column has the ID *#main*, so this particular style will only apply to the <h2> tags in that div.

This style is similar to the one you created in the tutorial for Chapter 2 in step 14 on page 46—it adds an underline and a simple flower icon to the headline. This style also specifies an orange color for the text.

3. **Preview the page once again in a web browser (see Figure 5-7).**

You'll notice that all of the heading 2 tags (the two in the main column and one in the sidebar) are the same size, but the two in the main column also have the underline and flower icon.

Because the *#main h2* style is more specific than the simple *h2* style, if there are any conflicts between the two styles—the *color* property, in this case—the *#main h2* properties win out. So, although the second-level headlines in the main column get a blue text color from the *h2* style, the orange color from the more specific *#main h2* style wins out.

However, since the *#main h2* style doesn't specify a font size or bottom margin, the headlines in the main column get those properties from the *h2* style.

Overcoming Conflicts

Because of how CSS properties sometimes conflict when several styles apply to the same tag, you'll sometimes find your pages don't look exactly as you planned.

Figure 5-7: *A tale of two styles: both the* h2 *and* #main h2 *styles apply to the second-level headlines in the left column of this page. However, the* #main h2 *style applies to just those headlines inside the main (left) column. Also, since that style is more powerful than the basic* h2 *tag style, it overrides any conflicts between the two styles, in this case, using an orange text color instead of the blue color of the* h2 *tag style.*

When that happens you'll need to do a little work to find out why, and rejigger your CSS selectors to make sure the cascade is working to produce the results you want.

1. **Return to your web page editor and the *main.css* file.**

   You'll now create a new style to format just the paragraphs in the main column of the page.

2. **Add the following style to the end of the style sheet:**

```
#main p {
  color: #616161;
  font-family: "Palatino Linotype", Baskerville, serif;
  font-size: 1.1em;
  line-height: 150%;
  margin-bottom: 10px;
  margin-left: 80px;
}
```

   This style changes the color, size, and font of the text, spreads the lines of text out (the *line-height* property) and adjusts the bottom and left margins of the paragraphs.

   The page would look better if you highlighted the paragraph immediately following the headline—making it bigger and bolder can help make a more powerful message. The easiest way to style just that one paragraph is to create a class style and apply it to that paragraph.

3. **Add one last style to the end of the style sheet:**

```
.intro {
  color: #6A94CC;
  font-family: Arial, Helvetica, sans-serif;
  font-size: 1.2em;
  margin-left: 0;
  margin-bottom: 25px;
}
```

This style changes the color, font, and size, and adjusts the margins a bit. All you have to do is apply the class to the HTML.

4. **Open the *cascade.html* file in your web page editor. Locate the <p> tag that appears after *<h1>CSS: The Missing Manual</h1>* and directly below * *, and then add the following class attribute:**

```
<p class="intro">
```

5. **Preview the page in a web browser.**

And…the paragraph is completely unchanged. What gives? Following the rules of the cascade, *.intro* is a basic class selector, while the *#main p* is a descendent selector composed of both an ID and a tag name. These add up to create a more specific style, so its style properties overrule any conflict between it and the *.intro* style.

In order to make the *.intro* style work, you need to give it a little juice by making its selector more powerful.

Figure 5-8: *Even in a simple page like this one, with just a handful of styles, the look of any one tag is often a combination of properties from various styles.*

6. **Return to the *main.css* file in your web page editor and change the name of the style from *.intro* to *#main .intro*.**

   Now you have a descendent selector composed of an ID and a class. This style is more specific than *#main p*, and its properties override those in any less specific style.

7. **Preview the page in a web browser.**

   Voila! The paragraph changes to blue, with bigger text, a different font, and no left margin. If you didn't have a clear understanding of the cascade, you'd be scratching your head wondering why that class style didn't work the first time around.

In this and the previous four chapters, you've covered the basics of CSS. Now, in Part 2, it's time to take that knowledge and apply it to real design challenges, making web pages look great.

2

Part Two: Applied CSS

CHAPTER
6

Formatting Text

Most websites still rely on words to get their messages across. Sure, people like to look at photos, movie clips, and Flash animations, but it's the reading material that keeps 'em coming back. People are hungry for Facebook updates, news, gossip, how-to articles, recipes, FAQs, jokes, information lists, and even 140 character tweets. With CSS, you can—and *should*—make your headlines and body text grab a visitor's attention as compellingly as any photo.

CSS offers a powerful array of text-formatting options, which let you assign fonts, color, sizes, line spacing, and many other properties that can add visual impact to headlines, bulleted lists, and regular old paragraphs of text (see Figure 6-1). This chapter reveals all, and then finishes up with a tutorial where you can practice assembling CSS text styles and put them to work on an actual web page.

Formatting Text

The first thing you can do to make text on your website look more exciting is to apply different fonts to headlines, paragraphs, and other written elements on your pages. To apply a font to a CSS style, you use the *font-family* property:

```
font-family: Arial;
```

Note: In real life, when you put a CSS property into action, you must, of course, include all the other necessities of a complete style declaration block and style sheet, as described in Chapter 2: *p* { *font-family: Arial;* }, for example. When you see examples like *font-family: Arial;,* remember that's just the property in isolation, distilled down for your book-reading benefit.

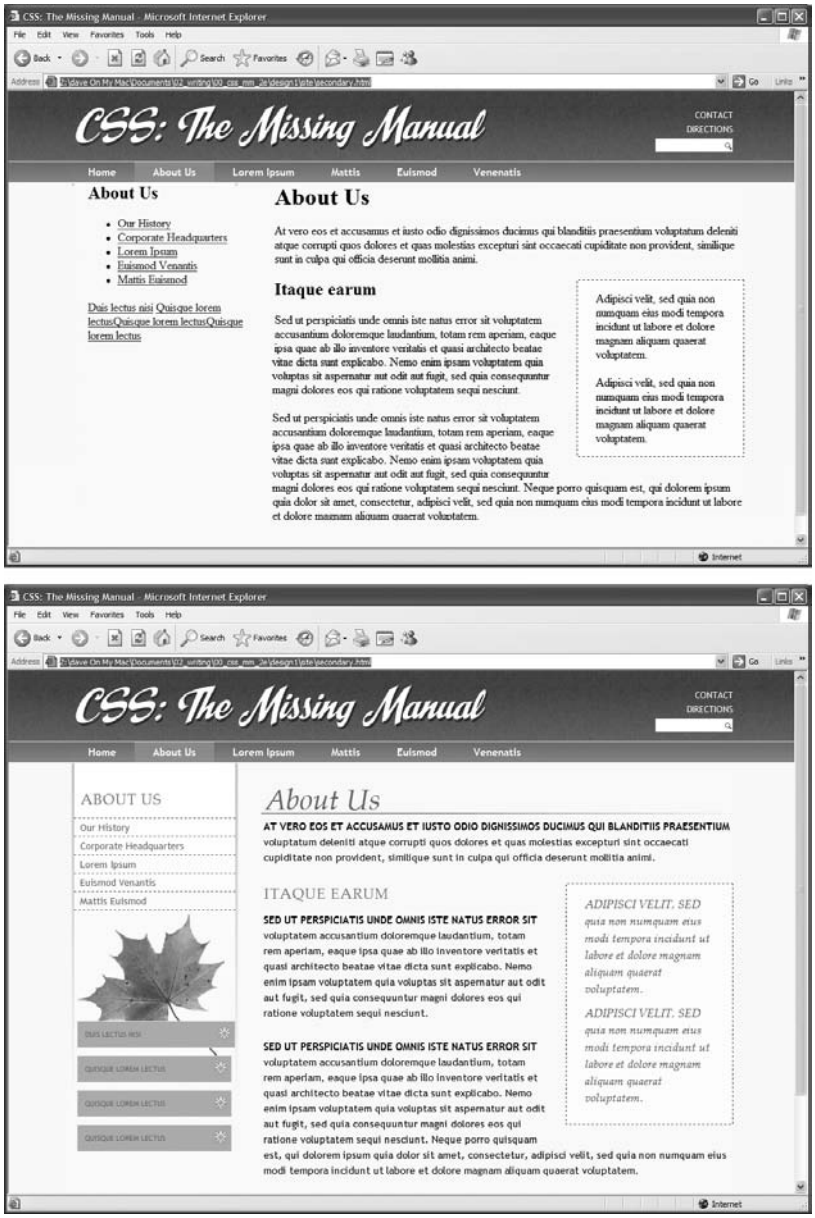


Figure 6-1:
Why settle for boring and drab text (top), when you can make your headlines scream and your text sing with a few simple CSS properties (bottom)?

Choosing a Font

Choose a font that makes your text eye-catching (especially if it's a headline) and readable (especially if it's main body text), as discussed in the figure on the previous page. Unfortunately, you can't use just any font you want. Well, actually you *can* use any font you want, but it won't show up on a viewer's computer unless she's installed the same font on her system. So that handcrafted font you purchased from the small font boutique in Nome Alaska won't do you any good on the Web—unless each person viewing your site has also bought and installed that font. Otherwise, your visitors' web browsers will show your text in a default font, which is usually some version of Times.

Note: For one cutting edge method of using any font you'd *like* there's Cufon: *http://wiki.github.com/sorccu/cufon/about*. This JavaScript-based solution lets you convert one of your fonts into a file that you can then use to replace HTML text. Although the technology behind Cufon is complex, it's quite easy to use.

One solution is to specify the font you'd like to use, as well as a couple of back-up choices. If your viewer's computer has your first-choice font, then that's what she'll see. But when the first font isn't installed, the browser looks down the list until it finds a font that is. The idea is to specify a list of similar-looking fonts that are common to a variety of operating systems, like so:

```
font-family: Arial, Helvetica, sans-serif;
```

In this example, a web browser first looks to see if the Arial font is installed; if it is, then that font is used; if not, the browser next looks for Helvetica, and if that isn't installed, then it finally settles for a generic font—sans-serif. When you list a generic font type (like sans-serif or serif), the viewer's browser gets to choose the actual font. But at least you can define its basic character.

Also, if the font's name is made up of more than one word, you must enclose it in quote marks:

```
font-family: "Times New Roman", Times, serif;
```

Here are some commonly used combinations organized by the type of font, including a generic font type at the end of each list.

Serif fonts

Serif fonts are best for long passages of text, as it's widely believed that the serifs—those tiny "feet" at the end of a letter's main strokes—gently lead the eye from letter to letter, making text easier to read. Examples of serif fonts are Times, Times New Roman, Georgia, and the font in the main body paragraphs of this book.

- "Times New Roman", Times, serif
- Georgia, "Times New Roman", Times, serif

- Baskerville, "Palatino Linotype", Times, serif
- "Hoefler Text", Garamond, Times, serif

Examples of these fonts are in Figure 6-2.

Figure 6-2: *Fonts don't always display the same on Windows (left) and Macs (right). The two systems come with different built-in fonts. In addition, anti-aliasing, which makes onscreen text look smoother, is better on the Mac than on Windows. If you're on Windows and want better looking type on your own computer, you can turn on Microsoft's Clear Type technology:* www.microsoft.com/typography/cleartype.

Sans-serif fonts

Sans-serif fonts are often used for headlines, thanks to their clean and simple appearance. Examples of sans-serif fonts include Arial, Helvetica, Verdana, and Formata, which you can see in the gray boxes in this book.

- Arial, Helvetica, sans-serif
- Verdana, Arial, Helvetica, sans-serif
- Geneva, Arial, Helvetica, sans-serif
- Tahoma, "Lucida Grande", Arial, sans-serif
- "Trebuchet MS", Arial, Helvetica, sans-serif
- "Century Gothic", "Gill Sans", Arial, sans-serif

Examples of these sans-serif fonts are in Figure 6-3.

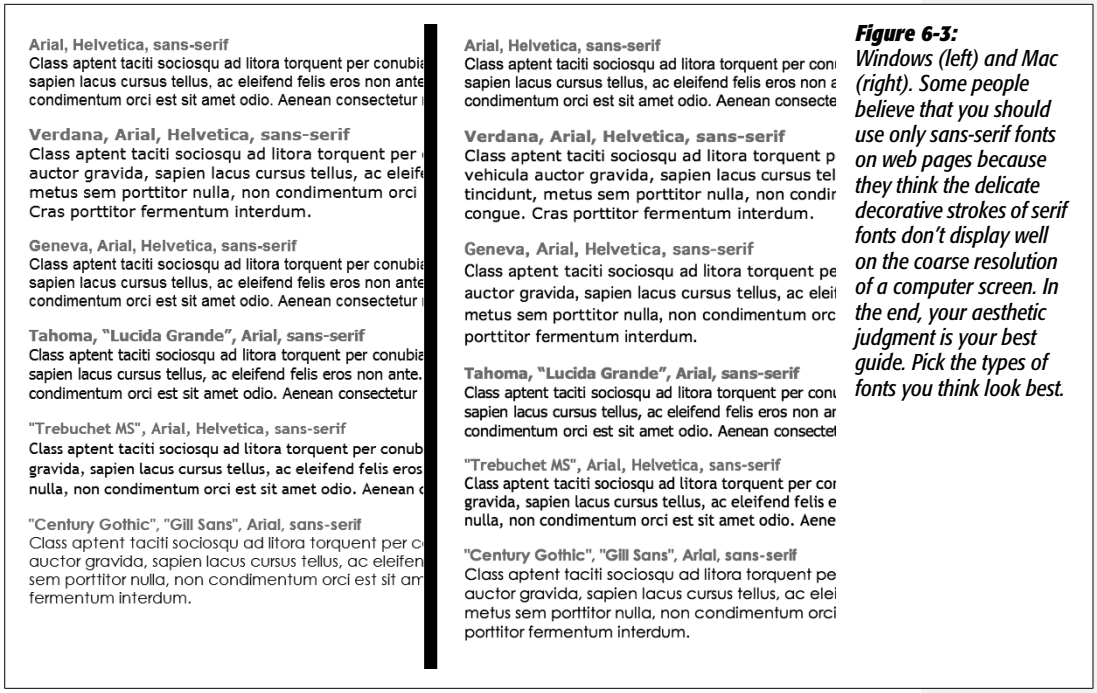


Figure 6-3: *Windows (left) and Mac (right). Some people believe that you should use only sans-serif fonts on web pages because they think the delicate decorative strokes of serif fonts don't display well on the coarse resolution of a computer screen. In the end, your aesthetic judgment is your best guide. Pick the types of fonts you think look best.*

Monospaced and fun fonts

Monospaced fonts are often used to display computer code (like the CSS snippets you see throughout this book). Each letter in a monospaced font is the same width (these were traditionally used on typewriters to line up data into tidy columns).

- "Courier New", Courier, monospace
- "Lucida Console", Monaco, monospace
- "Copperplate Light", "Copperplate Gothic Light", serif
- "Marker Felt", "Comic Sans MS", fantasy

Examples of these font lists are pictured in Figure 6-4.

Additional fonts to consider

There are literally thousands of fonts, and every operating system ships with many more fonts than are listed here. However, here are a few fonts that are very common on both Macs and PCs, so you might want to give them a go:

- Arial Black
- Arial Narrow
- Impact

Figure 6-4: *Windows (left) and Mac (right). Courier is the most common monospaced font, but you're far from limited to it. Lucida Console is very common on Windows and Macs, and Monaco is installed on every Mac.*

Be careful with Arial Black and Impact: They only have a single weight and don't include an italic version. Accordingly, if you use these fonts make sure to set the *font-weight* and the *font-style* (coming up on page 125) to normal. Otherwise, if the text is bolded or italicized, the browser will make its best (read: ugly) guess at what the text should look like.

Tip: You can find a lot more information on which fonts are installed on which systems, including Macs, Windows, and Linux, at *www.codestyle.org/css/font-family*. For another good resource for thinking outside the normal set of web fonts, visit *http://unitinteractive.com/blog/2008/06/26/better-css-font-stacks*.

Adding Color to Text

Black-and-white is great for *Casablanca* and Woody Allen films, but when it comes to text, a nice skyline blue looks much sharper and classier than drab black. Coloring your text with CSS is easy. In fact, you've used the *color* property in a few tutorials already. You have several different ways to define the exact color you want, but they all follow the same basic structure. You type *color:* followed by a color value:

```
color: #3E8988;
```

In this example, the color value is a hexadecimal number indicating a muted shade of teal (more in a moment on what hexadecimal is).

Every graphics program from Fireworks to Photoshop to the GIMP lets you select a color using hexadecimal or RGB values. Also, the color pickers built into Windows and Macs let you use a color wheel or palette to select the perfect color and translate it into a hexadecimal or RGB value.

Note: If your color design sense needs some help, you can find lots of attractive, coordinated collections of colors as well as great color-related resources at *www.colourlovers.com*.

Hexadecimal color notation

The most common color system used by web designers is hexadecimal notation. A color value—like *#6600FF*—actually contains three hexadecimal numbers—in this example 66, 00, FF—each of which specify an amount of red, green, and blue, respectively. As in the RGB color system described next, the final color value is a blend of the amounts of red, green, and blue specified by these numbers.

Tip: You can shorten the hexadecimal numbers to just three characters if each set contains the same two numbers. For example, shorten #6600FF to #60F, or #FFFFFF to #FFF.

RGB

You can also use the RGB—red, green, blue—method familiar in computer graphics programs. The color value consists of three numbers representing either percentages (0–100 percent) or numbers between 0–255 for each hue (red, green, and blue). So when you want to set the text color to white (perhaps to set it off from an ominous dark page background), you can use this:

```
color: rgb(100%,100%,100%);
```

or

```
color: rgb(255,255,255);
```

Note: If all these numbers and digits have your head spinning, then you can always fall back on the classic HTML color keywords. (Just don't expect your site to win any awards for originality.) There are 17 colors—aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, orange, purple, red, silver, teal, white, and yellow. In CSS, you add them to your style like so: *color: fuchsia;*.

Changing Font Size

Varying the size of text on a web page is a great way to create visual interest and direct your visitors' attention to important areas of a page. Headlines in large type sizes capture your attention, while copyright notices displayed in small type subtly recede from prominence.

The *font-size* property sets text size. It's always followed by a unit of measurement, like so:

```
font-size: 1em;
```

The value and unit you specify for the font size (in this example, 1em) determine the size of the text. CSS offers a dizzying selection of sizing units: keywords, ems, exs, pixels, percentages, picas, points, even inches, centimeters, and millimeters.

Units of measurement commonly used with printed materials—picas, points, inches, and so on—don't work well on web pages because you can't predict how they'll look from one monitor to the next. But you may have occasion to use points when creating style sheets for printer-friendly pages, as described on page 399. Only a few of the measurement units—pixels, keywords, ems, and percentages—make sense when you're sizing text for a computer monitor. The rest of this section explains how they work.

Using Pixels

Varying pixel values are the easiest to understand, since they're completely independent from any browser settings. When you specify, for example, a 36-pixel font size for an <h1> tag, the web browser displays text that's 36 pixels tall, period. Web designers cherish pixel values because they provide consistent text sizes across different types of computers and browsers. (Well, not *all* web designers. See the box below for one limitation of pixel sizing.)

To set a pixel value for the *font-size* property, type a number followed by the abbreviation *px*:

```
font-size: 36px;
```

Note: Don't include a space between the number and the unit type. For example, *36px* is correct, but *36 px* isn't.

FREQUENTLY ASKED QUESTION

One Problem with Pixels

It sounds like pixel values give me complete control over text size. Why bother using any other kind of text-sizing value?

Unfortunately, in Internet Explorer 6 (and earlier) for Windows, there's one serious limitation to pixel text sizes: The *viewer* gets no control over text size. Some people—especially those with limited eyesight—use IE's View → Text Size command to pump up text to a size that's easier to read. However, IE *won't* resize any text that's sized with a pixel value. IE adheres to what the designer wants, with no concern for the person behind the wheel of the browser.

Whether or not to use pixel values is something of a holy war in web design circles. Many web developers believe pixel-sized text creates an *accessibility issue*. That is, it potentially limits access to your site for people with disabilities.

Versions of Internet Explorer after IE 6, like most other web browsers currently available, *do* let you resize pixel-sized text. Actually, those browsers are following the trend of *page zooming*—instead of just enlarging text, you actually can zoom into the page, enlarging the entire page: images, text, and all. As IE 8 becomes more popular, you'll be able to use pixel values without worrying about the limitations of IE 6.

Meanwhile, the best you can do is consider your audience. If you're creating a site that's aimed at places where older browsers may still be in use, then use one of the resizable text options like keywords, ems, or percentages. Anywhere you're likely to find a combination of older computers and people with special needs, make accessibility more of a priority.

Using Keywords, Percentages, and Ems

Three ways of sizing text with CSS—keywords, percentages, and ems—work by either adding to or subtracting from the text size already on the viewer's browser screen. In other words, if you don't specify a text size using CSS, a web browser falls back on its pre-programmed settings. In most browsers, text inside a non-header tag is displayed 16 pixels tall—that's called the *base text size*.

Web surfers can adjust their browsers by pumping up or dropping down that base size. In Internet Explorer, for example, you can choose View → Text Size and select an option such as Larger or Smaller to adjust the text size on the screen; in Firefox 2, it's View → Text Size → Increase (or Decrease); in Firefox 3, it's View → Zoom; and in Safari the menu options are View → Make Text Smaller and View → Make Text Bigger.

When you resize text with CSS, the browser takes the base text size (whether it's the original 16 pixels or some other size the viewer ordered) and adjusts it up or down according to your keyword, em, or percentage value.

Keywords

CSS provides seven keywords which let you assign a size that's relative to the base text size: *xx-small, x-small, small, medium, large, x-large,* and *xx-large*. The CSS looks like this:

```
font-size: large;
```

The medium option is the same as the browser's base font size. Each of the other options decreases or increases the size by a different factor. In other words, while each size change is supposed to be a consistent increase or decrease from the previous size, it isn't. Basically *xx-small* is the equivalent of 9 pixels (assuming you haven't adjusted the base font size in your browser); *x-small* is 10 pixels, *small* is 13 pixels, *large* is 18 pixels; *x-large* is 24 pixels, and *xx-large* is 32 pixels.

Keywords are pretty limited: You have only seven choices. When you want more control over the size of your text, turn to one of the other font-sizing options discussed next.

Percentages

Like keywords, percentage values adjust text in relationship to the font size defined by the browser, but they give you much finer control than just *large, x-large,* and so on. Every browser has a pre-programmed base text size, which in most browsers is 16 pixels. You can adjust this base size in your browser's preferences. Whatever setting has been chosen, the base text size for a particular browser is equivalent to 100 percent. In other words, for most browsers, setting the CSS percentage to 100 percent is the same as setting it to 16 pixels.

Say you want to make a particular headline appear two times the size of average text on a page. You simply set the font size to 200 percent, like so:

```
font-size: 200%;
```

Or, when you want the text to be slightly smaller than the default size, use a value like 90 percent to shrink the font size down a bit.

The above examples are pretty straightforward, but here's where it gets a little tricky: Font size is an inherited property (see Chapter 4), meaning that any tags inside of a tag that has a font size specified inherit that font size. So the exact size of 100 percent can change if a tag inherits a font-size value.

For example, at the lower left of Figure 6-5, there's a tag that has its font size set to 200 percent. That's two times the browser's base text size, or 32 pixels. All tags inside that inherit that text size and use it as the basis for calculating their text sizes. In other words, for tags inside that , 100 percent is 32 pixels. So the <h1> tag inside the that has a font size of 100 percent displays at two times the base-text size for the page, or 32 pixels.

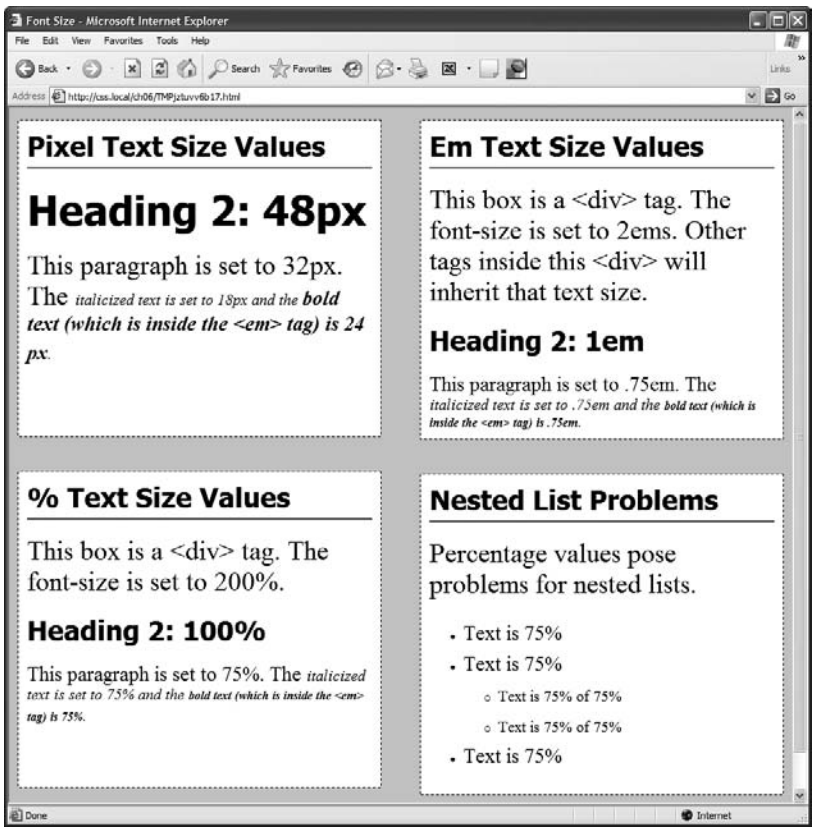


Figure 6-5: *The three most common units for sizing text: pixels, ems, and percentages. Watch out for inherited text sizes when using ems or percentages, as explained on the opposite page. If you notice that some text on a page looks unusually large or small, then check to see if the offending text isn't inside a tag that inherits a font size from another tag.*

Ems

Once you understand percentages, you know everything you need to understand ems. The two work exactly the same way, but many web designers use ems because of its roots in typography.

The word *em* comes from the world of printed (as in paper) typography, where it refers to the size of a capital letter M for a particular font. As it's worked its way into the Web world, an em in CSS no longer means the same thing as in typography. Think of it as referring to the base text size. That is, a value of 1em means the same thing as a value of 100 percent, as described in the previous section. You can even say it the opposite way: A percentage value is just an em multiplied by 100: .5em is 50 percent, .75em is 75 percent, 3em is 300 percent, and so on.

For example, this CSS does the exact same thing as *font-size: 200%;*.

```
font-size: 2em;
```

Note: As with pixel values, there's no space between the number and the word *em.* Also, even if you specify more than one em, you never add an *s* to the end: *2.5em,* never *2.5ems*.

When it comes to inheritance, ems also work just like percentage values. See the upper right of Figure 6-5 for an example. The bottom paragraph is set to .75em, which, since the <p> tag inherits the 2em (32 pixel) setting from the tag, works out to .75 × 32, or 24 pixels. Inside the <p> tag are two other tags that also have a font-size setting of .75em. The innermost tag, a tag, is set to .75em or, in essence, 75 percent of its *inherited* size. There's a lot of math to this one: 32 pixels (inherited from the tag) × 75 (inherited from the <p> tag) × .75 (inherited from the tag) × .75 (the tag's own font size). The result of this brainteaser is a text size of roughly 14 pixels.

Note: Internet Explorer 6 and earlier sometimes has problems displaying text when only em units are used. You have two ways around this: Either stick with percentage values or set the font size for the body of the page to a percentage and then use em units to size other text. For some mysterious reason, this trick seems to fix the bugs in IE 6.

WORKAROUND WORKSHOP

Untangling the Nest

Inherited font-size values can cause problems for nested lists. (See the bottom-right square of Figure 6-5.) If you create a style like *ul { font-size: 75% },* then a nested list, which is a <ul> tag inside of another <ul> tag, is set to 75 percent of 75 percent–making the text in the nested list smaller than the rest of the list.

To get around this conundrum, create an additional descendent selector style (page 57) like this: *ul ul {font-size: 100%}.* This style sets any ul tag inside of a ul to 100 percent: in other words, 100 percent of the surrounding ul tag's font size. In this example, it keeps any nested lists to 75 percent.

Tip: You can make type stand out on a page in many different ways. Making certain words larger than others or making some text darker, lighter, or brighter visually sets them apart from the surrounding text. Contrast is one of the most important principles of good graphic design; it can help highlight important messages, guide a reader's eye around a page, and generally make understanding a page easier. For a quick overview of typographic contrast, check out this page: *www.creativepro.com/story/feature/19877.html*.

Formatting Words and Letters

Although you'll spend a lot of time fine-tuning the color, size, and fonts of the text on your web pages, CSS also lets you apply other common text-formatting properties (like bold and italics) as well as some less common ones (like small caps and letter spacing).

Note: CSS lets you combine multiple text properties, but don't get carried away. Too much busy formatting makes your page harder to read. Worst of all, your hard work loses its impact.

Italicizing and Bolding

Web browsers display type inside the and <i> tags in *italicized* type and text inside the , <b>, <th> (table header), and header tags (<h1>, and so on) in bold type. But you can control these settings yourself—either turn off bold for a headline or italicize text that normally isn't—using the *font-style* and *font-weight* properties.

To italicize text, add this to a style:

```
font-style: italic;
```

Alternatively, you can make sure text *isn't* italicized, like so:

```
font-style: normal;
```

Note: The *font-style* property actually has a third option–*oblique*–which works identically to *italic*.

The *font-weight* property lets you make text bold or not. In fact, according to the rules of CSS, you can actually specify nine numeric values (100–900) to choose subtle gradations of boldness (from super-extra-heavy [900] to nearly-invisible-light [100]). Of course, the fonts you use must have nine different weights for these values to have any visible effect for your website's visitors. And since there aren't any fonts that work this way with web browsers yet, you have far fewer options for this property to worry about. So, for now, to make text bold:

```
font-weight: bold;
```

And to make text un-bold:

```
font-weight: normal;
```

Note: Since headlines are already displayed as bold type, you may want to find another way of highlighting a word or words that are strongly emphasized or bolded inside a headline. Here's one way:

```
h1 strong { color: #3399FF; }
```

This descendent selector changes the color of any tags (usually displayed as bold) that appear inside a <h1> tag.

Capitalizing

Capitalizing text is pretty easy—just hit the caps lock key and start typing, right? But what if you want to capitalize every heading on a page, and the text you've copied and pasted from a Word document is lowercase? Rather than retyping the headline, turn to the CSS *text-transform* property. With it, you can make text all uppercase, all lowercase, or even capitalize the first letter of each word (for titles and headlines). Here's an example:

```
text-transform: uppercase;
```

For the other two options, just use *lowercase* or *capitalize*.

Because this property is inherited, a tag that's nested inside a tag with *text-transform* applied to it gets the same uppercase, lowercase, or capitalized value. To tell CSS *not* to change the case of text, use the *none* value:

```
text-transform: none;
```

Small caps

For more typographic sophistication, you can also turn to the *font-variant* property, which lets you set type as small-caps. In small cap style, lowercase letters appear as slightly downsized capital letters, like so: POMP AND CIRCUMSTANCE. While difficult to read for long stretches of text, small caps lend your page an old-world, bookish gravitas when used on headlines and captions. To create small-cap text:

```
font-variant: small-caps;
```

Decorating

CSS also provides the *text-decoration* property to add various enhancements to text. With it, you can add lines over, under, or through the text (see Figure 6-6), or for real giggles you can make the text blink like a No Vacancy sign. Use the *text-decoration* property by adding one or more of the following keywords: *underline, overline, line-through,* or *blink*. For example, to underline text:

```
text-decoration: underline;
```

You can also combine multiple keywords for multiple effects. Here's how to add a line over and under some text:

```
text-decoration: underline overline;
```

But just because you *can* add these not-so-decorative decorations to text, doesn't mean you should. For one thing, anyone who's used the Web for any length of time instinctively associates any underlined text with a link and tries to click it. So it's not a good idea to underline words that aren't part of a link. And *blink* is like a neon sign flashing "Amateur! Amateur! Amateur!" (On top of that most browsers don't make text blink, even if you ask for it.)

Note: You can get a similar effect to underlining and overlining by adding a border to the bottom or top of an element (see page 160). The big advantage of borders is that you can control their placement, size, and color to create a more attractive design that doesn't look like a link.

The *overline* option simply draws a line above text, while *line-through* draws a line right through the center of text. Some designers use this strike-through effect to indicate an edit on a page where text has been removed from the original manuscript. Coupled with the *a:visited* selector, you can also create a cool effect where previously visited links are crossed out like a shopping list.

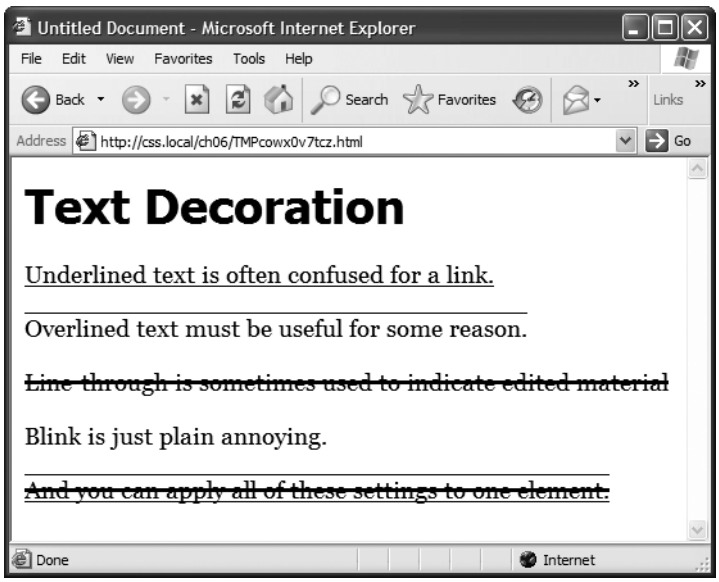


Figure 6-6: *The text-decoration property in action. If this is what the people at CSS headquarters call "decorations," you'd best not ask for their design help on your next home remodel.*

Finally, you can turn off all decorations by using the *none* keyword like this:

```
text-decoration: none;
```

Why do you need a text-decoration property that removes decorations? The most common example is removing the line that appears under a link. (See page 229.)

Letter and Word Spacing

Another way to make text stand out from the crowd is to adjust the space that appears between letters or words (see Figure 6-7). Reducing the space between letters using the CSS *letter-spacing* property can tighten up headlines, making them seem even bolder and heavier while fitting more letters on a single line. Conversely, increasing the space can give headlines a calmer, more majestic quality. To reduce the space between letters, you use a negative value like this:

```
letter-spacing: -1px;
```

A positive value adds space between letters:

```
letter-spacing: 10px;
```

Likewise, you can open up space (or remove space) between words using the *word-spacing* property. This property makes the space wider (or narrower) without actually affecting the words themselves:

```
word-spacing: 2px;
```

With either of these properties, you can use any type of measurement you'd use for text sizing—pixels, ems, percentages—with either positive or negative values.

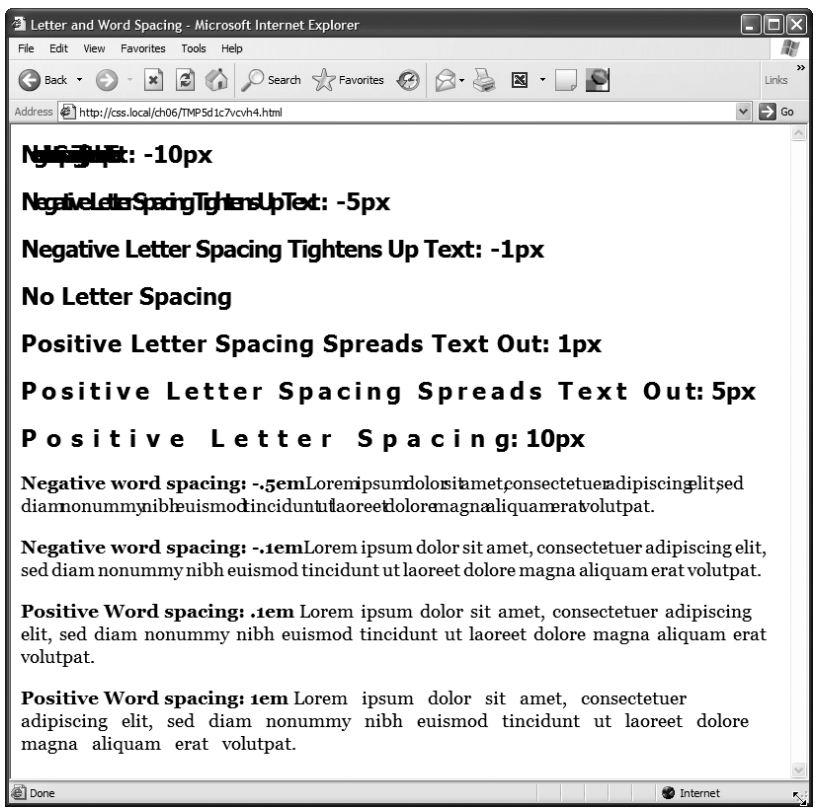


Figure 6-7: *Use word and letter spacing judiciously. Too much or too little of either can make text difficult if not impossible to read.*

Unless you're going for some really far-out design effect—in other words, totally unreadable text—keep your values small. Too high a negative value, and letters and words overlap. To keep the message of your site clear and legible, use both letter and word spacing with care.

Formatting Entire Paragraphs

Some CSS properties apply to chunks of text rather than individual words. You can use the properties in this section on complete paragraphs, headlines, and so on.

Adjusting the Space Between Lines

In addition to changing the space between words and letters, CSS lets you adjust the space between lines of text using the *line-height* property. The bigger the line height, the more space that appears between each line of text (see Figure 6-8).

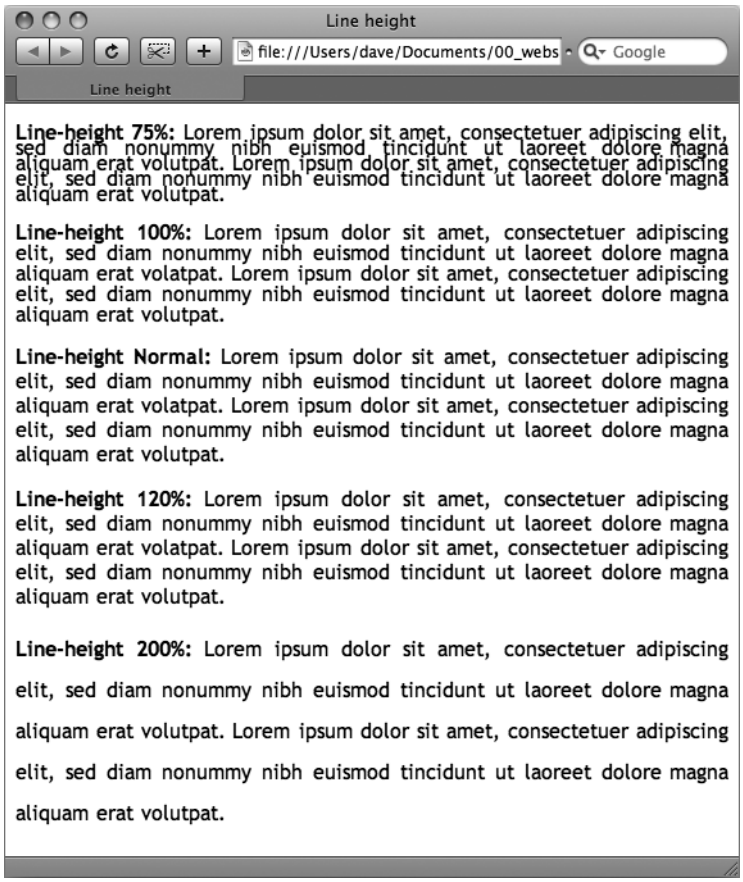


Figure 6-8:
The line-height property lets you spread a paragraph's lines apart or bring them closer together. The normal setting is equivalent to 120 percent, so a smaller percentage tightens up the lines (top), while a larger percentage pushes them apart (bottom).

Line spacing by pixel, em, or percentage

Just as with the *font-size* property, you can use pixels, ems, or percentages to set the size of line height:

```
line-height: 150%;
```

In general, percentages or ems are better than pixels, because they change according to, and along with, the text's *font-size* property. If you set the line height to 10 pixels and then later adjust the font size to something much larger (like 36 pixels), because the line height remains at 10 pixels, your lines then overlap. However, using a percentage (150 percent, say) means the *line-height* spacing adjusts proportionally whenever you change the *font-size* value.

The normal *line-height* setting for a browser is 120 percent. So, when you want to tighten up the line spacing, use a value less than 120 percent. To spread lines apart, use a value greater than 120 percent.

Note: To determine the amount of space that appears between lines of text, a web browser subtracts the font size from the line height. The result–called *leading*–is the amount of space between lines in a paragraph. Say the font size is 12 pixels, and the line height (set to 150 percent) works out to 18 pixels. 18 minus 12 equals 6 pixels, so the browser adds 6 pixels of space between each line.

Line spacing by number

CSS offers one other measurement method specific to line height, which is simply a number. You write it like this:

```
line-height: 1.5;
```

There's no unit (like em or px) after this value. The browser multiplies this number by the font size to determine the line height. So if the text is 1em and the line-height value is 1.5, then the calculated line height is 1.5em. In most cases, the effect is no different from specifying a value of 1.5em or 150 percent. But sometimes this multiplication factor comes in handy, especially since nested tags inherit the line-height value of their parents.

For example, say you set the *line-height* property of the <body> tag to 150 percent. All tags inside the page would inherit that value. However, it's not the percentage that's inherited; it's the *calculated* line height. So, say the font size for the page is set to 10 pixels; 150 percent of 10 is 15 pixels. Every tag would inherit a line height of 15 pixels, not 150 percent. So if you happened to have a paragraph with large, 36 pixel text, then its line height—15 pixels—would be much smaller than the text, making the lines squish together in a hard-to-read mess.

In this example, instead of using a line-height of 150 percent applied to the <body> tag, you could have all tags share the same basic proportional line-height by setting the line-height to 1.5. Every tag, instead of inheriting a precise pixel value for line height, simply multiplies its font size by 1.5. So in the above example of a paragraph with 36-pixel text, the line height would be 1.5×36 or 54 pixels.

Aligning Text

One of the quickest ways to change the look of a web page is with paragraph alignment. Using the *text-align* property, you can center a paragraph on a page, align the text along its left or right edge, or justify both left and right edges (like the paragraphs in this book). Normally, text on a page is left aligned, but you may want to center headlines to give them a formal look. Languages that read from right to left, like Hebrew and Arabic, require right-alignment. To change the alignment of text, use any of the following keywords—*left, right, justify, center:*

```
text-align: center;
```

Justified text looks great on a printed page—mainly because the fine resolution possible with printing allows for small adjustments in spacing and because most programs used to layout printed material can hyphenate long words (thus attempting to equally distribute the number of characters per line). This prevents large, unsightly gaps or rivers of white space flowing through the paragraphs. Web pages are limited to much coarser spacing because of the generally low resolution of monitors and because web browsers don't know how to hyphenate long words. So when you use the *justify* option, the space between words can vary significantly from line to line, making the text harder to read. When you want to use the *justify* option on your web pages, test it thoroughly to make sure the text is attractive and readable.

Indenting the First Line and Removing Margins

In many books, the first line of each paragraph is indented. This first-line indent marks the beginning of a paragraph when there are no spaces separating paragraphs. On the Web, however, paragraphs don't have indents but are instead separated by a bit of space—like the paragraphs in this book.

If you have a hankering to make your web pages look less like other web pages and more like a handsomely printed book, take advantage of the CSS *text-indent* and *margin* properties. With them, you can add a first-line indent and remove (or increase) the margins that appear at the beginning and ends of paragraphs.

First-line indents

You can use pixel and em values to set the first-line indent like this:

```
text-indent: 25px;
```

or

```
text-indent: 5em;
```

POWER USERS' CLINIC

Shorthand Method for Text Formatting

Writing one text property after another gets tiring, especially when you want to use several different text properties at once. Fortunately, CSS offers a shorthand property called *font,* which lets you combine the following properties into a single line: *font-style* (page 125), *font-variant* (page 125), *font-weight* (page 124), *font-size* (page 119), *line-height* (page 128) and *font-family* (page 113). For example, the declaration *font: italic bold small-caps 18px/150% Arial, Helvetica, sans-serif;* creates bold, italicized type in small caps, using 18px Arial (or Helvetica or sans-serif) with a line height of 150 percent. Keep these rules in mind:

- You don't have to include every one of these properties, but you *must* include the font size and font family: *font: 1.5em Georgia, Times, serif;*.
- Use a single space between each property value. You use a comma only to separate fonts in a list like this: *Arial, Helvetica, sans-serif*.
- When specifying the line height, add a slash after the font size followed by the line-height value, like this: *1.5em/150% or 24px/37px*.
- The last two properties must be *font-size* (or *font-size/line-height*) followed by *font-family*, in that order. All the other properties may be written in any order. For example both *font: italic bold small-caps 1.5em Arial;* and *font: bold small-caps italic 1.5em Arial;* are the same.

Finally, omitting a value from the list is the same as setting that value to normal. Say you created a <p> tag style that formatted all paragraphs in bold, italics, and small caps with a line height of 2000 percent (not that you'd actually *do* that). If you then created a class style named, say, *.specialParagraph* with the following font declaration *font: 1.5em Arial;* and applied it to one paragraph on the page, then that paragraph would *not* inherit the italics, bold, small caps, or line height. Omitting those four values in the *.specialParagraph* style is the same as writing this: *font: normal normal normal 1.5em/normal Arial/;*.

A pixel value is an absolute measurement—a precise number of pixels—while an em value specifies the number of letters (based on the current font size) you want to indent.

Tip: You can use negative text-indent values to create what's called a *hanging indent,* where the first line starts further to the left than the other lines in the paragraph. (Think of it as "hanging" off the left edge.)

You can also use a percentage value, but with the *text-indent* property, percentages take on a different meaning than you've seen before. In this case, percentages aren't related to the font size; they're related to the width of the element containing the paragraph. For example, if the text-indent is set to 50 percent, and a paragraph spans the entire width of the web browser window, then the first line of the paragraph starts half the way across the screen. If you resize the window, both the width of the paragraph and its indent change. (You'll learn more about percentages and how they work with the width of elements on page 121.)

Controlling margins between paragraphs

Many designers hate the space that every browser throws in between paragraphs. Before CSS, there was nothing you could do about it. Fortunately, you can now tap into the *margin-top* and *margin-bottom* properties to remove (or, if you wish, expand) that gap. To totally eliminate a top and bottom margin, write this:

```
margin-top: 0;
margin-bottom: 0;
```

To eliminate the gaps between *all* paragraphs on a page, create a style like this:

```
p {
  margin-top: 0;
  margin-bottom: 0;
}
```

As with *text-indent*, you can use pixel or em values to set the value of the margins. You can also use percentages, but as with *text-indent*, the percentage is related to the *width* of the paragraph's containing element. Because it's confusing to calculate the space above and below a paragraph based on its width, it's easier to stick with either em or pixel values.

Note: Because not all browsers treat the top and bottom margin of headlines and paragraphs consistently, it's often a good idea to simply *zero out* (that is, eliminate) all margins at the beginning of a style sheet. To see how this works, turn to page 102.

For a special effect, you can assign a *negative* value to a top or bottom margin. For example a –10px top margin moves the paragraph up 10 pixels, perhaps even visually overlapping the page element above it. (See step 4 on page 147 of the tutorial for an example.)

Formatting the First Letter or First Line of a Paragraph

CSS also provides a way of formatting just a part of a paragraph using the *:first-letter* and *:first-line* pseudo-elements (see Figure 6-9). Technically, these aren't CSS properties, but types of selectors that determine what part of a paragraph CSS properties should apply to. With the *:first-letter* pseudo-element, you can create an initial capital letter to simulate the look of a hand-lettered manuscript. To make the first letter of each paragraph bold and red you could write this style:

```
p:first-letter {
  font-weight: bold;
  color: red;
}
```

To be more selective and format just the first letter of a particular paragraph, you can apply a class style to the paragraph—*.intro*, for example:

```
<p class="intro">Text for the introductory paragaph goes here...</p>
```

Then you could create a style with a name like this: *.intro:first-letter*.

The *:first-line* pseudo-element formats the initial line of a paragraph. You can apply this to any block of text like a heading (*h2:first-line*) or paragraph (*p:first-line*). As with *:first-letter*, you can apply a class to just one paragraph and format only the first line of that paragraph. Say you wanted to capitalize every letter in the first line of the first paragraph of a page. Apply a class to the HTML of the first paragraph—<*p class="intro"*>—and then create a style like this:

```
.intro:first-line { text-transform: uppercase; }
```

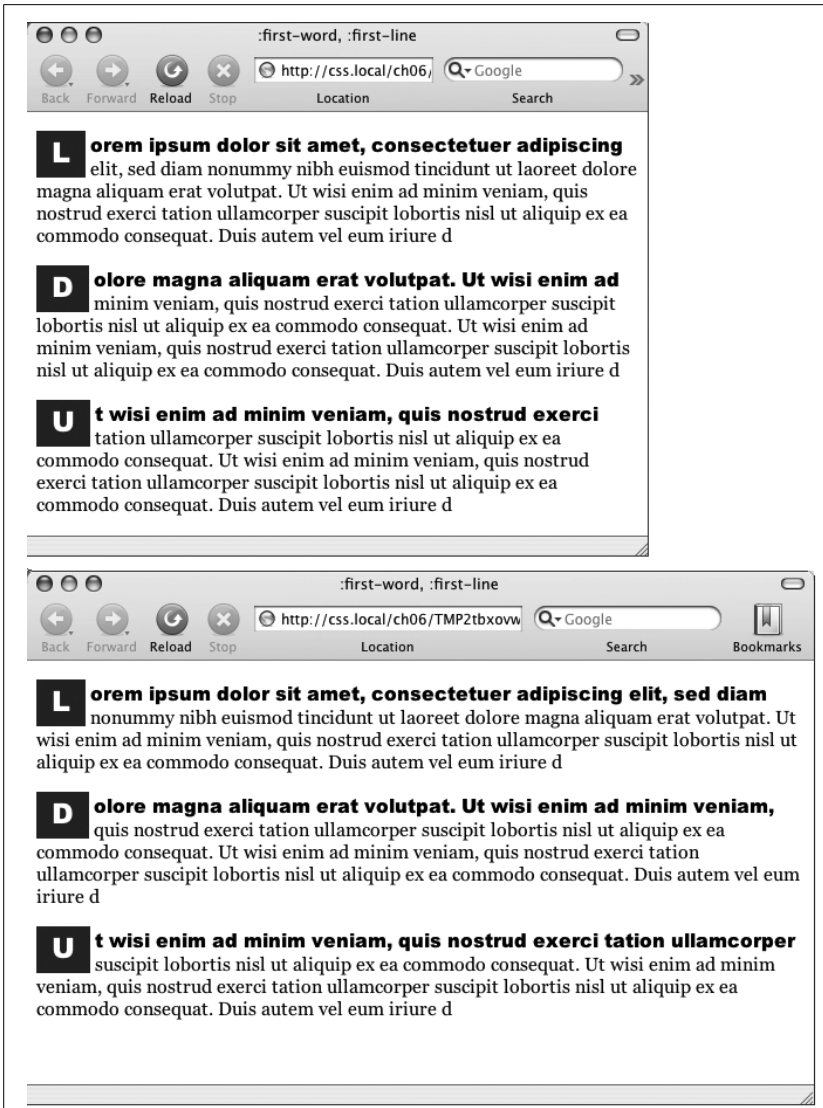


Figure 6-9: *The* :first-letter *pseudo-element formats the first letter of the styled element, like the "initial caps" to the left. The* :first-line *selector, on the other hand, styles the first line of a paragraph. Even if your guest resizes the window (bottom), the browser still styles every word that appears on a paragraph's first line.*

Note: For some strange reason, the Safari web browser doesn't understand the *text-transform* property (page 125) when it's used with the *:first-line* pseudo-element. In other words, you can't use CSS to capitalize the letters of a paragraph's first line in Safari.

Styling Lists

The <ul> and <ol> tags create bulleted and numbered lists, like lists of related items or numbered steps. But you don't always want to settle for the way web browsers automatically format those lists. You may want to swap in a more attractive bullet, use letters instead of numbers, or even completely eliminate the bullets or numbers.

Types of Lists

Most web browsers display unordered lists (<ul> tags) using round bullets, and numbered lists (<ol> tags) using…well…numbers. With CSS, you can choose from among three types of bullets—*disc* (a solid round bullet), *circle* (a hollow round bullet), or *square* (a solid square). There are also six different numbering schemes—*decimal, decimal-leading-zero, upper-alpha, lower-alpha, upper-roman,* or *lower-roman* (see Figure 6-10). You select all these options using the *list-style-type* property, like so:

```
list-style-type: square;
```

or

```
list-style-type: upper-alpha;
```

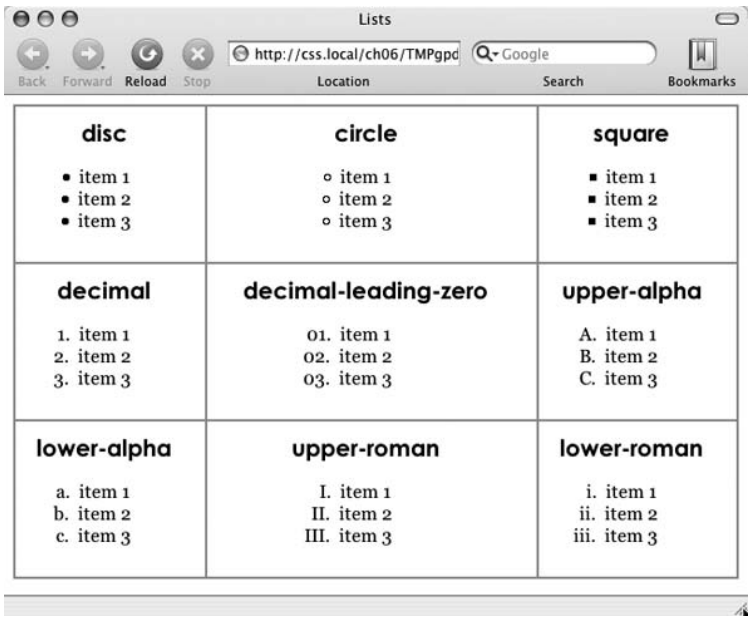


Figure 6-10: *Many web browsers display the* decimal *and* decimal-leading-zero *options identically. Firefox and other Mozilla-based browsers like Camino (pictured here) correctly display the* decimal-leading-zero *setting by adding a 0 before single digit-numbers–01, for example. Internet Explorer 6 and 7, however, don't recognize either the* decimal-leading-zero *or* lower-greek *options.*

Note: If you feel like rushing a fraternity or sorority, you can also replace numbers with Greek letters–α, β, γ–using the *lower-greek* option.

Most of the time, you use this property on a style that's formatting an <ol> or <ul> tag. Typical examples include an *ol* or *ul* tag style—*ul { list-style-type: square; }*—or a class you're applying to one of those tags. However, you can also apply the property to an individual list item (<li> tag) as well. You can even apply different types of bullet styles to items within the same list. For example, you can create a style for a <ul> tag that sets the bullets to *square*, but then create a class named *.circle* that changes the bullet type to *circle*, like this:

```
.circle { list-style-type: circle; }
```

You can then apply the class to every other item in the list to create an alternating pattern of square and circular bullets:

```
<ul>
<li>Item 1</li>
<li class="circle">Item 2</li>
<li>Item 3</li>
<li class="circle">Item 4</li>
</ul>
```

At times you'll want to completely hide bullets, like when you'd rather use your own graphic bullets (see page 137). Also, when a site's navigation bar is a list of links, you can use an <ul> list, but hide its bullets (see the example on page 235). To turn off the bullets, use the keyword *none:*

```
list-style-type: none;
```

Positioning Bullets and Numbers

Web browsers usually display bullets or numbers hanging to the left of the list item's text (Figure 6-11, left). With CSS, you can control the position of the bullet (somewhat) using the *list-style-position* property. You can either have the bullet appear *outside* of the text (the way browsers normally display bullets) or *inside* the text block itself (Figure 6-11, right):

```
list-style-position: outside;
```

or

```
list-style-position: inside;
```

Tip: You can adjust the space between the bullet and its text–increase or decrease that gap–by using the *padding-left* property (see page 153). To use it, you create a style that applies to the <li> tags. This technique works only if you set the *list-style-position* property to the *outside* option (or don't use list-style-position at all).

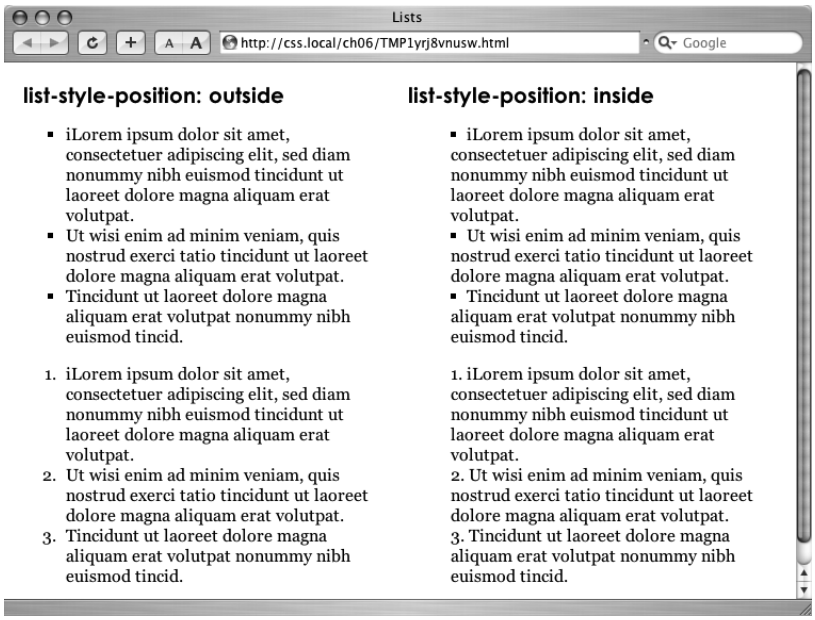


Figure 6-11: *Using the* list-style-position *property, you can control the position of bullets and numbers in a list. The* outside *option (left) emphasizes the "listness" of your list. Use the* inside *option (right) if you need to maximize the width of your list.*

In addition, if you don't like how web browsers indent a list from the left edge, then you can remove that space by setting both the *margin-left* and *padding-left* properties to 0 for the list. To remove the indent from all lists, you could create this group selector:

```
ul, ol {
  padding-left: 0;
  margin-left: 0;
}
```

Or, you could create a class style with those properties and apply it to a particular <ul> or <ol> tag. The reason you need to set both the padding and margin properties is that some browsers use padding (Firefox, Mozilla, Safari) and some use margin (Internet Explorer) to control the indent. (You'll learn more about the margin and padding properties in the next chapter.)

Browsers normally display one bulleted item directly above another, but you can add space between list items using the *margin-top* or *margin-bottom* properties on the particular list items. These properties work for spacing list items exactly the same way they work for spacing paragraphs, as explained on page 132. You just need to make sure that the style applies to the <li> tags by creating a class style and applying it individually to each <li> tag. Or, better yet, create an <li> tag style or descendent selector. The style should *not* apply to the <ul> or <ol> tag. Adding margins to the top or bottom of those tags simply increases the space between the entire list and the paragraphs above or below it—not the space between each item in the list.

Graphic Bullets

If you're not happy with squares and circles for your bullets, create your own. Using an image-editing program like Photoshop or Fireworks, you can quickly create colorful and interesting bullets. Clip art collections and most symbol fonts (like Webdings) provide great inspiration.

Tip: You can also find many examples of bullets on the Web. Go to *www.stylegala.com/features/bulletmadness/* to find over 200 free bullet icons, or check out this page listing loads of sites with free icons and bullets: *www.cssjuice.com/38-free-icon-checkpoints/*.

The CSS *list-style-image* property lets you specify a path to a graphic on your site, much as you'd specify a file when adding an image to a page using the *src* attribute of the HTML <img> tag. You use the property like this:

```
list-style-image: url(images/bullet.gif);
```

The term *url* and the parentheses are required. The part inside the parentheses—*images/bullet.gif* in this example—is the path to the graphic. Notice that, unlike HTML, you don't use quotation marks around the path.

FREQUENTLY ASKED QUESTION

Customizing List Bullets and Numbers

I'd like the numbers in my numbered lists to be bold and red instead of boring old black. How do I customize bullets and numbers?

CSS gives you a few ways to customize the markers that appear before list items. For bullets, you can use your own graphics, as described above. You have two other techniques available: one that's labor intensive, but works on most browsers, and one that's super geeky, cutting edge, and doesn't work on Internet Explorer 7 or earlier.

First, the labor-intensive way. Say you want the numbers in an ordered list to be red and bold, but the text to be plain, unbolded black. Create a style that applies to the list–like a class style you apply to the <ol> or <li> tags–with a text color of red and the font weight set to bold. At this point, everything in the list–text included–is red and bold.

Next, create a class style–*.regularList,* for example–that sets the font color to black and font weight to normal (that is, not bold). Then (and this is the tedious part), wrap a tag around the text in each list item and apply the class style to it. For example: *
Item 1
*. Now the bullets are bold and red and the text is black and normal. Unfortunately, you have to add that to *every* list item!

The cool, "I'm so CSS-savvy," way is to use what's called *generated content.* Basically, generated content is just stuff that isn't actually typed on the page but is added by the web browser when it displays the page. A good example is bullets themselves. You don't type bullet characters when you create a list; the browser adds them for you. With CSS, you can have a browser add content, and even style that content, before each <li> tag. You'll learn about generated content on page 452.

Note: When specifying a graphic in an *external* style sheet, the path to the image is relative to the style sheet file, not the web page. You'll learn more about how this works in the box on page 192, as you start to use images with CSS.

While the *list-style-image* property lets you use a graphic for a bullet, it doesn't provide any control over its placement. The bullet may appear too far above or below the line, requiring you to tweak the bullet graphic until you get it just right. A better approach—one you'll learn in Chapter 8—is to use the *background-image* property. That property lets you very accurately place a graphic for your bulleted lists.

Note: As with the *font* property (see the box on page 131), there's a shorthand method of specifying list properties. The *list-style* property can include a value for each of the other list properties–*list-style-image, list-style-position,* and *list-style-type*. For example, *ul* { *list-style: circle inside;* } would format unordered lists with the hollow circle bullet on the inside position. When you include both a style type and style image–*list-style: circle url(images/bullet.gif) inside;*–web browsers use the style type circle in this example–if the graphic can't be found.

Tutorial: Text Formatting in Action

In this tutorial, you'll gussy up headlines, lists, and paragraphs of text using CSS's powerful formatting options.

To get started, you need to download the tutorial files located on this book's companion website at *www.sawmac.com/css2e/*. Click the tutorial link and download the files. All of the files are enclosed in a ZIP archive, so you'll need to unzip them first. (Go to the website for detailed instructions on unzipping the files.) The files for this tutorial are contained inside the folder named *06*.

Setting Up the Page

First, you'll get your style sheet started and add styles to format the body text.

1. **Launch your web browser and open the file *06* → *text.html* (see Figure 6-12).**

   It's not much to look at—just a collection of headlines, paragraphs and a lone bulleted list—but you'll turn it into something far better looking.

2. **Open the file *text.html* in your favorite text editor.**

   Start by adding an internal style sheet to this file. (Yes, external style sheets are better, but it's perfectly OK to start your design with an internal sheet. See the box on page 70.)

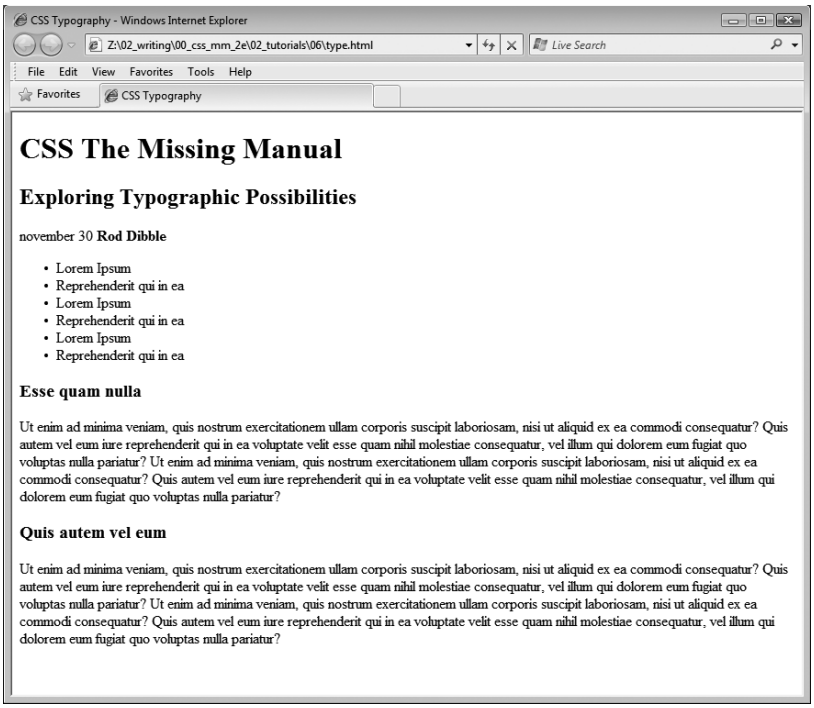


Figure 6-12: *The page begins with nothing but basic, drab, HTML.*

3. **In the <head> of the web page, click directly after the <title> tag. Hit Enter (Return), and then type *<style type="text/css">*. Press Enter twice and type *</style>*.**

   Now that the basic style tags are in place, you'll add the CSS reset discussed on page 192. Instead of typing it all out, you'll just copy and paste the CSS from an external style sheet.

4. **Open the file *reset.css*. Copy all of the code from that file and paste it between the opening and closing <style> tags you added in the previous step.**

   If you preview the *text.html* file in a web browser now, you'll see that the text looks nearly the same—in other words, all of the basic HTML formatting the browser applied has been removed, so you can start with a clean slate.

   Next, you'll create a style that defines some general properties for all text on the page.

5. **Press Enter and type *body {* .**

   This is a basic tag selector that applies to the <body> tag. As discussed in Chapter 4, other tags inherit the properties of this tag. You can set up some basic text characteristics like font, color, and font size for later tags to use as their starting point.

6. **Press Enter again, and then add the following three properties:**

```
color: #002D4B;
font-family: Arial, Helvetica, sans-serif;
font-size: 62.5%;
```

These three instructions set the color of the text to a dark blue, the font to Arial (or one of 2 others depending on which font is installed—see page 115), and the font size to 62.5 percent.

Note: Why set the page's base font to 62.5 percent? It just so happens that 62.5 percent times 16 pixels (the normal size of text in most web browsers) equals 10 pixels. With 10 pixels as a starting point, it's easy to compute what other text sizes will look like on the screen. For example, 1.5em would be 1.5 × 10 or 15 pixels. 2em is 20 pixels, and so on–easy multiples of ten. For more on this interesting discovery and more font-sizing strategies, visit *http://clagnut.com/blog/348/*.

---

7. **Complete this style by pressing Enter, and typing a closing bracket to mark the end of the style.**

At this point, your completed style should look like this:

```
body {
  color: #002D4B;
  font-family: Arial, Helvetica, sans-serif;
  font-size: 62.5%;
}
```

Your style sheet is complete.

8. **Save the page, and open it in a web browser to preview your work.**

The text on the page changes color and font…it also gets really small. Don't worry, that's the 62.5 percent font size you set in step 6. That's just the starting point for all text, and you'll easily increase the size of text by defining em sizes for the other tags.

Formatting the Headings and Paragraphs

Now that the basic text formatting is done, it's time to refine the presentation of the headlines and paragraphs.

1. **Return to your text editor and the *text.html* file. Click at the end of the closing brace of the body tag selector in the internal style sheet, press Enter (Return) to create a new line, and then type *#main h1 {* .**

This is a *descendent selector* (page 57). It provides more specific direction than a basic HTML tag selector. In this case, the selector tells the web browser "apply the following formatting to any <h1> tag inside another tag with the ID name *main.*" If you look at the page's HTML, you'll see that there's a tag with an ID of main ( ). As you'll learn later, it's very common in

CSS-based designs to group HTML tags inside of tags. You can then position individual div tags to create columns and other complex page layouts. It's also common to use descendent selectors like this one to pinpoint your formatting choices by affecting just the tags in certain areas of the page.

2. **Hit Enter, and then type these three CSS properties:**

```
color: #FF6600;
font-family: "Arial Black", Arial, Helvetica, sans-serif;
font-size: 4em;
```

You've just changed the color of the <h1> tag as well as the font. You've also set the font size to 4em, which for most browsers (unless the visitor has tweaked his browser's font settings) comes out to 40 pixels tall. That's all thanks to the 62.5 percent size you set for the body back at step 6. That smooth move made the base font size 10 pixels tall, so 4×10 comes out to 40 pixels.

3. **Finally, complete this style by hitting Enter and typing the closing brace.**

The completed style should look like this:

```
#main h1 {
  color: #FF6600;
  font-family: "Arial Black", Arial, Helvetica, sans-serif;
  font-size: 4em;
}
```

4. **Save the file, and preview it in a web browser.**

Next, spruce up the appearance of the other headings and paragraphs.

5. **Return to your text editor and the *text.html* file. Click after the closing brace of the *h1* tag , hit Enter, and add the following two styles:**

```
#main h2 {
  font: bold 3.5em "Hoefler Text", Garamond, Times, serif;
  border-bottom: 1px solid #002D4B;
  margin-top: 25px;
}
```

Here you have another descendent selector that only applies to <h2> tags inside another tag with the ID main (you're probably getting the hang of these now). The font property used here is shorthand that combines the more long-winded *font-weight, font-size,* and *font-family* (see the box on page 131). In other words, this one line makes the headline bold, 3.5ems tall, and specifies a font.

In addition, this style adds a decorative border below the headline and a bit of space between the headline and the tag above it (in other words, it adds some space between the "CSS The Missing Manual" and the "Exploring Typographic Possibilities" headlines). You'll read more about borders on page 160, and margins in the next chapter.

Time to tackle more headlines.

6. **Add another style below the one you added in the last step:**

```
#main h3 {
  color: #F60;
  font-size: 1.9em;
  font-weight: bold;
  text-transform: uppercase;
  margin-top: 25px;
  margin-bottom: 10px;
}
```

This style dishes out some of the usual formatting—color, size, boldness—and also uses the *text-transform* property (page 125) to make all of the text in the <h3> headlines uppercase. Finally, it adds a bit of space above and below the headlines using the *margin* properties.

Next, you'll improve the look of the paragraphs.

7. **Add one more style to the page:**

```
#main p {
  font-size: 1.5em;
  line-height: 150%;
  margin-left: 150px;
  margin-right: 50px;
  margin-bottom: 10px;
}
```

This style introduces the *line-height* property, which sets the spacing between lines. A percentage of 150 adds a little more space between lines in a paragraph than you'd normally see in a web browser. This extra breathing room gives the text a lighter, airier quality and makes the sentences a little easier to read (but only if you speak Latin).

The style also increases the font size to 1.5em (15 pixels for most browsers) and indents the paragraph from the left and right edges of the page. You'll notice that there's a lot of typing going on for the margin properties—fortunately, as you'll read on page 155 in the next chapter, there's a margin shortcut property that requires much less typing to control the four margins of an element.

Time to try out a more advanced selector type

8. **Add the following style to your style sheet:**

```
#main p:first-line {
  font-weight: bold;
  color: #999;
}
```

The *:first-line* pseudo-element (page 62) affects just the first line of a paragraph. In this case, just the first line of text for each of the paragraphs inside the main div will be bold and gray.

9. **Save the page and open it in a web browser to preview your work.**

   At this point, the page should look like Figure 6-13.

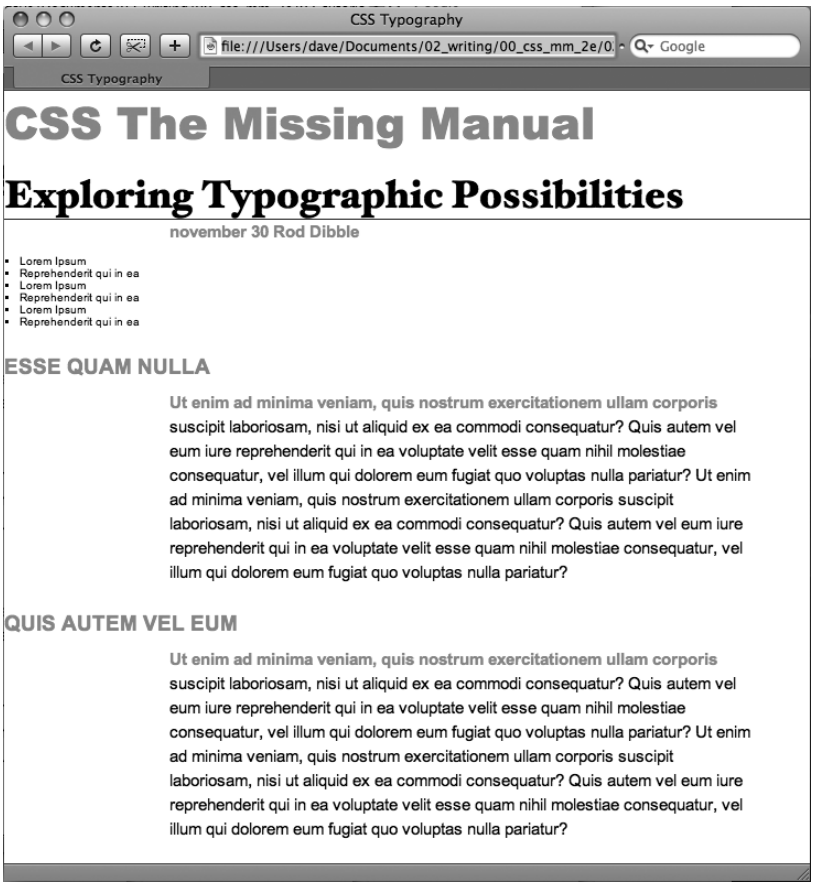


Figure 6-13: *The page is starting to come together. The headlines, paragraphs, and basic text settings are in place. Depending on which fonts you have on your computer, you may notice slight differences between your design and the one pictured here. Specifically, if you're on Windows, the "Exploring Typographic Possibilities" headline will use either Garamond or Arial. This screenshot, taken on a Mac, uses the "Hoefler Text" font family specified in step 5 on page 141.*

Formatting Lists

This page has a single bulleted list. The plan is to move the list over to the right edge of the page and have the text following it wrap around it. CSS makes this little trick easy.

1. **Return to your text editor and the *text.html* file. Add the following style at the end of the page's internal style sheet:**

```
#main ul {
  margin: 50px 0 25px 50px;
  width: 150px;
  float: right;
}
```

When formatting lists, you'll usually create styles for two different elements: the list itself (either the <ul> tag for bulleted lists or the <ol> tag for numbered lists) and the individual list items (the <li> tag). This style controls the entire list.

There are a few things happening in this style. First, the *margin* property uses the shorthand method. This one line sets all four margins around the list, replacing the four individual margin properties (*margin-top, margin-right,* and so on). The four values are order like this: top, right, bottom, left. So for this style, 50 pixels of space gets added above the list, 0 space on the right, 25 pixels on the bottom, and 50 pixels on the left.

The *width* property (discussed in detail on page 164) makes the entire list 150 pixels wide. If any particular list item has more text than will fit within that space, it wraps to another line. The *float* property is the real magic—in this case, *float: right* means move the list over to the right edge of the page. This property also causes the text following the list to wrap around the left side of the list. It's a cool trick, and you'll learn a lot more about floats on page 169.

You'll control the look of the individual list items next.

2. **Add one more style to the internal style sheet in the *text.html* file:**

```
#main li {
  color: #207EBF;
  font-size: 1.5em;
  margin-bottom: 7px;
 }
```

Nothing new here: just changing the color and size and adding space below each list item. Time to check out your progress.

Note: If you want to add space between list items, you need to add top or bottom margins to the <li> tag. Adding margins to the <ul> or <ol> tags simply adds space around the entire list.

3. **Save the page and preview it in a web browser.**

The page should now look like Figure 6-14.

Fine-Tuning with Classes

Sometimes you want even more control over how a style is applied. For example, while you might want most paragraphs in one section of the page to look the same, you might also want one or two paragraphs to have their own unique look. In this tutorial, the paragraph of text near the top of the page—"November 30 Rod Dibble"—contains

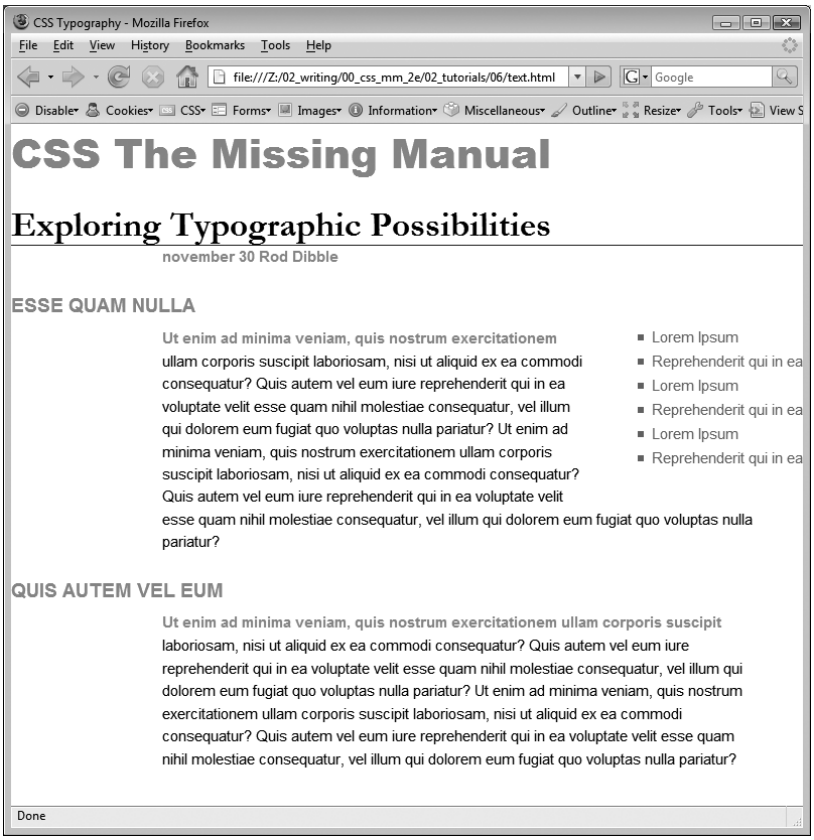


Figure 6-14: *The float property gives you some interesting design options. In this case, the bulleted list is floated to the right edge of the page. In fact the float property is so useful, you'll see that it's the main ingredient of CSS-based layouts, like the ones you'll learn about in Chapter 11.*

some unique information—a publication date and author. You want it stand out from the other paragraphs, so you'll add a class to the HTML and create a class style.

1. **Locate the HTML for that paragraph —* november 30 Rod Dibble *—and add *class="byline"* to the opening tag. The HTML should look like this:**

```
<p class="byline">november 30 <strong>Rod Dibble</strong></p>
```

   Now it's a simple matter of creating a class style that overrides the generic formatting of the other paragraphs on the page.

2. **In the internal style sheet near the top of the page, add a style for that paragraph:**

```
#main .byline {
  color: #999999;
  font-size: 1.6em;
  margin: 5px 0 25px 50px;
}
```

This style tweaks the color, size, and placement of just that one paragraph. Note that if you'd just named that style *.byline*—a basic class selector—it wouldn't work. Thanks to the rules of the cascade described in the last chapter, *.byline* is less specific (less powerful) than the *#main p* style you created in step 7 on page 142, so it wouldn't be able to override the color, size, and margins specified by *#main p*. However, *#main .byline* is more specific and successfully formats that top paragraph.

That paragraph still needs some work. It would be great if the name stood out more. The HTML in this case provides just the hook you need.

3. **Add another style to the style sheet:**

```
#main .byline strong {
  color: #207EBF;
  text-transform: uppercase;
  margin-left: 5px;
}
```

If you look at the HTML in step 1 above, you'll see that the name—Rod Dibble—is inside a tag. The tag is used to emphasize text and mark it as important. But that doesn't mean you have to let it be bold, the way web browsers normally display that tag. Instead, this descendent selector targets the tag but only when it appears inside another tag with the class *.byline*, and only if all of that is inside yet another tag with the ID main—whew, that's pretty specific.

This style turns the text blue, makes it uppercase and adds a bit of space on the left side (nudging the name over just a bit from the "November 30" text).

Adding the Finishing Touches

For the last bit of design, you'll incorporate a few design touches that format the page and that main div so they both look better. Then you'll finish up with a cool bit of text formatting.

1. **Return to your text editor and the *text.html* file.**

   First, you'll add a background color and image to the page.

2. **Locate the body style near the top of the internal style sheet and add one new property so that it looks like this (changes are in bold):**

```
body {
  font-size: 62.5%;
  font-family: Arial, Helvetica, sans-serif;
  color: #002D4B;
  background: #E1EEFD url(images/bg_body.png) repeat-x;
}
```

The *background* property is a powerful tool for any web designer. You've already used it a couple of times in earlier tutorials; it lets you add color and insert and control the placement of an image to the background of any tag. You'll learn the ins and outs of this property on page 164, but for now this line changes the background color of the page to light blue and adds a dark blue stripe to the top of the page.

Next you'll spruce up the main div.

3. **Add another style in between the body style and the *#main h1* style:**

```
#main {
  width: 740px;
  margin: 0 auto;
  padding: 0 10px;
  border: 4px solid white;
  background: transparent url(images/bg_banner.jpg) no-repeat;
}
```

In other words, click after the closing } for the body style, hit Enter and type the code above. You don't necessarily have to put the style in that spot for it to work, but for organizational purposes putting the style that controls the div before the other styles that format tags inside that div seems to make sense.

Note: You'll learn strategies for organizing your style sheets on page 421.

The *width* property sets an overall width of this div (and the content inside it), essentially turning this page into a 740-pixel-wide document. The *margin* property values here—*0 auto*—put 0 pixels of space above and below the div and set the left and right margins to *auto,* which centers the div in the middle of the browser window. The *padding* property adds space inside the box, pushing content inside the div away from the border line. Finally, you've placed an image into the background of the div.

Those last two styles didn't have anything to do with text formatting, but if you preview the page, you'll see that they make it look a lot better…except for those two top headlines. The first headline isn't bold enough, and the second should fall below the newly added graphic.

4. **Add one last style right after the *#main h1* style:**

```
#main h1 strong {
  font-size: 150px;
  color: white;
  line-height: 1em;
  margin-right: -1.25em;
}
```

The HTML for the headline looks like this:

```
<h1><strong>CSS</strong> The Missing Manual</h1>
```

The "CSS" is enclosed inside tags, so this descendent selector formats only that text (in that sense, it's like the style you added in step 3 on page 147 that took advantage of a tag embedded within a paragraph). The text size is pumped way up, it's color changed, and line height is adjusted so that it fits inside the top of the page. You'll notice that the line height is set to 1em—as you read on page 22, an em is based on the current font size of the element, so in this case the line height will translate to 150 pixels—that's the font size of this style.

The one cool trick is the *margin-right* property, which is set to a negative value: –1.25em. Since a positive margin pushes elements away, a negative margin actually pulls elements on top of each other. In this case, the rest of the text in the headline—"The Missing Manual"—is scooted over 1.25 em, which is 1.25 times the font size (150 pixels), on top of the "CSS" text.

Note: Negative margins are perfectly legal (although tricky) CSS. They're even used for some pretty advanced CSS layout, as described on page 318.

---

5. **Save the file and preview it in a web browser.**

   It should look like Figure 6-14. You can compare your work to the finished *text.html* page located in the *06_finished* folder.

Congratulations! You've explored many of the text formatting properties offered by CSS, and turned ho-hum HTML into an attractive, attention-getting design. In the next chapter, you'll explore graphics, borders, margins, and other powerful CSS design options offered by CSS.

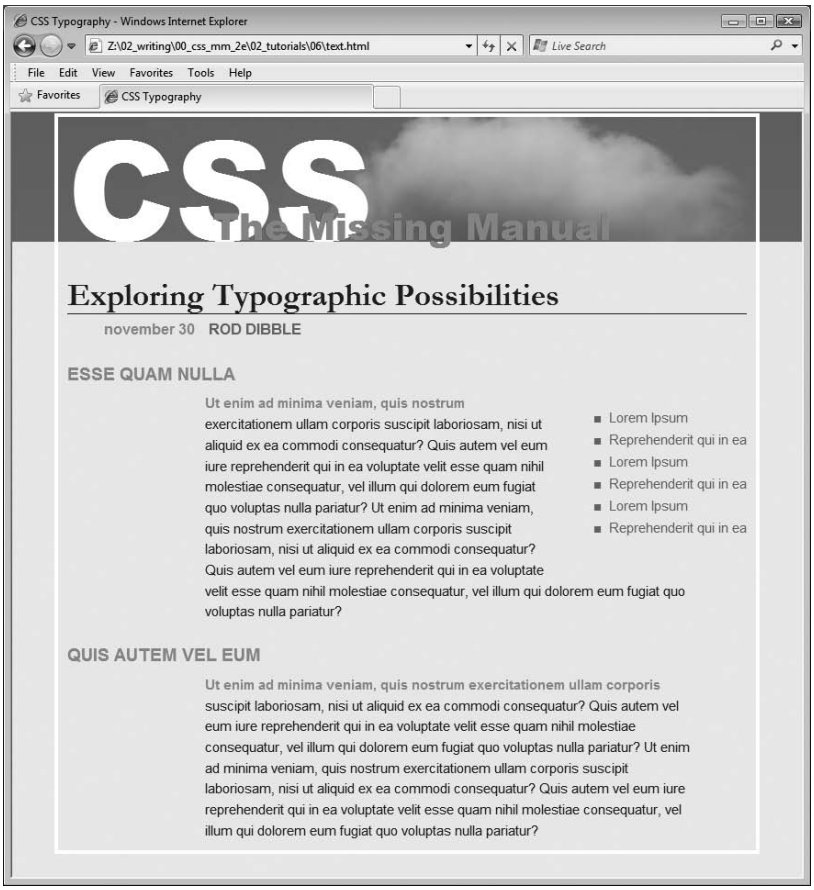


Figure 6-15: *With a little CSS, you can turn plain text into a powerful design statement that helps guide readers through the information on your site.*

CHAPTER
7

Margins, Padding, and Borders

Every HTML tag is surrounded by a world of properties that affect how the tag appears in a web browser. Some properties—like borders and background colors—are immediately obvious to the naked eye. Others, though, are invisible—like padding and margin. They provide a bit of empty space on one or more sides of a tag. By understanding how these properties work, you can create attractive columns and decorative sidebars and control the space around them (what designers call *white space*) so your pages look less cluttered, lighter, and more professional.

Taken together, the CSS properties discussed in this chapter make up one of the most important concepts in CSS—the *box model.*

Understanding the Box Model

You probably think of letters, words, and sentences when you think of a paragraph or headline. You also probably think of a photo, logo, or other picture when you think of the <img> tag. But a web browser treats these (and all other) tags as little *boxes*. To a browser, any tag is a box with something inside it—text, an image, or even other tags containing other things, as illustrated in Figure 7-1.

Surrounding the content are different properties that make up the box:

- *padding* is the space between the content and the content's border. Padding is what separates a photo from the border that frames the photo.
- *border* is the line that's drawn around each edge of the box. You can have a border around all four sides, on just a single side, or any combination of sides.

- *background-color* fills the space inside the border, including the padding area.
- *margin* is what separates one tag from another. The space that commonly appears between the tops and bottoms of paragraphs of text on a web page, for example, is the margin.

For a given tag, you can use any or all of these properties in combination. You can set just a margin for a tag or add a border, margins, *and* padding. Or you can have a border and margin but no padding, and so on. If you don't adjust any of these properties, then you'll end up with the browser's settings, which you may or may not like. For example, while browsers usually don't apply either padding or borders to any tags on a page, some tags like headings and paragraphs have a preset top and bottom margin.

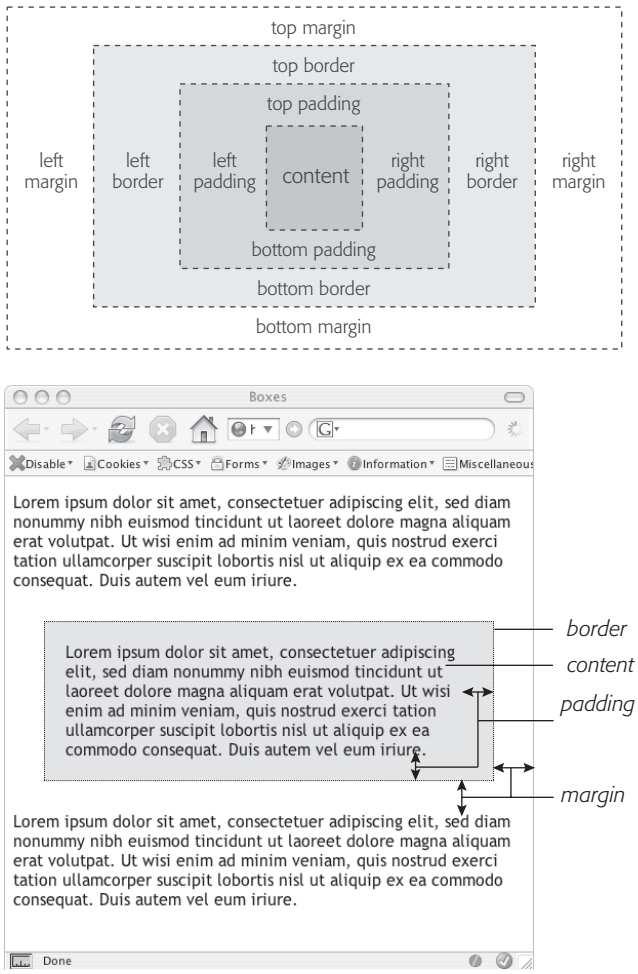


Figure 7-1:
The CSS box model includes the content inside a tag (for example, several sentences of text) plus padding, borders, and margins. The area within the border, which includes the content and padding, may also have a background color. Actually, the background color is drawn underneath the border, so when you assign a dashed or dotted border, the background color appears in the gaps between the dots or dashes.

Note: As discussed on page 423, because different browsers apply different amounts of padding and margin to the same tags, it's best to "zero-out" padding and margin values for all tags. In other words, use a set of simple styles–called a CSS reset–to remove padding and margin from HTML tags. Then, when you create additional styles that add margin and padding, you can be assured that you'll have a consistent cross-browser presentation.

Control Space with Margins and Padding

Both margins and padding add space around content. You use these properties to separate one element from another—for example, to add space between a left-hand navigation menu and the main page content on the right—or to inject some white space between content and a border. You may want to move the border away from the edge of a photo (see Figure 7-2).

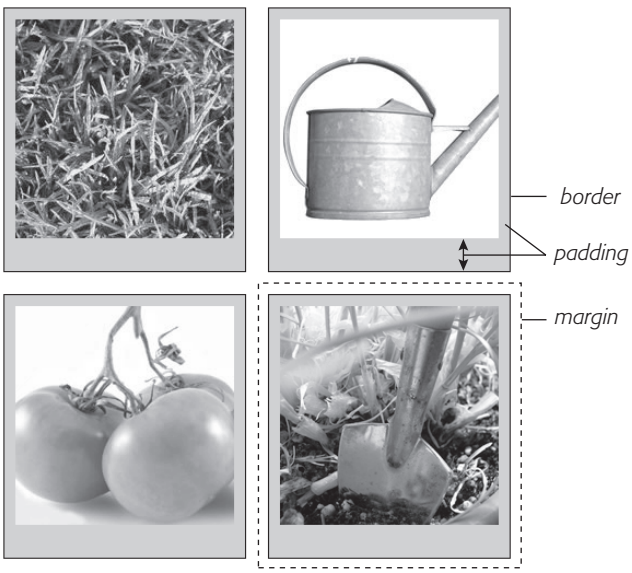


Figure 7-2:
Each photo on this page has a 10-pixel margin, so the gap separating two photos is 20 pixels. Padding separates the images from their borders and exposes a gray background color. You can set the border, margin, and padding independently for each edge. Notice the larger padding applied to the bottom edge of each photo.

Padding and margin function similarly, and unless you apply a border or background color, you can't really tell whether the space between two tags is caused by padding or by a margin. But if you have a border around an element or a background behind it, then the visual difference between the two properties is significant. Padding adds space between the content, and the border and keeps the content from appearing cramped inside the box, while margins add white space (often called a *gutter*) between elements giving the overall look of the page a lighter appearance.

You can control each side of the margin or padding for an element independently. Four properties control margin edges: *margin-top*, *margin-right*, *margin-bottom*, and *margin-left*. Similarly, four properties control padding: *padding-top*, *padding-right*, *padding-bottom*, and *padding-left*. You can use any valid CSS measurement to define the size of a margin or padding, like so:

```
margin-right: 20px;
padding-top: 3em;
margin-left: 10%;
```

Pixels and ems are commonly used and act just as they do with text (see page 120). A 20-pixel margin adds 20 pixels of space, and 3ems of padding adds space equal to 3 times the font size of the styled element. You can also use percentage values, but they're tricky. (See the box below for the details.)

Note: To remove all the space for a margin or padding, use 0 (*margin-top: 0* or *padding-bottom: 0*, for example). To remove space around all four edges of the browser window—to let a banner or logo or other page element butt right up to the edge without a gap—give the body tag a margin of 0 and a padding of 0: *margin: 0; padding 0;*.

POWER USERS' CLINIC

Margins, Padding, and Percentages

When you use percentages, web browsers calculate the amount of space based on the *width of the containing element*. On a simple web page, the containing element is the body of the page, and it fills the browser window. In this case, the percentage value is based on the width of the browser window at any given time. Say the window is 760 pixels wide. In that case, a 10 percent left margin adds 76 pixels of space to the left edge of the styled element. But if you resize the browser window, then that value changes. Narrowing the browser window to 600 pixels changes the margin to 60 pixels (10 percent of 600).

However, the containing element isn't always the width of the browser window. As you'll see in later chapters, when you create more sophisticated layouts, you can introduce new elements that help organize your page.

You may want to add a tag to a page in order to group related content into a sidebar area. (You'll see an example of this in the tutorial on page 181.) That sidebar might have a specified width of 300 pixels. Tags inside the sidebar consider the tag their containing element. So a tag in the sidebar with a right margin of 10 percent will have 30 pixels of empty space to its right.

To make matters more confusing, top and bottom percentage values are calculated based on the width of the containing element, not its height. So a 20 percent top margin is 20 percent of the width of the styled tag's container.

Margin and Padding Shorthand

You'll frequently want to set all four sides of a style's margin or padding. But typing out all four properties (margin-right, margin-left, and so on) for each style gets tedious. Fear not: You can use the shortcut properties named *margin* and *padding* to set all four properties quickly:

```
margin: 0 10px 10px 20px;
padding: 10px 5px 5px 10px;
```

Note: If the value used in a CSS property is 0, then you don't need to add a unit of measurement. For example, just type *margin: 0;* instead of *margin: 0px;*.

The order in which you specify the four values is important. It must be *top, right, bottom*, and *left*. If you get it wrong, you'll be in trouble. In fact, the easiest way to keep the order straight is to remember to stay out of **TRouBLe**—top, right, bottom, and left.

If you want to use the same value for all four sides, it's even easier—just use a single value. If you want to remove margins from all <h1> tags, you can write this style:

```
h1 {
 margin: 0;
}
```

Similarly, use shorthand to add the same amount of space between some content and its border:

```
padding: 10px;
```

Note: When you're using the same value for both top and bottom and another value for both left and right, you can use two values. *margin: 0 2em;* sets the top *and* bottom margins to 0 and the left *and* right margins to 2ems.

Colliding Margins

When it comes to CSS, two plus two doesn't always equal four. You could run into some bizarre math when the bottom margin of one element touches the top margin of another. Instead of adding the two margins together, a web browser applies the larger of the two margins (Figure 7-3, top). Say the bottom margin of an unordered list is set to 30 pixels, and the top margin of a paragraph following the list is 20 pixels. Instead of adding the two values to create 50 pixels of space between the list and the paragraph, a web browser uses the *largest* margin—in this case 30 pixels. If you don't want this to happen, then use top or bottom padding instead (Figure 7-3, bottom).

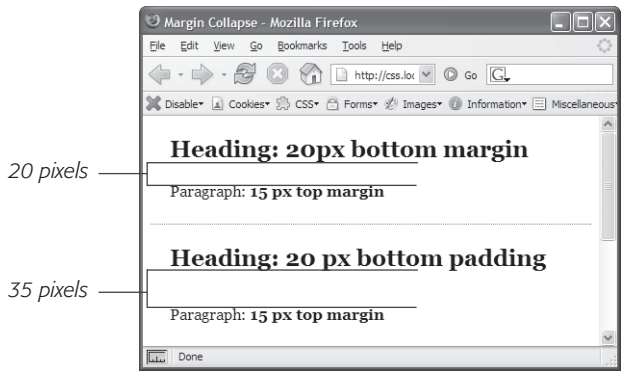


Figure 7-3:
When two vertical margins meet, the smaller one collapses. Although the top headline has a bottom margin of 20 pixels, and the paragraph has a top margin of 15 pixels, a web browser adds only 20 pixels of space between the two elements. To get the full 35 pixels' worth of space that you want, use padding instead of margins, as shown in the bottom headline. Here, the heading has 20 pixels of bottom padding. Those 20 pixels get added to the 15-pixel top margin of the paragraph to form a 35-pixel gap.

Things get even weirder when one element's *inside* another element. This situation can lead to some head-scratching behavior. For example, say you add a "warning" box to a page (like a tag to hold a warning message inside it). You add a 20 pixel top and bottom margin to separate the warning box from the heading above it and the paragraph of text below it. So far so good.

But say you insert a heading inside the warning box, and to put a little room between it and the top and bottom of the div, you set the heading's margin to 10 pixels. You may think you're adding 10 pixels of space between the heading and the top and bottom of the div, but you'd be wrong (Figure 7-4, left). Instead, the margin appears *above* the div. In this case, it doesn't matter how large a margin you apply to the headline—the margin still appears *above* the div.

Note: In the lingo of CSS, this phenomenon is known as "collapsing margins," meaning two margins actually become one.

You have two ways around this problem: Either add a small amount of padding around the tag or add a border to it. Since border and padding sit *between* the two margins, the margins no longer touch, and the headline has a little breathing room (Figure 7-4, right).

Note: Horizontal (left and right) margins and margins between floating elements don't collapse in this way. Absolutely and relatively positioned elements–which you'll learn about in Chapter 13–don't collapse either.

Removing Space with Negative Margins

Most measurements in CSS have to be a positive value—after all what would text that's *negative 20 pixels* tall (or short) look like? Padding also has to be a positive value. But CSS allows for many creative techniques using negative margins.

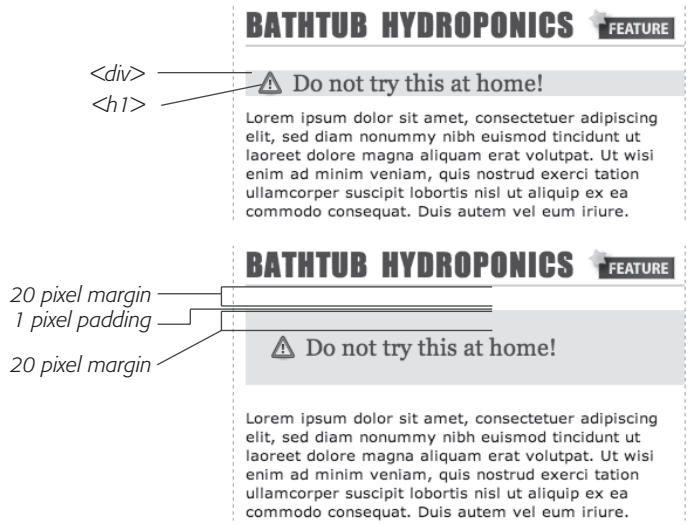


Figure 7-4:
Holy shrinking margins Batman!

Top: Whenever vertical margins touch, even when one element is inside another element (like the <h2> tag inside this div), the margins collapse.

Bottom: To solve this dilemma, add a little padding or a border around the containing element (1 pixel of bottom padding on the , in this case).

Instead of adding space between a tag and elements around it, a negative margin *removes* space. So you can have a paragraph of text overlap a headline, poke out of its containing element (a sidebar or other layout), or even disappear off an edge of the browser window. And, hey, you can even do something useful with negative margins.

Even when you set the margins between two headlines to 0, there's still a little space between the text of the headlines (thanks to the text's line height, as described on page 128 in the last chapter). That's usually a good thing, since it's hard to read sentences that bunch together and touch. But, used in moderation, tightening the space between two headlines can produce some interesting effects. The second headline of Figure 7-5 (the one that begins "Raise Tuna") has a top margin of –10px applied to it. This moves the headline up 10 pixels so it slightly overlaps the space occupied by the headline above it. Also, the left and right borders of the "Extra! Extra!" headline actually touch the letters of the larger headline.

You can also use a negative margin to simulate negative padding. In the third headline of Figure 7-5, the one that begins with "The Extraordinary Technique," a line appears directly under the text. This line is actually the *top* border for the paragraph that follows. (You'll learn how to add borders on page 160.) But because that paragraph has a negative top margin, the border moves up and under the headline. Notice how the descending tail for the letter Q in the headline actually hangs *below* the border. Since padding—the space between content (like that letter Q) and a border—can't be negative, you can't move a bottom border up over text or any other content. But you get the same effect by applying a border to the following element and using a negative margin to move it up.

Figure 7-5:
In this example, to make the last paragraph's top border look like it's actually the bottom border for the headline above it, add a little padding to the paragraph. Around 5 pixels of top padding moves the paragraph down from the border, while 4ems of left padding indents the paragraph's text, still allowing the top border to extend to the left edge.

Tip: You can actually use a negative top margin on the paragraph or a negative bottom margin on the headline. Both have the same effect of moving the paragraph up close to the headline.

Displaying Inline and Block-Level Boxes

Although web browsers treat every tag as a kind of box, not all boxes are alike. CSS has two different types of boxes—*block boxes* and *inline boxes*—that correspond to the two types of tags—block-level and inline tags.

A *block-level* tag creates a break before and after it. The <p> tag, for example, creates a block that's separated from tags above and below. Headlines, tags, tables and lists are other examples of block-level tags.

Inline tags don't create a break before or after them. They appear on the same line as the content and tags beside them. The tag is an inline tag. A word formatted with this tag happily sits next to other text—even text wrapped in other inline tags like . In fact, it would look pretty weird if you emphasized a single word in the middle of a paragraph with the tag and that word suddenly appeared on its own line by itself. Other inline tags are <img> for adding images, <a> for creating links, and the various tags used to create form fields.

In most cases, CSS works the same for inline boxes and block boxes. You can style the font, color, and background and add borders to both types of boxes. However, when it comes to margins and padding, browsers treat inline boxes differently. While you can add space to the left or right of an inline element using either left or right padding or left or right margins, you can't increase the height of the inline element with top or bottom padding or margins. In the top paragraph in Figure 7-6, the inline element is styled with borders, a background color, and 20 pixels of margin on all four sides. But the browser only adds space to the left and right sides of the inline element.

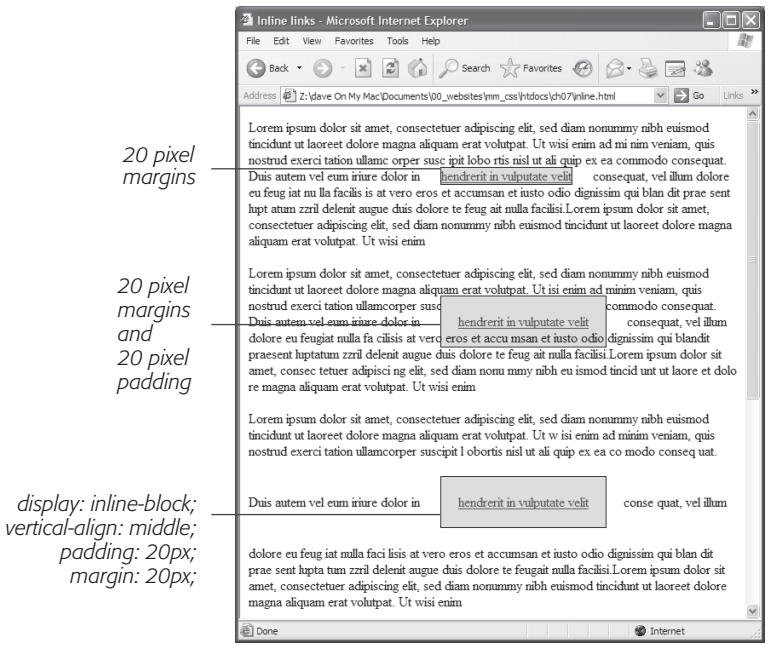


Figure 7-6: *Adding top or bottom margins and padding doesn't make an inline element any taller, so you can run into some weird formatting. In the middle paragraph, the background and borders of a link overlap the text above and below. The background appears on top of the line before the styled inline text, but underneath the line following it because the browser treats each line as if it's stacked on top of the previous line. Normally, that isn't a problem since lines of text don't usually overlap. If you want top and bottom margins and padding to work for an inline element you can use the* display:inline-block *instruction (bottom). This leaves the item inline, but treats it like a box so padding, margins, borders, and width and height are all applied (and obeyed). This even works in Internet Explorer 6 and 7, but only for normally inline elements like links, , , and tags; you should also add vertical-align: middle so that IE 6 and 7 display the inline block the same as other browsers.*

Note: One exception to the rule that inline elements don't get taller when padding or margin are added is the <img> tag (even though it's an inline tag). Web browsers correctly expand the height of the image's box to accommodate any padding and margins you add.

At times, you may wish an inline element behaved more like a block-level element and vice versa. Bulleted lists present each item as its own block—each list item is stacked above the next. Or, you may want to change that behavior so the list items appear side by side, all on a single line, as in a navigation bar (you can see an example of one on page 238 in Chapter 9). Finally, you may want to treat an inline element like a block-level element. Maybe you want an image embedded in a paragraph to be on its own line, with space above and below.

Fortunately, CSS includes a property that lets you do just that—the *display* property. With it, you can make a block-level element act like an inline element:

```
display: inline;
```

Or you can make an inline element, like an image or link, behave like a block-level element:

```
display: block;
```

Note: The *display* property has a myriad of possible options, most of which don't work in all browsers. The *inline-block* value works in current browsers (see Figure 7-6). Another value, *none,* works in most browsers and has many uses. It does one simple thing–completely hides the styled element so it doesn't appear in a web browser. With a dab of JavaScript programming, you can make an element hidden in this way instantly become visible, simply by changing its display back to either *inline* or *block.* You can even make an element with a display of *none* suddenly appear using CSS: You'll see an example of that on page 477. Finally, a few other values for the *display* property are recognized by IE 8, Firefox, Safari, and Opera and provide one way to create CSS-based layout. This advanced technique is discussed in the box on page 453.

Adding Borders

A border is simply a line that runs around an element. As shown back in Figure 7-1, it sits between any padding and margins you set. A border around every edge can frame an image or mark the boundaries of a banner or other page element. But borders don't necessarily have to create a full box around your content. While you can add a border to all four edges, you can just as easily add a border to just the bottom or any combination of sides. This flexibility lets you add design elements that don't necessarily feel like a border. For example, add a border to the left of an element, make it around 1em thick, and it looks like a square bullet. A single border under a paragraph can function just like the <hr> (horizontal rule) by providing a visual separator between sections of a page.

You control three different properties of each border: *color, width,* and *style.* The color can be a hexadecimal number, a keyword, or an RGB value, just like with text (see page 118). A border's width is the thickness of the line used to draw the border. You can use any CSS measurement type (except percentages) or the keywords *thin, medium,* and *thick.* The most common and easily understood method is simply pixels.

Finally, the style controls the type of line drawn. There are many different styles, and some look very different from browser to browser, as you can see in Figure 7-7 You specify the style with a keyword. For example *solid* draws a solid line and *dashed* creates a line made up of dashes. CSS offers these styles: *solid, dotted, dashed, double, groove, ridge, inset, outset, none,* and *hidden.* (*None* and *hidden* work the same way: They remove the border entirely. The *none* value is useful for turning off a single border. See the example on page 163.)

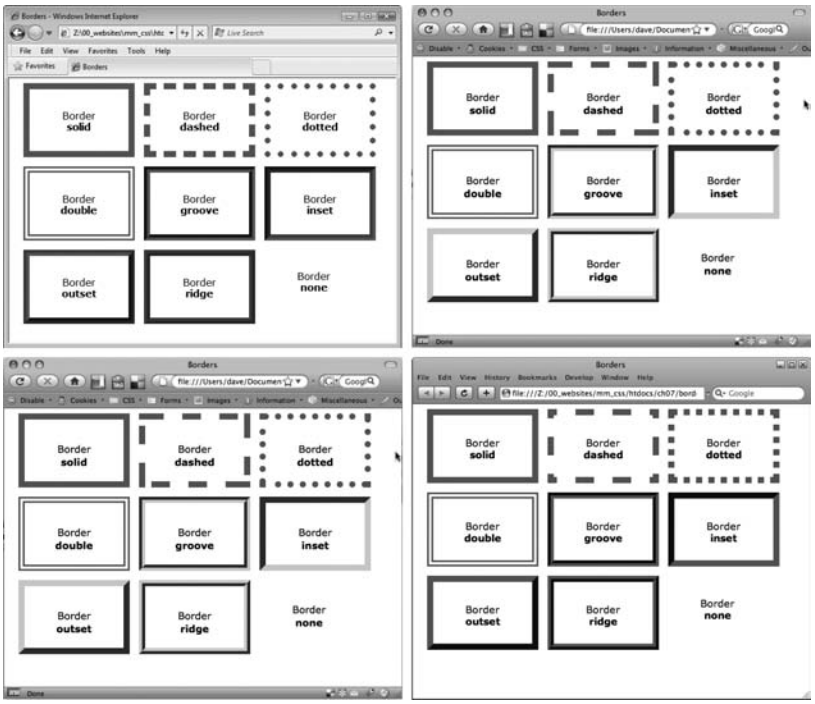


Figure 7-7: *The appearance of border styles can vary greatly from browser to browser. The browsers pictured here are Internet Explorer 8 for Windows (top left), Firefox 3 for Mac (top right), Opera 9 for Mac (bottom left), and Safari 3 for Windows (bottom right). Internet Explorer 6 and 7 display borders the same as IE 8 in this image.*

Note: In Windows Internet Explorer version 6 and earlier, a 1-pixel dotted border looks just like a 1-pixel dashed border.

Border Property Shorthand

If you've ever seen a list of the different border properties available in CSS, you may think borders are really complex. After all, there are 20 different border properties, which you'll meet in the following sections, plus a couple that apply to tables. But all these properties are merely variations on a theme that provide different ways of controlling the same three properties—color, width, and style—for each of the four borders. The most basic and straightforward property is *border*, which simply adds four borders:

```
border: 4px solid #F00;
```

The above style creates a solid, red, 4-pixel border. You can use this property to create a basic frame around a picture, navigation bar, or other item that you want to appear as a self-contained box.

Note: The order in which you write the properties doesn't matter. *border: 4px solid #F00;* works as well as *border: #F00 solid 4px;*.

Formatting Individual Borders

You can control each border individually using the appropriate property: *border-top, border-bottom, border-left,* or *border-right*. These properties work just like the regular *border* property, but they control just one side. The following property declaration adds a 2-pixel, red, dashed line below the style:

```
border-bottom: 2px dashed red;
```

You can combine the *border* property with one of the edge-specific properties like *border-left* to define the basic box for the entire style but customize a single border. Say you want the top, left, and right sides of a paragraph to have the same type of border, but you want the bottom border to look slightly different. You can write four lines of CSS, like this:

```
border-top: 2px solid black;
border-left: 2px solid black;
border-right: 2px solid black;
border-bottom: 4px dashed #333;
```

Or, you can achieve the same effect as the previous four lines of CSS with just two lines:

```
border: 2px solid black;
border-bottom: 4px dashed #333;
```

The first line of code defines the basic look of all four borders, and the second line redefines just the look of the bottom border. Not only is it easier to write two lines of CSS instead of four, but it also makes changing the style easier. If you want to change the color of the top, left, and right borders to red, then you only have to edit a single line, instead of three:

```
border: 2px solid red;
border-bottom: 4px dashed #333;
```

When you use this shortcut method—defining the basic look of all four borders using the *border* property and then overriding the look of a single border with one of the edge-specific properties like *border-left*—it's crucial that you write the code in a specific order. The more general, global border setting must come first, and the edge-specific setting second, like so:

```
border: 2px solid black;
border-bottom: 4px dashed #333;
```

Because the *border-bottom* property appears second, it overrides the setting of the *border* property. If the *border-bottom* line came before the *border* property, then it would be cancelled out by the *border* property, and all four borders would be identical. The last property listed can overrule any related properties listed above it. This behavior is an example of the CSS cascade you read about in Chapter 5.

You can also use this shortcut method to turn off the display of a single border with the *none* keyword. Say you want to put a border around three sides of a style (top, left, and bottom) but no border on the last side (right). Just two lines of code get you the look you're after:

```
border: 2px inset #FFCC33;
border-right: none;
```

The ability to subtly tweak the different sides of each border is the reason there are so many different border properties. The remaining 15 properties let you define individual colors, styles, and widths for the border and for each border side. For example, you could rewrite *border: 2px double #FFCC33;* like this:

```
border-width: 2px;
border-style: double;
border-color: #FFCC33;
```

Since you're using three lines of code instead of one, you'll probably want to avoid this method. However, each border edge has its own set of three properties, which are helpful for overriding just one border property for a single border edge. The right border has these three properties: *border-right-width, border-right-style,* and *border-right-color*. The left, top, and bottom borders have similarly named properties—*border-left-width, border-left-style,* and so on.

You can change the width of just a single border like this: *border-right-width: 4px;*. One nice thing about this approach is that if you later decide the border should be solid, you need to edit only the generic *border* property by changing *dashed* to *solid.*

In addition, you can specify individual values for each side of the border using the *border-width*, *border-style,* and *border-color* properties. For example, *border-width: 10px 5px 15px 13px;* applies four different widths to each (top, right, bottom, and left) side.

Imagine that you want to have a 2-pixel, dashed border around the four edges of a style, but you want each border to be a different color. (Perhaps you're doing a website for kids.) Here's a quick way to do that:

```
border: 2px dashed;
border-color: green yellow red blue;
```

This set of rules creates a 2-pixel dashed border around all four edges, while making the top edge green, the right edge yellow, the bottom edge red, and the left edge blue.

Note: You usually add padding whenever you use borders. Padding provides space between the border and any content, such as text, images, or other tags. Unless you want to put a border around an image, borderlines usually sit too close to the content without padding.

Coloring the Background

It's a cinch to add a background to an entire page, an individual headline, or any other page element. Use the *background-color* property followed by any of the valid color choices described on page 119. If you want, add a shockingly bright green to the background of a page with this line of code:

```
body { background-color: #6DDA3F; }
```

Alternatively, you can create a class style named, say, *.review* with the *background-color* property defined, and then apply the class to the body tag in the HTML, like so: *<body class="review">*.

Note: You can also place an image in the background of a page and control that image's placement in many different ways. You'll explore that in the next chapter.

Background colors come in handy for creating many different visual effects. You can create a bold-looking headline by setting its background to a dark color and its text to a light color. Background colors are also a great way to set off part of a page like a navigation bar, banner, or sidebar.

Note: When you use background colors and borders, keep the following in mind: If the border style is either dotted or dashed (see Figure 7-7), the background color shows in the empty spaces between the dots or dashes. In other words, web browsers actually paint the background color *under* the borderline.

Determining Height and Width

Two other CSS properties that form part of the CSS box model are useful for assigning dimensions to an object, such as a table, column, banner, or sidebar. The *height* and *width* properties assign a height and width to the content area of a style. You'll use these properties often when building the kinds of CSS layouts described in Part 3 of this book, but they're also useful for more basic design chores like assigning the width of a table, creating a simple sidebar, or creating a gallery of thumbnail images (like the one described in the steps on page 206).

Adding these properties to a style is very easy. Just type the property followed by any of the CSS measurement systems you've already encountered. For example:

```
width: 300px;
width: 30%;
height: 20em;
```

Pixels are, well, pixels. They're simple to understand and easy to use. They also create an exact width or height that doesn't change. An *em* is the same as the text size for the styled element. Say you set the text size to 24px; an em for that style is 24px, so if you set the width to 2em, then it would be 2×24 or 48 pixels. If you don't set a text size in the style, the em is based on the inherited text size (see page 123).

For the *width* property, percentage values are based on the percentage of the width of the style's containing element. If you set the width of a headline to 75 percent and that headline isn't inside any other elements with a set width, then the headline will be 75 percent of the width of the browser window. If the visitor adjusts the size of his browser, then the width of the headline will change. However, if the headline is contained inside a (maybe to create a column) that's 200 pixels wide, the width of that headline will be 150 pixels. Percentage values for the *height* property work similarly, but are based on the containing element's height, instead of width.

GEM IN THE ROUGH

Minimum and Maximum

CSS also offers a few other properties related to height and width: *min-height, min-width, max-height,* and *max-width.* These properties let you set a minimum width or height–meaning the element must be *at least* that width or height–or a maximum width or height. The element can't be wider or taller than a set amount.

These properties are useful in the flexible layouts described in Chapter 12, since they let you keep your design within a reasonable space for either very small monitors or very large monitors. Unfortunately, Internet Explorer 6 and earlier doesn't understand these properties. *C'est la guerre.* You can read more about these properties in the box on page 320.

Calculating a Box's Actual Width and Height

While the *width* and *height* properties seem pretty straightforward, there are a few nuances that often throw people for a loop. First of all, there's a difference between the value you set for a style's width and height and the amount of space that a web browser actually uses to display the style's box. The *width* and *height* properties set the width and height of the *content area* of the style—the place where the text, images, or other nested tags sit. (See Figure 7-1 for a refresher on where the content area sits within the overall box model.) The actual width—that is, the amount of screen real estate given by the web browser—is the total of the widths of the margins, borders, padding, and width properties, as illustrated in Figure 7-8.

Say you've set the following properties:

```
width: 100px;
padding: 15px;
border-width: 5px;
margin: 10px;
```

When the *width* property is set, you always know how much room is allocated just for your content—the words and images that fill the space—regardless of any other properties you may set. You don't need to do any math, because the value of the *width* property is the room for your content (in the above example, 100 pixels). Of course, you *do* have to perform a little math when you're trying to figure out exactly how much space an element will take up on a web page. In the above example,

the width that a web browser allocates for the style's box is 160 pixels: 20 pixels for the left and right margins, 10 pixels for the left and right borders, 30 pixels for the left and right padding, and 100 pixels for the width. (And versions of Internet Explorer for Windows older than version 6 get the whole thing wrong—see the note on page 167—forcing you to do a little extra work for those browsers.)

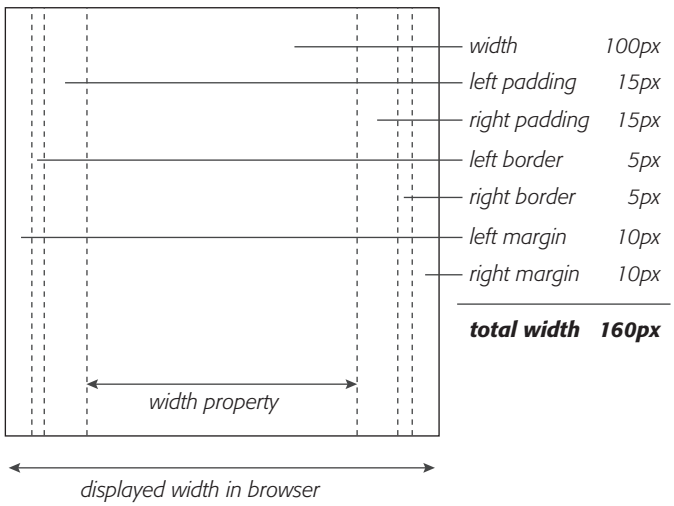


Figure 7-8:
Calculate the actual width of a styled element's box by adding up its margins, borders, padding, and width properties. The height occupied on the screen by the element is calculated in the same way—the total of the height property, the top and bottom margins, the top and bottom borders, and the top and bottom padding.

The general rule of thumb for setting heights on page elements is *don't!* A lot of budding CSS designers try to set heights on everything in an attempt to get pixel-perfect control. But unless you're totally sure of the exact dimensions of the content inside a tag, you can run into some unwanted results (see Figure 7-9). In this example, a pull-quote box used to highlight an interesting comment from an article has a set width and height of 100 pixels. When more text than fits into the 100 pixel height is added to the box, its contents (in all browsers but IE 6) spill out the bottom. Even if you make sure that the text you put inside a box with a fixed height fits, if a visitor increases the font size in her browser, the text might resize to a height larger than the box.

In other words, the *height* property is useful for controlling the height of a div containing images, for example, because you can correctly determine the height of the images; but, if you use the height for elements that have text, make sure to not only test your pages in the major browsers, but also to test the page with different font sizes by increasing the font size in the web browser.

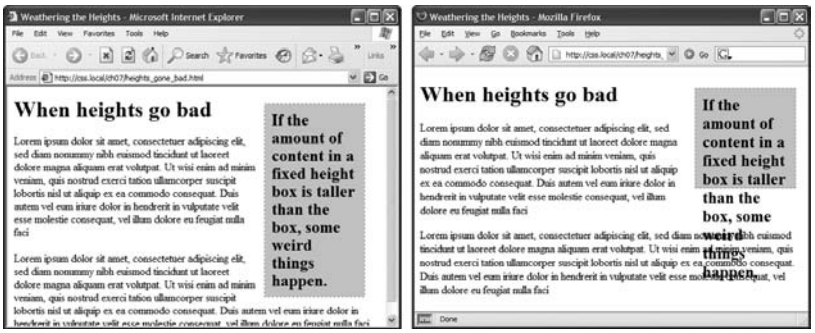


Figure 7-9: *Depending on the browser you're using, the content in a box will display in one of two ways if it's taller than the box's set height. Internet Explorer 6 (left) and earlier for Windows will simply expand the box to fit the content. But other browsers, like Firefox (right) and Internet Explorer 7, keep the box the same height and spill the content out and below the edges.*

Note: Internet Explorer 5 gets the whole width thing wrong. It uses the CSS *width* property to define the total width including margins, padding, and borders, resulting in page elements that are much thinner than in other browsers. The problem also crops up in IE 6 or IE 7 in quirks mode (see page 26). Since IE 5 is all but dead, you probably won't have to worry about it. But if you have a time machine and plan on going back 10 years to amaze the world with your futuristic CSS design skills, you can learn about the IE 5 "box model problem" at *http://reference.sitepoint.com/css/ie5boxmodel*.

Controlling the Tap with the Overflow Property

When the content inside a styled tag is larger than the style's defined width and height, some weird things happen. As shown in Figure 7-9, IE 6 just lets the box expand to fit the larger content, while other browsers let the content spill out of the box (past the borders and often over other content).

Fortunately, you can control what a browser should do in this situation with the *overflow* property. Overflow accepts four keywords that control how content that overflows the edges of a box should be displayed:

- *visible.* This option is what browsers do normally. It's the same as not setting the property at all (Figure 7-10, top).
- *scroll.* Lets you add scroll bars (Figure 7-10, middle). It creates a kind of mini-browser window in your page and looks similar to old-school HTML frames, or the HTML <iframe> tag. You can use *scroll* to provide a lot of content in a small amount of space. Unfortunately, scroll bars *always* appear when you use this option, even if the content fits within the box.
- *auto.* To make scroll bars optional, use the *auto* option. It does the same thing as scroll but adds scroll bars only when needed.

Figure 7-10:
The overflow property gives you three basic ways to deal with text that doesn't fit inside a box: visible displays the content anyway (top); scroll and auto add scroll bars (middle); and hidden just doesn't show anything that doesn't fit (bottom).

- *hidden.* Hides any content that extends outside the box (Figure 7-10, bottom). This option is a bit dangerous, since it can make some content disappear from the page. But it comes in handy for solving some IE browser bugs (see the box on the next page) and is a useful trick for float-based layouts.

BROWSER BUG

Special Rules for IE 6

Dealing with the surprisingly inconsistent ways different browsers display pages is the bane of every web designer. What looks great in Internet Explorer may fall completely apart in Firefox or vice versa. Throughout this book you'll find tips on browser management and ways to overcome the worst browser bugs. Not surprisingly, Internet Explorer 6, which is over eight years old, is plagued by many display problems. For example, IE 6 has trouble displaying float-based layouts, as you'll see in Chapter 12.

To overcome these bugs, you frequently have to send properties and values to IE that are different than the ones used by other browsers. To that end, there's an easy way to create CSS styles that apply only to IE 6 and earlier—the *star html hack.* In this method, you begin the style with the following: ** html.* If you want to have an *h1* tag style that applies only to IE 6 and earlier, then name the style ** html h1*. All other browsers see the style as a descendent selector that doesn't make any sense, so they promptly ignore it.

You can use the star html hack to override some setting from a style that other (better) browsers display properly but IE gets wrong. In that case, apply the ** html* hack *after* the correct style. Say you create a class style named *.sidebar* that creates an attractive sidebar box for news and site navigation links. Due to a weird bug in IE, the sidebar may appear three pixels off to the left or right (see page 335). To counteract this snafu, you can add this IE-only special fix after the regular .sidebar style:

```
* html .sidebar { margin-left: -3px }
```

You'll see the ** html* hack in a couple of places in this book (like this chapter's tutorial on page 186). You'll learn other techniques for managing Internet Explorer in Chapter 15.

Internet Explorer 7 and 8 *don't* understand the * html hack, so it'll ignore these types of styles. Fortunately, these browsers have fixed many of the bugs that plagued earlier versions of the browser so the fixes supplied by * html styles aren't usually needed for that browser. Regardless, you'll learn a technique on page 433 that will let you send specific styles to any version of Internet Explorer.

Wrap Content with Floating Elements

HTML normally flows from the top of the browser window down to the bottom, one headline, paragraph, or block-level element on top of another. This word-processor-like display is visually boring (Figure 7-11, top), but with CSS, you're far from stuck with it. You'll learn lots of new methods for arranging items on a web page in Part 3, but you can spice up your pages plenty with one little CSS property—*float*.

The *float* property moves an element to either the left or right. In the process, content below the floated element moves up and wraps around the float (Figure 7-11, bottom). Floating elements are ideal for moving supplemental information out of the way of the main text of a page. Images can move to either edge, letting text wrap elegantly around them. Similarly, you can shuttle a sidebar of related information and links off to one side.

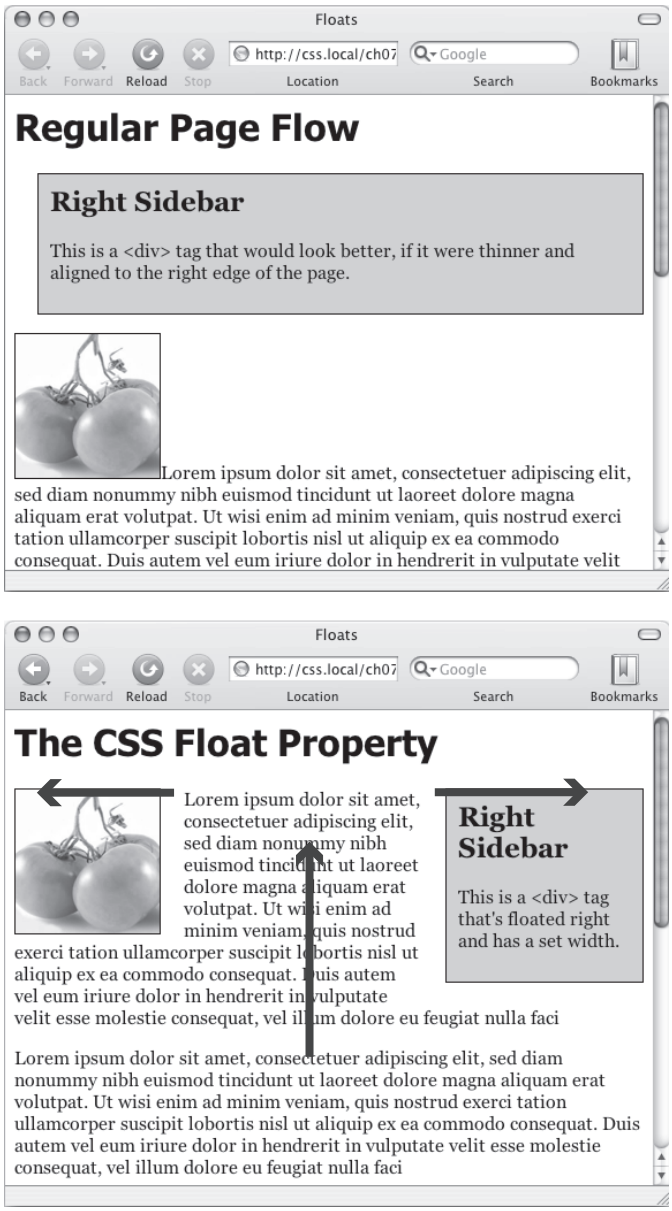


Figure 7-11:
The regular flow of HTML is left to right, top to bottom, with one block-level element–headline, paragraph, , and so on–stacked on top of the next. By letting you break up this uniformity, the float property is one of the most powerful and useful tools that CSS offers. Its uses range from simply moving an image to one side of a paragraph to providing complete layout control over banners, sidebars, navigation bars, and other page elements.

While you can use floats in some complex (and confusing) ways, as you'll see in Chapter 12, the basic property is very simple. It takes one of three keywords, *left*, *right*, or *none*, like so:

```
float: left;
```

- *left.* Slides the styled element to the left, while content below wraps around the right side of the element.
- *right.* Slides the element to the right.
- *none.* Turns off the float and returns the object to its normal position.

Note: Floating an image is similar to setting the <img> tag's align attribute to either *left* or *right.* That little bit of HTML is deprecated, so use the CSS *float* property instead.

Floated elements move to the left or right edge of their *containing element.* In some cases, this just means that the element moves to the left or right edge of the browser window. However if you float an element that's inside another tag with a set width or position on a web page, then the float will go to the left or right edge of that tag—the floated element's "container." For example, you may have a box on the page that's 300 pixels wide and is itself floated to the right edge of the browser window. Inside that box, you've got an image that floats to the left. That image slides to the left edge of that 300-pixel-wide box—not the left edge of the browser window.

You can even use the *float* property with an inline element, such as the <img> tag. In fact, floating a photo to the left or right using CSS is a very common use of the *float* property. A web browser treats a floated inline element just like a block-level element, so you don't run into the problems with padding and margin that normally trouble inline elements (see page 158).

You can also float a block-level element like a headline or paragraph. A common technique is to float a tag containing other HTML tags and page content to create a kind of containing box. In this way, you can create sidebars, pull quotes, and other self-contained page elements. (You'll see an example of this in this chapter's tutorial.) When you float block-level elements, you should also set the *width* property for that element (in fact, CSS rules require setting the width for floated elements for all tags except images). This way, you can control how much horizontal space the block takes up and how much space is available for the content below it to move up and wrap around the block.

Note: The *source order*–the order in which you write your HTML–has a big impact on the display of floated elements. The HTML for the floated tag must appear *before* the HTML of any content that wraps around the floated element. Say you've created a web page composed of an <h1> tag followed by a <p> tag. Toward the end of that <p> tag, you've also inserted a photo using the <img> tag. If you float that photo to the right, say, then the <h1> tag and most of the content inside that <p> tag will still appear above the photo; only content that follows the <img> tag will wrap around the left side of the image.

Backgrounds, Borders, and Floats

To the consternation of many web designers, backgrounds and borders don't react to floated elements the same way as content does. Say you float an element—a sidebar for example—to the right. The content below the sidebar moves up and wraps around it, just as it should. But if that content has a background or border set on it, then that background or border actually appears *underneath* the floated sidebar (Figure 7-12, left). In essence, a web browser wraps the text around the float, but not the border or background. Believe it or not, this is absolutely kosher and how (according to the rules) it's supposed to work. Of course, you may not want to follow these rules; you might want to have the border or background stop when it reaches the floated element (Figure 7-12, right). With a little CSS magic, you can do it.

First, you need to add one rule to the style that has background or borders running underneath the float. Once you locate the style, add this line: *overflow: hidden;*. The *overflow* property (discussed in more detail on page 326) makes any background or border that extends underneath the float disappear. (This trick doesn't work for all browsers, though. See the box on the next page.)

Another approach is to add a borderline around the floated element; when you make the borderline thick enough and match its color to the background color of the page, the border looks just like empty space—even though it's covering and hiding the background color and borderlines that are extending below it.

Figure 7-12: *In this example, there's an <h1> tag with a background color and an <h2> tag with a border (left). Adding overflow: hidden; to the style for the <h1> tag (right) prevents the headline from appearing under the floating element (sidebar).*

Stopping the Float

Sometimes you need a way to tell a tag to ignore a floated element. You may have a copyright notice that should always appear at the bottom of the browser window. If you have a particularly tall sidebar that's floated to the left side of the page, the copyright notice might actually be drawn up the page and wrap around the float. Instead of appearing at the bottom of the page, the copyright is sitting up the page next to the sidebar. You want the copyright notice part of your page to refuse to wrap around the floated element and instead drop below it.

BROWSER BUG

When *overflow: hidden* Fails

The *overflow: hidden* property prevents backgrounds and borders from awkwardly running under floating elements (Figure 7-13). But nothing's ever that simple in the world of web browsers. While this one line of code works for Internet Explorer 7, Firefox, Camino, and Safari, it doesn't work reliably in versions of Opera before 9, and Internet Explorer 5 and 6 for Windows just ignore it.

Alas there's no apparent fix for Opera 8 and earlier (it works fine in Opera 9), but there's something you can do for IE 5 and 6. For those browsers, you need to add one additional rule: *zoom: 1;*.

This is a Microsoft-only property that lets you enlarge or zoom into an element on a page. In this case, though, it's just a weird way to force IE 5 and 6 to stop a border or background from extending underneath the floated element. (For more detail on why this zoom thing works, see the box on page 338.)

You may want to put the IE-specific zoom rule in an IE-only style. You can even put it in a completely separate IE-only external style sheet.

You'll also find an example of this problem and its solution in the tutorial starting on page 174.

Other problems occur when you have several floated items close together. If the floated items aren't very wide, they float up and next to each other, and if they're of varying heights they can get into an unattractive logjam (see Figure 7-13, top). In this case, the floated elements *shouldn't* float next to each other. CSS provides the *clear* property for just these types of problems.

The *clear* property instructs an element to *not wrap around a floated* item. By clearing an element, you essentially force it to drop down below the floated item. Also, you can control which type of float (left or right) is cleared or force a style to simply ignore both types of floats.

The *clear* property accepts the following options:

- *left.* The style will drop below elements that are floated left but will still wrap around right-floated objects.
- *right.* Forces a drop below right-floated objects but still wraps around left-floated objects.
- *both.* Forces a drop below both left- and right-floated elements.
- *none.* Turns off clearing altogether. In other words, it makes an item wrap around both left- and right-floated objects, which is how web browsers normally work.

In the case of a copyright notice that must appear at the bottom of the page, you'd want it to clear both left- and right-floated objects—it should always be below other content, and should never wrap to the left or right of any other item. Here's a class style that would do just that:

```
.copyright {
 clear: both;
}
```

Figure 7-13 shows how the *clear* property can prevent floated items of varying heights from clumping together. All three photos in that figure have a right float applied to them. In the top figure, the photo of the tomatoes (1) is the first image on the page and appears at the far right edge. The second image (2) obeys the float set on the first image and wraps up to the left of it. The last photo (3) is too wide to sit next to the second photo (2) but still tries to wrap around both (1) and (2). It gets stuck in the process.

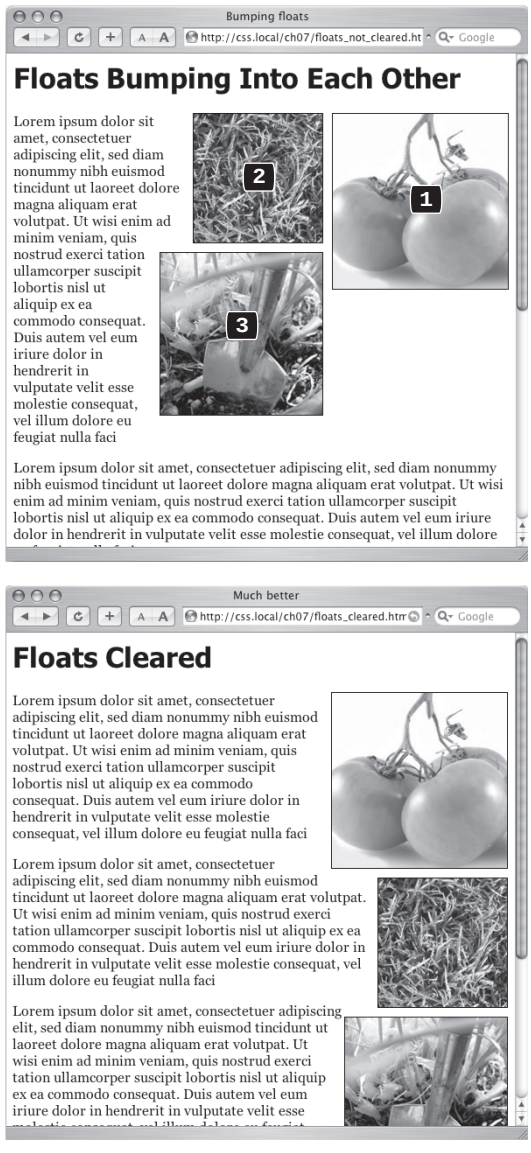


Figure 7-13:
Top: Sometimes you don't want an element to wrap around a floated object.

Bottom: Applying the clear property (in this case clear: right;*) to each image prevents them from sitting next to each other. The* clear *applied to photo (2) prevents it from wrapping up next to image (1). Applying* clear: right *to photo (3) forces it to appear below photo (2).*

Using *clear: right;* on the images prevents the photos from sitting next to each other (Figure 7-13, bottom). The clear applied to the second photo prevents it from wrapping up next to the first image, while the last image's right clear property forces it to appear below the second image.

Note: This business of left floats, right floats, and how to clear them sounds complicated–and it is. This section gives you a basic introduction. You'll see the subject again in Chapter 12 and eventually learn how to use floats in more sophisticated ways.

Tutorial: Margins, Backgrounds, and Borders

In this tutorial, you'll explore elements of the CSS box model, adjust the spacing around objects on a page, add colorful borders to items on a page, and control the size and flow of page elements.

To get started, you need to download the tutorial files located on this book's companion website at *www.sawmac.com/css2e/*. Click the tutorial link and download the files. (All of the files are enclosed in a Zip archive. See detailed instructions for unzipping the files on the website.) The files for this tutorial are contained inside the *07* folder.

Controlling Page Margins and Backgrounds

You'll start with a very basic HTML file containing an internal style sheet with a basic CSS reset style. It's not much to look at right now (see Figure 7-14).

Note: For a sneak preview of the final result, check out Figure 7-17.

1. **In your favorite text editor, open *07* → *sidebar.html.***

   There's already an internal style sheet added to this page containing a single group selector. This selector is the most important style in the CSS reset style sheet. It basically removes all margins, padding, font size, and font weight from the most common block-level elements and eliminates many of the cross-browser display problems you'll encounter related to these properties.

   At a bare minimum, you should always include this style in every style sheet you create. Within this style, the most important properties are the *margin* and *padding* settings. There's enough cross-browser-related weirdness related to those two properties that you should always zero these out and start fresh. You'll start with something simple: a background color.

2. **In the internal style sheet, click directly after the CSS comment /* *end reset styles* */ and add a tag selector style:**

```
html {
 background-color: #FDF8AB;
}
```

This style adds a light yellow background color to the page. If you want to color the background of a web page, you can add the *background-color* property to either the <html> tag or the <body> tag. Next, you'll add some margins, borders, and other properties to the <body> tag.

3. **Add another style to the internal style sheet:**

```
body {
 background-color: #FFF;
 border: 3px solid #85A110;
}
```

This style adds a white background color to the <body> tag and a 3-pixel green border. Because the <body> tag sits inside the <html> tag, a web browser considers it to be "on top" of the <html> tag, so the white background will cover the yellow color you added in the previous step. Next you'll give the body tag a width and adjust its padding and margins.

Tip: Normally if you add a background color property to the <body> tag, that color fills the entire browser window; however if you also add a background color to the <html> tag, the body's background color only fills the area with content. To see this in action, just preview the web page after step 3 above; then delete the html tag style, and preview the page again. A weird, but useful bit of CSS trivia.

---

4. **Edit the body style you just created by adding five new properties (changes are in bold):**

```
body {
 background-color: #FFF;
 border: 3px solid #85A110;
 width: 760px;
 margin-top: 20px;
 margin-left: auto;
 margin-right: auto;
 padding: 15px;
}
```

The *width* property constrains the body so that it's just 760 pixels wide: if a visitor's browser window is wider than 760 pixels, then he'll see the background color from the html style, and a 760-pixel box with the white background of the body tag.

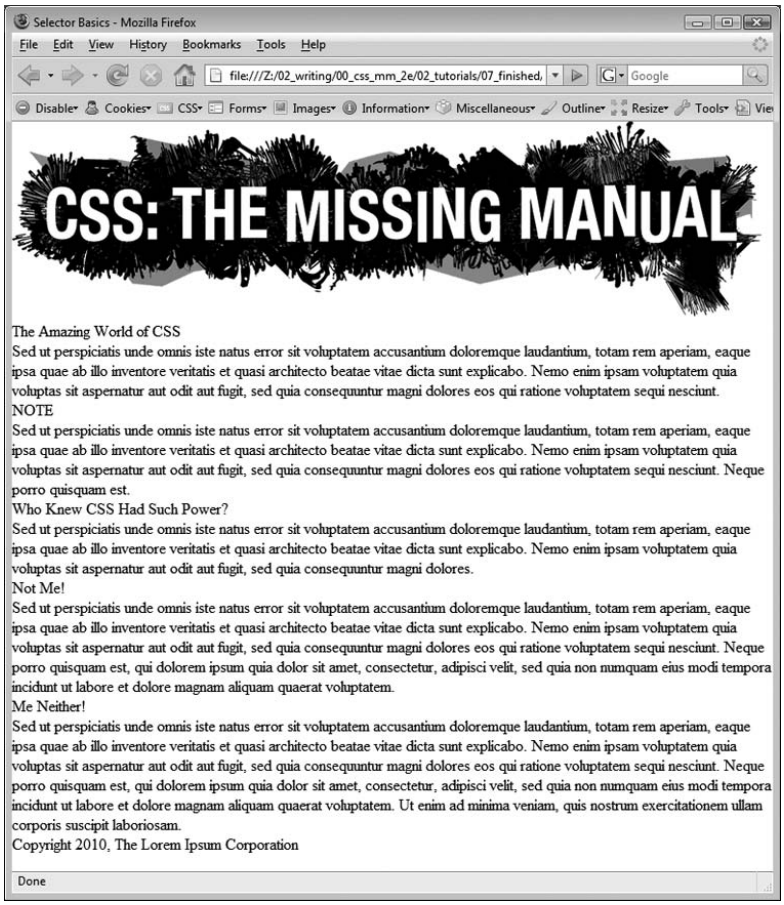


Figure 7-14: *This web page is barebones HTML, with a single style that removes much of the built-in web browser styling. It'll look a lot better with a box model makeover.*

The *margin-top* property adds 20 pixels of space from the browser windows top edge—nudging the body tag down just a bit; while the left and right margin settings center the body in the middle of the browser window. "Auto" is just another way of telling a browser, "You figure it out," and since that auto value is applied to both the left and right margins, a browser simply provides equal space on the left and right side.

Note: You could also have used the *margin* shorthand property (page 155) to condense those three lines of margin settings to just one like this:

```
margin: 20px auto 0 auto;
```

Finally, to keep the content inside the <body> from touching the border line, 15 pixels of space are added to the inside of the body using the *padding* property—in other words the image and text is indented 15 pixels from all four edges.

Your style sheet is pretty far along, and you're ready to check the page.

5. **Save the file and preview the page in a web browser.**

   You should see a white box with an image, a bunch of text, and a green outline floating in a sea of yellow (see Figure 7-15). The text needs some loving attention. You'll take care of that next.

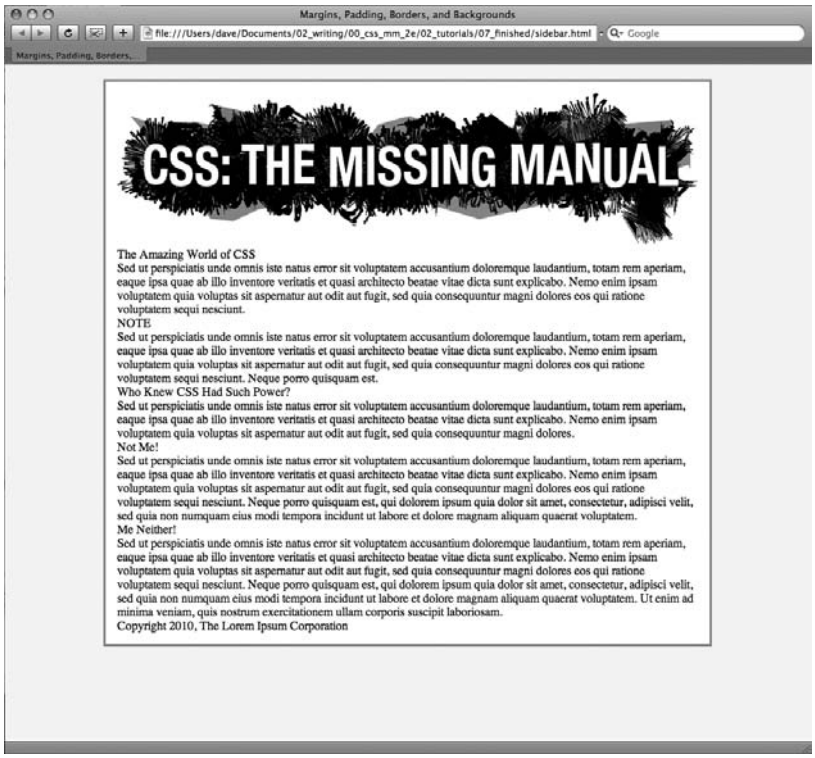


Figure 7-15: *Setting the left and right margins to* auto *for any element with a set width centers it. In this case, setting a width for the body and adding* margin-left: auto *and* margin-right:auto *places it smack dab in the center of the browser window. Unfortunately, there's no easy way to center an element vertically (with equal space above and below it) using CSS. There are a few tricks that crafty designers have come up with, though. If you're after vertically centered elements check out* www.student.oulu.fi/~laurirai/www/css/middle/ *and* www.search-this.com/2008/05/15/easy-vertical-centering-with-css/.

Adjusting the Space Around Tags

Since the CSS reset style pretty much stripped the text on this page of all formatting, you'll need to create styles to make the headings and paragraphs look great. You'll start with the <h1> tag at the top of the page.

1. **Return to your text editor and the *sidebar.html* file. Click at the end of the closing brace of the body tag selector, press Enter (Return) to create a new line, and then add the following style:**

```
h1 {
 font-size: 44px;
 font-family: Georgia, "Times New Roman", Times, serif;
 letter-spacing: 1px;
 color: #85A110;
 text-transform: uppercase;
}
```

This style uses many of the text-formatting properties discussed in the previous chapter—the top headline is 44 pixels tall and all uppercase, uses the Georgia font, and has a green color, with a little space between each letter. The real fun is adding a background color to really highlight the headline.

Tip: Save the page and preview it in a web browser after each step in this tutorial. That way you'll get a better understanding of how these CSS properties affect the elements they format.

2. **Add one new property to the h1 tag style so that it looks like this (changes in bold):**

```
h1 {
 font-size: 44px;
 font-family: Georgia, "Times New Roman", Times, serif;
 letter-spacing: 1px;
 color: #85A110;
 text-transform: uppercase;
 background-color: #E2EBB4;
}
```

If you preview the page now, you'll see that the headline has a light green background. When applied to a block-level element like a headline, the background fills the entire horizontal space available (in other words, the color doesn't just sit behind the text "The Amazing World of CSS" but extends all the way to the right edge of the box).

The headline text is a little cramped—the "T" that begins the headline touches the edge of the background. With a little padding, you can fix this.

3. **Add another property to the h1 tag style so that it looks like this (changes in bold):**

```
h1 {
 font-size: 44px;
 font-family: Georgia, "Times New Roman", Times, serif;
 letter-spacing: 1px;
 color: #85A110;
 text-transform: uppercase;
 background-color: #E2EBB4;
 padding: 5px 15px 2px 15px;
}
```

The *padding* shorthand property provides a concise way to add padding around all four sides of the content—in this case 5 pixels of space are added above the text, 15 pixels to the right, 2 pixels to the bottom, and 15 pixels to the left.

There's one other problem with the headline: Because of the padding added to the body tag (see step 4 on page 176), the headline is indented 15 pixels from the left and right edges of the green border surrounding the body. The headline would look better if it touched the green border. No problem; negative margins to the rescue.

4. **Add one last property to the h1 tag style so that it looks like this (changes in bold):**

```
h1 {
 font-size: 44px;
 font-family: Georgia, "Times New Roman", Times, serif;
 letter-spacing: 1px;
 color: #85A110;
 text-transform: uppercase;
 background-color: #E2EBB4;
 padding: 5px 15px 2px 15px;
 margin: 0 -15px 20px -15px;
}
```

Here, the margin shorthand sets the top margin to 0, the right margin to –15 pixels, bottom margin to 20 pixels, and the left margin to –15 pixels. The bottom margin just adds a bit of space between the headline and the paragraph that follows. The next trick is the use of negative values for the left and right margins. As mentioned on page 156, you can assign a negative margin to any element. This property pulls the element out toward the direction of the margin—in this case, the headline extends 15 pixels to the left and 15 pixels to the right, actually expanding the headline and pulling it out over the body tag's padding.

5. **Now, you'll add some formatting of the <h2> tags. Add the following style after the h1 tag style:**

```
h2 {
 font-size: 24px ;
 font-family: "Arial Narrow", Arial, Helvetica, sans-serif;
 color: #F96B18;
 border-top: 2px dotted #8DA516;
 border-bottom: 2px dotted #8DA516;
 padding-top: 5px;
 padding-bottom: 5px;
 margin: 15px 0 5px 0;
}
```

This style adds some basic text formatting and a dotted border above and below the headline. To add a bit of space between the headline text and the lines, it puts a small bit of padding at the top and bottom. Finally, the *margin* property adds 15 pixels above the headline and 5 pixels below it.

6. **Save the file and preview the page in a web browser.**

   The headlines are looking good (see Figure 7-16). Next, you'll create a sidebar on the right side of the page.

Figure 7-16: *With just a few styles, you can add background colors, control margins throughout the page, and adjust the space between headlines and paragraphs.*

Building a Sidebar

Sidebars are common elements in most types of print publications like magazines, books, and newspapers. They compartmentalize and highlight small chunks of information like a resource list, contact information, or a related anecdote. But to be effective, sidebars shouldn't interrupt the flow of the main story. They should, like the name says, sit unobtrusively off to one side, which you can easily make happen with CSS.

1. **Return to your text editor and the *sidebar.html* file.**

   First, you must isolate the region of the page that makes up the sidebar. The tag is the perfect tool. You can enclose any amount of HTML into its own self-contained chunk by wrapping it in a tag.

2. **Click *before* the first <h2> tag (the one with the "NOTE" headline). Then type <*div class="sidebar"*>, and press Enter (Return).**

   This HTML marks the beginning of the sidebar and applies a class to it. You'll create the *.sidebar* class style soon, but first you need to indicate the end of the sidebar by closing the .

3. **Click after the closing </p> tag that immediately follows the <h2> tag (this is the </p> that appears just before *<h2>Who Knew CSS Had Such Power?</h2>*. Press Enter, and then type .**

   You've just wrapped a headline and paragraph inside a tag. Next, you'll create a style for it.

4. **In the page's style sheet, add the following style below the *<h2>* style you created earlier:**

```
.sidebar {
 width: 30%;
 float: right;
 margin: 10px;
}
```

   This style sets the width of the content area (where the text appears) to 30 percent. You don't have to use an absolute value like pixels for widths. In this case, the sidebar's width is 30 percent of the width of the container. The *float* property moves the sidebar to the right side of the box, and the *margin* property adds 10 pixels of space around the sidebar.

   If you preview the page in a browser, you'll see that the basic shape and placement of the sidebar are set, but there's one problem: The borders from the <h2> tags appear *underneath* the box. Even though the floated sidebar moves the text of the headlines out of the way, floats don't displace borders or backgrounds. Those just appear right under the floated sidebar. One way to fix this problem is to simply add a background color to the sidebar, so you can't see the h2 borders. (There's another technique, as well, which you'll use in step 8 on page 184.)

5. **Add another property to the *.sidebar* style so it looks like this (changes in bold):**

```
.sidebar {
 width: 30%;
 float: right;
 margin: 10px;
 background-color: #FAEBC7;
 padding: 10px 20px;
}
```

   This property adds a light orangish color to the sidebar and indents the text from the sidebar's edges so it won't touch the borders you're about to add.

6. **Finally, add two more properties to the *.sidebar* style so it looks like this (changes in bold):**

```
.sidebar {
 width: 30%;
 float: right;
 margin: 10px;
 background-color: #FAEBC7;
 padding: 10px 20px;
 border: 1px dotted #FC6512;
 border-top: 20px solid #FC6512;
}
```

Here's an example of the handy technique described on page 162. If you want most of the borders around an element to be the same, you can first define a border for all four edges—in this case a 1 pixel, dotted, orange line around the entire sidebar—and then supply new border properties for the specific edges you want changed—in this example, the top border will be 20 pixels tall and solid. This technique lets you use just two lines of CSS code instead of four (*border-top, border-bottom, border-left,* and *border-right*).

The headline inside the sidebar doesn't look quite right. It uses the same properties as the other <h2> tags (because of the h2 tag style you created in step 5). The border is distracting and the top margin pushes the headline down too much from the top of the sidebar. Fortunately, you can use a descendent selector to override those properties.

7. **After the *.sidebar* style, in the internal style sheet, add a descendent selector:**

```
.sidebar h2 {
 border: none;
 margin-top: 0;
 padding: 0;
}
```

Because of the *.sidebar*, this style is more powerful—that is, it has greater *specificity* as described on page 96—than the basic h2 style. It erases the border from the original h2 tag style, along with the top margin and all of the padding. However, since this style doesn't have a font size, color or font family, those properties from the h2 style still apply—it's the cascade in action!

The page is looking good, but the borders on the h2 tags still run up to and behind the sidebar. That just doesn't look good, but you can fix it easily.

8. **Locate the h2 style and add the *overflow* property, like so:**

```
h2 {
 font-size: 24px ;
 font-family: "Arial Narrow", Arial, Helvetica, sans-serif;
 color: #F96B18;
 border-top: 2px dotted #8DA516;
 border-bottom: 2px dotted #8DA516;
 padding-top: 5px;
 padding-bottom: 5px;
 margin: 15px 0 5px 0;
 overflow: hidden;
}
```

   Setting the *overflow* property to *hidden* hides the borders that pass beyond the headline text and under the floating element. (Unfortunately, Internet Explorer 6 doesn't get it and still displays the borders underneath the sidebar. But you'll fix that in the next section.)

9. **Save the file and preview the web page in a browser.**

   The page should look like Figure 7-17.

Unfortunately, the page doesn't look like Figure 7-17 in Internet Explorer 6 for Windows. A couple of bugs in that browser affect the page's appearance for the worse. Read on for the fixes.

Fixing the Browser Bugs

While the *sidebar.html* file looks just fine in Internet Explorer 7 and 8, earlier versions of that browser don't display the page correctly. If you have access to Internet Explorer 6, check it out. You'll see the problems.

For one thing, the border under the two <h2> headlines travels underneath the sidebar. In step 8 above, you used the *overflow* property to fix this problem in most browsers, but you need something else to get IE 6 straightened out. In addition, the margin around the sidebar is noticeably larger on the right.

Note: If you don't have access to check for yourself, just trust that problems are there and use this section to learn how to fix them for the sake of your visitors who are stuck with IE 6.

You'll tackle the first bug, the overextended borders, first:

1. **Return to your text editor and the *sidebar.html* file.**

   You just have to add one property to the h2 tag style—it has no effect on other browsers, but it knocks some sense into IE 6.

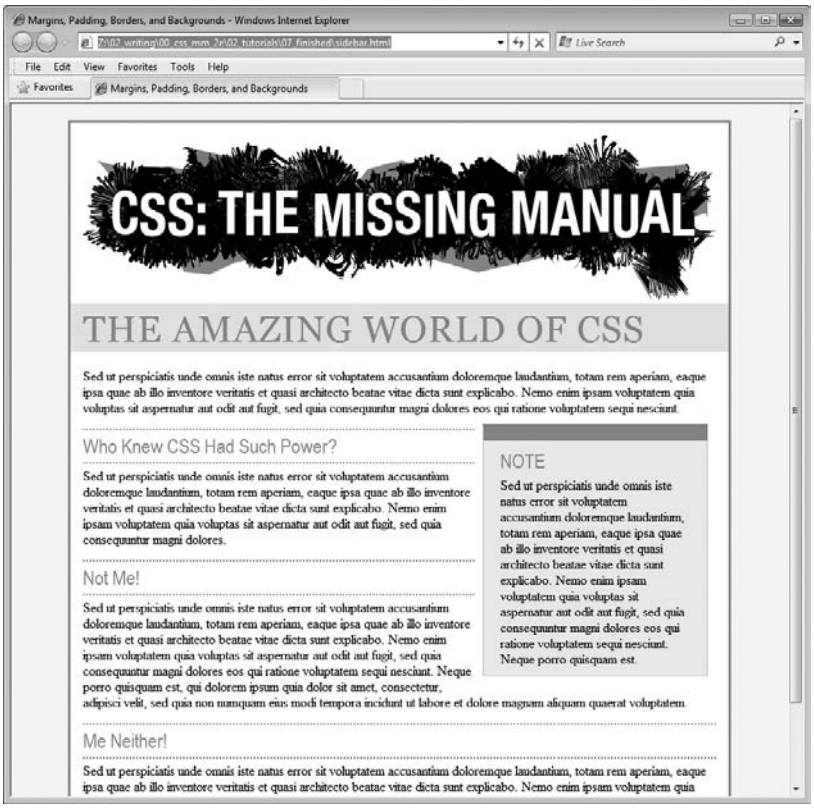


Figure 7-17: *A handful of CSS styles add design elegance to ho-hum HTML. Notice how the floated sidebar both attracts attention and moves it out of the way of the main body of text.*

2. **Add this new style to the end of the *sidebar.html* page's style sheet:**

```
h2 {
 font-size: 24px ;
 font-family: "Arial Narrow", Arial, Helvetica, sans-serif;
 color: #F96B18;
 border-top: 2px dotted #8DA516;
 border-bottom: 2px dotted #8DA516;
 padding-top: 5px;
 padding-bottom: 5px;
 margin: 15px 0 5px 0;
 overflow: hidden;
 zoom: 1;
}
```

Zoom isn't an official CSS property. It's a Microsoft-only property meant to enlarge an element on a page. That's not why you're using it here, though. In this case, the *zoom* property prevents the border from extending under the float in IE 6. *It fixes the border bug*—albeit in a completely arcane way. (See the box on page 173 for more details on this browser voodoo.)

Next problem: The double-margin bug that's causing that extra space on the right side of the sidebar. Since this bug affects just IE 6, you'll create a ** html* style for the sidebar. (As described in the box on page 169, ** html* hides the rest of this selector—.*sidebar*—from all browsers except IE 6 for Windows and earlier.)

3. **Add this style to your style sheet:**

```
* html .sidebar {
 display: inline;
}
```

This use of the *display* property is another nonsensical bit of CSS. But it does the job: It tricks IE into removing the extra right margin.

4. **Save the file and preview the page in Internet Explorer 6.**

The page should now look like Figure 7-17 in that browser as well. Dealing with these browser bugs is an unfortunate reality for every web developer. You'll learn solutions (also known as *hacks*) to particular bugs throughout this book. Also, in Chapter 15, you'll learn even more strategies for dealing with hacks used to fix Internet Explorer browser bugs.

The solution is in the *sidebar_finished.html* file inside the *07_finished* folder.

Going Further

To try out your newfound skills, try this exercise on your own: Create a p tag style to add some pizzazz to the paragraphs on the page—try out some margin settings, font color, and so on. Next, create a class style for formatting the copyright notice that appears at the bottom of the *sidebar.html* page (called, say, *.copyright*). In this style, add a border above the copyright notice, change its text color, shrink its font size, and change the type to uppercase. (Hint: Use the *text-transform* property discussed in on page 125.) After you've created the style, add the appropriate class attribute to the <p> tag in the HTML.

CHAPTER
8

Adding Graphics to Web Pages

No matter how much you gussy up your text or fiddle with borders and margins, nothing affects the appearance of your site more than the images you add to it. And once again, CSS gives you more image control than HTML ever dreamed of. You can work with graphics in CSS on two fronts: the <img> tag and the *background-image* property (which lets you place an image in the background of any tag on a page).

This chapter delves into some of the creative ways you can deploy images with CSS. The best way to learn how to use graphics in CSS is to see them in action, so this chapter has three—count 'em, three—tutorials. By creating a photo gallery web page and using images for overall page styling, you'll be an image-slinging pro in no time.

CSS and the <img> Tag

The venerable <img> tag has been the workhorse of photo-heavy websites since the beginning of the World Wide Web. Even sites without photos use it to add logos, navigation buttons, and illustrations. While CSS doesn't have any properties specifically aimed at formatting images, you can take advantage of the CSS properties you've already learned to enhance your site's graphics. For example, the *border* property is a quick and simple way to frame an image or unify the look of a gallery of photos. Here's a rundown of the CSS properties most commonly used with images:

- **Borders.** Use one of the many *border* properties (page 160) to frame an image. You'll see an example of this in the tutorial on page 206. Since each border side can be a different color, style, and width, you've got lots of creative options.

- **Padding.** The *padding* property (page 153) adds space between a border and an image. By putting a little breathing room between a photo and its frame, padding simulates the fiberboard *mat* that's used in traditional picture frames to surround and offset the image. And by setting a background color, you can even change the color of the "mat."
- **Float.** Floating an image moves it to either the left or right edge of the page, or—if the image is contained in another layout element such as a sidebar—to the left or right edge of the image's containing element. Text and other page elements then wrap around the image. You can even float multiple images to create a flexible, multi-row image gallery. You'll see an example of this technique in the tutorial on page 206.
- **Margins.** To add space between an image and other page content, use the *margin* property. When you float an image, the text that wraps around it is usually uncomfortably close to the image. Adding a left margin (for right-floated images) or right margin (for left-floated images) adds space between text and the graphic.

In most cases, you won't create a style for the <img> tag itself. Formatting this tag is using too broad a brush, since it formats *all* images on your page—even those with very different functions, such as the logo, navigation buttons, photos, and even graphic ads. You wouldn't, after all, want the same black frame around all of those images. Instead, you should use a class style, such as *.galleryImage* or *.logo,* to apply the style selectively.

Another approach is to use a descendent selector to target images grouped together in one section of a page. If you have a gallery of photos, you can place all of the photos inside a tag with an ID name of *gallery,* and then create a style for just the images inside that , like this: *#gallery img.*

Background Images

The *background-image* property is the key to making visually stunning websites. Learn how to use it and its cousin properties, and you can make your site stand head and shoulders above the rest. For an example of the power of background images, check out *www.csszengarden.com* (Figure 8-1). The HTML for both the pages shown here is exactly the same; the visual differences are accomplished by using different background images. How's that for CSS power?

If you've built a few websites, you've probably used an image for the background of a page—perhaps a small graphic that repeats in the background of the browser window creating a (hopefully) subtle pattern. That time-honored HTML method used the <body> tag's *background* attribute. But CSS does the same job better.

Note: In the next few pages, you'll meet three background image properties by learning the individual CSS code for each one. Later in the chapter, you'll learn a shorthand method that'll save you a lot of typing.

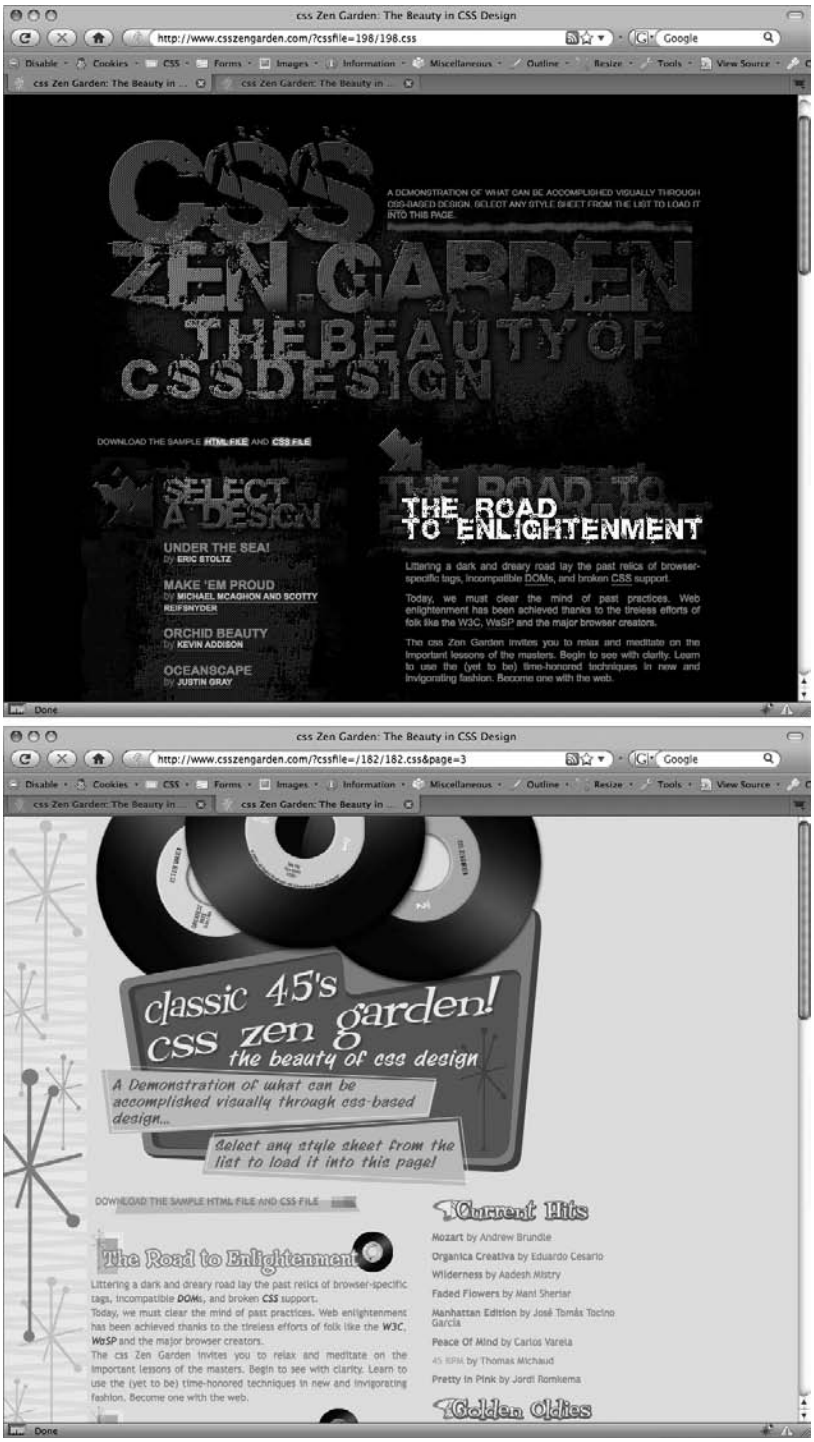


Figure 8-1: CSSzengarden.com *showcases the power of Cascading Style Sheets by demonstrating how you can transform a single HTML file into two utterly different looking pages with the help of CSS. The real secret to making each of the wonderful designs look unique is the extensive use of background images. (In fact, when you look at these pages' HTML code, you'll see there isn't a single <img> tag in it.)*

UP TO SPEED

GIFs, JPEGs, and PNGs: The Graphics of the Web

Computer graphics come in hundreds of different file formats, with a mind-numbing assortment of acronyms: JPEG, GIF, TIFF, PICT, BMP, EPS, and so on.

Fortunately, graphics on the Web are a bit simpler. Today's web browsers only work with three graphics formats: GIF, JPEG, and PNG, each of which provides good *compression.* Through clever computer manipulation, compression reduces the graphic's file size so it can travel more rapidly across the Internet. Which you choose depends on the image you wish to add to your page.

GIF (Graphics Interchange Format) files provide good compression for images that have areas of solid color: logos, text, simple banners, and so on. GIFs also offer single-color transparency, meaning that you can make one color in the graphic disappear, permitting the background of a web page to show through part of the image. In addition, GIFs can include simple animations.

A GIF image can contain a maximum of only 256 shades, however, which generally makes photos look *posterized* (patchy and unrealistically colored, like a poster). In other words, that radiant sunset photo you took with your digital camera won't look so good as a GIF. (If you don't need to animate an image, the PNG8 format discussed below is a better choice than GIF.)

JPEG (Joint Photographic Experts Group) graphics, on the other hand, pick up where GIFs leave off. JPEG graphics can contain millions of different colors, making them ideal for photos. Not only do JPEGs do a better job on photos, they also compress multicolored images much better than GIFs, because the JPEG compression algorithm considers how the human eye perceives different adjacent color values. When your graphics software saves a JPEG file, it runs a complex color analysis to lower the amount of data required to accurately represent the image. On the downside, JPEG compression makes text and large areas of solid color look blotchy.

Finally, the **PNG** (Portable Network Graphics) format includes the best features of GIFs and JPEGs, but you need to know which version of PNG to use for which situation. PNG8 is basically a replacement for GIF. Like GIF, it offers 256 colors and basic one-color transparency. However, PNG8 usually compresses images to a slightly smaller file size than GIF, so PNG8 images download a tiny bit faster than the same image saved in the GIF format.

PNG24 and PNG32 (also known as "PNG24 with alpha transparency") offer the expanded color palette of JPEG images, without any loss of quality. This means that photos saved as PNG24 or PNG32 tend to be higher quality than JPEGs. But before you jump on the PNG bandwagon, JPEG images do offer very good quality and a *much* smaller file size than either PNG24 or PNG32. In general, JPEG is a better choice for photos and other images that include lots of colors.

Finally PNG32 offers one feature that no other format does: 256 levels of transparency (also called *alpha* transparency), which means that you can actually see the background of a web page through a drop shadow on a graphic, or even make a graphic that has 50 percent opacity (meaning you can see through it) to create a ghostly translucent effect. Unfortunately, Internet Explorer 6 for Windows doesn't properly display PNG32's 256 levels of transparency: Instead of making the transparent areas see-through, IE6 replaces these areas with a hideous blue background. (There are several JavaScript based techniques–see *http://24ways.org/2007/supersleight-transparent-png-in-ie6*, for example–that can help IE 6 display PNG transparency correctly.) Fortunately, Internet Explorer 7 and 8 can handle PNG transparency, as can Firefox, Safari, and Opera.

The *background-image* property adds a graphic to the background of an element. To put an image in the background of a web page, you can create a style for the <body> tag:

```
body {
  background-image: url(images/bg.gif);
}
```

The property takes one value: the keyword *url,* followed by a path to the graphic file enclosed in parentheses. You can use an absolute URL like this—*url(http://www.cosmofarmer.com/image/bg.gif)*—or a document- or root-relative path like these:

```
url(../ images/bg.gif) /* document-relative */
url(/images/bg.gif) /* root-relative */
```

As explained in the box on the previous page, document-relative paths provide directions in relation to the style sheet file, *not* the HTML page you're styling. These will be one and the same, of course, if you're using an internal style sheet, but you need to keep this point in mind if you're using an *external* style sheet. Say you've got a folder named *styles* (containing the site's style sheets) and a folder named *images* (holding the site's images). Both these folders are located in the site's main folder along with the home page (Figure 8-2). When a visitor views the home page, the external style sheet is also loaded (step 1 in Figure 8-2). Now, say the external style sheet includes a style for the <body> tag with the background image property set to use the graphic file *bg.gif* in the images folder. The document-relative path would lead from the style sheet to the graphic (step 2 in Figure 8-2). In other words, the style would look like this:

```
body {
  background-image: url(../images/bg.gif);
}
```

This path breaks down like this: *../* means "go up one level" (that is, up to the folder containing the *styles* folder); *images/* means "go to the images folder," and *bg.gif* specifies that file.

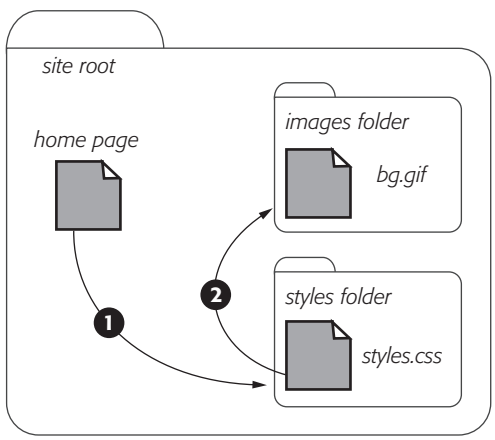


Figure 8-2:
Document-relative paths are calculated in relation to the style sheet, not the web page being styled.

In the examples so far, the path isn't enclosed in quotes as in HTML, but quotes are fine, too. In CSS, all three of the following code lines are kosher:

```
background-image: url(images/bg.gif);
background-image: url("images/bg.gif");
background-image: url('images/bg.gif');
```

UP TO SPEED

URL Types

In CSS, you need to specify a *URL* when you add a background image or attach an external style sheet using the @import method (page 398). A URL or *Uniform Resource Locator* is a path to a file located on the Web. There are three types of paths: *absolute path, root-relative path,* and *document-relative path*. All three simply indicate where a web browser can find a particular file (like another web page, a graphic, or an external style sheet).

An absolute path is like a postal address–it contains all the information needed for a web browser located anywhere in the world to find the file. An absolute path includes http://, the hostname, and the folder and name of the file. For example: *http://www.cosmofarmer.com/images/bluegrass.jpg*.

A *root-relative* path indicates where a file is located relative to a site's top-level folder–the site's root folder. A root-relative path doesn't include http:// or the domain name. It begins with a / (slash) indicating the root folder of the site (the folder the home page is in). For example */images/bluegrass.jpg* indicates that the file *bluegrass.jpg* is located inside a folder named *images*, which is itself located in the site's top-level folder. An easy way to create a root-relative path is to take an absolute path and strip off the http:// and the host name.

A *document-relative* path specifies the path from the current document to the file. When it comes to a style sheet, this means *the path from the style sheet to the specified file*, not the path from the current web page to the file.

Here are some tips on which type to use:

- If you're pointing to a file that's not on the same server as the style sheet, you *must* use an absolute path. It's the only type that can point to another website.
- Root-relative paths are good for images stored on your own site. Since they always start at the root folder, you can move the style sheet around without affecting the path from the root to the image on the site. However, they're difficult to use when first building your designs: You can't preview root-relative paths unless you're viewing your web pages through a web server–either your web server out on the Internet or a web server you've set up on your own computer for testing purposes. In other words, if you're just opening a web page off your computer using the browser's File → Open command, then you won't see any images placed using root-relative paths.
- Document-relative paths are the best when you're designing on your own computer without the aid of a web server. You can create your CSS files and then review them in a web browser simply by opening a web page stored on your hard drive. These pages will work fine when you move them to your actual, living, breathing website on the Internet, but you'll have to re-write the URLs to the images if you move the style sheet to another location on the server.

Controlling Repetition

One problem with the old HTML *background* attribute is that the graphic always tiles, filling up the entire background of a web page. (Not only that, it's being phased out from current HTML standards.) Fortunately, CSS gives you far greater control. Using the *background-repeat* property you can specify how (or if at all) an image tiles:

```
background-repeat: no-repeat;
```

The property accepts four values: *repeat, no-repeat, repeat-x,* and *repeat-y:*

- *repeat* is the normal setting for background images that you want to display from left to right and top to bottom until the entire space is filled with a graphic (Figure 8-3).

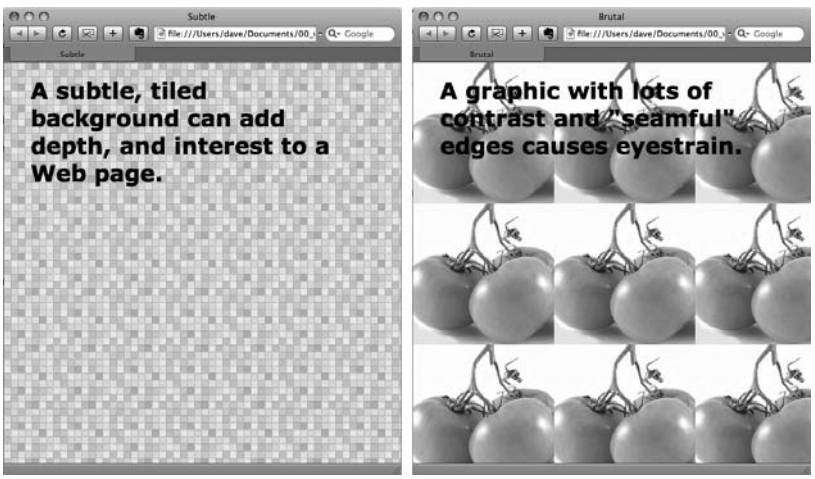


Figure 8-3: *Be careful when tiling images in the background of a web page. Choose an image without a lot of contrast that tiles seamlessly (left). An image with too much contrast (right), makes text hard to read.*

- *no-repeat* displays the image a single time, without tiling or repetition. It's a very common option, and you'll frequently use it when placing images into the background of tags other than the body. You can use it to place a logo in the upper corner of a page or to use custom graphics for bullets in lists, to name a couple. (You'll see the bullet example in action in the tutorial on page 218.) In another example, you'll use it at the top of a tag to create a rounded edge at the top of a box (page 219).
- *repeat-x* repeats an image horizontally along the x-axis (the horizontal width of the page, if your geometry is rusty). It's perfect for adding a graphical banner to the top of a web page (Figure 8-4, left) or a decorative border along the top or bottom of a headline. (See page 214 in the tutorial for an example of this effect.)
- *repeat-y* repeats an image vertically along the y-axis (the vertical length of the page). You can use this setting to add a graphic sidebar to a page (Figure 8-4, right) or to add a repeating drop shadow to either side of a page element (like a sidebar).

Positioning a Background Image

Placing and tiling a background image is just half the fun. With the *background-position* property, CSS lets you control the exact placement of an image in a number of ways. You can specify both the horizontal and vertical starting points for a graphic in three ways—keywords, exact values, and percentages.

Figure 8-4: *Add graphic backgrounds to the banners and sidebars of a page by taking advantage of the tiling control offered by the repeat-x (left) and repeat-y (right) options.*

Keywords

You get two sets of keywords to work with. One controls the three horizontal positions—*left, center, right*—and the other controls the three vertical positions—*top, center, bottom* (Figure 8-5). Suppose you want to place a graphic directly in the middle of a web page. You can create a style like this:

```
body {
  background-image: url(bg_page.jpg);
  background-repeat: no-repeat;
  background-position: center center;
}
```

To move that graphic to the top-right corner, just change the background position to this:

```
background-position: right top;
```

Note: If you've decided to tile an image (by setting *background-repeat* to one of the values listed in the previous section), then the *background-position* property controls the *starting* point of the first tile. So, for example, if you use the *repeat* option, you'll still see the entire background filled by the image. It's just that the position of the *first* tile changes based on which *background-position* setting you used.

Keywords are really useful when you want to create vertical or horizontal banners. If you wanted a graphic that's centered on a page and tiled downwards in order to create a backdrop for content (Figure 8-6, left), then you'd create a style like this:

```
body {
  background-image: url(background.jpg);
  background-repeat: repeat-y;
  background-position: center top;
}
```

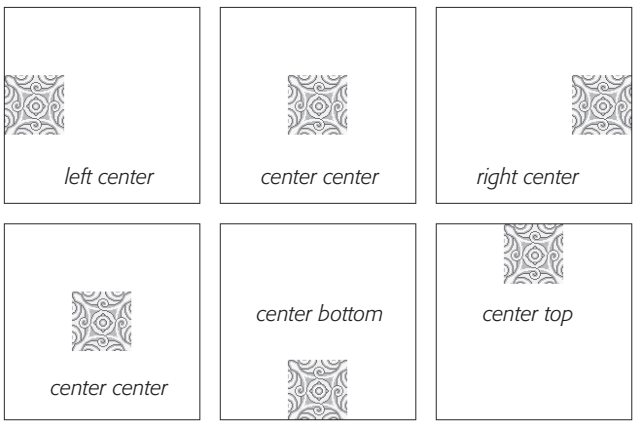


Figure 8-5: *You can use keywords to position an image in the background. The order in which you specify the keywords doesn't matter–*top center *and* center top *both have the same effect.*

Likewise, using the *bottom, center,* or *top* keywords you can position a horizontally repeating image using *repeat-x* (Figure 8-4, left) in a particular place on the page (or within a styled element). Use the technique shown on the right side of Figure 8-6, to position a line under headlines in the tutorial on page 217.

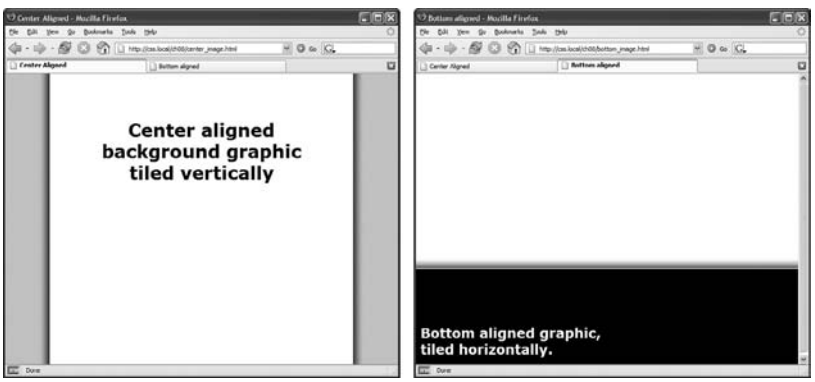


Figure 8-6: *Use the* background-position *property when tiling an image either vertically (left) or horizontally (right). In the left image, the graphic is a wide white box with drop shadows on the left and right edges. The page's background color is gray, so the text of the page looks like it's on a white piece of paper floating above the screen.*

Tip: You can actually add a background image to both the <html> and <body> tags. If you tile both images horizontally and place <body> tag's image at the top and the <html> tag's image on the bottom, you can achieve the effect of two stripes cutting across the top and bottom of the page–no matter how tall the page is. And it works in all current browsers, even IE 6!

BROWSER BUG

Bottoming Out

When displaying an image in the background of a web page, most browsers don't always vertically position the image in the way you'd expect. For example, if you set the vertical position to *bottom,* the image doesn't always appear at the bottom of the browser window. This happens when the content on a page is shorter than the browser window is tall.

If the web page has only a couple of paragraphs of text and it's displayed on a really large monitor, most browsers treat the "bottom" as the bottom of the last paragraph, not the bottom of the browser window. If you run into this annoyance, then just add this style to your style sheet: *html { height: 100%; }*. (Internet Explorer 7 and earlier doesn't have this problem.)

Precise Values

You can also position background images using pixel values or ems. You use two values: one to indicate the distance between the image's left edge and the container's left edge, and another to specify the distance between the image's top edge and the style's top edge. (Put another way, the first value controls the horizontal position, the second value controls the vertical position.)

Say you want custom bullets for a list. If you add a background image to the <li> tag, the bullets often don't line up exactly (see Figure 8-7, top). So you can just nudge the bullets into place using the background-position property (Figure 8-7, bottom). If the list would look better with, say, the bullets 5 pixels farther to the right and 8 pixels farther down, then add this declaration to the style defining the background image:

```
background-position: 5px 8px;
```

You can't specify distances from the *bottom* or *right* using pixel or em measurements, so if you want to make sure an image is placed in the exact bottom right corner of the page or a styled element, then use keywords (*bottom right*) or percentages, as discussed next. However, you can use negative values to move an image off the right edge or above the top edge, hiding that portion of the image from view. You may want to use negative values to crop out part of a picture. Or, if the background image has lots of extra white space at the top or left edge, you can use negative values to eliminate that extra space.

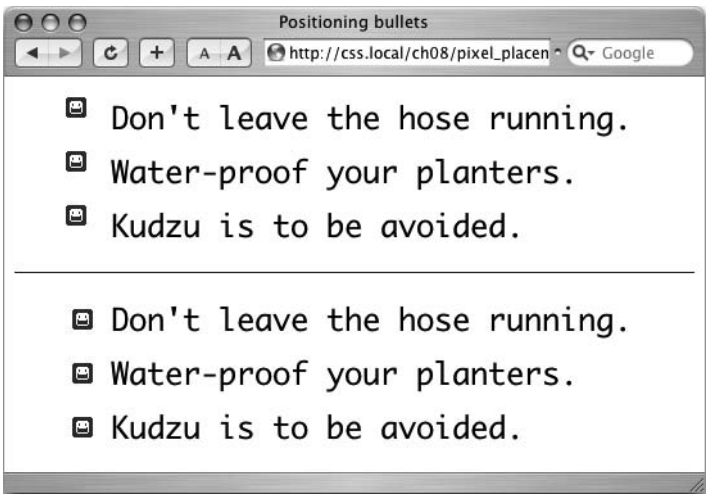


Figure 8-7: *Using custom images for bullets sometimes requires careful positioning, so that the bullet graphic appears the correct distance from, and perfectly centered on, the list item's text.*

Percentage Values

Finally, you can use percentage values to position a background image. Using percentages in this manner is tricky, and if you can achieve the effect you're after with the keyword or precise values discussed previously, then use them. But you have to use percentages to position an element in a spot that's proportional to the width of an element. For example, if you want to place a graphic three-quarters of the way across a headline and you don't know the width of the element.

Note: Percentage values are also useful for a little trick often used with float-based layouts to give left and right sidebars background colors or graphics that span the entire height of a web page (see the Note on page 311).

As with pixel or em values, you supply two percentages: one to indicate the horizontal position and the second to indicate the vertical position. What the percentage is measuring is a little tricky. In a nutshell, a percentage value aligns the specified percentage of the image with the same percentage of the styled element. What?

The best way to understand how percentage values work is to look at a few examples. To position an image in the middle of a page (like the one shown in the center of Figure 8-8) you'd write this:

```
background-position:50% 50%;
```

This declaration places the point on the image that's 50 percent from its left edge directly on top of the point that's 50 percent from the left edge of the page (or whatever element you've styled with the background image). The declaration also aligns the point on the image that's 50 percent from its top with the point that's 50 percent from the top edge of the page or styled element. In other words, the center

of the image is aligned with the center of the element. This means that, when using percentages, the exact point on the image that's being aligned can be a moving target. (That's because your styled element's positioning percentages can change if your visitors resize their browsers.)

Note: Positioning an image vertically in the background of a page using percentages won't necessarily put the image in the correct spot if the page content doesn't fill the entire height of the browser window. See the box on page 196 for the solution to this problem.

As with pixel and em values, you can specify negative percentage values, though the results can be hard to predict. You can also mix and match pixel/em values with percentage values. For example, to place an image that's 5 pixels from the element's left edge, but placed in the middle of the element's height, you could use this:

```
background-position: 5px 50%;
```

Avoid mixing percentages or pixels/ems with keywords: *top 50px*, for example. Some browsers can handle this combination, but some can't.

Note: Although background images can raise the visual quality of your web pages, they usually don't show up if your visitor prints the page. Most browsers *can* print out the backgrounds, but it usually requires extra work on your visitor's part. If you plan to have your visitors print pages from your site, then you may want to keep using the <img> tag to insert mission-critical images like your site logo or a map to your store.

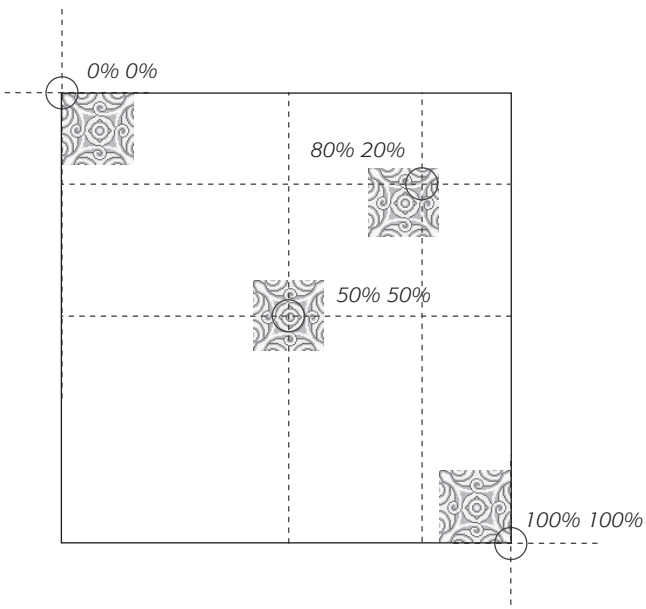


Figure 8-8:
Each of the four images pictured here have been positioned on this web page (represented by the large black box) using percentage values. When using percentage values, first identify the "anchor point" on the image: 50 percent 50 percent, for example, is the center of the middle image. Next, identify the 50/50 point on the page itself: again, that would be directly in the center of the page. That spot is where the image's anchor point gets placed. The three other images are all positioned in the same way.

Fixing an Image in Place

Normally, if there's a background image on a web page and the visitor has to scroll down to see more of the page, the background image scrolls as well. As a result, any pattern in the background of the page appears to move along with the text. Furthermore, when you have a nonrepeating image in the background, it can potentially scroll off the top of the page out of view. If you've placed the site's logo or a watermark graphic in the background of the page, then you may *not* want it to disappear when visitors scroll.

The CSS solution to such dilemmas is the *background-attachment* property. It has two options—*scroll* and *fixed. Scroll* is the normal web browser behavior; that is, it scrolls the background image along with the text and other page content. *Fixed*, however, keeps the image in place in the background (see Figure 8-9). So if you want to place your company's logo in the upper-left corner of the web page, and keep it there even if the viewer scrolls, then you can create a style like this:

```
body {
  background-image: url(images/logo.gif);
  background-repeat: no-repeat;
  background-attachment: fixed;
}
```

The *fixed* option is also very nice when using a repeating, tiled background. When you have to scroll, the page's text disappears off the top, but the background doesn't move: The page content appears to float gracefully above the background.

Note: CSS lets you "fix" the background image for a style applied to any element, not just the <body> tag. However, the Windows versions of Internet Explorer 6 and earlier only understand the *background-attachment* property when used with a style applied to the <body> tag.

Using Background Property Shorthand

As you can see from the examples in the previous section, to really take control of background images you need to harness the power of several different background properties. But typing out *background-image, background-attachment,* and so on again and again can really take its toll on your hands. But there's an easier way—the *background* shorthand property.

You can actually bundle all the background properties (including the *background-color* property you learned about last chapter) into a single line of streamlined CSS. Simply type *background* followed by the values for *background-color, background-image, background-attachment,* and *background-position.* The following style sets the background to white and adds a nonrepeating fixed background image smack dab in the middle of the page:

```
body {
  background: #FFF url(bullseye.gif) scroll center center no-repeat;
}
```

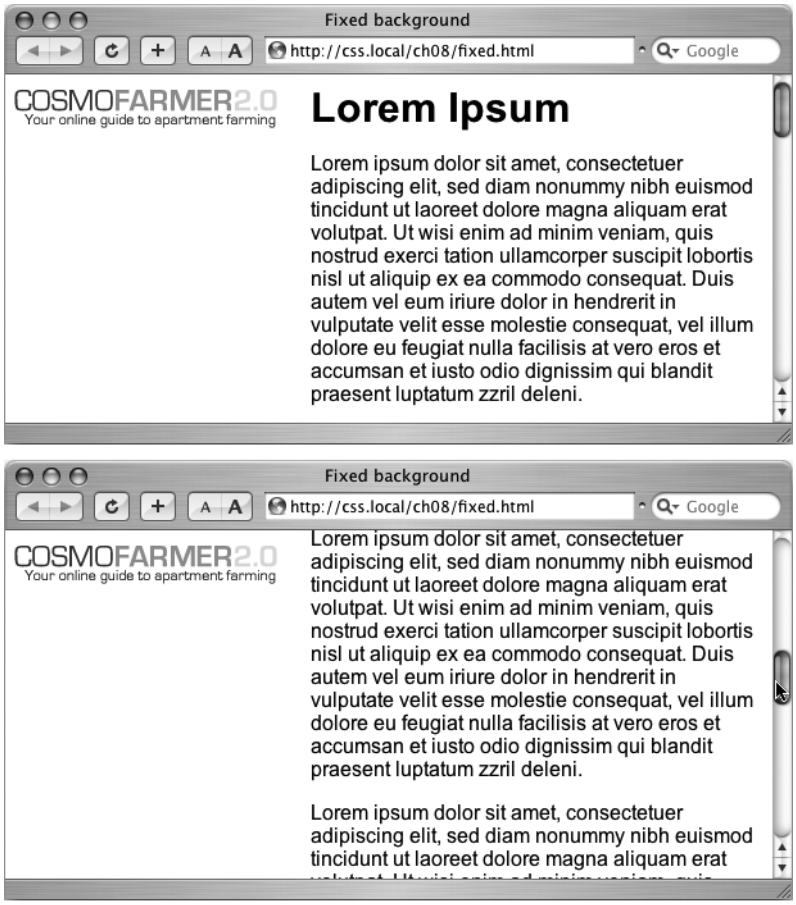


Figure 8-9: *Looking for a way to nail down a site logo (like the CosmoFarmer 2.0 image) so that when viewers scroll down the page the logo stays in place? Using the fixed option for the background-attachment property, you can lock a background image in place. That way, even if the page is very long and the visitor has to scroll down, the image remains visible on the web page (bottom).*

You don't need to specify all of the property values either. You can use one or any combination of them. For example: *background: yellow* is the equivalent of *background-color: yellow*. Any property value you leave out simply reverts to its normal behavior, so say you specified only an image:

```
background: url(image/bullseye.gif);
```

That's the equivalent of this:

```
background: url(image/bullseye.gif) fixed left top repeat;
```

Because the background property is so much faster to type, and it achieves all the same ends as its long-winded siblings, use it liberally when adding background images (and colors) to your styles.

FREQUENTLY ASKED QUESTION

Finding Free Imagery

I'm not an artist. I can't draw, can't paint, don't even own a digital camera. Where can I find artwork for my site?

Thank goodness for the Web. It's the one-stop shop for creative geniuses who couldn't paint themselves into a corner if they tried. There are plenty of pay-to-download sites for stock photos and illustrations, but there are also quite a few completely free options. For photos, check out Morgue File (*www.morguefile.com*), which despite the grisly name has many wonderful photos supplied free of charge by people who love to take pictures. Stock.xchng (*www.sxc.hu*) is yet another excellent photographic resource. Open Photo (*http://openphoto.net/gallery/browse.html*) also supplies images based on Creative Commons licenses, and you can use the search engine on the Creative Commons website to find images (and video and music) that can be used in personal and commercial projects: *http://search.creativecommons.org*. In addition, you can use Flickr (*www.flickr.com/creativecommons*) and Picasa Web Albums (*http://picasaweb.google.com*) to search for images that have a Creative Commons license applied to them. (Although they don't cost money, not all photos on these sites can be used in commercial projects. Make sure you read the fine print for any photo you wish to use.)

If you're looking for bullets to add to lists, icons to supercharge your navigation bar, or patterns to fill the screen, there are plenty of sites to choose from. Bullet Madness (*www.stylegala.com/features/bulletmadness*) offers 200 bullets including variations on the common arrow, circle, and square as well as more detailed bullets representing software icons, iPods, folders, and more. Some Random Dude (no, really; that's the name of the website) offers a set of 121 icons free of charge: *www.somerandomdude.net/srdprojects/sanscons*. And if you're looking for interesting tiling patterns, check out the patterns on these sites: ColourLovers.com (*www.colourlovers.com/patterns*), Pattern4u (*www.kollermedia.at/pattern4u*), and Squidfingers (*http://squidfingers.com/patterns*). Or make your own tiled backgrounds with these online pattern creators: BgPatterns (*http://bgpatterns.com*), Stripe Generator 2.0 (*www.stripegenerator.com*), and PatternCooler (*www.patterncooler.com*).

Tutorial: Enhancing Images

A photo gallery is a perfect example of an eye-catching web page. This tutorial brings together a variety of image styling techniques. You'll format images with frames and captions, create a photo gallery that's flexible enough to look great in a variety of window sizes, and use background images to create professional-looking drop shadows.

To get started, you need to download the tutorial files located on this book's companion website at *www.sawmac.com/css2e/*. Click the tutorial link and download the files. All of the files are enclosed in a Zip archive, so you need to unzip them first. (There are detailed instructions on the website.) The files for this tutorial are in the *08* folder.

Framing an Image

1. **Launch a web browser and open the file *08* → *image_ex* → *image.html*.**

   You'll be working on a basic web page from the fictional (just in case you thought it was real) website CosmoFarmer.com (Figure 8-10). In this case, there's already an external style sheet attached to the page, adding some basic text formatting.

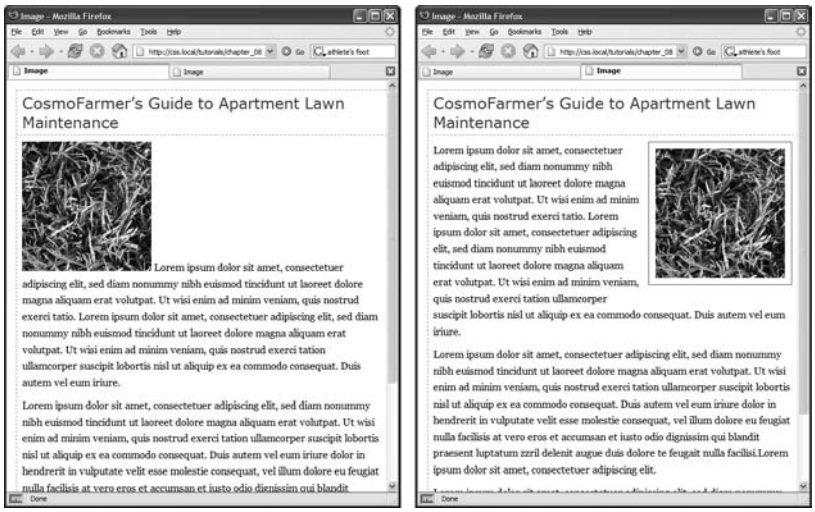


Figure 8-10: *Before and after—CSS, that is. If you rely just on HTML, images take up lots of space (left). With a little CSS (right) you can nicely frame an image and move it out of the way.*

2. **Open the file *styles.css* in the *image_ex* folder in your favorite text editor.**

   This file is the external style sheet used by the *image.html* file. You'll start by adding a class style to this stylesheet, then applying a class to the <img> tag in the HTML file.

3. **Scroll to the bottom of the file and then type the following:**

```
img.figure {

}
```

   The selector *img.figure* targets any <img> tag with the *figure* class applied to it. You'll use this to selectively format only the images you want. (You could also just name the style *.figure*—the only difference is that that style would then apply to *any* tag with the class figure, not just images.)

4. **Add *float* and *margin* properties to the style you just created, like so:**

```
float: right;
margin-left: 10px;
margin-bottom: 10px;
```

The right float moves the image to the right side of the page, letting the text move up and wrap around the photo's left edge. The left and bottom margins give the photo a little breathing room and move it away from the text. Next, you'll add a border and some padding to make the image look more like a real snapshot.

5. **Add border and padding, so that the finished style looks like this:**

```
img.figure {
  float: right;
  margin-left: 10px;
  margin-bottom: 10px;
  border: 1px solid #666;
  padding: 10px;
}
```

If you save this file and then preview the web page right now, you won't see a change, since the class style has no effect until you've added the class to a tag.

6. **Save and close the *styles.css* file and open the *image.html* file. Locate the <img> tag and add *class="figure"* so the tag looks like this:**

```
<img src="../
images/grass.jpg" alt="Apartment Grass" width="200" height="200"
class="figure">
```

Now that image takes on all of the formatting properties you defined for the *.figure* class style.

7. **Preview the page in a web browser. It should look like the right image in Figure 8-10.**

You can find the completed version of this exercise, *image.html* in the *08_finished → image_ex* folder.

A picture may be worth a thousand words, but sometimes you still need a few words to explain a picture. So in the next part of this tutorial, you'll add a caption below the photo.

Adding a Caption

You'll frequently want to add a caption to an image or photo to provide more information about the subject, where the photo was taken, and so on. Instead of just floating the image, as you did in the previous exercise, you want the caption text to float as well. The best way to float both is to wrap the image and the text in a container—a tag—that's floated as a single unit. This method keeps the photo and its related text together. If you decide later that you want to change their layout—perhaps float them to the left—no problem: You simply change the formatting for the entire container.

1. **In a text editor, open the file *08 → caption_ex → caption.html.***

Begin by adding a little HTML to create the container.

2. **Locate the <img> tag in the code, and add * * before that tag.**

   This marks the beginning of the container. Now close the to indicate the end of the container.

3. **Find the closing *</p>* tag of the paragraph directly after the image and type * *. The code should now look like this:**

```
<div class="figure">
<img src="../
images/grass.jpg" alt="Creeping Bentgrass"
height="200"/>
<p>Figure 1: Creeping Bentgrass is best suited for outdoor use and should
be avoided by the indoor farmer.</p>
</div>
```

   As with the previous tutorial, you'll edit an existing external style sheet (*styles.css*) that's linked to this web page.

4. **Open the file *08 → caption_ex → styles.css*.**

   Because this is an external style sheet, you'll notice there's no <style> tag. That tag is necessary only for internal style sheets.

5. **Scroll to the bottom of the file and add the following style to the end:**

```
.figure img {
  border: 1px solid #666;
  padding: 10px;
}
```

   This descendent selector affects any <img> tag *inside* any other tag with the *figure* class applied to it—in this case, the you just added. Since you're using a descendent selector here (and in step 7), you don't need to add a class to the <img> tag. As a result, you save a little typing, cut down on HTML code, and make the page load faster for your site's visitors.

   Next, you'll format the so that it floats the photo and caption text to the right edge of the page.

6. **Add this style to the *styles.css* file:**

```
.figure {
  float: right;
  width: 222px;
  margin: 15px 10px 5px 10px;
}
```

You've already used the *float: right* property in the previous tutorial, and the *margin* adds a little white space around all four edges of the . But what's the *width* for, you ask? Although the photo has a set width (200 pixels; see step 3) the caption paragraph doesn't. When you don't set a width, the paragraph makes the expand wider than the photo. In this case, you want the caption to be just as wide as the photo and its frame.

The 222 pixels comes from a little math used to calculate the entire area taken up by the photo on the page: While the photo is only 200 pixels wide, the 10 pixels of left and right padding as well as the image's 1-pixel left border and 1-pixel right border make the entire width of the photo equal to 222 pixels from border to border. Next, spruce up the look of the caption text.

7. **Add the following style to the *styles.css* style sheet:**

```
.figure p {
  font: bold 1em/normal Verdana, Arial, Helvetica, sans-serif;
  color: #333;
  text-align: center;
}
```

This style uses some of the properties you learned about in Chapter 6 to create a center-aligned, bold, and gray caption using the Verdana font. Fortunately, the font shorthand property in the first line lets you roll four different properties into a single style declaration.

Again, you're taking advantage of a descendent selector (*.figure p*) to target just the caption paragraph. To make the caption stand out even more, add a background color and border.

8. **Add three properties to the *.figure p* style, like so:**

```
.figure p {
  font: bold 1em/normal Verdana, Arial, Helvetica, sans-serif;
  color: #333;
  text-align: center;
  background-color: #e6f3ff;
  border: 1px dashed #666;
  padding: 5px;
}
```

The purpose of the *background-color, border*, and *padding* properties should be clear—to create a colored box around the caption. Now it's time to preview your work.

9. **Save both the *caption.html* and *styles.css* files and preview the *caption.html* file in a web browser.**

(Now you see one reason why it's easier to develop a design using an internal style sheet—you need to work in and save only one file instead of two.)

The page looks great: The photo and caption float to the right, and the caption stands out boldly. There's one small problem, though: If you look at the left and right edges of the paragraph, you'll notice they're indented slightly and aren't as wide as the photo. Here's an example of one of the many head-scratching situations you'll find as you work with CSS.

In this case, you've run into a problem with the cascade. The caption text is inside a <p> tag, and, as it happens, there's a tag style for the <p> tag in the *styles.css* file. When you look at that style, you see it sets margins—10 pixels on the top and bottom and 8 pixels on the left and right. You want to override those margins, and you can do so by adding new margins to a more specific style. (See "Specificity: Which Style Wins" on page 96 for a discussion of *specificity* and the cascade.) Fortunately, you already have a more specific style—*.figure p*—so you need only add margins to that style to override the margins from the more generic *p* style.

10. **Add a *margin* property to the *.figure p* style, like so:**

```
.figure p {
  font: bold 1em/normal Verdana, Arial, Helvetica, sans-serif;
  color: #333;
  text-align: center;
  background-color: #e6f3ff;
  border: 1px dashed #666;
  padding: 5px;
  margin: 10px 0 0 0;
}
```

This removes margins on all sides of the caption except the top, which adds 10 pixels of space between the caption and the photo above.

11. **Save the *caption.html* and *styles.css* files. Preview *caption.html* file in a web browser.**

The page should now look like Figure 8-11 (You can find a completed version of this page in the *08_finished → caption_ex* folder.)

Tutorial: Creating a Photo Gallery

Folks used to rely on the HTML <table> tag to create rows and columns for holding the pictures in a photo gallery. But you can achieve the same effect with a little CSS and far less HTML.

1. **Open the file *08 → gallery_ex → gallery.html.***

First, a quick review of the HTML used to construct the photo gallery. The page contains nine photos and photo captions. Each photo and caption is contained

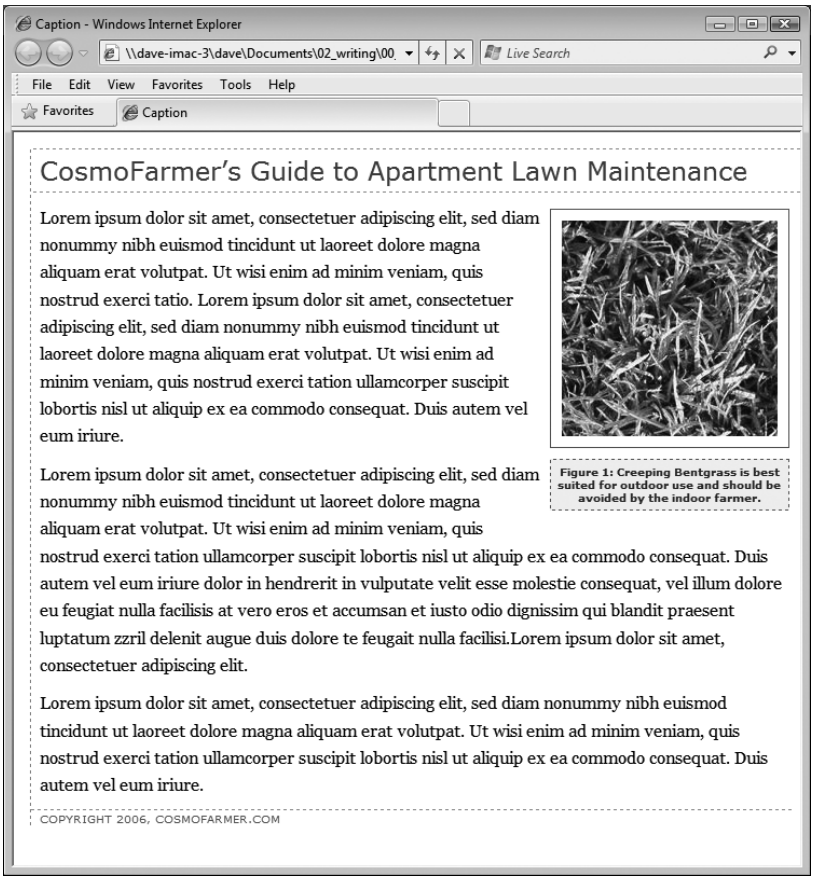


Figure 8-11: *With the use of a containing , a right float, and a little style, it's easy to add captions to photos.*

in a with a class named *figure* applied to it. This functions just like the similar used in the previous exercise for adding a caption. The photo itself is contained in another with a class of *photo:*

```
<div class="figure">
 <div class="photo">
  <img src="../ images/dandelion.jpg" alt="Dandelion" height="200"
width="200"/>
 </div>
 <p>Figure 6: The dandelion: scourge of the apartment farmer. </p>
</div>
```

Note: That second will come in handy for the next exercise, when you learn to add drop shadows to the photos.

2. **Locate the <link> tag near the top of the file, place your cursor *after* that tag, and then press Enter (Return) to create a new blank line.**

   The <link> tag attaches an external style sheet containing some basic formatting.

3. **Add an internal style sheet. Then add two new styles, as follows:**

```
<style type="text/css">
.photo img {
  border: 1px solid #666;
  background-color: #FFF;
  padding: 4px;
}

.figure p {
  font: 1.1em/normal Arial, Helvetica, sans-serif;
  text-align: center;
  margin: 10px 0 0 0;
}
</style>
```

   These two styles add a border to each image in the gallery, and set the font, alignment, and margins of the captions. They use descendent selectors to target just the images and paragraphs inside the gallery.

   All of the images and captions are themselves wrapped in one with an ID of *gallery,* since enclosing the group of photos in another provides even more formatting options. You could set a specific width for the gallery or add a border around it. But that enclosing also provides another way to target the photos and paragraphs using descendent selectors. For example, *#gallery img* and *#gallery p* are also valid descendent selectors in this case. The main difference between the two approaches is the specificity of the styles (see page 96). Because *#gallery img* is more specific than *.photo img,* its formatting options override the *.photo img* style.

   Next, place the photos side by side.

Note: When you insert the internal style sheet, make sure to place it in the page's head section, between the link tag and the closing </head> tag.

---

4. **Add the following style to the internal style sheet you just created:**

```
.figure {
  float: left;
  width: 210px;
  margin: 0 10px 10px 10px;
}
```

This style floats each photo/caption pair to the left. In effect, it places the photos side-by-side until there's no more room in the row. The browser then drops the next photos down a row, until all of the photos are displayed one row on top of the next. The width is the *total* width of the photo plus padding and borders. In this example, it's 200 pixels for the photo, 8 pixels for left and right padding, and 2 pixels for left and right borders.

Note: In this fictitious photo gallery, each picture is the same width. In the real world, you may have pictures of varying sizes. See the box below for a trick that lets you arrange rows of pictures of different widths. Using different height images won't work (as you'll see in step 5). When you've got images with differing heights, stick with HTML tables (or you can use the advanced, doesn't-apply-to-all-browsers technique described in the tip on page 210).

POWER USERS' CLINIC

When One Width Doesn't Fit All

It's a breeze to set up a photo gallery–like the one in this tutorial–when the photos are conveniently all the same width. But what if you have photos of differing widths? One solution is to create a style for each different width and apply the style to the with the *figure* class. (That's tons of work, so it would pay to do some photo editing work to standardize your photos to just a handful of different widths first.)

You can take advantage of CSS's ability to apply two classes to one tag like this: * *. This tag has both the *figure* and *w300* class styles applied to it.

Then create a class style, for example *.w300,* and set the width to the width of the image (in this case, 300) plus 10 to cover the padding and borders: *.w300 { width: 310 }*. For this trick to work, you must either remove the width setting on the *.figure* style or add the *.w300* style *after* the *.figure* style in the style sheet. Here's why: The two width definitions conflict (one's 210 the other's 300), so the browser has to break the tie using the cascade (see Chapter 5). Since *.figure* and *.w300* have the same specificity, the one that's defined last in the style sheet wins.

5. **Save the file and preview the *gallery.html* page in a web browser. It should look like the left image in Figure 8-12.**

   Adjust the width of your browser window to make it thinner and wider and watch how the images reflow into the space. Aha—something's not quite right. The second row of images has two empty spaces where photos should be. This problem occurs because the caption for the second image on the first line is taller than the other captions on the line. Images that jump down to another row bump into that caption and can't get by it. (You can read more about this *float* property snafu on page 324.) Fortunately, there's a simple fix to this dilemma.

Tip: There is a way to avoid that weird display problem noted in step 5, as well as create a gallery than can handle different height images. Instead of using the *float* property, you can use *display: inline-block* on the *.figure* style. This will treat each image/caption pair as a block (a box with height and width) but also as an inline element (so the blocks can sit side-by-side). In addition, you can use the *vertical-align* property to make the picture tops align. The *.figure* style from step 4 could then be rewritten like this:

```
.figure {
  display: inline-block;
  vertical-align: top;
  width: 210px;
  margin: 0 10px 10px 10px;
}
```

The downside to this very simple and useful technique: It won't work in IE 6, IE 7, or Firefox 2. Hey, but at least it works in everything else, including IE 8!

6. **Return to your text editor and the *gallery.html* file. Locate the *.figure p* style and add a height to it. The finished style should look like this:**

```
.figure p {
  font: 1.1em/normal Arial, Helvetica, sans-serif;
  text-align: center;
  margin: 10px 0 0 0;
  height: 5em;
}
```

Adding this property sets a uniform height for each caption. In this case, it's tall enough to accomodate the lines of caption text. (If you needed more text, you'd just increase the height.)

Note: You don't need the *height* property if you're sure each floated element is the same height. This could happen if you don't have captions and all of the photos are the same height, or if each caption has the same number of lines of text.

7. **Save the file and preview the page in a web browser. See the right side of Figure 8-12.**

If you resize the browser window, the gallery reformats itself. With a wider window you can fit four or even five images on a row, but if you make it smaller you'll see only one or two images per row.

Adding Drop Shadows

Your gallery looks good, but you can make it even more impressive. Adding drop shadows under each photo lends the page an illusion of depth and a realistic 3-D quality. But before you fire up Photoshop, you'll be glad to know there's no need to add individual drop shadows. Instead, you can make CSS automatically add a shadow to any image you want.

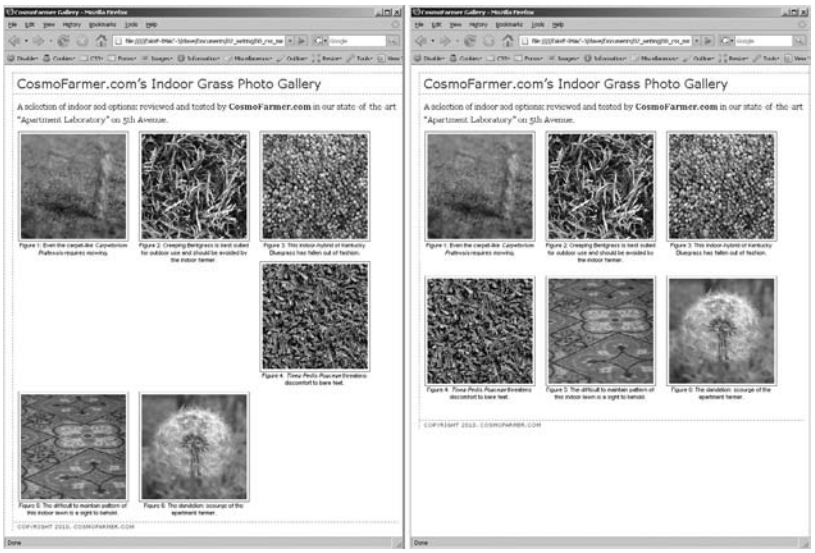


Figure 8-12: *Floating elements next to each other is one way to simulate the column and row appearance of a table. But it doesn't work well if the elements are of varying heights (left). Using the height property can help you enforce equal heights and make sure elements line up correctly (right).*

Note: CSS 3 provides a new CSS property–*box-shadow*–which can automatically add drop shadows to any style. It's cool, customizable, and easy to use, but only works in a few browsers. You can read about it on page 449.

First you need a drop shadow graphic—just an image with fuzzy right and bottom black edges. There's one in the *08 → gallery_ex* folder, but you can make your own in Photoshop, Fireworks, or any other image editing program that has a blur or drop shadow filter. (In Fireworks, for example, you'd create a white box and apply the drop shadow filter to it. Then save the file in PNG8 format.)

1. **In a text editor, open the *gallery.html* file you completed in the previous exercise.**

   First, add a background image to the tag that surrounds each image.

2. **Add this style to the gallery page's internal style sheet:**

```
.photo {
  background: url(drop_shadow.gif) right bottom no-repeat;
}
```

   This *.photo* style adds a background image—*drop_shadow.gif*—to the lower-right corner of the photo . The *no-repeat* value means the graphic won't tile.

   If you preview the page now, you won't see much. That's because the drop shadow appears in the background. On top is the photo itself, which you styled in step 3 on page 208 to have a white background, a black border, and 4 pixels of padding. What you need is a way to reveal that background image.

One clever technique pioneered by Richard Rutter (*www.clagnut.com*) is to move the image up and to the left a little—essentially moving it outside of its containing tag. CSS provides a mechanism known as *positioning* that lets you control the exact placement of an element. You'll learn more about positioning in Chapter 13, but for now you need to add only three properties to the *.photo img* style you created in step 3 on page 208 to reveal the drop shadow.

Note: Negative margins are another way to achieve the drop shadow shift. For details, see *http://1976design.com/blog/archive/2003/11/14/shadows*.

---

3. **Locate the *.photo img* style, and add three positioning properties, like so:**

```
.photo img {
  border: 1px solid #666;
  background-color: #FFF;
  padding: 4px;
  position: relative;
  top: -5px;
  left:-5px;
}
```

In a nutshell, these three properties simply move the photo up and to the left 5 pixels, exposing the underlying drop shadow graphic of the . In fact, the very reason for using the to contain the photo here is to provide an element to hold the drop shadow image.

4. **Save the file and preview the page. It should look like Figure 8-13.**

Each image has its own drop-shadow, and you didn't even have to open Photoshop!

Note: The graphic you used here is around 375×375 pixels, so it accommodates images only up to that size. You can use this same technique for larger images, but you'll need to create your own drop shadow.

You can use this drop-shadow method on any graphic, not just those inside a gallery. The key is surrounding the <img> tag with a container , applying a drop shadow graphic to that , and offsetting the <img> tag with negative top and left placement. Use this same effect to add a drop shadow to any box element, such as a sidebar or pull quote.

You can find a completed version of this tutorial in the *08_finished → gallery_ex* folder.

Note: You may have noticed that the drop shadows you just created have abrupt left and top endings. They don't fade like actual drop shadows. To learn how to create more sophisticated drop shadows, check out *www.alistapart.com/articles/cssdrop2* and *www.ploughdeep.com/onionskin*.

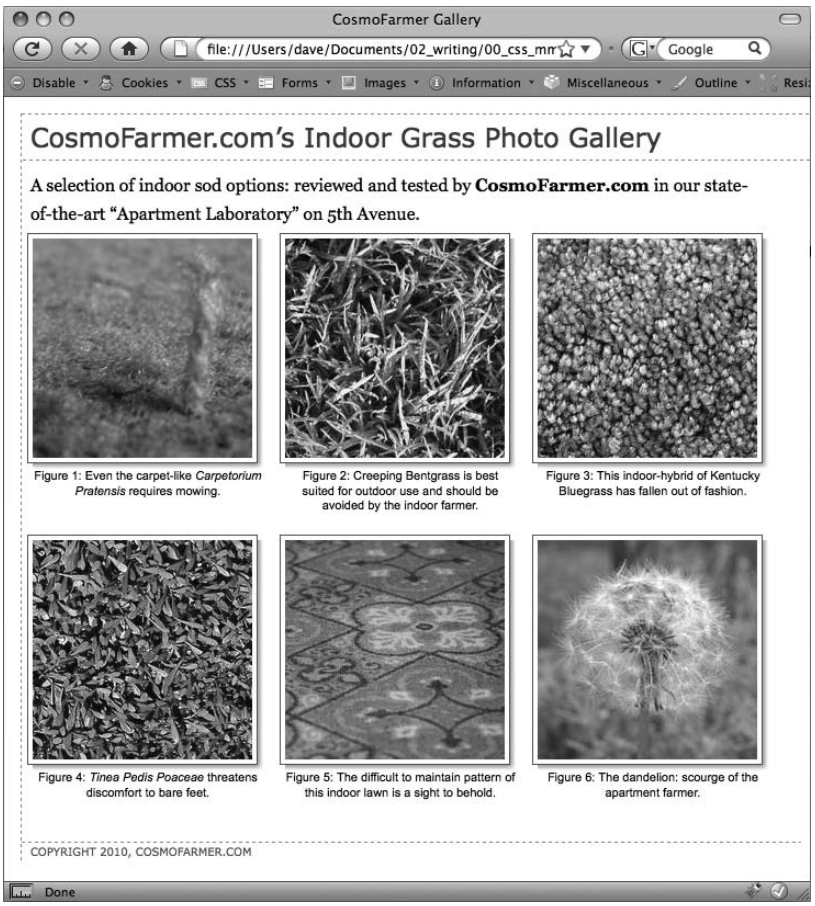


Figure 8-13: *Adding drop shadows to photos gives a page a 3-D look and increases the visual appeal of any photo gallery. Fortunately, using CSS you can easily add a drop shadow to any picture without even touching Photoshop.*

Tutorial: Using Background Images

The CSS *background-image* property is the secret weapon of modern web design. It can turn a ho-hum, text-heavy web page into a dazzling swirl of imagery (see Figure 8-14). Since you can use it to add an image to the background of any HTML tag, the designs you can create are limited only by your imagination. The drop shadow example in the previous tutorial is just one example of creative background image use. Other common background image frills include applying a page background and adding custom bullets to unordered lists. You'll explore some of these common tasks in this tutorial.

Adding an Image to the Page Background

Whether it's an intricate pattern, a logo, or a full-screen photograph, images appear in the background of many a web page. In fact, adding an image to the background of a page is probably the most common application of the *background-image* property.

1. **In your text editor, open the file *08 → bg_ex → bg_images.html.***

   This page is a basic two-column layout: a very simple page, with some text formatted on a white background (Figure 8-14, top). To start, you'll add a background image to the page. The page has an external style sheet with the basic formatting, but so you don't have to wade through all the styles in that file, you'll add an internal style sheet for the steps in this tutorial.

2. **Click between the opening and closing <style> tags. Add the following style:**

```
body {
  background-image: url(images/bg_page.png);
  background-repeat: repeat-x;
  background-color: #FFF;
}
```

   The first line of code points to the image—*bg_page.png*—you want to display on the page. The file is stored in the *images* folder. This graphic is a gradient that starts as light blue at the top and fades to white at the bottom. The graphic isn't as tall as the page content, so without further instructions, it would tile over and over across and down the page. At a certain point down the page, that light blue would reappear and fade once again downward to white. To prevent this unsightly snafu, you've set the *background-repeat* property so that the image tiles from left to right in order to fit any width of browser window, but doesn't tile *down* the page. The last line of code sets the page's background color to match the end of the gradient, so the image fades seamlessly into the page's background color.

Note: Using background property shorthand, you can condense the three lines of code from step 2 into a single line of CSS: *background: #FFF url(images/bg_page.png) repeat-x.*

---

3. **Save the file and preview it in a web browser.**

   The background graphic's blue gradient drips down the page. Not bad looking, but the blue also appears in the text's background. You can make the text pop by giving its background a different color.

4. **Return to your text editor and the *bg_images.html* file. Add another style for the containing the content of the page:**

```
#wrapper {
  background-color: #FFF;
}
```

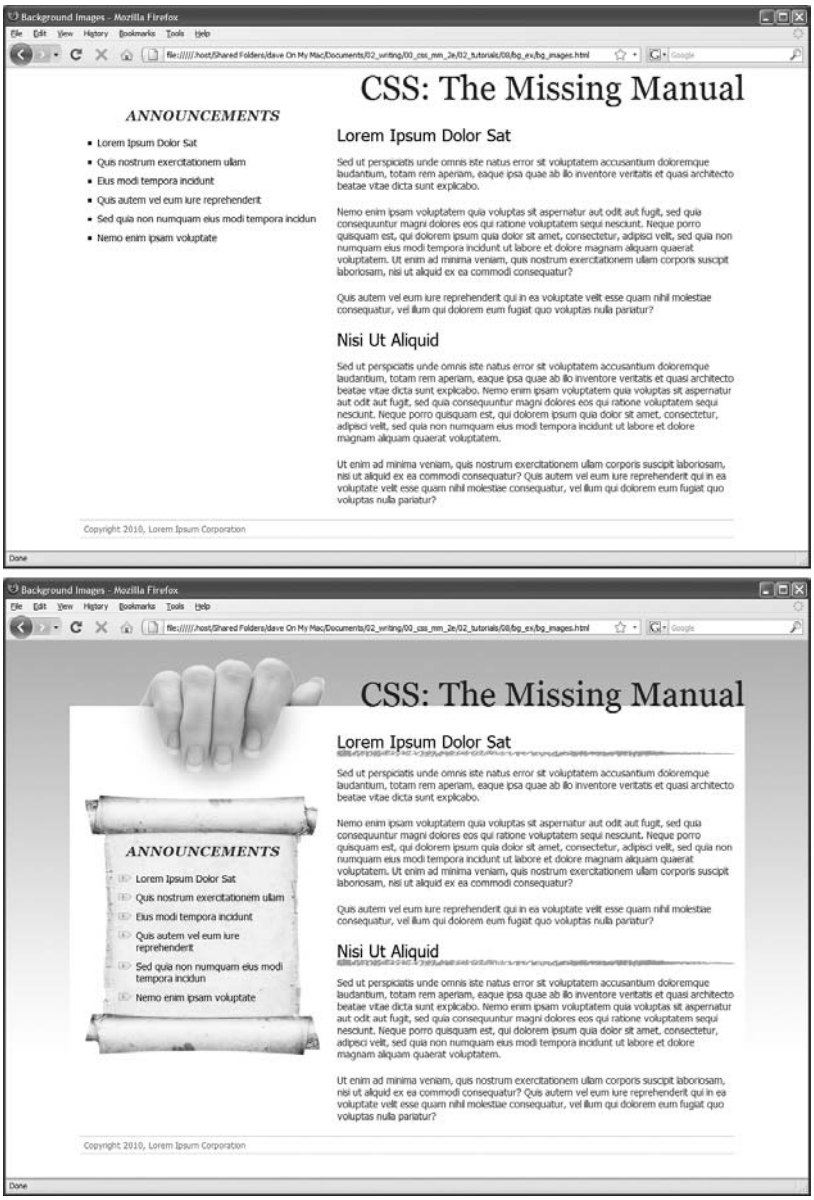


Figure 8-14: *Using background images, you can make an already well-organized page (top) look much spiffier (bottom). Since you can add images to the background of any tag on a page, the possible placement of graphics on a page are nearly limitless.*

The wrapper div is a fixed width, centered in the middle of the page, containing all of the page's text. This style gives it a white background, but with the help of an image, you can do better than that.

5. **Edit the style you created in step 4 by adding a background image:**

```
#wrapper {
  background-color: #FFF;
  background-image: url(images/bg_main.jpg);
  background-position: top left;
  background-repeat: no-repeat;
}
```

These three lines of code add a background image to the top left of the ; the *no-repeat* option for the *background-repeat* property means the image only appears a single time. If you save the file and preview it in a web browser, you'll now see the picture of a hand acting like it's holding the page. Very cool. The only problem is the text is too far up, covering up the image. You'll next push down the big, top headline and the left sidebar.

6. **Add two more styles to the internal style sheet:**

```
#banner {
 margin-top: 48px;
}
#announcement {
 margin-top: 115px;
}
```

The first line just adds a bit of padding pushes down the banner containing the headline until it just tops the touch of the white page, while the second style moves the left sidebar down enough to clear the picture of the hand. The page should now look like Figure 8-15.

Replacing Borders with Graphics

The *border* property is a useful tool in your design arsenal, but the limited number of border styles CSS offers can get boring. A hand-drawn line with a little texture would catch your visitors' attention better than a plain, straight one. You can skip the border property and add any kind of line you want as a background image—easy as pie. In this part of the tutorial, you'll replace the underline below each <h2> tag in the main text area with a custom graphic that looks like a hand-drawn line.

1. **Return to your text editor and the *bg_images.html* file. Add a style for the <h2> tags inside the main tag:**

```
#main h2 {
  background-image: url(images/underline.png)
  background-repeat: no-repeat;
}
```

The *background-image* property specifies which graphic to use in the background of <h2> tags inside an tag with an ID of *main;* while the *no-repeat* value makes sure graphic only appears a single time.

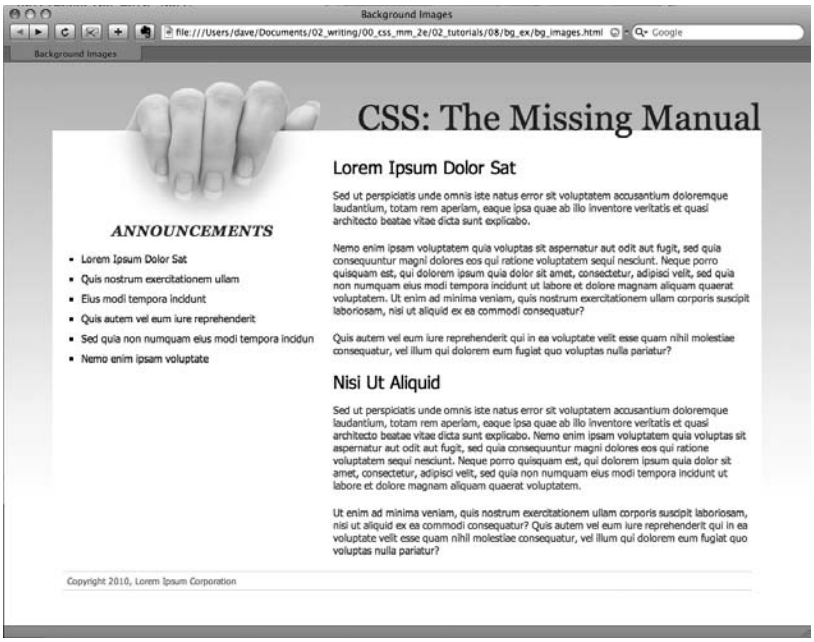


Figure 8-15: *CSS lets you combine a background color and a background image, which comes in really handy in this example. The main text area has a white background color that helps separate the text from the fading gradation in the page's background. In addition, a graphic of a hand holding a piece of paper adds depth to the design.*

If you preview the file now, you'll see that the underline doesn't exactly line up. In fact, it isn't *under* at all. It's above the headlines!

2. **Add the following style declaration to the *#main h2* style below the *background-repeat* property:**

```
background-position: left bottom;
```

You've changed the graphic's starting location so it appears at the left edge and bottom of the <h2> tags. If you preview the page now, though, you may not notice much improvement. The underline runs *into* the headline text.

But there's an easy fix. Since the bottom value used here puts the graphic at the bottom of the block created by the <h2> tag, you need only to increase the overall height of the block to move the line down a bit. You'll do this with a little bottom *padding*.

3. **Edit the *#main h2* style one last time, so that it looks like this:**

```
#main h2 {
  background-image: url(images/underline.png);
  background-repeat: no-repeat;
  background-position: left bottom;
  padding-bottom: 7px;
}
```

Padding, as you'll recall from, is the space between the border (the edge of the background as well) and the content. It also increases the overall height of the box—in this case by adding 7 pixels of bottom padding. Now, the line graphic is placed at the bottom of the *h2* block, but in the empty space created by the bottom padding.

4. **Save the file and preview the page in a web browser.**

   Each <h2> tag has the hand-drawn underline. Next you'll tackle the sidebar box, making it look a little less boxy and jazzing up the bulleted lists.

Using Graphics for Bulleted Lists

The average bullet used for unordered lists is a black dot—not very inspiring. But you can use the *background-image* property to replace those drab bullets with any image you want. The first step is to hide the bullets that normally appear beside list items.

1. **Return to your text editor and the *sidebar.html* page. And add a style for formatting the list items in the left sidebar.**

```
#announcement li {
  list-style: none;
}
```

   The bulleted list is inside a with an ID of *announcement,* so this descendent selector targets just the list items (<li> tags) inside that div. The style removes the bullet. Now add the graphic.

Note: You can just as well apply *list-style: none;* to a style affecting the <ul> or <ol> tags to remove bullets from *each* list item.

---

2. **Add the following two properties to the *#announcement li* style:**

```
background-image: url(images/bullet.png);
background-repeat: no-repeat;
```

   You've seen these two properties before. They add an image to the background and turn off repeating so that the graphic appears only once.

   If you preview the page, you'll see that the bullets currently overlap the list text and the list items are a little jammed together (Figure 8-16, left). A little padding and margin will fix this.

3. **Add two more properties to the *#announcement li* style:**

```
padding-left: 25px;
margin-bottom: 10px;
```

   The left padding adds empty space, effectively moving the text out of the way in order to display the new bullet icon. The bottom margin adds just a bit of breathing room between each list item (Figure 8-16, middle).

There's just one final flaw. The bullet image is a tad too high on the line, causing the tip of the icon to stick out too far above the text. But you can easily fix that with the *background-position* property.

4. **Finish this style by adding *background-position: 0px 4px;*. The completed style should look like this:**

```
#announcement li {
  list-style: none;
  background-image: url(images/bullet.png);
  background-repeat: no-repeat;
  background-position: 0 4px;
  padding-left: 25px;
  margin-bottom: 10px;
}
```

This last style declaration positions the bullet icon to the far left (that's the 0) and 4 pixels from the top (4px) of the list item. It moves the icon down just a smidgen, enough to make the bullet look perfect.

Note: As discussed on page 138, this kind of exact positioning is precisely why you should use the *background* property instead of the *list-style-image* property for adding graphic bullets to your lists.

---

5. **Save the file and preview the page in your browser.**

The list should now have 3-D tabs with red exclamation marks instead of dreary black circles (Figure 8-16, right).

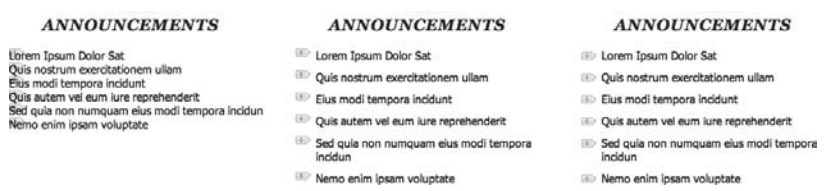


Figure 8-16: *Replacing regular black bullets with your own graphics is easy. Just a few extra steps ensure the bullets and text are placed in the correct location.*

Giving the Sidebar Personality

At this point, the sidebar looks pretty good. The text is nicely formatted, and the bullets look great, but the sidebar gets a little lost in the sea of white. Adding a background image can make the sidebar stand out in a whimsical way. You could use a single image—the scroll image pictured in the bottom image of Figure 8-14—in the background of the tag, but in order to make sure the text fit exactly on the scroll, you'd have to limit the amount of content you put in the sidebar—too much text and it won't fit on top of the single image; too little, and there will be too much empty space on the graphic.

A more flexible approach would let the image grow as the sidebar acquires more content (see Figure 8-17, top). Fortunately, this little trick isn't so hard—it just requires three different images and three different styles. In this example, there's one with the ID *announcement*—that's the sidebar—and it contains an <h2> tag (with the text "Announcements") and a bulleted list (a <ul> tag). Basically, you attach the top of the image to an HTML element at the top of the sidebar (the <h2> tag in this example), the bottom of the image to the last HTML element of the sidebar (the <ul> tag), and an image that tiles vertically in the that creates the sidebar (see Figure 8-17, bottom).

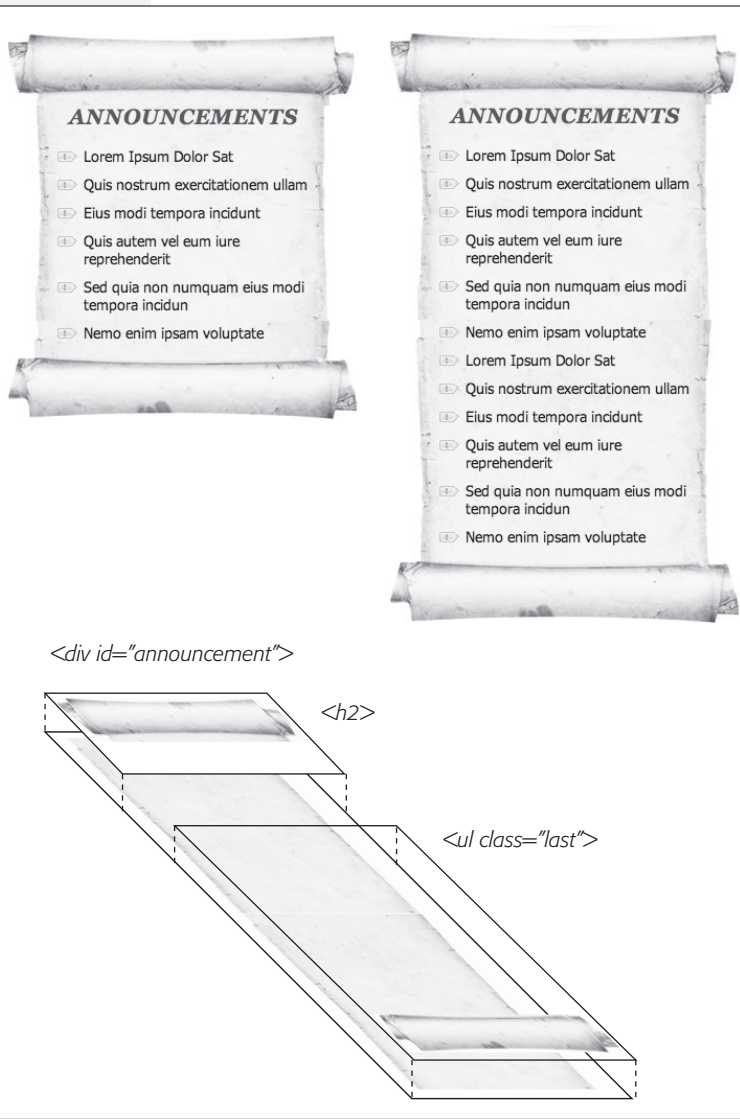


Figure 8-17: *Sometimes there's more than one way to skin a web page. Many of the pages you see every day may look like a unified whole, but are actually composed of many images placed strategically in the background of multiple tags.*

1. **Return to your text editor and the *bg_images.html* file. Locate the *#announcement* style you added in step 6 on page 216 and add one additional property:**

```
#announcement {
  background: url(images/scroll_middle.jpg) repeat-y center top;
  margin-top: 115px;
}
```

This line adds a background image to the tag that scrolls vertically (*repeat-y*) and centers the image in the div. The image tiles seamlessly so that as the div gets taller, the background image appears to grow. But, if you preview the page now, you'll see that the bulleted list sticks out on the both the left and right sides of the sidebar image. To make the bulleted list fit on the scroll, you need to add some left and right margin.

2. **Locate the *#announcement li* style you created earlier and add two properties to the end so that it looks like this:**

```
#announcement li {
  list-style: none;
  background-image: url(images/bullet.png);
  background-repeat: no-repeat;
  background-position: 0 4px;
  padding-left: 25px;
  margin-bottom: 10px;
  margin-left: 30px;
  margin-right: 40px;
}
```

These properties move both the left and right edges of each bulleted item in enough to clear the edges of the background image. Next, you'll add the top of the scroll by placing a background image behind the <h2> tag in the sidebar.

3. **At the bottom of the internal style sheet, add the following descendent selector style for the sidebar's <h2> tag:**

```
#announcement h2 {
  background: url(images/scroll_top.jpg) no-repeat center top;
}
```

Here an image is only placed a single time in the center and top of the tag. But if you preview the page right now, it doesn't look quite right (see Figure 8-18). You can't see the entire scroll top, and the heading text overlaps it in an unrealistic way. Basically, the <h2> tag isn't tall enough to display all of the graphic. Also, you need to add some space above the text to push it down below the graphic. The *padding* property comes to the rescue.

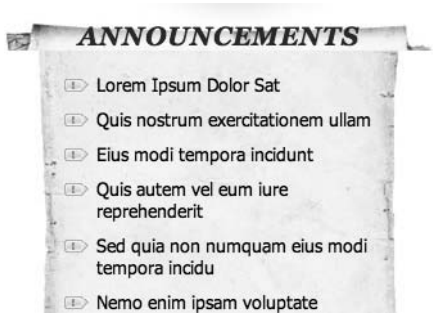


Figure 8-18:
If you can't see all of a background image (the top of the scroll here), then the element isn't big enough. You can add padding to make room for the entire image.

4. **Edit the style you added in the last step so it looks like this:**

```
#announcement h2 {
  background: url(images/scroll_top.jpg) no-repeat;
  padding-top: 70px;
}
```

The 70 pixels of top padding does two things: pushes the text down to clear the scroll's top edge and makes the <h2> element tall enough to display the entire image. In fact, the text, "Announcements" isn't actually sitting on top of the style's background image at all—it's sitting on top of the background image placed on the .

Note: The technique used here is for a fixed-width box. That means if you change the width of the sidebar, you'll need to recreate the graphics at the same width to match. For a few techniques that let you create rounded corners with more flexibility–and require more CSS and HTML code–visit these pages:

www.vertexwerks.com/tests/sidebox/

www.sperling.com/examples/box/

Next, you need to add the bottom image to the <ul> tag. But first, you'll modify the HTML a bit.

5. **Locate the <ul> tag (it's below the and <h2> tag) and add *class="last"*:**

```
<div id="announcement">
<h2>Announcements</h2>
<ul class="last">
```

Why add a class? As pictured in Figure 8-17, the bottom image (the end of the scroll) must be attached to the last tag in the sidebar; that's how the image appears at the bottom of the scroll. Now, you could just create a style like *#announcement ul*, which will work in this case, but if you ever want to remove the bulleted list and replace it with paragraphs of text, you'll need to recreate the style. If you use a class and create a style like *#announcement .last*, then

whenever you change the HTML in the sidebar, you just add *class="last"* to the last tag in the sidebar. (You can do the same for the <h2> tag. For example, you can create a class named *#announcement .first* and add *class="first"* to which every tag comes first inside the .)

6. **In the page's internal style sheet, add one last style:**

```
#announcement .last {
  background: url(images/scroll_bottom.jpg) no-repeat center bottom;
  padding-bottom: 65px;
}
```

Like the other styles in this part of the tutorial, here you're adding a single image to the background of an element. However in this case, the image is being placed at the bottom of the <ul> tag. Since there are quite a few list items, the <ul> tag is actually pretty tall—taller than the background image—so you need to place it at the bottom of the tag, in order for it to appear at the bottom of the .

7. **Save the file and preview it in a web browser.**

The sidebar should look like the bottom image of Figure 8-14…unless you're using IE 6 or IE 7. In those browsers, you don't actually see anything except the tiled background—no headline, no bullets, and no top and bottom parts of the scroll. Behold another IE browser bug. It's a variant of the "peekaboo" bug described on page 173. Thankfully, this bug has been fixed in IE 8, and there's a way to fix it for IE 6 and IE 7.

8. **Return to the *bg_images.html* file and add *zoom: 1* to *#announcement* style in the internal style sheet. The final version should look like this:**

```
#announcement {
  background: url(images/scroll_middle.jpg) repeat-y center top;
  margin-top: 115px;
  zoom: 1;
}
```

This weird, IE-only property adds what's called *layout,* which ends up fixing this problem and many just like it. It's a bit of CSS voodoo that shouldn't really do anything…but it does (gotta love web design). You'll learn more about layout and using the zoom property to fix IE bugs on page 173.

Going Further

The page is done, but for an extra challenge take the internal style sheet you incorporated in this tutorial and move it into the external style sheet—*styles.css*—that's attached to this page. One way is to simply cut the styles from the internal style sheet and paste them into the external style sheet. However, in some cases, the same style name appears in both style sheets (the external style sheet, for example, has a *#announcement* style used to provide the layout information for the sidebar).

Try to end up with an external style sheet that doesn't repeat style names—you can do this by copying the properties from the internal style sheet (for example, copy the properties for *#announcement*) and pasting them into the appropriate style in the external style sheet (for example, pasting the properties into the *#announcement* style in the *styles.css* file).

You'll find finished examples of this tutorial—both the finished, two style sheet version and the single external style sheet version—in the folder *08_finished/bg_ex* and *08_finished/bg_ex_further* folders.

CHAPTER
9

Sprucing Up Your Site's Navigation

It's safe to say that without links there'd be no Web. The ability to be on one page, then click something onscreen and suddenly see a page on a computer half a world away is what makes the Web so useful. Links are also how your visitors navigate their way around your website. That's why web designers agonize over making their links look good and work properly.

In this chapter, you'll learn how to style links to make them stand out from other text. You can also make your links provide visual cues so your site's visitors can see where they are—and where they've been. You'll learn how to use CSS to create onscreen buttons and navigation bars just like the pros use. And in the tutorial section, you'll get some hands-on experience creating a full set of navigation features that work in all browsers.

Selecting Which Links to Style

As always in CSS, you have to select something before you can style it. For links, you need to tell CSS not only *what* you want to style, but also *when* you want that style to apply. Web browsers keep track of how a visitor interacts with links, and then displays that link differently depending on the link's status, or *state*. When you use a CSS link selector, you can target a specific link state as well.

Understanding Link States

Most browsers recognize four basic link states: an unvisited link, a link that's been visited already (meaning the URL is stored in the browser's history), a link that the visitor's mouse is poised over, and a link that's being clicked. As described in Chapter 3 (page 61), CSS gives you four pseudo-class selectors to accompany these states—*:link*, *:visited*, *:hover*, and *:active*. Using them, you can apply different formatting to each state, so there's no doubt in your visitor's mind whether he's been there or done that.

Note: Internet Explorer 8, Firefox, Safari, and Opera also recognize a pseudo-class called *:focus*. Links get *:focus* when mouse-averse visitors use the keyboard to tab to them. This pseudo-class is also fun to use with form text fields, as you'll see on page 295.

Suppose you want to change the text color for an unvisited link from boring browser blue to vivid orange. Add this style:

```
a:link { color: #F60; }
```

Once someone has clicked that link, its state changes to *visited*, and its color changes to the purple used by most browsers. To change that color to deep red, use this style:

```
a:visited { color: #900; }
```

Tip: When you want to provide a style that applies to all link states–for example, use the same font and font size for all link states–then style the HTML <a> tag by creating a generic *a* selector. You can then use the specific link state styles–*a:visited,* for example–to change the color or in some other way customize the look of just that state.

The *:hover* pseudo-class offers many creative possibilities. (You'll learn quite a few later in this chapter.) It lets you completely alter the look of a link when a visitor moves her mouse over it. If you've used cumbersome JavaScript to make graphic buttons change when a mouse hovers over them, you'll love being able to create the same effect with CSS alone. But to start with a simple example, this style changes the color of a link as a mouse passes over it:

```
a:hover { color: #F33; }
```

Tip: Be careful when adding CSS properties to the *:hover* pseudo-class. Properties that change the size of the hovered element might affect other elements around it. For example, if you increase the font size of a hovered text link, when you mouse over the link, the text will grow, pushing other elements out of the way. The effect can be jarring.

And finally, for those obsessive-compulsive designers who leave no design stone unturned, you can even change the look of a link for the few milliseconds when a visitor is actually clicking it. Here's how:

```
a:active {color: #B2F511; }
```

In most cases, you'll include at least *:link*, *:visited*:, and *:hover* styles in your style sheets for maximum design control. But for that to work, you must specify the links in a particular order: *link, visited, hover,* and *active*. Use this easy mnemonic to remember it: **LoVe/HA**te. So here's the proper way to add all four link styles:

```
a:link { color: #F60; }
a:visited { color: #900; }
a:hover { color: #F33; }
a:active {color: #B2F511; }
```

If you change the order, the hover and active states won't work. For example, if you put *a:hover* before *a:link* and *a:visited,* then the color change won't take effect when hovering.

Note: Why does the order matter? That would be thanks to our friend the cascade (see Chapter 5). All those styles have the same specificity, so the order in which they appear in the code determines the style that wins out. A link can be both *unvisited* and *hovered over.* So if the *a:link* style comes last in the code, then it wins, and the color from *a:hover* never gets applied.

Targeting Particular Links

The styles in the previous section are basic *a* tag styles. They target certain link states, but they style *all* links on a page. What if you want to style some links one way and some links another way? A simple solution is to apply a class to particular link tags. Say you have a bunch of links within the body of an article, some of which point to sites that you want to highlight (for example, links to websites belonging to your friends, business associates, or sponsors). You may want to identify these links so people know they're special and are more likely to click them. In this case, you can apply a class to these external links, like this:

```
<a href="http://www.hydroponicsonline.com" class="sponsor">Visit this great
resource</a>
```

To style this link in its own way, you'd create styles like this:

```
a.sponsor:link { color: #F60; }
a.sponsor:visited { color: #900; }
a.sponsor:hover { color: #F33; }
a.sponsor:active {color: #B2F511; }
```

Leaving off the *a* and only specifying the class works too:

```
.sponsor:link { color: #F60; }
.sponsor:visited { color: #900; }
.sponsor:hover { color: #F33; }
.sponsor:active {color: #B2F511; }
```

Now only those links with a class of "sponsor" will get this formatting.

Note: These examples change only the links' color, but that's just to make it simple for demonstration purposes. You can use *any* CSS property to format links. As you'll see in the next section, you have lots of creative ways to style links.

Grouping links with descendent selectors

If a bunch of links appear together in one area of a page, you can also save time by using *descendent selectors*. Say you have five links that lead to the main sections of your site. They represent your main navigation bar, and so you want to give them a distinctive look. Just wrap those links in a tag and apply a class or ID to it like this: * *. Now you have an easy way to identify and format just those links:

```
#mainNav a:link { color: #F60; }
#mainNav a:visited { color: #900; }
#mainNav a:hover { color: #F33; }
#mainNav a:active {color: #B2F511; }
```

Using descendent selectors, it's easy to style links differently for different areas of a web page. (See page 427 in Chapter 15 for a thorough discussion of the power of descendent selectors.)

Tip: It's very common to use bulleted lists to present links (you'll see an example of this technique on page 235). In this, case you can add an ID or class to the <ul> tag for the list–*<ul id="mainNav">,* for example–then create descendent selectors like *#mainNav a:link* to style them.

Styling Links

Now that you know how to create a selector that targets links, how should you style them? Any way you want! There aren't any CSS properties intended just for links. You have full access to all CSS properties, so you're limited only by your imagination. Just make sure your links look like links. Not that they need to be blue and underlined, but links must look different from non-link text so visitors know they can click them.

If you make a link look like a button—adding a border, including a background, and making it change color when moused over—most people will understand they can click it. Likewise, links that appear in long passages of text should look clearly distinct. You can make links stand out by bolding the text, keeping the traditional underline, coloring the background, or adding a hover style. You can even add a graphic (like an arrow) that provides a clear visual cue that clicking the text takes you somewhere else.

Tip: Unless you set an <img> tag's border attribute to 0, web browsers usually add a border around linked images. To prevent this from happening, add this basic style to your style sheets: *img { border: none; }*.

Underlining Links

Since the beginning of the Web, vibrant blue, underlined text has signaled, "Click here to go there." But that underline and color are often the first two things a designer wants to change. Underlines are such a common way to mark a link that they're boring. (See #1 in Figure 9-1). Fortunately, you can do several things to eliminate or improve on the standard underline, while still ensuring that your links are identifiable:

- **Remove the underline entirely.** To eliminate the regular underline, use the *text-decoration* property and the *none* value:

  ```
  a {text-decoration: none;}
  ```

  Of course, removing the underline completely can confuse your visitors. Unless you provide other visual cues, your links look exactly the same as all the other text (#2 in Figure 9-1). So if you go this route, then make sure you highlight the links in some other way, like making link text bold (#3 in Figure 9-1), coloring the background, adding an informative graphic (page 230), or making the link look like a button (page 231).

- **Underline when mousing over.** Some designers remove underlines for all links, highlight them in some other way, and then add the underlines back when the visitor moves his mouse over the link, as shown in #4 in Figure 9-1. To do so, simply remove the underline for links, and then reintroduce it using the *:hover* pseudo-class:

  ```
  a {
    text-decoration: none;
    background-color: #F00;
   }
  a:hover {
    background-color: transparent;
    text-decoration: underline;
  }
  ```

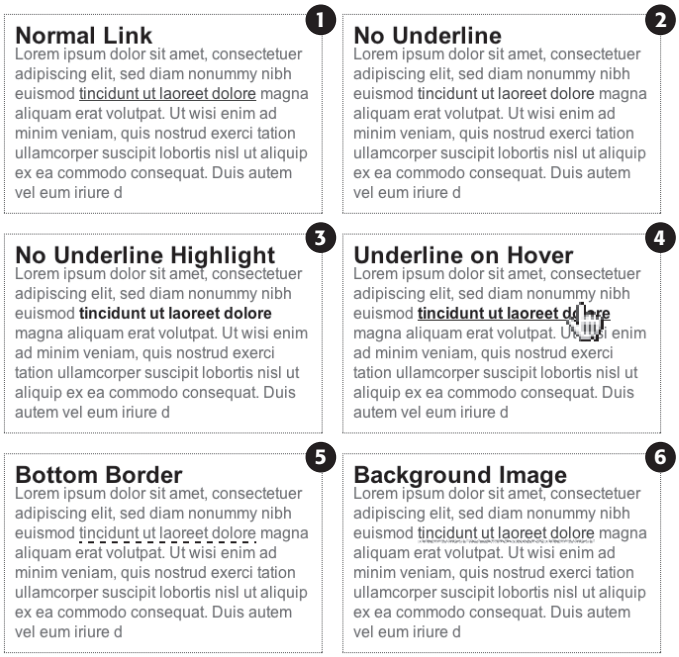


Figure 9-1:
You have plenty of ways to make the boring line (1) under links more exciting. Start by removing the line entirely (2, 3, 4). Better yet, create a more stylized line by using the border property (5) or a background image (6).

- **Use a bottom border.** You can't control the color, width, or style of a regular link underline. It's always a solid, 1-pixel line in the same color as the link text. For greater variety, use the *border-bottom* property instead, like #5 in Figure 9-1. Hiding the normal underline and adding a dashed-line border looks like this:

```
a {
  text-decoration: none;
  border-bottom: dashed 2px #9F3;
}
```

  You can alter the style, width, and color of the border. To put more space between the text and the border, use the *padding* property.

- **Use a background image.** You can customize the look of links even further by using a graphical line. For example, #6 in Figure 9-1 uses a graphic that looks like a hand-drawn line. There's a similar technique for underlining headlines in the Chapter 8 tutorial (page 216). Start by creating an underline graphic using a program like Fireworks or Photoshop, which have brush tools that simulate the look of a crayon, felt-tip marker, or whatever. Next, create a style for the link that

removes the normal underline and adds a background image. Make sure the graphic repeats horizontally and is positioned at the bottom of the link. You may also need to add a little bottom padding to position the line. Here's an example:

```
a {
  text-decoration: none;
  background: url(images/underline.gif) repeat-x left bottom;
  padding-bottom: 5px;
}
```

It's best to use this technique for short, one- to-three-word links, since if the link runs longer than a single line, then Windows Internet Explorer 6 and 7 add the graphic to only the bottom of the last line (IE 8 gets it right).

Creating a Button

You can also make links look like the buttons in the dialog boxes and toolbars you see in computer programs. Buttons look great in navigation bars, but you can also use them for any small (one- or two-word) links on your pages. Your main allies in this task are the *border, background-color,* and *padding* properties. With them, it's easy to create a wide range of boxy-looking buttons (see Figure 9-2).

Say you added a class to a link that you'd like to style as a button: *Free Donuts Here!*. To add a basic black outline around this link (like the top-left image in Figure 9-2), you'd create this style:

```
a.button {
  border: solid 1px #000;
}
```

You can get fancier by adding a background color as well, like so:

```
a.button {
  border: solid 1px #000;
  background-color: #333;
}
```

Note: In these examples, both *a.button* or *.button* would work for style names. In the case of *a.button,* the style only applies to <a> tags with the class *button,* while *.button* applies to any tag with that class name. If you want to make sure the style only applies to a particular tag, then add the tag name to the beginning. Adding the tag name is also a helpful reminder when looking over your CSS code–it provides a valuable clue as to what the style is intended to format. When you see *a.button,* it's clear that the style is aimed at particular links.

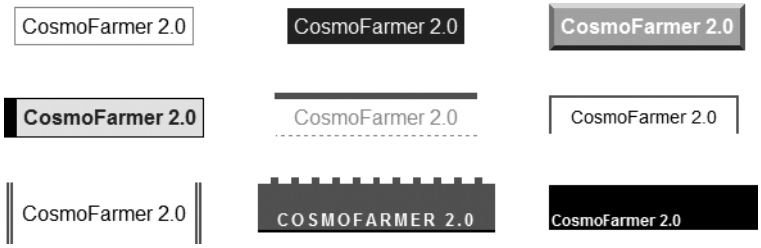


Figure 9-2: *Use the* border, background, *and* padding *properties to turn a link into an obviously clickable button. Simply adding a border (top left) can be enough to get the point across. Or you can create more sophisticated-looking buttons by combining different borders of varying colors, styles, and widths with the* background-color *property (page 164).*

Mind you, all four borders don't need to be the same width, type, or color. You don't even have to have four borders. One common design technique is to add a beveled look to a button using four different border colors, as shown at top right in Figure 9-2. Creating the beveled look isn't difficult, but you need to remember what makes something look three-dimensional—the light source. Imagine a light shining on one of the four sides; that side is the lightest, while the side opposite is the darkest (since the raised button is blocking the light and putting that side into a "shadow"). The other two sides should have shades in between the "lit" and "shadow" borders. Here's the CSS used to create the beveled design in the top-right corner of Figure 9-2:

```
a.button {
  background: #B1B1B1;
  color: #FFF;
  font-weight: bold;
  border-width: 4px;
  border-style: solid;
  border-top-color: #DFDFDF;
  border-right-color: #666;
  border-bottom-color: #333;
  border-left-color: #858585;
}
```

Keep in mind that you can (and probably should) create a *:hover* state for your buttons as well. That way, your buttons can react when a visitor moves her mouse over the link, providing useful visual feedback. In the case of a beveled button, reversing the various colors—make a dark background lighter, a light border darker, and so on—is very effective.

Using Graphics

Adding graphics to links is one of the easiest and most visually exciting ways to spruce up your site's navigation. There are any number of possible techniques and designs, but none of the good ones involve an HTML <img> tag. Instead, you can easily add attractive and informative imagery to any link using the CSS *background-image* property. You can see several examples in Figure 9-3. (You'll also learn more advanced techniques for using images to create graphical buttons and rollovers starting on page 246.)

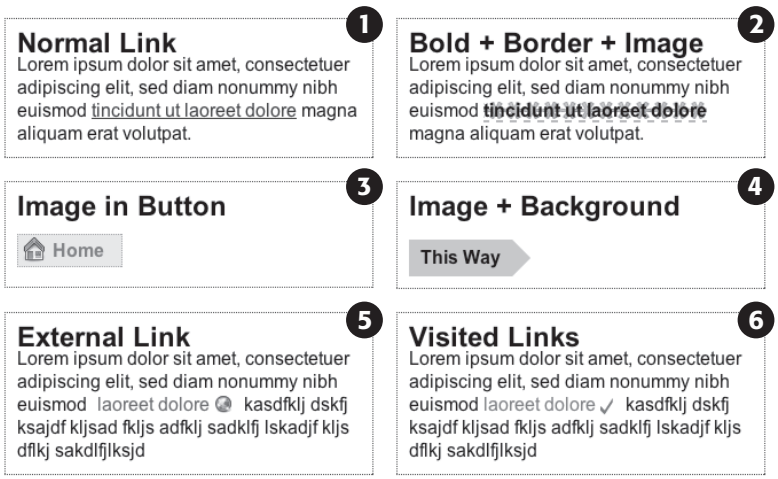


Figure 9-3: *Even a simple graphic can enliven a link and make its purpose clearer. A globe icon (5) is one way to indicate an external link, while a checkmark (6) can instantly let a visitor know that he's been there, done that.*

If you need a refresher on *background-image* and related properties, flip back to page 188. Meanwhile, here are a few things to keep in mind when you use images with links:

- **Don't forget *no-repeat.*** Normally a background graphic tiles repeatedly in the background. With many graphics, that effect looks awful for links (see #2, Figure 9-3). Unless you're using a subtle pattern like a gradient fill, remember to set the repeat option to stop the tiling like this: *background-repeat: no-repeat;*.
- **Control placement with *background-position.*** To place an image accurately in the background, use the *background-position* property (page 194). When you want to place an image on the far-right edge of a link but centered vertically on the line, use this CSS: *background-position: right center.*

  For more accurate placement, use a specific value such as pixels or ems. These units of measurement make it easy to scoot a graphic a couple of pixels away from the left edge of the link. By combining these units with a percentage value, you can easily center a graphic vertically within a link but place it an exact amount away from the left edge: *background-position: 10px 50%;*.

Tip: In positioning background images, the first value is the horizontal placement (left to right); the second is vertical placement (top to bottom).

Unfortunately, there's no way to exactly place an image from the right or bottom edges. So if you want to move an image in from the right edge a bit, then you have two options: First, in your image-editing program, you can add empty space to the right edge of the graphic. The amount of empty space you add should be equivalent to how much you want to indent that graphic from the right. Once you've created the graphic, use the *background-position* property to place the graphic on the right edge of the element: for example, *background-position: right top;*. Or you can use percentage values: *background-position: 90% 75%;* places the point that lies 90 percent from the left edge of the image on top of the point 90 percent from the left edge of the styled element. As you can imagine, this method doesn't provide complete accuracy, so you'll need to experiment a little. (See page 475 for more on how percentage positioning works.)

- **Padding gives you room.** If you're using an image or icon to mark a link (like #3, #5, and #6 in Figure 9-3), then make sure to add padding on the side the image is on to move the link text out of the way. For instance, the third example in Figure 9-3 has 30 pixels of left padding to prevent the word "Home" from overlapping the picture of the house, while a little right padding makes room for the globe and checkmark in #5 and #6.

Note: Since the <a> tag is an inline element, adding top and bottom padding (or, for that matter, top and bottom margins) has no effect. See page 158 for the reason why. You can, however, turn a link into a block-level element so that it can accept top and bottom padding and margins. You'll see this technique later in this chapter.

- **Use the pseudo-classes.** Don't forget the *:hover* and *:visited* pseudo-classes. They can add great dynamic effects and provide helpful feedback about your links. You can swap in a *different* background graphic for any of these pseudo-classes. So you could, for example, have a dim light bulb graphic in the background of a normal link but change that graphic to a lit bulb when the mouse travels over it. Or don't use a graphic for the background of unvisited links, but once they're visited add a checkmark graphic to clearly identify their used status (see #6 in Figure 9-3).

  Should you decide to use a graphic for a link's *:hover* state, keep in mind that browsers don't download the graphic until your visitor's mouse actually hovers over the link, so there'll be a noticeable delay before the graphic appears. Once the graphic is downloaded, however, the delay goes away. See page 246 for a technique to prevent this awkward problem.

Building Navigation Bars

Every site needs good navigation features to guide visitors to the information they're after—and help them find their way back. Most sites are organized in sections, such as Products, Contact Info, Corporate Blog, and so on. This structure lets visitors know what information to expect and where they can find it. Much of the time, you find links to a site's principal sections in a *navigation bar*. CSS makes it easy to create a great-looking navigation bar, rollover effects and all.

Using Unordered Lists

At heart, a navigation bar is nothing more than a bunch of links. More specifically, it's actually a *list* of the different sections of a site. Back in Chapter 1, you learned HTML's mission is to provide meaningful structure to your content. Accordingly, you should always use a tag that's appropriate to the meaning of that content. For a list of items, that's the <ul> or unordered list tag—the same one you use to create bulleted lists. It doesn't matter whether you want your list to have *no* bullets or to stretch horizontally across the top of the page: You can do all that by styling the <ul> tag with CSS. Figure 9-4 shows an example.

Figure 9-4: *Using CSS, you can bend ordinary HTML <ul> tags to your will and turn them into either vertical or horizontal navigation bars. To paraphrase a classic movie line, "We don't need no stinkin' bullets."*

The HTML for a nav bar is straightforward. There's a single link inside each individual list item. Also, you need a way to style just that unordered list. (You don't want *actual* lists of items to look like navigation bars.) Applying a class or id to the <ul> tag is a good approach:

```
<ul class="nav">
<li><a href="index.html">Home</a></li>
<li><a href="news.html">News</a></li>
<li><a href="reviews.html">Reviews</a></li>
</ul>
```

The CSS varies a bit depending on whether you want a horizontal of vertical navigation bar. In either case, you need to do two things:

- **Remove the bullets.** Unless the navigation bar is supposed to look like a bulleted list, remove the bullets by setting the *list-style-type* property to none:

```
ul.nav {
  list-style-type: none;
}
```

- **Eliminate padding and margins.** Since browsers indent list items from the left, you need to remove this added space as well. Some browsers do the indenting using *padding*, and others use *margin*, so you need to set both to 0:

```
ul.nav {
  list-style-type: none;
  padding-left: 0;
  margin-left: 0;
}
```

These two steps essentially make each list item look like any plain old block-level element, such as a paragraph or headline (except that a browser doesn't insert margins between list items). At this point, you can begin styling the links. If you want a vertical navigation bar, read on; for horizontal nav bars, see page 238.

Vertical Navigation Bars

A vertical navigation bar is just a bunch of links stacked one on top of the next. Removing the bullets, left margin, and padding (as explained in the previous section) gets you most of the way there, but you need to know a few additional tricks to get things looking right:

1. **Display the link as a block.**

   Since the <a> tag is an inline element, it's only as wide as the content inside it. Buttons with different length text (like Home and Our Products) are different widths. The staggered appearance of different width buttons stacked on top of each other doesn't look good, as you can see in #1 in Figure 9-5. In addition, top and bottom padding and margins have no effect on inline elements. To get around these limitations, style the link as a block element:

```
ul.nav a {
  display: block;
}
```

   The block value not only makes each button the same width, but it also makes the entire area of the link clickable. That way, when your visitors click areas where there's no link text (like the padding around the link), they still trigger the link. (Internet Explorer 6 and earlier has problems with this technique, so look for the fix on page 238.)

2. **Constrain the width of the buttons.**

   Making links block-level elements also means they're as wide as the tag they're nested in. So when they're just sitting in a page, those links stretch the width of the browser window (see #2 in Figure 9-5). You have several ways to make them a little narrower. First you can just set the width of the <a> tag. If you want each button to be 8 ems wide, for example, then add that to the *width* property:

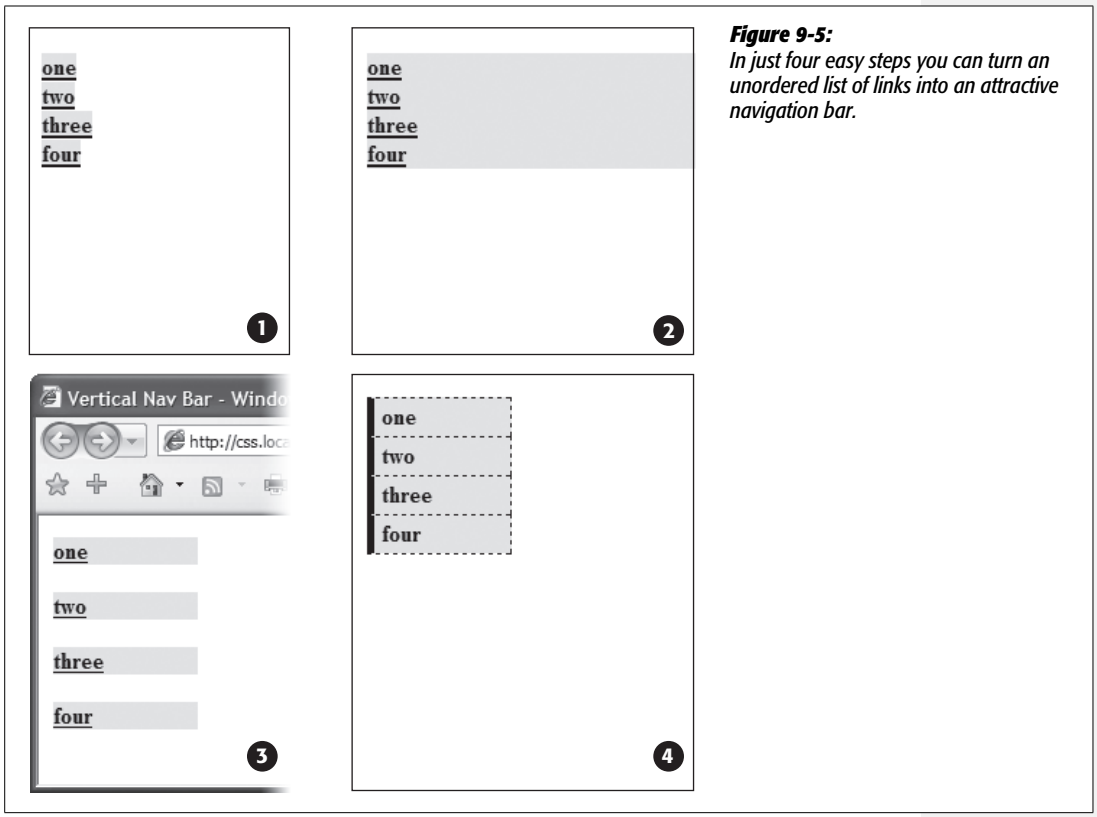


Figure 9-5:
In just four easy steps you can turn an unordered list of links into an attractive navigation bar.

```
ul.nav a {
  display: block;
  width: 8em;
}
```

Setting a width for any of the tags that wrap around those links—such as the <li> or <ul> tags—also works.

If the button text occupies only one line, you can also center the text vertically so there's equal space above and below the link text. Just add a height to the link *and* set its *line-height* property to the same value: *a { height: 1.25em; line-height: 1.25em; }*.

Note: You may not need to set an explicit width if the nav bar is inside a page layout element that itself has a width. As you'll read in Part 3, it's easy to create a sidebar that hugs the left (or right) edge of a page. The sidebar has a set width, so plopping the unordered list nav bar inside it automatically constrains the width of the buttons.

Unfortunately, when you don't set an explicit width for the <a> tag, Internet Explorer 6 and earlier has a couple of problems with these links. First, IE 6 displays large gaps between each link (see #3 in Figure 9-5).

In addition, another IE 6 bug appears whenever you set a link to display as a *block*. Even though other browsers make the entire block area clickable, IE 6 still limits clicking to just the text inside the link—in other words, if you add a hover effect, to make the background color of a button light up, for example, in IE 6 the background only lights up when you mouse over the text, not over the empty area of the button.

Fortunately, these two problems are easy to fix. In fact, if you set an explicit width on the <a> tags in the nav bar, then you've already taken care of this IE bug. Skip the next step.

3. **Fix the Internet Explorer 6 bug.**

   To remove this space and make the entire area clickable, add the IE-only property of *zoom* to the link:

   ```
   ul.nav a { zoom: 1; }
   ```

   You can read more about this little trick in the box on page 338, but basically, you can solve many IE 6 (and some IE 7 bugs) simply by adding *zoom: 1* to an element. There's no CSS-based reason for it—just a way to change how IE renders page elements.

   Adding the *zoom* property won't affect any other browsers—they simply ignore any CSS they don't understand. You could hide this style from other browser if you wanted to by using either the ** html* hack discussed on page 335—for example, ** html ul.nav a { zoom: 1 ; }*. Alternatively, you can put this kind of invalid CSS code into IE-only style sheets using the IE conditional comments technique discussed on page 433.

Now that all this busywork is out of the way, you can style the buttons to your heart's content. Add padding, background colors, margins, images, or whatever tickles your artistic fancy. If you want to spread the buttons out so they don't touch, then add a bottom (or top) margin to each link.

Horizontal Navigation Bars

CSS lets you turn a set of stacked list items into a side-by-side presentation of links, like the one shown back in Figure 9-4. This section shows you two common ways to create a horizontal navigation bar from a list. The first—using the *display: inline* property—is easy, but it can't create equal-size buttons. If a uniform look is what you crave, then turn to the *floated * method described on page 241.

WORKAROUND WORKSHOP

When Borders Bump

If the buttons in your nav bar touch and you apply a border around each link, then the borders double up. In other words, the bottom border from one button touches the top border of the next button.

To get around this, add the border to only the *top* of each link. That way, you'll get just one border line where the bottom from each button touches the top from the next.

This workaround, however, leaves the entire nav bar borderless below the last link. To fix that problem, you can either create a class with the correct bottom border style and apply it to the last link, or better yet, add a bottom border to the <ul> tag that encloses the nav bar. (You'll see this trick in action in this chapter's tutorial, on page 261.)

Whichever method you use, start by removing the bullets and left space from the <ul> tag, as illustrated in #1 in Figure 9-6.

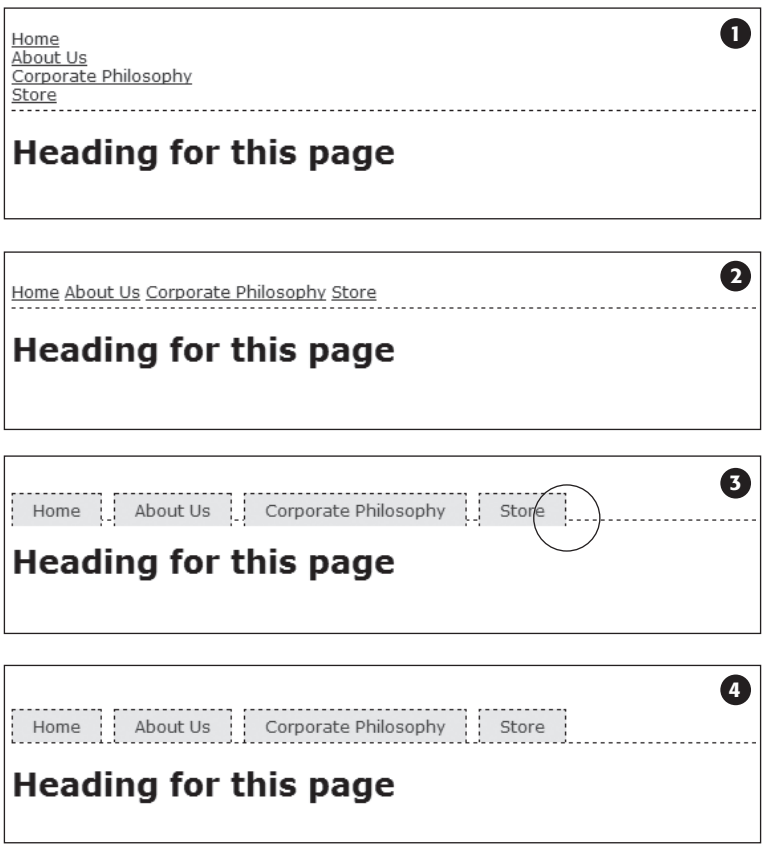


Figure 9-6: *Creating a horizontal menu from an unordered list of links requires just a few steps. When you use the inline setting for each list item, though, you must set top and bottom padding on the <ul> tag to prevent the buttons from overflowing the <ul> tag's background or overlapping its borders (circled in #3).*

Using display: inline

The simplest method of creating a horizontal navigation bar involves changing the *display* property of the list items from *block* to *inline*. It's easy to do using CSS.

1. **Make the list items inline elements.**

   Inline elements don't create a line break before or after them as block-level elements do. Setting the *display* property of the <li> tags to *inline* makes them appear one beside the other (see #2 in Figure 9-6).

   ```
   ul.nav li { display: inline; }
   ```

   You need to make sure you don't have too many buttons, though. If they won't all fit side by side, some will drop down below the first row.

2. **Style the links.**

   You can remove the underline beneath the links and add a border around them instead. You can also add background color or a background image to provide visual depth. Add padding if you need more room around each link's text. If you want some space between each button, then apply a right margin. The following style gives links a button-like appearance, as shown in #3 and #4 in Figure 9-6:

   ```
   ul.nav a {
     border: 1px dashed #000;
     border-bottom: none;
     padding: 5px 15px 5px 15px;
     margin-right: 5px;
     background-color: #EAEAEA;
     text-decoration: none;
     color: #333;
   }
   ```

Note: When you use the inline method to create a horizontal nav bar, don't set the links' *display* property to *block*. If you do, then each link will appear one on top of the other and span the entire width of the page (or entire width of the list's containing block).

---

3. **Add top and bottom padding to the <ul> tag.**

   Because <a> tags are inline elements, adding top and bottom padding doesn't actually increase the height of a link. Instead, that padding just causes borders and backgrounds on links to overlap elements above and below the link, like the example shown way back in Figure 7-6. In Internet Explorer, the padding can also make top borders on your links disappear. In this case, the <a> tag's padding is also making the border on the bottom of the <ul> tag appear a little above and behind the links (circled in image #3 in Figure 9-6).

The solution is to add padding to the <ul> tag, which creates space to accommodate the links' overflowing backgrounds and borders. For the <ul> tag's bottom padding, use the same value as the link's bottom padding. To determine the <ul> tag's top padding value, add 1 pixel to the link's top padding. (If you're using ems, just make sure the <ul> tag's top padding is greater than the top padding used for the link.) For example, the <ul> tag style to accompany the links in step 2 would look like this:

```
ul.nav {
  margin-left: 0;
  list-style: none;
  padding-left: 0;
  padding-top: 6px;
  padding-bottom: 5px;
  border-bottom: 1px dashed #000;
}
```

As you can see in #4 in Figure 9-6, the bottom padding lets the bottom border of a <ul> fit in place nicely. One problem with this approach is that there's always a gap between each button, so if you want buttons whose sides touch, then you need to float the links or set a negative right margin on them. Read on for another solution.

Note: To make this horizontal nav bar appear in the center of the page, add *text-align: center;* to the <ul> tag's style.

Using floats for horizontal navigation

Although the *display: inline* technique for creating a horizontal nav bar is simple, it has one fundamental flaw: There's no way to create equally sized buttons. Setting a width on either the <li> or <a> tags has no effect, because they're inline elements. To get around this problem, you need to use a little trickier solution—floats.

Note: Nav bars made up of floated elements are hard to center horizontally in the middle of a page. When you need to do that, the *inline* method described on the previous page is better.

---

1. **Float the list items.**

   Adding a left float to the <li> tags removes them from the normal top-down flow of elements:

   ```
   ul.nav li { float: left; }
   ```

   The floated list items (along with their enclosed links) slide right next to each other, just like the images in the photo gallery tutorial on page 208. (You can just as easily float them right if you want those buttons to align to the right edge of the screen or containing sidebar.)

FREQUENTLY ASKED QUESTION

Pop-up Menus

How do I create those cool pop-up menus that display a submenu of links when someone rolls his mouse over a button?

Navigation bars that have multiple levels of menus that pop up or slide out are extremely popular. They're a perfect way to cram a lot of link options into a compact navigation bar. You can create them in a couple of ways.

First, there's the CSS-only approach. One popular dropdown menu technique is called Son of Suckerfish. (The earlier version was called Suckerfish.) You can learn about both here: *www.htmldog.com/articles/suckerfish/dropdowns*.

As for creating a multi-level, horizontal drop-down menu, there's a nice easy tutorial at: *www.tanfa.co.uk/css/examples/menu/tutorial-h.asp*.

The same site provides a tutorial for creating vertical menus with pop-out submenus: *www.tanfa.co.uk/css/examples/menu/tutorial-v.asp*.

If you're not the do-it-yourself type (of course you are, you're reading this book), or if you're just in a hurry, you can use the free Pure CSS Menu generator—a wizard-like web page that produces the necessary HTML and CSS for you: *http://purecssmenu.com*.

The one disadvantage to the CSS approach is that the submenus disappear instantly if your visitor's mouse strays. You can hope that all your visitors have excellent reflexes, or you can try a different approach: Use CSS to style the buttons and JavaScript to control the actions of the submenus. (Another benefit of JavaScript is that you can add cool animation effects to your menus.)

For a very simple JavaScript menu try the "jQuery Simple Drop Down Menu plugin" (*http://javascript-array.com/scripts/jquery_simple_drop_down_menu*). Just the basics, but it works well. A more powerful JavaScript-driven menu system is Superfish. You can read about it and download the necessary files from *http://users.tpg.com.au/j_birch/plugins/superfish*.

2. **Add *display: block* to the links.**

   Links are inline elements, so width values (as well as top and bottom padding and margins) don't apply to them. Making a browser display the links as block elements lets you set an exact width for the button and add a comfortable amount of white space above and below each link:

   ```
   ul.nav a { display: block; }
   ```

3. **Style the links.**

   Add background colors, borders, and so on. This part of the process is identical to step 2 on page 240.

4. **Add a width.**

   If you want the nav buttons to have identical widths, set a width for the <a> tag. When you set the *width* property, it's a good idea to use em units because they scale. That way, the link text won't get bigger than the buttons if a visitor increases the browser's font size. The exact width you use depends on how much text is in each button. Obviously for a link like Corporate Philosophy, you need a wider button.

   If you want each button to be simply the width of the text inside, don't set a width. You can, however, adding left and right padding to give the text some breathing room.

Tip: To center the text in the middle of the button, add *text-align: center;* to the links' style.

5. **Add *overflow: hidden* to the <ul> tag style.**

   If it has a border, background color, or image, you should need to "contain the float"—that is, the floated list items inside the <ul> will appear to pop out of the bottom of the list (and outside the <ul> tags border or background color).

```
ul.nav {
  overflow: hidden;
}
```

   Finally, Internet Explorer 6 isn't too happy with this, so it simply ignores this instruction, unless you coax it.

6. **Add *zoom: 1* for IE 6:**

```
ul.nav {
  overflow: hidden;
  zoom: 1;
}
```

   See step 3 on page 238, for a brief rundown on this bit of magic.

Here are the styles required to create the navigation bar pictured in Figure 9-7. Notice that the buttons are the same width, and the button text is centered.

```
ul.nav {
  margin-left: 0px;
  padding-left: 0px;
  list-style: none;
  border-bottom: 1px dashed #000;
  overflow: hidden;
  zoom: 1;
}
ul.nav li {
  float: left;
}
ul.nav a {
  width: 12em;
  display: block;
  border: 1px dashed #000;
  border-bottom: none;
  padding: 5px;
  margin-right: 5px;
  background-color: #EAEAEA;
  text-decoration:none;
  color: #333;
  text-align: center;
}
```

Heading for this page

Figure 9-7: *Floating list items let you create equal width buttons for a navigation bar like this one. You can see the actual CSS that created this bar on the facing page.*

FREQUENTLY ASKED QUESTION

Where to Get Navigation Bar Help

I've never made a nav bar before, but I really want my site to have one. I just don't think I can put it all together on my own. Is there something that walks me through the whole process for the first time?

Yes. In fact, there's a tutorial in this very chapter that shows you step by step how to create a navigation bar. Just flip to page 240.

Online, you can find tutorials, plus tools that do some of the work for you.

For more information on turning ordinary lists into extraordinary navigation elements, visit the step-by-step list tutorial at: *http://css.maxdesign.com.au/listutorial*.

You can also find loads of cool list-based navigation designs at *http://css.maxdesign.com.au/listamatic*.

If you want to create tabs for your navigation (like the ones at the top of every Amazon.com page), check out the resources on this page: *http://css-discuss.incutio.com/?page=ListTabs*.

Finally, if you just don't want to bother creating your own, then try the List-O-Matic wizard at *www.accessify.com/tools-and-wizards/developer-tools/list-o-matic*. This site is for certain information, like fonts and colors, and can create the CSS you need for list-based navigation. It even lets you create submenus (a.k.a drop-down menus).

Advanced Link Techniques

If you've mastered the basic *:hover* principle and know how to add a background image to a link, you're probably hungry for more elaborate ways to spruce up your site's navigation. In the following sections, you'll meet a few of the most popular techniques.

Big Clickable Buttons

The *:hover* pseudo-class is a great way to add an interactive feel to a web page. But what if you want to highlight an area that's bigger than just a two-word navigation link? Suppose you have a list of news stories in a sidebar. Each item includes the title on one line, followed by a paragraph summary of the story. And suppose you want to highlight the area around both title and summary when a visitor mouses over them (see Figure 9-8).

Fortunately, Internet Explorer 7 and above, Firefox, Safari, Chrome, and Opera all understand the *:hover* pseudo-class when applied to all kinds of elements, not just links. So if you want to highlight a paragraph when the mouse moves across it, you can do so like this:

```
p:hover { background-color: yellow;}
```

Figure 9-8:
Give your visitors a big target. With a little clever CSS, you can make what looks like a headline and a paragraph behave like one giant button.

Look ma, no link! You can even apply hover effects to larger regions, like a div containing headlines, photos, and text paragraphs. So, if each news item in a page's sidebar is wrapped in a tag and has a class of *newsItem* applied to it, this style changes the background color of each:

```
.newsItem:hover { background-color: #333; }
```

Sadly, Internet Explorer 6 (and earlier) doesn't understand this style at all. That browser can display a hover effect only when it's applied to a link. And since the link tag is an inline element, you can't (at least according to the rules of HTML) wrap it around a block-level element. So you can't wrap both the headline of a story and the paragraph summary in the same link—exactly what you need to do to make both the title and summary change appearance when hovered over.

You're not out of luck, though. You just need to apply a little creative thinking. Don't put the title and summary into separate tags. Instead, keep them together in the link and use CSS to make the title *look* like a headline. Here's an example of marking up some HTML to achieve this effect. This snippet represents a single list item inside an unordered list:

```
<li class="story">
<a href="virgo.html"><span class="title">Virgo: It's Your Month!</span>
The stars are aligned in your favor. Next month? Not so much.</a>
</li>
```

In this case, both the title and summary are together inside the link, so you can highlight both with the same style:

```
li.story a:hover {
  background-image: url(highlight.gif);
}
```

In HTML, the story title ("Virgo, It's Your Month!") is wrapped in a tag. You can make text look like a block-level headline with just a few simple rules:

```
.story span.title {
  display: block;
  text-weight: bold;
  font-size: 150%;
}
```

The key here is the *block* value, which makes the browser treat the text inside the span like its own headline with a line break before and after. Now, even though the title and summary look like they're separate block-level tags, they're still just part of the same inline <a> tag.

Note: You can also use JavaScript to create a better, more flexible, "big link." You can find a tutorial at *www.creativepro.com/article/view-source-make-your-links-unforgettable*.

CSS-Style Preloading Rollovers

In the bad old days, making a graphical link change to another graphic when moused over required JavaScript. With CSS, you can achieve similar effects with the *:hover* pseudo-class and a background image. However, there's one problem with the CSS method: Unless your visitor has already downloaded the rollover graphic, there's a noticeable delay while the browser sucks down the new graphic and displays it. The delay happens only the first time the visitor hovers over the link, but still, waiting for graphics to load is very 20th century.

The JavaScript solution can avoid this problem thanks to a technique called *preloading* which automatically downloads the rollover graphic well before it's needed. But CSS doesn't give you that option, so you need to enlist another clever maneuver called *CSS Sprites* (it was originally called the *Pixy method*), which utilizes a single graphic to create different states for the same button.

Note: To read about the original Pixy method (the predecessor to what you're about to learn), visit *http://wellstyled.com/css-nopreload-rollovers.html*. The evolved CSS Sprites method is now used widely by companies like Yahoo and Google, not just for rollover effects but to optimize the download speed of websites. You can read more about that at *www.mezzoblue.com/archives/2009/01/27/sprite_optim*.

Here's how to implement the method:

1. **In your favorite image-editing program, create one image with different versions of the button.**

   You might create a regular state, a rollover state, and maybe even a "you are here" state. Place the images one on top of the other, with the regular link image on top and the rollover image below.

2. **Measure the distances from the top of the entire graphic to the top of each image.**

   In Figure 9-9 (top) the rollover image's top edge is 39 pixels from the top of the graphic.

3. **Create a CSS style for the regular link. Include the image in the background and place it at the left top of the style (Figure 9-9, middle).**

   Your style may look something like this:

   ```
   a { background: #E7E7E7 url(images/pixy.png) no-repeat left top; }
   ```

4. **Create the *:hover* style.**

   Here's the trick: Use the *background-position* property to shift the graphic *upwards*, so the first image disappears and the rollover image becomes visible (Figure 9-9, bottom).

   ```
   a:hover { background-position: 0 -39px; }
   ```

Besides preventing the dreaded download delay, this technique helps you keep your navigation graphics organized in a single file.

Tip: CSS gives you other ways to preload the image. You can place the image into the background of an element that's covered by another element. Say your site's logo appears in the top-left corner of the web page. You could place the rollover image in the top-left corner of the page's background: *body { background: url(rollover.gif) no-repeat left top;* }. When the page loads, the rollover graphic is sitting in the background of the page, but your visitors won't see it because it's covered by the logo. Another method is to place the rollover image inside a that you position off the page using CSS positioning (see page 367). In either case, the browser downloads the image and the CSS rollover won't have any delays.

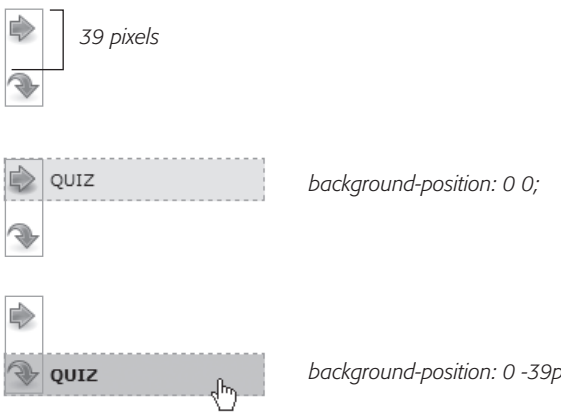


Figure 9-9:
Using the CSS Sprites method, you can avoid an annoying delay while the browser downloads a rollover image for the first time. By combining all of the different link state graphics into a single image, you can display a different state simply by adjusting the positioning of the background image.

Note: Some websites take this technique to the extreme. Yahoo, Amazon, and Google (among many others) often put together dozens of little images into a single file and display only the portion of the file containing the desired button. You can see an example from Amazon here: *www.flickr.com/photos/mezzoblue/3217540317*.

On a more manageable level, the website of one well-known designer uses a single graphic to manage the 15 different buttons on her navigation bar. You can read about her technique at *http://veerle.duoh.com/index.php/blog/comments/the_xhtml_css_template_phase_of_my_new_blog_part_2*. You can also see this technique in action in this chapter's tutorial, in step 8 on page 260.

Sliding Doors

Ever since Amazon popularized them years back, tabbed navigation buttons have become one of the most common ways to highlight the organization of a site. With good reason, too: Selecting a tab to open a new "folder" of information is a metaphor everyone recognizes. You have many ways to create tab buttons. Most basically, you can use border and background colors around links to create a tab appearance (see Figure 9-7). This technique uses just CSS—no images.

But using graphics can really add depth and visual interest to your buttons. One common method is to create a tab made up of a single graphic—text added to a button graphic in a graphics program like Photoshop or Fireworks. However, updating a bunch of button images every time you change your site's navigation can get old quick. Furthermore, having different graphics for each button slows down the loading time of your site.

A slicker technique is to put a tab graphic in the background of each link and use regular HTML for the text. That way, updating your site's navigation is a simple matter of updating some text in a web page. Even someone with zero Photoshop experience can manage it. The only time a single graphic for a tab doesn't work well is when the text on each link varies in length. If one tab reads "Store," and the other reads "Contact Us Today!" the Store tab suffers from empty space and the Contact tab looks a little cramped (see #1 in Figure 9-10).

What you need in that case is a way to have the tab graphic shrink-wrap itself around the link text. Luckily, designer Douglas Bowman has come up with a creative technique that does just that. Dubbed the *Sliding Doors* method, it involves creating one very wide and tall tab graphic in your image editing program (#2 in Figure 9-10), and then slicing that image into two graphic files (#3 in Figure 9-10). The very thin graphic is the left edge of the tab. It should be only wide enough to reveal the sloping left edge of the tab. The second graphic is very wide—wider than you imagine any tab on the page would ever get—and forms the tab's main body and right edge.

Note: Douglas Bowman's Sliding Doors technique is a classic in CSS design. You can find his original article at the A List Apart website: *www.alistapart.com/articles/slidingdoors*. There's also a follow-up article covering more advanced techniques at *www.alistapart.com/articles/slidingdoors2*.

Now here's the tricky part. Since a tag can have only *one* background image, you need to apply the graphics as backgrounds to *two* different tags. Start by creating an unordered list and turning it into a horizontal navigation bar as described on page 238. At this point, each <a> tag is nested inside one <li> tag, so you've got two tags to play with.

First, add the wide background image to the <li> tag and place it at the top-right corner of the tag. Do that by adding the following property to the style formatting for that button's <li> tag:

```
background: url(images/right_tab.gif) no-repeat right top;
```

The Sliding Doors technique capitalizes on the fact that a background image never extends outside of the box created by its tag. In other words, even though this image is really, really wide and tall, you won't see any part of the graphic that extends outside the region of the <li> tag—either below it or outside its left edge.

Note: If you like this technique, but aren't good at using Photoshop to create graphics, you can pick up free tab designs at *www.exploding-boy.com/2005/12/15/free-css-navigation-designs* and *www.exploding-boy.com/2005/12/21/more-free-css-navigation-menu-designs*.

Next, place the thin, left-hand graphic in the *top-left* background of the <a> tag by adding this property to the style for the link:

```
background: url(images/left_tab.gif) no-repeat left top;
```

Because the <a> tag is nested *inside* of the <li> tag, its background appears *above* the <li> tag's background. That left side tab graphic sits on top of the really wide tab graphic, creating the illusion of a single graphic. At this point, type whatever text you want for each link, in the process expanding the <li> tag and exposing more of the extra-wide graphic (see #4 in Figure 9-10).

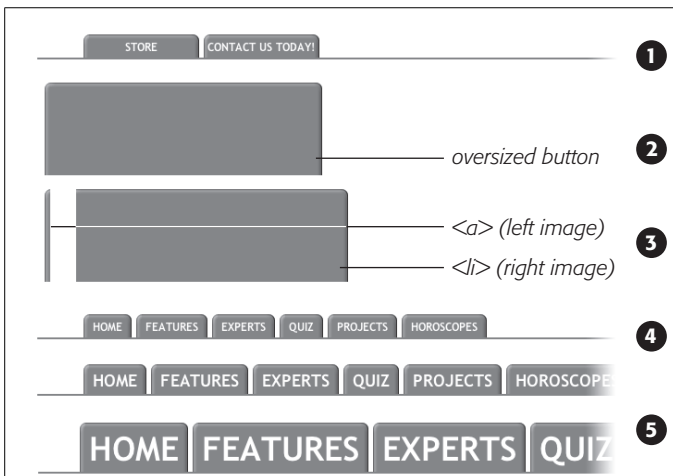


Figure 9-10:
With the Sliding Doors method, you can add graphical tabs to any link. By using oversized graphics (3) that are taller and wider than the largest tab, you can make sure that your tabs look right even when visitors pump up the size of their text (5).

Note: You can find a web page with an example of the Sliding Doors technique in the tutorial files for this chapter. The file is located in the *09* → *sliding_doors* folder.

Styling Particular Types of Links

Web designers link to all sorts of things: other web pages on their sites, web pages on other sites, Adobe Acrobat files, Word documents, and Zip archive files, to name a few. To help guide your site's visitors, you might want to supply clues to let them know where a link leads before they click it. Advanced selectors are a great way to do just that. Although this technique uses selectors from CSS 3 (the next, as yet-to-be-finished CSS standard) almost all browsers currently understand these selectors.

Note: Internet Explorer 6 doesn't understand these selectors (of course). However, the market share of that browser continues to plummet (as of this writing less than 17 percent), and you can still use this technique without harming the usability of your site. The majority of visitors will get the enhanced presentation, while IE 6 users will get the regular view of the site.

Links to other websites

You can easily create a style that identifies links to other websites using an attribute selector. As you read on page 67, attribute selectors let you style HTML tags that have a particular attribute—for example, an <img> tag with the *alt* attribute set to *Our Company*. You can also style tags whose attributes *begin* with certain values. Any link that points outside your site must be an absolute URL (see page 192), meaning it must begin with *http://*—for example, *http://www.yahoo.com*. So to create a style that only affects links using an absolute URL, you use this selector:

```
a[href^='http://']
```

The ^= translates to "begins with," so this selector matches links like *<a href="http://www.google.com/">*, *<a href="http://www.sawmac.com/missing/css2e/">*, and so on.

You could style these any way you'd like, but one common technique is to add a small image next to the link—an icon indicating an external link. You'll see this in action on page 255 of this chapter's tutorial.

If you happen to use absolute links to point to other pages in *your* site, then you'll need to add another style to "turn off" the styling—otherwise, you'll end up highlighting those links as external links, when in reality they're just links within your site. This second style just uses a more detailed version of the selector listed above. For example, if your site is located at *www.mysite.com*, then you can create a selector that applies to those links like this: *a[href^='http://www.mysite.com']*. Putting

this all together, if you want to add a globe icon next to external links, but not for links within your site, you can create these two styles:

```
a[href^='http://'] {
  background: url(images/globe.png) no-repeat center right;
  padding-right: 15px;
}
a[href^='http://www.mysite.com'] {
  background: none;
  padding-right: 0;
}
```

Note: If you want to get really fancy with your CSS, you can combine the attribute selector with the CSS 3 *:not()* selector to create a single style that will affect all absolute URLs *except* ones pointing to your own site:

```
a[href^='http://']:not(a[href^='http://www.mysite.com'])
```

This crazy-looking selector translates to "select all links that begin with *http://*, but *not* the ones that begin with *http://www.mysite.com*." The downside of this technique is that no version of Internet Explorer (not even 8) understands the *:not()* selector, so pretty much the majority of the web surfing population won't see any affect from this style.

Email links

Email links are another special kind of link. Normally, email links look just like any other link—blue and underlined. However, they don't act like any other link. Clicking one launches a visitor's email program, and some people find starting up a new program while browsing a website really distracting, so let 'em know it's for email.

The same basic technique described for external links above applies. Since all email links begin with *mailto:*, you can create a selector like the following to create a style to format just email links:

```
a[href^='mailto:']
```

You'll see an example of this in action in the tutorial on page 255.

Links to specific types of files

Some links point to files, not other web pages. You often see a company's annual report up online as a downloadable PDF file or a Zip archive of files (like the tutorials for this book) on a website. Links to those types of files usually force the browser to download the file to the visitor's computer, or, for PDF files, launch a plug-in that lets you view the file within the browser. It can be a real drag to click a link, only to find out that it's actually started a 100MB download!

You can identify specific file types in much the same way as external links or email links. But instead of looking for specific information at the beginning of the link's URL, you can find it at the end. For example, a link to a PDF document might look like this *<a href="annual_report.pdf">*, while a link to a ZIP archive could look like this: *<a href="tutorials.zip">*. In each case, the specific file type is identified by an extension at the end of the URL—.pdf or .zip.

CSS 3 provides an attribute selector that lets you find attributes that end with specific information. So to create a style for links to PDF files, use this selector:

```
a[href$='.pdf']
```

$= means "ends in," so this selector means select all links whose *href* attribute ends in .pdf. You can create similar styles for other types of files as well:

```
a[href$='.zip'] /* zip archive */
a[href$='.doc'] /* Word document */
```

You'll see examples of this technique in the tutorial on page 258.

Tutorial: Styling Links

In this tutorial, you'll style links in a variety of ways, like adding rollovers and background graphics.

To get started, download the tutorial files from this book's companion website at *www.sawmac.com/css2e*. Click the tutorial link and download the files. All the files are enclosed in a Zip archive, so you need to unzip them first. (You'll find detailed instructions on the website.) The files for this tutorial are contained inside the *09* folder.

Basic Link Formatting

1. **Launch a web browser and open the file *09* → *links* → *links.html*.**

   This page contains a variety of links (circled in Figure 9-11) that point to other pages on the site, links to pages on other websites, and an email address. Start by changing the color of the links on this page.

2. **Open *links.html* in a text editor and place your cursor between the opening and closing <style> tags.**

   The page already has an external style sheet attached to it with some basic formatting, plus the <style> tags for an internal style sheet.

Note: As you've done before (page 70), you'll put the styles for this exercise into an internal style sheet for easy coding and previewing. When done, it's best to move the styles to an external style sheet.

---

3. **Add a new style to the internal style sheet:**

```
<style type="text/css">
a {
 color: #207EBF;
}
</style>
```

This style is about as generic as it gets. It will apply to all <a> tag on the page. It's a good place to start, since it sets up the overall look of links for the page. You'll add more styles that will let you pinpoint links in specific areas of the page. Now, time to remove that boring old underline beneath the link.

4. **Add *text-decoration: none;* to the style you just created.**

This removes the underline, but also makes the link less visible on the page. Remember you should always do something to make links stand out and seem clickable to your site's visitors.

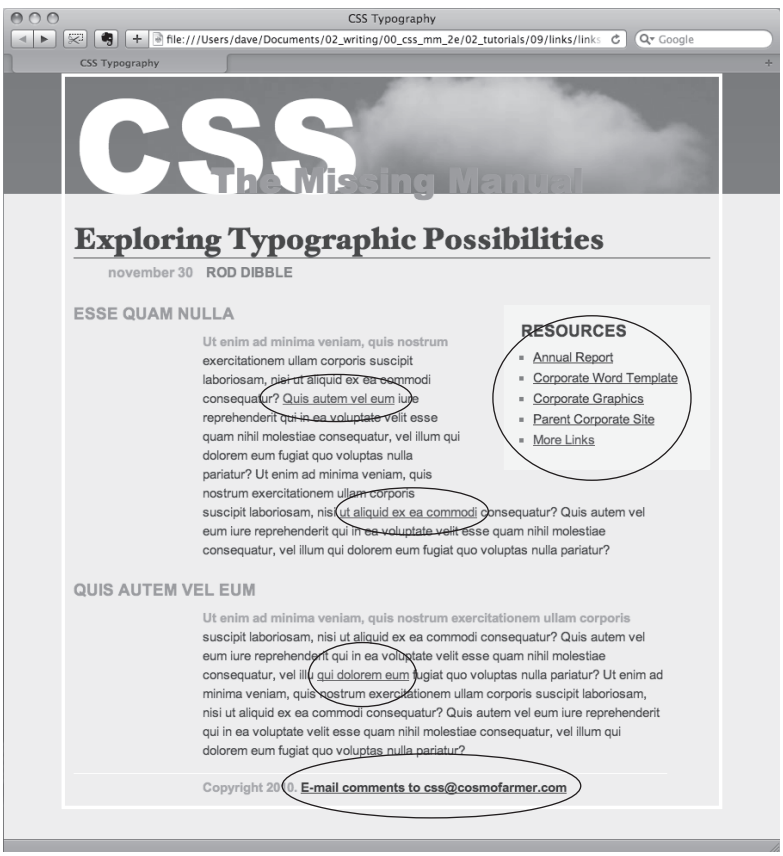


Figure 9-11: *Here's a basic web page with links in their standard browser configuration—underlined and blue (or purple, if they're links to previously visited pages). In this case, some links point to other pages on the site, some point to other sites, and one is an email address. In this tutorial, you'll style each of these links differently.*

5. **Add *font-weight: bold;* to the *a* style.**

   Now links appear in bold (other text may appear bold, too). Next you'll replace the underline, but you'll do it a bit more creatively, using a border instead of the *text-decoration* property.

6. **Add a *border* declaration to the style, so it looks like this:**

```
a {
  color: #2O7EBF;
  text-decoration: none;
  font-weight: bold;
  border-bottom: 2px solid #F6O;
}
```

   The links really stand out, and using a border instead of the normal underline applied to links lets you change the line's color, size, and style (Figure 9-12, left). Now you'll change the look of visited links.

7. **Add a *:visited* pseudo-class style for visited links:**

```
a:visited {
 color: #6E97BF;
}
```

   This style changes the look of visited links to a lighter, grayer shade of the main link color—a subtle way to draw attention away from an already visited page. If you preview the page, click one of the links (try one in the middle part of the page) and then return to the links.html page. You should see the link get lighter in color. You'll also notice that it stays bold and continues to have the orange underline you assigned to the a style in step 6. That's the cascade in action (chapter 5)—the a:visited style is more specific than a plain a selector, so its color property overrides the color assigned by the a style.

   Time to take it a step further by adding a rollover effect, so the link's background changes color when the mouse moves over it.

8. **Add a *:hover* pseudo-class style to the style sheet:**

```
a:hover {
  color: #FFF;
  background-color: #6E97BF;
  border-bottom-color: #6E97BF;
}
```

   This pseudo-class applies only when the mouse is over the link. The interactive quality of rollovers lets visitors know the link does something (Figure 9-12).

Figure 9-12:
With a couple of styles, you can change the look of any link. With the :hover pseudo-class, you can even switch to a different style when the mouse moves over the link.

Adding a Background Image to a Link

The email link at the bottom of the page remains unaffected by the styles you've created so far (Figure 9-13, top). That's fine—you have other plans for that *mailto* link. Since it points to an email address, clicking it doesn't take a visitor to another page, but instead launches an email program. To provide a visual cue emphasizing this point, you'll add a cute little email icon.

1. **Add a descendent selector to the internal style sheet of the *links.html* file:**

```
#legal a {
  color: #666666;
  border: none;
  background: url(images/email.gif) no-repeat left center;
}
```

The email link's inside a <p> tag with an ID of *legal,* so this style affects only this link, and the *color* declaration makes it gray. The *border: none* setting removes the underline defined by the a style you created in step 6—you're going for a subtle look here. The *background* property adds an image on the left edge of the link. Finally, the *no-repeat* value forces the graphic to appear just a single time. Trouble is, the graphic lies directly underneath the link, so it's hard to read the text (circled in the middle image in Figure 9-13).

2. **Add 20 pixels of left padding to the *#legal a* style you just created:**

```
padding-left: 20px;
```

Remember that padding adjusts the space between content and its border. So adding some left padding moves the text over 20 pixels but leaves the background in place. One last touch: move the entire link a little away from the copyright notice.

3. **Add 10 pixels of left margin to the style, so it finally ends up like this:**

```
#legal a {
  color: #666666;
  border: none;
  background: url(images/email.gif) no-repeat left center;
  padding-left: 20px;
  margin-left: 10px;
}
```

This small visual adjustment makes it clear that the icon is related to the link and not part of the copyright notice (Figure 9-13, bottom).

Tip: You can also use an advanced attribute selector, as described on page 69, to highlight all email links this way. You'll see those selectors used in the next section.

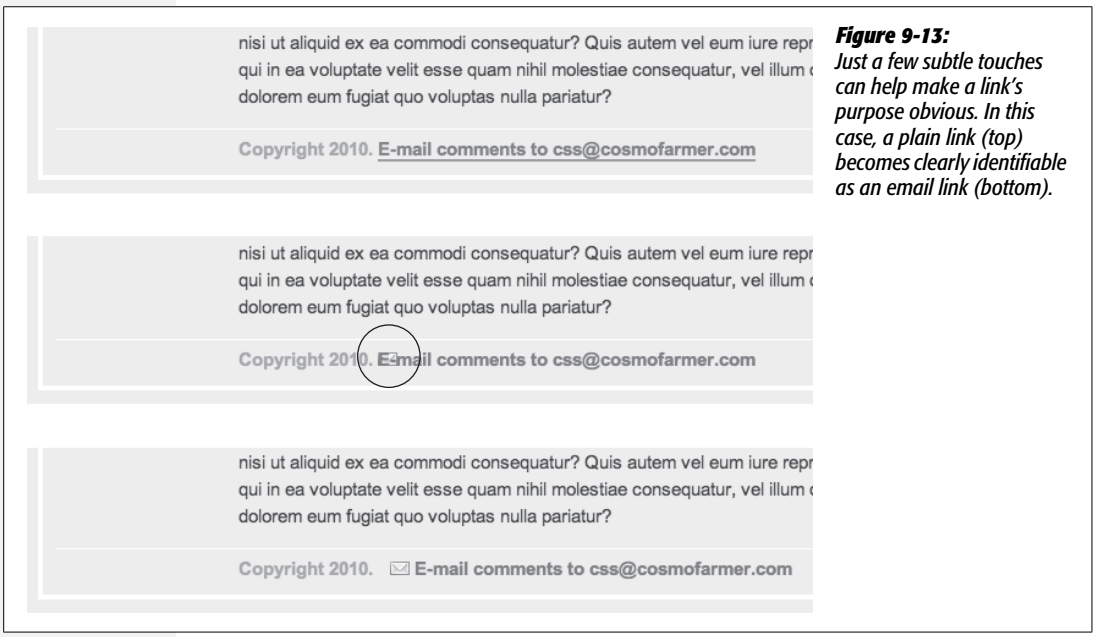


Figure 9-13: *Just a few subtle touches can help make a link's purpose obvious. In this case, a plain link (top) becomes clearly identifiable as an email link (bottom).*

Highlighting Different Links

At times you may want to indicate that a link points to another website. In this way, you can give your visitors a visual clue that there's additional information elsewhere on the Internet or warn them that they'll exit your site if they click the link. Also, you may want to identify links that point to downloadable files or other non-web-page documents.

On the web page you're working on, the right-hand "Resources" sidebar contains different types of links that you'll highlight with icons—a different icon for each type of link. First, you'll set up a basic style that applies to all of those links.

1. **Add this style to the *links.html* internal style sheet:**

```
#resources a {
  border-bottom: none;
}
```

Since all of the links you want to format are inside a with the ID resources, the descendent selector *#resources a,* targets just those links. This style gets rid of the underline that the generic link style added (step 6 on page 254 added).

Next, you'll add an icon next to external links.

2. **Add another style at the end of the *links.html* internal style sheet:**

```
a[href^='http://'] {
  background: url(images/globe.png) no-repeat right top;
}
```

This style uses the advanced attribute selector discussed on page 69. Basically, it targets any link that begins with *http://*. As with the email link style you created earlier, this style adds a background image. It places the image at the right side of the link.

Note: In this section, you're using advanced attribute selectors to style the different links in the page's sidebar. Most browsers understand these styles–with the exception of IE 6. If you want to create similar styles that work with IE 6, your best bet is to use class styles–*.externalLink,* for example–and then manually apply class names to links that point outside your site: *<a class="externalLink" href="http://www.twitter.com">*. This method will take a lot of work, however, since you need to add classes to each type of link–external, PDF files, Word docs, and so on. Unless you client or boss demands it, it's better to be forward-looking and use these CSS 3 selectors–the dwindling community of IE 6 users will still be able to click the links, they just won't see the icons.

However, this style has a similar problem as the email link style—the image sits underneath the link's text. Fortunately, the solution is the same—just add some padding to move the image out of the way of the text. In this case, though, instead of adding left padding, you'll add right padding (since the icon appears on the right side of the link). In addition, since every link in the resources box will have a similarly sized icon, you can save some code by adding the padding to the *#resources a* style you created in step 1.

3. **Edit the #resources a style so that it looks like this:**

```
#resources a {
  border-bottom: none;
  padding-right: 22px;
}
```

If you save the page and preview it in a web browser, you'll see small globe icons to the right of the bottom two links in the sidebar. Time to format the other links.

4. **Add three more styles to the internal style sheet:**

```
a[href$='.pdf'] {
  background: url(images/acrobat.png) no-repeat right top;
}
a[href$='.zip'] {
  background: url(images/zip.png) no-repeat right top;
}
a[href$='.doc'] {
  background: url(images/word.png) no-repeat right top;
}
```

These three styles look at how the *href* attribute ends; identifies links to either Adobe Acrobat files (.pdf), Zip archives (.zip), or Word documents (.doc); and assigns a different icon in each case.

5. **Finally, add a hover state for the resources links:**

```
#resources a:hover {
  color: #FFF;
  background-color: #6E97BF;
}
```

This style both changes the color of the text and adds a background color (see Figure 9-14).

You can find a finished version of this tutorial in the *09_finished/links/links.html* file.

Figure 9-14:
Using advanced attribute selectors, you can easily identify and style different types of links–external links, links to PDF files, Words docs, and Zip files.

Tutorial: Creating a Navigation Bar

In this exercise you'll turn a plain old list of links into a spectacular navigation bar, complete with rollover effects and a "You are here" button effect.

1. **In a text editor, open *09 → nav_bar → nav_bar.html.***

As you can see, there's not much to this file yet. There's an internal style sheet with the basic "reset styles" discussed on page 102, and one rule setting up some basic properties for the <body> tag. The HTML consists of an unordered list with six links. It looks like example one in Figure 9-15. Your first step is to add some HTML so you can target your CSS to format the links in this list.

2. **Locate the opening <ul> tag and add *id="mainNav"* to it, so it looks like this:**

```
<ul id="mainNav">
```

The ID attribute identifies this list as the main navigation area. Use this ID to build descendent selectors to format only these links—and not just any old link on the page.

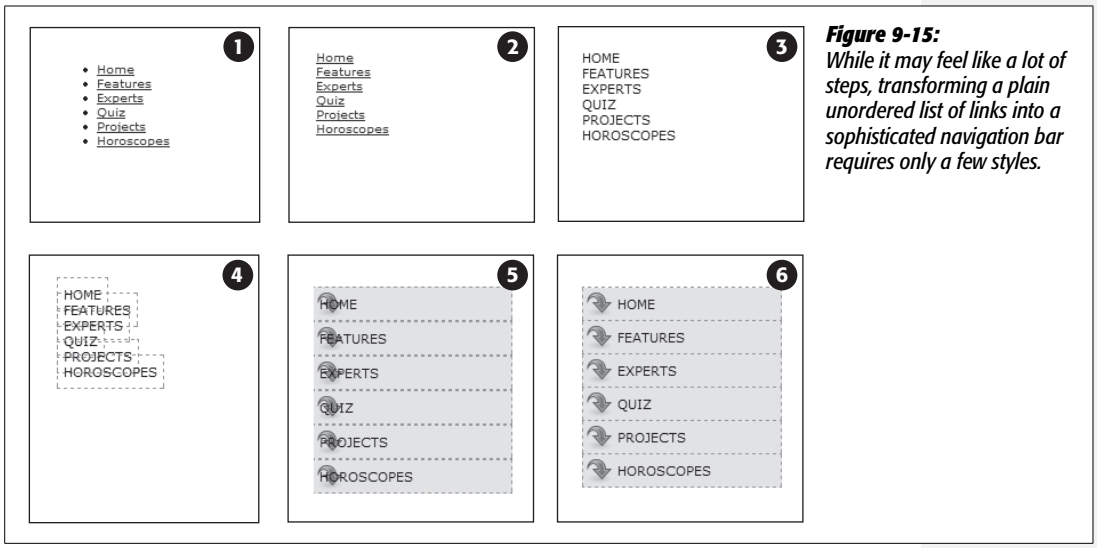


Figure 9-15: *While it may feel like a lot of steps, transforming a plain unordered list of links into a sophisticated navigation bar requires only a few styles.*

3. **Below the *body* style in the internal style sheet, add a new style:**

```
#mainNav {
  margin: 0;
  padding: 0;
  list-style: none;
}
```

This style applies only to a tag with an ID of *mainNav*—in this case, the <ul> tag. It removes the indent and bullets that browsers apply to unordered lists, as shown in #2 in Figure 9-15. Next, you'll start formatting the links.

4. **Add a descendent selector to format the links in the list:**

```
#mainNav a {
  color: #000;
  font-size: 11px;
  text-transform: uppercase;
  text-decoration: none;
}
```

This style defines the basic text formatting for the links. It sets the color and font size, makes all letters uppercase, and removes the line usually found underneath links (# 3 in Figure 9-15). Now start making the links look like buttons.

5. **To the *#mainNav a* style, add the following *border* and *padding* properties:**

```
border: 1px dashed #999;
padding: 7px 5px;
```

If you preview the file now, you'll see a few problems (#4 in Figure 9-15): The borders overlap and the boxes aren't the same width. That's because the <a> tag is an inline element, so the width of the box is just as wide as the text in the link. In addition, top and bottom padding don't add any height to inline boxes, so the borders overlap. (See page 158 for a discussion of inline boxes.) You can fix these problems by changing how a browser displays these links.

6. **Add *display: block;* to the *#mainNav a* style.**

You've changed the basic display of the <a> tag so that it acts like a paragraph or other block-level element, with the links neatly stacked one on top of the other. The only problem now is that they also extend the full length of the browser window—a little too wide for a button. You can fix this by constraining the width of the <ul> tag's style.

Note: If you preview the page in Internet Explorer 6 or earlier, you'll notice a gap between each nav button. Remain calm. You'll fix this bug in step 1 on page 265.

---

7. **In the internal style sheet, locate the *#mainNav* style and add *width: 175px;* to it.**

With the list's width now set to 175 pixels, the links still expand, but they're limited to the width of their container (the <ul> tag). In many cases, you'll have a list of links inside some layout element (like a sidebar) that already has a set width, so you'll be able to skip this step. (You'll learn how to add sidebars in Part 3.)

Now for the fun part.

8. **Add background properties to the *#mainNav a* style, like so:**

```
#mainNav a {
  color: #000;
  font-size: 11px;
  text-transform: uppercase;
  text-decoration: none;
  border: 1px dashed #999;
  padding: 7px 5px;
  display: block;
  background-color: #E7E7E7;
  background-image: url(images/nav.png);
  background-repeat: no-repeat;
  background-position: 0 2px;
}
```

These lines add a gray background color to the links and a nonrepeating image at the left edge of each button (#5 in Figure 9-15). You still have a couple of things to fix: The link text overlaps the icon, and the border between each button is 2 pixels thick. (Technically, the borders are still just 1 pixel thick, but the bottom and top borders of adjoining links are creating a 2-pixel line.)

Tip: Using the *background* shorthand property you can write the code in step 8 like this: *background: #E7E7E7 url(images/nav.png) no-repeat 0 2px;*.

---

9. **Remove the bottom border and adjust the padding for the *#mainNav a* style, so it looks like this:**

```
#mainNav a {
  color: #000;
  font-size: 11px;
  text-transform: uppercase;
  text-decoration: none;
  border: 1px dashed #999;
  border-bottom: none;
  padding: 7px 5px 7px 30px;
  display: block;
  background-color: #E7E7E7;
  background-image: url(images/nav.png);
  background-repeat: no-repeat;
  background-position: 0 2px;
}
```

The text of each link sits clear of the icon and the borders look great…except for one thing. The last link's bottom border is now gone. (Sometimes CSS feels like two steps forward, one step back!) But you have a few ways to fix this snafu. One way is to create a class style with the proper *border-bottom* setting and then apply it to just that last link. But it would be easier to apply a bottom border to the <ul> tag containing the list of links. (Since there's no padding on that tag, there's no space separating the top of the <ul> from the top of that first link.)

10. **Add a bottom border to the *#mainNav* style so that it looks like this:**

```
#mainNav {
  margin: 0;
  padding: 0;
  list-style: none;
  width: 175px;
  border-bottom: 1px dashed #999;
}
```

There you have it: A basic navigation bar using borders, padding, background color and images (#6 in Figure 9-15).

Adding Rollovers and Creating "You Are Here" Links

Now it's time to add some interactive and advanced features to this nav bar. First, you'll add a rollover effect to the buttons in your main navigation bar. That way, the buttons change to show your visitor which button she's about to click.

It's also considerate to let your visitor know which page of your site she's on. Using the same HTML nav bar you already have, you can make this bit of interactivity happen automatically. You simply make the button's format change to match the page's section. Sounds simple, but it does require a little planning and setup, as you'll see in the following steps.

The rollover effect is easy, so get that out of the way first:

1. **In the *nav_bar.html* file, add the following style to the end of the style sheet:**

```
#mainNav a:hover {
  font-weight: bold;
  background-color: #B2F511;
  background-position: 3px 50%;
}
```

This style sets the button's hover state. It makes the text inside the button bold, and changes the background color to a vibrant green. In addition, it uses the CSS Sprites technique discussed on page 246. The same image is used as in step 8 on page 260—however, that image actually holds three different icons (see Figure 9-16). In this case, the image is centered within the button, displaying the middle icon in the file.

Now, moving the mouse over any of the buttons instantly changes its look. (Open the page in your web browser and try it yourself.)

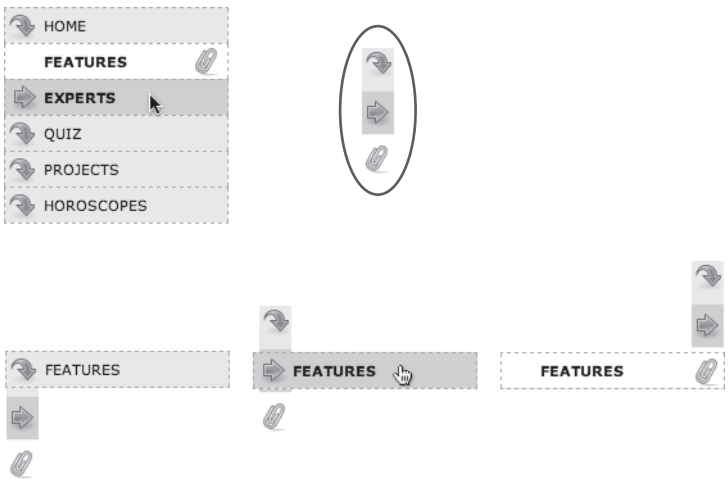


Figure 9-16:
With some basic CSS, it's easy to create interactive rollover effects for navigation buttons. You can even automatically highlight the section of the site in which the current page is located. To speed up the download of your navigation bar graphics, you can use the CSS Sprites method described on page 246. Basically you use one image (circled at top right) and adjust its position for different states of each button (bottom row).

Next, make your navigation bar more informative by highlighting the button that matches the section in which the page is located. To do so, you need to identify two things in the nav bar's HTML: the section a page belongs to and the section each link points to. For this example, assume that the page you're working on is the home page.

Note: Alternatively, you can create a class style that changes the appearance of a link and apply it to the link representing the page's section. For a horoscope page, you'd apply the class to the Horoscope link in the nav bar: *Horoscopes*.

---

2. **Locate the <body> tag, and then add *id="home"*, like so:**

```
<body id="home">
```

Now that you know what section this page belongs to, you can use a descendent selector to create special CSS rules that apply only to tags on pages within the Features section. Next, you need to identify the section each link applies to, which you accomplish by adding some IDs to those links.

3. **In the nav bar's HTML code, locate the Features link, and then add *id="homeLink"* so the tag looks like this:**

```
<a href="/index.html" id="homeLink">Home</a>
```

This ID uniquely identifies this link, providing the information you need to create a style that applies only to that link.

You need to ID the other links in the navigation bar as well.

4. **Repeat step 4 for each of the other links using the following IDs: *featureLink, expertLink, quizLink, projectLink,* and *horoscopeLink* .**

You're done with the HTML part of this exercise. Now it's time to create some CSS. Because you've ID'd the page and the link, it's easy to create a descendent selector to highlight the Features link.

5. **Add another style to the page's style sheet:**

```
#home #homeLink {
  background-color: #FFFFFF;
  background-position: 97% 100%;
  padding-right: 15px;
  padding-left: 30px;
  font-weight: bold;
}
```

You've seen all these properties before. Again, you're using the CSS Sprites method to adjust the position of the background image. This time, the image is moved over to the right 97 percent (that is, the point 97 percent across the

image is matched up with the point 97 percent across the button), and the bottom of the image is placed at the bottom of the button. In other words, it displays the icon at the bottom of the image (see Figure 9-16). See page 197 for a discussion of how percentage values work with background-images.

The most interesting part is the selector—*#home #homeLink*. It's a very specific selector that applies only to a link with an ID of *homeLink* that's *also* inside a <body> tag with an ID of *home*. If you change the ID of the page to *quiz,* for example, the link to the Home page is no longer highlighted.

Preview the page in a browser to see the effect: The Home link now has a white background and a paperclip icon. To make this work for the other links, you need to expand this selector a little…OK, make that a *lot*.

6. **Edit the selector for the style you just added, like so:**

```
#home #homeLink,
#feature #featureLink,
#expert #expertLink,
#quiz #quizLink,
#project #projectLink,
#horoscope #horoscopeLink {
  background-color: #FFFFFF;
  background-position: 97% 100%;
  padding-right: 15px;
  padding-left: 30px;
  font-weight: bold;
}
```

Yes, that's a lot of CSS. But your set-up work here has a big payoff. This style now applies to every link in the nav bar, but only under certain conditions, which is exactly how you want it to behave. When you change the *id* attribute of the <body> tag to *quiz,* the link to the Quiz gets highlighted instead of the link to the Features section. Time to take your work for a test drive.

Note: This long-winded selector is an example of the group selector discussed on page 56.

---

7. **Change the *id* attribute of the <body> tag to *feature* like this:**

```
<body id="feature">
```

Preview the page, and wham! The Feature link is now highlighted with a white background and a paperclip icon (Figure 9-16). The secret at this point is to just change the ID in the <body> tag to indicate which section of the site a page belongs to. For a horoscope page, change the id to *id="horoscope"* in the <body> tag.

Note: Ready to take this design further? Try adding a rollover effect to complement the style you created in step 6. (Hint: Use the *:hover* pseudo-class as part of the selector like this: *#quiz #quizLink:hover*.) Also try adding a different graphic for the Home link. (You have a *home.png* file in the images folder to use.)

Fixing the IE Bugs

What would a CSS tutorial be if there weren't any Internet Explorer bugs to fix? Unfortunately, the navigation bar doesn't work quite right in Internet Explorer 6 or earlier (it's fine in IE 7 and 8). First, an annoying gap appears between each button. In addition, only the text—not the entire area of the button—is clickable (Figure 9-17). In other browsers, moving the mouse over any part of the background (including the empty space to the right of the link text) highlights the link. Fortunately, the fix is simple.

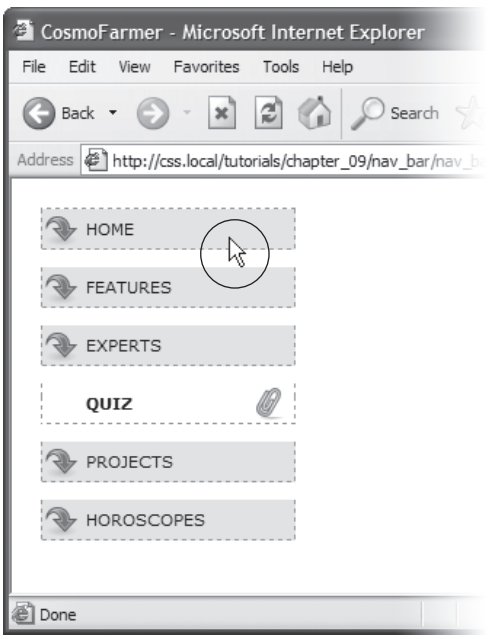


Figure 9-17:
Internet Explorer has some problems with the navigation bar at this point. It adds space between each link and will highlight a link only if the cursor (circled) is directly over the text link.

1. **Edit the *#mainNav a* style by adding *zoom: 1*. The final style should look like this:**

```
#mainNav a {
  text-decoration: none;
  color: #000000;
  font-size: 11px;
  text-transform: uppercase;
  border: 1px dashed #999999;
```

```
    border-bottom: none;
    padding: 7px 5px 7px 30px;
    display: block;
    background-color: #E7E7E7;
    background-image: url(images/nav.png);
    background-repeat: no-repeat;
    background-position: 0 2px;
    zoom: 1;
}
```

As discussed in the box on page 73, this weird little bit of code is enough to fix IE 6. Go figure.

2. **If you have Internet Explorer 6, preview the page in it.**

   The navigation bar should now work as well in that browser as it does in more savvy browsers like Internet Explorer 8, Firefox, Opera, and Safari.

To see the completed version of this navigation bar, see the file *09_finished → nav_bar → nav_bar_vertical.html.*

Note: In many cases, when creating specific styles targeted to just Internet Explorer, it's a good idea to isolate them from your other styles. Not that they're contagious, but they usually include nonsense CSS that for weird reasons smoothes out IE kinks. You don't want to read your style sheet later and get confused about why you included some bizarre CSS. In fact, the preferred method is to put IE-only styles in external style sheets and attach them using Microsoft's conditional comments feature. Get the full story on page 433.

From Vertical to Horizontal

Suppose you want a horizontal navigation bar that sits at the top of the page. No problem—you did most of the hard work in the last part of this tutorial. Just modify that page a little to spread the buttons along a single line. (You'll use the *nav_bar.html* file you just completed, so if you want to keep the vertical nav bar, then save a copy of the file before proceeding.)

1. **Make sure you've completed all the steps above to create the vertical navigation bar, and have the file *nav_bar.html* open in your text editor.**

   Now you'll see how easy it is to change the orientation of a navigation bar. Start by cleaning up some of the work you already did. You need to remove the width you set for the <ul> tag in step 6 on page 243. That width prevented the nav buttons from spanning the entire length of the page. But since the <ul> needs to spread out much wider to contain the side-by-side buttons, this width has to go.

2. **Find the *#mainNav* style, and then remove the *width: 175px;* declaration.**

   And now it's time for the big secret of vertical nav bars—placing the buttons side by side.

3. **Add a new style to your style sheet (directly below the *#mainNav* style is a good spot):**

```
#mainNav li {
  float: left;
  width: 12em;
}
```

This style applies to the <li> tag (the list items that hold each link). The first declaration floats the tag to the left. In this way, each <li> tag attempts to wrap around to the right side of the previous <li> tag. (You saw the same effect in the photo gallery tutorial on page 206.) Also, setting the width of the <li> tag defines the width of each button. Here, a value of 12ems provides enough space to contain the longest link name—Horoscopes. When you're working with longer links, you need to increase this value.

Tip: Using an em value for the width of the buttons used to be considered a best practice among web designers, since em values adjust to changes in the browsers font size. So if a visitor chose to increase the font size, the em-width button would also grow in size. However, most web browsers these days use a "page zoom" feature, so that when you enlarge the text, you're actually enlarging the entire page–zooming in–so even buttons and other elements whose widths are defined in pixels, grow in size. So nowadays, you see more designers using pixel values for everything.

If you preview the page now, you'll see the basics are complete. All that's left are some cosmetic enhancements (see the circled areas of #1 in Figure 9-18). First, the bottom border you created in step 10 on page 261 runs the entire length of the <ul> tag—wider than the navigation buttons themselves. Even stranger, that bottom border is no longer on the bottom—it's on top of the navigation buttons! In addition, since the buttons sit side by side, their left and right borders combine to make a 2-pixel border between each button. You'll fix that problem now.

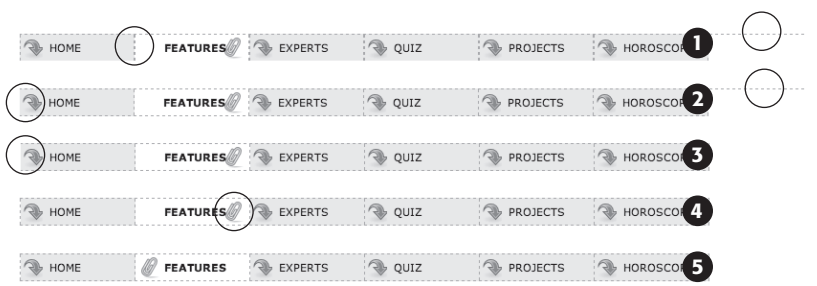


Figure 9-18: *Changing a vertical stack of navigation buttons into the much shorter, side-by-side format of a horizontal navigation bar only takes a couple of steps. Most of your effort involves tweaking styles for cosmetic considerations such as borders and background image placement.*

4. **In the *#mainNav a* style change *border-bottom: none;* to *border-left: none;*.**

   This change removes the left border so that the borders don't double up between buttons and at the same time adds a border to the bottom of each button. But that <ul> tag's bottom border is still on top of the buttons, and now the nav bar is missing a border on the far left button (see circled areas of #2 in Figure 9-18). No problem—just change the border on the <ul> tag.

5. **Locate the *#mainNav* style and change *border-bottom: 1px dashed #999999;* to *border-left: 1px dashed #999999;*.**

   If you preview the page now, you'll see that the border above the buttons is gone, but there's still no left border (#3 in Figure 9-18). You're witnessing one of the complications of using floats. That is, floating the list items removes them from the normal flow of the document, so web browsers no longer see them as part of the <ul> tag, and the <ul> tag shrinks down to nearly no height—that's the reason the ul's bottom border appeared on top as well. (If this whole scenario sounds confusing, it is. That's why there's an entire section of Chapter 12 dedicated to dealing with the issue—see page 323 for the details.)

   Fortunately, while the problem is complex, the solution is simple. Add one CSS property to the bulleted list.

6. **Add two properties to the end of the *#mainNav* style (changes are in bold):**

```
#mainNav {
  margin: 0;
  padding: 0;
  list-style: none;
  border-left: 1px dashed #999999;
  overflow: hidden;
  zoom: 1; /* for IE 6 */
}
```

   The *overflow: hidden* forces the unordered list to expand. Why does this property work? See the detailed coverage on page 326. The *zoom: 1* is for your old nemesis, Internet Explorer 6.

   Finally, that paperclip aligned to the right edge of the "You are here" button looks funny (#4 in Figure 9-18). You'll switch its position to the left edge of the button.

7. **Locate the "You are here" style you created in step 6 on page 264. (It's the one with the crazy, long-winded selector.) Change its background position from *97% 100%* to *3px 100%*. The style should now look like this:**

```
#home #homeLink,
#feature #featureLink,
#expert #experLink,
#quiz #quizLink,
#project #projectLink,
#horoscope #horoscopeLink
{
  background-color: #FFFFFF;
  background-position: 3px 100%;
  padding-right: 15px;
  padding-left: 30px;
  font-weight: bold;
}
```

Preview the page, and you'll find a fully functional horizontal navigation bar (#5 in Figure 9-18). And guess what? It works perfectly even in Internet Explorer 6.

To see the finished version, open the file *09_finished → nav_bar → nav_ bar_ horizontal.html.*

Note: You may want to center the text inside each button. If so, you need to do two things: Add *text-align: center;* to the *#mainNav a* style and adjust that style's *left-padding* until the text looks absolutely centered.

CHAPTER
10

Formatting Tables and Forms

The formatting powers of CSS go way beyond text, images, and links. You can make tables of information like schedules, sports scores, and music playlists easier to read by adding borders, backgrounds, and other visual enhancements. Similarly, you can use CSS to organize the elements of a form to help your visitors through the process of ordering items, signing up for your newsletter, or using your latest web application.

This chapter shows you how to display tables and forms with HTML and how to lay out and style them using CSS. In two tutorials at the end of the chapter, you'll create a table and a form, using the tricks you've learned along the way.

Using Tables the Right Way

HTML tables have seen a lot of use in the short history of the Web. Originally created to display data in a spreadsheet-like format, tables became a popular layout tool. Faced with HTML's limitations, designers got creative and used table rows and columns to position page elements like banner headlines and sidebars. As you'll see in Part 3 of this book, CSS does a much better job of laying out web pages. You can concentrate on using (and formatting) tables for their original purpose—displaying data (Figure 10-1).

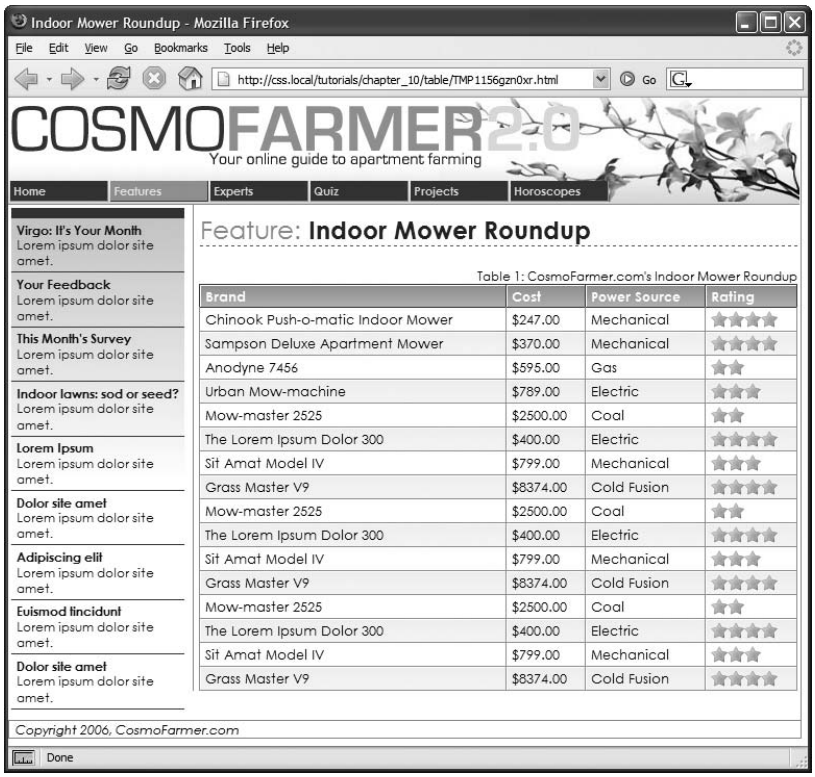


Figure 10-1: *You can do all of your page layout and design with CSS and use tables for what they were intended—displaying rows and columns of information. CSS created the attractive fonts, borders, and background colors in this table about indoor lawn mowers, but the underlying structure is all thanks to HTML.*

HTML (and XHTML) has a surprising number of tags dedicated to table building. This chunk of HTML creates the very simple table pictured in Figure 10-2.

```
<table>
<caption align="bottom">
  Table 1: CosmoFarmer.com's Indoor Mower Roundup
</caption>
<colgroup>
  <col id="brand" />
  <col id="price" />
  <col id="power" />
 </colgroup>
 <thead>
  <tr>
   <th scope="col">Brand</th>
     <th scope="col">Price</th>
     <th scope="col">Power Source</th>
   </tr>
 </thead>
```

```
  <tbody>
    <tr>
      <td>Chinook Push-o-matic Indoor Mower</td>
      <td>$247.00</td>
      <td>Mechanical</td>
    </tr>
    <tr>
      <td>Sampson Deluxe Apartment Mower</td>
      <td>$370.00</td>
      <td>Mechanical</td>
    </tr>
  </tbody>
</table>
```

Even with only three rows and three columns, the table uses nine unique HTML tags: <table>, <caption>, <colgroup>, <col>, <thead>, <tbody> <tr>, <th>, and <td>. In general, more HTML isn't a good thing, but a table's various tags give you lots of useful hooks to hang CSS styles on. The headers of each column—the <th> tags—can look different from other table cells if you create a <th> tag style. This saves you the hassle of having to create lots of classes—like *.tableHeader*—and then apply them by hand to individual table cells. In the next section, you'll see examples of how you can use these different tags to your advantage.

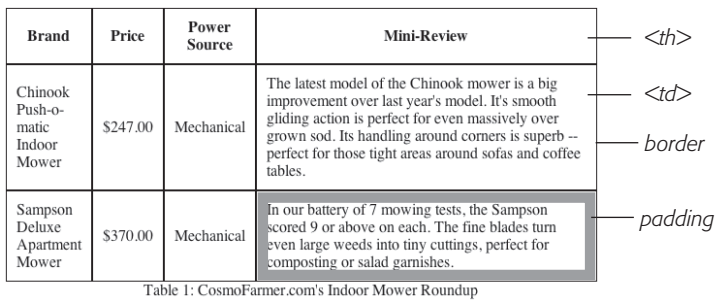


Figure 10-2: *Data tables, like this one, usually have headers created with the <th> tag. Header cells announce what type of information appears in a row or column. Price tells you that you'll find the cost of each lawn mower listed in the cells below. The actual data presented in a table is enclosed in <td> tags.*

Note: For an in-depth article on the HTML used to create tables, visit *www.456bereastreet.com/archive/200410/bring_on_the_tables*.

Styling Tables

You can use many of the CSS properties you've read about to dress up the appearance of a table and its contents. The *color* property, for example, sets a table's text color, just like anywhere else. You'll find a few properties, however, that are particularly useful with tables, as well as a couple aimed specifically at formatting tables.

Because tables are composed of several HTML tags, it helps to know which tag to apply a particular CSS property to. Applying padding to a <table> tag has no effect. The next few sections cover CSS properties for formatting tables and which HTML tags they get along with.

Adding Padding

As you read on page 153, padding is the space between an element's border and its content. You can use padding to provide a little space between the edges of a paragraph's text and its border. When it comes to tables, the borders are the *edges* of a cell, so padding adds space around any content you've placed inside of a table cell (see Figure 10-2). It works a lot like the <table> tag's *cellpadding* attribute, with the added benefit that you can individually control space between a cell's content and each of its four edges.

You apply padding to either a table header or a table cell tag, but *not* to the <table> tag itself. So, to add 10 pixels of space to the inside of all table cells, you'd use this style:

```
td, th { padding: 10px; }
```

You can also control the spacing separately for each edge. To add 10 pixels of space to the top of each table data cell, 3 pixels to the bottom of that cell, and 5 pixels on both the left and right sides, create this style:

```
td {
  padding-top: 10px;
  padding-right: 5px;
  padding-bottom: 3px;
  padding-left: 5px;
}
```

Or, use the padding shortcut property:

```
td {
  padding: 10px 5px 3px 5px;
}
```

Tip: If you place an image into a table cell using the <img> tag and notice that there's unwanted space below the image, then set its display property to *block*. For more information, see *http://developer.mozilla.org/en/docs/Images,_Tables,_and_Mysterious_Gaps*.

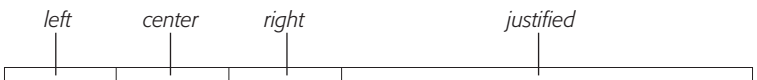
Adjusting Vertical and Horizontal Alignment

To control where content is positioned *within* a table cell, use the *text-align* and *vertical-align* properties.

Text-align controls horizontal positioning and can be set to *left*, *right*, *center*, and *justify* (see Figure 10-3). It's an inherited property. (See Chapter 4 for more on inheritance.) When you want to right align the contents of all table cells, create a style like this:

```
table { text-align: right; }
```

This property comes in handy with <th> tags, since browsers usually center align them. A simple style like *th { text-align: left; }* makes table headers align with table cells.



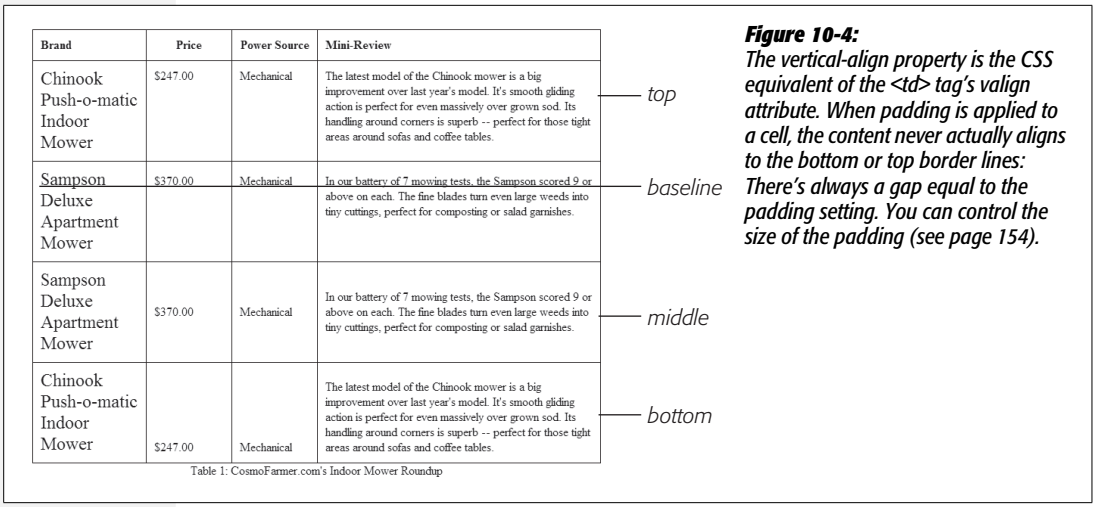
Brand	Price	Power Source	Mini-Review
Chinook Push-o-matic Indoor Mower	$247.00	Mechanical	The latest model of the Chinook mower is a big improvement over last year's model. It's smooth gliding action is perfect for even massively over grown sod. Its handling around corners is superb -- perfect for those tight areas around sofas and coffee tables.
Sampson Deluxe Apartment Mower	$370.00	Mechanical	In our battery of 7 mowing tests, the Sampson scored 9 or above on each. The fine blades turn even large weeds into tiny cuttings, perfect for composting or salad garnishes.

Table 1: CosmoFarmer.com's Indoor Mower Roundup

Figure 10-3: *When applied to table cells, the CSS text-align property works like the <td> tag's align attribute. Use the CSS approach, however, since it lets you store the style information in an external style sheet. That way, if you decide you need to change alignment in your table cells from right to left, then you need to update only the external style sheet, not 10,000 individual <td> tags.*

Table cells have a height as well. web browsers normally align content vertically in the middle of a table cell (see the middle example in Figure 10-4). You can control this behavior using the *vertical-align* property. Use one of these four values: *top*, *baseline*, *middle*, or *bottom*. *Top* pushes content to the top of the cell, *middle* centers content, and *bottom* pushes the bottom of the content to the bottom of the cell. *Baseline* works just like *top*, except the browser aligns the baseline of the first line of text in each cell in a row (Figure 10-4). (Unless you're a real perfectionist, you won't even notice the subtlety of the baseline option. More importantly, neither will your visitors.) Unlike *text-align*, the *vertical-align* property isn't inherited, so you can use it only on styles that apply directly to <th> and <td> tags.

Note: So far, the table formatting you've learned applies to *all* your tables. When you want to style individual tables (or table cells), change the selector you use. To apply a special design to a certain table, give it a class name–*<table class="stocks">*–and create descendent selectors like *.stocks td,* or *.stocks th* to uniquely format individual cells. If you want to style a particular cell differently than other cells in a table, then apply a class to the tag–*<td class="subtotal">*–and create a class style to format that cell.



Brand	Price	Power Source	Mini-Review
Chinook Push-o-matic Indoor Mower	$247.00	Mechanical	The latest model of the Chinook mower is a big improvement over last year's model. It's smooth gliding action is perfect for even massively over grown sod. Its handling around corners is superb -- perfect for those tight areas around sofas and coffee tables.
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Table 1: CosmoFarmer.com's Indoor Mower Roundup

Figure 10-4:
The vertical-align property is the CSS equivalent of the <td> tag's valign attribute. When padding is applied to a cell, the content never actually aligns to the bottom or top border lines: There's always a gap equal to the padding setting. You can control the size of the padding (see page 154).

Creating Borders

The CSS *border* property (page 160) works pretty much the same with tables as with other elements, but you need to keep a couple of things in mind. First, applying a border to a style that formats the <table> tag outlines just the table, not any of the individual cells. Second, applying borders to cells (*td { border: 1px solid black; }*) leaves you with a visual gap between cells, as shown in Figure 10-5, top. To gain control of how borders appear, you need to understand the <table> tag's *cellspacing* attribute and the CSS *border-collapse* property.

- **Controlling the space between table cells.** Unless instructed otherwise, browsers separate table cells by a couple of pixels. This gap is really noticeable when you apply a border to table cells. CSS 2.1 gives you the *border-spacing* property to control this space, but since Internet Explorer 7 and earlier doesn't recognize border-spacing, you're better off using the <table> tag's cellspacing attribute for now. Here's the HTML to insert 10 pixels of space between each cell: *<table cellspacing="10">*. (Setting the value to 0 eliminates the space entirely, but if you want to do that, then use the CSS border-collapse property, discussed next.)

- **Eliminating double borders.** Even if you eliminate the cell spacing of a table, borders applied to table cells double up. That is, the bottom border of one cell adds to the top border of the under-hanging cell, creating a line that's twice as thick as the border setting (Figure 10-5, middle). The best way to eliminate this (and eliminate cell spacing at the same time) is to use the *border-collapse* property. It accepts two values—*separate* and *collapse*. The *separate* option is normally how tables are displayed, with the cell spaces and doubled borders. Collapsing a table's borders eliminates the gaps and doubled borders (Figure 10-5, bottom). Apply the *collapse* value to a style formatting a table, like so:

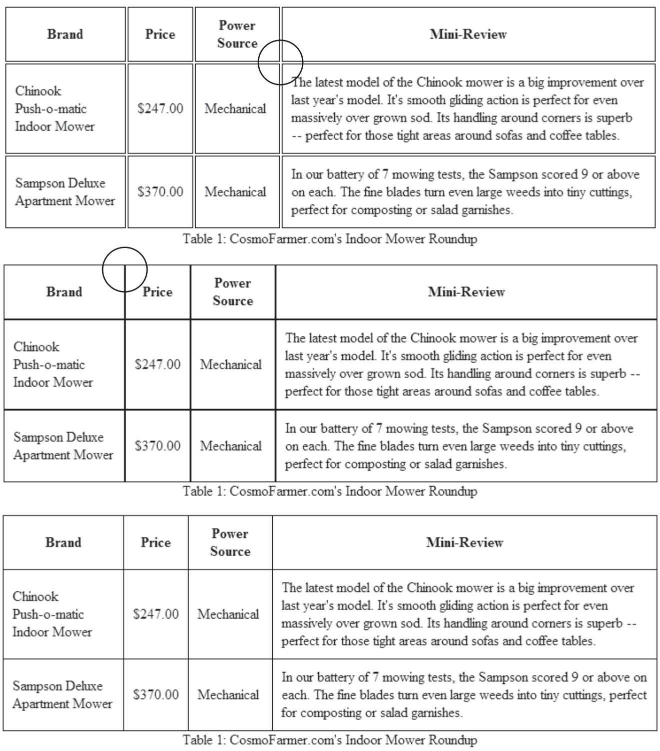
```
table { border-collapse: collapse; }
```

Note: HTML tags that are used to build tables include attributes that accomplish a lot of the same tasks as CSS. The *border* attribute can add a border to the table and each cell. You should avoid these attributes: CSS can do a much better job with less code.

Styling Rows and Columns

Adding stripes, like the ones in Figure 10-6, is a common table design technique. By alternating the appearance of every other row of data, you make it easier for people to spot the data in each row. Unfortunately, CSS (at least at this point) doesn't offer a way to say, "Hey browser, make *every other row* look this way!" The basic solution is to apply a class (like *<tr class="odd">*) to every other row, and then create a style to format that row:

```
.odd { background-color: red; }
```



Brand	Price	Power Source	Mini-Review
Chinook Push-o-matic Indoor Mower	$247.00	Mechanical	The latest model of the Chinook mower is a big improvement over last year's model. It's smooth gliding action is perfect for even massively over grown sod. Its handling around corners is superb -- perfect for those tight areas around sofas and coffee tables.
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Table 1: CosmoFarmer.com's Indoor Mower Roundup

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Table 1: CosmoFarmer.com's Indoor Mower Roundup

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Table 1: CosmoFarmer.com's Indoor Mower Roundup

Figure 10-5:
Browsers normally insert space between each table cell. (You probably won't notice this extra space unless you've added a border, as shown here, at top.) If you use the <table> tag's cellspacing attribute to remove the extra space, you're left with double border lines where adjoining borders touch (middle). The border-collapse *property solves both dilemmas (bottom).*

You're not limited to colors either. You can use background images (see page 188) to create more sophisticated looks like the slight gradation in the table header row of Figure 10-6. (You'll see a similar example of this in the tutorial on page 288.) You can use a descendent selector to target cells in that row as well. This technique is great for when you style all of the cells in one column with their own class and look: *<td class="price">*, for example. To create a unique look for that cell when it appears in an odd row, create a style with this selector: *.odd .price*.

Tip: For a quicker, CSS 3 solution to striping tables see page 440. This technique only works in some browsers, so another technique, that works for all browsers is to use JavaScript to quickly stripe tables. Check out *www.creativepro.com/article/view-source-javascript-designers* for the details.

Formatting columns is a bit trickier. HTML provides the <colgroup> and <col> tags to indicate groups of columns and individual columns, respectively. You include one <col> tag for each column in the table and can identify them with either a class or ID. (See the HTML code on page 272.) Only two sets of properties work on these tags: *width* and the background properties (*background-color, background-image,* and so on). But they can come in mighty handy. When you want to set the width of all of the cells in a column, you can skip any HTML attributes and just style the column using a style applied to the <col> tag. For example, say you have this bit of HTML: *<col id="price">*. You can add this style to a stylesheet to set the width of each cell in that column to 200 pixels:

```
#price { width: 200px; }
```

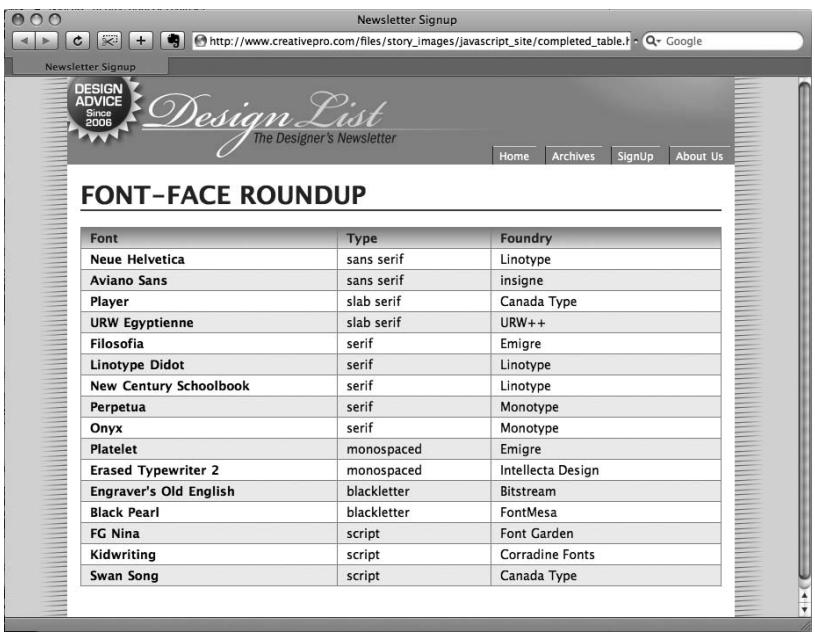


Figure 10-6: *Alternating the background color from row to row in a table makes it easier to quickly identify the data for each row.*

Likewise, the <colgroup> tag groups several columns together. When you set a width for that tag, a web browser automatically applies the specified width to *each* column in the group. A table displaying airline schedules might have several columns displaying the different dates a plane travels from Boston to Chicago. You can use *<colgroup>* to organize those columns and apply an ID to the tag to identify it: *<colgroup id="dates">*. Then, to set each date column to a set width of 10ems, you can create this style:

```
#dates{ width: 10em; }
```

Even though the *width* property here applies to the <colgroup> tag, a browser actually applies the value—*10em*—to *each* column in the group.

To highlight a column, you can use the background properties. Again, assume you have a <col> tag with an ID of *price* applied to it:

```
#price { background-color: #F33; }
```

Keep in mind, however, that backgrounds for columns appear under table cells, so if you set a background color or image for <td> or <th> tags, then a column's background won't be visible.

Styling Forms

Web forms are the primary way visitors interact with a website. By supplying information on a form, you can join a mailing list, search a database of products, update your personal profile on MySpace, or order that Star Wars Lego set you've had your eye on.

There's no reason your forms need to look like all the others on the Internet. With a little CSS, you can style form fields to share the same formatting as other site elements like fonts, background colors, and margins. There aren't any CSS properties specific to forms, but you can apply just about any property in this book to a form element.

The results, however, can be mixed (see Figure 10-7). Browsers vary widely in how they handle the styling of form elements. Safari 2 and earlier limits styling to only a few form elements like text fields and the <fieldset> and <legend> tags. It won't let you change the look of buttons, checkboxes, radio buttons, or pull-down menus. Even Internet Explorer and Firefox may display the same form elements differently. The next section tells you which properties work best with which form tags and also lists which browsers interpret them properly.

UP TO SPEED

Staying True to Form

Quite apart from the varying browser support for CSS-styled forms (page 283), there are good reasons to tread lightly when altering the look of universally recognized interface elements like Submit buttons and pull-down menus. Most web surfers are already very familiar with how forms look and work. The generic look of a Submit button is the same from site to site. When people see it, they instantly know what that button does and how to use it. If you alter the look of a form *too* much, you may make it harder for visitors to fill out your form correctly.

Adding a dotted border to a form field can turn an easily recognizable text field into an easily skipped box. (See the examples at bottom right and bottom center of Figure 10-7.) If that text box is intended to capture email addresses for your newsletter, you may lose a few visitors who skip right over it. At the very least, make sure people can recognize the forms on your sites as forms.

HTML Form Elements

A variety of HTML tags help you build forms. You can format some of them (like text fields) more successfully than others (submit buttons). Here are a few common form tags and the types of properties they get along with:

- **Fieldset.** The <fieldset> tag groups related form questions. Most browsers do a good job of displaying background colors, background images, and borders for this tag. However, Internet Explorer lets the background flow up and over the top line of the fieldset. (Look at the top of the middle image in Figure 10-7, left column.) Padding places space from the edges of the fieldset to the content inside it. (Although Internet Explorer unfortunately ignores top padding, you can simulate it by adding a top *margin* to the first element inside the fieldset.)

Tip: Matt Heerema has found a way to prevent Internet Explorer from adding a background above a fieldset's top borderline. Read about it at *www.mattheerema.com/archive/getting-fieldset-backgrounds-and-legends-to-behave-in-ie*.

- **Legend.** The <legend> tag follows the HTML for the <fieldset> tag and provides a label for the group of fields. The legend appears vertically centered on the top borderline of a fieldset. If the form elements for collecting a shipping address appear inside the fieldset, you might add a legend like this: *<legend>Shipping Address</legend>*. You can use CSS to change the <legend> tag's font properties, add background colors and images, and add your own borders.
- **Text fields.** The *<input type="text">* (<input type="text" /> in XHTML), *<input type="password">* (<input type="password" />), and the <textarea> tags create text boxes on a form. These tags give you the most consistent cross-browser CSS control. You can change the font size, font family, color, and other text properties for text boxes, as well as add borders and background colors. IE, Firefox, and Opera also let you add background images to text boxes; Safari 2.0 doesn't. You can set the width of these fields using the CSS *width* property. However, only the <textarea> tag obeys the *height* property.

- **Buttons.** Form buttons—like *<input type="submit">* (<input type="submit" />)—let your visitors submit a form, reset its contents, or set off some other action to occur. While Safari 2.0 and earlier doesn't recognize formatting of these elements, other browsers let you go wild with text formatting, borders, and backgrounds. You can also align the button's text to left, middle, or right using the text-align property.
- **Drop-down menus.** Drop-down menus created by the <select> tag also give you a fair amount of styling control. Safari 2.0 limits you to font family, color, and size, while most other browsers also let you set background color, image, and borders.

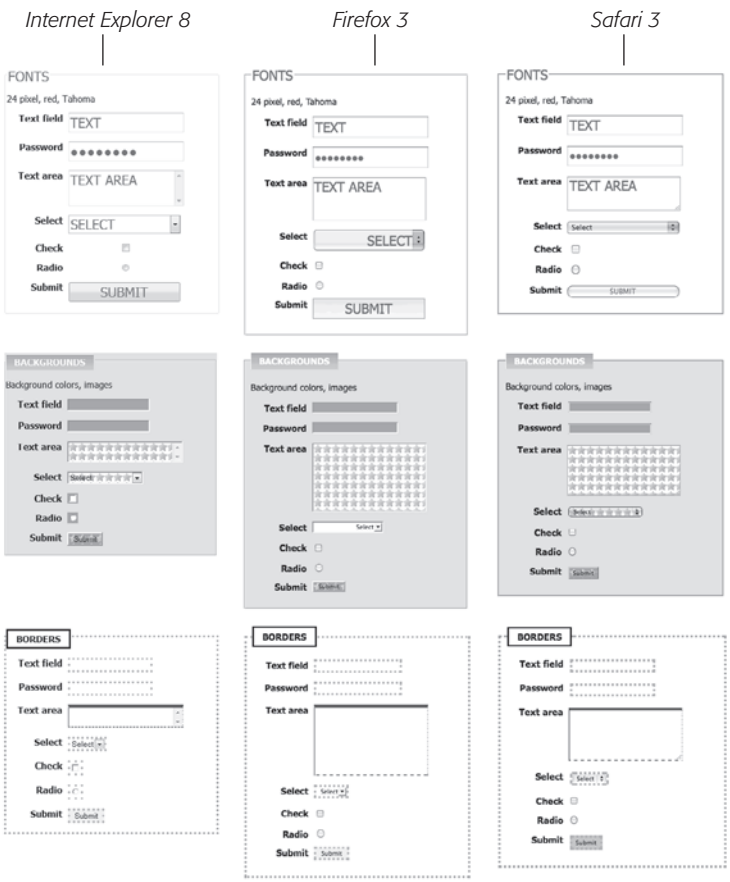


Figure 10-7: *Browsers vary in how they handle the styling of form fields. Safari has historically had the strongest "keep your hands off my user interface" policy, but with Safari 3 (right), Apple seems to be loosening up a bit–only a few form elements like the fonts in a drop-down menu can't be styled in Safari. Internet Explorer (left) and Firefox (center) are more tolerant, but there are significant differences between them. Internet Explorer applies background colors and borders to checkboxes and radio buttons, while Firefox doesn't. The best you can do is design your forms carefully and not expect them to look the same on every browser.*

Note: For more on the wide variety of browser results you get when applying CSS to form elements, visit *www.456bereastreet.com/archive/200701/styling_form_controls_with_css_revisited*. And if you have a day to kill, you might check *www.webformelements.com* from the obsessive-compulsive web designer Christopher Schmitt. On that site, you can find 3,520 screen shots of a form elements displayed on Mac, Windows, and a wide variety of web browsers. Finally, you can download a free chapter from the *CSS Cookbook,* by Christopher Schmitt that includes 164, that's right, 164 pages of form styling information and samples: *http://oreilly.com/catalog/9780596527419/appendixd/appd.pdf*.

- **Checkboxes and radio buttons.** Most browsers don't allow formatting of these elements. Opera, however, lets you set a background color that appears *inside* the box or button. Internet Explorer adds a background color *around* the box or button. Because browsers vary widely in how they treat these elements, it's best to leave them alone.

POWER USERS' CLINIC

Attribute: The Ultimate Form Field Selector

When it comes to styling forms, tag styles just don't cut the mustard. After all, text boxes, radio buttons, checkboxes, password fields, and buttons all share the same HTML tag—<input>. While a width of 200 pixels makes sense for a text-box, you probably don't want your checkboxes to be that big, so you can't use the <input> tag to format width. For now, the most cross-browser-friendly way of formatting only text fields would be to add a class name to each text field—like *<input type="text" class="textfield" name="email" />*—and then create a class style to format it.

However, you can take advantage of a more advanced CSS selector—the attribute selector—to fine-tune your form styling without resorting to classes.

An attribute selector targets an HTML tag based on one of the tag's attributes. The *type* attribute is responsible for determining what kind of form element the <input> tag produces. The type value for a form text field is *text*. To create a style that makes the background color of all single-line text fields blue, you'd create this selector and style:

```
input[type="text"] { background-color:
blue; }
```

Changing *text* in the above example to *submit* creates a style for submit buttons only, and so on.

Since Internet Explorer 7 and 8, Firefox, Safari, Chrome, and Opera understand attribute selectors, you can start using them today if you want. The downside is that Internet Explorer 6 users won't see your finely styled form elements. If that's not a problem—for example, your boss uses IE 8, or you're just adding some eye candy that doesn't affect your form's usability—feel free to experiment with these very useful selectors.

Attribute selectors aren't just for form elements either. You can use an attribute selector to style *any* tag with a particular attribute. Here's the selector for styling links that point to *http://www.cosmofarmer.com/*: *a[href="http://www.cosmofarmer.com"]*.

CSS 3 promises even more elaborate attribute selectors, including the ability to select attributes that *start* with a particular value (like *http://*) or which *end* with a particular value (like *.jpg* or *.pdf*). See page 439 for more details and examples.

Laying Out Forms Using CSS

All it takes to create a form is adding a bunch of labels and other form elements to a web page. Visually, though, you may end up with a chaotic mess (see Figure 10-8, left). Forms usually look best when the questions and form fields are organized into columns (Figure 10-8, right).

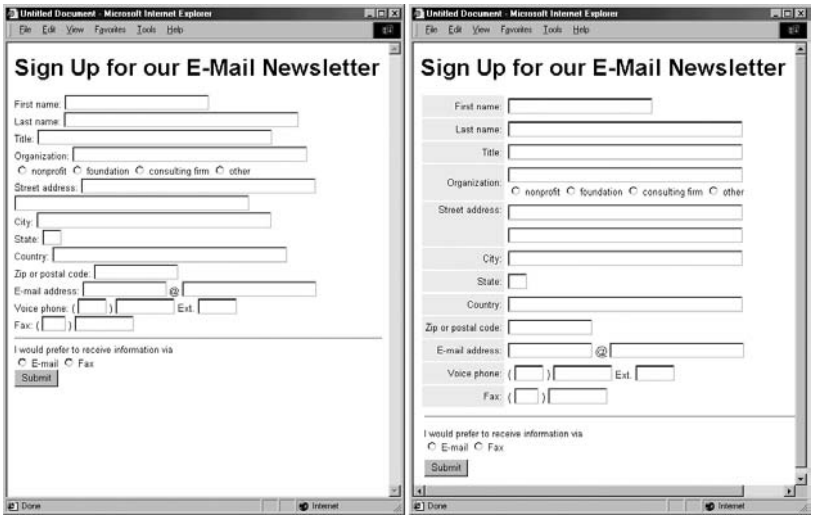


Figure 10-8: *The different shapes and sizes of text boxes, radio buttons, and other form objects don't naturally align well with text, often causing an ungainly zigzag pattern. This form isn't just ugly; it's hard to read (left). The solution is to organize your forms into columns (right), using either an HTML table or CSS styles.*

You can achieve this effect in a couple of ways. The easiest approach is with an HTML table. Although form labels and fields aren't strictly table data, they lend themselves beautifully to a row/column format. Just put your labels ("First Name," "Phone Number," and so on) in one column and form fields in a second column.

Using CSS, you can also create a two-column form like Figure 10-8 (with the added benefit of less HTML code). Here's the basic approach:

1. **Wrap each label in a tag.**

   The obvious choice for a tag is <label>, since it's designed to identify form labels. But you can't *always* use <label> tags for all labels. Radio buttons usually have a question like "What's your favorite color?" followed by separate <label> tags for each button. So what tag do you use for the question? In this case, you must resort to wrapping the question in a tag: *What's your favorite color?*. Then add a class to each of these tags—**—and also add the class to just those <label> tags you want to appear in the left-hand column (in Figure 10-8, that would be the labels for "First name," "Last name," and so on, but not the <label> tags for the radio buttons).

Note: Visit *www.htmldog.com/guides/htmladvanced/forms* for a quick overview on the <label> tag.

2. **Float and set a width for the labels.**

   The secret to this technique lies in creating a style that floats the labels to the left and sets a width for them. The *width* value should provide enough space to accommodate the entire label on one line if possible. You can create a class style that looks something like this:

```
.label {
  float: left;
  width: 20em;
}
```

   The *width* and *float* turn the labels into little evenly sized blocks and let the content that follows—the form field—wrap on the right side of the label.

3. **Adjust the style.**

   Just a couple more enhancements complete the job. You want to align the label text to the right, so each label appears next to each form field. Also, adding a *clear: left* property clears the floats (page 172), so that the labels fall one below the other instead of wrapping continuously. Finally, by adding a little bit of right margin, you can create a nice gutter of white space between the labels and form fields.

```
.label {
  float: left;
  width: 20em;
  text-align: right;
  clear: left;
  margin-right; 15px;
}
```

   At this point, you've got yourself a simple, neat form. You can make other enhancements if you wish, like making the labels bold and a different color. The tutorial that starts on page 292 provides a step-by-step example of this technique.

Note: If you're looking for inspiration (and cool styling tricks) for formatting web forms visit this showcase of CSS-based form designs *www.smashingmagazine.com/2006/11/11/css-based-forms-modern-solutions.*

Tutorial: Styling a Table

HTML is great for building tables, but you need CSS to give them style. As you can see on page 272, it takes quite a bit of HTML to construct a simple table. Lucky for you, this book comes with a prebuilt HTML table for you to practice your CSS on. In this tutorial, you'll format the table's rows, columns, and cells, and give it an attractive font and background color.

To get started, download the tutorial files located on this book's companion website at *www.sawmac.com/css2e/*. Click the tutorial link and download the files. All the files are enclosed in a ZIP archive, so you need to unzip them first. (Go to the website for detailed instructions.) The files for this tutorial are in the *10 → table* folder.

1. **Launch a web browser and open the file *10 → table → table.html*.**

   This page contains a simple HTML table. It has a caption, a row of table headers, and nine rows of data contained in table cells (Figure 10-9). In addition, the <col> tag is used three times to identify the three columns of data. As you'll see in a bit, <col> is a handy tag to style, since it will let you set the width of all cells in a column.

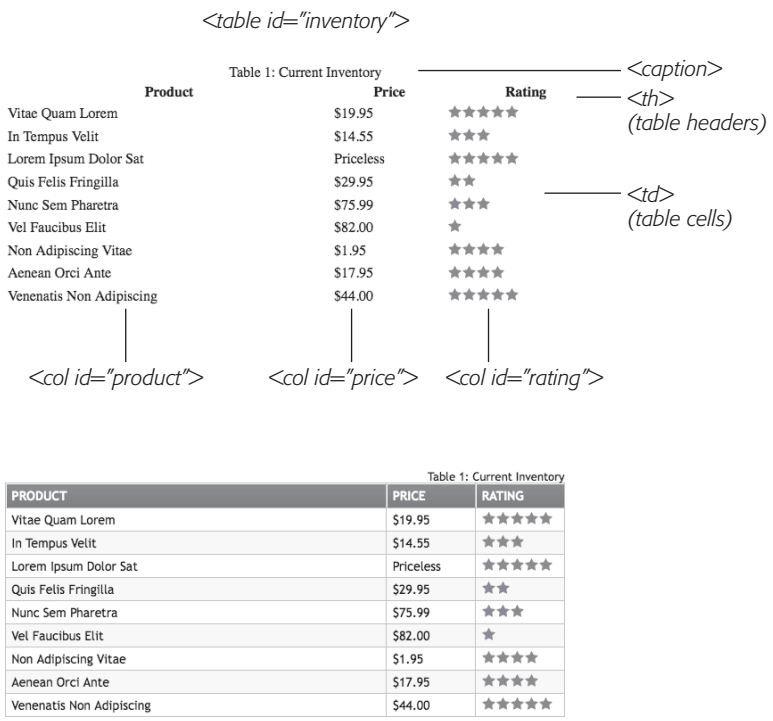


Figure 10-9: *Formatting a table with borders, background colors, and other CSS properties not only makes a drab HTML table (top) look great, but also makes the table's data easier to read (bottom).*

2. **Open *table.html* in a text editor.**

   You'll start by creating a style that sets the table's width and text font. This table has an ID of *inventory* applied to it, so you can use an ID selector to format just this one table.

Note: There's already an external style sheet attached to this page, but you'll add your new styles to an internal style sheet.

3. **Click between the opening and closing <style> tags, and then add the following style:**

```
#inventory {
  font-family: "Trebuchet MS", Arial, Helvetica, sans-serif;
  width: 100%;
}
```

Unless you set the width of a table, it grows and shrinks to fit the size of the content inside it. In this case, you've set a 100 percent width, so the table stretches to fit the entire width of its containing . (In this case, it's the area of the page containing the headline "Welcome to the Lorem Ipsum Store" and the table itself.) Setting the font family in the <table> uses inheritance to give all of the tags inside the table the same font—<caption>, table headers (<th>), table cells (<td>), and so on.

Next you'll style the table's caption.

4. **Add another style below the table style you just created:**

```
#inventory caption {
  text-align: right;
  font-size: 1.3em;
  padding-top: 25px;
}
```

This descendent selector only affects the <caption> tag that appears inside another tag with the ID of *inventory* (that's the <table> on this page). A <caption> tag indicates what a table is about. In this case, it shouldn't be the focus of attention, so you've kept the text small and moved it to the right edge, out of the way. The *padding-top* property adds some space above the caption, moving the caption (and table) a bit farther below the headline.

Tip: When you have a caption on a table, and you want to move the caption and table further down from the element above it, only use padding on the <caption> tag. The *margin* property won't work for some strange reason: If you add a top margin to the <table> tag, Firefox actually inserts the space between the caption and the table proper, while other browsers add the space above the caption. If you try to add margin to the top of the <caption>, Firefox gets it right, IE ignores it, and Safari adds the space between the caption and the table. The only reliable method is to use top padding on the <caption> tag.

When you read information across a table row, it's easy to lose track of which row you're looking at. Good visual guides are essential. Adding borders around the cells, which you'll do next, visually delineates the information.

5. **Add the following group style to the internal style sheet:**

```
#inventory td, #inventory th {
  font-size: 1.4em;
  border: 1px solid #DDB575;
}
```

This group selector formats the table header (<th>) and table cell (<td>) tags of this table with larger type and draws a border around each header and each cell. Browsers normally insert space between each cell, so at this point there are small gaps between the borders (Figure 10-10, circled). Between the gaps and the borders, the whole table looks too boxy. You'll fix that next.

6. **Add the *border-collapse* property to the table style you created in step 3 so that it looks like this:**

```
#inventory {
  font-family: "Trebuchet MS", Arial, Helvetica, sans-serif;
  width: 100%;
 border-collapse: collapse;
}
```

The *border-collapse* property removes the spacing between cells. It also merges borders that touch, which prevents thick, unattractive borders. Without *border-collapse,* the bottom border of a table header and the top border of the table cell would double up to make a 2-pixel border.

If you preview the table now, you'll see the data is better organized visually, but the information in each cell looks a little cramped. Add some padding to fix that.

7. **Add padding to the group selector you created in step 5:**

```
#inventory td, #inventory th {
  font-size: 1.4em;
  border: 1px solid #DDB575;
  padding: 3px 7px 2px 7px;
}
```

While the top, table-header row stands out because of its boldface text, there are a few things you can do to make it stand out even more and improve its appearance.

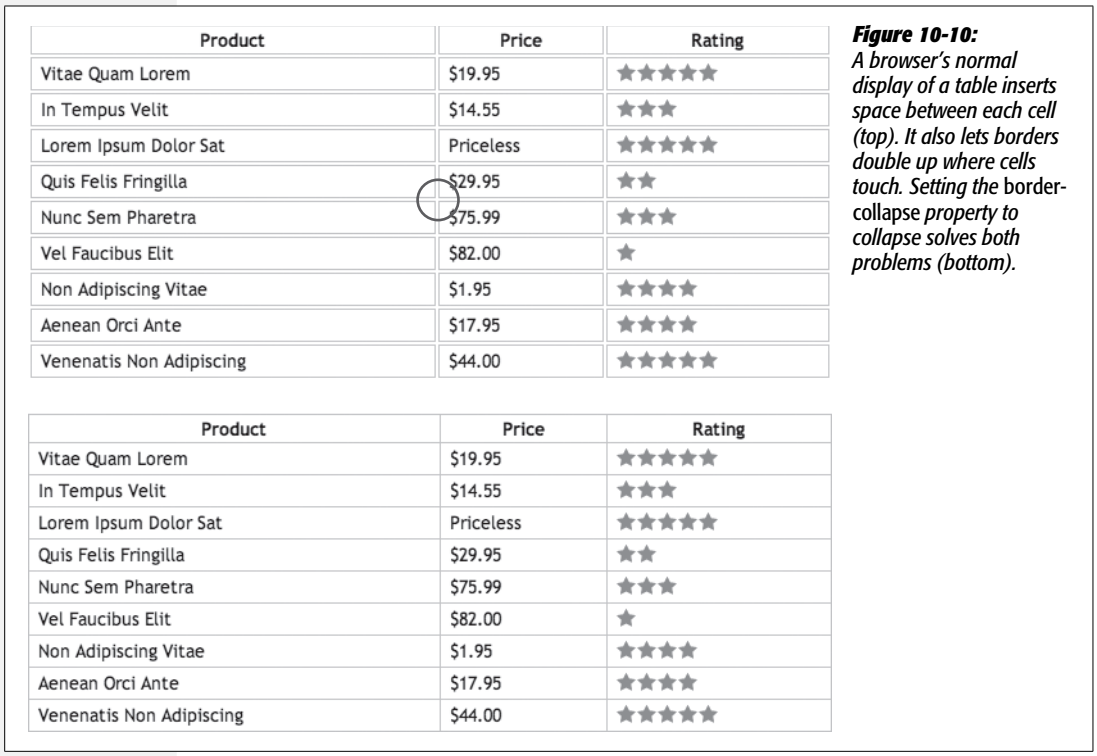
8. **Create a new style below the *#inventory td, #inventory th* style for formatting just table head cells:**

```
#inventory th {
  text-transform:uppercase;
  text-align: left;
  padding-top: 5px;
  padding-bottom: 4px;
}
```

This style is a perfect example of effective cascading. The group selector *td, th* defines common formatting properties between the two types of cells. By introducing this *th*-only style, you can further tweak the look of *just* the table headers. For example, the *padding-top* and *padding-bottom* settings here override those same settings defined in the selector in step 7. However, since you don't override

the left or right padding settings, the <th> tags will retain the 7 pixels of left and right padding defined in step 7. This style also turns all of the text to uppercase and aligns it to the left edge of the table cell.

The table headers still don't have enough oomph, and the table seems to recede into the background of the page. A background graphic can provide the necessary boost.



Product	Price	Rating
Vitae Quam Lorem	$19.95	★★★★★
In Tempus Velit	$14.55	★★★
Lorem Ipsum Dolor Sat	Priceless	★★★★★
Quis Felis Fringilla	$29.95	★★
Nunc Sem Pharetra	$75.99	★★★
Vel Faucibus Elit	$82.00	★
Non Adipiscing Vitae	$1.95	★★★★
Aenean Orci Ante	$17.95	★★★★
Venenatis Non Adipiscing	$44.00	★★★★★

Product	Price	Rating
Vitae Quam Lorem	$19.95	★★★★★
In Tempus Velit	$14.55	★★★
Lorem Ipsum Dolor Sat	Priceless	★★★★★
Quis Felis Fringilla	$29.95	★★
Nunc Sem Pharetra	$75.99	★★★
Vel Faucibus Elit	$82.00	★
Non Adipiscing Vitae	$1.95	★★★★
Aenean Orci Ante	$17.95	★★★★
Venenatis Non Adipiscing	$44.00	★★★★★

Figure 10-10: *A browser's normal display of a table inserts space between each cell (top). It also lets borders double up where cells touch. Setting the* border-collapse *property to collapse solves both problems (bottom).*

9. **Edit the *th* style by adding a background image and changing the text color:**

```
#inventory th {
  text-transform:uppercase;
  text-align: left;
  padding-top: 5px;
  padding-bottom: 4px;
  background: url(images/bg_th.png) no-repeat left top;
  color: #FFF;
}
```

In this case, the graphic introduces a subtle top-down gradient while a white borderline at the top and left edges of the image contrasts nicely with the darker top and left borders around the cells, giving the cells a 3-D look.

Note: By the way, you could just as easily set the background color of these cells to achieve a similar effect.

When tables have lots of data stuffed into many rows and columns, it's sometimes hard to quickly identify which data belongs to each row. One solution designers use is to alternate the color of every other row in a table. You create this effect with a class style that you apply to every other table row.

10. **Add one more style to the web page's internal style sheet:**

```
#inventory tr.alt td {
  background-color: #FFF;
}
```

This complex descendent selector basically says, "Apply the following formatting to every <td> tag that's inside a <tr> tag that has the class *alt* applied to it and only when both of those are inside another tag with the ID of *inventory*." The style itself will turn the background of the cells to white, but in order for it to work, you must first apply the class *alt* to every other row.

11. **In the page's HTML, look for the <tr> tag that precedes the <td> containing "Vitae Quam Lorem." Add *class="alt"* to that <tr> tag, like so:**

```
<tr class="alt">
<td>Vitae Quam Lorem</td>
```

You'll need to do this with every second row after this one as well. (Manually tagging each alternating row can be tedious, especially if you frequently add or reorder table rows. For an automated approach to striping table rows using a little JavaScript programming, see the Tip on page 278.)

12. **Repeat step 11 for every other <tr> tag.**

You'll probably want to check the page in a browser after you add the class to each <tr>, just to make sure you're correctly locating every *other* table row.

Finally, you'll adjust the width of the cells that fall under the Price and Rating columns. One technique is to meticulously add class names to those cells and create a class style with a set width. A better approach, however, is to take advantage of the <col> tag, which lets you assign a class or ID to a column's worth of cells. As you can see in Figure 10-9, those two columns have an ID of *price* and *rating*. You can easily set the width for these two columns with one group selector.

13. **Add one more style to the web page's internal style sheet:**

```
#price, #rating {
  width: 100px;
}
```

Now those two columns are each 100 pixels wide. Finally, the table looks great in all browsers…well almost. In IE 6, the table drops down on the page. When the table's width is set to 100 percent, IE 6 actually makes the table a little bit larger than its container, which in turn forces the table to drop down below the left sidebar. This all-too-common problem is called a *float drop,* and you'll learn more about it on page 330. But for now, a simple solution is to just make the table slightly smaller than 100 percent.

14. **Edit the ID style *#inventory,* used to format the table, by changing the width to 98 percent, like this:**

```
#inventory {
  font-family: "Trebuchet MS", Arial, Helvetica, sans-serif;
  width: 98%;
  border-collapse: collapse;
}
```

Now the table is just a tad thinner than its container and fits fine in IE 6. (If you simply can't stand the table being thinner in other browsers, you could use an IE 6–specific style to only set the width to 98 percent for that one browser—see page 433 for more on that trick.)

Preview the page in a web browser to see the results. Your page should look like the bottom image in Figure 10-9. You'll also find the completed exercise in the *10_finished → table* folder.

Tutorial: Styling a Form

This tutorial gives you some practice using CSS to organize a form and make it more attractive. If you open *10 → form → form.html* in a web browser, then you'll see it contains a simple form for subscribing to fictitious website, CosmoFarmer.com (Figure 10-11). The form asks several questions and uses a variety of form elements for input, including text boxes, radio buttons, and a pull-down menu.

As subscription forms go, it looks fine, but a little bland. In the steps on the following pages, you'll spruce up the fonts, line up the questions and boxes better, and add a few other improvements.

1. **Open the file *form.html* in a text editor.**

There's already an external style sheet attached to this page, but you'll add your new styles to an internal style sheet. Start by bringing down the size of the type in the form.

2. **Click between the opening and closing <style> tags, and then add the following style:**

```
#subForm {
  font-size: .8em;
}
```

The subscription form has an ID of *subForm* applied to it, so this style sets the text size for all text between the <form> tags.

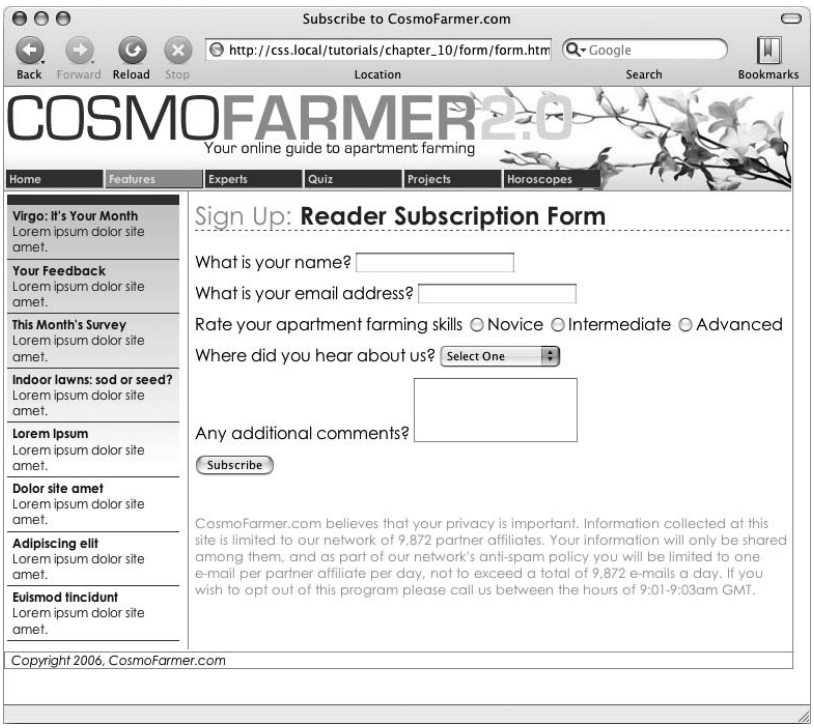


Figure 10-11: *While the HTML <table> tag is a common way to organize the questions of a form, you can also use CSS to make a disorganized jumble of labels and form fields (like the ones pictured here) and make a form's layout clearer and more attractive.*

Time to work on the layout. To better align the form elements, you'll create the appearance of two columns, one for the questions (labels) and another for the answers (form fields).

3. **Add another style to the internal style sheet:**

```
#subForm .label {
  float: left;
  width: 230px;
}
```

This descendent selector identifies any element with a class of *.label* within this form. The style sets a width of 230 pixels and floats the element to the left. Remember the *float* property lets you move elements to one side or the other of a containing block. It has the added benefit of letting you set a width and force elements that follow the style to wrap around it. As a result, when you apply this style to each of the questions in the form, you create an even-width column. But in order to see the effect, you must first apply the class to the appropriate page elements.

4. **In the page's HTML, locate this code *<label for="name">* and add *class="label"*, so the tag looks like this:**

```
<label for="name" class="label">
```

You must do the same for each question in the form, so…

5. **Repeat step 5 for the following pieces of HTML code: *<label for="email">*, *<label for="refer">*, *<label for="comments">*.**

There's one additional question on the form—"Rate your apartment farming skills." It isn't inside a label tag, since its purpose is to introduce a series of radio buttons, each of which has its own label. You need to add a tag to this text so you can apply the *label* style to it.

6. **Find the text *Rate your apartment farming skills,* and then wrap it in a tag with a class of *label,* like so:**

```
<span class="label">Rate your apartment farming skills</span>
```

Now the questions appear to be in a single column (Figure 10-12, top). But they'd look better if they stood out more and lined up with the corresponding form fields.

7. **Edit the *#subForm .label* style you created in step 4, so it looks like this:**

```
#subForm .label {
  float: left;
  width: 230px;
  margin-right: 10px;
  text-align: right;
  font-weight: bold;
}
```

Preview the page in a web browser. The form should look like the bottom image in Figure 10-12.

There's one last step for these labels. Because they're floated to the left, if the text runs more than one line, the question that follows will also try to wrap around to the right. Fix that by applying the *clear* property.

Note: You can see a similar problem illustrated in Figure 7-12. See page 172 for more detail on clearing floats.

8. **Add a *clear* property to the *#subForm .label* style:**

```
#subForm .label {
  float: left;
  width: 230px;
  margin-right: 10px;
  text-align: right;
  font-weight: bold;
  clear: left;
}
```

The form is shaping up, but that Subscribe button looks out of place over at the left edge. You'll align it with the other form elements next.

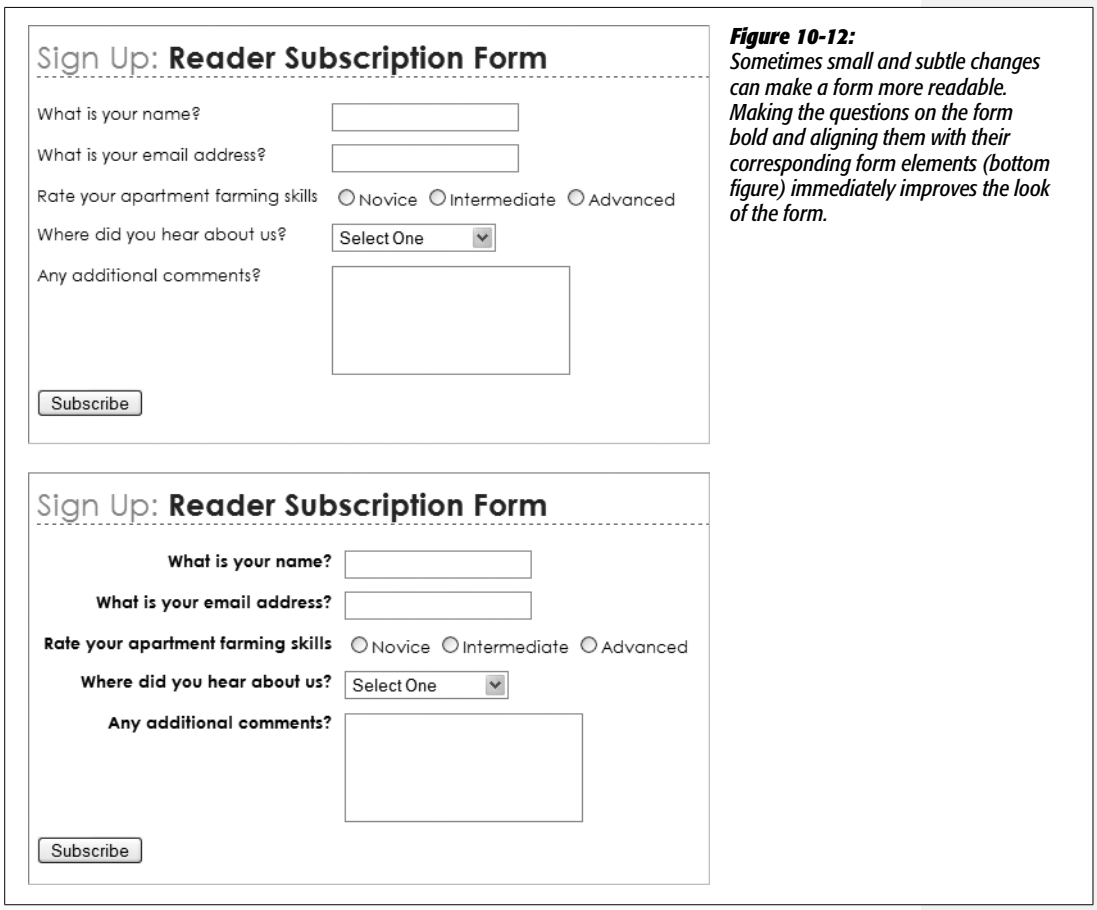


Figure 10-12: *Sometimes small and subtle changes can make a form more readable. Making the questions on the form bold and aligning them with their corresponding form elements (bottom figure) immediately improves the look of the form.*

9. **Add another style to the internal style sheet.**

```
#subscribe {
  margin-left: 240px;
}
```

The <input> tag that creates this Subscribe button has an ID of *subscribe* already applied to it, so this style indents the button 240 pixels to match the width and right margin of the *#subForm .label* style.

Most browsers let you style buttons in other ways, too, so…

10. **Edit the Subscribe button style by adding a background color and font to the style you just created:**

```
#subscribe {
  margin-left: 240px;
  background-color: #CBD893;
  font-family: "Century Gothic", "Gill Sans", Arial, sans-serif;
}
```

You can even change the font used in a pull-down menu.

11. **Add a style for the form's select menu:**

```
#refer {
  font-family: "Century Gothic", "Gill Sans", Arial, sans-serif;
}
```

There! You've got the text labels and Subscribe button looking great, but why stop there? Time to jazz up the form fields. Begin by changing their font and background colors.

12. **Create a new group selector for styling the three text boxes in the form:**

```
#name, #email, #comments {
  background-color: #FBEF99;
  font-family: "Lucida Console", Monaco, monospace;
  font-size: .9em;
}
```

This group style gives the text boxes (each of which has its own ID applied to it) a light yellow background color and sets a new size and font for text visitors to type into them. The boxes look a little narrow, and they also appear a little low compared with their labels at right. Fixing these two problems with CSS is a snap:

13. **Edit the style you just created by setting a width and altering the top margin:**

```
#name, #email, #comments {
  background-color: #FBEF99;
  font-family: "Lucida Console", Monaco, monospace;
  font-size: .9em;
  width: 300px;
  margin-top: -2px;
}
```

You can make your form easier for your visitors to fill out by highlighting the active form element with the special *:focus* pseudo-class (page 64). You'll add that in the next step.

14. **At the end of the internal style sheet, add one last style for the pull-down menu and the three text fields:**

```
#name:focus,
#email:focus,
#comments:focus,
#refer:focus
{
  background-color: #FDD041;
}
```

The *:focus* pseudo-class works only in Internet Explorer 8, Firefox, Safari, and Opera, but since it doesn't do IE 7 or IE 6 people any harm, adding a *:focus* style is a fun enhancement.

Preview the page in a web browser. It should now look like Figure 10-13 You can find a completed version of this tutorial in the *10_finished → form* folder.

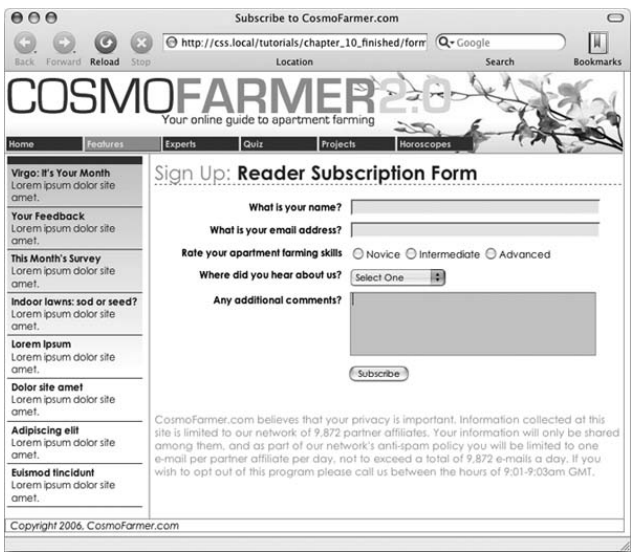


Figure 10-13:
Using the :focus *pseudo-class, you can make your forms more interactive by highlighting form fields the visitor uses. Here, you can see you're about to type into the Comments field because of its darker background color.*

3

Part Three: CSS Page Layout

CHAPTER
11

Introducing CSS Layout

CSS leads a double life. As great as it is for formatting text, navigation bars, images, and other bits of a web page, its truly awesome power comes when you're ready to lay out entire web pages. While HTML normally displays onscreen content from top to bottom, with one block-level element stacked after another, CSS lets you create side-by-side columns and position images or text anywhere on the page (even layered on top of other page elements), so you can create much more visually interesting web pages.

There's a lot to CSS layout. The next two chapters cover two of the most important CSS techniques in detail. This chapter provides a brief overview of the principles behind CSS layout and a handful of useful guidelines for approaching your own layout challenges.

Types of Web Page Layouts

Being a web designer means dealing with the unknown. What kind of browsers do your visitors use? Do they have the latest Flash Player plug-in installed? But perhaps the biggest issue designers face is creating attractive designs for different display sizes. Monitors vary in size and resolution: from 15-inch, 640×480 pixel notebook displays to 30-inch monstrosities displaying, oh, about 5,000,000×4,300,000 pixels. Not to mention the petite displays on mobile phones.

Web layouts offer several basic approaches to this problem. Nearly every page design you see falls into one of two types—*fixed width* or *liquid.* Fixed-width designs give you the most control over how your design looks but can inconvenience some of your visitors. Folks with really small monitors have to scroll to the

right to see everything, and those with large monitors end up with wasted space that could be showing more of your excellent content. Liquid designs, which grow or shrink to fit browser windows, make controlling the design more challenging but offer the most effective use of the browser window. An elastic design combines some advantages of both.

- **Fixed Width.** Many designers prefer the consistency of a set width, like the page in Figure 11-1, top. Regardless of the browser window's width, the page content's width remains the same. In some cases, the design clings to the left edge of the browser window, or, more commonly, it's centered in the middle. With the fixed-width approach, you don't have to worry about what happens to your design on a very wide (or small) monitor.

  Many fixed-width designs are below 1,000 pixels wide, letting the window and the space taken up by scrollbars and other parts of the browsers "chrome" fit within a 1024×768 pixel monitor. A very common width is 960 pixels. The great majority of websites are a fixed width.

Note: For examples of fixed-width designs, visit *www.alistapart.com*, *www.espn.com*, or *www.nytimes.com*.

- **Liquid.** Sometimes it's easier to roll with the tide instead of fighting it. A liquid design adjusts to fit the browser's width—whatever it may be. Your page gets wider or narrower as your visitor resizes the window (Figure 11-1, middle). While this type of design makes the best use of the available browser window real estate, it's more challenging to make sure your design looks good at different window sizes. On very large monitors, these types of designs can look ridiculously wide, creating very long, difficult to read lines of text.

Note: For an example of a liquid layout, check out *http://maps.google.com*.

- **Elastic.** An elastic design is really just a fixed-width design with a twist—type size flexibility. With this kind of design, you define the page's width using em values. An em changes size when the browser's font size changes, so the design's width is ultimately based on the browser's base font size (page 121). By changing the browser's font size, you can change the width of the page and the elements on it. It's kind of like zooming into the design (Figure 11-1, bottom).

  Elastic designs are losing favor these days in large part because the newest versions of the most popular browsers have replaced the normal "increase text size" command with a "page zoom" command. For example, in Internet Explorer 8, Firefox 3, Safari 4, Opera, and Chrome, pressing Ctrl-+ enlarges everything on the page (pretty much the same effect you get with an elastic design).

In the tutorials at the end of next chapter, you'll create a fixed-width design and a liquid design.

Note: The *max-width* and *min-width* properties offer a compromise between fixed and liquid designs. See the box on page 320.

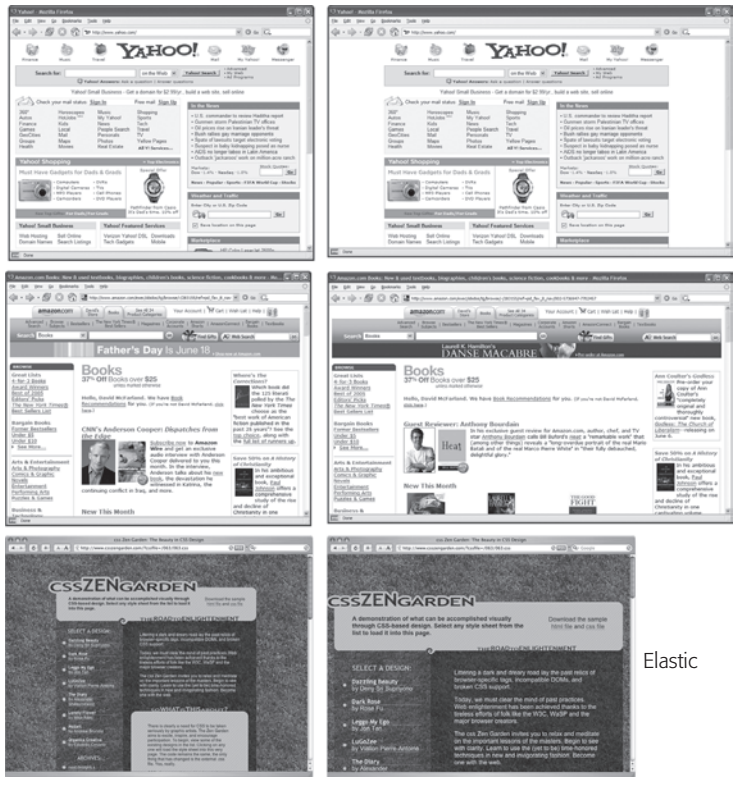


Figure 11-1: *You have several ways to deal with the uncertain widths of web browser windows and browser font sizes. You can simply ignore the fact that your site's visitors have different resolution monitors and force a single, unchanging width for your page (top), or create a liquid design that flows to fill whatever width window it encounters (middle). An elastic design (bottom) changes width only when the font size–not the window width–changes.*

How CSS Layout Works

As discussed in Chapter 1, in the early days of the Web, HTML's limitations forced designers to develop clever ways to make their websites look good. The most common tool was the <table> tag, which was originally intended to create a spreadsheet-like display of information composed of rows and columns of data. Designers used HTML tables to build a kind of scaffolding for organizing a page's contents (see Figure 11-2). But because the <table> tag wasn't meant for layout, designers often had to manipulate the tag in unusual ways—like placing a table inside the cell of *another* table—just to get the effect they wanted. This method was a lot of work, added a bunch of extra HTML code, and made it very difficult to modify the design later. But before CSS, that's all web designers had.

If you're a longtime <table> tag jockey, you need to develop a new mindset when you begin to use CSS for layout. First, forget about rows and columns—that notion is important only when working with tables. In table-based layout, you took your HTML and put it into individual table cells. Each cell acted like a box on the page holding a headline, an image, text, or a combination.

CSS has a rough equivalent of a table cell—the tag. As with table cells, a tag is a container for content that you want to position in one area of the page. In addition, as you'll see, CSS designs often nest a div inside another div, much like you'd nest tables within tables to get certain effects—but the CSS method uses a *lot* less HTML code.

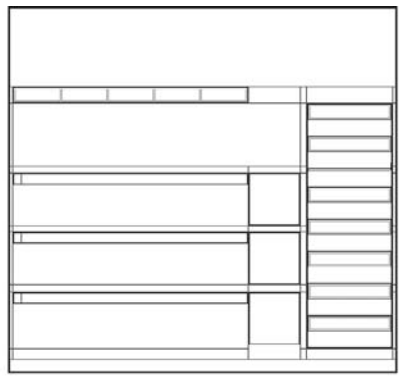


Figure 11-2: *Building a complex page design (left) using the <table> tag involves tricks like nesting tables within tables, merging adjacent cells, and propping open cells with invisible spacer images. It's like building a rigid scaffolding (right), and changing the design of a page requires tearing down the scaffolding and building a new one.*

The Mighty Tag

Web page layout involves putting chunks of content into different regions of the page. With CSS, the element most commonly used for organizing content is the tag. As you read on page 22, the tag is an HTML element that has no inherent formatting properties (besides the fact that browsers treat the tag as a block with a line break before and after it). Instead, it's used to mark a logical grouping of elements or a *division* on the page.

You'll typically wrap a tag around a chunk of HTML that belongs together. The elements comprising the logo and navigation bar in Figure 11-3 occupy the top of the page, so it makes sense to wrap a tag around them. At the very least, you would include tags for all the major regions of your page, such as the banner, main content area, sidebar, footer, and so on. But it's also possible to wrap a tag around one or more additional divs. One common technique is to wrap the HTML inside the <body> tag in a . Then you can set some basic page properties by applying CSS to that *wrapper* . You can set an overall width for the page's content, set left and right margins, center all of the page's content in the middle of the screen, and add a background color or image to the main column of content.

Once you've got your tags in place, add either a class or ID to each one, which becomes your handle for styling each separately. For parts of the page that appear only once and form the basic building blocks of the page, designers usually use an ID. The tag for a page's banner area might look like this: *< div id="banner">*. You can use an ID only once per page, so when you have an element that appears multiple times, use a class instead. If you have several divs that position photos and their captions, for example, then wrap those tags in a div and add a class like this: * *. (For more on knowing when to use a div, read the box below.)

Once you have the divs in place and have accurately identified them with IDs or class names, you can then create CSS styles to position those <divs> on the page using either floats (Chapter 12) or absolute positioning (Chapter 13).

WORD TO THE WISE

A Delicate Balancing Act

Although divs are critical to CSS layout, don't go crazy pelting your page with divs. A common trap is to believe you must wrap *everything* on a web page in a tag. Say your main navigation bar is an unordered list of links (like the one described on page 235). Because it's an important element, you may be tempted to wrap a around it: * … *.

But there's no reason to add a when the <ul> tag is just as handy. As long as the <ul> contains the main navigation bar links, you can simply add your ID style to that tag: *<ul id="mainNav">*. An additional is just unnecessary code.

Likewise, it doesn't make sense to use a when another, more logical HTML tag is at hand. For example, say you want to add a pull quote to a long passage of text—a box aligned to the right edge of the page displaying an exciting quote pulled from the page. In this case, you can skip an extra and simply use the HTML <blockquote> tag. You can position the blockquote tag using the float property as discussed in the next chapter.

That said, don't be afraid of divs either. Adding a few extra divs to a page is not going to substantially change the file size or slow the page's download speed. If a div helps you get the job done, and no other HTML tag makes sense, then by all means use a div. Also, a div is the only way to go when you want to group a bunch of different HTML tags into a cohesive unit. In fact, it's not at all uncommon to see one surround one or more other divs.

The basic rule of thumb is you should try to keep the amount of HTML on a page down to a minimum, but use as much HTML as is needed. If adding a few divs makes sense for the design—go for it.

Techniques for CSS Layout

At this point in the evolution of CSS, layout comes in two flavors—*floats* and *absolute positioning*. The vast majority of web pages use the CSS *float* property for layout. You've already encountered this seemingly simple property in Chapter 8, where the *float* property was introduced as a way of positioning an image within a column of text by either floating the image to the left or right side. The same concept applies to divs: By setting the width on a div and floating it to the left or right, you

can create a column (the text following the div ends up wrapping around the floated div as if it were another column). By using the *float* property with multiple divs, you're able to achieve multi-column layouts. Taking this technique further, you can quickly create complex, multicolumn layouts by placing floated divs within floated divs.

Absolute positioning lets you place an element anywhere on the page with pixel-level accuracy. You can place an element 100 pixels from the top edge of the browser window and 15 pixels in from the left edge, for example. Page layout programs like InDesign and Quark Xpress work this way. Unfortunately, the fluid nature of web pages and some of the weird characteristics of absolute positioning make it difficult to achieve total layout control with this technique. As you'll read in Chapter 13, it is possible to lay out a page using absolute positioning, but, in general, this technique is better suited to smaller tasks like positioning a logo in a particular location of the page.

Don't worry if this sounds rather abstract right now, you'll see all of these techniques in action in the next two chapters.

Note: There are a couple of other ways to do CSS layout as well, but they're limited to Internet Explorer 8, Firefox, Safari, and other current browsers. In other words, these other techniques won't work for the vast majority of web surfers on IE 6 and 7. However, we do introduce these up-and-coming techniques on page 439 in Chapter 16.

Layout Strategies

Web page layout with CSS is more of an art than a science; there's no one formula to follow for marking up your content with HTML and creating your CSS. What works for one design might not for another. Though that might not be a comforting thought—"Hey, I bought this book to learn this darn stuff"—CSS layout is something you'll learn through experience, learning how the different CSS properties work (especially floats and absolute positioning), reading about different layout techniques, following tutorials like the ones in the next two chapters, and lots of practice.

However, there are definitely some strategies you can adopt as you approach CSS layout. These are more like guidelines than hard or fast rules, but as you begin to see your projects through the initial visual design, start with these tips in mind.

Start with Your Content

Many designers like to jump right into the good stuff—colors, fonts, icons, and images. But beginning with the visual design is putting the cart before the horse. The most important elements of a web page are the contents: headlines, paragraphs of text, stunning photographs, navigational links, Flash movies, and such

are what people will come to your site for. They want to read, learn, and experience what your site has to offer. Content is king, so you think of what you want to say before you tackle how it should look. After all, it won't do you much good to create a fantastic, 3-D looking sidebar box if you don't have anything meaningful to put in that box.

In addition, a page's message should dictate its design. If you decide that your home page needs to sell the services of your company and highlight the excellent customer service you offer, you might decide that a large photo of your friendly staff is important, as well as a quote from a satisfied customer. Since both of these elements are important to the page's message, you can craft the visual message by making both the picture and the quote prominent and compelling.

Mock Up Your Design

Even if you feel more comfortable hand-coding HTML and CSS in your favorite text editor than drawing in a graphics program, avoid starting with code. It's fairly easy to use a graphics program like Photoshop, Illustrator, or Fireworks to create a visual design. These programs give you the freedom to explore different colors, fonts, images, and positioning without spending the time required to code the HTML and CSS. You can experiment rapidly with new design ideas until you hit upon something you love.

If you're not a wiz with graphics programs, even just drawing boxes to indicate different placement of page elements can help you refine your thinking about how the page should be laid out. It's a lot easier to change a two-column design to a four-column design by resizing boxes in Illustrator than by rewriting HTML and CSS. Even simple pencil and paper sketches are a great way to get a feel for where content should go, how big it should be, and the general color tone (light or dark).

Tip: Yahoo offers a free Stencil Kit (*http://developer.yahoo.com/ypatterns/wireframes*) that you can use in Illustrator, Visio, OmniGraffle, and other graphics programs to create web page mockups. The supplied user interface elements, like buttons, form fields, windows, and navigation buttons, can make sketching out a page layout as simple as dragging and dropping icons.

Identify the Boxes

Once you've created a visual mockup, it's time to think of how to create the HTML markup and CSS to achieve your design goal. This process usually involves envisioning the different structural units of a page and identifying elements that look like individual boxes. For example, in Figure 11-3, there are quite a few elements that look like boxes: most obviously the three announcement boxes near the bottom (marked as A in Figure 11-3). Each box is usually a good candidate for a separate tag (unless there's a more appropriate HTML tag, as discussed in the box on page 303).

Often a visual clue in your mockup can help you decide if a div is needed. For example, a border line drawn around a headline and several paragraphs of text indicates you'll need to surround that group of HTML tags with a tag that has a border applied to it.

In addition, whenever you see chunks of text sitting side by side (like the three chunks of content in the footer in Figure 11-3), you know you'll need to have each group in its own div tag—HTML tags don't usually sit side by side, so you have to use some layout mojo (like the float technique covered in the next chapter) to make that happen.

It's also common to group divs that sit side by side in columns within another div. For example, in the bottom half of Figure 11-3 you can see the basic set of tags that provide the page's structure. The "news" and "footer" divs are containers for their own set of divs. While this isn't always a necessity, it can provide flexibility. For example, you can reduce the main area (the photo of the hand and the tagline) in width and move the news div to the right side to form its own column. The news items could then be stacked on top of each other rather than sitting side by side.

Go with the Flow

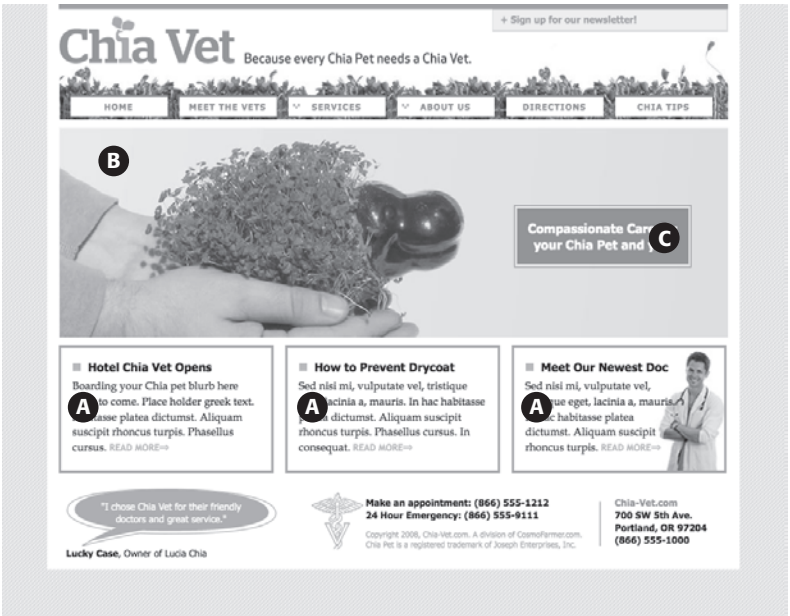
Tags don't normally sit side by side or layer on top of each other. Normally, HTML tags act pretty much like text in a word-processing program: filling the entire width of the page and flowing from top to bottom. Each block level tag—headline, paragraph, bulleted list, and so on—stacks on top of the next block level tag. Since that's the "business as usual" approach of HTML tags, you usually don't have to do any kind of positioning if you plan on stacking one div on the next.

For example, in Figure 11-3, four divs—"banner," "main," "news," and "footer"—span the entire width of their container (the <body> tag) and sit one on top of the other. Because this is the normal way block-level tags work, you don't need to do anything special with the CSS for those four divs to stack on top of each other.

Remember Background Images

You've no doubt seen tiled images filling a web page's background, or subtle gradients adding depth to a banner. But the *background-image* property (page 188) provides another way to add photos to a page without resorting to the <img> tag. Not only does putting an image into the background of an existing HTML tag save the few bytes of data required by the <img> tag, but it also simplifies some layout challenges.

For example, in Figure 11-3, the central image of the hands holding the Chia Pet (B) is actually just a background image. This makes placing another div—the one with the tagline "Compassionate care…" (C) really easy, since it's just sitting on top of the background of its parent div. Likewise, the picture of the doctor lower right of the page is just a background image placed in that div—adding some right padding pushes the text in that div out of the way of the photo.



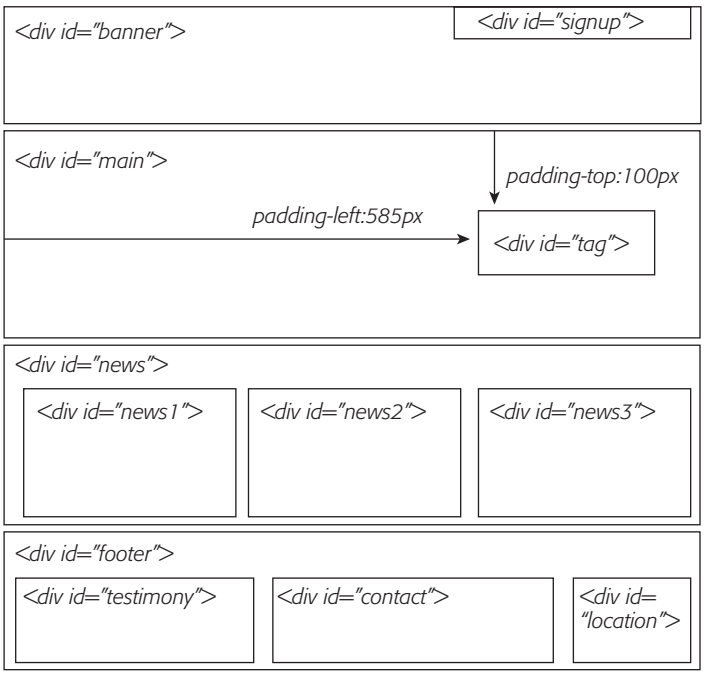


Figure 11-3: *Correctly putting together the HTML necessary to convert a Photoshop mockup into HTML and CSS reality involves seeing the underlying structure and wrapping related groups of HTML within tags. Sometimes, it can take a lot of divs to make a design come to life.*

Note: There are downsides to using photos in the background of divs (or any HTML tag). First, web browsers usually don't print backgrounds–so if you've got a page with a map containing driving directions to your business, insert the map with the <img> tag and not as a background image. Likewise, search engines don't search CSS, so if you think the image can help attract traffic to your site, use an <img> tag and include a descriptive *alt* attribute.

Pieces of a Puzzle

This tip can be filed under "creative problem solving" or "if I stare at this design long enough I'll come up with some crazy solution." Often, what looks like a single, unified whole is actually composed of multiple pieces. For example, in the tutorial in Chapter 8, a sidebar that looked like a paper scroll was actually constructed of three background images in three separate HTML tags (see Figure 8-17). Likewise, the "sliding doors" trick discussed on page 248 uses a similar technique to piece together a single, flexible tab (see Figure 9-10).

You can see a simple example of this in Figure 11-3, even though at first glance it looks like one big white box full of content. Actually there are four stacked divs, each with a white background. So, if you're having trouble seeing how to put together one large element on a page—a very large graphic, a rainbow that spans several columns, or just a solid background color that appears to span multiple areas of a page—think about how you could achieve the same look breaking the large unit into smaller pieces that are joined like parts in a jigsaw puzzle.

Layering Elements

If you're a Photoshop, Illustrator, or Fireworks fan, you're probably used to the notion of layers. Layers let you create separate canvases that float on top of each other to build one unified image. In these programs, it's easy to make a logo float on top of a headline of text, or place a photo over another photo. If you want a web page that has this kind of effect, you have a couple of choices.

Often the easiest way to layer something on top of a photo is to put the image into the background of another tag (see the tip on the previous page). Because the background image is behind the tag, anything inside that tag—text, another photo—will sit on top of the photo.

But what if you want to layer a photo on top of some text? In that case, you'll turn to the only CSS property that lets you layer elements—the *position* property. You'll learn all about that property in Chapter 13, since to position something on top of something else requires absolute positioning.

Don't Forget Margins and Padding

Finally, sometimes the simplest solution is the best. You don't always need fancy CSS to move a page element into place. Remember that padding and margins (page 153) are just empty space, and by using those properties you can move elements around the page. For example, the tagline box (C in Figure 11-3) is positioned simply by setting the top and left padding of the parent div. As you can see in the diagram in the bottom half of Figure 11-3, the tagline is placed inside another div ( ). That div doesn't actually have any content besides the tagline—the photo is just a background image—so adding padding moves the tagline div down and to the right.

CHAPTER
12

Building Float-Based Layouts

Float-based layouts take advantage of the *float* property to position elements side by side and create columns on a web page. As described in Chapter 7 (page 169), you can use this property to create a wrap-around effect for, say, a photograph, but when you apply it to a tag, *float* becomes a powerful page-layout tool. The *float* property moves a page element to one side of the page (or other containing block). Any HTML that appears below the floated element moves up on the page and wraps around the float.

The *float* property accepts one of three different values—*left, right,* and *none.* To move an image to the right side of the page, you could create this class style and apply it to the <img> tag:

```
.floatRight { float: right; }
```

The same property applied to a tag full of content can also create a sidebar:

```
#sidebar {
  float: left;
  width: 170px;
}
```

Figure 12-1 shows these two styles in action.

Note: The *none* value turns off any floating and positions the element like a normal, unfloated element. It's useful only for overriding a float that's already applied to an element. You may have an element with a particular class such as "sidebar" applied to it, with that element floating to the right. But on one page you may want an element with that class to *not* float, but to be placed within the flow of the page, like this Note box. By creating a more specific CSS selector (see page 96) with *float: none,* you can prevent that element from floating.

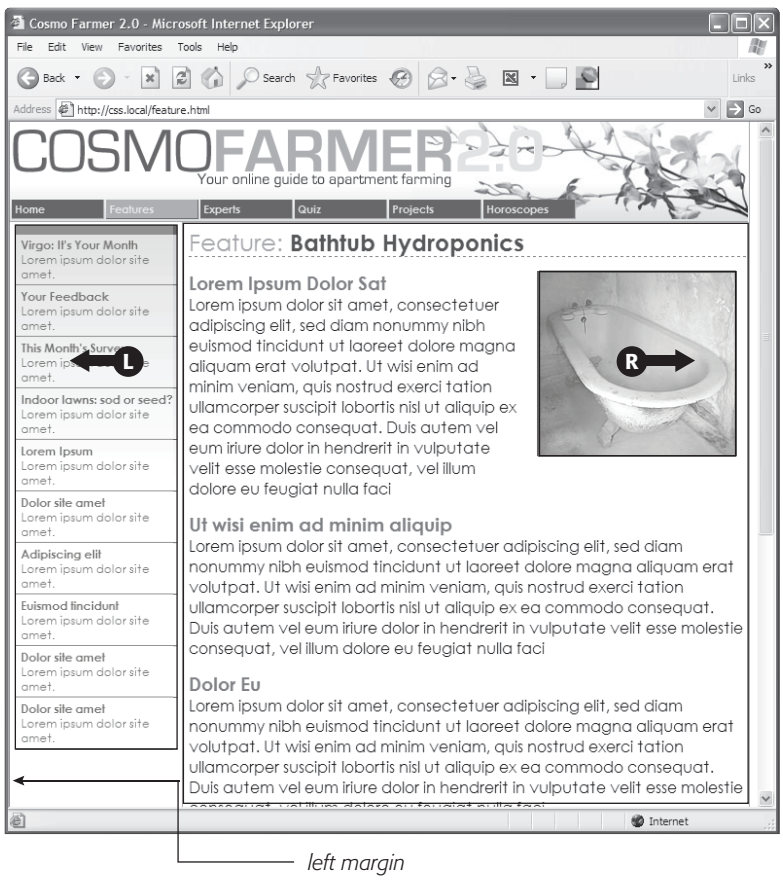


Figure 12-1: *You can use the float property to lay out a web page with multiple columns. On this page, a block of content is floated to the left edge. The sidebar has a set width, but the main content doesn't, which makes this design a liquid layout (page 300). The main section of the page simply expands to fill the width of the browser window. In the upper right, the bathtub photo is floated to the right.*

A simple two-column design like Figure 12-1 requires just a few steps:

1. **Wrap each column in a tag with an ID or class attribute.**

   In Figure 12-1, the news items listed in the left sidebar are wrapped in one —* *—and the main content in another div—* *.

2. **Float the sidebar either right or left.**

   When you work with floats, the source order (the order in which you add HTML to a file) is important. The HTML for the floated element must appear *before* the HTML for the element that wraps around it.

   Figure 12-2 shows three two-column layouts. The diagrams on the left side show the page's HTML source order: A for the banner, followed by a for the sidebar, and, lastly, a for the main content. On the right side, you see the actual page layout. The sidebar comes *before* the main content in the HTML so it can float either left (top, bottom) or right (middle).

3. **Set a width for the floated sidebar.**

   Unless you're floating an image with a predefined width, you should always give your floats a width. This way, you create a set size for the floated element, letting the browser make room for other content to wrap into position.

   The width could be a fixed size like 170px or 10em. You can also use percentages for a flexible design that's based on the width of the browser window. (See page 120 for more about the pros and cons of the different measurement units.) If the sidebar is 20 percent wide, and the browser window is 700 pixels wide, then the sidebar will be 140 pixels wide. But if your visitor resizes the window to 1000 pixels, then the sidebar grows to 200 pixels. Fixed-width sidebars are easier to design for, since you don't have to consider all the different widths the sidebar might stretch to. However, percentages let you maintain the same proportions between the two columns, which can be more visually pleasing.

Note: When the overall page design is a fixed width (as described in the box on page 154), percentage width values for the sidebar are based on the fixed-width containing element. The width isn't based on the window size and won't change when the browser window changes size.

---

4. **Add a left margin to the main content.**

   If the sidebar is shorter than the other content on the page, the text from the main column wraps underneath the sidebar, ruining the look of two side-by-side columns (see Figure 12-16 for an example). Adding a left margin that's equal to or greater than the width of the sidebar indents the main content of the page, creating the illusion of a second column:

```
#main { margin-left: 180px; }
```

   By the way, it's usually a good idea to make the left margin a little bigger than the width of the sidebar: This creates some empty space—a white gutter—between the two elements. So, when you use percentages to set the width of the sidebar, use a slightly larger percentage value for the left margin.

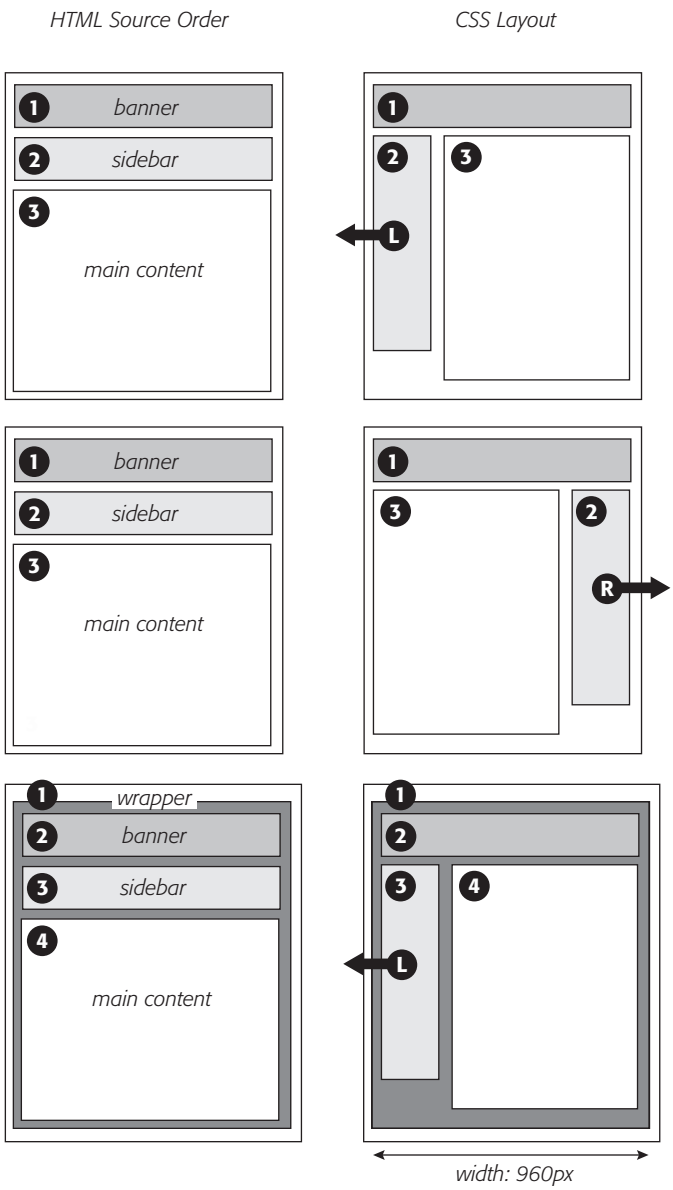


Figure 12-2:
Creating a two-column layout is a simple matter of floating a tag to the left (top). To make a sidebar move from the left to right side of the page (middle), just change the sidebar's CSS styling to float: right. You don't need to make any other changes to your CSS or HTML.

Avoid setting a width for the main content div. It's not necessary, since browsers simply expand it to fit the available space. Even if you want a fixed-width design, you don't need to set a width for the main content div, as you'll see in the next section.

Applying Floats to Your Layouts

Now that you've learned a basic two-column liquid layout, you can adapt it in countless ways. Converting it into a fixed-width layout is a snap. Simply wrap all the tags within the page's body inside *another* (like * *). Then, create a style for that new container element that has a set width, such as 960 pixels (see Figure 12-2, bottom). That width setting constrains everything inside the container box.

Tip: It's also possible to create a fixed-width page without resorting to the extra wrapper div: set a width on the <body> tag. You already saw an example of this technique in the tutorial on page 176.

Expanding it into a three-column design isn't difficult, either (Figure 12-3). First, add another between the two columns and float it to the right. Then add a right margin to the middle column, so that if the text in the middle column runs longer than the new right sidebar, it won't wrap underneath the sidebar.

The rest of this section explores more CSS layout techniques that use float-based layouts.

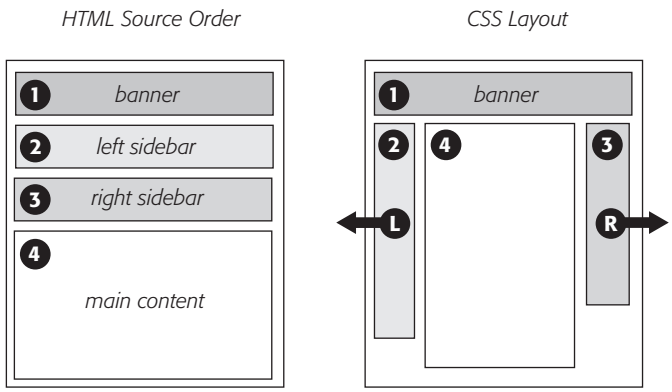


Figure 12-3:
A three-column design uses the same concepts used to create a two-column design. In this case, you float both the left and right sidebars and add both left and right margins to the center column. The left-hand diagram shows the order of the HTML; the right side shows what the web page looks like.

Floating All Columns

It's perfectly possible to float *every* column, not just the left and right sidebars. You could float the first sidebar to the left, the middle column to the left, and the right sidebar to the right, as shown in Figure 12-2, top. This approach lets you put more than three columns in your design. You can float four or more columns, as long as there's room for all the floats to fit side by side.

When you float all columns in a design, you need to pay close attention to the widths of each column. If the total width of all the columns is less than the space available—for example, if the browser window is smaller or the columns are placed inside another with a set width—then the last column drops down below the others. (You can read a solution to this dropping float problem on page 330.)

UP TO SPEED

You Don't Have to Reinvent the Wheel

If terms like *liquid layout* and *containing element* sound a little intimidating, don't give up. First of all, the tutorials beginning on page 318 walk you step by step through the process of laying out web pages with CSS. But there's no law saying you have to create your own CSS layouts from scratch. On the Web, you'll find plenty of pre-built and tested designs you can make your own. The Layout Gala site offers 40 different CSS designs that work in most common browsers, including Internet Explorer 5 (*http://blog.html.it/layoutgala/*). The designs are just basic skeletons consisting of tags and the CSS that positions them. All you need to do is fill them with your own design touches like font styling and imagery. If you're into choice, Jacob Meyers offers 224 different layouts for you to choose from at *http://layouts.ironmyers.com*.

There are also quite a few *layout generators*—online tools that let you customize basic requirements like the number of columns you want, whether you're after a liquid or fixed layout, and so on. The Grid System Generator (*www.gridsystemgenerator.com*) lets you define the width of the page, how many columns you'd like and the margin between columns. You can then download HTML and CSS files with the code created for you. At *www.pagecolumn.com*, you'll find a similar tool that provides different types of layouts including liquid and fixed-width layouts.

In addition, floating more than just the sidebars lets you change the order of your divs in the HTML. Take, for example, the left diagram in Figure 12-3, which shows the order of the tags for that page. Because of the way floated elements work, they must appear before any content that wraps around them, so in this example, the main content area must go *after* the sidebars.

The order of the tags in the HTML may not seem like a big deal until you try to browse the web page *without* CSS, which is the case for many alternative browsers, including screen readers that read a page's content aloud to visually impaired visitors. Without CSS, all the sidebar material (which often includes navigational elements, ads, or other information that's not relevant to the main topic of the page) appears before the content the visitor came to read in the first place. The inconvenience of having to scroll past the same sidebar content on each page will turn off some visitors. Furthermore, your page is less accessible to vision-impaired visitors, who have to listen to their screen readers read off a long list of links and ads before coming to any real information.

And if that doesn't sway you, you've got the search engines to worry about. Most search engines limit the amount of HTML they read when searching a site. On a particularly long web page, they simply stop at a certain point—possibly missing important content that *should* be indexed by the search engine. Also, most search engines give greater value to the HTML near the beginning of the file. So if you're worried about getting good placement in search engine results, it's in your best interest to make sure the important content is as close as possible to the top of the page's HTML code. Finally, floating every column also avoids a 3-pixel bug that affects Internet Explorer 6 and earlier (see page 335).

In the top-left diagram in Figure 12-4, the main content's HTML is between the left and right sidebars, which is better than having it after both sidebars. You can even put the main content before *both* sidebars' HTML by wrapping the main content and left sidebar in one , floating that left, and then floating the main content right and the left sidebar right *within* that (Figure 12-4, bottom). Voilà—the main column's HTML falls before the other tags.

Floats Within Floats

The bottom diagram in Figure 12-4 illustrates another useful technique—floating elements *within* floats. Imagine that the main content (3) and the left sidebar (4) divs didn't exist, and only the column wrapper (2) and the right sidebar (5) were left. You'd have just a basic two-column design, with one column floated left and another floated right. In fact, it's still a two-column design even with the two divs (3 and 4) placed back inside the column-wrapper div. The difference is that the left column is itself divided into two columns.

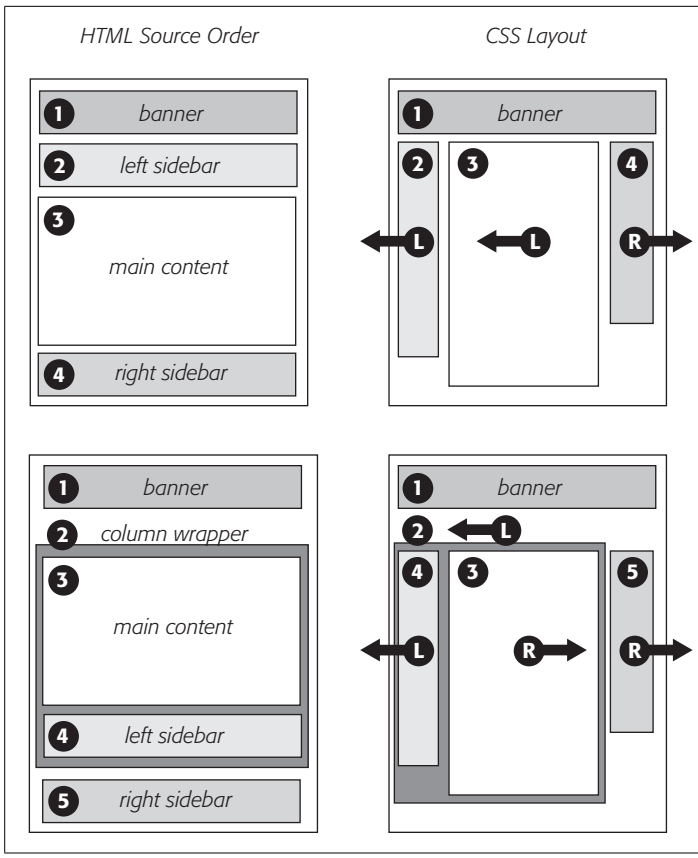


Figure 12-4: *There's more than one way to float a page. CSS's flexibility provides many ways to create a multi-column layout. Using different methods of floating, you can easily change the source order of the HTML for the page, as you can see in the diagrams at left. Right-side diagrams represent final web page layout.*

Although this arrangement is a bit confusing, it's also helpful in a number of instances. First, it lets you add columns within a column. The three-column layout at the top of Figure 12-5 shows a small Tips box in the middle column that also has two columns inside it. By nesting floats inside floats, you can create some very complex designs.

In addition, when you have just a couple of floated elements divided into columns with additional floated elements, it's easier to calculate the widths of page elements. That's a good thing when you need to control float drops (page 330) and other problems that occur when columns get too wide.

Using Negative Margins to Position Elements

While the last section provided a few techniques that let you reorder the HTML for each column in a design, there's an even more advanced technique that gives you complete control over the placement of your columns. By using *negative* margins, you can put your tags in any order you wish in your HTML, and then position them in a different order onscreen—thereby keeping your pages accessible to screen readers, text browsers, and search engines. In addition, since you don't need to worry about the source order, you can always change the design of a page—maybe float the main column to the far right and the two sidebars to the left—without having to change the HTML of the page. Be warned, though, this method involves math and some mind-bending uses of CSS. You can live a healthy, happy life using just the float methods presented earlier in this chapter. But if you're up for some adventure, read on. (The tutorial also presents a hands-on demonstration of this method, starting on page 338.)

Note: The technique described on these pages works only for fixed-width layouts, where you know the exact width of each column. For another method that achieves the same results with a liquid layout (where you don't know the exact width of the middle column), visit *www.alistapart.com/articles/holygrail*. Also, you'll find a completely liquid design using negative margins–all columns change width with the browser window–described in the book *Flexible Web Design* by Zoe Mickley Gillenwater (New Riders).

Here's how to lay out a page using negative margins:

1. **Add a wrapper around all of the page content.**

   This step provides a container for setting a fixed width for all of the content on the page and gives you an easy way to make the banner, columns, and footer the same width.

2. **Set a width for the wrapper .**

   Create a style for the wrapper div that gives it a set width. For example, 960 pixels is a typical size that accommodates visitors with 1024×768 pixel monitors.

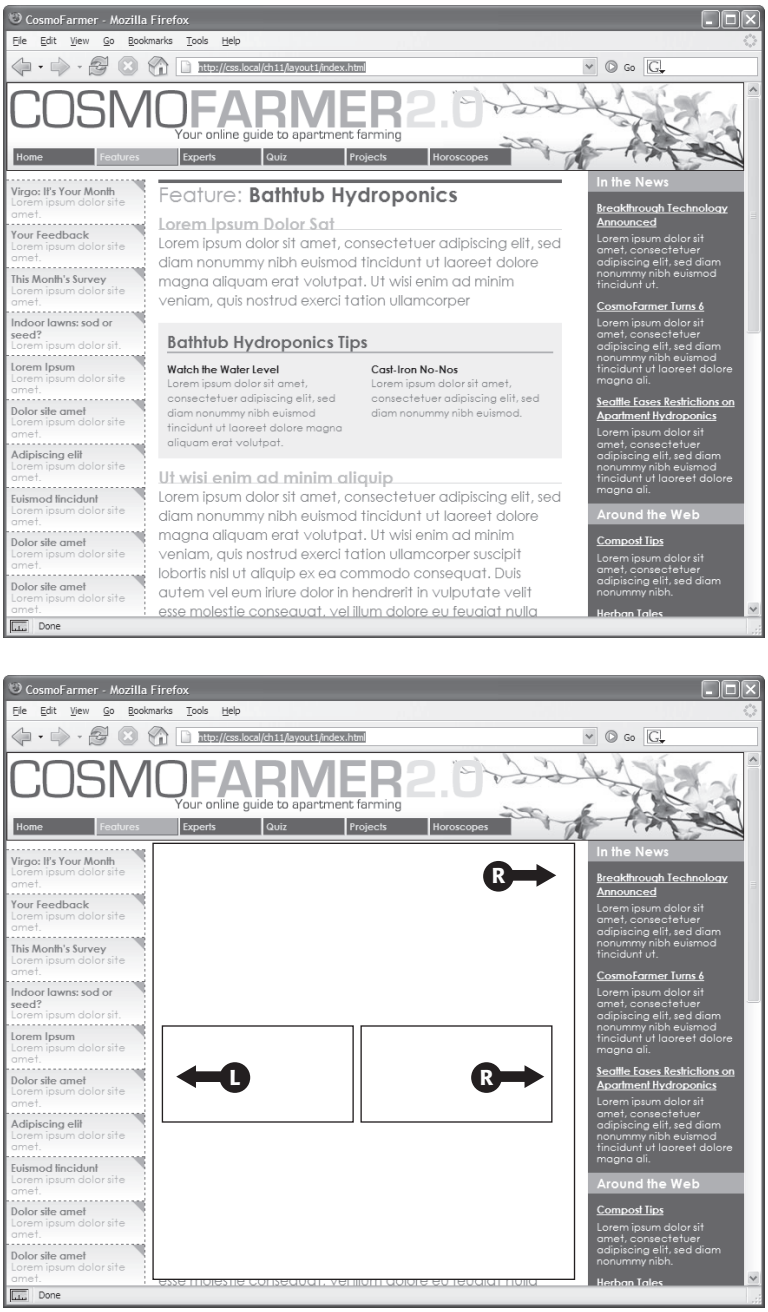


Figure 12-5:
Top: Create columns within columns by floating elements inside another floated element. In the middle column, the Tips box provides a simple two-column note that adds visual interest to the page.

Bottom: It doesn't matter which direction the container is floated (in this instance, to the right)—you simply float the two additional columns left and right.

POWER USERS' CLINIC

Finding the Middle Ground

The two types of layouts–fixed-width and liquid–have their pluses and minuses. A fixed-width design gives you a lot of control and lets you make sure that your layout looks exactly the same even on different-sized monitors. However, on a particularly small monitor, a fixed-width page may force your visitor to scroll horizontally to view the whole page. On a really wide monitor, your lovely fixed-width design may look like a small sliver in a sea of empty space.

Liquid layouts solve these problems, but have their own limitations as well. On a small screen, a liquid layout may contract so much that the design falls apart. And on a really wide screen, your design may stretch so far that your visitors get eye cramps trying to read 30-inch-wide lines of text.

Several CSS properties aim to solve this problem: *min-width, min-height, max-width,* and *max-height.* The *min-* properties instruct a browser to make an element *at least* as wide or tall as the specified value. You can apply *min-width* to the <body> tag to control the total width of the page's content, like so: *body { min-width: 760px; }*. If a visitor expands his browser window to 1000 pixels, the page content stretches to fit the space. However, if he makes the window 500 pixels, then the content remains 760 pixels wide and the browser adds horizontal scrollbars. The *min-height* property does the same thing, but for an element's height.

On the other hand, the *max-* properties limit an element to a maximum size. The styled element can get smaller than that value, but never larger. With them, you can make sure your pages don't get too wide to be unreadable. Say you create a style for the <body> tag with this property: *max-width: 1200px.* Now, if a visitor expands her browser window to 1800 pixels wide (on her unbelievably expensive 30-inch monitor), the page content doesn't sprawl all over the screen, but remains 1200 pixels wide. *Max-height* does the same thing, but for the height of a style.

By combining the two properties, you can create a style that expands and contracts only within set dimensions, so your design never gets too small or too big:

```
body {
  min-width: 760px;
  max-width: 1200px;
}
```

The only problem with these otherwise useful properties: Internet Explorer 6 and earlier ignores them completely. If you're feeling adventurous, there's a JavaScript technique that dynamically changes the dimensions of web page elements based on the size of the browser window: *www.doxdesk.com/software/js/minmax.html.*

3. **Wrap each column in a tag with an ID or class attribute.**

   This part of the process is the same as creating any float-based layout. It defines the basic layout blocks (Figure 12-6, top left).

4. **Float the divs for each column.**

   You must float each of the columns in your design. When you float them all to the left, they sit side by side. Another option is to float the left sidebar and main content left and the right sidebar right. (Since all columns are enclosed in the wrapper from step 1, the right sidebar stays close to the central column.)

Note: If you're not using a wrapper div, as described in step 1, then you *must* float the right sidebar *left.* Otherwise, it clings to the right edge of the browser window, potentially creating a large empty space between the right sidebar and the main content.

5. **Set widths for each column.**

   You should always specify a width for a floated element. Depending on your design, you can also add padding, margins, and borders. Keep in mind, though, that the total width of the three columns in the browser window is the sum of the CSS *width* property values *and* the left and right margins, padding, and borders for each column. Yep, here's where the math comes in. If you're not careful, the total width of the columns may exceed the width provided by the wrapper , causing the dreaded float drop (see page 330).

Note: The *width* property doesn't define the total width that an element takes up onscreen. Margins, padding, and borders count, too. If this stuff doesn't sound familiar, then read page 151 to brush up on the CSS box model theory.

---

6. **Add a left margin to the main column.**

   Here's where the negative-margin technique differs from the layout methods described earlier in this chapter. The left margin should *equal the space required for the left sidebar*. If the left sidebar is 160 pixels wide, then set the left margin of the main column to 160 pixels: *margin-left: 160px*. The top-right diagram in Figure 12-6 shows the page so far. The crosshatched area to the left of the main column (3) represents that column's left margin.

   Or, say the left sidebar is 160 pixels wide and you want 10 pixels of space between it and the main content. In that case, add 10 pixels to the main column's left margin: *margin-left: 170px*.

   Finally, when the left sidebar has padding and borders, you need to factor those in as well. Suppose the left sidebar is 160 pixels wide, has a 2-pixel right border and 10 pixels of left and right padding, and you want 10 pixels of space between it and the main column. Add all of these together to get the left margin value for the main column. So, 160 (width value) + 2 (right border) + 10 (left padding) + 10 (right padding) + 10 (gutter between sidebar and main column) = 192 pixels (*margin-left: 192px*).

7. **Apply a negative margin to the left sidebar .**

   At this point, the left sidebar is floated to the left, but since it comes after the main column in the HTML's source order, it appears on the right edge of the main column (Figure 12-6, top right). To get it into position, use a negative margin, which—believe it or not—pulls the sidebar clear across the main column to the left edge of the page. The only trick is figuring out what that negative margin value should be to move the sidebar the exact distance required to position it at the left side of the page. In other words, the left margin must equal the distance from the right edge of the main column to the left edge of the wrapper .

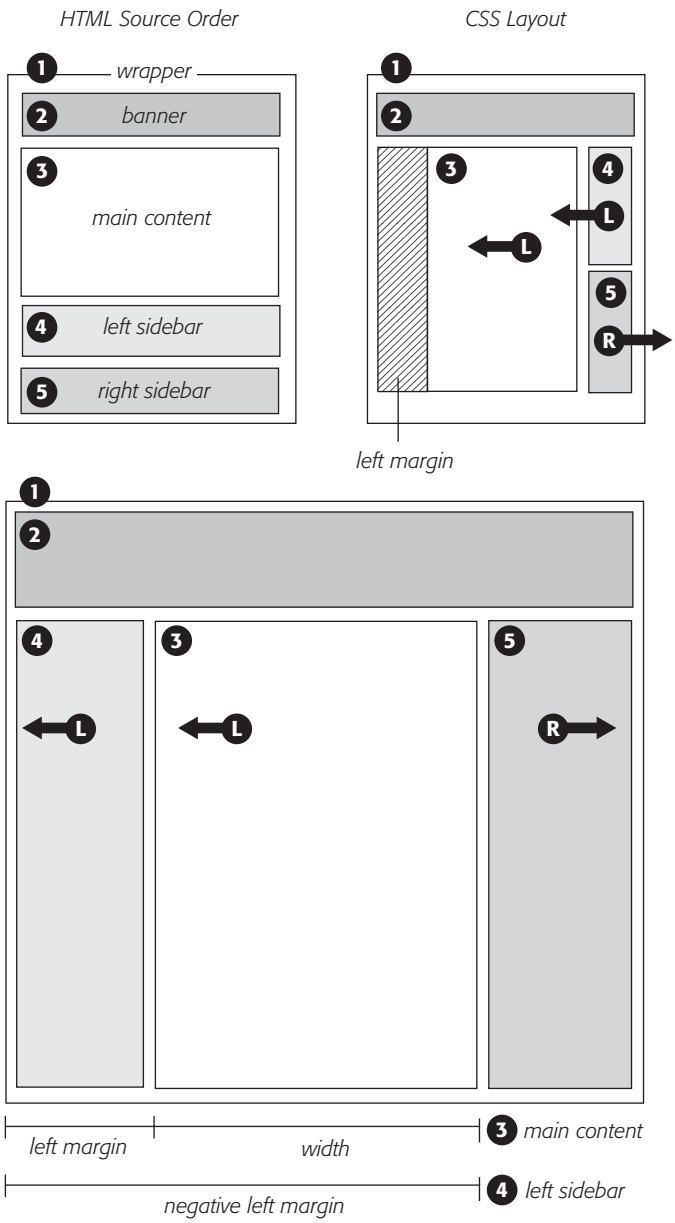


Figure 12-6:
Yes, Virginia, you can put three divs in any order in your HTML (top left) and position them in any order on the screen (bottom). The secret is using negative margins to pull an element that appears later in the HTML over and past an element that precedes it. In the top-right diagram, notice that the left sidebar (4) floats next to the main content column (3); adding a negative margin to the left sidebar pulls it into position on the left edge of the page. To make room for that left sidebar, you also add a positive left margin to the middle columns (indicated by the crosshatched box on the top-right diagram).

To determine that value, add the main column's width, left and right margins, left and right padding, and left and right borders. Say the main column is 400 pixels wide, has a 1 pixel border around it, has 10 pixels of left padding and 15 pixels of right padding, and has a 192 pixels left margin to accommodate the left sidebar. Just add the values together to get the left sidebar's left-margin value: 400+1+1+10+15+192 = 619. Then add a left margin to the style formatting the left sidebar, but make its value negative: *left-margin: –619px;*. The minus sign is the critical piece that makes the whole thing work.

8. **Fix the Internet Explorer bugs.**

   When you use negative margins, Internet Explorer 6 and earlier exhibits a weird bug—the *double-margin* bug. In this case, IE doubles the left margin applied to the main column, totally disrupting the design. The fix is to add *display: inline* to the style formatting the *main column*. (Read more about the double-margin bug on page 333.)

Once you get past the math, the negative margin approach rewards you with flexibility. If you want to swap the sidebars so the left sidebar moves to the right and right sidebar moves to the left, then simply swap the styles for those two divs. In other words, set the first sidebar to float right and the second sidebar to float left using a negative left margin. You'll see negative margins in action in the tutorial on page 350.

Overcoming Float Problems

As you get more adventurous with CSS, you'll probably encounter—like many web designers before you—some of the weird intricacies of working with floats. This section describes a few common problems and their solutions. (And if you ever stumble upon a problem not listed here, you can always take it to one of the online forums or discussion lists in Appendix C.)

Note: When it comes to designing pages that work in Internet Explorer 6, there are even more potential pitfalls. So many, in fact, that this chapter has a separate section dedicated to dealing with that one browser. See page 333.

Clearing and Containing Floats

Floats are powerful design tools because they let content flow around them. Floating a photo lets text below it move up and wrap around the image (Figure 12-1). When you're creating float-based column designs, though, sometimes you *don't* want content to move up and next to a floated element. For example, you frequently want to keep copyright notices, contact information, or other housekeeping details at the bottom of your web page, below all other content.

In the two- and three-column designs you've seen so far, if the main column is shorter than either of the floated sidebar columns, a footer can move up and around the left floated column (Figure 12-7, left). To make the footer stay down below the sidebars, you can use the *clear* property (page 173). This property prevents an element from wrapping around floats. You can make an element drop below a left-floated object (*clear: left;*) or a right floated object (*clear: right;*). For footers and other items that need to appear at the bottom of the page, you should clear *both* left and right floats, like this:

```
#footer { clear: both; }
```

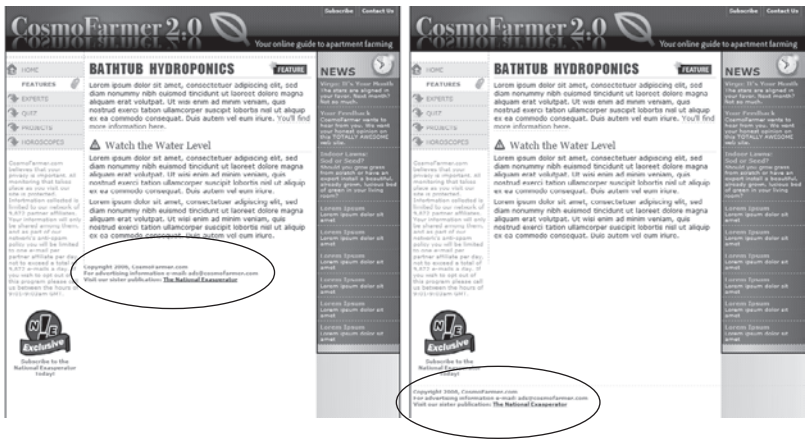


Figure 12-7: *You don't always want an item to wrap around a floated element (left). Copyright notices and other material that belongs at the bottom of a page usually need to clear any floats they encounter. To achieve this, use the clear property for the copyright notice to force it to the bottom of the page below any floated elements.*

Another problem occurs when you float one or more elements inside a non-floated containing tag like a tag. When the floated element is taller than the other content inside the div, it sticks out of the bottom of the enclosing element. This snafu is especially noticeable if that tag has a background or border. The top of the web page in Figure 12-8 shows a tag that has an <h1> tag and two columns created by floating two divs. The background and border, which appear only around the <h1> tag, are actually applied to the entire enclosing , including the area where the two columns are. However, since the columns are floated, they pop out of the bottom instead of expanding the borders of the box.

Note: For a good explanation of why floated elements can break outside of their containing blocks, read *www.complexspiral.com/publications/containing-floats*.

A similar problem happens in the bottom example in Figure 12-8. In this case, each image is floated left inside a containing that has a border. Because the images are taller than their boxes, they pop out of the bottom. Unfortunately, this example is even worse than the previous one, because each image causes the image below it to wrap to the right, creating an ugly staggered effect.

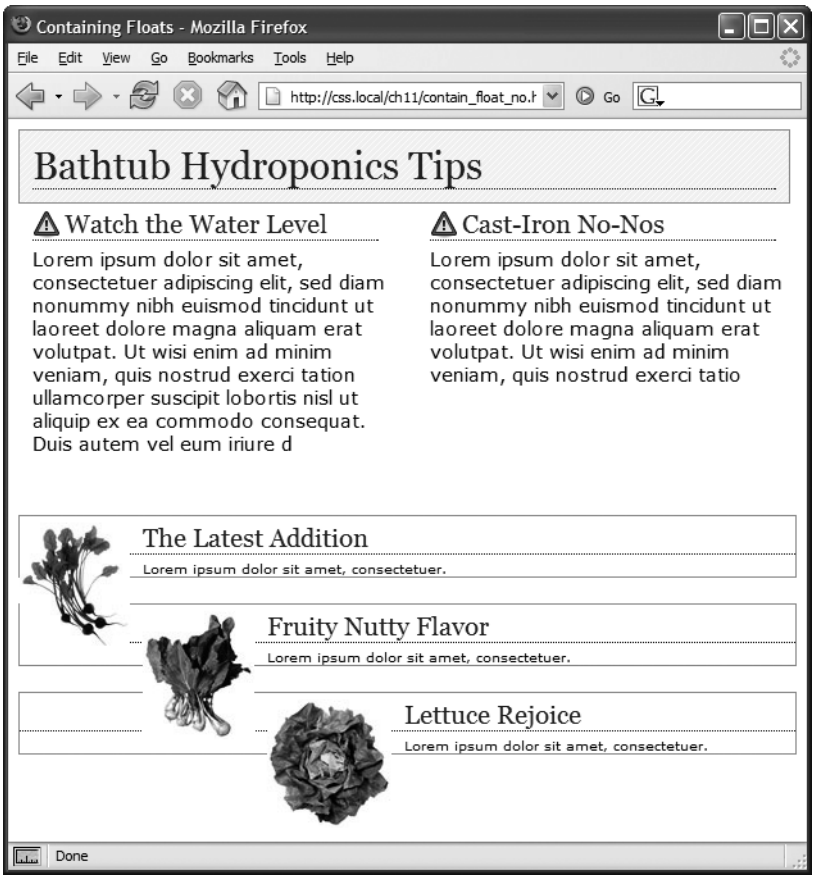


Figure 12-8: *A floated element can escape its containing if it's taller than the container itself. If the containing tag includes a background or border, then the escaping elements can look like they're not even part of the container (top of page). In addition, a floated element can bump into other elements–including other floats, thereby creating a "stair-stepped" effect (bottom of page) instead of the nicely stacked boxes in Figure 12-9.*

You have many ways to tackle the problem of these renegade floating elements. We'll cover all of these techniques below, because it's good to have more than one solution under your belt.

- **Add a clearing element at the bottom of the containing div.** This solution is the most straightforward. Simply add a tag—like a line break or horizontal rule—as the last item in the containing the floated element (that is, right before the closing tag). Then use the *clear* property to force that extra tag below the float. This trick makes the enclosing div expand, revealing its background and border. You can add a line break—
 (HTML) or
 (XHTML)—*before* the closing tag and add a class to it: *<br class="clear"/>*. Then create a style for it, like this:

  ```
  br.clear { clear: both; }
  ```

  The problem with this technique is that it adds extra HTML.

- **Float the containing element.** An easier way is to just float the containing the floated elements as well. A floated container expands to fully contain any floated elements inside it. In Figure 12-9, top, the containing the heading and two floated columns is floated to the left of the page. In the process, its entire box—background and borders—expands to fit everything inside it, including the floated elements. Strange, but true.

  If you go this route, make sure you add a *clear* property to whatever element follows the floated container to make sure the following element drops below the container.

- **Use *overflow:hidden*.** Another common technique is to add the following two properties to a style for the containing block:

```
overflow: hidden;
zoom: 1;
```

  The *overflow:hidden* property is just another one of those weird CSS things: It forces the containing block to expand and contain the floated elements. The *zoom:1* is just for Internet Explorer 6 (and earlier)—it won't affect any other browser. If you want you can put this property into a separate style sheet using IE conditional comments described on page 433. (The whole *zoom:1* weirdness is described in the box on page 173.)

  In general, this technique works very well. However, if you have any absolutely positioned elements (see page 356) inside the container, they may not show up. You can get into this situation if you have a drop-down menu inside another tag and the drop-downs, when they appear, are supposed to appear outside the container element. If that's the case, use one of the other methods described on these pages.

- **Use the "easy clearing method."** With this technique, created by Tony Aslett of CssCreator.com and the folks behind PositionIsEverything.com, you add just a few styles and a class name to the tag containing the floated element. Of course, the name "easy clearing method" is a bit of a misnomer, since the CSS behind it is anything but easy. You must add three different styles to your style sheet: One applies to Firefox, Safari, Internet Explorer 8, and other modern browsers; another style applies to IE 7 and earlier. The whole shebang looks like this:

```
.clear:after {
  content: ".";
  display: block;
  height: 0;
  font-size: 0;
  clear: both;
  visibility: hidden;
}
.clear {
  zoom:1;
}
```

The last two styles make IE 5, 6, and 7 "have layout" as described in the box on page 338.

Once you've added these styles to a style sheet, you simply add the class name to the div *containing* the escaping floats: * *. See the bottom of Figure 12-9. This technique is very reliable; however, unlike the previous two techniques, you do have to add extra HTML to the page.

Note: The *zoom* property makes your page flunk the CSS validator check. To get around *that,* you can put this rule (along with any other IE-only styles) into an external style sheet and attach it to your web pages using any of the tricks described in Chapter 15 (page 421).

Figure 12-9: *Don't let a float escape! You have several ways to make floated elements stay inside the borders and backgrounds of their containing tag. Two methods are pictured here, though any of the four discussed would produce the same results. Floating the container works (top), as does a special combination of CSS—affectionately called the "easy clearing method" (bottom). Both methods result in borders and backgrounds that surround the container and the floats inside.*

Creating Full-Height Columns

HTML tables aren't great for web page layout for several reasons. They add lots of code, are difficult to update, and don't work well on alternative browsers like those used by cellphones. But tables have one thing going for them in the layout department—the ability to create columns of equal height. Equal-height columns let you add a background color or graphic to one column and have it fill the entire height of the page. The backgrounds of the two sidebars in the top image of Figure 12-10 fill the screen height, creating solid, bold stripes on either side of the page.

CSS floats, on the other hand, fall a bit short in this regard. Table cells in a row are always the same height, which isn't true of divs. The height of a float is usually dictated by the content inside it. When there's not a lot of content, the float is not very tall. Since a background image or background color fills only the float, you can end up with solid-colored columns that stop short of the page bottom, as in the circled areas in Figure 12-10, bottom.

As with most problems related to CSS, there's a workaround. The secret is to add background images to a tag that *wraps around* the stubby sidebar and the other columns on the page. Say your HTML has two tags that contain the content for a left sidebar and the page's main content:

```
<div id="sidebar">Sidebar content here</div>
<div id="main">Main content for page, this column has a lot of text and is
much taller than the sidebar.</div>
```

The sidebar is floated to the left edge of the page and has a width of 170 pixels. Because there's less content in the sidebar, it's shorter than the main text. Suppose you wrap that HTML in a wrapper tag, like so:

```
<div id="wrapper">
<div id="sidebar">Sidebar content here</div>
<div id="main">Main content for page, this column has a lot of text and is
much taller than the sidebar.</div>
</div>
```

That outer div grows to be as tall as the tallest element inside it, so even if the *#main* div is very tall, that wrapper div will be just as tall. Here's the magic: Create a style for the wrapper with a background image the width of the sidebar, in the background color you want for the sidebar. That way, if the background image tiles vertically, it forms a solid bar the height of the wrapper (Figure 12-10, top).

```
#wrapper { background: url (images/col_bg.gif) repeat-y left top; }
```

Web browsers display that background image directly *under the sidebar,* creating the illusion that the sidebar has a background color. In essence, you create a "faux column" in the words of Dan Cederholm, the fellow who first publicized this technique.

Figure 12-10:
Full-height columns with bold background colors are a common design technique. The left and right sidebars (top) show how solid backgrounds can help visually define the different areas of a page. When a sidebar's background stops abruptly (circled at bottom), you get extra white space that's both distracting and unappealing.

Note: You're not limited to solid colors either. Since you're using an image anyway, you can make a decorative pattern that tiles seamlessly down the left side of the page.

Reproducing this result for two columns is just a little more involved. First, add two wrapper divs:

```
<div id="wrapper1">
<div id="wrapper2">
<div id="sidebar1">Sidebar content here</div>
<div id="sidebar2">Second sidebar</div>
<div id="main">Main content for page, this column has a lot of text and is
much taller than the two sidebars.</div>
</div>
</div>
```

Note: If the wrapper and each column are all fixed widths, you can create this "faux column" look for both the left and right columns with just a single image and wrapper div. Just make the graphic as wide as the wrapper, with the left side of the graphic being the color and width of the left sidebar, the right side of the graphic the color and width of the right sidebar, and the center part of the graphic matching the background color of the center column.

If the first sidebar appears on the left side of the page and the second sidebar appears on the right side, you create two styles. Apply one style to the first wrapper tag to add a background to the left sidebar; apply one to the second wrapper to add a background to the right sidebar (Figure 12-11, bottom).

```
#wrapper1 { background: url(images/col1_bg.gif) repeat-y left top; }
#wrapper2 { background: url(images/col2_bg.gif) repeat-y right top; }
```

When adding a background image to the right-hand column, make sure you position the background image in the top right of the second wrapper, so that it falls underneath the second sidebar on the right side of the page.

Note: If you use percentages to define the width of columns, then it's more difficult to create the illusion of full-height columns using graphics. But it's not impossible. To learn how, go to *www.communitymx.com/content/article.cfm?page=1&cid=AFC58*.

Preventing Float Drops

Suddenly, one of your columns simply drops down below the others (Figure 12-12, top). It looks like there's plenty of room for all the columns to coexist perfectly side by side, but they just don't. You've got the dreaded float drop.

A floated column drops down because there's not enough room to fit it. Be careful if you set widths for *each* column. If the available space in the browser window (or the containing block in a fixed-width design) is less than the *total* widths of the columns, then you're asking for a float drop. Also, keep the CSS box model in mind: As discussed in the box on page 154, the width of an element displayed in the browser window isn't the same as its *width* property. The displayed width of

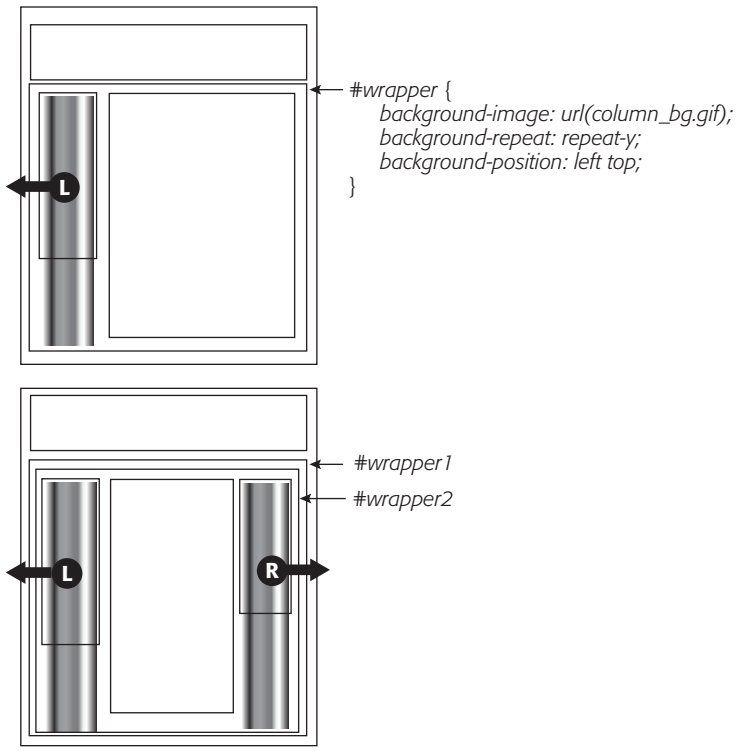


Figure 12-11: *You sometimes need to think outside the tag for creative solutions to CSS problems. To get full-height backgrounds behind floated columns, you need to resort to some extra tags that wrap around all of the main columns of text. These divs grow to be the height of the tallest column in the group. By adding background images to these wrapper divs, you create the appearance of equal-height columns.*

any element is a combination of its width, left and right border sizes, left and right padding, and left and right margins. For the columns to fit, the browser window (or containing block) must accommodate the combined total of all those widths.

Take, for example, the simple three-column layout in Figure 12-12. As you can see in the top example, the three columns don't fit. Here's a breakdown of the math behind the problem:

- **Wrapper div.** A fixed-width wrapper tag encloses the entire design. Its *width* property is set to *760 pixels,* so all three columns can't total more than that.
- **Sidebar 1 (left side).** Its width is 150 pixels, but it also has 10 pixels of padding, making its total onscreen width *170 pixels.* (150 + 10 pixels of left padding + 10 pixels of right padding.)
- **Main content.** The main content is *390 pixels* wide, with a 1-pixel border and 15 pixels of left and right margin for a total width of *422 pixels.* (You may need a calculator for this one: 390 + 1 [left border] +1 [right border] + 15 [left margin] + 15 [right margin].)
- **Sidebar 2 (right side).** This element has a *width* property set to 150 pixels, with 10 pixels of left and 10 pixels of right padding: *170 pixels,* just like Sidebar 1.

The actual widths of each element add up to a grand total of *762 pixels*. That's two pixels more than the width of the wrapper . The middle image of Figure 12-12 shows an outline around the main content indicating its total width plus margins. Just those measly two extra pixels of width (circled) are enough to cause a column to drop down. The solution: Remove 2 pixels of space from any of the elements. Changing the main content div's left and right margins from 15 to 14 pixels buys you the extra room needed for all three columns to fit side by side (bottom).

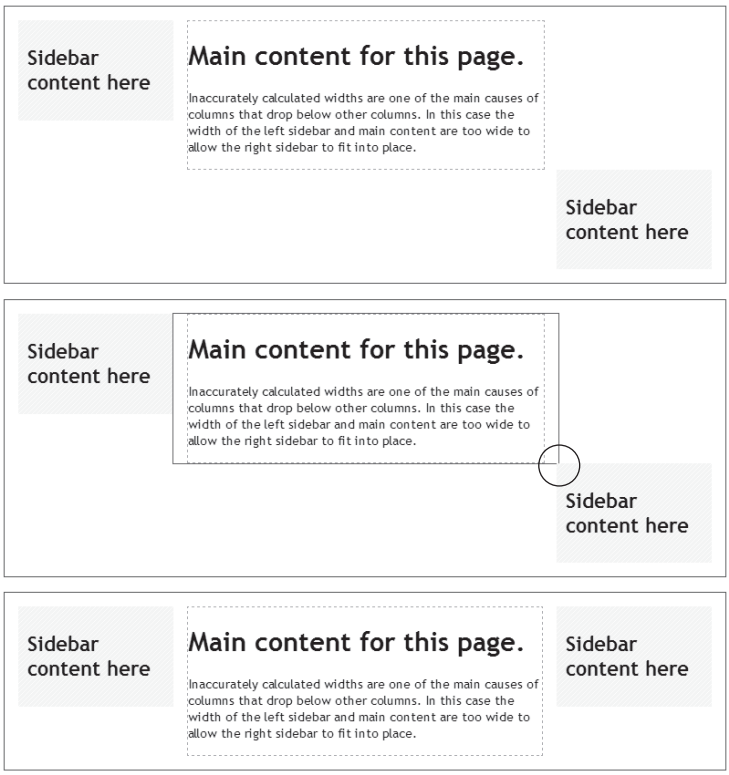


Figure 12-12:
It takes only a single pixel or two to ruin a design. When the width of floated elements are just a hair wider than their containing block (like a with a set width, or even the browser window itself), the last floated element drops below the others (top). The actual width of an element combines many CSS properties. In the middle image, the outline around the main content area shows that it's a tad too wide to allow the right sidebar to fit (circled). Adjusting any of the elements by removing a bit of width, padding, or margins can solve the problem (bottom).

While miscalculated column widths are the most common cause of dropping floats, they're not the only cause. Here are a few other culprits:

- **Rounding errors in percentage widths.** Be careful when setting widths in percentages. Browsers sometimes make mistakes when calculating the actual number of pixels needed to display something on the screen. That is, they can round numbers up, making elements slightly too large for the available space. So err on the side of caution and make your percentage widths total slightly less than 100 percent.

- **Internet Explorer 6's double-margin bug.** Under some conditions, Internet Explorer 6 and earlier doubles the margin applied to a floated element, making the element wider than in other browsers. When you have a float drop occurring only in IE 6 or earlier, this bug may be the culprit. See below for a solution.
- **Internet Explorer 6's 3-pixel gap.** Sometimes IE 6 and earlier adds an extra 3 pixels to the side of a float. Again, if you see a float drop only in IE, then this bug could be the reason. See page 335 for an explanation and solution.
- **Italic text.** IE 6 strikes again (noticing a theme here?) If a floated element contains italicized text, then IE 6 sometimes makes the float wider. When there's a float drop and italics inside the float, check to see if the problem is happening in all browsers or only IE. For a solution, you can remove any italics from the sidebar or add *overflow: hidden* to the style formatting the sidebar.

Bottom line: Float drops are always caused by not enough room to hold all of the columns. Rather than striving to use every last pixel of onscreen space, give all your elements a little more wiggle room. Get in the habit of making the overall column widths a bit smaller than necessary, and you'll spend less time troubleshooting float drops.

Handling Internet Explorer 6 Bugs

Internet Explorer 6 has a long history of CSS bugs, especially (and unfortunately) when it comes to float-based layouts. These bugs can affect the placement of floats and the overall width allotted to floated elements. If you're lucky, you may just get a slightly annoying difference in how your web page looks in Internet Explorer versus other browsers. At worst, these bugs can cause significant display problems like the float drops discussed in the previous section. This section tells you the most common problems and how to get around them.

Note: See the box on page 63 to decide how much you need to be worried about Internet Explorer 6.

Double-Margin Bug

Internet Explorer 6 and earlier sometimes *doubles* the size of a margin you've applied to a floated element. The problem occurs only when the margin is in the same direction as the float—a left margin on a left-floated element or a right margin on a right-floated element. In Figure 12-13, there's a left-floated sidebar holding the site's navigation. To add a bit of space between it and the left edge of the browser window, the sidebar has a left margin of 10 pixels.

Most browsers, including Internet Explorer 7 and 8, Safari, and Firefox (Figure 12-13, top), add the requested 10 pixels of space. However, Internet Explorer 6 (bottom) doubles that margin to 20 pixels. Even with relatively small margins like 10 pixels, the visual difference is significant. Furthermore, if the layout is very tight, with precisely measured floated elements sitting side by side, then the doubled margin can easily trigger a float drop (page 330).

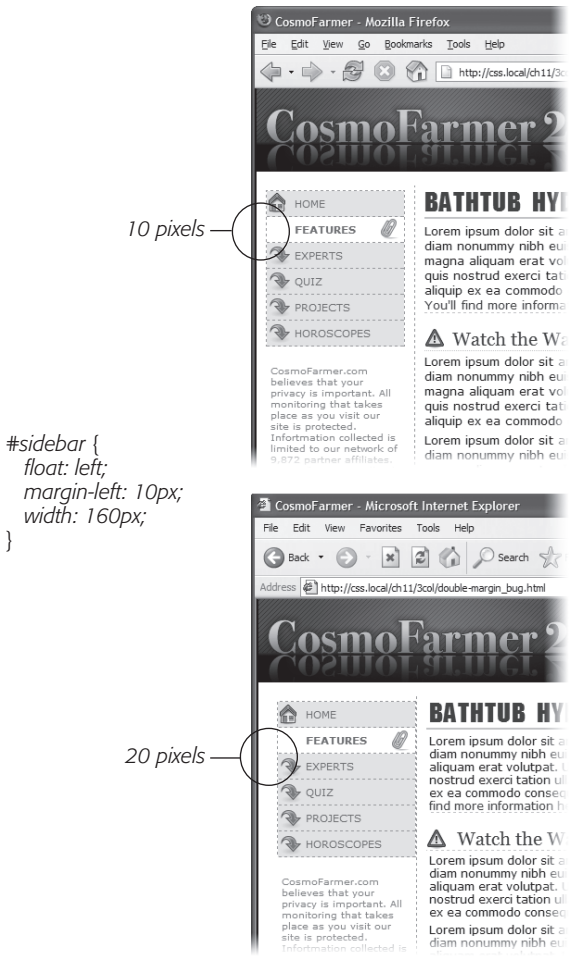


Figure 12-13:
A 10-pixel left margin applied to a left-floated element should, in theory anyway, indent the float 10 pixels from the left edge of the page. Firefox (above) gets it right. But IE 6 (bottom) incorrectly doubles that margin. By adding 20 pixels to the left edge of the sidebar, IE 6 significantly changes the page's appearance.

Note: This margin doubling happens only when the element's margin touches the edge of its containing block. So when an element is floated left against another left-floated element, its left margin *won't* double.

The solution is simple: Add *display:inline;* to the CSS style for the floated element:

```
#sidebar {
  float: left;
  margin-left: 10px;
  width: 160px;
  display: inline;
}
```

In this case, the display property doesn't do anything except fix IE's bug. In fact, the only reason it's there is to force the sidebar element to "have layout," as described in the box on page 338, so you can alternatively use *zoom:1* instead of *display:inline*. Floated elements are always block-level elements, and changing a style's display to inline won't alter that. (See page 160 for more on the display property.) However, even though this added style declaration doesn't adversely affect any other browsers, you may want to put it in an IE-only style using the ** html* hack:

```
#sidebar {
  float: left;
  margin-left: 10px;
  width: 160px;
}
* html #sidebar {
  display: inline;
}
```

Note: Internet Explorer's conditional comments feature provides an even better way to isolate IE-only styles than the ** html* hack. An external style sheet attached to a page using a conditional comment is read only by Internet Explorer; it's ignored by all other browsers. See page 433 for the details.

3-Pixel Gaps

Internet Explorer 6 and earlier inserts an additional three pixels of space between a floated column and a non-floated column. The exact placement of that gap depends on a couple of conditions:

- **The non-floated column doesn't have a set width or height.** If the column next to the float doesn't have any dimensions defined, then you'll see a 3-pixel indent between the edge of the column and the text inside that column. This space appears only along the float, so when the float ends, the text moves back to the left edge of the column (Figure 12-14).

  In this case, the best solution is to live with it. The extra indent isn't terribly distracting and doesn't do anything else weird to the page. But if the perfectionist in you can't let go of this bug, you can fix it by doing what's known as "adding layout" to the non-floated element, as described in the box on page 338. Add an IE 6–only style for that column:

  ```
  * html #mainColumn { zoom: 1; }
  ```

  The downside to fixing this bug is that it triggers the bug discussed next. (See what you get for being a perfectionist?)

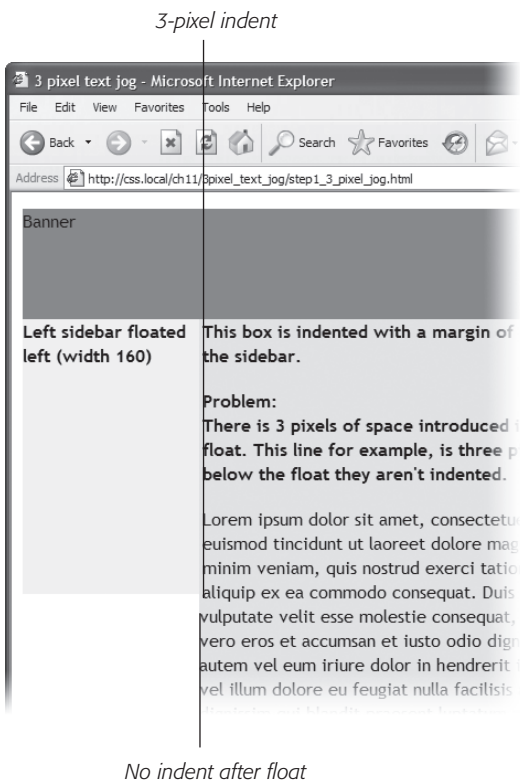


Figure 12-14:
On this page, the left-hand sidebar is floated left, while the central column isn't floated at all. A left margin on the central column indents it far enough to the left so that it won't wrap around the bottom of the sidebar. (This technique is described on page 315.) Unfortunately, Internet Explorer 6 and earlier also adds a small indent to the text in the non-floated column.

- **The non-floated column has a set width or height.** When the column next to the float has a set layout dimension (like *height* in the previous example), another 3-pixel error appears—a small gap between the two columns (Figure 12-15, left). This bug is more serious than the one in Figure 12-14, since this 3-pixel gap can force the second column to drop below the floated element (Figure 12-15, right).

  The solution to this problem is two-fold. First, you must eliminate the left margin of the non-floated column (but for IE 6 and earlier only):

  ```
  * html #mainColumn { margin-left: 0; }
  ```

  Then, you must set the right margin for the floated column to –3 pixels. This pulls the non-floated column back into position:

  ```
  * html #sidebar { margin-right: -3px; }
  ```

  In any normal browser, these styles make no sense. Some determined CSS experts (with time on their hands, apparently) came up with them to make IE behave. For more info on this phenomenon, check out *www.positioniseverything.net/explorer/threepxtest.html*.

Figure 12-15: *Internet Explorer 6 often has trouble with floats. If, for example, a single column is floated left and another non-floated column with a set width wraps around the float, IE 6 and earlier inject a 3-pixel gap between the two columns (left). For designs that have precisely determined widths, that gap can add just enough space to force a column to drop below the floated element (right).*

Another option is to float *all* of the columns. In the examples pictured in Figure 12-14 and Figure 12-15, removing any left margins from the non-floated column and floating it either left or right eliminates *both* 3-pixel problems:

```
#mainColumn {
  float: left;
}
```

This solution seems quick, but it adds a little more complexity, since you have to manage yet another float in the design.

Note: While a lot of bugs were fixed when IE 7 came out, that browser still has a few. You can read about them at *http://css-discuss.incutio.com/?page=IE7*. Fortunately, IE 8, which is quickly replacing IE 7, works very well with CSS.

Other IE Problems

A few more bugs plague float-based layouts in Internet Explorer 6. Many of them are so rare you may *never* come across them in your web design projects. But just in case, here are a couple of weird things that can happen when viewing a page in IE 6 or earlier.

- **If the bottom part of a floated element just disappears,** it may be the *guillotine bug*. For information on the cause and solution (which fortunately has nothing to do with sharp, dangerous objects), visit *www.positioniseverything.net/explorer/guillotine.html*.
- **Content inside a floated element doesn't appear,** but sometimes reappears if you resize the browser window or scroll. This oddity is aptly called the *peek-a-boo bug*. Learn about it at *www.positioniseverything.net/explorer/peekaboo.html*.

POWER USERS' CLINIC

Got Layout?

As you've probably gathered by now, Internet Explorer 6 has a long history of browser bugs. Some basic CSS that looks fine in Internet Explorer 8, Firefox, or Safari crumbles in Internet Explorer 6. Fortunately, IE 6 is dwindling in popularity (see the box on page 63), but it's not gone yet. As it turns out, you can fix many IE bugs by switching on a special IE-only property known as *layout.* This isn't a CSS concept, nor does it have anything to do with the rules of HTML. It's just a concept built into Internet Explorer (versions 7 and earlier) by the engineers who created IE. As far as IE is concerned, each page element either has layout or it doesn't.

In IE, floats, list items, and absolutely positioned elements display differently depending on whether or not they have layout. In the Chapter 9 (page 265), you saw how IE 6 doesn't make the entire area of a link clickable when the link is set to display as a block. You can fix that problem by creating an IE 6–only style like this:

```
* html .nav a { zoom: 1; }
```

The point of that style isn't really to zoom into the links. *Zoom* is an IE-only property that's intended to let you zoom into a page element (using JavaScript), but *zoom* also triggers layout in IE 6. For reasons known only to Microsoft (and the extraterrestrials), switching on layout makes IE treat the entire area of block-level links as clickable. *Zoom* isn't the only property that switches on layout in IE. Several other (real) CSS properties also give an element layout: *position: absolute; float: left; float: right; display: inline-table;* any *width* value, and any *height* value.

Zoom is a good choice because it doesn't mean anything to other browsers (unlike real CSS properties like *width* and *height*), and so Safari, Firfox, and so on just happily ignore it. That means you can use *zoom* anywhere you need to fix an IE bug by "adding layout" to an element without fear of messing up the page in other browsers. The downside of using this property is that it isn't valid CSS, so it won't pass W3C validation (see the box on page 36).

Internet Explorer 7 (as of this writing) still has a few bugs you have to fix by adding layout. Any of the properties listed above add layout to an element in IE 7, as will the following: *min-width, max-width, min-height,* and *max-height* (see the box on page 320).

Throughout this book, you use layout to overcome many different IE bugs. For an in-depth (so deep, you may need a life preserver) discussion of the topic, go to *www.satzansatz.de/cssd/onhavinglayout.html*. Microsoft offers a friendly introduction at *http://msdn.microsoft.com/en-us/library/bb250481(VS.85).aspx*.

Tutorial: Multiple-Column Layouts

In this tutorial, you'll create a multi-column, float-based layout. In the process, you'll create two- and three-column liquid designs, as well as a fixed-width design.

To get started, download the tutorial files located on this book's companion website at *www.sawmac.com/css2e/*. Click the tutorial link and download the files. All the files are in a ZIP archive, so you need to unzip them first. (Find detailed instructions on the website.) The files for this tutorial are in the *12 → layout1* folder.

Structuring the HTML

The first step in creating a CSS-based layout is identifying the different layout elements on the page. You do this by wrapping chunks of HTML inside of tags, each of which represents a different part of the page.

1. **Open the *start.html* file in a text editor and click in the empty line following the HTML comment: *<!--sidebar goes here-->*.**

   As you can see, some of the HTML work is already done: Currently, there's a banner and footer. Before you create any styles, you need to add the structure and content for the page. You'll next add the tag for the left sidebar.

2. **Add an opening for the sidebar: * *. Then press Enter (Return) to create a new, empty line.**

   If you were creating a web page from scratch, at this point you'd add the HTML for the page's sidebar, perhaps a list of articles on the site, links to related websites, and so on. In this case, the HTML is already taken care of. The code for an unordered list of links is waiting for you in another file. You just need to copy and paste it into this page.

3. **Open the file *sidebar.txt,* copy all of the contents, and then return to the *start.html* file. Paste the HTML after the tag you created in step 2.**

   The HTML for the sidebar is nearly complete. You just need to close the tag.

4. **Immediately after the code you just pasted, type * *.**

   You've just added the first layout element on the page. In a little bit you'll style this HTML so that it looks like a column. But first, you need to add some more content.

5. **Place your cursor in the empty line after this HTML comment: *<!--main content goes here-->,* and then type * *.**

   This div holds the page's main content. You'll get that HTML from another file, too.

6. **Open the file *story.txt,* copy all of the contents, return to the *start.html* file, and then paste the code after the tag you just created. Add the closing </ div> tag exactly as in step 4.**

   That's all the HTML you need to create your design. Now it's time to turn your attention to building the CSS.

Creating the Layout Styles

If you preview the page now, you'll see that the banner, navigation buttons, and text are already styled. That's because this page has an external style sheet attached to it with some basic formatting. Next, you'll create styles to format the page's columns.

1. **In your text editor, click in the empty space directly before the closing </head> tag near the top of the file. Type *<style type="text/css">*, and then hit Enter (Return).**

   This code is the opening tag for an internal style sheet. As with the other tutorials in this book, you'll create your styles in an internal style sheet, which makes creating and testing your styles easier. Once you're done, you should move the styles into an external style sheet, as described on page 37.

2. **Add a style for the sidebar element, like so:**

```
#sidebar {
  float: left;
  width: 160px;
  margin-top: 10px;
}
```

This class style floats the sidebar div to the left of the page, gives it a width of 160 pixels, and adds a bit of space to separate the sidebar from the banner above. The *width* property is important in this style: Unless you're floating an image that has a set width, you should always set a width for a floated element. Otherwise, the browser sets the width based on the content inside the float, leading to inconsistent results.

3. **Press Enter, and then type *</style>* to finish the internal style sheet. Preview the page in a web browser.**

The sidebar now forms a left-hand column…sort of. When the text in the main column reaches the bottom of the sidebar, it wraps around the bottom of the sidebar, as shown in Figure 12-16. While that's normally how floats work, it's not what you want in this case. To make the main body text appear like a column of its own, you have to add enough left margin to indent the main text beyond the right edge of the sidebar.

4. **Create a style for the second column:**

```
#main {
  margin-left: 180px;
}
```

Since the sidebar is 160 pixels wide, a margin of 180 pixels indents the main content an additional 20 pixels, creating a gutter between the two columns. This additional white space not only makes the text easier to read, but also makes the page look better.

Preview the page now, and you'll see you've got yourself a two-column layout.

Adding Another Column

As you can see, a two-column design isn't hard. Adding a third column so you can treat your visitors to even more information isn't any harder. In fact, the steps are quite similar to the previous part of this tutorial.

1. **Open the file *secondary.txt*. Copy all the HTML from that file, and then return to the *start.html* file.**

The HTML for this next column goes between the page's two divs.

Figure 12-16: *A floated element doesn't actually create a column on the page. It merely displaces any content that wraps around it, up to the point where the float ends (circled). After that, the content flows back to its normal position underneath the float.*

2. **Click just after the closing for the sidebar element (right before the HTML comment *<!--main content goes here-->*). Then press Enter to create an empty line.**

   It's often hard to find the right closing when you use a lot of divs to structure a page. That's why HTML comments—like this one—can really help you identify and keep track of the HTML in your page.

3. **Type * *, press Enter, and then paste the HTML you copied in step 1. Hit Enter again, and then type * *.**

   When you close the tag, you've completed the HTML for the page's third column. Start styling it next.

4. **Below the *#main* style you created in step 4 on the previous page, add a new style to the internal style sheet:**

```
#secondary {
  float: right;
  width: 180px;
}
```

You're floating this column to the right side of the page to flank the main content with sidebars on either side. The problem with the first column (Figure 12-16) appears here as well—the main content wraps underneath this new sidebar. To fix it, add a right margin to the *#main* style.

5. **Edit the *#main* style so that it looks like this:**

```
#main {
  margin-left: 180px;
  margin-right: 200px;
}
```

Now the page is a full, three-column layout. Test the page in a browser. When you resize the window, you'll see that the page adjusts to fit the window.

Note: In this design, the left and right sidebars are a fixed width, so even when you make the browser window much larger, they stay the same size. You can make those columns change width as well, simply by setting their widths to percentage values and changing the *#main* style's left and right margins to percentages as well.

That new column you just added doesn't look very good, so polish it up in the next section.

Adding a "Faux Column"

The right sidebar doesn't stand out enough visually. You'll fix that with a dark background color and some text formatting.

1. **Edit the *#secondary* style you created earlier by adding a dark background color. The complete style should look like this:**

```
#secondary {
  float: right;
  width: 180px;
  background-color: #294E56;
}
```

Now the right sidebar's background color really stands out, but the text, which is also dark, doesn't.

2. **Add another style to the bottom of the internal style sheet to make all the text in this sidebar white:**

```
#secondary * {
  color: #FFF;
}
```

This style takes advantage of the universal selector (page 56). It essentially says, "Set the text color for every tag inside *#secondary* to white." It's a shorthand way of creating what would normally be a very long group selector: *#secondary h1, #secondary h2, #secondary p, #secondary a,* and so on.

Next, you'll create a few styles to help adjust the font size, margins, and other display properties of the text.

3. **Add the following styles to the internal style sheet:**

```
#secondary h3 {
  font-size: 1.5em;
  background: #73AFB7;
  padding: 3px 5px 3px 10px;
}
#secondary h4 {
  font-size: 1.2em;
  margin: 10px 10px 5px 10px;
}
#secondary p {
  font-size: 1.2em;
  margin: 3px 10px 10px 10px;
  line-height: 110%;
}
```

Each of these styles adjusts the font size for the different text tags used in the sidebar. In addition, you've added a background color to the headings that introduce each section in the sidebar. If you preview the page in a web browser now, it should look like Figure 12-17.

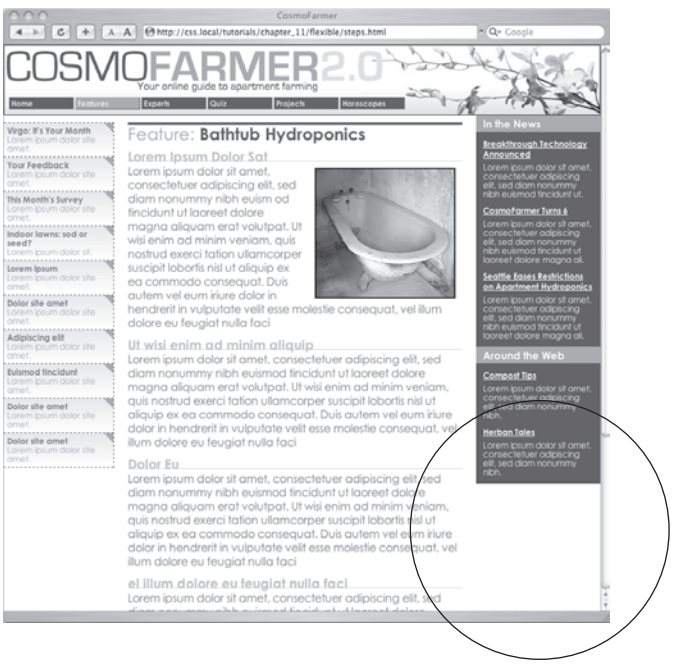


Figure 12-17: *One of the biggest challenges with CSS layouts is making columns of equal height. In this example, the right-hand sidebar has a dark background that would look much better if it extended down the page. However, since there's more content in the middle section of the page, the right sidebar's background stops short (circled). Using a background image (instead of the* background-color *property) is the answer.*

Note: The *#secondary* style–the one that defines the layout of this sidebar–has no padding added. But the text doesn't bump right up to the edges of the sidebar because the other styles add space between the edges of the sidebar and the text inside. Specifically, the padding in the *h3* style and the margins in the *h4* and *p* styles add the needed space, which has one benefit. Without padding on the sidebar, you can make the background color of the main headers in the sidebar ("In the News" and "Around the Web") span the entire width of the sidebar.

The sidebar presents one more hurdle—its background color stops short of the bottom of the page. Things would look much better if that dark color extended all the way down the window's right side.

The background color on the right sidebar needs a little help. To extend the color so that it fits the entire height of the page you need to put a graphic in the background of the page itself and tile it vertically, so no matter how tall the page gets, the background image stays visible.

4. **Add a *body* tag style to the top of the internal style sheet:**

```
body {
  background: url(images/bg/bg_column.gif) repeat-y right top;
}
```

The *bg_column.gif* file is a simple, solid color graphic that's the same width as the right sidebar. The *repeat-y* property makes the graphic tile up and down only, and the *right* value places the graphic on the right edge of the page.

Fixing the Width

Currently, the page is a liquid design (page 300), meaning that it expands to fill the entire width of the browser window. But say you'd rather have the page stay the same width all the time—because you hate how it looks on cinema display monitors, or you don't like what happens to the design when the browser window is shrunk too small. Changing a liquid design to a fixed-width design is easy. Start by adding a little more HTML.

1. **Directly after the opening <body> tag (<*body id="feature"*>) add a new tag:**

```
<div id="wrapper">
```

You're wrapping the entire page inside a div, which you'll use to control the page's width. You need to make sure that tag is closed.

2. **Add the closing just before the closing </body> tag:**

```
</div>
</body>
```

Now that there's a div surrounding all of the content on this page, you can control the page's width by setting a width for this tag.

3. **Just below the body tag style you created earlier, add a style that defines a set width for the new div:**

```
#wrapper {
  width: 760px;
}
```

Preview the page in a browser, and you'll see that the banner, footer, and other content on the page stays locked at 760 pixels. However, the image that adds the background to the right sidebar jumps around depending on the width of the browser window. That's because that graphic is aligned in relation to the right edge of the window. To fix this, just place the graphic as a background on the *#wrapper* instead.

4. **Delete the *body* style you created in step 4 on the previous page. Add the background declaration to the *#wrapper* style, so it looks like this:**

```
#wrapper {
  width: 760px;
  background: url(images/bg/bg_column.gif) repeat-y right top;
}
```

Preview the page in a browser. It should now look like Figure 12-18.

There's a completed version of this tutorial in the *12_finished/layout1/* folder.

Tutorial: Negative Margin Layout

In this tutorial, you'll explore how to create a multi-column, float-based layout using the negative margin technique discussed on page 318. Download the files as described for the previous tutorial. The files for this tutorial are contained inside the folder named *12 → layout2*.

Centering a Layout

Unlike the last exercise, all the HTML is already in place for this page. All you have to do is add CSS to create the layout. There are six major sections to the page, each enclosed in a tag with an ID applied.

1. **In a text editor, open the *12 → layout2 → start.html* file.**

Figure 12-19 shows the basic structure of the HTML (left) and the final result you're aiming for (right). Currently, the divs just stack one on top of the other, because you haven't added any CSS layout—yet.

Begin by creating a fixed-width layout and centering it in the middle of the browser window.

Figure 12-18: *Turning a liquid design into a fixed-width design is simply a matter of wrapping all the HTML inside the <body> tag in a new tag and then creating a style that sets the width of the div. If you'd prefer to have the fixed design centered in the middle of the browser window, see the next tutorial.*

2. **In the <head> region of the HTML, place your cursor between the opening and closing <style> tags.**

   There's already an external style sheet attached to the page, with most of the visual formatting in it. You'll add the layout styles to this internal style sheet, which you can always move to an external style sheet later as described on page 37.

3. **Add a new style for the *wrapper* div:**

```
#wrapper {
  border-right: 2px solid #000000;
  border-left: 2px solid #000000;
  background: #FFFFFF url(images/column_bg.png) repeat-y right top;
}
```

   These declarations add a border to either side of the page and place a background image in the right side of the div. The image tiles vertically down the page and provides the background for the right sidebar in the final design. This setup is an example of the faux column technique described on page 342.

Because the wrapper div encloses the other tags on the page, setting its width defines the width for the entire page (Figure 12-19).

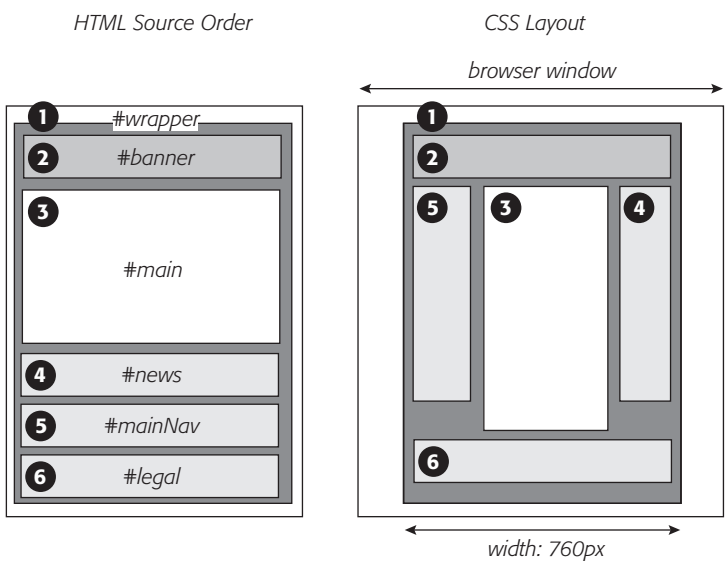


Figure 12-19: *These diagrams illustrate where the page begins (left) and where it ends (right). Currently, the page is just a series of tags enclosed by one wrapper tag. By setting a width for the wrapper and adjusting its left and right margins, you create a design that floats in the middle of the browser window.*

4. **Edit the *#wrapper* style you just created. Add a width and left and right margins so the style looks like this:**

```
#wrapper {
  width: 760px;
  margin-right: auto;
  margin-left: auto;
  border-right: 2px solid #000000;
  border-left: 2px solid #000000;
  background: #FFFFFF url(images/column_bg.png) repeat-y right top;
}
```

The *width* property sets the overall width of the page content to 760 pixels. To center the wrapper div, set the left and right margins to *auto*. The *auto* value tells the browser that it should calculate the margins automatically. Also, since the value is applied to both left and right margins, the browser should split the difference between the two margins. In other words, the browser adds the same amount of space on either side of the wrapper div, whatever the window's width.

Preview the page now in a web browser. Resize the browser window, and you'll see that the page stays centered in the middle of the window. But you can still improve on the page's looks.

5. **At the beginning of the internal style sheet, add a new style for the <body> tag:**

```
body {
  margin: 0;
  padding: 0;
  background: #E6E6E6 url(images/page_bg.png) repeat-y center top;
}
```

The first two declarations eliminate any space around the page content, allowing the wrapper div to freely touch the edges of the browser window. The *background* property is where the real fun is. First, it changes the page's background to a sophisticated gray (#E6E6E6). Second, it adds a graphic and tiles it vertically from page top all the way to the bottom. The *center* value places the graphic in the middle of the window. That way, no matter how wide the window, the graphic stays centered. The graphic itself is slightly wider than the 760 pixels of the wrapper div and has a shadow effect on both the right and left sides. This gives the appearance that the wrapper is floating above the page, as shown in Figure 12-20.

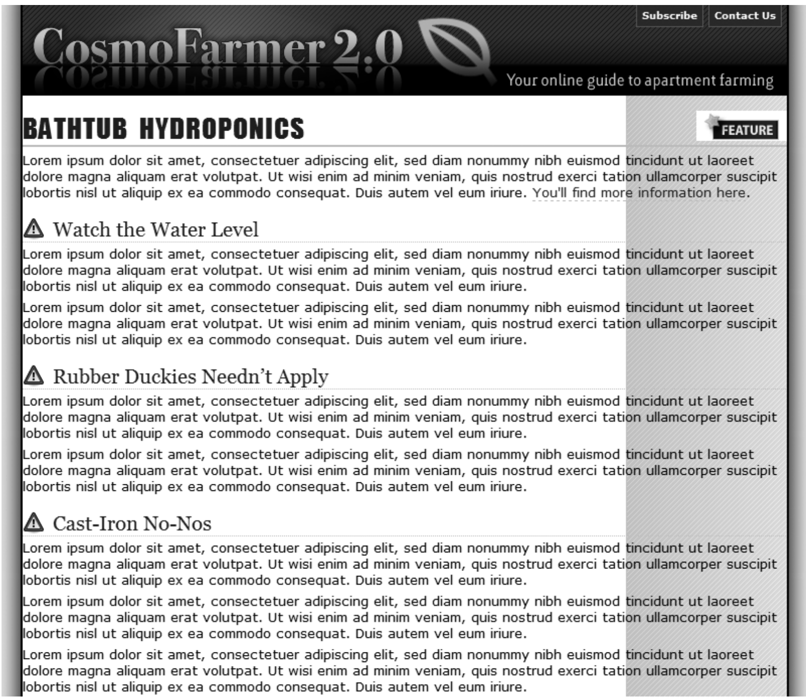


***Figure 12-20:** Placing an image centered in the background of a page's <body> tag creates the illusion of a drop shadow underneath the page's contents.*

Floating the Columns

Now it's time to create the three columns of this design. In the left diagram of Figure 12-19, notice the HTML for the *main* div containing the page's main content appears *before* the HTML for either the left sidebar with an ID of *mainNav* or right sidebar with an ID of *news*. A couple of factors make this design different from the basic float layout you created in the previous tutorial. First, since the HTML for the *main* div comes first, you have to float it to make the sidebars wrap around either side of it. Second, the *main* div appears in the middle, between the two sidebars. Normally, that kind of arrangement isn't possible. But you'll cleverly use negative margins (page 318) to make it work.

1. **Add a style to the internal style sheet for the *main* div:**

```
#main {
  float: left;
  width: 419px;
  padding-left: 10px;
  border-left: 1px dashed #999999;
}
```

   So far, this style is pretty basic. It positions the div at the left edge of the wrapper div, sets its width, adds a left border, and adds a little space between the text and the border. You'll position the *news* div next.

2. **Add another style to position the right sidebar:**

```
#news {
  float: right;
  width: 160px;
}
```

   Lastly, you need to position the *nav* sidebar.

3. **Add one more style to the internal style sheet:**

```
#nav {
  float: left;
  width: 160px;
}
```

   The page should look like Figure 12-21. Sure enough, there are three side-by-side columns, but they're not in the right order. The large column on the left belongs in the middle.

   Here's where the negative margins come in. The basic process goes like this: First, you want to add enough left margin to the main column to push it into its final location in the middle of the page. Then, you need to add enough *negative* margin to the navigation sidebar to *pull it over* to the left of the main content area.

Figure 12-21: *Normally, the placement of floated elements is completely dependent on the order of their HTML in the source code of the HTML file. The large, main content (left) is first in the source code, so it doesn't appear between the two sidebars. But you can change that with negative margins.*

4. **In the *#main* style, add *margin-left: 160px;*:**

```
#main {
  float: left;
  width: 419px;
  margin-left: 160px;
  padding-left: 10px;
  border-left: 1px dashed #999999;
}
```

Back in step 3, the *nav* div (which is supposed to be the far left column) is 160 pixels, just like you used for the left margin. By indenting the *main* div 160 pixels, you've made room for the *nav* sidebar.

5. **Add a negative left margin to the *#nav* style so that it looks like this:**

```
#nav {
  float: left;
  width: 160px;
  margin-left: -590px;
}
```

Here's the story behind the –590 pixel value: Currently, the *nav* div and *main* div are both floated left. But because the *nav* div's HTML comes after that of the *main* div, it can float only as far left as the right edge of the *main* div. In order for the *nav* div to get to the left edge of the wrapper, it has to move all the way from the right edge of the *main* div to the left edge of the wrapper. In other words, it has to travel left the same distance (in pixels) from the left edge of the wrapper to the right edge of the *main* div.

The right edge of the *main* div is the grand total of its width, left and right margins, left and right padding, and left and right border. That is, 160 (left margin) + 10 (left padding) + 1 (left border) + 419 (width) = 590 pixels. So, giving the *nav* div a left margin of –590 pixels moves it over and past the *main* div, and into position.

Preview the page in a web browser, and you'll see something like Figure 12-22. It works if you use Firefox or Safari. It's a different story with Internet Explorer 6. In that browser, you'll see a large empty space to the left of the middle column and no navigation bar anywhere in sight. That's the nasty double margin bug in action (page 333). Because the *main* div is floated left *and* it has a left margin, IE 6 doubles the margin, ruining the layout. Luckily, there's an easy fix.

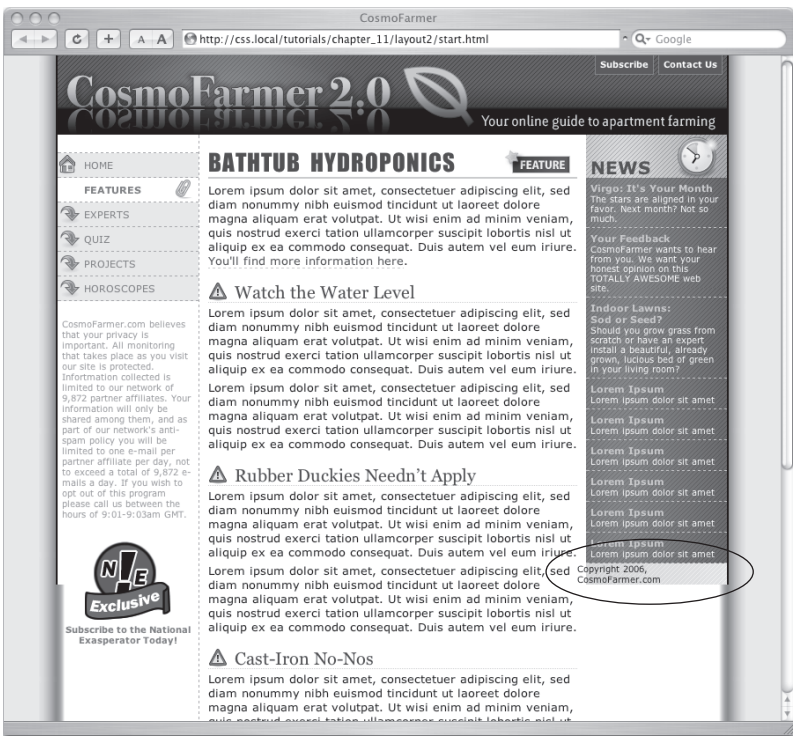


Figure 12-22: *Using negative margins, you can place columns in any order on the page. Doing so requires floating all of the columns, which can cause problems for content that comes after the columns, like the copyright notice (circled). That element tries to wrap around the floats, and in the process it gets crammed into a corner rather than positioned at the bottom of the page. To fix it, add* clear: both *to the copyright notice's style.*

6. **Add *display: inline* to the *#main* style:**

```
#main {
  display: inline;
  float: left;
  width: 419px;
  margin-left: 160px;
  padding-left: 10px;
  border-left: 1px dashed #999999;
}
```

Now if you preview the page in IE 6, everything works fine (Figure 12-22).

Final Adjustments

The next couple of steps demonstrate how flexible CSS layout really is. First, you'll take care of the copyright notice that should appear at the bottom of the page. Currently, it's caught up in all of that floating stuff. It needs to clear the floats to get into position.

1. **At the end of the internal style sheet, add one last style:**

```
#legal {
  clear: both;
  margin-right: 160px;
  padding: 5px 5px 160px 20px;
  border-top: 1px dashed #999999;
  font-weight: bold;
  color: #666666;
}
```

   This style applies a variety of formatting rules to the copyright notice. The most important is the *clear* declaration, which drops the copyright below all of the floats. The right margin pushes the copyright notice away from the right sidebar, so the top border (also defined in this style) doesn't overlap the background graphic.

   The page is basically done, and as a reward, you get to do one last thing to demonstrate how cool CSS really is. Think you can swap the two sidebars so that the news appears on the left and the navigation on the right? It's easier than it sounds—just a couple of changes to two styles.

2. **Edit the *#nav* style by removing the negative margin and changing its float value from left to right. The finished style should look like this:**

```
#nav {
  float: right;
  width: 160px;
}
```

   The navigation bar moves to the right side. Now move the news to the left.

3. **In the *#news* style, add *margin-left: –590px* and set the float to *left* like this:**

```
#news {
  float: left;
  width: 160px;
  margin-left: -590px;
}
```

Save the page and preview it in a web browser (Figure 12-23). The columns have swapped with no messy HTML changes. All you did was swap the two styles. If you want to take this a bit further, you can move the background graphic applied to the wrapper from the right to the left and switch the border that appears on the left edge of the main content div to its right edge so that it butts up against the navigation div.

Figure 12-23: *CSS's flexibility is one of its biggest benefits. By changing just a few CSS styles, you can move elements to completely different areas of a page. In this case, swapping two styles made the left and right sidebars switch position—without any changes to the HTML.*

CHAPTER
13

Positioning Elements on a Web Page

When the World Wide Web Consortium introduced *CSS Positioning,* some designers understandably thought they could make web pages look just like print documents created in programs like PageMaker, InDesign, or Quark XPress. With just a couple of CSS properties, CSS Positioning lets you position an element in a precise location on a page—say 100 pixels from the top of the page and 200 pixels from the left edge. The pixel-accurate placement possible with CSS-P (as it was called way back when) seemed to promise that, at last, you could design a page simply by putting a photo here, a headline there, and so on.

Unfortunately, the level of control designers expected from CSS-P never materialized. There have always been differences in how various browsers display CSS positioned elements. But, even more fundamentally, the Web doesn't work like a printed brochure, magazine, or book. Web pages are much more fluid than printed pages. Once a magazine rolls off the press, readers can't change the page size or font size. About the only way they can change the look of the magazine is to spill coffee on it.

Web visitors, on the other hand, can tinker with your handcrafted presentation. They can increase their browsers' font size, potentially making text spill out of precisely placed and sized layout elements. But the news isn't all bad: As long as you don't try to dictate the exact width, height, and position of *every* design element, you'll find CSS's positioning properties powerful and helpful. You can use these properties to make a text caption appear on top of a photo, create multicolumn page layouts, place a logo anywhere on the page, and much more.

How Positioning Properties Work

The CSS *position* property lets you control how and where a web browser displays particular elements. Using *position,* you can, for example, place a sidebar anywhere you wish on a page or make sure a navigation bar at the top of the page stays in place even when visitors scroll down the page. CSS offers four types of positioning:

- **Absolute.** Absolute positioning lets you determine an element's location by specifying a *left, right, top,* or *bottom* position in pixels, ems, or percentages. (See Chapter 6 for more on picking between the different units of measurement.) You can place a box 20 pixels from the top and 200 pixels from the left edge of the page, as shown in Figure 13-1, middle. (More in a moment on how you actually code these instructions.)

  In addition, absolutely positioned elements are completely detached from the flow of the page as determined by the HTML code. In other words, other things on the page don't even know the absolutely positioned element exists. They can even disappear completely underneath absolutely positioned items, if you're not careful.

Note: Don't try to apply both the *float* property and any type of positioning other than static (explained below) or relative to the same style. *Float* and *absolute* or *fixed* positioning can't work together on the same element.

- **Relative.** A relatively positioned element is placed relative to its current position in the HTML flow. So, for example, setting a top value of 20 pixels and left value of 200 pixels on a relatively positioned headline moves that headline 20 pixels down and 200 pixels from the left *from wherever it would normally appear.*

  Unlike with absolute positioning, other page elements accommodate the old HTML placement of a relatively positioned element. Accordingly, moving an element with relative positioning leaves a "hole" where the element would have been. Look at the dark strip in the bottom image of Figure 13-1. That strip is where the relatively positioned box *would have* appeared, before it was given orders to move. The main benefit of relative positioning isn't to move an element, but to set a new point of reference for absolutely positioned elements that are nested inside it. (More on that brain-bending concept on page 360.)

- **Fixed.** A fixed element is locked into place on the screen. It does the same thing as the *fixed* value for the *background-attachment* property (page 199). When a visitor scrolls the page, fixed elements remain onscreen as paragraphs and headlines, while photos disappear off the top of the browser window.

  Fixed elements are a great way to create a fixed sidebar or replicate the effect of HTML frames, where only a certain portion (frame) of the page scrolls. You can read about how to create this effect on page 375.

Note: Internet Explorer 6 (and earlier versions) doesn't understand the *fixed* setting and ignores it.

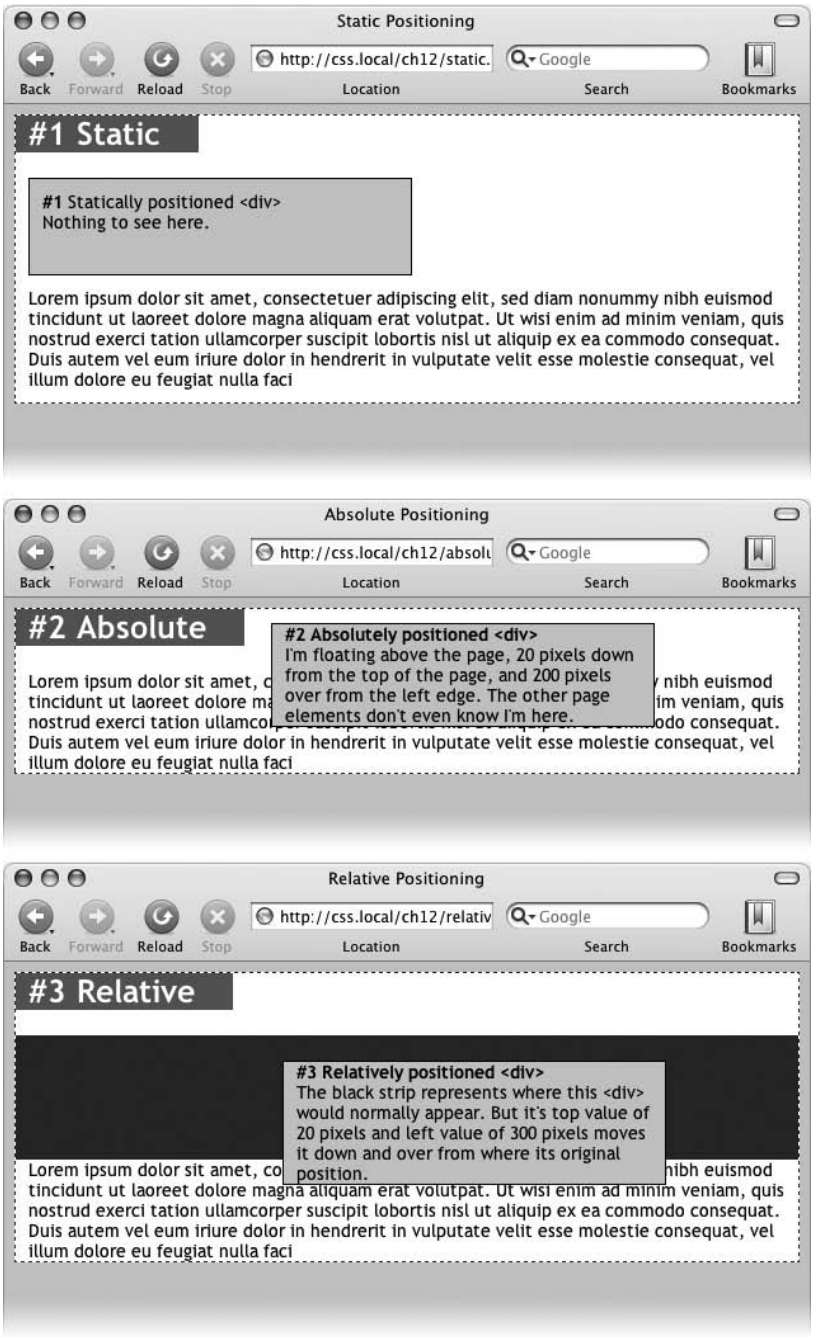


Figure 13-1: *CSS offers several ways to affect an element's placement on a web page. The* static *option, top, is the way browsers have presented content since the beginning of the Web. They simply display the HTML in top-to-bottom order.* Absolute *positioning (middle) removes an element from the page flow, placing it on top of the page, sometimes overlapping other content.* Relative *positioning (bottom) places an element relative to where it would normally appear on the page and leaves a hole (the dark background here) where that element would've been without relative positioning.*

- **Static** positioning simply means the content follows the normal top-down flow of HTML (see Figure 13-1, top). Why would you want to assign an element static positioning? The short answer: You probably never will.

To change the positioning of any element, simply use the *position* property followed by one of the four keywords: *absolute, relative, fixed, static.* To create an absolutely positioned element, add this property to a style:

```
position: absolute;
```

Static is the normal positioning method, so unless you're overriding a previously created style that already has a position of *absolute, relative* or *fixed,* you won't need to specify that. In addition, static elements don't obey any of the positioning values discussed next.

Setting a positioning value is usually just part of the battle. To actually place an element somewhere on a page, you need to master the various positioning properties.

Setting Positioning Values

The display area of a web browser window—also called the *viewport*—has top, bottom, left, and right edges. Each of the four edges has a corresponding CSS property: *top, bottom, left,* and *right*. But you don't need to specify values for all four edges. Two are usually enough to place an item on the page. You can, if you want, place an element 10ems from the left edge of the page and 20ems from the top.

Note: Internet Explorer 6 sometimes misplaces elements that are positioned with the *bottom* or *right* properties. See the box on page 365.

To specify the *distance* from an edge of a page to the corresponding edge of the element, use any of the valid CSS measurements—pixels, ems, percentages, and so on. You can also use negative values for positioning like *left: –10px;* to move an element partly off the page (or off another element) for visual effect, as you'll see later in this chapter (page 370).

After the *position* property, you list two properties (*top, bottom, left,* or *right*). If you want the element to take up less than the available width (to make a thin sidebar, for example), then you can set the *width* property. To place a page's banner in an exact position from the top and left edges of the browser window, create a style like this:

```
#banner {
  position: absolute;
  left: 100px;
  top: 50px;
  width: 760px;
}
```

This style places the banner as pictured in Figure 13-2, top.

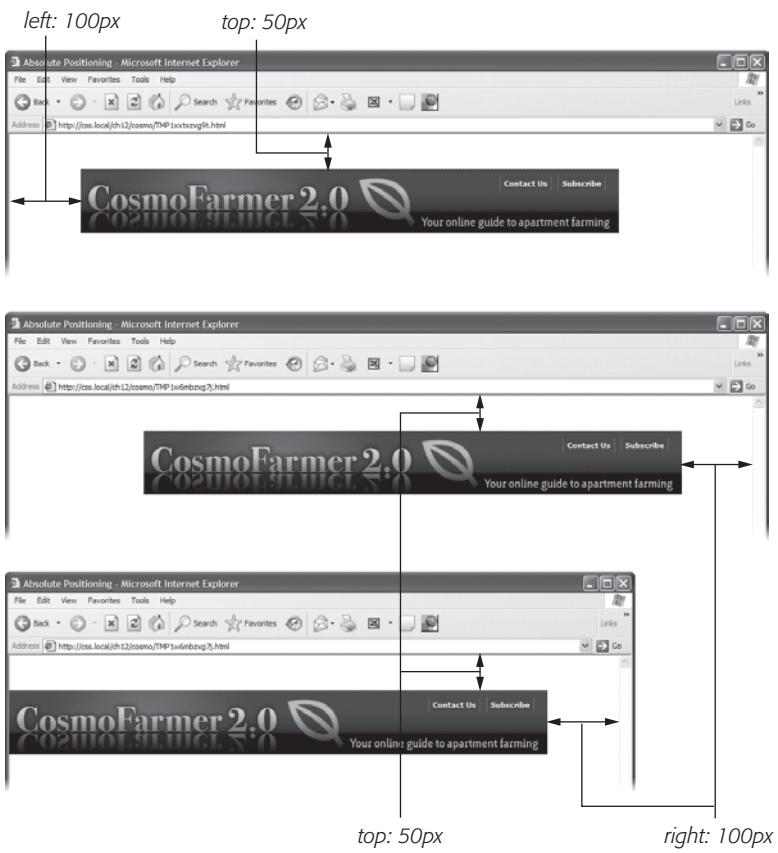


Figure 13-2: *One useful aspect of absolute positioning is the ability to place an item relative to the right edge of the browser window (middle). Even when the width of the browser changes, the distance from the right edge of the window to the right edge of the positioned element stays the same (bottom).*

Here's another example: placing an element so it always remains a fixed distance from the right side of the browser. When you use the *right* property, the browser measures the distance from the right edge of the browser window to the right edge of the element (Figure 13-2, middle). To position the banner 100 pixels from the right edge of the window, you'd create the same style as above, but simply replace *left* with *right:*

```
#banner {
  position: absolute;
  right: 100px;
  top: 50px;
  width: 760px;
}
```

Since the position is calculated based on the right edge of the browser window, adjusting the size of the window automatically repositions the banner, as you can see in Figure 13-2, bottom. Although the banner moves, the distance from the right edge of the element to the right edge of the browser window remains the same.

Technically, you can specify *both* left and right position properties as well as both *top* and *bottom* and let a browser determine the width and height of the element. Say you want a central block of text positioned 100 pixels from the top of the window and 100 pixels from both the left and right edges of the window. To position the block, you can use an absolutely positioned style that sets the *top, left,* and *right* properties to 100 pixels. In a browser window, the left edge of the box starts 100 pixels from the left edge of the window, and the right edge extends to 100 pixels from the right edge (Figure 13-3, top). The exact width of the box, then, depends on how wide the browser window is. A wider window makes a wider box; a thinner window, a thinner box. The left and right positions, however, remain the same.

Unfortunately, though, Internet Explorer 6 (and earlier) doesn't get this right (see Figure 13-3, bottom). That browser displays the left position correctly, but simply ignores any right value. So until IE 6 isn't around anymore, you're better off sticking with either *left* or *right* and using the *width* property to specify the width of an absolutely positioned element.

The *width* and *height* properties, which you learned about in Chapter 7, work exactly the same way for positioned elements. To place a 50×50 pixel gray box in the top-right corner of the browser window, create this style:

```
.box {
  position: absolute;
  right: 0;
  top: 0;
  width: 50px;
  height: 50px;
  background-color: #333;
}
```

The same caveat mentioned on page 165 applies here as well: Be careful with setting heights on elements. Unless you're styling a graphic with a set height, you can't be sure how tall any given element will be on a page. You might define a sidebar to be 200 pixels tall, but if you end up adding enough words and pictures to make the sidebar taller than 200 pixels, then you end up with content spilling out of the sidebar. Even if you're sure the content fits, a visitor can always pump up the size of her browser's font, creating text that's large enough to spill out of the box. Furthermore, when you specify a width and height in a style and the contents inside the styled element are wider or taller, strange things can happen. (See the box on page 173 for a discussion of how to use the CSS *overflow* property to control this situation.)

When Absolute Positioning Is Relative

So far, this chapter has talked about positioning an element in an exact location in the browser window. However, absolute positioning doesn't always work that way.

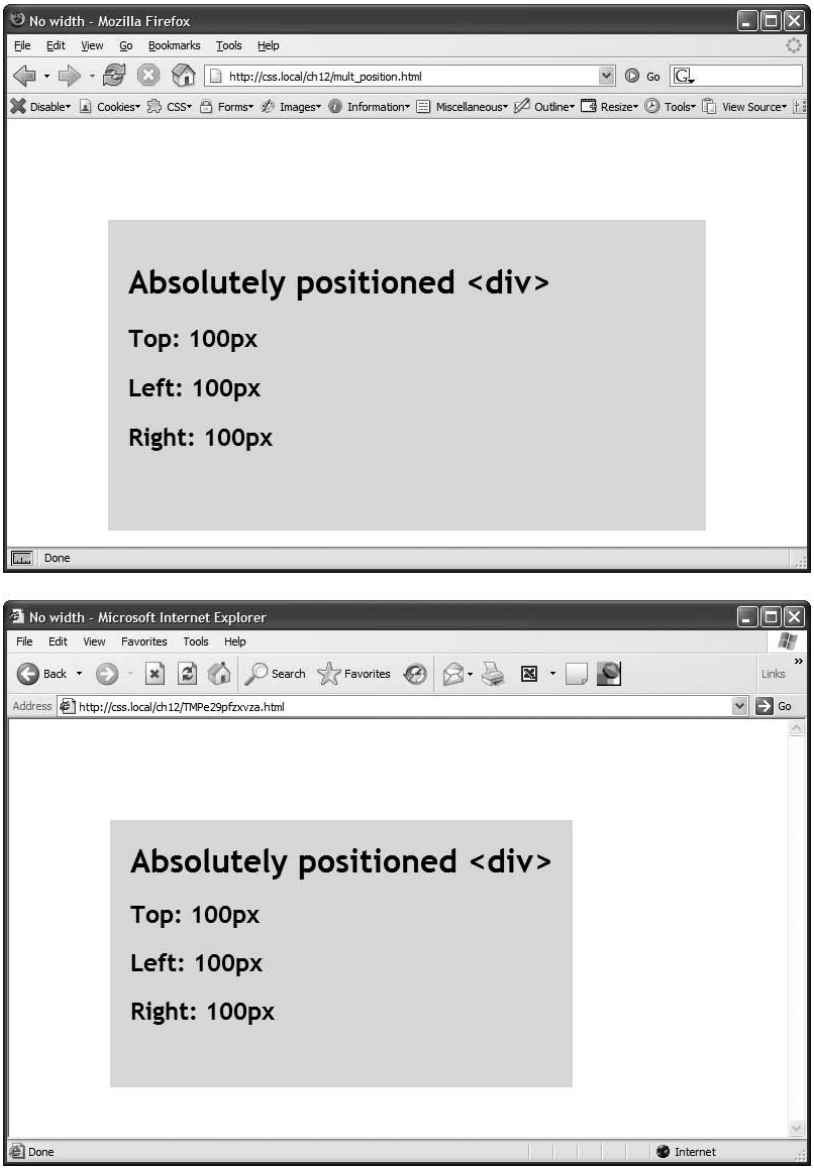


Figure 13-3: *Working with absolute positioning can be tricky. In this case, given just left and right positions, Firefox correctly calculates the width of the gray box (top). Internet Explorer 6, however, doesn't follow the same rules. It ignores the right value and sets the width of the box based on the width of its contents.*

In fact, an absolutely positioned element is actually placed *relative* to the boundaries of its closest positioned ancestor. Simply put, if you've already created an element with absolute positioning (say a tag that appears 100 pixels down from the top of the browser window), then any absolutely positioned elements with HTML *inside* that tag are positioned relative to the div's top, bottom, left, and right edges.

Note: If all this talk of parents and ancestors doesn't ring a bell, then turn to page 57 for a refresher.

In the top image of Figure 13-4, the light gray box is absolutely positioned 5ems from the top and left edges of the browser window.

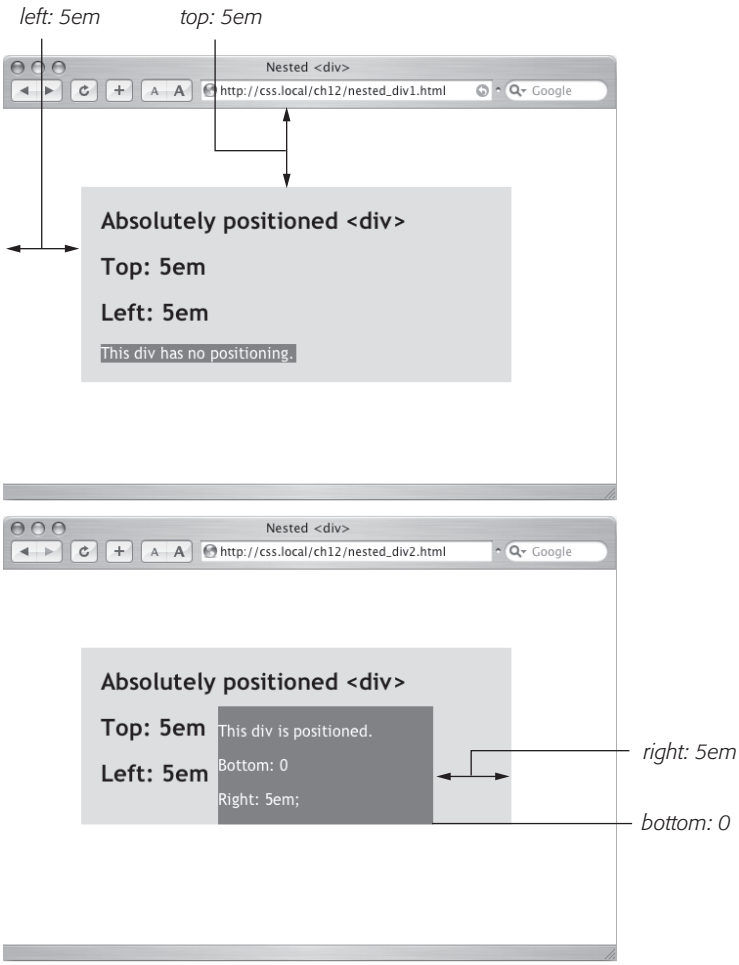


Figure 13-4: *You can place an element relative to the browser window (top) or relative to a positioned ancestor (bottom).*

There's also a tag nested inside that box. Applying absolute positioning to that positions it *relative to its absolutely positioned parent.* Setting a *bottom* position of *0* doesn't put the box at the bottom of the screen; it places the box at the bottom of its parent. Likewise, a *right* position for that nested refers to the right of the edge of its parent (Figure 13-4, bottom).

Whenever you use absolute positioning to place an element on the page, the exact position depends upon the positioning of any other tags the styled element is nested in. Here are the rules in a nutshell:

- **A tag is positioned relative to the browser window** if it has an absolute position *and* it's not inside any other tag that has absolute, relative, or fixed positioning applied to it.
- **A tag is positioned relative to the edges of another element** if it's inside another tag with absolute, relative, or fixed positioning.

When (and Where) to Use Relative Positioning

You get one big benefit from placing an element relative to another tag: If that tag moves, the positioned element moves along with it. Say you place an image inside an <h1> tag, and you want the image to appear on the right edge of that <h1> tag. If you simply position the image in an exact spot in the browser window on the left edge of the <h1> tag, you're taking your chances. If the <h1> moves, the absolutely positioned image stays glued to its assigned spot. Instead, what you want to do is position the image relative to the <h1> tag, so that when the headline moves, the image moves with it (bottom two images in Figure 13-5).

Note: Use the *background-image* property (see page 188) to place an image into the background of an <h1> tag. But if the graphic is taller than the <h1> tag, or you want the graphic to appear *outside* the boundaries of the headline (see the example third from the top in Figure 13-5), then use the *relative* positioning technique described here.

You could use the *position* property's relative value to place the image, but that has drawbacks, too. When you set an element's position to relative and then place it—maybe using the left and top properties—the element moves the set amount from where it would normally appear in the flow of the HTML. In other words, it moves relative to its current position. In the process, it leaves a big hole where it would've been if you hadn't positioned it at all (Figure 13-1, bottom). Usually that's not what you want.

A better way to use relative positioning is to create a new positioning context for nested tags. For instance, the <h1> tag in the example at the beginning of this section is an ancestor of the <img> tag inside it. By setting the position of the <h1> tag to *relative,* any absolute positioning you apply to the <img> tag is relative to the four edges of the <h1> tag, not the browser window. Here's what the CSS looks like:

```
h1 { position: relative; }
h1 img {
  position: absolute;
  top: 0;
  right: 0;
}
```

Figure 13-5:
Top: A graphical button (circled) is placed inside an <h1> tag.

Second from top: Adding absolute positioning to the button—right: -35px; top: -35px;—moves it outside of the <h1> tag area and places it in the top-right corner of the browser window (circled). (In fact, it's placed a little outside of the browser window thanks to the negative positioning values.)

Third from top: Adding position: relative to the <h1> creates a new positioning context for the <img> tag. The same top and right values move the <img> tag to the <h1> tag's top-right corner.

Bottom: When you move the heading down the page, the graphic goes along for the ride.

Setting the image's *top* and *right* properties to *0* places the image in the upper-right corner of the headline—not the browser window.

In CSS, the term *relative* doesn't exactly mean the same thing as in the real world. After all, if you want to place the <img> tag relative to the <h1> tag, your first instinct may be to set the image's position to relative. In fact, the item that you want to position—the image—gets an *absolute* position, while the element you want to position the element *relative to*—the headline—gets a setting of relative. Think of the relative value as meaning "relative to me." When you apply relative positioning to a tag, it means "all positioned elements inside of me should be positioned relative to my location."

Note: Because you'll often use relative positioning merely to set up a new positioning context for nested tags, you don't even need to use the left, top, bottom, or right settings with it. The <h1> tag has *position: relative,* but no left, top, right, or bottom values.

BROWSER BUG

IE Forgets Its Place

Sometimes, you'll use the *bottom* and *right* positioning properties to place something at a page's lower-right corner or to put something in a low corner of another element. Say you want to place a Contact Us link in the lower-left corner of a banner. If the style for the banner has either absolute or relative positioning and you position the link absolutely, then most browsers position the link relative to the banner's edges, as they should.

But not Internet Explorer 6 and earlier. Seemingly straightforward properties like *bottom* and *right* can confound this ornery browser. IE sometimes continues to use the bottom and right edges of the web page as a reference, so you'll end up with a positioned element way lower or further to the right than you expected.

Like many other IE bugs, this one has been fixed in Internet Explorer 7 and later.

The fix is to give the containing element (the element you want to position something *relative* to, like the banner in this example) a special IE-only property known as *layout.*

If you use the *bottom* or *right* properties on an absolutely positioned element, and IE places that element in a different location than other browsers, turn to page 333 in Chapter 12 and apply one of the solutions described there. You'll see examples of this problem (and its solution) throughout this chapter.

Stacking Elements

As you can see in Figure 13-6, absolutely positioned elements sit "above" your web page and can even reside on top of (or underneath) other positioned elements. This stacking of elements takes place on what's called the *z-index*. If you're familiar with the concept of layers in Photoshop, Fireworks, or Adobe InDesign, then you know how the z-index works: It represents the order in which positioned elements are stacked on top of the page.

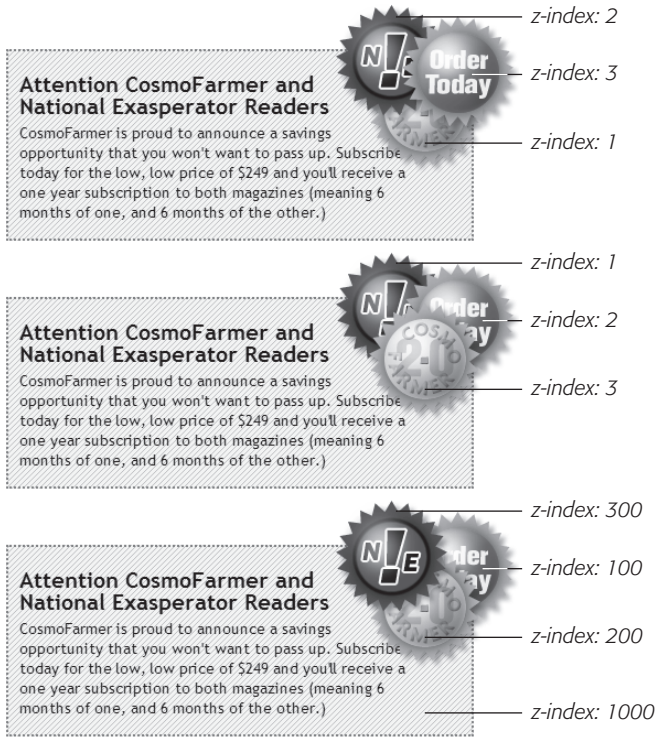


Figure 13-6:
When you use z-index to control how positioned elements are stacked, parent elements define the stacking order for their children. In the top two examples, the text box isn't positioned, so it shares the z-index of the page itself, which has a z-index value of 0. So the buttons in those two text boxes are stacked relative to and above the page. But the text box in the bottom image has an absolute position and a z-index of 1000. This containing becomes the starting point for stacking the images inside it. So even though the div's z-index is 1000, its nested children (with lower z-index values) appear on top of it, while the text box itself, sits above the page.

To put it another way, think of a web page as a piece of paper and an absolutely positioned element like a sticky note. Whenever you add an absolutely positioned element to a page, it's like slapping a sticky note on it. Of course, when you add a sticky note, you run the risk of covering up anything written on the page below.

Normally, the stacking order of positioned elements follows their order in the page's HTML code. On a page with two absolutely positioned tags, the tag that comes second in the HTML appears *above* the other . But you can control the order in which positioned elements stack up using the CSS *z-index* property. The property gets a numeric value, like this:

```
z-index: 3;
```

The larger the value, the closer to the top of the stack an element appears. Say you have three absolutely positioned images, and parts of each image overlap. The one with the larger z-index appears on top of the others (see Figure 13-6, top). When you change the z-index of one or more images, you change their stacking order (Figure 13-6, middle).

Note: It's perfectly OK to have gaps in z-index values. In other words, *10, 20, 30* does the exact same things as *1, 2, 3.* In fact, spreading out the numerical values gives you room to insert more items into the stack later. And, when you want to make sure nothing ever appears on top of a positioned element, give it a really large z-index, like this: *z-index: 10000;*. But don't get too carried away: Firefox can only handle a maximum z-index of 2147483647.

Hiding Parts of a Page

Another CSS property often used with absolutely positioned elements is *visibility*, which lets you hide part of a page (or show a hidden part). Say you want a label to pop into view over an image when a visitor mouses over it. You make the caption invisible when the page first loads (*visibility: hidden*), and switch to visible (*visibility: visible*) when the mouse moves over it. Figure 13-7 shows an example.

The visibility property's *hidden* value is similar to the *display* property's *none* value (see the note on page 160), but there's a fundamental difference. When you set an element's display property to *none*, it literally disappears from the page without a trace. However, setting the visibility property to hidden prevents the browser from displaying the element's contents, but leaves an empty hole where the element would have been. When applied to absolutely positioned elements that are already removed from the flow of the page, *visibility: hidden* and *display: none* behave identically.

The most common way to switch an element from hidden to displayed and back again is with JavaScript. But you don't have to learn JavaScript programming to use the visibility property (or, for that matter, the display property). You can use the *:hover* pseudo-class (see page 367) to make an invisible element visible.

Note: For a basic CSS method of adding pop-up tool tips–additional information that appears when someone mouses over a link–check out: *http://psacake.com/web/jl.asp*. You also have many JavaScript options to choose from: the jQuery Tooltip plug-in is a full-featured and easy-to-use JavaScript tooltip based on the jQuery framework: *http://bassistance.de/jquery-plugins/jquery-plugin-tooltip*.

Powerful Positioning Strategies

As explained at the beginning of this chapter, you can run into trouble when you try to use CSS positioning to place *every* element on a page. Because it's impossible to predict all possible combinations of browsers and settings your visitors will use, CSS-controlled positioning works best as a tactical weapon. Use it sparingly to provide exact placement for specific elements.

In this section, you'll learn how to use absolute positioning to add small but visually important details to your page design, how to absolutely position certain layout elements, and how to cement important page elements in place while the rest of the content scrolls.

Figure 13-7: *The* visibility *property is useful for hiding part of a page that you later want to reveal. The top image shows movie listings. Moving the mouse over one of the images makes a previously invisible pop-up message appear. Programmers usually use JavaScript to create this kind of effect, but you can use the CSS* :hover *pseudo-class to make an invisible element visible when a visitor mouses over a link.*

Positioning Within an Element

One of the most effective ways to use positioning is to place small items relative to other elements on a page. Absolute positioning can simulate the kind of right alignment you get with floats. In the first example in Figure 13-8, the date on the top headline is a bit overbearing, but with CSS you can reformat it and move it to the right edge of the bottom headline.

In order to style the date separately from the rest of the headline, you need to enclose the date in an HTML tag. The tag (page 54) is a popular choice for applying a class to a chunk of inline text to style it independently from the rest of a paragraph.

```
<h1><span class="date">Nov. 10, 2006</span> CosmoFarmer Bought By Google</h1>
```

Now it's a matter of creating the styles. First, you need to give the containing element—in this example, the <h1> tag—a relative position value. Then, apply an absolute position to the item you wish to place—the date. Here's the CSS for the bottom image in #1 of Figure 13-8:

```
h1 {
  position: relative;
  width: 100%;
  border-bottom: 1px dashed #999999;
}
h1 span.date {
  position: absolute;
  bottom: 0;
  right: 0;
  font-size: .5em;
  background-color: #E9E9E9;
  color: black;
  padding: 2px 7px 0 7px;
}
```

Some of the properties listed above, like *border-bottom,* are just for looks. The crucial properties are bolded: *position*, *bottom,* and *right*. Once you give the headline a relative position, you can position the containing the date in the lower-right corner of the headline by setting both the *bottom* and *right* properties to *0*.

Note: Internet Explorer 6 and earlier can get the placement of an element wrong when you use the *bottom* or *right* properties. In this example, the *width: 100%;* declaration in the *h1* tag style fixes the problem, as discussed in the box on page 338.

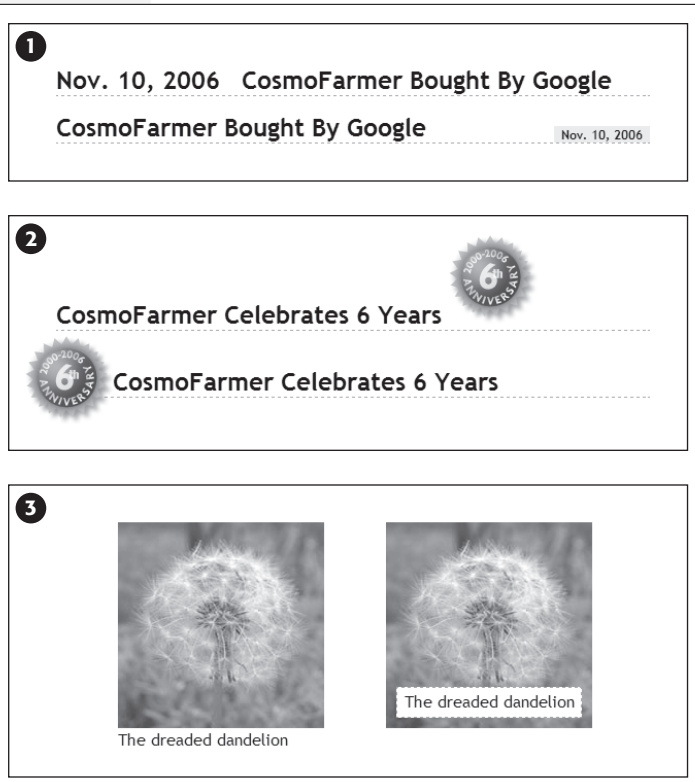


Figure 13-8:
Absolute positioning is perfect for simple design details like placing a date in the lower-right corner of a headline (top), punching an image out of its containing block (middle), or placing a caption directly on top of a photo (bottom). (You'll learn the caption trick in the tutorial on page 384.)

Breaking an Element Out of the Box

You can also use positioning to make an item appear to poke out of another element. In the second example in Figure 13-8, the top image shows a headline with a graphic. That is, the <img> tag is placed inside the <h1> tag as part of the headline. Using absolute positioning and negative *top* and *left* property values moves the image to the headline's left and pushes it out beyond the top and left edges. Here's the CSS that produces that example:

```
h1 {
  position: relative;
  margin-top: 35px;
  padding-left: 55px;
  border-bottom: 1px dashed #999999;
}
h1 img {
  position: absolute;
  top: -30px;
  left: -30px;
}
```

The basic concept is the same as the previous example, but with a few additions. First, the image's *top* and *left* values are negative, so the graphic actually appears 30 pixels above the top of the headline and 30 pixels to the left of the headline's left edge. Be careful when you use negative values. They can position an element partially (or entirely) off a page or make the element cover other content on the page. To prevent a negatively positioned element from sticking out of the browser window, add enough margin or padding to either the body element or the enclosing, relatively positioned tag—the <h1> tag in this example. The extra margin provides enough space for the protruding image. In this case, to prevent the image from overlapping any content above the headline, add a significant top margin. The left padding of 55 pixels also moves the text of the headline out from under the absolutely positioned image.

As in the previous example, Internet Explorer is ready to make trouble. What's worse, adding *width: 100%* doesn't even fix things this time. Since there's padding on the <h1> tag, setting its width to 100 percent actually makes the <h1> wider than 100 percent of the page (see page 165 for the reason why). There's a solution, but it uses a nonstandard CSS property—*zoom*. Simply add *zoom: 1* to the <h1> tag style:

```
h1 {
  position: relative;
  margin-top: 35px;
  padding-left: 55px;
  border-bottom: 1px dashed #999999;
  zoom: 1;
}
```

Note: The *zoom* property doesn't cause harm in other browsers, although it prevents your CSS from validating correctly (page 36). You can use Internet Explorer's conditional comments to hide the nonstandard property, as discussed on page 433. An even better solution is to create a separate external style sheet just for IE (see page 421).

Using CSS Positioning for Page Layout

As mentioned on page 363, trying to position every last element on a page in exact spots in a browser window is usually an exercise in frustration. Using absolute positioning judiciously, you can build many standard web page layouts (like the ones you saw in the last chapter). This section shows you how to build a three-column, fluid layout using absolute positioning. The page will have a banner, left and right sidebars, a main content area, and a footer for copyright notices.

Note: This section teaches you a generic approach to absolute positioning that you can apply to almost any page layout. For a real hands-on exercise in creating a layout with absolute positioning, turn to the tutorial on page 380.

Whenever you use absolute positioning, keep this rule of thumb firmly in mind: *Don't try to position everything.* To achieve a good layout, you usually have to use absolute positioning on only a couple of page elements.

Here's a simple technique you can use to figure out which elements need positioning. Say you want to build a three-column design, like Figure 13-9, right. First, study how the different sections of the page follow the normal HTML flow, without any CSS positioning (Figure 13-9, left). Then, for each layout element on your page, ask yourself, "Would this be in the right place if I didn't position it at all?"

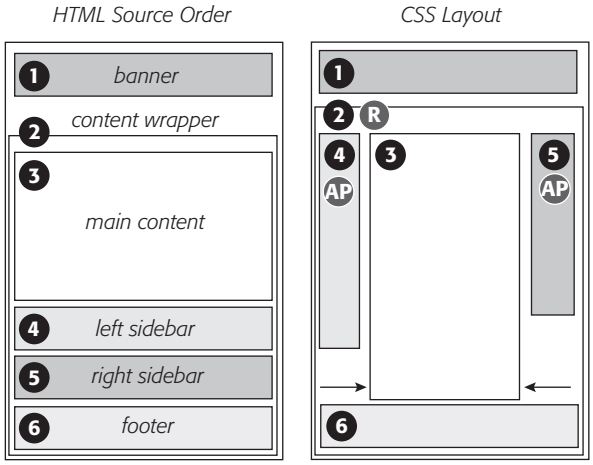


Figure 13-9:
The left diagram demonstrates how to divide the HTML of a page up into sections, each wrapped in a tag with a unique ID. The right diagram shows the final, three-column layout and the types of positioning required: relative positioning for the content wrapper div (R); absolute positioning to place the left and right sidebars correctly (AP). Finally, the main content area needs a little left and right margin to keep it from being covered by the sidebars (arrows).

Here's a walk through the page elements in the left image of Figure 13-9:

- **The banner.** The banner (1) is at the top of the page. That's right where you want it, so it doesn't require absolute positioning. You can use a combination of margins and padding to scoot the content around a little (maybe add some white space above or to the left of the banner).
- **The content wrapper.** This is a special element that holds all other elements on the page (2). Since it holds the page's contents, just ask yourself whether you want the contents to appear below the banner. You do, so you don't need to apply absolute positioning here either.

Note: This content wrapper's role in life is to help you position page elements–like the sidebars–within it. See step 3 on the next page.

- **The main content.** The main part of the page is also directly under the banner (3). You'll have to indent it on the left and right sides to make room for the sidebars, but you don't need absolute positioning to do that.

- **The left sidebar.** In Figure 13-9, left, it appears way down the page underneath the main content (4). Is that where it should be? Definitely not, so this section needs absolute positioning.
- **The right sidebar.** Instead of appearing on the right as its name implies, this one (5) appears way down the page below the left sidebar. Here again, you need absolute positioning to put this element in its rightful place—under the banner and on the right side of the page.
- **The footer.** In the left image, the footer appears at the bottom of the page (6)—just where you want it, so no need for any special positioning.

Note: It's usually a bad idea to use absolute positioning to place a footer at the bottom of the browser window. If the page's content runs longer than the height of the browser window, then the footer scrolls along with–and rides on top of–other page elements when your visitor scrolls. A better solution is *fixed* positioning, as described on page 356.

Now that you know how to decide where to use CSS positioning in your design, here's an overview of the process for building a three-column layout:

1. **Add tags for each section of the page.**

   These tags let you divide the page's content into different layout containers for the banner, sidebar, and so on. As with float layouts discussed in the previous chapter, you'll add IDs to these container divs so you can create specific CSS styles to format each part of the page (like * *).

   The left image in Figure 13-9 shows the order in which the different tags for a three-column layout appear in the HTML. One nice thing about absolute positioning is that you don't have to worry (as you do with float layouts) about the order of the tags in the HTML. The HTML for any absolutely positioned element can appear anywhere in the flow of the file—directly after the opening <body> tag, just before the closing </body> tag, or somewhere in between. It's the *positioning* properties that determine where an absolutely positioned element appears onscreen, not its place in the HTML.

2. **Wrap *all* the HTML for the main content, sidebars, and footer in another tag.**

   This (Figure 13-9, #2) gathers all of those content sections in one wrapper. Add an ID to the tag so you can style it (* *, for example). This provides a context for positioning the sidebars, as you'll see next.

3. **Give the wrapper a relative position.**

   Use the *position* property and the *relative* value to create a style like this:

   ```
   #contentWrapper { position: relative; }
   ```

Remember, if you don't supply a *top, left, bottom,* or *right* value for a relatively positioned element, then it appears where it normally would—in this case, directly below the banner. The relative position *does* change the positioning of elements *inside* the . Now when you use absolute positioning to place the sidebars—that's the next step—you can set *top* values relative to the wrapper, not the browser window. That way, if you add more content to the banner and make it taller, the wrapper and everything inside it moves neatly down the page. Without the , your sidebars would be placed relative to the top of the browser window and you'd have to adjust their *top* values to accommodate the change.

4. **Apply absolute positioning and set widths on the sidebars.**

   Since all other content on the page fits fine where it is, you need to position only the sidebars. Since you're positioning the sidebars relative to the wrapper that you set up in step 3, you can simply use *top* and *left* positions of *0* for the left sidebar and *top* and *right* positions of *0* for the right sidebar.

```
#leftSidebar {
  position: absolute;
  left: 0;
  top: 0;
  width: 175px;
}
#rightSidebar {
  position: absolute;
  right: 0;
  top: 0;
  width: 180px;
}
```

   The widths constrain the sidebar boxes. When you don't set a width, the sidebars expand to fill as much space as possible, leaving no room for the page's main content.

Note: You can also adjust the *top, right,* and *left* values to your liking. If the left sidebar would look a little better indented a bit from the left and top of the wrapper, then change the *left* and *top* values to, say, *10px, .9em,* or whatever value looks good to you.

---

5. **Adjust margins on the main content.**

   Since the left and right sidebars have absolute positioning, they're removed from the flow of the page. The main content doesn't even know they exist, so it simply goes about its business and flows right under them. But since the main content is in the right place on the page—below the banner—you don't need to reposition it. All you have to do is scoot it in a bit from the left and right edges to clear the sidebars.

To do so, apply left and right margins to the main content . Set the value of each margin to equal or greater than the sidebar's width:

```
#mainContent {
  margin-left: 185px;
  margin-right: 190px;
}
```

In this code, the margins are slightly larger than the widths of each sidebar. It's usually a good idea to increase the margins a little so that there's some visual space between the different elements of the page.

Handsome though it is, this layout has an Achilles' heel. Whenever you use absolutely positioned columns (like these sidebars), the columns can potentially grow to cover up part of a footer or other lower HTML elements (see Figure 13-10). Unlike with float-based layouts, where you can clear an element and force it to appear below a floated column, CSS gives you no way to clear the bottom of a positioned column. The best you can do is find a workaround, as in the next step.

6. **If necessary, add margins to the footer to prevent the sidebars from covering it up.**

   Your other option: just make sure that any absolutely positioned columns are *never* taller than the main content. When the main content is long enough, it pushes the footer down below the columns, and you avoid the problem.

Tip: If you like to live on the edge of web innovation, you can try a JavaScript solution to this problem: *www.shauninman.com/plete/2006/05/clearance-position-inline-absolute.php*.

You can modify this basic page layout technique in any number of ways. Remove the right sidebar and eliminate the *right-margin* on the main content , and you've got a two-column layout. Or eliminate the left sidebar instead to create a two-column layout, but with the thinner column on the right. You can also use this basic design in a fixed-width layout. Just set a width for the banner and a width for the content wrapper like this:

```
#banner, #contentWrapper { width: 760px; }
```

Creating CSS-Style Frames Using Fixed Positioning

Since most web pages are longer than one screen, you may want to keep some page element constantly visible—like a navigation panel, search box, or your site logo. HTML frames were once the only way to keep important fixtures handy as other content scrolled out of sight. But HTML frames have major drawbacks. Since each frame contains a separate web page file, you have to create several HTML files to make one complete web page (called a *frameset*). Not only are framesets time consuming for the designer, they also make your site hard for search engines to search. And HTML framesets can also wreak havoc for visitors who use screen readers due to vision problems or those who want to print pages from your site.

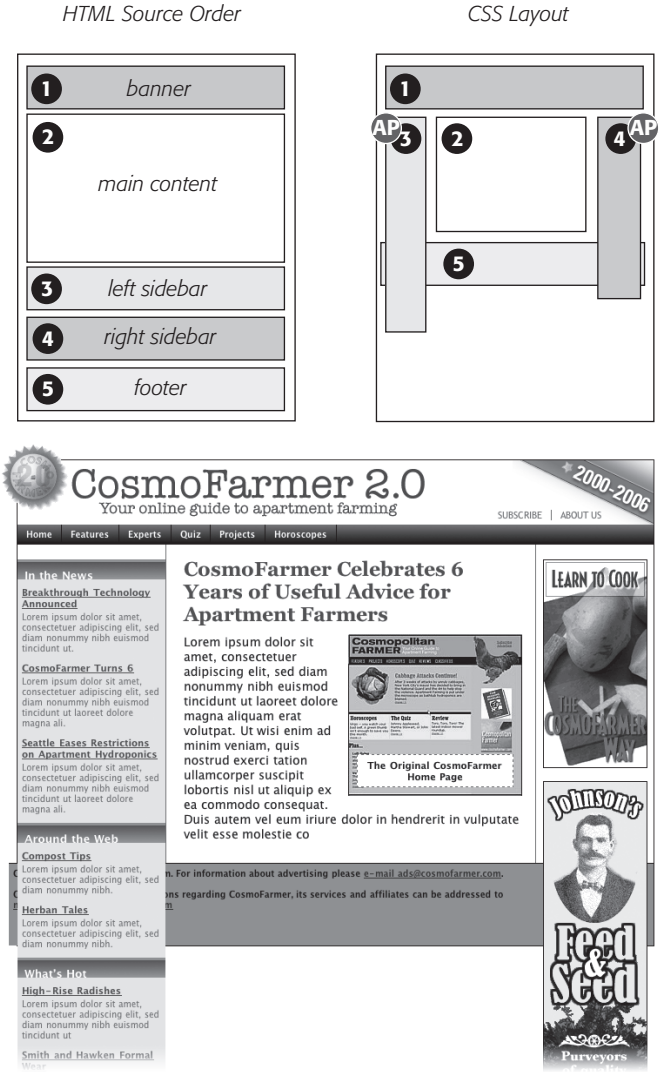


Figure 13-10:
If an absolutely positioned column is longer than any statically positioned content that needs to appear underneath the column, overlap ensues. An easy fix in this case is to indent the footer just as you did the main content area (see step 6 in on page 375).

Nevertheless, the idea behind frames is still useful, so CSS offers a positioning value that lets you achieve the visual appearance of frames with less work. You can see a page created using the *fixed* value in Figure 13-11.

Note: Fixed positioning doesn't work with Internet Explorer 6 or earlier. However, with just a little extra CSS (described in step 5 on page 375), you can make the page look fine in IE 6 (although the "fixed" elements end up scrolling along with everything else). And since Internet Explorer 7 and later *do* recognize fixed positioning, you can use this technique and get similar results for almost all of your site's visitors.

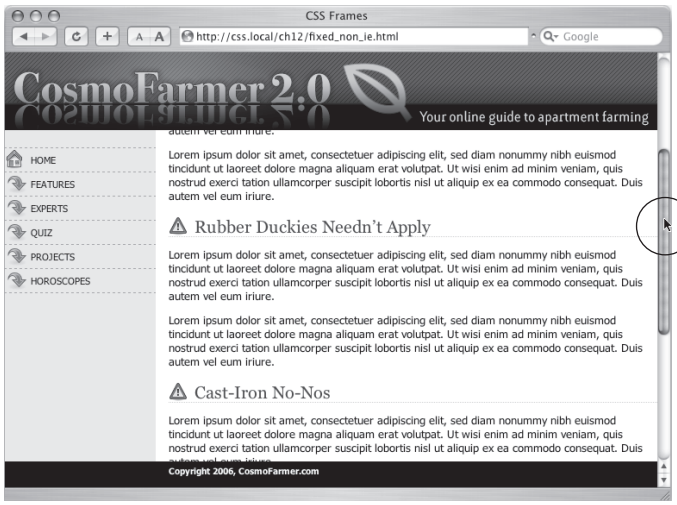


Figure 13-11:
Revisit the Web of yesteryear, but with a lot less code. Using the position property's fixed value, you can emulate the look of HTML frames by fixing some elements in place but still letting visitors scroll through the content of a very long web page. The scrollbar (circled) moves only the large text area; the top and bottom banners and the sidebar stay fixed.

Fixed positioning works much like absolute positioning in that you use the *left*, *top*, *right*, or *bottom* properties to place the element. Also like absolutely positioned elements, fixed positioning removes an element from the flow of the HTML. It floats above other parts of the page, which simply ignore it.

Here's how you can build the kind of page pictured in Figure 13-11, which has a fixed banner, sidebar and footer, and a scrollable main content area:

1. **Add tags with ID attributes for each section of the page.**

   You can have four main tags with IDs like *banner*, *sidebar*, *main*, and *footer* (Figure 13-12). The order in which you place these tags in the HTML doesn't matter. Like absolute positioning, fixed positioning lets you place elements on a page regardless of their HTML order.

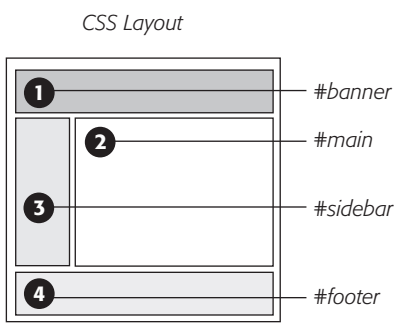


Figure 13-12:
With fixed positioning, you can lock any number of page elements in place, so they're always in view when your visitor scrolls. In this example, the header (1), sidebar (3), and footer (4) are fixed while the content in the main area of the page (2) is free to scroll.

Note: One exception: In order for the page to look normal for Internet Explorer 6 folks, the HTML for the footer should appear *below* the HTML for the main content area, as you'll see in step 5.

2. **Add your material to each .**

   In general, use the fixed divs for stuff a visitor should always have access to in the areas you wish to be locked in place. In this example, the banner, sidebar, and footer contain the site logo, global site navigation, and copyright notices.

   The main content goes into the remaining tag. Don't add too much information to a fixed , however. If a fixed sidebar is taller than the visitor's browser window, he won't be able to see the entire sidebar. And since fixed elements don't scroll, there'll be no way (short of buying a bigger monitor) for that visitor to see the sidebar content that doesn't fit in his browser window.

3. **Create styles for all fixed elements.**

   The left, right, top, and bottom values are relative to the browser window, so just determine where on the screen you'd like them to go and plug in the values. Specify a width for the elements as well.

Note: Unlike absolute positioning, fixed positioning is *always* relative to the browser window, even when an element with fixed positioning is placed inside another tag with relative or absolute positioning.

The styles to position the elements numbered 1, 3, and 4 in Figure 13-12 look like this:

```
#banner {
  position: fixed;
  left: 0;
  top: 0;
  width: 100%
}
#sidebar {
  position: fixed;
  left: 0;
  top: 110px;
  width: 175px;
}
#footer {
  position: fixed;
  bottom: 0;
  left: 0;
  width: 100%;
}
```

4. **Create the style for the scrollable content area.**

   Since fixed-positioning elements are removed from the flow of the HTML, other tags on the page have no idea the fixed position elements are there. So, the tag with the page's main content, for example, appears underneath the fixed items. The main task for this style is to use margins to move the contents clear of those areas. (The concept is the same as for absolutely positioned layouts, as discussed on page 365.)

   ```
   #main {
     margin-left: 190px;
     margin-top: 110px;
   }
   ```

5. **Fix the layout for Internet Explorer 6 and earlier.**

   IE 6 doesn't understand fixed positioning. It treats fixed elements like *static* elements, in that it doesn't try to place them in exact spots on the page. Depending on how you've ordered your HTML, in IE 6 your page may just look weird, with big margins between the banner and sidebar or worse—the navigation bar and banner may end up *below* the main content.

   The trick is to tell IE 6 to treat the fixed elements like absolutely positioned elements, which takes those elements out of the flow of the page and places them in their rightful places in the browser window.

   ```
   * html #banner { position: absolute; }
   * html #sidebar { position: absolute; }
   ```

Note: These styles use the ** html hack* to hide their properties from browsers other than IE 6 and earlier (see the box on page 169). You can also use IE's conditional comments (page 433).

You'll notice that the *#footer* style isn't listed. You don't want to position the footer absolutely—otherwise it'll travel up the browser window when scrolled, sitting directly on top of the other scrolling content.

In this case, it's best to have the footer appear at the bottom of the page and scroll up into view, just as any unpositioned footer would. (That's why, as mentioned in step 1, you should put the HTML for the footer below the HTML for the main content so it appears at the bottom of the page in IE 6.)

This technique doesn't make IE 6 handle fixed positioning correctly, but it at least places the banner and sidebar in their proper places when the page loads. When someone using IE 6 scrolls the page, the banner and sidebar scroll off the top of the window like other content. In other words, in IE 6 your page works like any ordinary web page, and in IE 7 or 8, Firefox, Safari, and Opera it works even better.

Tutorial: Positioning Page Elements

This tutorial lets you explore a few different ways to use absolute positioning, like creating a three-column layout, positioning items within a banner, and adding captions on top of photos. Unlike the previous chapter, where you wrapped chunks of HTML in tags and added ID or class names to them, in these exercises most of the HTML work has already been done for you. You can focus on honing your new CSS skills.

To get started, download the tutorial files located on this book's companion website at *www.sawmac.com/css2e/*.

Enhancing a Page Banner

First, you'll make some small but visually important changes to a page banner. You'll create styles that refer to HTML tags with IDs or classes applied to them. (Again, that part has been taken care of for you.)

1. **Launch a web browser and open the file *13* → *index.html*.**

   On this CosmoFarmer.com web page (Figure 13-13), start by repositioning several parts of the banner.

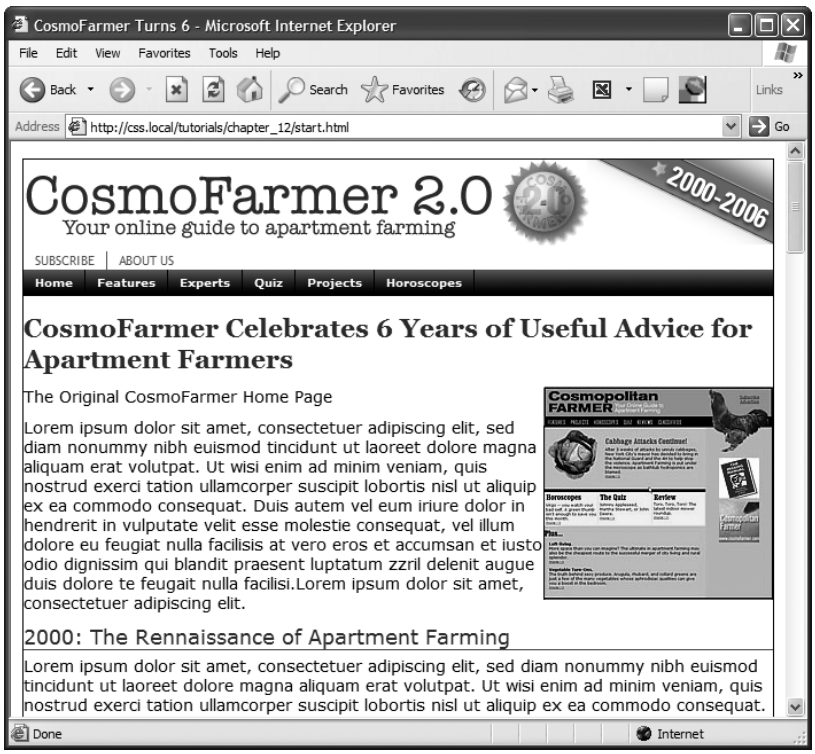


Figure 13-13: *This page has it all—banner, nav bar, main story area, sidebar links, and ads. But there's not much visual structure. Just normal, static HTML with everything running from top to bottom of the page. You can make it more readable by organizing the contents into columns.*

2. **Open the *index.html* file in a text editor. Place your cursor between the opening and closing <style> tags.**

   Along with the <style> tags for an internal style sheet, the page already has an attached external style sheet with some basic formatting. Start by moving the small CosmoFarmer 2.0 badge to the left side of the banner. To help break up the boxy look that's typical of CSS designs, break this graphic out of the banner's borders, so it looks like a slapped-on sticker.

3. **In the internal style sheet, add this new style:**

```
#banner #badge {
  position: absolute;
  left: -18px;
  top: -18px;
}
```

   The graphic is inside of a with an ID of *banner*, and the graphic itself has an ID of *badge*. This style positions the top left corner of the graphic 18 pixels to the left and 18 pixels above the top of the page.

   Preview the page now, and you'll see a couple of problems. First, the graphic hangs off the edge of the page but you really want it to hang off the edge of the banner area. You'll tackle that problem now.

4. **Add this style *above* the one you just created:**

```
#banner {
  position: relative;
}
```

   It's good practice to place the CSS code for styles that control a general section of a page (like this *#banner* style) *above* the code for styles that format just parts of that section (like the style you created in step 3). Also, grouping styles for related sections makes it easier to find styles when you need to analyze or edit a page's CSS. In this case, the *#banner* style goes first in the internal style sheet because it applies to a large chunk of HTML. But you should keep the *#banner #badge* style near it as you add more styles to the page. (You can read more about techniques for organizing your CSS on page 416.)

   The *#banner* style creates a new positioning context for any nested tags. In other words, the *relative* setting makes any other positioned elements inside this tag place themselves relative to the edges of the banner. This change in positioning shifts the placement of the style you created in step 3. Now it's 18 pixels above and to the left of the banner box. The badge still hangs off the page just a little bit, so you'll add some margins around the page to accommodate the graphic.

5. **Add a style for the body tag. Place it in the internal style sheet *above* the other two styles you created:**

```
body {
  margin: 20px;
}
```

This margin adds enough space around the edges of the page so the entire graphic is visible (Figure 13-14). But now you have another problem—the CosmoFarmer logo is partially hidden underneath the badge. Overlapping elements is one of the hazards of absolute positioning. In this case, you can fix the problem by adding a little margin to the logo.

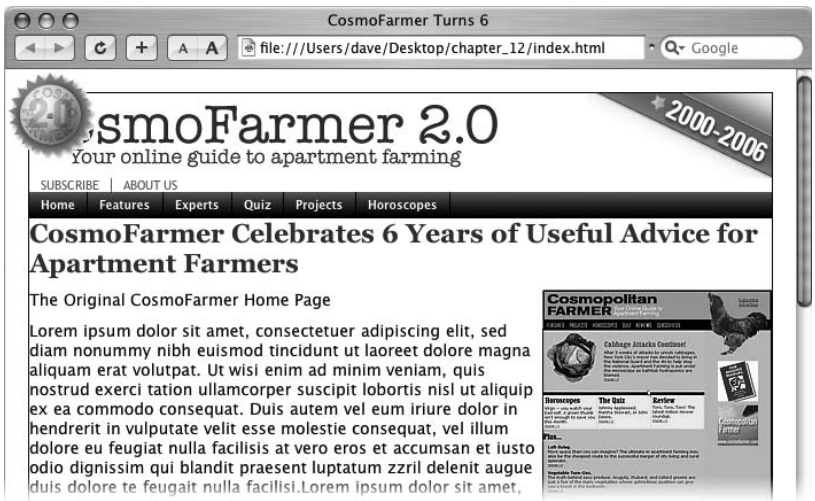


Figure 13-14: *Making a graphic break out of a box, like the CosmoFarmer badge in the upper-left corner of this banner, is a cinch with absolute positioning. By crossing over the borderlines of the banner, the graphic helps soften the boxy look of the rest of the banner and lends dynamic energy to the design.*

6. **Add a new style for the logo to the internal style sheet. Place it below the other styles you've created so far:**

```
#banner #logo {
  margin-left: 60px;
}
```

Like the badge graphic, the logo already has an ID applied to it—*logo*. This style moves the logo far enough to the left so that it's out of the way of the absolutely positioned graphic. However, a weird thing happens if you view this in Internet Explorer 6 and 7: When you mouse over the navigation bar, the logo jumps *back* to where it was before. Huh? Fortunately, the problem is easily fixed.

7. **Edit the *#banner #logo* style you just created by changing its positioning to *relative:***

```
#banner #logo {
  margin-left: 60px;
  position: relative;
}
```

Adding relative positioning doesn't actually move the logo anywhere—that would happen only if you added a *left, top, right,* or *bottom* value. For reasons known only to Microsoft, though, it knocks IE upside the head and makes it behave.

The banner is looking good so far, but the two links—*Subscribe* and *About Us*—look awkward sandwiched between the logo and the nav bar. There's plenty of space in the right side of the banner, so you'll move them there. (The links are actually an unordered list that gets its formatting from the page's external style sheet. See page 235 for details on how to turn an unordered list into a horizontal navigation bar.)

8. **Add this new style to the bottom of the internal style sheet:**

```
#banner ul {
  position: absolute;
  right: 60px;
  bottom: 5px;
}
```

This style is a descendent selector that targets unordered lists inside the banner. (There's just one list in this case.) Since the <ul> is absolutely positioned, it's removed from the flow of the page, letting the nav bar scoot up just under the banner.

Also, remember this tag is inside the banner, which you earlier set to a *relative* position. Accordingly, the Subscribe and About Us links are positioned relative to the tag. They're placed an exact amount from the right and bottom edges of the banner…unless you're viewing this in—you guessed it—Internet Explorer 6 or earlier. As discussed on page 379, IE 6 has problems positioning elements using the bottom coordinates of relatively positioned elements (like this banner). It ends up using the bottom coordinates of the entire page. Luckily, the fix is easy.

Note: If you're following along in IE 6, you can actually see the links in IE 6 if you scroll down to the very bottom of the web page.

---

9. **Edit the *#banner* style you created in step 4 and add *zoom: 1;*.**

```
#banner {
  position: relative;
  zoom: 1;
}
```

These lines are more nonsense code that all browsers except Internet Explorer just ignore (see the box on page 173 for the details).

10. **Preview the page in a web browser.**

    The finished banner should look like Figure 13-15. This exercise is a good example of using absolute positioning to achieve small, subtle changes that add a lot to a page's visual appeal.

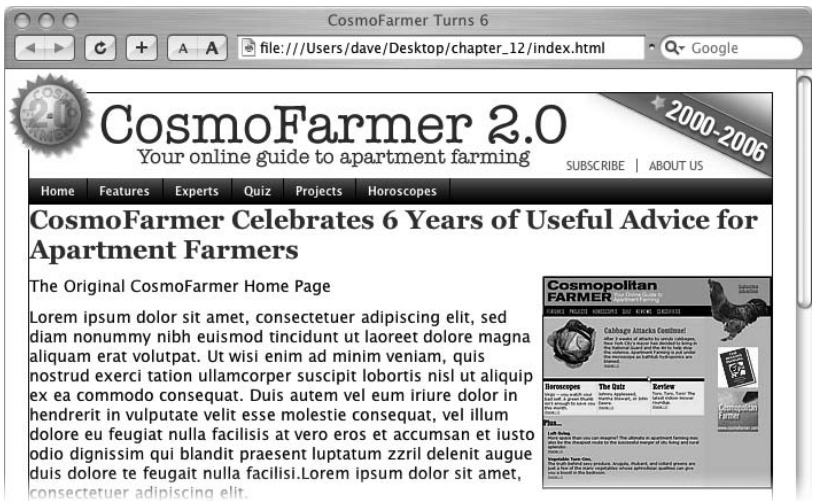


Figure 13-15: *Absolute positioning is a big help in placing small elements like the Subscribe and About Us links in the right of the banner. Unlike floats, the exact position of the links in the HTML code isn't important, giving you a lot of layout flexibility. You can achieve the same effect without absolute positioning, but it would be harder.*

Adding a Caption to a Photo

In Chapter 8, you learned one way to add a caption to a photo (page 203). In the examples from that chapter, the captions sat underneath the photos, which is what you want most of the time. But someday, you may want to add a caption directly *on* a photo, like the subtitles TV news shows love to display across the lower third of the screen.

1. **Open *index.html* in your text editor.**

   Notice the graphic of the original CosmoFarmer home page. Currently it's aligned to the right using the *align* attribute of the <img> tag, but that's *so* 2001. You'll align it using CSS instead, but first you need to edit some HTML.

2. **Locate the <img> tag that inserts the graphic *old_home.jpg*, and then delete the HTML code *align="right"*.**

   Here's what the entire tag looks like. You want to remove the part that's bolded:

```
<img src="images/old_home.jpg" alt="The Original Cosmo Home Page"
height="186" align="right" />
```

Now that you've gotten rid of the old HTML, you need to create a container—a tag—to hold the CSS for both the image and its caption.

3. **Immediately before the <img> tag, add * *. After the closing </p> of the caption (which appears right after the <img> tag), add the closing . When you're done, the HTML should look like this:**

```
<div class="figure">
<img src="images/old_home.jpg" alt="The Original Cosmo Home Page"
height="186"/>
<p>The Original CosmoFarmer Home Page</p>
</div>
```

All the code for the photo and caption are in one box that you can align and format as a unit.

4. **Create a style to format the newly added :**

```
#main .figure {
  float: right;
  width: 200px;
  margin-bottom: 2px;
  margin-left: 10px;
}
```

The properties in this style should be old news by now (especially if you read Chapter 8). This style aligns the box to the right edge of the page, and the bottom and left margins add a little space between the photo box and the text that wraps around it.

The plan is to move the caption paragraph out of the normal flow of the page and place it on top of the photo. To do so, you'll position the caption relative to the edges of the photo. However, since the <img> tag is *self-closing* (meaning it doesn't have both an opening and closing tag), you must position the caption relative to another element. Here's another use of the *figure* you just added—to provide the positioning context for the caption.

5. **Add *position: relative* to the style you just created:**

```
#main .figure {
  float: right;
  width: 200px;
  margin-bottom: 2px;
  margin-left: 10px;
  position: relative;
}
```

Now you can position the caption relative to the , which for all intents and purposes is the same as positioning it relative to the photo.

6. **Add a new style after the *#main .figure* style you created in the last step:**

```
#main .figure p {
  position: absolute;
  width: 168px;
  left: 10px;
  bottom: 10px;
  background-color: #FFF;
}
```

This new style positions the paragraph 10 pixels from the bottom and 10 pixels from the left edge of the tag. The *width* property constrains the paragraph so it doesn't span across the entire photo, and *background-color* makes the text legible. All that's left are a few formatting details to improve the look of the caption.

7. **Edit the style you just created, so that it looks like this:**

```
#main .figure p {
  position: absolute;
  width: 168px;
  left: 10px;
  bottom: 10px;
  background-color: #FFF;
  border: 1px dashed #666666;
  font-size: 13px;
  font-weight: bold;
  text-align: center;
  padding: 5px;
  margin: 0;
}
```

You need to attend to one small detail. It's something you may never notice, but some browsers position the caption just a few pixels lower than other browsers. (To see for yourself, check the page out in IE and then in Firefox.) Browsers position inline elements (like images) differently relative to the baseline of other elements around them (page 158). At any rate, the fix is simple: Using CSS, force the image to display as a block-level element.

8. **Add one more style to the internal style sheet:**

```
#main .figure img {
  display: block;
}
```

Preview the page. The caption should appear centered across the lower portion of the photo, as in Figure 13-16.

Figure 13-16:
Only absolute positioning lets you layer one element on top of another, like the caption on top of this photo.

Laying Out the Page

Now it's time to turn your attention to the structure of this page. As it is now, you need to scroll down the page to read the latest news in the sidebar and scroll even farther to see the ads. (Advertisers hate that.) In this section, you'll use absolute positioning to create a three-column flexible layout that brings all content up to the top of the page (and keeps your sponsors from canceling their accounts).

Before you get started, get an overview of the page structure—see Figure 13-17. Each section of the page is wrapped in its own tag, with an appropriate ID applied. The page's main contents, sidebar, ads, and copyright notice are enclosed in a with the ID *contentWrapper* (#4 in Figure 13-17). All of the tags in the page's body are wrapped in a with an ID of *wrapper* (1). That may seem like a lot of tags, but they each serve an important purpose.

Your mission is to arrange the three <divs> (*sidebar, main*, and *adverts*) into three columns. You need to use absolute positioning on only two elements—the sidebar and the advertising section (see #6 and #7 in Figure 13-17). You'll take them out of the normal flow of the page (where they appear near the bottom) and stick them at the left and right edges of the page just below the banner. Absolute positioning also causes those elements to float above the page, and on top of the main content area (see #5). To make room for the sidebars, you have to add a little margin to the left and right of the main area.

1. **Create a style for the tag that encloses the main contents of the page (#3 in Figure 13-17). Add it as the last style in the internal style sheet:**

```
#contentWrapper {
  clear: both;
  position: relative;
}
```

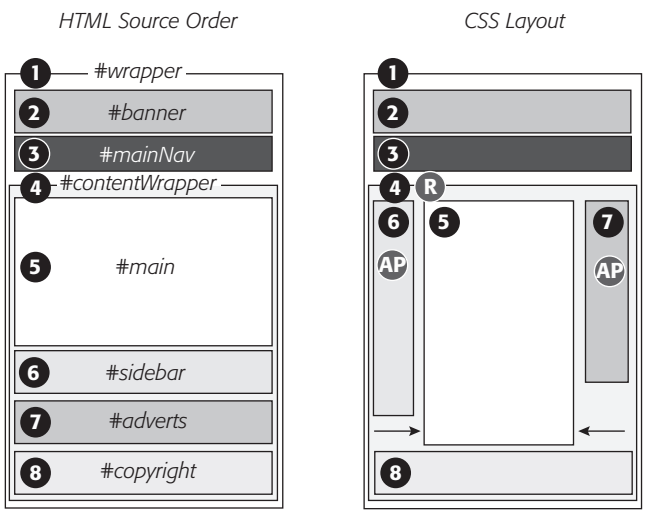


Figure 13-17:
The secret to absolutely positioned layouts—less is more. Using the minimum amount of positioning to get the job done isn't only less work, it also creates less troubleshooting for different browsers. You usually need to position only a couple of elements to create a basic page layout. Use padding or margins to handle other spacing issues (like moving an item a few pixels to the left).

The *clear* property helps the *#contentWrapper* clear the navigation bar, which was created using a left float. (As explained on page 323, you should always clear elements that need to appear under a float.)

The *position* property comes in handy for placing the sidebars. Setting its value to *relative* lets you position both sidebars relative to the four edges of the content wrapper, not the four edges of the browser window. (See step 3 on page 373 for more on why this is useful.)

2. **Create a style for the left sidebar, placing the CSS code under the style you created in step 1:**

```
#sidebar {
  position: absolute;
}
```

This style takes the sidebar out of the normal flow of the page, but it doesn't yet position it anywhere. It's still near the bottom of the page, but if you view it in a browser, you'll see it's floating on top of the advertisements. To position it, use the *top* and *left* properties.

3. **Add top and left properties to the style you just created by:**

```
#sidebar {
  position: absolute;
  top: 15px;
  left: 0;
}
```

Since this sidebar is positioned relative to the content wrapper , a *left* position of *0* places it flush with the left edge. The top value is determined by aesthetic judgment (otherwise known as trial and error). A top value of *0* would make the sidebar touch the bottom of the nav bar; the 15 pixels of space bring the sidebar's top more in line with the story headline.

One thing is missing: Most of the time when you position something, you also want to give it a width. That's true in this case, since at this point the sidebar spreads almost across the entire page, covering nearly all of the content.

4. **Add a width to the *#sidebar* style.**

   The final style looks like this:

```
#sidebar {
  position: absolute;
  top: 15px;
  left: 0;
  width: 170px;
}
```

   Next, repeat the process to position the advertising area of the page.

5. **Add an *#adverts* style to the bottom of the style sheet:**

```
#adverts {
  position: absolute;
  top: 15px;
  right: 5px;
  width: 125px;
}
```

   This style works just like the one for the sidebar, except that you place the ads relative to the *right* edge of the page. That works much better than trying to put the ads at some point relative to the *left* edge of the page. When you specify a *right* value, the ads always stay the same distance from the right edge of the content wrapper. If you change the width of the browser window, the ads stay in position.

   At this point, the page should look like Figure 13-18, with both the sidebar and ads covering the main story of the page. Adjust that main area's margins to prevent this overlap.

6. **Below the *#adverts* style you just created, add a style for the main story area of the page:**

```
#main {
  margin-left: 170px;
  margin-right: 135px;
}
```

   This *#main* style indents the main story area so that it clears the left and right sidebars. Now just a few design enhancements remain.

Figure 13-18: *Absolute positioning can pose some problems. Since absolutely positioned elements (like the two sidebars here) float on top of the page, separate from the main flow of the HTML, they can cover up and hide other elements.*

7. **Add some padding and borders to the *#main* style:**

```
#main {
  margin-left: 170px;
  margin-right: 135px;
  padding: 0 15px 15px 20px;
  border: 1px solid #666666;
  border-top: none;
  border-bottom: none;
}
```

The padding adds some space inside of the div, so the text doesn't touch the sidebars or the bottom of the div. You can actually achieve the same thing by increasing the left and right margins from the previous step, but this way you also get to add a nice border to the left and right edges of the div, helping to visually divide the three columns.

Notice the little productivity shortcut in this style. First, the *border* style declaration sets up a border on *all four edges* of the div; next, the last two declarations turn *off* the border at the top and bottom. You can achieve the exact same effect with two style declarations (*border-left* and *border-right*), but then you'd have to repeat the values (*1px solid #666666*). If you want to change the color, thickness, or style of both borders, then you have to edit *two* properties. This way, only one declaration takes care of both the left and right borders.

The layout is nearly complete. There's just one last thing: When you preview the page in IE 6, you see the left sidebar is off by a lot—185 pixels too far to the right to be exact! Yep, another IE bug. Fortunately, there's an easy fix. To make the left sidebar line up and fly right (#4 in Figure 13-17), give its containing tag that mysterious IE-only property known as *layout* (see the box on page 338).

8. **Add a width to the *#contentWrapper* style:**

```
#contentWrapper {
  position: relative;
  clear: both;
  width: 100%;
}
```

The page now falls correctly into three columns (Figure 13-19), with fewer steps than the modifications you made to the banner. Preview the page in a web browser and expand the browser window. You'll see the page's flexible design lets it fit any width window.

Figure 13-19: *Building a flexible, three-column design with absolute positioning requires just a few steps, but the basic concept breaks down to this: Position the two outer columns, and indent the left and right margins of the middle column.*

If fixed-width designs are your cup of tea, the basic structure of this page makes it easy to set a fixed width. Just set a width for the that wraps all of the other tags on the page (#1 in Figure 13-17) like this:

```
#wrapper {
  width: 760px;
  margin: 0 auto;
}
```

The margin property here, centers the layout in the middle of the page. If you prefer to have the layout hug the left side of the browser window, just leave the margin property out.

A completed version of this tutorial is in the *13_finished* folder.

4

Part Four: Advanced CSS

CHAPTER
14

CSS for the Printed Page

Not everyone likes to sit in front of a computer and read. More and more, web surfers are printing out pages for offline reading. Plenty of folks enjoy websites while sitting at the dinner table, on a train, or lying on the grass in a park on a sunny day. Printing out a receipt after making an online purchase is common as well. So what becomes of your carefully crafted designs when the ink hits the paper? White text on a black background can waste gallons of toner, and some browsers may not even print the background. Do visitors really need to see your site's navigation bar on the printed page? Probably not.

Web designers used to solve this dilemma by creating separate *printer-friendly* versions of their sites—essentially creating a duplicate site formatted just for printing. Not only is that a lot more work than building one version of the site, it also means changing multiple files each time a page needs editing. Fortunately, CSS offers a better way—the ability to make a page look one way when displayed on a screen and a different way when printed (see Figure 14-1). The secret? Media style sheets.

How Media Style Sheets Work

The creators of CSS were pretty thorough when they envisioned all the different ways people might view websites. They knew while most people view the Web using a computer and monitor, sometimes people want to print out a page. In addition, new web surfing devices like mobile phones, handhelds, and televisions have their own unique requirements when it comes to web design.

To accommodate these different methods of surfing, CSS lets you create styles and style sheets that specifically target a particular *media type*. CSS recognizes 10 different media types: *all, braille, embossed, handheld, print, projection, screen, speech, tty,* and *tv*. The browser applies the style sheet only when that media type is active. In other words, the browser can apply one style sheet for the screen and a different one when printing. Many of these media types are for very specialized applications like a Braille reader for the blind, a speech reader (for those who want or need to hear a page in spoken form), or a teletype machine. Most of these types don't yet work in the real world, as there are no devices programmed to understand them. You should be aware, however, of three: *all, screen,* and *print.*

- **All** applies to every type of device. When a style or style sheet applies to *all* media types, every device accessing the page uses those same styles. Printers and monitors alike attempt to format the page the same way. (Styles actually work this way already when you embed them in the page or link them from an external style sheet, so you don't need to specify "all media types" when adding a style sheet to a page.)
- **Screen** styles display only on a monitor. When you specify the *screen* media type, the browser ignores those styles when it prints the page. This media type lets you isolate styles that look good on screen but awful on paper, like white text on a black background.
- **Print** styles apply only when the page is printed. Print styles let you create styles that use printer-friendly font sizes, colors, graphics, and so on.

Note: The Opera web browser understands the *projection* media type when it's in Full Screen mode. For a tutorial on this cool feature, visit *www.opera.com/support/tutorials/operashow/*.

One approach is to build styles with your monitor in mind first, and then attach them using one of the methods described below (methods like internal or external, linked or imported). At the outset, these styles work for both the monitor and the printer. Then, you create a style sheet that applies only when printing. It overrides any of the main styles that negatively affect the look of the page when printed. You'll learn this technique starting on page 399. Alternatively, you can create two different media style sheets—one for screen and the other for print—and attach them to your web pages, as described next.

Tip: Another popular technique is to create three style sheets: one for the printer, one for the screen, and a third with styles that should appear both on a monitor and when printed. You specify the media types for the printer and screen style sheets and attach the third, shared set of styles as you would normally (see page 398).

Figure 14-1: *Using a printer style sheet can save paper, ink, and frustration by letting visitors print just the information they're after and leave unneeded extras on the monitor. In this example, a page from the great web development site, A List Apart, looks nice onscreen (top) and simple, clean, and informative when printed (bottom). Notice how the printed version expands to fill the entire width of the page and leaves off logo, navigation, and ads.*

How to Add Media Style Sheets

Media style sheets are simply CSS style sheets: They can be either internal or external. However, when you want a web browser to apply the styles for only a particular device such as a screen or printer, you need to add the style sheet to your web page in a slightly different way than usual.

Specifying the Media Type for an External Style Sheet

To attach an external style sheet while specifying a particular media type, use the <link> tag with a *media* attribute. To link a style sheet that should be used only for printing, add this HTML to your web page:

```
<link rel="stylesheet" type="text/css" media="print" href="print.css"/>
```

Note: Technically, the rules of CSS also let you define a media type when using the @import method of attaching an external style sheet (see page 38), like so: *@import url(print.css) print;*. But since Internet Explorer refuses to understand this code, you should avoid using it.

If you don't specify any media, a web browser assumes you're targeting all media, so it uses the style sheet for screen display, printing, and so on. In addition, you can specify *multiple* media types by separating them with commas. A linked external style sheet targeting multiple media might look like:

```
<link rel="stylesheet" type="text/css" media="screen, projection, handheld"
href="screen.css"/>
```

You probably won't need to specify more than one until browsers start recognizing multiple media types.

Tip: When you build and test printer style sheets, leave off the *media="print"* attribute and turn off any screen-only style sheets. For example, change *media="screen"* to *media="speech"*. This technique lets you view the page in a web browser but have it display as if it were formatted for a printer. Once the printer style sheet looks good, make sure to set its media type to *print* and turn on any screen-only style sheets.

Specifying the Media Type Within a Style Sheet

You can also include media-specific styles directly inside a style sheet using the *@media* directive. Maybe you want to add a couple of print-specific styles to an internal style sheet. Or perhaps you'd like to keep all your styles in a single external style sheet and just add a few printer-only styles. You can do so using the *@media* directive, like so:

```
@media print {
  /* put your styles for the printer in here */
}
```

Be careful to include that closing brace (on the last line), otherwise the directive won't work. Here's an example of using *@media* to include two printer-only styles:

```
@media print {
  h1 {
    font-size: 24pt;
  }
  p {
    font-size: 12pt;
  }
}
```

Technically, it doesn't really matter whether you put all styles in a single file and use the *@media* method or put media-specific styles in their own external style sheets (like *screen.css*, and *printer.css*). Putting all your printer-only styles in their own external style sheet named something like *printer.css* makes it a lot easier to find and edit styles for print only.

Creating Print Style Sheets

First, see how pages on your site print before embarking on a print-specific redesign. Often, all the information on a web page prints without problems, so you may not have to add a printer style sheet to your site. But in some cases, especially when using heavy doses of CSS, pages look awful printed. For example, since web browsers don't print background images unless instructed to, you might end up with large blank spaces where those background images were. But even if a page looks the same in print as it does on the screen, you have many ways to improve the quality of the printed version by adding custom printer-only styles (see Figure 14-2).

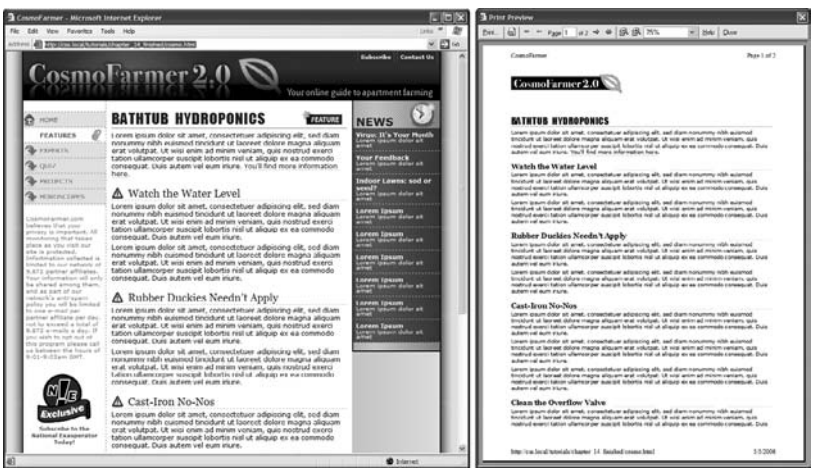


Figure 14-2: *When printing a web page, you really don't need navigation links or information that's not related to the topic at hand. With a printer style sheet, you can eliminate sidebars, navigation bars, and other content designed for web browsing (left). The result is a simply formatted document—perfect for printing (right).*

Tip: A quick way to see how a page will print without wasting a lot of paper and toner is to use your browser's *Print Preview* command. On Windows this is usually available from a web browser's File → Print Preview menu. On Macs, you usually first choose File → Print, and then click Preview in the window that appears. Using Print Preview you can check to see whether a page is too wide to fit on one page and see where page breaks occur.

Using *!important* to Override Onscreen Styling

As mentioned earlier, it's often useful to create a style sheet without specifying a media type (or by using *media="all"*). When you're ready to define some print-specific rules, you can just create a separate style sheet to override any styles that don't look good in print.

Say you've got an <h1> tag that's styled to appear blue onscreen, and you've also chosen rules controlling letter spacing, font weight, and text alignment. If the only thing you want to change for your printed pages is to use black rather than blue, then you don't need to create a new style with a whole new set of properties. Just create a main style sheet that applies in both cases and a print style sheet that overrides the blue color for the <h1> tag.

One problem with this approach is that you need to make sure the printer styles actually *do* override the main style sheet. To do this successfully, you have to carefully manage the *cascade*. As discussed in Chapter 5, styles can interact in complex ways: Several styles may apply to the same element, and those styles' CSS properties can merge and override each other. There's a surefire way to make sure one property trumps all others—the *!important* declaration.

When you add *!important* after the value in a CSS declaration, that particular property overrides any conflicts with other styles. Add this rule to a print style sheet to ensure that all <h1> tags print black:

```
h1 {
  color: #000 !important ;
}
```

This *h1* style overrides even more specific styles, including *#main h1*, *h1.title*, or *#wrapper #main h1* from the main style sheet.

Reworking Text Styles

You may not necessarily want to have text look the same onscreen as it does in print. A good place to start when creating a printer style sheet is by modifying the *font-size* and *color* properties. Using pixel sizes for text doesn't mean much to a printer. Should it print 12-pixel type as 12 dots? If you've got a 600 DPI printer, that text will be illegibly small. And while bright green text may look good onscreen, it may come out a difficult-to-read pale gray when printed.

Pixels and ems (page 120) make sense for onscreen text, but the measurement of choice for printing is *points*. Points are how Word and other word-processing programs measure font sizes, and they're what printers expect. In practice, most web browsers translate pixel and ems to something more printer friendly anyway. The base onscreen font size for most browsers—16-pixels—prints out as 12 points. But there's no consistent way to predict how every browser will resize text, so for maximum printing control, set the font size specifically to points in your print style sheets.

To make all paragraphs print in 12-point type (a common size for printing), use the following rule:

```
p {
  font-size: 12pt;
}
```

Note: As with ems, you don't add an 's' when setting the font to a point size: 12pt *not* 12pts.

Likewise, screen colors don't often translate well when printed on a black-and-white laser printer. Crisp black text on white paper is much easier to read, for instance, than light gray letters. What's more, as you'll see in the next section, white text on a black background—though very legible onscreen—often doesn't print well. To make text most readable on paper, it's a good idea to make all text print black. To make all paragraph text black, add this style to your print style sheet:

```
p {
  color: #000;
}
```

As mentioned on the previous page, if your print style sheet competes with styles from another attached style sheet, then use *!important* to make sure your printer styles win:

```
p {
  font-size: 12pt !important;
  color: #000 !important;
}
```

To make sure *all* text on a page prints black, use the universal selector (page 56) and *!important* to create a single style that formats every tag with black text:

```
* { color: #000 !important }
```

Of course, this advice applies only if your site is printed out in black and white. If you think most visitors to your site use color printers, then you may want to leave all the text color in or change the colors to be even more vibrant when printed.

Styling Backgrounds for Print

Adding background images and colors to navigation buttons, sidebars, and other page elements adds contrast and visual appeal to your web pages. But you can't be sure if the background will come through when those pages are printed. Because colored backgrounds eat up printer ink and toner, most web browsers don't normally print them, and most web surfers don't turn on backgrounds for printing even if their browser has this feature.

In addition, even if the background *does* print, it may compete with any text that overlaps it. This is especially true if the text contrasts strongly with a colorful background on a monitor but blends into the background when printed on a black-and-white printer.

Note: White text on a black background used to pose the biggest problem–your visitor would end up with a blank white page. Fortunately, most current web browsers have the smarts to change white text to black (or gray) when printing without backgrounds.

Removing background elements

The easiest way to take care of backgrounds is to simply remove them in your print style sheet. Say you reverse out a headline so that the text is white and the background is a dark color. If the style that creates that effect is named *.headHighlight,* then duplicate the style name in your print-only style sheet, like this:

```
.headHighlight {
  color: #000;
  background: #FFF;
}
```

This style sets the background to white—the color of the paper. In addition, to get crisp printed text, this style sets the font color to black.

GEM IN THE ROUGH

Two Birds with One Stone

You can use the *background-color* property to set a background color to white like this: *background-color: white.* You get the same effect using the *background* shorthand method: *background: white.* Remember that the background property (page 199) can also specify a background image, how the image repeats, and its position.

But when you leave out any values using the shorthand method, the web browser resets to its normal value. In other words, by omitting a background image value, the browser sets that value to its normal setting–*none.* So a declaration like *background: white;* not only sets the background color to white but also removes any background images. By using the *background* shorthand property, you kill two birds–setting a white background and removing images–with very little code.

Leaving background elements in

If you don't want to get rid of the background, you can leave it in and hope that visitors set their browsers to print them. If you leave background elements in your print style sheet and text appears on top of them, then make sure the text is legible with the backgrounds on *and* off.

Another thing to consider when using background images: Do you *need* the image to print out? Say you place a company's logo as a background image of a tag used for the banner of a page. Because the logo is in the background, it may not print. Your company or client may not be happy when every page printed from their site lacks a logo. In this case, you've got a few options. You can insert the logo as a regular <img> tag instead of a background image. This technique works, but what if the logo looks great on a full-color monitor but no good at all when printed on a black-and-white printer? Another technique is to leave the logo in as a background image and add *another,* more printer-friendly logo using the <img> tag. You then hide that <img> tag onscreen but show the printer-friendly logo when printed. Here's how:

1. **Add the <img> tag to your HTML in the spot where you want it to appear when printed:**

```
<img src="logo.png" height="100" width="100" id="logo" />
```

2. **Then, in the main style sheet (the one that applies when the page is displayed on screen), add a style that hides that image:**

```
#logo { display: none; }
```

3. **In the print style sheet, add one last style to display the image:**

```
#logo { display: inline; }
```

Now that logo won't appear on screen, but will when printed.

Tip: If you want to be absolutely sure that a background image prints, there's another tricky CSS workaround for overcoming a browser's reluctance to print background images. You can find it here: *http://web-graphics.com/mtarchive/001703.php*.

Hiding Unwanted Page Areas

Web pages are often loaded with informational and navigational aids like navigation bars, sidebars full of helpful links, search boxes, and so on. These elements are great for surfing the Web, but don't do much good on a piece of paper. Your web pages may also contain ads, movies, and other doodads that people don't like to waste expensive ink and toner on. You can do your visitors a favor by stripping these onscreen frills out of the content they really want to print.

POWER USERS' CLINIC

Revealing Links in Print

Imagine a coworker hands you a printout of a fascinating article she found on the Web. You're reading along and come to this passage: "And that's when I found the secret to eternal life *here*." The underline tells you there's a clickable link that reveals the secret. But on a piece of paper, of course, you have no way to follow where the link leads.

To prevent this conundrum on your own pages, you can make linked URLs print along with the rest of the text: "secret to eternal life here (*http://www.pyramind_scam.com*)." Using an advanced selector–*:after*–and an advanced CSS property called *content,* you can print text that doesn't appear onscreen at the end of a styled element. Unfortunately, the *:after* selector and *content* property trick doesn't work in Internet Explorer 7 or earlier. But it does work in Internet Explorer 8, Firefox, Safari, and Opera, so you can at least spell out URLs for the benefit of visitors using those browsers.

To do so, add a style to the print style sheet that prints the URL after each link.

You can even add other text items like parentheses to make it look better:

```
a:after {
 content: " (" attr(href) ") ";
}
```

However, this CSS doesn't distinguish between external or internal links, so it also prints unhelpful document-relative links to other pages on the same site: "Visit the home page (../../index.html)." Using an advanced attribute selector (page 67), you can force the style to print only absolute URLs (the ones that begin with *http://*), like so:

```
a[href^="http://"]:after {
 content: " (" attr(href) ") ";
}
```

Fortunately, even though this technique uses yet-to-be-finalized CSS 3 rules, all browsers that understand the *:after* selector and *content* property understand this advanced attribute selector.

If you use root-relative links on your site, you can use another technique to print the correct, full URLs. See this article for more information: *www.alistapart.com/articles/goingtoprint*.

As you learned in of the third part of this book, one way to lay out a page is to wrap tags around different layout elements—banner, main navigation, content, copyright notice, and so on. By styling each using floats or absolute positioning, you can place various page elements right where you want them. You can use that same structure to create a print-only style sheet that hides unwanted elements using the *display* property.

By setting the *display* value to *none,* you can make a web browser remove a styled element from a page. So to prevent a sidebar from printing, simply redefine that style in a print style sheet and set its display property to *none:*

```
#sidebar {
  display: none;
}
```

For most pages, you want the print style sheet to display only the most basic informational elements—like the logo, the main content, and a copyright notice—and hide everything else. You can easily hide multiple elements with a group selector, like so:

```
#banner, #mainNav, #sidebar, #ads, #newsLinks {
  display: none;
}
```

Remember, these styles go into your *print style sheet,* not the main style sheet. Otherwise, you'd never see the navigation, banner, or other important areas of your page onscreen. However, at times you might want to hide something from your main style sheet and reveal it *only* when printed.

Say you place your site's logo as a background image inside the banner area of a page. You may want to do this to have text or links appear on top of an empty area of the logo graphic. You (or your boss or client) certainly want the logo to appear on any printed pages, but since not all browsers print background images, you can't be sure the logo will appear when printed. One solution is to insert an <img> tag containing a modified, printer-friendly version of the logo graphic; add an ID to the image; create an ID style in the main style sheet with the *display* property set to *none;* and then set the *display* property for the same ID style in the print style sheet to *block*. Voilà! The logo appears only when printed.

Adding Page Breaks for Printing

Version 2.1 of the Cascading Style Sheet standard includes many CSS properties aimed at better formatting a printed web page: from setting the orientation of the page to defining margins and paper size. (You can see the full list at *www.w3.org/TR/CSS21/page.html*.) Unfortunately, today's web browsers recognize very few of these print styles.

Two widely recognized properties are *page-break-before* and *page-break-after*. Page-break before tells a browser to insert a page break before a given style. Say you want certain headings to always appear at the top of a page, like titles for different sections of a long document (see Figure 14-3). You can add *page-break-before: always* to the style used to format those headings. Likewise, to make an element appear as the last item on a printed page add *page-break-after: always* to that element's style.

The page-break-before property is also useful for large graphics, since some browsers let images print across two pages, making it a little tough to see the whole image at once. If you have one page with three paragraphs of text followed by the image, then the browser prints part of the image on one page and the other part on a second page. You don't want your visitors to need cellophane tape to piece your image back together, so use the *page-break-before* property to make the image print on a new page, where it all fits.

Here's a quick way to take advantage of these properties. Create two class styles named something like *.break_after* and *.break_before,* like so:

```
.break_before { page-break-before: always; }
.break_after { page-break-after: always; }
```

You can then selectively apply these styles to the elements that should print at the top—or bottom—of a page. If you want a particular heading to print at the top of a page, then use a style like this: *<h1 class="break_before">*. Even if the element already has a class applied to it, you can add an additional class like this: *<h1 class="sectionTitle break_before">*. (You'll learn about this useful technique in the next chapter on page 418.)

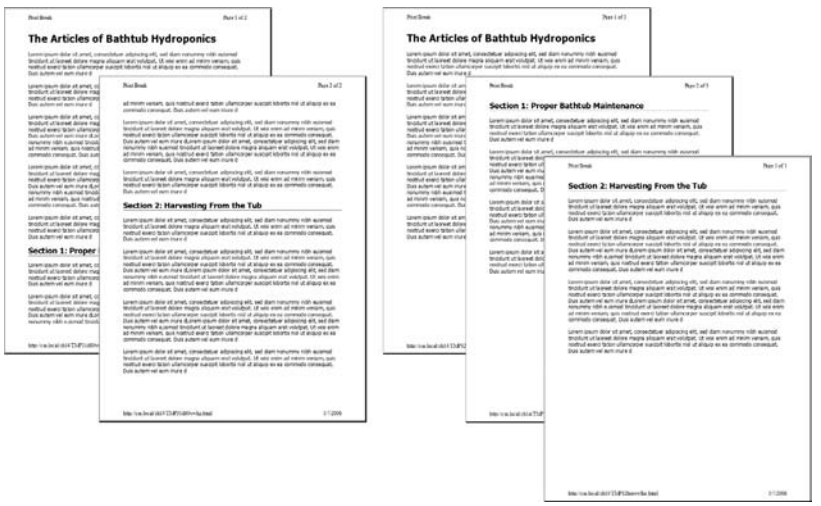


Figure 14-3: *Normally when printing a web page, a browser breaks the content into multiple pages to fit as much content on each page as possible (left). But if you want to put page breaks in more attractive and logical places, then use the* page-break-before *property (right).*

Tutorial: Building a Print Style Sheet

In this tutorial, you'll create a print style sheet. To make the printed version of a web page look better, you'll add styles that remove unwanted page elements and backgrounds, change text formatting, and print the URLs attached to any links on the page.

To get started, download the tutorial files from this book's companion website at *www.sawmac.com/css2e/*. Click the tutorial link, and then download the files. All of the files are in a Zip archive, so you need to unzip them first. (You'll find detailed instructions on the website.) The files for this tutorial are in the *14* folder.

Remove Unneeded Page Elements

To get started, you first need to understand how the page is laid out so you can decide which elements you want printed.

1. **Launch a web browser and open *14 → print.html.***

   This web page is a float-based layout consisting of several tags (see Figure 14-4). In all likelihood, anyone printing this page is most interested in the main content—the large central body of text. Printing the navigation bar and sidebar is just a waste of toner, so your print style sheet should hide these parts of the page.

2. **In a text editor, create a new file named *print.css* and save it along with the main style sheet in the *css* folder inside the *14* folder.**

   In your new print style sheet, the first order of business is to hide the navigation bar and other parts of the page that you don't want to print.

3. **Using the *display* property, create a new group selector that hides the navigation elements and sidebar, like so:**

```
#sidebar, #navWrapper, #footerNav {
  display: none;
}
```

   With the *display* property set to *none*, web browsers hide those elements so they won't print. But first you need to attach this external style sheet to your web page so browsers can find it.

4. **In your text editor, open *14 → print.html.***

   This page already has an attached style sheet—*main.css.* This external style sheet provides all of the formatting for the page when it's displayed in a browser. Also, since the style sheet is attached using the <link> tag with no media attribute specified, it applies when the page is printed as well. Your print style sheet, then, needs to override any styles from the *main.css* file that won't look good in print. The first step in that process is attaching the print style sheet *after* the *main.css* file in the html of this page.

5. **Locate the <link> tag in the head of the page used to attach the *global.css* file. Insert a blank line after that tag, and then add the following:**

```
<link href="css/print.css" rel="stylesheet" type="text/css" media="print" />
```

   If properties from two styles with the same name conflict, the properties from the style sheet *last linked on the page* wins, so this <link> must go *after* the other <link>. That way, if the *main.css* file has a class named *.copyright* that creates white, 10-pixel type on a black background, you can create another style named *.copyright* in the *print* style sheet with black, 12-point type on a white background. Even though the two styles share the same name, the properties from the print style sheet win because it's the last one linked. (See page 96 for more detail on this cascading rule.)

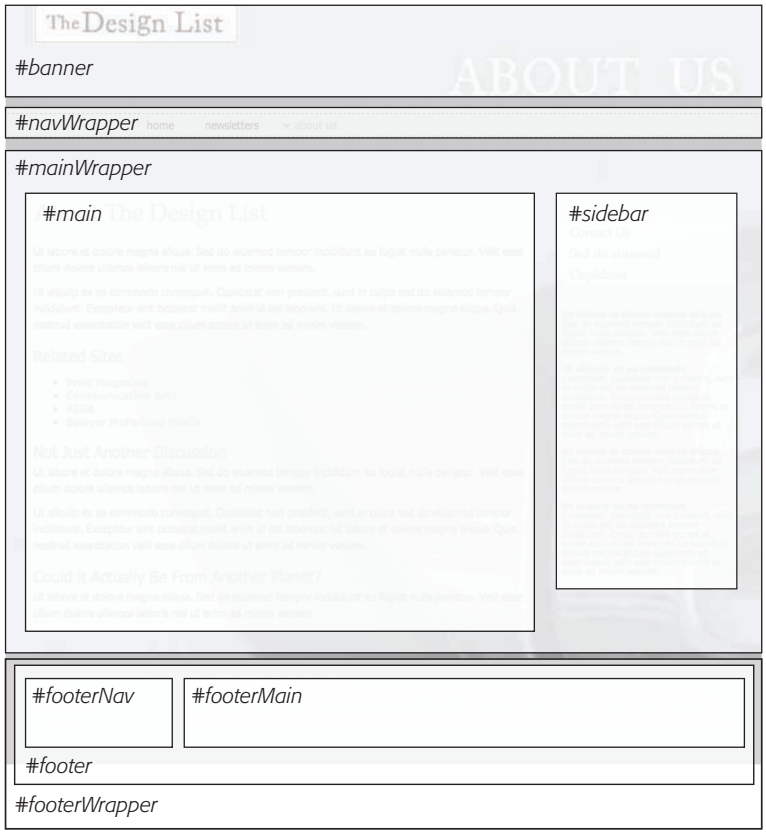


Figure 14-4:
CSS layout lets you control the placement of elements on a page. When printing a page, some elements are better off not appearing at all. The banner, sidebar, and navigation elements don't add useful information to a printed document.

6. **Save the *print.css* and *print.html* files, and then preview *print.html* in a web browser.**

   The page should look no different than it did in step 1 above. That's because you haven't printed it yet. You can see the effect of the print style sheet by using your browser's Print Preview command.

7. **If you're using Windows, choose File → Print Preview. Mac fans should choose File → Print, and then, in the Print window that appears, click the Preview button.**

   In the Print Preview window, you'll see that the right sidebar and navigation have disappeared. But the design still doesn't look that great. The main content doesn't fill the page as it should. You'll fix that—and a few other things—next.

Adjusting the Layout

Currently, the main content and the footer copyright notice don't fit the printed page correctly: The main content stops short of the right edge of the page, while the copyright is indented from the left edge. Both would look better if they filled the entire printable area.

Two styles are currently controlling the layout. In Figure 14-4, you can see that the page is divided into several areas, each created with a separate tag. The *#mainWrapper* and *#footer* are both used to center and set a width of 900 pixels for the main content area and the footer area. In addition, the *#main* style has a set width, while the *#footerMain* style has a left margin. Since you don't know what size paper this page might be printed on, you should get rid of all widths and remove any margins.

1. **Return to your text editor and the *print.css* file. Add one new group style to remove widths and margins of the areas of the page that will be printed:**

```
#banner, #mainWrapper, #footer, #main {
  width: auto;
  margin: 0;
  padding: 0;
}
```

   The first declaration—*width:auto*—affects several areas of the page. It overrides the 900-pixel width setting for the main text and footer in the *main.css* file and leaves the exact width up to the web browser. *Auto* simply lets the fill the entire available width, so no matter the paper size—letter, A4, or whatever—the content fills the width of the printed page. The two other declarations, *margin* and *padding,* remove any space around these divs.

   The copyright content, contained inside a with the ID *footerMain,* doesn't have a set width, but it does have a left margin—that indent will look strange when printed, so you should get rid of it.

2. **Add another style to the *print.css* style sheet:**

```
#footerMain {
  margin: 0;
}
```

   While you've hidden the right sidebar, which is positioned using a float, the main content is still floated—it doesn't have to be for the printed page.

3. **Add another style to the *print.css* style sheet:**

```
#main {
  float: none;
}
```

Other problems can arise when printing a float-based layout. As described on page 326, floated elements can pop out of the bottom of their containers, preventing backgrounds and borders from showing properly. One solution: add the declaration *overflow: hidden;* to the containing block's style. However, hiding overflowing content can sometimes cause printed material to not show up. So, you need to turn that off for two styles:

4. **Add another style to the *print.css* style sheet:**

```
#mainWrapper, #footer {
  overflow: visible;
}
```

This style ensures that content inside those two divs is fully displayed.

There are also a few background colors and images sprinkled throughout the page. Sometimes background images and colors print out, but often they don't. It all depends on the browser and the visitor's settings. Some browsers don't print background elements at all; others can print them but give folks the option of turning them on or off. Printing backgrounds is useful when it's important for the printed page to look just like the screen version. But when you have backgrounds that would only be a distraction and a waste of ink, do your visitors a favor and disable them.

5. **Add another style to the *print.css* style sheet:**

```
html, body, #banner, #footerWrapper {
  background: #FFF;
}
```

When viewed onscreen, this page has various background colors and images. The banner, for example, has a background image for the "About Us" tag and the footer area has a purple background color. This style sets the background color of the page and banner to white *and* removes the graphic. (See page 402 for the story on why the background image disappears as well.)

The banner area containing the site logo also doesn't look very good in print. That area is too tall, since it was expanded to hold a background image that won't appear in print. So you'll adjust the height—and while you're at it, you'll improve the overall look of this top section by centering the logo and adding lines above and below it.

6. **Add a new style to the *print.css* file:**

```
#banner {
  height: auto;
  text-align: center;
  border-bottom: 2pt solid #000;
  border-top: 2pt solid #000;
  padding: 10pt 0;
  margin-bottom: 15pt;
}
```

The first property eliminates the height of the banner, letting it size itself based on the content of the . In other words, it will just be as tall as the logo graphic inside it. The *text-align* property centers the logo for a refined, classic look. The border settings add lines above and below the logo, while the padding adds space between the logo and the borders. Note these styles use pt (points), since that's a more normal way of measuring items for print.

Feel free to save this file, preview the *print.html* file in a web browser, and use the Print Preview function to see how the printed version's coming along.

Reformatting the Text

While colored text and pixel-sized fonts may work on the screen, laser printers understand point sizes better. Also, solid black text looks better on white paper. In this section, you'll adjust the text accordingly to look better in print.

1. **In the *print.css* file, add the following CSS rule:**

```
* {
  color: #000000 !important;
}
```

This style is the CSS equivalent of a sledgehammer. It essentially tells every tag to use black text no matter what. The * (universal selector) is a quick way of specifying a style for every single element on a page, while the *!important* declaration cancels out any conflicts caused by the cascade. So even though * isn't a very specific style, the color property here trumps the same property in much more specific styles like *#main h1* or *#nav #mainNav a*.

Next you'll set new font sizes for the text.

2. **Add the following three styles:**

```
h1 {
  font-size: 30pt !important;
}
h2 {
  font-size: 16pt !important;
}
p, li {
  font-size: 11pt !important;
}
```

These styles make each of these tags use a more printer-friendly font size. The addition of *!important* makes these sizes *always* apply to those tags regardless of any style conflicts with the *main.css* style sheet.

Note: In this case, h1, h2, p, and li are the only tags that print from the *print.html* page. Your pages may require you to redefine text sizes for other tags like blockquote, other headlines and so on.

Just for fun, add a couple of styles to change the font size of the copyright notice and add a borderline above it.

3. **Add the following two styles:**

```
#footerMain {
  margin-top: 15pt;
  border-top: 1pt solid #000;
  padding-top: 5pt;
}
#footerMain p {
  font-size: 9pt !important;
}
```

The CSS properties in these styles should all be old hat by now. They adjust space above the footer, add a borderline, add some space between the border and the copyright, and make the copyright notice text smaller. Notice the *!important* declaration in the *#footerMain p* style. You need to add this because the *p* style from step 2 has *!important* as well. Because *#footerMain p* has greater specificity (see page 96 for more on this concept) than *p*, its *!important* declaration wins out.

Displaying URLs

For a final flourish, you'll add one more style that prints the URL next to the text of each link on the page. That way, the onscreen text "Click here to find out more" will print as "Click here to find out more (*http://www.outmore.com*)" so anyone reading the printed version can visit the site referenced by the link. This technique uses some advanced CSS that Internet Explorer 6 and 7 doesn't understand, but it doesn't do any harm in those browsers, either. And it *is* a great enhancement for visitors who print from your site with IE 8, Firefox and Safari.

1. **Add one last style to the *print.css* style sheet:**

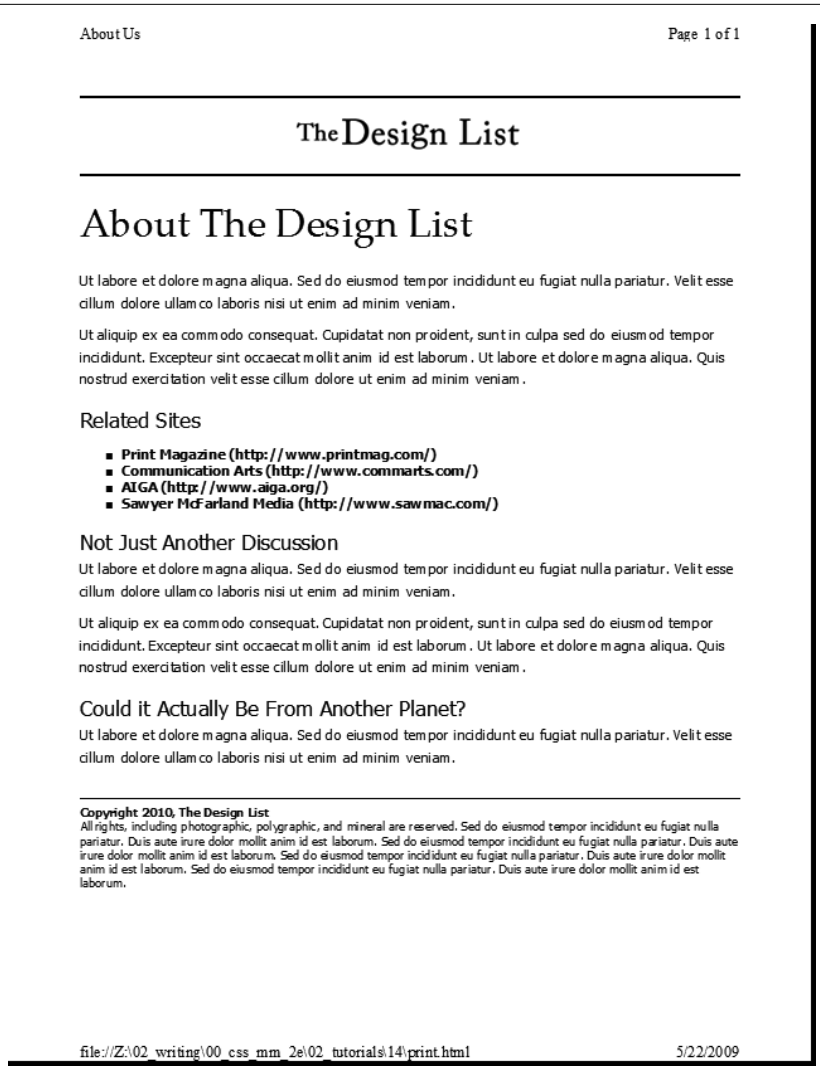
```
a:after {
  content: " (" attr(href) ") ";
}
```

In the *content*: line, this style adds the URL (the *attr(href)* part) at the end of each link (the *a:after* part).

2. **Save the *print.css* file. In your browser, open *cosmo.html* and print it.**

The printed page should look something like Figure 14-5—a simple, barebones, just-the-facts page.

You'll find a completed version of the page in the *14_finished* folder.



About Us Page 1 of 1

The Design List

About The Design List

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Related Sites

- **Print Magazine (http://www.printmag.com/)**
- **Communication Arts (http://www.commarts.com/)**
- **AIGA (http://www.aiga.org/)**
- **Sawyer McFarland Media (http://www.sawmac.com/)**

Not Just Another Discussion

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Could it Actually Be From Another Planet?

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file://Z:\02_writing\00_css_mm_2e\02_tutorials\14\print.html 5/22/2009

Figure 14-5:
Its looks aren't much to write home about, but this page's simplicity makes it perfect for printing. It'll earn you the appreciation of visitors who are looking for a clean presentation of the facts, free from navigation buttons, ads, and toner-wasting background images.

CHAPTER
15

Improving Your CSS Habits

At this point, we've covered most aspects of Cascading Style Sheets. With the addition of CSS-based layout, which you learned about in Part 3, you're now an unstoppable web-designing machine. But even after you've mastered all the properties CSS offers, nailed those annoying browser bugs, and learned great tricks for producing beautiful web pages, you can still stand to learn a few techniques that'll make your CSS easier to create, use, and maintain.

This chapter covers some recommendations for creating and using CSS. None of them count as "must know" CSS essentials, but they can make your CSS work go faster, leading to less frustration and greater productivity.

Adding Comments

When it's time to edit a style sheet weeks, months, or even years after creating it, you may find yourself wondering, "Why did I create that style? What does it do?" As with any project, when building a website, you should keep notes of what you did and why. Fortunately, you don't need a pad of paper to do this. You can embed your notes right into your style sheets using CSS comments.

A CSS comment is simply a note contained within two sets of characters, /* and */. As with HTML comments, CSS comments aren't read or acted on by a web browser, but they do let you add helpful reminders to your style sheets. Say you created a style intended to solve an Internet Explorer bug:

```
* html .imageFloat {
    display: inline;
}
```

At the time you wrote the style, you knew what you were doing, but will you still remember three months later? Add a comment and it'll be easy for you or someone else who needs to work on the site to figure out what the style does and why it was created:

```
/* Fix IE 6 double-margin bug */
* html .imageFloat {
  display: inline;
}
```

If you have a lot to say, comments can span multiple lines as well. Just begin with /*, type all the comments you'd like, then end with */. This is handy when adding background information at the beginning of a style sheet, as pictured in Figure 15-1.

Figure 15-1: *CSS comments can help you identify your styles for later editing. You can also use them to provide helpful introductory information that lets you keep track of the version of the site or style sheets, add copyright information, and identify yourself as the CSS master behind it all.*

Organizing Styles and Style Sheets

You've learned a lot in this book about creating styles and style sheets. But when you're designing a site that's meant to last, you can incorporate a few other steps to help you out in the future. The day will come when you need to change the look of the site, tweak a particular style, or hand off your hard work to someone else who'll be in charge. In addition to leaving notes for yourself and others, a little planning and organization within your CSS will make things go more smoothly down the road.

Name Styles Clearly

You've already learned the technical aspects of naming different types of selectors—class selectors begin with a . (period) to identify the styles as a class, and ID styles begin with the # symbol. In addition, the names you give IDs and classes must begin with a letter and can't contain symbols like &, *, or !. But beyond those requirements, following some rules of thumb can help you keep track of your styles and work more efficiently:

Name styles by purpose not appearance

It's tempting to use a name like *.redhighlight* when creating a style to format eye-catching, fire-engine-red text. But what if you (or your boss or your client) decide that orange, blue, or chartreuse look better? Let's face it: a style named *.redhighlight* that's actually chartreuse is confusing. It's better to use a name that describes the *purpose* of the style. For example if that "red" highlight is intended to indicate an error that a visitor made while filling out a form, then use the name *.error*. When the style needs to alert the visitor of some important information, a name like *.alert* would work. Either way, changing the color or other formatting options of the style won't cause confusion, since the style's still intended to point out an error or alert the visitor—regardless of its color.

Don't use names based on position

For the same reason you avoid naming styles by appearance, you should avoid naming them by position. Sometimes a name like *#leftSidebar* seems like an obvious choice—"I want all this stuff in a box placed at the left edge of the page!" But it's possible that you (or someone else) will want the left sidebar moved to the right, top, or even bottom of the page. All of a sudden, the name *#leftSidebar* makes no sense at all. A name more appropriate to the *purpose* of that sidebar—like *#news, #events, #secondaryContent, #mainNav*—serves to identify the sidebar no matter where it gets moved. The names you've see so far in this book—*#gallery, .figure, .banner, #wrapper* and so on—follow this convention.

The temptation is to use names like *#header* and *#footer* (for elements that always appear at the top or bottom of the page, for example) since they're so easily understood, but you can often find names that are better at identifying the content of an element—for example, *#branding* instead of *#header*. On the other hand, sometimes using a name with position information does make sense. For example, say you wanted to create two styles, one for floating an image to the left side of a page and another for floating an image to the right side. Since these styles exist solely to place an image to the left or right, using that information in the style names makes sense. So *.floatLeft* and *.floatRight* are perfectly legitimate names.

Avoid cryptic names

Names like *.s, #s1,* and *#s2* may save you a few keystrokes and make your files a bit smaller, but they can cause trouble when you need to update your site. You could end up scratching your head, wondering what all those weird styles are for. Be succinct, but clear: *.sidebar, #copyright,* and *#banner* don't take all that much typing, and their purpose is immediately obvious.

Note: For more tips on naming styles, check out *www.stuffandnonsense.co.uk/archives/whats_in_a_name_pt2.html*. You can also learn a lot from checking out the naming conventions used on other sites. The Web Developer's Toolbar, discussed in the box in on page 424, gives you a quick way to reveal the style names.

Use Multiple Classes to Save Time

Often, two or more items on a web page share many similar formatting properties. You may want to use the same border styles to create a frame around a bunch of images on a page. But there may be some formatting differences between those items as well. Maybe you want some images to float to the left and have a right margin, while some photos float to the right and have a left margin (Figure 15-2).

The most obvious solution is to create two class styles, each having the same border properties but different float and margin properties. You then apply one class to the images that should float left and another to the images that should float right. But what if you need to update the border style for all of these images? You'll need to edit *two* styles, and if you forget one, the images on one side of the page will all have the wrong frames!

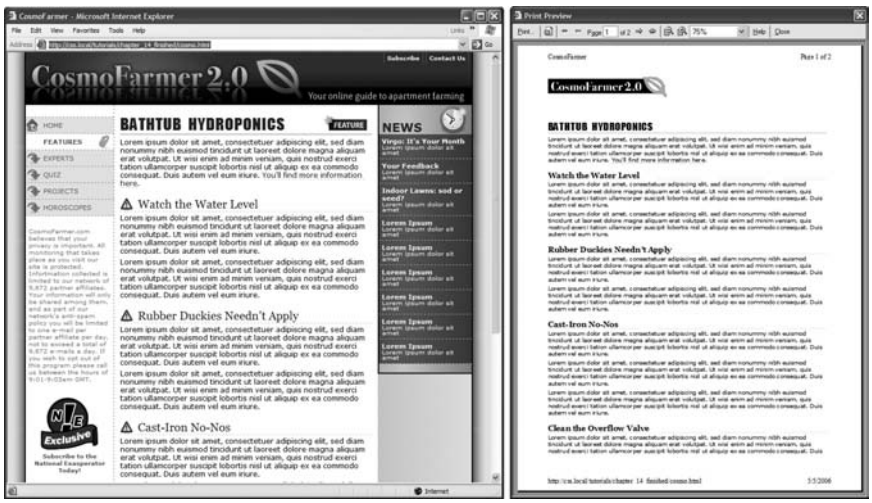

Figure 15-2: *Top: The page as originally formatted.*

Bottom: In this case, both photos have the same style applied to them, thus creating the border effect. The left image, in addition, has another class style applied, causing it to float left; the right image also has a second class applied to it floating that photo to the right.

There's a trick that works in all browsers that not all designers take advantage of—*multiple classes* applied to the same tag. This just means that when you use the class attribute for a tag, you add two (or more) class names like this: * *. In this example, the tag receives formatting instructions from both the *.note* style and the *.alert* style.

Say you want to use the same border style for a group of images, but some of the images you want floating left and others you want floating right. You'd approach the problem like this:

1. **Create a class style that includes the formatting properties shared by all the images.**

   This style could be called *.imgFrame* and have a 2-pixel, solid black border around all four edges.

2. **Create two additional class styles, one for the left floated images and another for the right floated images.**

   For example, *.floatLeft* and *.floatRight*. One style would include properties unique to one set of images (floated left with a small right margin), while the other style includes properties specific to the second group of images.

3. **Apply both classes to each tag, like so:**

   ```
   <img src="photo1.jpg" height="100" class="imgFrame floatLeft" />
   ```

   or

   ```
   <img src="photo1.jpg" height="100" class="imgFrame floatRight" / >
   ```

   At this point, two classes apply to each tag, and the web browser combines the style information for each class to format the tag. Now if you want to change the border style, then simply edit one style—*.imgFrame*—to update the borders around both the left and right floated images.

Note: You can list more than two classes with this method; just make sure to add a space between each class name.

This technique is useful when you need to tweak only a couple of properties of one element, while leaving other similarly formatted items unchanged. You may want a generic sidebar design that floats a sidebar to the right, adds creative background images, and includes carefully styled typography. You can use this style throughout your site, but the width of that sidebar varies in several instances. Perhaps it's 300 pixels wide on some pages and 200 pixels wide on others. In this case, create a single class style (like *.sidebar*) with the basic sidebar formatting and separate classes for defining just the width of the sidebar—for example, *.w300* and *.w200*. Then apply two classes to each sidebar: * *.

Organize Styles by Grouping

Adding one style after another is a common way to build a style sheet. But after a while, what was once a simple collection of five styles has ballooned into a massive 150-style CSS file. At that point, quickly finding the one style you need to change is like looking for a needle in a haystack. (Of course, haystacks don't have a Find command, but you get the point.) If you organize your styles from the get-go, you'll make your life a lot easier in the long run. There are no hard and fast rules for *how* to group styles together, but here are two common methods:

- **Group styles that apply to related parts of a page.** Group all the rules that apply to text, graphics, and links in the banner of a page in one place. Then group the rules that style the main navigation in another, and the styles for the main content in yet another.
- **Group styles with a related purpose.** Put all the styles for layout in one group, the styles for typography in another, the styles for links in yet another group, and so on.

Using comments to separate style groups

Whatever approach you take, make sure to use CSS comments to introduce each grouping of styles. Say you collected all the styles that control the layout of your pages into one place in a style sheet. Introduce that collection with a comment like this:

```
/* *** Layout *** */
```

or

```
/* --------------------------
            Layout
--------------------------- */
```

As long as you begin with /* and end with */, you can use whatever frilly combination of asterisks, dashes, or symbols you'd like to help make those comments easy to spot. You'll find as many variations on this as there are web designers. If you're looking for inspiration, then check out how these sites comment their style sheets: *www.wired.com*, *www.mezzoblue.com*, and *http://keikibulls.com*. (Use the Web Developer's Toolbar described in the box on page 424 to help you peek at other designers' style sheets.)

Tip: For a method of naming comments that makes it easy to find a particular section of a style sheet you're editing, check out *www.stopdesign.com/log/2005/05/03/css-tip-flags.html*.

Using Multiple Style Sheets

As you read in Chapter 14, you can create different style sheets for different types of displays—maybe one for a screen and another for a printer. But you may also want to have multiple onscreen style sheets, purely for organizational purposes. This takes the basic concept from the previous section—grouping related styles—one step further. When a style sheet becomes so big that it's difficult to find and edit styles, it may be time to create separate style sheets that each serve an individual function. You can put styles used to format forms in one style sheet, styles used for layout in another, styles that determine the color of things in a third, another style sheet for keeping your Internet Explorer hacks, and so on. Keep the number of separate files reasonable since having, say, 30 external CSS files to weed through may not save time at all.

At first glance, it may seem like you'll end up with more code in each web page, since you'll have that many more external style sheets to link to or import—one line of code for each file. Ah, but there's a better approach: Create a single external style sheet that uses the *@import* directive to include multiple style sheets. Figure 15-3 illustrates the concept.

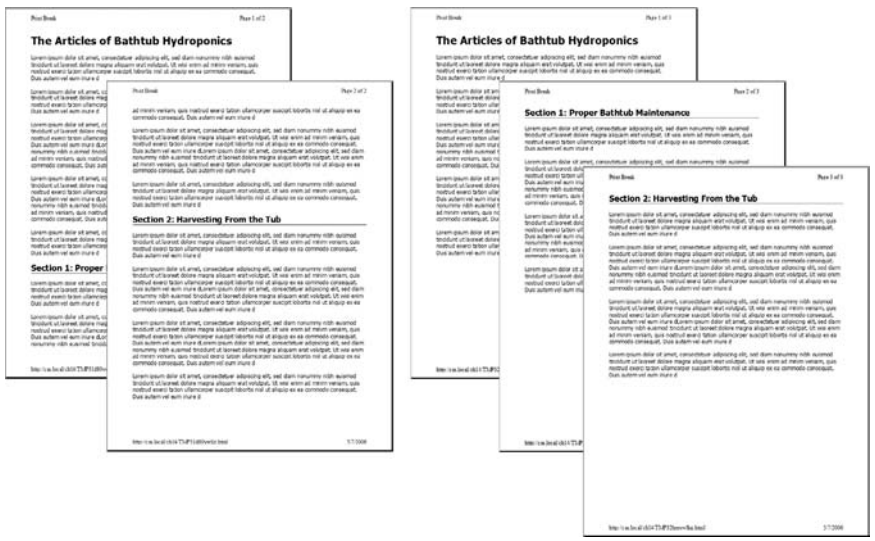

Figure 15-3: *Let a single external style sheet serve as gatekeeper for your site's CSS. Each HTML page in the site can link to a single CSS file (*base.css *in this example). The HTML never has to change, even if you want to add or remove additional external style sheets. Just update the base.css file by adding or removing @import directives.*

Here's how to set up this type of arrangement:

1. **Create external style sheets to format the different types of elements of your site.**

   For example a *color.css* file with styles that control the color of the site, a *forms.css* file that controls form formatting, a *layout.css* file for layout control, and a *main.css* file that covers everything else (see the right side of Figure 15-3).

Note: These suggestions are just a few possibilities. Organize your styles and style sheets in whatever way seems most logical and works best for you. For more suggestions, check out this article on modular CSS design: *www.contentwithstyle.co.uk/content/modular-css*.

2. **Create an external style sheet and import each of the style sheets you created in step 1.**

   You can name this file *base.css, global.css, site.css,* or something generic like that. This CSS file won't contain any rules. Instead use the *@import* directive to attach the other style sheets like this:

   ```
   @import url(main.css);
   @import url(layout.css);
   @import url(color.css);
   @import url(forms.css);
   ```

   That's the only code that needs to be in the file, though you may add some comments with a version number, site name, and so on to help identify this file.

Note: For a better way to attach an "IE-only" style sheet, see page 433.

3. **Finally, attach the style sheet from step 2 to the HTML pages of your site using either the <link> tag or the *@import* method. (See page 37 for more on using these methods.) For example:**

   ```
   <link rel="stylesheet" href="base.css" type="text/css" />
   ```

   Now, when a web page loads, the browser loads *base.css,* which in turn tells the browser to load the four other style sheets.

It may feel like there's a whole lot of loading going on here, but once the browser has downloaded those files and stored them in its cache, it won't have to retrieve them over the Internet again. (See the box on the next page.)

There's another benefit to using a single external style sheet to load several other style sheets: If you decide later to further divide your styles into additional styles sheets, then you won't have to muck around with the HTML of your site. Instead, just add one more *@import* directive to that gatekeeper style sheet (see step 2). If you decide to take all the styles related to type out of the *main.css* file and put them in their own *type.css* file, then you won't need to touch the web pages on your site. Simply open the style sheet with all of the *@import* directives in it and add one more: *@import url(type.css)*.

This arrangement also lets you have some fun with your site by swapping in different style sheets for temporary design changes. Say you decide to change the color of your site for the day, month, or season. If you've already put the main color-defining styles into a separate *color.css* file, then you can create another file (like *summer_fun.css*) with a different set of colors. Then, in the gatekeeper file, change the *@import* directive for the *color.css* file to load the new color style file (for example, *@import url(summer_fun.css)*).

POWER USERS' CLINIC

A Pain in the Cache

The web browser's cache is usually every website owner's friend. As discussed on page 35, the cache makes sure frequent visitors to your site don't have to download the same file over and over again, which would slow down their experience and increase your web hosting bills. However, the cache can be a pain when it's time to update your site's appearance. For example, if all of the pages in your site reference an external style sheet named *main.css,* then visitors to your site will cache that file. However, when you update that file with all new styles and a completely new look and feel for your site, previous visitors to your site may continue to access the old style sheet from their hard drive instead of the new *main.css* file you've updated.

Eventually, a visitor's cache will clear and they'll get the new CSS file, but you have one simple way to defeat the cache—by updating the <link> tag on each HTML page. Normally a <link> tag to an external style sheet looks like this:

```
<link rel="stylesheet" type="text/css"
href="main.css">
```

However, if you add a query string after the name of the .css file (for example, *main.css?v=1*), then a web browser will see the file as *main.css?v=1* and not just *main.css.* If you change the number after the *v=* whenever you change the external style sheet, then browsers consider that a new file and will download the external style sheet from the web server instead of using the cached site.

For example, suppose when you launch your site, the *main.css* file is the first version of the site's CSS. You can then use this link:

```
<link rel="stylesheet" type="text/css"
href="main.css?v=1">
```

Then when you update the *main.css* file, you change the <link> to this:

```
<link rel="stylesheet" type="text/css"
href="main.css?v=2">
```

The web browser considers this different from the cached version of the *main.css* file and downloads the file from the web server. In reality, the *?v=1* doesn't do anything—it doesn't affect how your web server works, for example. It's a way of telling a web browser to redownload the file.

The downside of this technique is that you must update the <link> tag for every HTML file on your site. If you're comfortable with PHP, there's a more automated way to handle this problem: *http://ikeif.net/2009/03/27/stop-caching-files-php-function*.

Eliminating Browser Style Interference

When you view a web page that hasn't been "CSS-ified" in a web browser, HTML tags already have some minimal formatting: headings are bold, the <h1> tag is bigger than other text, links are underlined and blue, and so on. In some cases, different web browsers apply slightly different formatting to each of these elements. You may experience some frustrating "it *almost* looks the same in Internet Explorer and Firefox and Safari" moments.

Note: Firefox actually uses a CSS style sheet to format HTML tags. To see it on a Mac, locate the Firefox application file, right-click it and then select "Show package contents." Then navigate to Contents → MacOS → res and open the *html.css* file in a text editing program. In Windows, you'll find that file at *C:\Program Files\Mozilla Firefox\res\html.css.* As you can see, it takes a lot of styles to make regular HTML look boring.

POWER USERS' CLINIC

The Web Developer's Toolbar

Web designers have to stay on top of a lot of things: HTML, CSS, links, graphics, forms, and so on. Troubleshooting problems with any of these items can sometimes be a real challenge. The Web Developer's Toolbar (*http://chrispederick.com/work/webdeveloper*), created by Chris Pederick, is a Firefox extension that's like the Swiss Army knife of web design (see Figure 15-4). If you don't have Firefox, you should install it for this toolbar alone (*www.mozilla.com/firefox*).

Download the extension, install it, and spend a little time with the different options. You have many features available to you, but here are a few worth noting:

- **Choose CSS → View CSS,** and you'll see all of the styles for the current page, even styles imported from multiple style sheets. If you've ever been to a website and wondered, "How'd they do that?" this tool gives you a free backstage tour.
- **Choose CSS → Edit CSS,** and you can edit the styles of the current web page. This doesn't do any permanent damage to the real web page, but it does let you tweak a page's styles and immediately see the results.
- The **Information** menu provides a wealth of detailed, and often geeky, under-the-hood details. The *Display Block Size* option displays the dimensions of block-level elements such as tables and divs. *Display Element Information* provides info on any element you hover over (including HTML attributes, CSS properties, and its position on the page). And *Display Id & Class Details* is a great way to see the names of styles applied to tags on the page. Use it to see how other sites name their tags.
- The **Tools** menu gives you access to online tools for validating HTML and CSS, and even checking links. These tools work only for pages that are online, not ones you're currently working with on your computer.

Microsoft offers a similar tool for Internet Explorer. You can find it by visiting *www.microsoft.com* and entering *IE Developer Toolbar* in the search box.

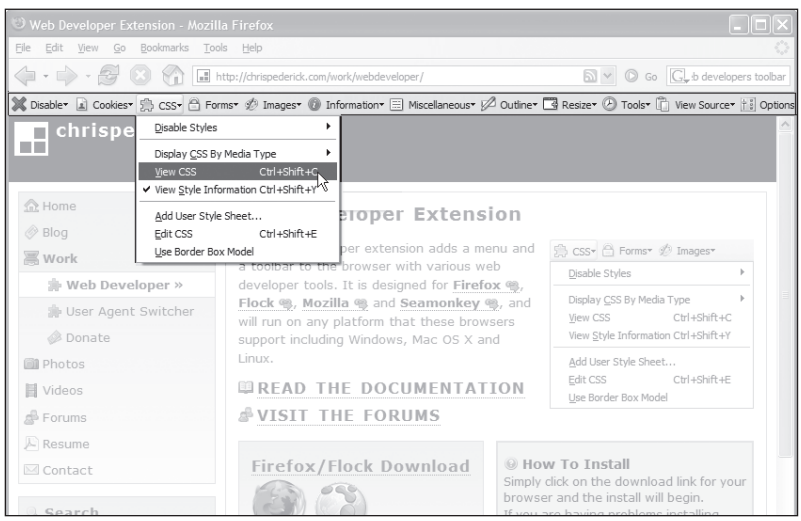

Figure 15-4: *The Web Developer's Extension is a must-have tool for any web designer. This Firefox extension lets you view the styles of any site on the Web, identify the structure of a page's HTML, find out more information on how any element on a page is styled, validate a page and its CSS in one easy operation, and even edit the CSS of a page and see how the changes you make affect the appearance of the page.*

As discussed on page 102, to deal with these browser differences, it's a good idea to "zero out" the formatting for commonly used tags so your audience can see the beautiful styling you worked so hard to create (see Figure 15-5). All you have to do is set up some basic styles at the beginning of your style sheet that remove the offensive formatting.

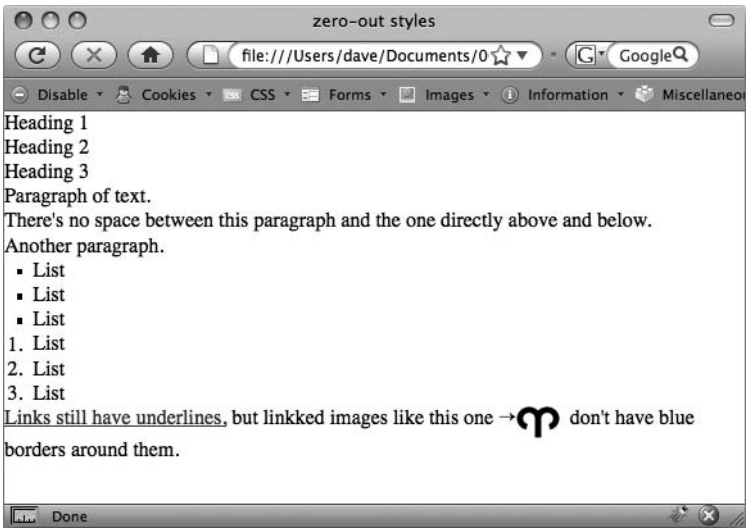

Figure 15-5: *Doesn't look like much, and that's the point! Eliminate browser display differences by "zeroing out" the normal browser styles. Then create your own—and better—styles to add margins, padding, and font sizes that are consistent across browsers.*

Here are some things you may want to do to make browsers stop meddling with your designs:

- **Remove padding and margins.** Browsers add top and bottom margins to most block-level elements—the familiar space that appears between <p> tags, for example. This can cause some weird display issues like when the exact margin amount is inconsistently applied across browsers. A better approach is to remove padding and margins from the block-level tags you use, and then purposely add the amount you want by creating new styles.
- **Apply consistent font sizes.** While text inside a <p> tag is displayed as 1em, web browsers apply different sizes to other tags. You can force all tags to be 1em to begin with, and then create additional styles with specific font sizes for the different tags. That way, you stand a much better chance of getting consistent font sizes across browsers.
- **Improve table borders and create consistent table cells.** As you read on page 276, applying a border to of a table cell usually creates an unpleasant gap between cell borders and doubles up the borders between cells. You should get rid of both the space and the extra borders. In addition, the <th> and <td> tag are given different alignments and font weights.

- **Remove borders from linked images.** Internet Explorer, Firefox, and other browsers add a colored border around any image inside of a link. If you're like most people, you find this border both unattractive and unnecessary. Remove it and start fresh.
- **Set consistent list indents and bullet types.** Different browsers indent bulleted and numbered lists in different ways, and you'll even find the type of bullet used can vary between browsers. It's good to set a consistent indent and bullet type.
- **Remove quote marks from quoted material.** If you ever use the <q> tag to identify a quote (*<q>To err is human</q>* for example), then you may have notice that some browsers (Firefox, Safari) automatically add quote marks (' ') around the quote and some (Internet Explorer 6 and 7) don't. And even within the browsers that do add quote marks, the type of mark added varies; for example, IE 8 inserts single quotes (' '), while Firefox adds double quotes (" "). For a consistent presentation, it's best to remove these quote marks.

To put these ideas into action, here are a few basic styles you can add at the beginning of your style sheet:

```
html, body, h1, h2, h3, h4, h5, h6, p, ol, ul, li, pre, code, address,
variable, form, fieldset, blockquote {
  padding: 0;
  margin: 0;
  font-size: 100%;
  font-weight: normal;
}
table {
  border-collapse: collapse;
  border-spacing: 0;
}
td, th, caption {
  font-weight: normal;
  text-align: left;
}
img, fieldset {
  border: 0;
}
ol {
  padding-left: 1.4em;
  list-style: decimal;
}
ul {
  padding-left: 1.4em;
  list-style:square;
}
q:before, q:after {
  content:'';
}
```

The first two styles here are group selectors that apply the same formatting to every one of the tags listed. Add these styles to the beginning of your style sheet, and then, further down the style sheet, override them on a case-by-case basis. After zeroing out the margins and font-size for the <h1> tag, you may want to give the <h1> tag a specific top margin value and font size. Just add another style, like so:

```
h1 {
    margin-top: 5px;
    font-size: 2.5em;
}
```

Thanks to the cascade (see Chapter 5), as long as this *h1* style appears in the style sheet *after* the group selector (the *reset* style that removes the margins and changes the font size), the new values take precedence.

You'll find the file *reset.css* in the *15* folder inside the tutorials folder. Just copy the code from that file into your own style sheets.

Note: Web luminary Tantek Celic is often credited with introducing the very useful technique of undoing the standard web browser formatting of HTML. You can see his basic set of undo styles at *http://tantek.com/log/2004/undohtml.css*.

Using Descendent Selectors

Classes and IDs are great for marking specific tags for styling. For example, you can add a class to a paragraph—*<p class="intro">*—and pinpoint just that one paragraph with its own look as determined by the *.intro* class style. Trouble is, it's so easy to add a class or ID to a tag, lots of designers tend to add classes and IDs to *everything* (well, almost everything). The pros even have a diagnosis for this disease—*classistis.* Adding a class to every tag is not only a waste of your time, it also makes your HTML slower to download. Most important, there's a better way to exert pinpoint control over your tags without resorting to too many classes or IDs—descendent selectors.

Descendent selectors are a powerful tool for efficient website building. As discussed in Chapter 3, they let you pinpoint the tags you want to style with greater accuracy than tag styles, with less work than class styles. Most of the time you want to format *all* the links in a navigation bar the same way, but that doesn't mean you want to format all of the links in the entire *page* the same way. What you need is a way to say (in CSS), "Format *only* the links in the nav bar this way"—without having to apply a class style to each of those links. In other words, you need the ability to format the same HTML in different ways depending on where it's located—and that's exactly what descendent selectors offer (see Figure 15-6).

Figure 15-6: *The same HTML was pasted into both the left sidebar and the larger right area of this web page. By using descendent selectors, identical HTML tags (<h1>, <p>, <ul>, and <li>) are formatted differently based solely on where they're located on the page.*

Compartmentalize Your Pages

One of your biggest allies in using descendent selectors effectively is the tag. Since this HTML tag lets you create logical *divisions* in a page, you can use it to identify different layout elements like a banner, a sidebar, a column of text, and so on. As discussed on page 302, you can organize the content of your page into different areas by wrapping HTML in a tag.

Group the title of a story and a list of links used to navigate the story's pages like this:

```
<div>
  <h2>The CosmoFarmer Revolution</h2>
  <ul>
    <li><a href="page1.html">Page 1</a></li>
    <li><a href="page2.html">Page 2</a></li>
    <li><a href="page3.html">Page 3</a></li>
  </ul>
</div>
```

After adding the , identify it for CSS purposes with either a *class* or *ID* attribute: * * or * *. When you want to include the same type of layout element more than once on a page—multiple pull quotes in a single story perhaps—use a class. For regions that appear only once per page—like the banner—an ID is the common choice.

Suppose the list of links in the HTML above appears twice on a page—at the beginning of the text and at the end. You'd apply a class to it like this:

```
<div class="storyNav">
  <h2>The CosmoFarmer Revolution</h2>
  <ul>
    <li><a href="page1.html">Page 1</a></li>
    <li><a href="page2.html">Page 2</a></li>
    <li><a href="page3.html">Page 3</a></li>
  </ul>
</div>
```

Note: You don't always need to add a tag to style a group of elements. If the HTML above had only an unordered list of links and didn't include the <h2> tag, then you could just as easily skip the tag and simply add a class to the unordered list: *<ul class="storyNav">*.

Once you identify each on a page, it becomes very easy to use a descendent selector to target tags inside a particular . Say you want to create a unique look for each of the links in the above HTML. You'd create a descendent selector like this:

```
.storyNav a {
  color: red;
  background-color: #ccc;
}
```

Now links will appear as red text on a light gray background, but *only* when they appear *inside* another tag with the *storyNav* class applied to it. Best of all, if you want to add another link (like *page4.html*) to this list, then you don't have to lift a finger to format it like the other links. The browser handles all of that automatically when it applies the descendent selector.

Formatting other tags inside that is a simple matter of creating a descendent selector that begins with the class name—*.storyNav,* for instance—followed by a space and the tag you want to style. To format the <h2> that appears inside the , create the descendent selector *.storyNav h2.*

Identify the Body

Because descendent selectors provide such specific targeting of styles, you can easily create styles that not only apply to one particular area of a page, but also apply only to particular *types* of pages on your site. Say you want to style the <h1> tag differently on the home page than on other pages of the site. An easy way to distinguish <h1> tags on the home page is to add a class or ID to the <body> tag of the home page:

```
<body id="home">
```

or

```
<body class="home">
```

You can style the <h1> tag on the home page using a descendent selector: *#home h1* (if you're using an ID) or *.home h1* (if you're using a class). With this technique, you can create entirely different looks for any tag on any particular page of your site. One approach is to identify the section of the site each page is in. Say your site is divided into four sections—news, events, articles, and links. On each page within a section, add either a class or ID to the <body> tag. So each page in the news section might have the following HTML: *<body class="news">*, while pages in the events section would have *<body class="events">*.

Note: Another common CSS technique is to use a class to identify the type of layout you want for a particular page (like a one-, two-, or three-column design).

One great use for identifying a page's section in the site is to highlight that section's button in a navigation bar. The highlighted button acts as a kind of "you are here" marker, as shown in Figure 15-7 If a page is in the news section of your site, you can highlight the "news" button so visitors can tell immediately which section they're in.

Here's how to format a navigation button differently depending on which section of your site it's in:

1. **Add an identifier to the <body> tag indicating the section the page is in.**

   For example, *<body id="home">*. Do the same thing for each section, so pages in the news section of the site would have code like this: *<body id="news">*.

2. **Add a navigation bar to the page.**

   Step-by-step instructions are on page 235.

3. **Identify each link within the navigation bar.**

   For a link to the home page, you might have this code: *Home*. The ID lets you identify that particular link as the one going to the home page. (You could do the same thing using a class instead of an ID.) Repeat for the other links: *News* and so on.

   At this point, you have enough information in your HTML to uniquely format each section's link using CSS. In this example, you know that the Home page link is nested inside a <body> tag with the ID of home *only* on the Home page.

4. **Create a descendent selector to format each section's link differently when the link is inside a page for that section.**

   For the home page in this example, the descendent selector would look like this:

   ```
   #home #homeLink
   ```

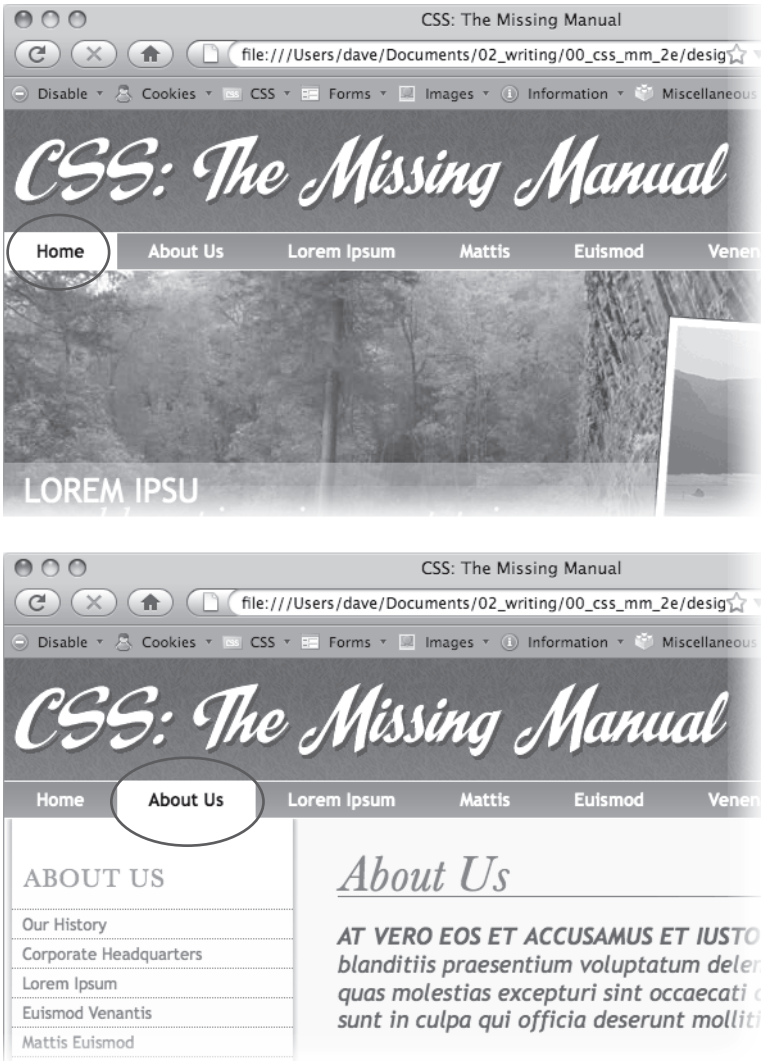

Figure 15-7: *Using descendent selectors, you can highlight a button in a navigation bar simply by changing the class or ID applied to the <body> tag. In this example, when the body tag has the ID home applied to it, the Home button lights up (circled, top). Change the ID to about, and the About button highlights (circled, bottom).*

This selector formats the *#homeLink* only when it's inside another tag with the ID *#home*. In most cases, you'll want the look of the "you are here" button to be the same for each section of the site, so you can use a group selector (page 262) to group all the descendent selectors for each section's button. That way, you can apply the same formatting to each button without creating separate rules

for each button. A group selector to highlight the current section's navigation button with a light yellow background may look like this:

```
#home a#homeLink,
#news a#newLink,
#articles a#articlesLink,
#links a#linksLink {
  background-color: #FBEF99;
}
```

Tip: When creating a group selector that includes several descendent selectors, keep each selector on its own line as in this example. It's easier to identify each selector in the group this way when you need to go back and edit your style sheet.

Using the same technique, make additional styles to apply different looks for the links when you hover over them, click them, or when they've been visited. See page 256 for the details.

These few examples are just some of the ways you can take advantage of descendent selectors. They can make your style sheets a little more complex. You'll have styles like *#home .navbar a,* for example, instead of a simple class like *.navLink.* But once the styles are set up, you'll need to do very little further formatting. HTML pasted into different areas of the page automatically gets formatted in strikingly different ways. Almost like magic.

Managing Internet Explorer Hacks

Browsers don't always behave the way you, or the rules of CSS, expect. Browsers like Safari, Firefox, and Internet Explorer 8 handle CSS quite well and display CSS-based web pages consistently and predictably. Getting your designs to work in Internet Explorer 6 and 7 for Windows is much more of a challenge. Although these browsers are old by today's standards, they still make up the majority of web browsers in use.

Throughout this book, you've seen some of the most horrific Internet Explorer bugs—and their solutions. There's the double-margin bug (page 33) and IE 5's box model problem (page 167). Techniques for managing these problems include the ** html* hack (page 169). But knowing the techniques isn't enough. You've got to consider your entire Web audience and make sure your IE fixes don't get in the way and spoil the fun for other viewers.

Tip: You can find a list of pages describing various CSS bugs in many different browsers at *http://css-discuss.incutio.com/?page=BrowserBugs*.

Design for Contemporary Browsers First

Because Internet Explorer 6 and 7 are still very common, many web designers use one of those browsers for testing their site design. When they find a problem with the way the page looks in this browser, they manipulate their CSS until the page looks fine. Unfortunately, because IE 6 and 7 don't always get CSS right, the "solutions" designers use for that browser cause more modern, CSS-savvy browsers like IE 8, Firefox, and Safari to display pages incorrectly.

The backward-looking approach of designing for Internet Explorer 6 or 7 would be fine if everyone visits your site on Windows with Internet Explorer 6 or 7 for the rest of eternity. But as more people upgrade to Internet Explorer 8 or switch to state-of-the-art browsers like Firefox or Safari, your fine-tuned IE 6 pages will begin to break. A better approach is to design with Internet Explorer 8, Firefox, Safari, or Chrome in mind. Make sure your CSS works in those browsers, and you can be reasonably confident that you're using CSS correctly. Then, after your site looks great in those browsers, it's time to fix the problems that crop up in Internet Explorer 7 and 6.

Tackling all those problems may sound like an overwhelming task, but take heart. You'll repeatedly encounter the same set of bugs, which in turn require the same set of fixes. So once you become an old hand at identifying and fixing the peek-a-boo bug or the double-margin bug, it won't be hard for you to add the necessary hacks to fix your pages for older versions of Internet Explorer.

Note: For more terrifying information on how Internet Explorer can mangle your carefully designed web pages visit *www.positioniseverything.net/explorer.html* and *www.positioniseverything.net/ie-primer.html*.

Isolate CSS for IE with Conditional Comments

The * *html* hack in Chapter 7 (page 169) is one way to send the "this'll fix your stupid bug" styles to just Internet Explorer 6 and earlier without adversely affecting other browsers. But as your style sheets get larger, all those little fixes start to create clutter. Even if you isolate those changes into one part of your style sheet, you may still end up inserting some invalid CSS code (like *zoom: 1*) that prevents your main CSS file from validating.

Another way to collect IE-only styles in a single place is to use Internet Explorer's *conditional comments* feature (Figure 15-8). This Microsoft invention provides a way of inserting HTML that only Internet Explorer understands. Other browsers simply see the code as an HTML comment and ignore it.

Conditional comments can even target different versions of IE. You can put all of your IE 6–only styles in a single external style sheet (like *IE6_styles.css*) and use a conditional comment to link it to IE 6 browsers only. This approach also makes it a snap to eliminate those styles when IE 6 finally goes the way of the dinosaurs. Just remove the external style sheet. Your non-IE visitors will benefit too. When you use conditional comments, other browsers don't download those external style sheets at all. As a result, your site opens and runs faster for these lucky folks.

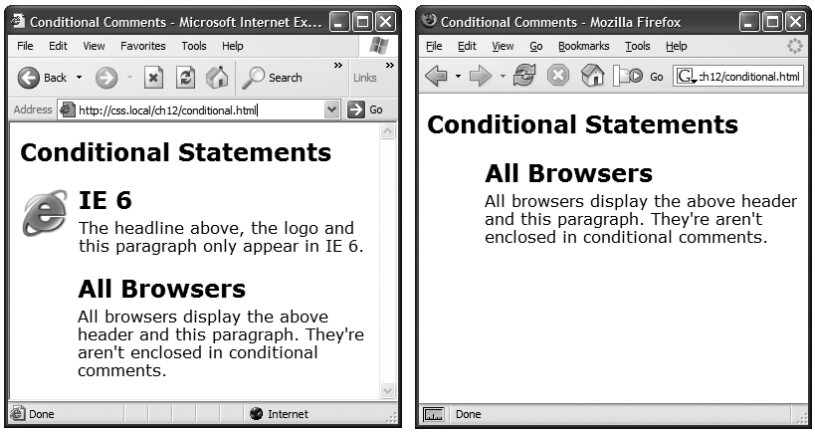

Figure 15-8: *With Internet Explorer's conditional comments feature, you can apply IE-specific style sheets full of your IE hacks. Conditional comments let you have some HTML appear only in a particular version of Internet Explorer (left). Other browsers simply ignore the HTML inside the comment (right).*

Here's the basic structure of a conditional comment:

```
<!--[if IE]>
Some HTML code that only applies to IE goes here.
<![endif]-->
```

The *<!--[if IE]>* is the *condition* itself. It translates to: "If this browser is Internet Explorer, then process the following HTML." So any Internet Explorer browser acts on the HTML that comes after this line of code and stops when it gets to the *<![endif]-->* statement. In this way, you can add any HTML—text, images, styles, and even links to external style sheets—to Internet Explorer only.

Note: Non-IE browsers simply view conditional statements as HTML comments and ignore them.

Conditional comments and IE 8

Internet Explorer 8 understands CSS much better than earlier versions, so you may have to hide some IE hacks from that browser as well. Fortunately, conditional comments also let you specify which *version* of Internet Explorer the style sheet applies to. Say you want to have a particular style sheet load only for Internet Explorer 6 or earlier. Add the following conditional comment to your web page's head:

```
<!--[if lte IE 6]>
<link href="IE_styles.css" rel="stylesheet" type="text/css" />
<![endif]-->
```

Or, using the *@import* method:

```
<!--[if lte IE 6]>
<style type="text/css">
@import url(IE_styles.css)
</style>
<![endif]-->
```

The *lte* stands for "less than or equal to," so *if lte IE 6* means "if this browser is version 6 or earlier of Internet Explorer."

Conditional comments and the cascade

Use whatever method you prefer for linking an external style sheet (page 37), but add any conditional comments *after* any other linked style sheets. Most IE hacks tend to redefine styles already present in the style sheet—styles that work for other browsers. And, due to the nature of the cascade, rules defined later in a page can override earlier defined styles. To make sure your redefined IE-only styles successfully take hold in Internet Explorer, they should appear after any other style sheets attached to the page.

Here's the code you might use to link: a) a style sheet for all browsers, b) a style sheet just for IE 7, and c) a style sheet for version 6 or earlier of IE:

```
<link href="global_styles.css" rel="stylesheet" type="text/css" />
<!--[if IE 7]>
<link href="IE7_styles.css" rel="stylesheet" type="text/css" />
<![endif]-->
<!--[if lte IE 6]>
<link href="IE6_styles.css" rel="stylesheet" type="text/css" />
<![endif]-->
```

Note: For more information on Internet Explorer's conditional comments, visit the source: *http://msdn.microsoft.com/en-us/library/ms537512(VS.85).aspx*.

CHAPTER
16

CSS 3: CSS on the Edge

Although CSS 2.1 has been around for years, it's only now, with the introduction of Internet Explorer 8, that all major browsers properly handle this version of CSS. Of course, the Web never sleeps, and the World Wide Web Consortium is busy working on the next CSS standard—CSS 3 (see Figure 16-1). Most browser developers have already started to include bits and pieces of this yet-to-be finished edition of CSS.

If you like to live on the edge and explore the latest new thing, this chapter is for you. Just be ready to accept the fact that some CSS 3 properties don't yet work in all browsers. This chapter shows you how to use the more widely accepted properties and, when possible, shows you workarounds for the browsers that don't yet understand them.

Above all, remember this: Web pages don't *have* to look the same in every browser. Just make sure that your websites *work* for all of your site's visitors, whether they use Internet Explorer 6 or Firefox 3.5. If a page is unreadable because of some difference in how a web browser displays it—for example, the horrible float drop discussed on page 330—that's a problem you need to fix.

That said, it's perfectly fine to enhance the appearance of a page using properties that work in some browsers but not others. For example, the *text-shadow* property (coming up on page 448) lets you give text a drop shadow. It works in Safari, Opera 9.5, Firefox 3.5, and Chrome but not in any version of IE. Adding a subtle drop shadow can improve the appearance of headlines in those browsers, but it doesn't ruin the experience for Internet Explorer users. So feel free to explore the following CSS properties, even if not everyone will get to enjoy them.

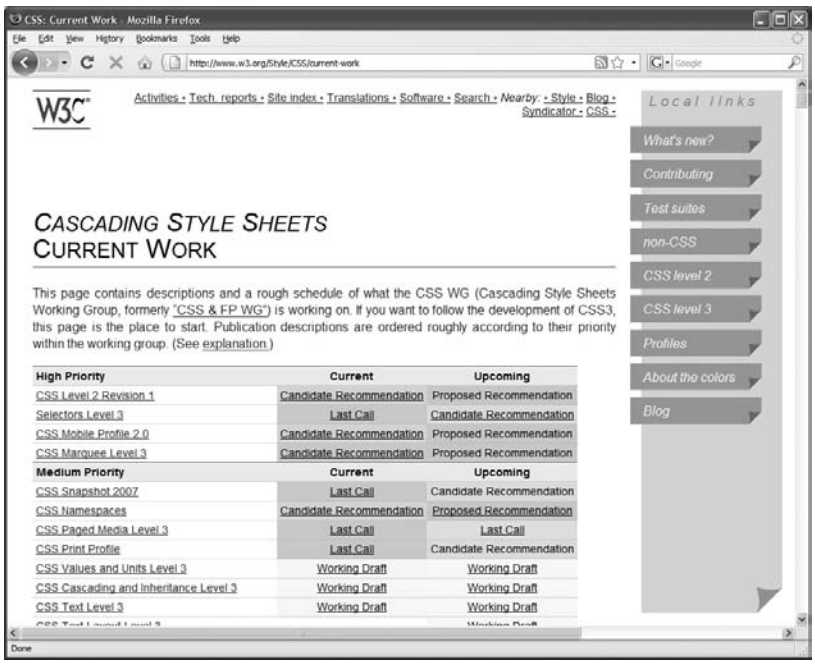

Figure 16-1: *The World Wide Web Consortium provides the most up-to-date information on CSS at* www.w3.org/Style/CSS/current-work. *Here you can read about all of the different CSS 3 modules and see how far along they are in the approval process.*

An Overview of CSS 3

CSS has matured substantially since its 1996 introduction. It's become the primary web-design tool, and with designers clamoring to make ever more stunning websites, each version of CSS has more—and more complex—properties than the one before. With CSS 3, the World Wide Web Consortium has broken CSS up into independent *modules*. Each module describes a specific new set of CSS properties. Some modules are straightforward, like CSS Transitions (for animating a transition between two states such as making text glow when you mouse over a link) and CSS Web Fonts (instructions for different font properties), while some modules are more obscure, like CSS Math or CSS Namespaces. The goal of the module system is to let CSS grow bit by bit, without making everyone wait for one giant set of instructions to be completed. Each module progresses on its own, and browser vendors are free to adopt a module's rules as soon as it's ready.

Although none of the CSS 3 modules is complete, some of the most visually exciting bits of CSS 3 have made their way into current browsers (even Internet Explorer, in some cases). The rest of this chapter walks you through you a bunch of them.

Tip: Beside the W3C, *www.css3.info* also offers fairly up-to-date information on the state of CSS 3.

CSS 3 Selectors

CSS 3 introduces a wide range of new selectors that let you specify which page elements a style applies to with even greater precision. In fact, several of the attribute selectors discussed on pages 67–70 are actually CSS 3 selectors. For example, to style links that point to Adobe Acrobat files, you can create a selector like this: *a[href$=".pdf"]*. The *$=* means "ends with," so the specified attribute (here, *href*) has to end with a particular value (*.pdf*). Similarly, you can use ^= to pinpoint an attribute that starts with a particular value (page 69 explains how to use this selector to identify links to another website).

The advanced attribute selectors in this section work with Firefox, Safari, Chrome, Opera, and even Internet Explorer 7 and above (but not IE 6, mind you). Other new CSS 3 selectors work mostly in non-IE browsers.

Note: If you want to see which CSS 3 selectors your favorite web browser understands, visit the CSS Selectors Test Suite at *www.css3.info/selectors-test*. This nifty JavaScript program tests your browser, giving either a green (thumbs up) or red (thumbs down) rating for each of the CSS 3 selectors. Safari 4, Firefox 3.5, Opera 9.5, and Chrome pass all 43 tests, while Internet Explorer 8 passes 22 of the 43 tests.

Child Selectors

CSS provides several methods for formatting tags that are children of other tags. As described on page 57, a child is any tag that's directly wrapped inside a tag. Take, for example, a bold word inside a paragraph; the tag is the child of the <p> tag. In a bulleted list of items, the <li> tags are children of the <ul> tag.

- *:first-child*. You've seen this selector before, on page 64. Actually part of the CSS 2 standard, it lets you format just the first child of a tag—see top-left image in Figure 16-2. For example, to format the first list item in a bulleted list, you can write this selector:

  ```
  ul :first-child
  ```

  Note the space between *ul* and *:first-child*, which translates to "find the first child of a <ul> tag." (The selector *ul:first-child*, with no space, is entirely different: it selects *all* tags that are a first child of some other tag.)

  If you want to add a special color to any text that appeared first inside a div with the class *announcement*, write the following style:

  ```
  .announcement :first-child { color: #F33F00; }
  ```

  This style applies to the first tag inside the div, whether it's an <h1>, <h2>, <p>, or any other tag. It gives you extra flexibility, since the style isn't dependent on an exact type of tag to appear first inside the div.

  The *:first-child* selector works in all modern browsers except Internet Explorer 6 and earlier.

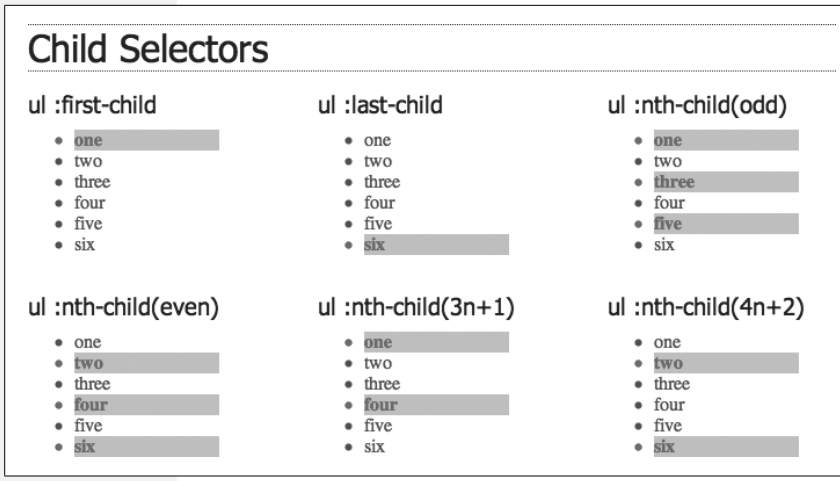

Figure 16-2: *CSS's wide range of child selectors gives you a variety of ways to select child elements. These selectors are great when you want to highlight the first, last, or an alternating number of items in a list.*

- *:last-child.* This selector is new in CSS 3 and applies to the last child within a tag. You can use it, for example, to add a borderline to the bottom of the last paragraph of a div or to highlight the last item in a list (see second from left image in the top row of Figure 16-2). This selector doesn't work in any version of Internet Explorer (even IE 8).

- *:nth-child( ).* This complex selector is very useful. With it, you can easily style every other row in a table, every third list item, or style any combination of alternating child elements (see Figure 16-2).

  :nth-child( ). This selector requires a value to determine which children to select. The easiest option is a keyword—either *odd* or *even*—which lets you select alternating odd or even child elements. For example, if you want to provide one background color for each even row in a table and another color in the background of each odd-numbered row, you can write two styles like this:

```
table tr:nth-child(odd) { background-color: #D9FOFF; }
table tr:nth-child(even) { background-color: #FFFFFF; }
```

  Now that's a really simple way to color alternating table rows (see Figure 16-3). But *:nth-child( )* has even more power up its sleeve. You can also select, say, every third child element in a series, starting with the second child element. For example, suppose you want to highlight every third table cell (<td> tag) inside a row, starting with the second table cell (see Figure 16-3). Here's a style to achieve that:

```
tr td:nth-child(3n+2) { background-color:#900; }
```

  Basically, the number before the *n* (3 in this case) represents which child element you're after. So, *3n* means every third element, while *4n* means every fourth element. The plus sign followed by a number (*+2* in this example) indicates which element to start at, so *+2* means start at the second child element, while *+5* means start at the fifth child element. So *:nth-child(5n + 4)* selects every fifth child element starting at the fourth child element.

Unfortunately, only Firefox 3.5 and later understands this fancy new selector. Safari, Opera, Chrome, and Internet Explorer will simply ignore it. (For them, you can use the lower-tech solution for striping tables, described on page 277, which works in all browsers.)

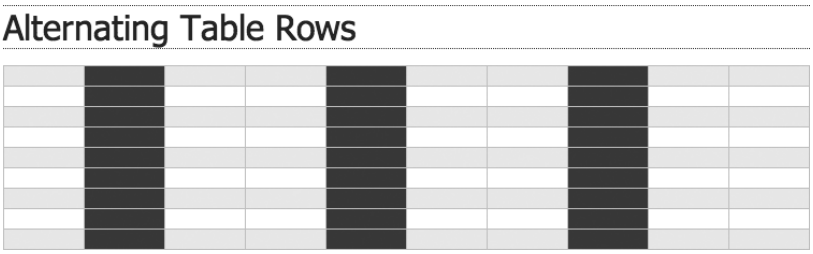

Figure 16-3: *Table-striping the easy way: with child selectors. You can even stripe alternating columns by targeting every other <td> tag within a row, or, as in this case, every third column beginning with the second one. Now that's precision! Unfortunately, this technique doesn't work in the most common browser in the world—Internet Explorer.*

Type Selectors

CSS 3 introduces a selector that works much like the child selectors in the previous section but applies to children with a specific type of HTML *tag*. For example, say you want to format the first paragraph inside a sidebar in a particular way, but on some pages, that sidebar starts with an <h2> tag, and on other pages, it starts with a <p> tag. You can't use *:first-child* to select that paragraph, since in some cases it's the *second* child (following the <h2>). However, it's always the first *paragraph* (<p> tag), even if other tags come before it, so you can select it with a type selector called *:first-of-type*.

Here's the skinny on *:first-of-type* and several more type-related selectors:

- *:first-of-type*. Works just like *:first-child* but applies to a child that has a particular tag. For example, say you have a sidebar element with the ID *sidebar*. To style the first paragraph in that sidebar, use this selector:

  ```
  #sidebar p:first-of-type
  ```

  Notice the *p* in *p:first-of-type*. It indicates the tag you're going to format.

- *:last-of-type*. Works like *:last-child* but applies to the last instance of a particular type of tag. For example, if you want to format the last paragraph in the sidebar div in a particular way, but you're not sure whether there are other tags coming after the paragraph (like a bulleted list, headline, or image). Here's the style:

  ```
  #sidebar p:last-of-type
  ```

Note: Remember, these type selectors also have to be children of a particular tag. So *p:first-of-type* means the "first child with a paragraph tag."

- *:nth-of-type( )*. Works like *:nth-child( )* but it applies to alternating children that have a specific tag. You may find this selector handy if you have something like a big paragraph of text that's peppered with photos. The <img> tag is an inline tag, so you can have a <p> tag with a bunch of <image> tags inside it. And say you want to alternately float the images left and right, as shown in Figure 16-4. You can do so with these two styles:

```
img:nth-of-type(odd) { float: left; }
img:nth-of-type(even) { float: right; }
```

As you can see, you use the same keywords (*odd* or *even*) and formula (here, *2n +1*) for *:nth-of-type( )* as you do for *:nth-child( )*.

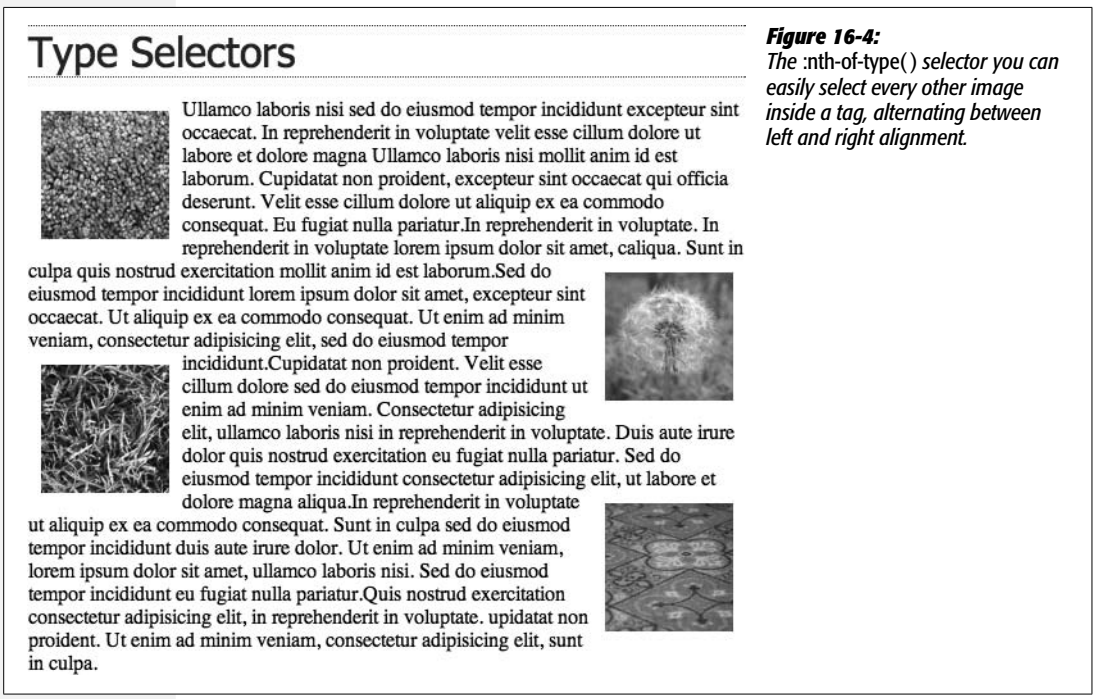

Figure 16-4: *The* :nth-of-type( ) *selector you can easily select every other image inside a tag, alternating between left and right alignment.*

Unfortunately, the type selectors don't work in Internet Explorer; just Firefox 3.5, Safari, Opera, and Chrome.

Note: For a complete list of CSS 3 selectors, visit *www.w3.org/TR/css3-selectors*.

FREQUENTLY ASKED QUESTION

Vendor-Specific Extensions

I've come across some CSS that has properties like -moz-opacity and -webkit-border-radius. What are those?

Browser makers like Apple, Mozilla, Opera, and Microsoft sometimes add an extension to the beginning of a CSS property to indicate that property only applies to their browser. Developers use this technique when they want to add a CSS property that isn't part of the CSS standard. (Or the W3C CSS Working Group hasn't figured out how the property is supposed to work yet.)

Properties beginning with *-moz-* are for Firefox, *-webkit-* is Safari, *-ms-* is Internet Explorer, and *-o-* is Opera. Usually, if the W3C CSS Working Group adopts the property and finalizes enough of its details, vendors drop the extension. For example, Firefox 3 now understands the CSS 3 property *opacity,* but earlier versions of the program used the property *-moz-opacity.*

Opacity

If you like ghosts, at least the cartoon kind you can see through, then you'll like the CSS 3 *opacity* property. Basically, this simple property lets you make any element partially transparent, so, for example, you can make an image appear faded into a page's background. You can use *opacity* in conjunction with JavaScript to make elements fade into view by dynamically adjusting their opacity. Or you can use it with the link pseudo-classes like *:hover* to add some simple excitement to a navigation bar or even a set of photos (see Figure 16-5).

Opacity takes a value from 0 (invisible) to 1 (opaque). So if you want to make a particular image with the class of *see-thru* 50 percent transparent, use this style:

```
.see-thru {
  opacity: .5;
}
```

The *opacity* property works in all browsers except Internet Explorer. Fortunately, IE supplies a similar property that lets you achieve the same results. To get the previous style to work in all browsers (even IE 6), rewrite it like this:

```
.see-thru {
  opacity: .5;
  filter: alpha(opacity=50);
}
```

The IE-only *filter* property lets you add a bunch of groovy (and some hideous) visual effects to your pages. In this case, the *alpha* filter lets you set the opacity of an element from 0 (invisible) to 100 (opaque). So to make an element 75 percent opaque, for example, use these two declarations:

```
opacity: .75;
filter: alpha(opacity=75);
```

Two styles create the effect in Figure 16-5: one that sets the images to 50 percent transparent and another that makes them 100 percent opaque when moused over. Basically each image is wrapped in a <a> tag as part of a link, and then the *:hover* pseudo-class creates the rollover effect:

```
a img{
  opacity: .5;
  filter: alpha(opacity=50);
}
a:hover img {
  opacity: 1;
  filter: alpha(opacity=100);
}
```

One problem with *opacity*—all descendent tags inherit the property. For example, say you put some text inside a tag. The div is sitting on top of a background image that's been added to the <body> tag. You'd like to add a background color to the div but make it transparent so you can see through the background color to see part of the image. Unfortunately, if you use the *opacity* property on the tag, it also applies to the text inside the div—even if the text is inside another tag, like a <h1> or <p> tag. In other words, the text will be transparent, too—and hard to read. Fortunately, you can turn to another new CSS 3 attribute for a solution to that problem—RGBA color—as described next.

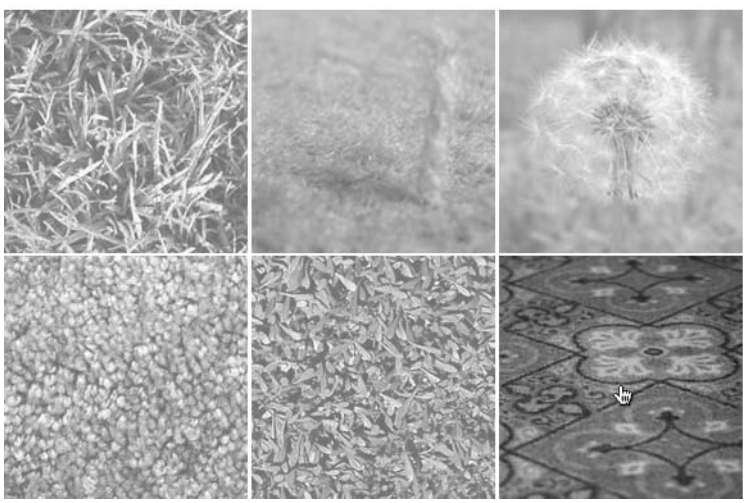

Figure 16-5:
Now you sort of see it, now you totally see it. Here, images with links are set to 50 percent opacity (essentially fading them into the page's white background). But mousing over one of the images (bottom right) suddenly makes it pop into vivid solidness.

RGBA Color

You're familiar with hexadecimal colors like #FF0066. And in Chapter 6 (page 119), you read about RGB color notation: *rgb(25, 255, 0),* for example. CSS 3 adds another way of specifying color: RGBA, which stands for Red, Green, Blue, Alpha. Basically, it's RGB color with the addition of *alpha transparency.* Alpha works the same way as opacity, as described in the previous section, in that you specify a value from 0 to 1 to indicate how much you can see through the color. A value of *0* means the color's invisible, while *1* means it's a solid color—you can't see through it.

Say you want to add a background color to a div with a class of *caption,* but you want that color to be see-through enough so the content underneath the div is readable (see Figure 16-6). You could then create a style like this:

```
.caption { background-color: rgba(95,156,140,.75); }
```

In this case, the background color is teal (*95, 156, 140*) with 75 percent opacity (*.75*). You can use RGBA wherever you'd normally use a color value in CSS—for a background color, text color, border color, and so on.

The downside of RGBA color is that Firefox 2, Opera 9, and every version of Internet Explorer don't understand RGBA colors. If those browsers encounter this style, they simply ignore it and leave the background color empty. You have a couple of approaches for dealing with these browsers: First, don't worry about it and let those browsers ignore the color. That's the easiest tactic, but not necessarily the best. For example, the text might not be legible if there's no background color at all (Figure 16-6).

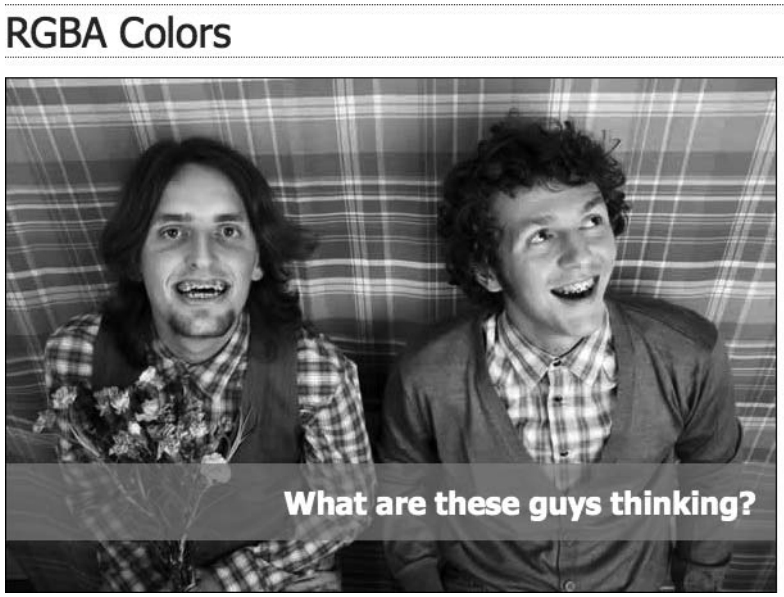

Figure 16-6: *The new CSS 3 RGBA color gives you an easy way to add partially transparent backgrounds to page elements, like the paragraph pictured here.*

Tip: Any image-editing program, like Photoshop or Fireworks, can give you an RGB color value as well as a hexadecimal color. If you already know a hex color value, and you want to convert it to RGB so you can use RGBA colors, visit this web page for help: *www.javascripter.net/faq/hextorgb.htm*.

Another approach is to give the background a solid color using either the regular RGB color or a hexadecimal color. Doing so takes two passes. First, to deal with non-IE web browsers that don't understand RGBA, you must edit the *rgba* style:

```
.caption {
  background-color: rgb(95,156,140); /* Opera and others */
  background-color: rgba(95,156,140,.75);
}
```

In this case, the first *background-color* declaration uses RGB color, which all browsers understand. When Opera, Internet Explorer 8, or Firefox 2 encounters the second declaration, the browser ignores it, since it doesn't know what RGBA color is. This style works for Opera 9 and Internet Explorer 8, but IE 6 and 7 get confused and don't display any background color at all.

Accordingly, you need to add another style sheet for IE using conditional comments, as described on page 433. Here's an example of how to get the previous code to work with IE as well:

```
<!--[if IE]>
<style type="text/css">
.caption {
  background-color: rgb(95,156,140);
}
</style>
<![endif]-->
```

Simulating RGBA in Internet Explorer

There's another way to get Internet Explorer to join the RGBA party. As with *opacity,* IE provides a *filter* property that you can use to achieve the same effect as RGBA color. It's a bit of a handful to type, and you need to add a one other CSS property to make it work. To get a taste of how the finished product looks, here's you what you'd add to your page to get the same effect as described in the previous section on RGBA color:

```
<!--[if IE]>
<style type="text/css">
.caption {
  background-color: transparent;
  filter:progid:DXImageTransform.Microsoft.gradient(
  startColorstr=#BF5F9C8C,endColorstr=#BF5F9C8C);
  zoom: 1;
}
</style>
<![endif]-->
```

This chunk of code does the same thing as this:

```
.caption { background-color: rgba(95,156,140,.75); }
```

Here's how it works:

- First, you need to put the special IE code into a conditional comment. Here, the conditional comment contains an internal style sheet, but you can use IE conditional comments (also called IECCs) to link to another IE-only style sheet with the style, as described on page 434.
- Use the same selector as you did for creating the effect in the first place. In this example, the selector is *.caption.*
- For Internet Explorer 8, you need to set the background color to transparent first with *background-color: transparent.* This style erases any background color that's been applied to the element so the *filter* property (that's the next step) will work correctly.
- Add the *filter* property:

  ```
  filter:progid:DXImageTransform.Microsoft.
  gradient(startColorstr=#BF5F9C8C,endColorstr=#BF5F9C8C);
  ```

  There's a lot of code here. Just take your time and type it exactly as you see here, except keep it all on a single line. The only two things you change are the values for *startColorstr* and *endColorstr.* In this example, those values are both *#BF5F9C8C.* The first two characters BF (which means roughly 75 percent) represent the transparency. It's just a number from 0 to 255 represented in hexadecimal. The last six characters are the hex value of the color; in this example that's 5F9C8C.

  In other words, take the alpha value you specified in the RGBA declaration and convert it to a hex number between 0 and 255 (see Table 16-1 for a quick conversion guide). Then convert the RGB color to hex (use the calculator at *www.javascripter.net/faq/rgbtohex.htm*), and then put them together (transparency value first) and type that combined number for both the *startColorStr* and *endColordstr*).
- Add *zoom: 1.* This property forces IE 6 and 7 to obey. You can read the bizarre details of this little maneuver in the box on page 173.

Table 16-1. *To use Internet Explorer's gradient filter to simulate RGBA color, you have to convert your alpha setting to a hex value.*

Alpha Setting	Hex Equivalent
0 (invisible)	00
.1	19
.2	33
.3	4C
.4	66

Table 16-1. *To use Internet Explorer's gradient filter to simulate RGBA color, you have to convert your alpha setting to a hex value. (continued)*

Alpha Setting	Hex Equivalent
.5	7F
.6	99
.7	B2
.8	CC
.9	E6
1 (opaque)	FF

Text Shadow

As you saw in the image gallery tutorial on page 210, there's nothing like a drop shadow to add dimension to a web page. CSS 3 includes one property that lets you add drop shadows to text to add depth and interest to headlines, lists, and paragraphs (see Figure 16-7).

The *text-shadow* property requires four pieces of information: the horizontal offset (how far to the left or right of the text the shadow should appear), the vertical offset (how far above or below the text the shadow should appear), the blurriness of the shadow, and the color of the drop shadow. For example, here's *the text-shadow* property that creates the effect at top in Figure 16-7:

```
text-shadow: -4px 4px 3px #999999;
```

The first value— *–4px*—means "place the shadow 4 pixels to the left of the text." (A positive value here would place the shadow to the right of the text.) The second value—*4px*—places the shadow 4 pixels below the text. (A negative value would place the shadow above the text.) The *3px* value defines how blurry the shadow should be. A zero value (no blur) results in a sharp drop shadow; the larger the value, the more blurry and indistinct the shadow. Finally, the last value is the drop shadow's color.

You can even add multiple drop shadows for more complex effects (see bottom image in Figure 16-7): just add a comma followed by additional drop shadow values, like this:

```
text-shadow: -4px 4px 3px #666, 1px -1px 2px #000;
```

There's no limit (except good taste) to the number of shadows you can add this way. Sadly, this effect works only in Firefox 3.5, Safari, Chrome, and Opera. All versions of Internet Explorer and versions 3 and earlier of Firefox ignore this property. For that reason, *don't* rely on this effect to make text readable. The bottom image in Figure 16-7, shows you what not to do: The text color is white and it's readable only because the drop shadows define the outline of the text. In Internet Explorer, the text would be invisible—white text on a white background.

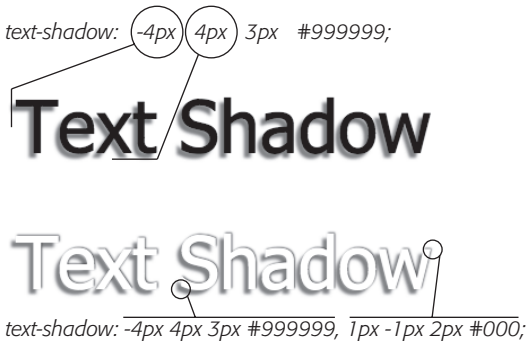

Figure 16-7:
Text shadows are a great way to add subtle (or, if you insist, not so subtle) depth to headlines and other text. However, the text-shadow property doesn't work in Internet Explorer or versions of Firefox prior to 3.5.

Note: If you're really gaga for drop shadows, you can use JavaScript to add complete cross-browser shadows to not only text, but also any other element. Visit *http://eyebulb.com/dropshadow* for one solution.

POWER USERS' CLINIC

But, Wait, There's More!

This chapter touches upon some of the most well-supported CSS 3 features. These properties currently work in enough browsers that it's worth your while to start learning them—and eventually, they'll work everywhere. This box introduces some cool new CSS 3 properties with more limited adoption that you may be interested in experimenting with:

Rounded Corners. Everyone loves rounded corners (or so it seemed back in 2005 with the Web 2.0 revolution). But they're so darn hard to create. CSS 3 provides a property just for adding rounded corners to elements. Imagine smooth round corners around a sidebar without any extra HTML and no images whatsoever. The *border-radius* property (which currently works in Firefox, Safari, and Chrome) lets you control the curvature of any or all of an element's four corners. To learn how it works, visit *www.css3.info/preview/rounded-border*.

Drop Shadows. If you like drop shadows for your text, why not try them on block-level elements? The *box-shadow* property lets any element cast a rectangular shadow. You can make a sidebar appear to be floating onto a page, for example, or simply highlight a footer with a solid, dark shadow. It works just like *text-shadow,* but it only works in Firefox 3.5 and Safari. Furthermore, even in those browsers you have to use browser-specific extensions (see the box on page 443). For example, to get a gray, blurry drop shadow 10 pixels below and to the right of a div, you could create this style:

```
div {
-webkit-box-shadow: 10px 10px 5px #888;
-moz-box-shadow: 10px 10px 5px #888;
}
```

Border Image. Tired of plain-old solid, dotted, or dashed border lines (page 161)? How about using your own images to create a border effect? You can (in Firefox 3.5 and Safari), using the *border-image* property (actually, the *-webkit-border-image* and *-moz-border-image* properties). To see it in action and learn more about it, launch Firefox 3.5 or Safari and visit *www.css3.info/preview/border-image* and *http://ejohn.org/blog/border-image-in-firefox*.

Font Freedom

As discussed on page 113, the humble *font-family* property lets you assign a font to your CSS styles. However, you can't just use any old font with that *font-family*. Well, you *can*, but your site's visitors will only see that font if they also have it installed on their computers. Because most people don't buy lots of fonts, web designers usually stick with a handful of web-safe fonts they can count on most people having (see page 117).

CSS 3 opens new typographic territory with the *@font-face* rule. With this rule, you can put a font file on your web server—in either open type (.otf) or true type (.ttf) format—and use the *@font-face* rule to make a visitor's web browser download the font for use while looking at your site. Before you jump up and down for joy, there are a few things to keep in mind:

- **The @font-face rule doesn't work in all browsers.** Only Firefox 3.5, Safari 3, Chrome, and Opera 10 respond to this technique. Earlier versions of these browsers and Internet Explorer don't display the font and resort to the old, what-the-user-has-installed method of displaying fonts. One exception: Internet Explorer has recognized *@font-face* since version 4, but only for a special type of font—*.eot* (*embedded open type*)—which you create using a Windows-only font conversion tool (*http://msdn.microsoft.com/en-us/library/ms533034.aspx*).

Note: You *can* make the *@font-face* rule work in both IE and the other modern browsers, but it's a chore. If you're interested, you can read about the process at *http://jontangerine.com/log/2008/10/font-face-in-ie-making-web-fonts-work*. There's also a JavaScript-only approach to getting the font you want that's relatively easy to get working: *http://wiki.github.com/sorccu/cufon/about*.

- **Big font files can slow down your site.** When you use the *@font-face* technique, visitors have to download an entire font file. And font files are not small. A simple font (and a font consists of just one weight; the bold version is another font file entirely) can be around 172 KB. Complex font files are many times that size. Your visitors have to wait around for that file to download before they can read the text that uses that font. With small font files and fast Internet connections, visitors may not notice anything. But if you make visitors download a bunch of font files, your site might take a long time to load.
- **There are legal restrictions.** Fonts are software and are protected by copyright laws. Most fonts are commercial products sold by companies like Adobe.com or Fonts.com, and, like other commercial software, are governed by licenses that specify how the font can and cannot be used. In many cases, you can't legally put these commercial fonts on web servers using the *@font-face* rule. After all, you're literally putting the font file up on your server where anyone can download it. However, there are plenty of free fonts that you can use for *@font-face* embedding. For a sampling, visit *www.tinyurl.com/font-face-rule*.

Aside from these (hopefully temporary) problems, the *@font-face* rule is an exciting development for web designers. The *@font-face* rule requires two pieces of information: a font-family name (which identifies the font in your styles) and a URL pointing to the font file's location. For example, a basic *@font-face* rule may look like the following:

```
@font-face {
  font-family: Lavoisier;
  src:  url('lavoisier.otf');
}
```

The *font-family* property (here, *Lavoisier*) defines the name you'll use in your styles. It doesn't have to match the name of the font you're using; it could be something like "Site Font" or MyFont.

Note: You must enclose the font name in quotes if it's more than one word long. For example,

```
font-family: Site Font;
```

is wrong, but

```
font-family: "Site Font";
```

is correct.

The *src* property uses a URL to point to either a true type font (.ttf) or open type font (.otf). As with URLs used elsewhere in CSS (for example, to point to a background image file), the path is relative to the style sheet. So, if you're using an external style sheet, the path would be from that style sheet to wherever the font lives on your server. You can even use absolute URLs to point to the file.

Once you've defined the font, you can then use it in your styles. For example, here's the Lavoisier font used in an <h1> tag style:

```
h1 {
  font-family: Lavoisier, Arial, Helvetica, sans-serif;
  color: #FF993E;
  font-size: 48px;
}
```

Note: It's still a good idea to provide a list of fonts after the font you've specified with *@font-face*. For example *font-family: Lavoisier, Arial, sans-serif;*. That way, you're providing options for browsers that don't understand the *@font-face* rule.

The *@font-face* rule provides another useful option for the *src* property. Say you want to use a font that's common but not quite universal. For example, some fonts come installed on all Windows computers, but not on Macs. It would be a waste of

time (and bandwidth) to force those Windows people to download a font they already have. Fortunately, you can also specify a *local* font, so if the browser finds that font installed, it won't bother downloading the font file. Here's an example:

```
@font-face {
  font-family: Lavoisier;
  src: local(Lavoisier),
    url('lavoisier.otf');
}
```

You need to use the name of the font as it appears in your font menu (see the Note below). In the above example, if the visitor already has the Lavoisier font on her computer, her browser won't download the font file. But if she doesn't have that font, then the browser will download it for use on the site.

Note: To find the name of a font on your computer, you can look at the Font menu in a program like Word. Also, on Windows you can use the Fonts Control Panel to see the fonts installed on your computer (*www.ehow.com/how_2148826_access-fonts-control-panel.html*). And on a Mac, open the Applications → Font Book program.

Generated Content

Sometimes you want to add some content without necessarily adding any code to your HTML. For example, say you wanted to display the word "Announcement" before the first paragraph of a news announcement (see Figure 16-8). You could just put that into your HTML, but that would require extra work and extra code. It's also not really integral to the actual content; it's just a sort of introduction to the text. Also, if you later wanted to change "Announcement" to "News" you'd have the time-consuming task of identifying and changing that text throughout your site.

There's an easier way to insert stuff that isn't really part of an element's content. It's called *generated content,* and it's been around since CSS 2.1. However, it hasn't been very useful until Internet Explorer 8 came on the scene. Now, every major browser (except IE 6 and IE 7) understands generated content.

Note: You encountered generated content earlier in the book. It's part of one method for dealing with float problems (see page 137).

You add generated content with the *content* property in combination with either the *:before* or *:after* pseudo-elements. You use *:before* to place stuff before a tag, and *:after* to place content after a tag. For example, say you want to add a paragraph symbol (¶) at the beginning of each paragraph (Figure 16-8) to add typographic distinction (or just to show off). You can do that with this style:

```
p:before {
  content: "¶";
}
```

The selector—*p:before*—applies to the location right before the beginning of the content inside the paragraph. The *content* property indicates what you want to place before each paragraph (in this case, a paragraph symbol). You can put any text you like between quotes, and it will appear in the specified location (before or after the tag). Beware: The text between quotes is printed as is, so you can't include HTML as part of the content (well, you can, but the tags will appear onscreen). So for example, if you had this style:

```
p:before {
  content: "<h2>Announcement</h2>";
}
```

You wouldn't end up with a heading 2 before each paragraph, just the text "<h2> Announcement</h2>".

Note: Trivial Pursuit Challenge Answer: The ¶ symbol is technically called a *pilcrow.*

POWER USERS' CLINIC

The Future of Layout

Web designers always find a way to make good designs out of the worst technologies–HTML tables, for example–and have made the Web a much more beautiful place by creatively using floats (Chapter 12) and absolute positioning (Chapter 13). However, none of those techniques really approaches the level of control offered in desktop publishing programs. Fortunately, there's a lot of work being done on this front, with the CSS 3 Working Group busily crafting three separate CSS 3 modules to help make web page layout easier.

For example, if you've ever read a magazine, you know that columns are easier to read than text that goes all the way across a wide page. There's no easy way to create columns on web pages now, but the proposed *multi-column layout module* will make that task a snap. In fact, both Safari and Firefox have already implemented multiple columns. To see an example and learn more, visit *www.css3.info/preview/multi-column-layout*.

The CSS 3 *grid positioning module* (*www.w3.org/TR/css3-grid*) is another set of CSS properties aimed at making graphic designers' lives easier. The goal of this module is to let you define a grid–an invisible collection of columns–that you can then use to position and size elements. These properties would let you divide a page into, say, six 150-pixel columns–an underlying grid for the page–and then size other elements using grid measurements. For example, "make this div 3 columns wide and place it in the top of column 2." This module is a long way away from becoming reality, since no browser currently recognizes anything from this module.

Finally, the most interesting CSS 3 addition to layout will be the *template layout module* (*www.w3.org/TR/css3-layout*). The template layout properties will let you use letters to define a page's basic structure. For example, the following code divides the page into two rows, with the top row–aaa–being one unit, and the bottom row–bcd–being three units or columns:

```
body {
  display: "aaa"
           "bcd";
}
```

Positioning different page elements into the proper location uses a similar, notation:

```
#head { position: a }
#nav { position: b }
#adv { position: d }
#body { position: c }
```

Here, an element with ID *head* spans the entire page in the top row, while the *nav, adv,* and *body* elements sit side by side, each in its own column. Exciting stuff, but unfortunately, this module too is far from becoming a reality.

You can even insert an image by specifying a URL like this:

```
p:before {
  content: url("images/symbol.png");
}
```

And you can combine text with an image, like this:

```
p:before {
  content: "Paragraph" url("images/symbol.png");
}
```

This code prints the text "Paragraph" and adds the image *symbol.png* at the front of each paragraph.

You can style generated content like other elements, using any CSS property. For example, in Figure 16-8, the "Announcement" text uses a different font than the paragraph, and has a background color. That first paragraph has a class of *announcement*, so here's the style that creates the look pictured in Figure 16-8:

```
.announcement:before {
  content: "ANNOUNCEMENT";
  font: bold .6em Arial, Helvetica, sans-serif;
  color: #FFF;
  padding: 4px;
  background-color:red;
  margin-right: 10px;
}
```

All of those CSS properties apply to the *:before* pseudo-element, and since that holds the text "ANNOUNCEMENT," all of the properties are applied to that text.

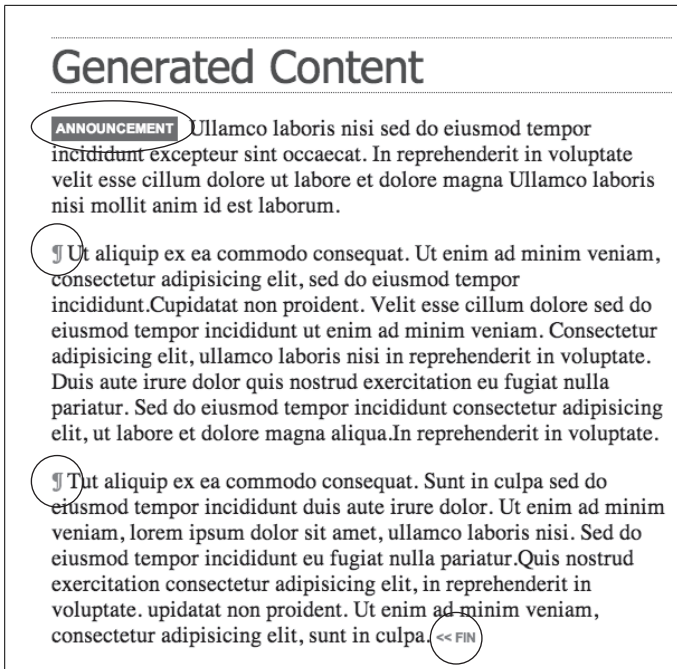

Figure 16-8:
CSS Generated Content lets you add supplemental, less critical content to spice up your pages. Add introductory boxes like the Announcement blurb at the beginning of the first paragraph, or elegantly close an entry with "<<fin" (bottom right) without adding extra HTML to the page.

5

Part Five: Appendixes

Appendix A: CSS Property Reference

Appendix B: CSS in Dreamweaver CS4

Appendix C: CSS Resources

APPENDIX

A

CSS Property Reference

Mastering Cascading Style Sheets involves knowing how to use a large number of CSS properties that control the appearance of text, images, tables, and forms. To help you in your quest, this appendix gives you a summary of the properties and values you'll use to create your own styles. This list covers nearly all of the CSS 2.1 standard properties—the ones that most web browsers support.

Note: This appendix leaves out properties that no (or hardly any) browsers recognize. Otherwise, the following descriptions mention the browsers with which each property works. For full details straight from the horse's mouth, visit the World Wide Web Consortium's CSS 2.1 specification at *www.w3.org/TR/CSS21*. You can read about some of the newer CSS 3 properties in Chapter 16. (They don't work in all browsers.)

CSS Values

Every CSS property has a corresponding value. The *color* property, which formats font color, requires a color value to specify which color you want to use. The property *color: #FFFFFF;* creates white text. Different properties require different types of values, but they come in four basic categories: colors, lengths and sizes, keywords, and URLs.

Colors

You can assign colors to many different properties, including those for font, background, and borders. CSS provides several different ways to specify color.

Keywords

A web color keyword is simply the name of the color, like *white* or *black*. There are currently 17 recognized web color keywords: *aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, orange, purple, red, silver, teal, white, and yellow*. Some browsers accept more keywords, and CSS 3 promises to offer many more in the future: for one example, RGBA color, see page 445. You can read a lot more about CSS 3 at *www.w3.org/TR/css3-color*.

RGB values

Computer monitors create colors using a mixture of red, green, and blue light. These RGB values can create (nearly) the full spectrum of color. Almost every design, illustration, and graphics program lets you specify colors using RGB, so it's easy to transfer a color from one of those programs to a CSS property. CSS represents RGB values in several ways:

- **Hex values.** The method most commonly used on the Web for identifying color, hex color values consist of three two-character numbers in the hexadecimal (that is, base 16) system. *#FF0033* represents an RGB value composed of red (FF, which equals 255 in normal, base 10 numbers), green (00), and blue (33). The # tells CSS to expect hex numbers ahead, and it's required. If you leave off the #, a web browser won't display the correct color.

Tip: If all three two-digit values are repeated pairs of digits, you can shorten the hex value by using just the first number of each pair. For example #361 means the same thing as #336611.

- **RGB percentages.** You can also specify a color using percentage values, like this: *rgb(100%, 0%, 33%)*. You can get these numbers from image-editing and design programs that can define colors using percentages (which is most of them).
- **Decimal values.** Finally, you can use decimal RGB values to specify a color. The format is similar to the percentage option, but you use a number from 0 to 255 to indicate each color: *rgb(255, 0, 33)*.

It doesn't matter which method you use—they all work. For consistency's sake, you should pick one way of specifying RGB values and stick with it. The Windows and Mac operating systems both have color pickers that let you find the perfect color from a palette of millions, and then show you the RGB value. Alternatively, you can use this free online color picker: *www.ficml.org/jemimap/style/color/wheel.html*. Or, for more advanced color picking (including the ability to create and save a pallet of colors), check out *http://kuler.adobe.com*.

Tip: Many Mac programs, including TextEdit, let you open the color picker by pressing ⌘-Shift-C.

Lengths and Sizes

CSS provides many different ways to measure the size of type, the width of a box, or the thickness of a borderline. To indicate type size, you can use inches, picas, points, centimeters, millimeters, em-heights, ex-heights, pixels, and percentages. However, even though there are a lot of options, most don't apply to the world of onscreen display, for reasons discussed on page 120. You really need to think about these three only—pixels, ems, and percentages.

Pixels

A pixel is a single dot on a computer screen. Pixels give you a consistent method of identifying lengths and font sizes from computer to computer: 72 pixels on one monitor is 72 pixels on another monitor. That doesn't mean the actual, real-world length is the same for everyone, though. Since people set their monitors to different resolutions—800×600, 1024×768, 1600×1200, or whatever—72 pixels may take up 1 inch on one monitor, but only half an inch for someone else. Nevertheless, pixels give you the most consistent control over presentation.

Note: There's just one drawback to using pixels: Folks using Internet Explorer 6 or earlier can't resize any type that's sized using pixels. If your text is too small for someone's eyes, the visitor won't be able to enlarge it to make it more readable. (See page 120 for more on pixel measurements.)

Ems

Originally from the typographic world, an *em* is a unit that represents the height of the capital letter M for a particular font. In web pages, 1em is the height of the web browser's base text size, which is usually 16 pixels. However, anyone can change that base size setting, so 1em may be 16 pixels for one person, but 24 pixels in someone else's browser. In other words, ems are a relative unit of measurement.

In addition to the browser's initial font-size setting, ems can inherit size information from containing tags. A type size of .9em would make text about 14 pixels tall on most browsers with a 16 pixel base size. But if you have a <p> tag with a font size of .9ems, and then a tag with a font size of .9ems inside that <p> tag, that tag's em size isn't 14 pixels—it's 12 pixels (16×.9×.9). So keep inheritance in mind when you use em values.

Percentages

CSS uses percentages for many different purposes, like sizing text, determining the width or height of an element, and specifying the placement of an image in the background of a style, to name a few. Now, what you're taking a percentage *of* varies from property to property. For font sizes, the percentage is calculated based on the text's inherited value. Say the general font size for a paragraph is 16 pixels tall. If you created a style for one special paragraph and set its font size to 200 percent,

that text is displayed at 32 pixels tall. When applied to width, however, percentages are calculated based on the width of the page or on the width of the nearest parent element. You specify a percentage with a number followed by the percent sign: *100%*.

Keywords

Instead of color or size, many properties have their own specific values that affect how the properties display and are represented by keywords. The *text-align* property, which aligns text on screen, can take one of four keywords: *right, left, center,* and *justify*. Since keywords vary from property to property, read the property descriptions that follow to learn the keyword appropriate to each property.

One keyword, however, is shared by all properties—*inherit.* This keyword lets you force a style to inherit a value from a parent element. You can use the inherit keyword on any property. This keyword gives you the power to make styles inherit properties that aren't normally inherited from parent tags. For instance, say you use the *border* property to add a border around a paragraph. Other tags, such as and , inside the <p> tag don't inherit this value, but you can force them to do so with the *inherit* keyword:

```
em, strong {
  border: inherit;
}
```

That way, the em and strong tags display the same border value as their parent <p> tag. So the and elements of the paragraph each get their own borders, as does the entire paragraph, so you'd end up with boxes within boxes (a good reason why that property *isn't* inherited normally). If you change the <p> tag's *border* value to *a different color or thickness,* the and tags inherit that value and display the same type of border, too.

Note: The *border* property isn't a very useful example, mainly because *inherit* isn't a very useful value. But this wouldn't be a Missing Manual if it didn't give you all the facts.

URLs

URL values let you point to another file on the Web. For example, the *background-image* property accepts a URL—the path to the file on the Web—as its value, which lets you assign a graphic file as a background for a page element. This technique is handy for adding a tiling image in the background of a page or using your own graphic for bulleted lists (see page 137).

In CSS, you specify an URL like this: *url(images/tile.gif)*. A style that adds an image called *tile.gif* to the background of the page would look like this:

```
body { background-image: url(images/tile.gif); }
```

Unlike in HTML, in CSS, quotes around the URL are optional, so *url("images/tile.gif"), url('images/tile.gif'),* and *url(images/tile.gif)* are equivalent.

Note: The URL itself is just like the HTML *href* attribute used for links, meaning you can use an absolute URL like *http://www.missingmanuals.com/images/tile.gif*, a root-relative path like */images/tile.gif*, or a document-relative URL like *../../images/tile.gif*. See page 192 for the full story on these kinds of paths.

Text Properties

The following properties affect how text is formatted on a web page. Since most of the properties in this category are inherited, you don't necessarily have to apply them to tags specifically intended for text (like the <p> tag). You can apply these properties to the <body> tag, so that other tags inherit and use the same settings. This technique is a quick way to define an overall font, color, and so on for a page or section.

color (inherited)

Sets the color of text. Since it's inherited, if you set the color of the <body> tag to red, for example, all text inside of the body—and all other tags inside the <body> tag—is red, too.

- **Values:** any valid color value
- **Example:** `color: #FFFF33;`

Note: The preset link colors for the <a> tag override color inheritance. In the above example, any links inside the <body> tag would still be standard hyperlink blue. See page 226 for ways to change preset link colors.

font (inherited)

This is a shortcut method for cramming the following text properties into a single style declaration: *font-style, font-variant, font-weight, font-size, line-height,* and *font-family.* (Read on for the individual descriptions.)

You must separate each value by a space and include at least *font-size* and *font-family, and* those two properties must be the last two items in the declaration. The others are optional. If you don't set a property, the browser uses its own preset value, potentially overriding inherited properties.

- **Values:** Any value that's valid for the specific font property. When including a line height, add a slash followed by the line height after the font size like this: *1.25em/150%.*
- **Example:** `font: italic small-caps bold 1.25em/150% Arial, Helvetica, sans-serif;`

font-family (inherited)

Specifies the font the browser should use to display text. Fonts are usually specified as a series of three to four options to accommodate the fact that a particular font may not be installed on a visitor's computer. See page 117.

- **Values:** A comma-separated list of font names. When a font has a space in its name, surround that font name with quotes. The last font listed is usually a generic font type instructing browsers to choose a suitable font if the other listed fonts aren't available: serif, sans-serif, monotype, fantasy, or cursive.
- **Example:** `font-family: "Lucida Grande", Arial, sans-serif;`

font-size (inherited)

Sets the size of text. This property is inherited, which can lead to some weird behaviors when using relative length measurements like percentages and ems.

- **Values:** Any valid CSS measurement unit (page 120), plus the following keywords: *xx-small, x-small, small, medium, large, x-large, xx-large, larger,* and *smaller. Medium* represents the web browser's normal, preset font size, and the other sizes are multiples of medium.

  Each of the other options decreases or increases the size by a different factor. While each size change is supposed to be a consistent increase or decrease from the previous size, it isn't. Basically, *xx-small* is the equivalent of 9 pixels (assuming you haven't adjusted the base font size in your browser); *x-small* is 10 pixels; *small* is 13 pixels; *large* is 18 pixels; *x-large* is 24 pixels; and *xx-large* is 32 pixels. Due to the uncertainty of how each browser handles these keywords, many designers use pixels, ems, or percentages instead.
- **Example:** `font-size: 1.25em;`

font-style (inherited)

Makes text italic. Applied to italic text, it turns it back to plain text. The options *italic* and *oblique* are functionally the same.

- **Values:** *italic, oblique, normal*
- **Example:** `font-style: italic;`

font-variant (inherited)

Makes text appear in small caps, like this: SPECIAL PRESENTATION. The value *normal* removes small caps from text already formatted that way.

- **Values:** *small-caps, normal*
- **Example:** `font-variant: small-caps;`

font-weight (inherited)

Makes text bold or removes bolding from text already formatted that way.

- **Values:** CSS actually provides 14 different *font-weight* keywords, but only a couple actually work with today's browsers and computer systems—*bold* and *normal.*
- **Example:** `font-weight: bold;`

letter-spacing (inherited)

Adjusts the space between letters to spread out letters (adding spacing between each) or cram letters together (removing space).

- **Values:** Any valid CSS measurement unit, though ems and pixels are most common. For this property, percentages don't work in most browsers. Use a *positive* value to increase the space between letters and a *negative* value to remove space (scrunch letters together). The value *normal* resets *letter-spacing* to its regular browser value of 0.
- **Examples:** `letter-spacing: -1px; letter-spacing: 2em;`

line-height (inherited)

Adjusts space between lines of text in a paragraph (often called *line spacing* in word-processing programs). The normal line height is 120 percent of the size of the text (page 128).

- **Values:** Most valid CSS lengths (page 120), though ems and pixels and percentages are most common.
- **Example:** `line-height: 200%;`

text-align (inherited)

Positions a block of text to the left, right, or center of the page or container element.

- **Values:** *left, center, right, justify* (the *justify* option often makes text difficult to read on monitors).
- **Example:** `text-align: center;`

text-decoration

Adds lines above, under, and/or through text. Underlining is common with links, so it's usually a good idea *not* to underline text that isn't a link. The color of the underline, overline, or strike-through line is the same as the font color of the tag being styled. The property also supports a *blink* value that makes text flash off and on obnoxiously (but most browsers ignore *blink* anyway).

- **Values:** *underline, overline, line-through, blink, none*. The *none* value turns off all decoration. Use this to hide the underline that normally appears under links. You can also add multiple decorations by listing the name of each type (except *none*) separated by a space.
- **Example:** `text-decoration: underline overline line-through;`

text-indent (inherited)

Sets the indent size of the first line of a block of text. The first line can be indented (as in many printed books) or outdented, so that the first line hangs off and over the left edge of the rest of the text.

- **Values:** Any valid CSS measurement unit. Ems and pixels are most common; percentages behave differently than with the *font-size* property. Here, percentages are based on the width of the box containing the text, which can be the width of the entire browser window. So *50%* would indent the first line half of the way across the window (see page 62 for a detailed explanation). To outdent (hang the first line off the left edge), use a negative value. This technique works well in conjunction with a positive *margin-left* property (page 136), which indents the left side of the other lines of text a set amount.
- **Example:** `text-indent: 3em;`

text-transform (inherited)

Changes the capitalization of text, so text appears in all uppercase letters, all lowercase, or only the first letter of each word capitalized.

- **Values:** *uppercase, lowercase, capitalize, none.* The *none* option returns the text to whatever case is in the actual HTML code. If *aBCDefg* are the actual letters typed in HTML, then *none* removes any other inherited case set by an ancestor tag and displays *aBCDefg* onscreen.
- **Example:** `text-transform: uppercase;`

vertical-align

Sets the baseline of an inline element relative to the baseline of the surrounding contents. With it, you can make a character appear slightly above or below surrounding text. Use this to create superscript characters like ™, ®, or ©. When applied to a table cell, the values *top, middle, bottom,* and *baseline* control the vertical placement of content inside the cell (page 275).

- **Values***: baseline, sub, super, top, text-top, middle, bottom, text-bottom,* a percentage value, or an absolute value (like pixels or ems). Percentages are calculated based on the element's *line-height* value (page 128).
- **Examples:** `vertical-align: top; vertical-align: -5px; vertical-align: 75%;`

white-space

Controls how the browser displays space characters in the HTML code. Normally, if you include more than one space between words—"Hello Dave"—a web browser displays only one space—"Hello Dave." You can preserve any white space exactly as is in the HTML using the *pre* value, which does the same as the HTML <pre> tag. In addition, web browsers will split a line of text at a space, if the line won't fit within the window's width. To prevent text from wrapping, use the *nowrap* value. But the *nowrap* value makes *all* of the paragraph's text stay on one line, so don't use it with long paragraphs (unless you like the idea of making your visitors scroll endlessly to the right).

- **Values:** *nowrap, pre, normal*. Two other values—*pre-line* and *pre-wrap*—don't work in many browsers.
- **Example:** `white-space: pre;`

word-spacing (inherited)

Works like the *letter-spacing* property (page 464), but instead of letters, it adjusts space between words.

- **Values:** Any valid CSS measurement unit, though ems and pixels are most common; percentages don't work in most browsers. Use a *positive* value to increase the space between words and a *negative* value to remove space (scrunch words together). The value *normal* resets word spacing to its regular browser value of 0.
- **Examples:** `word-spacing: -1px; word-spacing: 2em;`

List Properties

The following properties affect the formatting of bulleted lists (<ul>) and numbered lists (<ol>). (See page 134 for more on using CSS with lists.)

list-style (inherited)

This property is a shorthand method of specifying the three properties listed next. You can include a value for one or more of those properties, separating each by a space. You can even use this property as a shortcut for writing a single property and save a couple of keystrokes: *list-style: outside,* instead of *list-style-position: outside.* If you specify both a type and an image, a web browser will display the bullet type (disc, square, and so on) *only* if it can't find the image. This way, if the path to your custom bullet image doesn't work, you don't end up with a bulletless bulleted list.

- **Values:** Any valid value for *list-style-type, list-style-image,* and/or *list-style-position.*
- **Example:** `list-style: disc url(images/bullet.gif) inside;`

list-style-image (inherited)

Specifies an image to use for a bullet in a bulleted list.

- **Values:** a URL value (page 192) or *none.*
- **Example:** `list-style-image: url(images/bullet.gif);`

Note: The *background-image* property does the custom bullet job just as well and offers more control (see page 188).

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list-style-position (inherited)

Positions the bullets or numbers in a list. These markers can appear outside of the text, hanging off to the left, or inside the text (exactly where the first letter of the first line normally begins). The *outside* position is how web browsers normally display bullets and numbers.

- **Values**: *inside, outside*
- **Example**: `list-style: inside;`

list-style-type (inherited)

Sets the type of bullet for a list—round, square, roman numeral, and so on. You can even turn an unordered (bulleted) list into an ordered (numbered) list by changing the *list-style-type* property. Use the *none* option to completely remove bullets or numbers from the list.

- **Values:** *disc, circle, square, decimal, decimal-leading-zero, upper-alpha, lower-alpha, upper-roman, lower-roman, lower-greek, none*
- **Example:** `list-style-type: square;`

Padding, Borders, and Margins

The following properties control the space around an element, and let you add border lines to a style.

border

Draws a line around the four edges of an element.

- **Values:** The width (thickness) of the border line in any valid CSS measurement unit (except percentages).

  You can also specify a style for the line: *solid, dotted, dashed, double, groove, ridge, inset, outset, none, and hidden.* (See Figure 7-7 on page 161 for an illustration of the different styles.) The *none* and *hidden* values do the same thing—remove any border.

Finally, you can specify a color using any valid CSS color type (a keyword like *green* or a hex number like *#33fc44*).

- **Example:** `border: 2px solid #f33;`

border-top, border-right, border-bottom, border-left

Adds a border to a single edge. For example, *border-top* adds a border to the top of the element.

- **Values:** same as for *border*.
- **Example:** `border-left: 1em dashed red;`

border-color

Defines the color used for all four borders.

- **Values:** Any valid CSS color type (a keyword like *green* or a hex number like *#33fc44*).
- **Example:** `border-color: rgb(255,34,100);`

This property also supports a shorthand method, which lets you assign different colors to each of the four borders.

- **Values:** Any valid CSS color type for each border: top, right, bottom, left. If you include just two colors then the first color applies to the top and bottom, and the second color to the left and right.
- **Example:** `border-color: #000 #F33 #030 #438F3C;`

border-top-color, border-right-color, border-bottom-color, border-left-color

Functions just like the *border-color* property but sets color for only one edge. Use these properties to override the color set by the *border* property. In this way, you can customize the color for an individual edge while using a more generic *border* style to define the basic size and style of all four edges.

- **Values:** see *border-color* above.
- **Example:** `border-left-color: #333;`

border-style

Defines the style used for all four borders.

- **Values:** One of these keywords: *solid, dotted, dashed, double, groove, ridge, inset, outset, none,* and *hidden*. See Figure 7-7 on page 161 for an illustration of the different styles. The *none* and *hidden* values act identically—they remove any border.
- **Example:** `border-style: inset;`

This property also supports a shorthand method, which lets you assign different styles to each of the four borders.

- **Values:** One of the keywords mentioned above for each border: top, right, bottom, left. If you include just two keywords, then the first style applies to the top and bottom and the second style to the left and right.
- **Example:** `border-style: solid dotted dashed double;`

border-top-style, border-right-style, border-bottom-style, border-left-style

Functions just like the *border-style* property, but applies only to one edge.

- **Values:** see *border-style* above.
- **Example:** `border-top-style: none;`

border-width

Defines the width or thickness of the line used to draw all four borders.

- **Values:** Any valid CSS measurement unit except percentages. The most common are ems and pixels.
- **Example:** `border-width: 1px;`

This property also supports a shorthand method, which lets you assign different colors to each of the four borders.

- **Values:** Any valid CSS measurement unit (except percentages) for each border: top, right, bottom, left. If you include just two values, then the first value sets the width for the top and bottom border and the second value the width for the left and right borders.
- **Example:** `border-width: 3em 1em 2em 3.5em;`

border-top-width, border-right-width, border-bottom-width, border-left-width

Functions just like the *border-width* property but applies only to one edge.

- **Values:** see *border-width* above.
- **Example:** `border-bottom-width: 3em;`

outline

This property is a shorthand way to combine *outline-color*, *outline-style*, and *outline-width* (listed next). An outline works just like a border, except the outline takes up no space (that is, it doesn't add to the width or height of an element), and it applies to all four edges. It's intended more as a way of highlighting something on

a page than as a design detail. *Outline* works in Firefox, Safari, Chrome, Opera, and only version 8 or later of Internet Explorer.

- **Values:** The same as for *border* with one exception—see *outline-color* next.
- **Example:** `outline: 3px solid #F33;`

outline-color

Specifies the color for an outline (see *outline* above).

- **Values:** Any valid CSS color, plus the value *invert,* which merely reverses the color the outline is sitting on. If the outline is drawn on a white background, the invert value makes the outline black. Works just like *border-color* (page 469).
- **Example:** `outline-color: invert;`

outline-style

Specifies the type of line for the outline—dotted, solid, dashed, and so on.

- **Values:** Same as *border-style* (page 469).
- **Example:** `outline-style: dashed;`

outline-width

Specifies the thickness of the outline. Works just like *border-width*.

- **Values:** Any valid CSS measurement unit except percentages. The most common are ems and pixels.
- **Example:** `outline-width: 3px;`

padding

Sets the amount of space between the content, border, and edge of the background. Use it to add empty space around text, images, or other content. (See Figure 7-1 on page 152 for an illustration.)

- **Values:** Any valid CSS measurement unit, like pixels or ems. Percentage values are based on the width of the containing element. A headline that's a child of the <body> tag uses the width of the browser window to calculate a percentage value, so a padding of 20 percent adds 20 percent of the window's width. If the visitor resizes his browser, the padding size changes proportionately. You can specify the padding for all four edges by using a single value or set individual padding sizes per edge using this order: *top, right, bottom, left.*
- **Examples:** `padding: 20px; padding: 2em 3em 2.5em 0;`

padding-top

Works just like the *padding* property, but sets padding for top edge only.

- **Example:** `padding-top: 20px;`

padding-right

Works just like the *padding* property, but sets padding for right edge only.

- **Example:** `padding-right: 20px;`

padding-bottom

Works just like the *padding* property, but sets padding for bottom edge only.

- **Example:** `padding-bottom: 20px;`

padding-left

Works just like the *padding* property, but sets padding for left edge only.

- **Example:** `padding-left: 20px;`

margin

Sets the amount of space between an element's border and the margin of other elements (see Figure 7-1 on page 152). It lets you add white space between two elements—between one picture and another picture, or between a sidebar and the main content area of a page.

Note: Vertical margins between elements can *collapse*. That is, browsers use only the top or bottom margin and ignore the other, creating a smaller gap than expected (see page 156).

- **Values:** Any valid CSS measurement unit like pixels or ems. Percentage values are based on the width of the containing element. A headline that's a child of the body tag uses the width of the browser window to calculate a percentage value, so a margin of 10 percent adds 10 percent of the window's width to the edges of the headline. If the visitor resizes his browser, the margin size changes. As with padding, you specify the margin for all four edges using a single value, or set individual margins in this order: *top, right, bottom, left.*
- **Examples:** `margin: 20px; margin: 2em 3em 2.5em 0;`

margin-top

Works just like the *margin* property, but sets margin for top edge only.

- **Example:** `margin-top: 20px;`

margin-right

Works just like the *margin* property, but sets margin for right edge only.

- **Example:** `margin-right: 20px;`

margin-bottom

Works just like the *margin* property, but sets margin for bottom edge only.

- **Example:** `margin-bottom: 20px;`

margin-left

Works just like the *margin* property, but sets margin for left edge only.

- **Example:** `margin-left: 20px;`

Backgrounds

CSS provides several properties for controlling the background of an element, including coloring the background, placing an image behind an element, and controlling how that background image is positioned.

background

Provides a shorthand method of specifying properties that appear in the background of an element, like a color, an image, and the placement of that image. It combines the five background properties (described next) into one compact line, so you can get the same effect with much less typing. However, if you don't set one of the properties, browsers use that property's normal value instead. For example, if you don't specify how a background image should repeat, browsers will tile that image from left to right and top to bottom (see page 193).

- **Values:** The same values used for the background properties listed next. The order of the properties isn't important (except for positioning as described below), but usually follow the order of *background-color, background-image, background-repeat, background-attachment, background-position.*
- **Example:** `background: #333 url(images/logo.gif) no-repeat fixed left top;`

background-attachment

Specifies how a background image reacts when your visitor scrolls the page. The image either scrolls along with the rest of the content or remains in place. You can add a logo to the upper-left corner of a very long web page, using the *background-attachment* property's *fixed* value, and make that image stay in the upper-left corner

even when the page is scrolled. (In Internet Explorer 6 and earlier, this property works only for the <body> tag.)

- **Values:** *scroll* or *fixed*. Scroll is the normal behavior: An image will scroll off the screen along with text. Fixed locks the image in place.
- **Example:** `background-attachment: fixed;`

background-color

Adds a color to the background of a style. The background sits underneath the border and underneath a background image, a fact to keep in mind if you use one of the nonsolid border styles like *dashed* or *dotted.* In these cases, the background color shows through the gaps between the dashes or dots.

- **Values:** any valid color value (page 118).
- **Example:** `background-color: #FFF;`

background-image

Places an image into the background of a style. Other page elements sit on top of the background image, so make sure that text is legible where it overlaps the image. You can always use padding to move content away from the image, too. The image tiles from left to right and top to bottom, unless you set the *background-repeat* property as well.

- **Values:** The URL of an image.
- **Examples:** `background-image: url(images/photo.jpg);` `background-image: url(http://www.example.org/photo.jpg);`

background-position

Controls the placement of an image in the background of a page element. Unless you specify otherwise, an image begins in the element's top-left corner. If the image tiles, *background-position* controls the image's start point (see *background-repeat* next). If you position an image in the center of an element, the browser puts the image there, and then tiles the image up and to the left *and* down and to the right. In many cases, the exact placement of an image doesn't cause a visible difference in the background tiling, but it lets you make subtle changes to the positioning of a pattern in the background.

- **Values:** Any valid CSS measurement unit, like pixels or ems, as well as keywords or percentages. The values come in pairs, with the first being the horizontal position, and the second being vertical. Keywords include *left, center,* and *right* for horizontal positioning and *top, center,* and *bottom* for vertical. Pixel and em values are calculated from the top-left corner of the element, so to place a graphic 5 pixels from the left edge and 10 pixels from the top, you'd use a value of *5px 10px.*

Percentage values map one point on the image to one point in the background of the element, calculated by the specified percentage from the left and top edges of the image and the specified percentage from the left and top edges of the element. *50% 50%* places the point that's 50 percent across and 50 percent down the image on top of the point that's 50 percent across and 50 percent down the element. In other words, it puts the image directly in the middle of the element. You can mix and match these values: If you want, use a pixel value for horizontal placement and a percentage value for vertical placement.

- **Examples:** `background-position: left top; background-position: 1em 3em; background-position: 10px 50%;`

background-repeat

Controls whether or how a background image repeats. Normally, background images tile from the top left to the bottom right, filling the element's entire background.

- **Values:** *repeat, no-repeat, repeat-x, repeat-y*. The *repeat* option is the normal method—tiling left to right, top to bottom. *No-repeat* places the image a single time in the background with no tiling. *Repeat-y* tiles the image top to bottom only—perfect for adding a graphical sidebar. *Repeat-x* tiles the image from left to right only, so you can add a graphical bar to an element's top, middle, or bottom.
- **Example:** `background-repeat: no-repeat;`

Page Layout Properties

The following properties control the placement and size of elements on a web page.

bottom

This property is used with *absolute, relative,* and *fixed* positioning (see page 356). When used with absolute or fixed positioning, *bottom* determines the position of the bottom edge of the style relative to the bottom edge of its closest positioned ancestor. If the styled element isn't inside of any positioned tags, then the placement is relative to the bottom edge of the browser window. You can use this property to place a footnote at the bottom of the browser window. When used with relative positioning, the placement is calculated from the element's bottom edge (prior to positioning).

- **Values:** Any valid CSS measurement unit, like pixels, ems, or percentages. Percentages are calculated based on the width of the containing element.
- **Example:** `bottom: 5em;`

Note: Internet Explorer 6 and earlier can have a problem when positioning an element using the *bottom* property. See the box on page 365 for details.

clear

Prevents an element from wrapping around a floated element. Instead, the cleared element drops below the bottom of the floated element.

- **Values:** *left, right, both, none.* The *left* option means the element can't wrap around left-floated elements. Similarly, *right* drops the element below any right-floated items. The *both* value prevents an element from wrapping around *either* left- or right-floated elements. *None* turns the property off, so you use it to override a previously set *clear* property. This trick comes in handy when a particular tag has a style that drops below a floated element but you want the tag to wrap in just one case. Create a more specific style to override the float for that one tag.
- **Example:** `clear: both;`

clip

Creates a rectangular window that reveals part of an element. If you had a picture of your high-school graduating class, and the class bully was standing on the far right edge of the photo, you could create a display area that crops out the image of your tormentor. The full image is still intact, but the clipping area only displays the bully free portion of it. The *clip* property is most effective when used with JavaScript programming to animate the clip. You can start with a small clipping area and expand it until the full photo is revealed.

- **Values:** Coordinates of a rectangular box. Enclose the coordinates in parentheses and precede them by the keyword *rect*, like so: *rect(5px,110px,40px,10px);*.

  Here's how the order of these coordinates works: The first number indicates the top offset—the top edge of the clipping window. In this example, the offset is *5px,* so everything in the first four rows of pixels is hidden. The last number is the left offset—the left edge of the clipping window. In this example, the offset is *10px,* so everything to the left (the first 9 pixels of the element) is hidden. The second number is the width of the clipping window plus the last number; if the left edge of the clip is 10 pixels and you want the visible area to be 100 pixels, the second number would be *110px.* The third number is the height of the clipping region plus the top offset (the first number). So, in this example, the clipping box is 30 pixels tall (30px + 10px = *40px*).
- **Example:** `clip: rect(5px,110px,40px,10px);`

Note: Since the order of the coordinates is a little strange, most designers like to start with the first and last numbers, and then compute the two other numbers from them.

display

Determines the kind of box used to display a web page element—block-level or inline (page 22). Use it to override how a browser usually displays a particular element. You can make a paragraph (block-level element) display without line breaks above and below it—exactly like, say, a link (inline element).

- **Values:** *block, inline, none*. The display property accepts 17 values, most of which have no effect in the browsers available today. *Block, inline,* and *none,* however, work in almost all browsers. *Block* forces a line break above and below an element, just like other block-level elements (like paragraphs and headers). *Inline* causes an element to display on the same line as surrounding elements (just as text within a tag appears right on the same line as other text). *None* makes the element completely disappear from the page. Then, you can make the element reappear with some JavaScript programming or the *:hover* pseudo-class (see page 64). Some of the other properties work in a handful of browsers (the most notable exceptions being Internet Explorer 7 and 6). You can use the table display properties to create some interesting page layouts, as mentioned on page 283.
- **Example:** `display: block;`

float

Moves an element to the left or right edge of the browser window, or, if the floated element is inside another element, to the left or right edge of that containing element. Elements that appear after the floated element move up to fill the space to the right (for left floats) or left (for right floats), and then wrap around the floated element. Use floats for simple effects—like moving an image to one side of the page—or for very complex layouts—like those described in Chapter 12.

- **Values:** *left, right, none.* To turn off floating entirely, use *none:* This comes in handy when a particular tag has a style with a left or right float applied to it and you want to create a more specific style to override the float for that one tag.
- **Example:** `float: left;`

height

Sets the height of the *content area*—the area of an element's box that contains content like text, images, or other tags. The element's actual onscreen height is the total of height, top and bottom margins, top and bottom padding, and top and bottom borders.

- **Values:** Any valid CSS measurement unit, such as pixels, ems, or percentages. Percentages are calculated based on the height of the containing element.
- **Example**: `height: 50%;`

Note: Sometimes, your content ends up taller than the set height–if you type a lot of text, for instance, or your visitor increases text size in her browser. Browsers handle this situation differently: IE 6 (and earlier) simply makes the box bigger, while other browsers make the content extend outside of the box. The *overflow* property controls what happens in this case (see page 167).

left

When used with absolute or fixed positioning (page 356), this property determines the position of the left edge of the style relative to the left edge of its closest positioned ancestor. If the styled element isn't inside of any positioned tags, then the placement is relative to the left edge of the browser window. You can use this property to place an image 20 pixels from the left edge of the browser window. When used with relative positioning, the placement is calculated from the element's left edge (prior to positioning).

- **Values:** Any valid CSS measurement unit, such as pixels, ems, or percentages.
- **Example**: `left: 5em;`

max-height

Sets the *maximum* height for an element. That is, the element's box may be shorter than this setting, but it can't be any taller. If the element's contents are taller than the *max-height* setting, they overflow the box. You can control what happens to the excess using the *overflow* property. Internet Explorer 6 (and earlier) doesn't understand the *max-height* property.

- **Values:** Any valid CSS measurement unit, like pixels, ems, or percentages. Browsers calculate percentages based on the height of the containing element.
- **Example:** `max-height: 100px;`

max-width

Sets the *maximum* width for an element. The element's box can be narrower than this setting, but not wider. If the element's contents are wider than the *max-width* setting, they overflow the box, which you can control with the overflow property. You mostly use *max-width* in liquid layouts (page 300) to make sure a page design doesn't become unreadably wide on very large monitors. This property doesn't work in Internet Explorer 6 (or earlier).

- **Values:** Any valid CSS measurement unit, like pixels, ems, or percentages. Percentages are calculated based on the width of the containing element.
- **Example:** `max-width: 950px;`

min-height

Sets the *minimum* height for an element. The element's box may be taller than this setting, but it can't be shorter. If the element's contents aren't as tall as the *min-height* setting, the box's height shrinks to meet the *min-height* value. Internet Explorer 6 (and earlier) doesn't recognize this property.

- **Values:** Any valid CSS measurement unit, like pixels, ems, or percentages. Percentages are based on the containing element's height.
- **Example:** `min-height: 20em;`

min-width

Sets the *minimum* width for an element. The element's box may be wider than this setting, but it can't be narrower. If the element's contents aren't as wide as the *min-width* value, the box simply gets as thin as the *min-width* setting. You can also use *min-width* in liquid layouts, so that the design doesn't disintegrate at smaller window widths. When the browser window is thinner than *min-width,* it adds horizontal scroll bars. Internet Explorer 6 (and earlier) doesn't understand this property.

- **Values:** Any valid CSS measurement unit, like pixels, ems, or percentages. Percentages are based on the containing element's width.
- **Example:** `min-width: 760px;`

Note: You usually use the *max-width* and *min-width* properties in conjunction when creating liquid layouts. See Chapter 12 (page 320).

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overflow

Dictates what should happen to text that overflows its content area, like a photo that's wider than the value set for the *width* property.

Note: IE 6 (and earlier) handles overflow situations differently than other browsers. See page 173.

- **Values:** *visible, hidden, scroll, auto. Visible* makes the overflowing content extend outside the box—potentially overlapping borders and other web page elements on the page. IE 6 (and earlier) simply enlarges the box (borders and all) to accommodate the larger content. *Hidden* hides any content outside of the content area. *Scroll* adds scroll bars to the element so a visitor can scroll to read any content outside the content area—sort of like a mini-frame. *Auto* adds scrollbars *only* when they're necessary to reveal more content.
- **Example:** `overflow: hidden;`

position

Determines what type of positioning method a browser uses when placing an element on the page.

- **Values:** *static, relative, absolute, fixed*. *Static* is the normal browser mode—one block-level item stacked on top of the next with content flowing from the top to the bottom of the screen. *Relative* positions an element in relation to where the element currently appears on the page—in other words, it can offset the element from its current position. *Absolute* takes an element completely out of the page flow. Other items don't see the absolute element and may appear underneath it. It's used to position an element in an exact place on the page or to place an element in an exact position relative to a parent element that's positioned with *absolute, relative,* or *fixed* positioning. *Fixed* locks an element on the page, so that when the page is scrolled, the fixed element remains on the screen—much like HTML frames. Internet Explorer 6 (and earlier) ignores the *fixed* option.
- **Example:** `position: absolute;`

Tip: You usually use *relative, absolute,* and *fixed* in conjunction with *left, right, top,* and *bottom*. See Chapter 13 for the full details on positioning.

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right

When used with absolute or fixed positioning, this property determines the position of the right edge of the style relative to the right edge of its closest positioned ancestor. If the styled element isn't inside of any positioned tags, then the placement is relative to the right edge of the browser window. You can use this property to place a sidebar a set amount from the right edge of the browser window. When used with relative positioning, the placement is calculated from the element's right edge (prior to positioning).

- **Values:** Any valid CSS measurement unit, like pixels, ems, or percentages.
- **Example:** `left: 5em;`

Warning: Internet Explorer 6 (and earlier) can have problems when positioning an element using the *right* property. See the box on page 365 for details.

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top

Does the opposite of the *bottom* property (page 475). In other words, when used with absolute or fixed positioning, this property determines the position of the top edge of the style relative to the top edge of its closest positioned ancestor. If the styled element isn't inside of any positioned tags, then the placement is relative to the top edge

of the browser window. You can use this property to place a logo a set amount from the top edge of the browser window. When used with relative positioning, the placement is calculated from the element's top edge (prior to positioning).

- **Values:** Any valid CSS measurement unit, like pixels, ems, or percentages.
- **Example:** `top: 5em;`

visibility

Determines whether a web browser displays the element. Use this property to hide part of the content of the page, such as a paragraph, headline, or tag. Unlike the *display* property's *none* value—which hides an element and removes it from the flow of the page—the visibility property's *hidden* option doesn't remove the element from the page flow. Instead, it just leaves an empty hole where the element would have been. For this reason, you most often use the *visibility* property with absolutely positioned elements, which have already been removed from the flow of the page.

Hiding an element doesn't do you much good unless you can show it again. JavaScript programming is the most common way to toggle the *visibility* property to show and hide items on a page. You can also use the *:hover* pseudo-class (page 64) to change an element's visibility property when a visitor hovers over some part of the page.

- **Values:** *visible, hidden*. You can use the *collapse* value to hide a row or column in a table as well.
- **Example**: `visibility: hidden;`

width

Sets the width of the content area (the area of an element's box that contains text, images, or other tags). The amount of onscreen space actually dedicated to the element may be much wider, since it includes the width of the left and right margin, left and right padding, and left and right borders. IE 6 (and earlier) handles overflow situations differently than other browsers. (See the box on page 365.)

- **Values:** Any valid CSS measurement unit, like pixels, ems, or percentages. Percentages are based on the containing element's width.
- **Example:** `width: 250px;`

z-index

Controls the layering of positioned elements. Only applies to elements with a position property set to *absolute, relative,* or *fixed* (page 365). It determines where on the z axis an element appears. If two absolutely positioned elements overlap, the one with the higher *z-index* appears to be on top.

- **Values:** An integer value, like *1*, *2*, or *10*. You can also use negative values, but different browsers handle them differently. The larger the number, the more "on top" the element appears. An element with a *z-index* of *20* appears below an element with a *z-index* of *100* (if the two overlap). However, when the element is inside another positioned element, it's "positioning context" changes and it may not appear above another element—no matter what its *z-index* value. See Figure 13-6.
- **Example:** `z-index: 12;`

Note: The values don't need be in exact integer order. If element A has a *z-index* of *1*, you don't have to set element B's *z-index* to *2* to put it on top. You can use *5, 10,* and so on to get the same effect, as long as it's a bigger number. So, to make sure an element *always* appears above other elements, simply give it a very large value, like *10000.* However, Firefox can only handle a maximum value of 2147483647, so don't ever set your *z-index* above that number.

Table Properties

There are a handful of CSS properties that relate solely to HTML tables. Chapter 10 has complete instructions on using CSS with tables.

border-collapse

Determines whether the borders around the cells of a table are separated or collapsed. When they're separated, browsers put a space of a couple of pixels between each cell. Even if you eliminate this space by setting the *cellspacing* attribute for the HTML <table> tag to 0, browsers still display double borders. That is, the bottom border of one cell will appear above the top border of the cell below, causing a doubling of border lines. Setting the *border-collapse* property to *collapse* eliminates both the space between cells and this doubling up of borderlines (page 273). This property works only when applied to a <table> tag.

- **Values:** *collapse, separate*
- **Example:** `border-collapse: collapse;`

border-spacing

Sets the amount of space between cells in a table. It replaces the <table> tag's *cellspacing* HTML attribute. However, Internet Explorer 7 and earlier doesn't understand the *border-spacing* property, so it's best to continue to use the cellspacing attribute in your <table> tags to guarantee space between cells in all browsers.

Note: If you want to eliminate the space browsers normally insert between cells, just set the *border-collapse* property to *collapse.*

- **Values:** Two CSS length values. The first sets the horizontal separation (the space on either side of each cell), and the second sets the vertical separation (the space separating the bottom of one cell from the top of the one below it).
- **Example:** `border-spacing: 0 10px;`

caption-side

When applied to a table caption, this property determines whether the caption appears at the top or bottom of the table. (Since, according to HTML rules, the <caption> tag must immediately follow the opening <table> tag, a caption would normally appear at the top of the table.)

- **Values:** ***top, bottom***
- **Example:** `caption-side: bottom;`

Note: Unfortunately, this property has no effect in Internet Explorer 6 or 7 (it works in IE 8), so it's safest to stick with the HTML equivalent: <*caption align="bottom*"> or <*caption align="top*">.

---

empty-cells

Determines how a browser should display a table cell that's completely empty, which in HTML would look like this: <*td*></*td*>. The *hide* value prevents any part of the cell from being displayed. Instead, only an empty placeholder appears, so borders, background colors, and background images don't show up in an emptied cell. Apply this property to a style formatting the <table> tag.

- **Values:** *show, hide*
- **Example:** `empty-cells: show;`

Note: The *empty-cells* property has no effect in Internet Explorer 7 and earlier.

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table-layout

Controls how a web browser draws a table and can slightly affect the speed at which the browser displays it. The *fixed* setting forces the browser to render all columns the same width as the columns in the first row, which (for complicated technical reasons) draws tables faster. The *auto* value is the normal "browser just do your thing" value, so if you're happy with how quickly your tables appear on a page, don't bother with this property. If you use it, apply *table-layout* to a style formatting the <table> tag.

- **Values:** *auto, fixed*
- **Example:** `table-layout: fixed;`

Miscellaneous Properties

CSS 2.1 offers a few additional—and sometimes interesting—properties. They let you enhance your web pages with special content and cursors, offer more control over how a page prints, and so on. (Unfortunately, browser understanding of these properties is spotty at best.)

content

Specifies text that appears either before or after an element. Use this property with the *:after* or *:before* pseudo-elements. You can add an opening quotation mark in front of quoted material and a closing quotation after the quote. Internet Explorer 6 and 7 don't understand this property, so its use is limited.

- **Values:** Text inside of quotes *"like this,"* the keywords *normal, open-quote, close-quote, no-open-quote, no-close-quote.* You can also use the value of an HTML attribute. (See page 404 for an example.)
- **Examples:** `p.advert:before { content: "And now a word from our sponsor..."; }`

  `a:after { content: " (" attr(href) ") "; }`

Note: Adding text in this way (like the opening and closing quote example) is called generated content. Read a simple explanation of the generated content phenomenon at *www.westciv.com/style_master/academy/css_tutorial/advanced/generated_content.html*. For a deeper explanation, visit *www.w3.org/TR/CSS21/generate.html*.

cursor

Lets you change the look of the mouse pointer when it moves over a particular element. You can make a question mark appear next to the cursor when someone mouses over a link that provides more information on a subject (like a word definition).

- **Values:** *auto, default, crosshair, pointer, move, e-resize, ne-resize, nw-resize, n-resize, se-resize, sw-resize, s-resize, w-resize, text, wait, help, progress.* You can also use a URL value to use your own graphic as a cursor (but see the Note below). The look of a cursor when mousing over a link is *pointer*, so if you want to make some element on the page display the "click me" icon, you can add the declaration *cursor: pointer* to the style.
- **Example:** `cursor: help; cursor: url(images/cursor.cur);`

Note: Not all browsers recognize URL cursor values. For more information, visit *www.quirksmode.org/css/cursor.html*.

orphans

Specifies the minimum number of lines of text that can be left at the bottom of a printed page. Suppose you're printing your web page on a laser printer, and a five-line paragraph is split between two pages, with just one line at the bottom of page one, and the four remaining lines at the top of page two. Because a single line all by itself looks odd (sort of like a lost *orphan*—get it?), you can tell the browser to break a paragraph *only* if at least, say, three lines are left on the bottom of the page. (At this writing, only the Opera browser understands this property.)

- **Values:** a number like *1, 2, 3*, or *5*.
- **Example:** `orphans: 3;`

page-break-after

Determines whether a page break (in printing) occurs after a particular element. With it, you can make sure that a particular paragraph is always the last item to appear on a printed page.

- **Values:** *auto, always, avoid, left, right. Auto* represents the normal value and lets the browser determine when and how to break content across printed pages. *Always* forces the element that follows to appear at the top of a separate printed page, and it's the only value that works consistently across browsers. *Avoid* prevents a page break after an element; it's a great way to keep a headline *with* the paragraph that follows it, but unfortunately, most browsers don't understand it. *Left* and *right* determine whether the element following appears on a left- or right-handed page, which may force the browser to print an extra empty page. But since no browsers understand these values, don't worry about wasting paper. Browsers treat *left* and *right* the same as *always*.
- **Example:** `page-break-after: always;`

page-break-before

Works like *page-break-after,* except the page break appears before the styled element, placing it at the top of the next printed page. You can use this property to make sure headlines for different sections of a long web page each appear at the top of a page.

- **Values:** same as *page-break-after*.
- **Example:** `page-break-before: always;`

page-break-inside

Prevents an element from being split across two printed pages. If you want to keep a photo and its caption together on a single page, wrap the photo and caption text in a tag, and then apply a style with *page-break-inside* to that . (At this writing, only Opera understands this property.)

- **Values:** *avoid*
- **Example:** `page-break-inside: avoid;`

widows

The opposite of *orphans*, it specifies the minimum number of lines that must appear at the *top* of a printed page. Say the printer can manage to fit four out of five lines of a paragraph at the bottom of a page and has to move the last line to the top of the next page. Since that line might look weird all by itself, use *widows* to make the browser move at least two or three (or whatever number of) lines together to the top of a printed page. (Only Opera understands this property, so it's of limited use.)

- **Values:** a number like *1, 2, 3* or *5*.
- **Example:** `widows: 3;`

APPENDIX
B

CSS in Dreamweaver CS4

Adobe's Dreamweaver CS4 is a website-building program that takes the drudgery out of creating HTML/XHTML and CSS. Instead of typing lines of code into a text editor, you can click convenient onscreen buttons and menus and watch your design unfold before your eyes. The program even has powerful site-management tools that help you keep track of your site's pages and links.

Although this book gives you everything you need to know to create your own CSS from scratch, there's nothing wrong with turning to a visual editor like Dreamweaver to save time. In fact, knowing how CSS works, as this book shows you, is a big help when tweaking or troubleshooting pages created in Dreamweaver.

Note: This appendix focuses solely on Dreamweaver CS4's CSS features. To learn everything Dreamweaver can do for your website design and maintenance, check out *Dreamweaver CS4: The Missing Manual.*

Creating Styles

You begin most CSS-related tasks in the CSS Styles panel, which is Dreamweaver's command center for creating styles. To open it, choose Window → CSS Styles.

Using Figure B-1 as a guide, here's how to find your way around the CSS Styles panel:

- The All button at the top of the panel lists all internal and external styles for the currently open document. The other button—Current—lets you take a closer look at individual styles.

Note: Clicking the minus (–) icon to the left of the style sheet collapses the list of styles, hiding them from view. (On a Mac, the button looks like a little triangle instead, but it does the same thing.)

- An internal style sheet is indicated by <style> in the panel. In this example, there's one tag style inside an internal style sheet (for the <body> tag).
- External style sheets are listed by file name (*main.css*). The external style sheet's rules are listed below the file name (*h1*, *p*, *.copyright*, and so on). The first two styles are tag styles (notice that the names match various HTML tags), while the last five are class styles (note the period at the beginning of each name).
- The Properties list in the bottom half of the panel lets you edit a style as described on page 498. The three buttons at the bottom left of the panel (circled in Figure B-1) control how the property list is displayed.

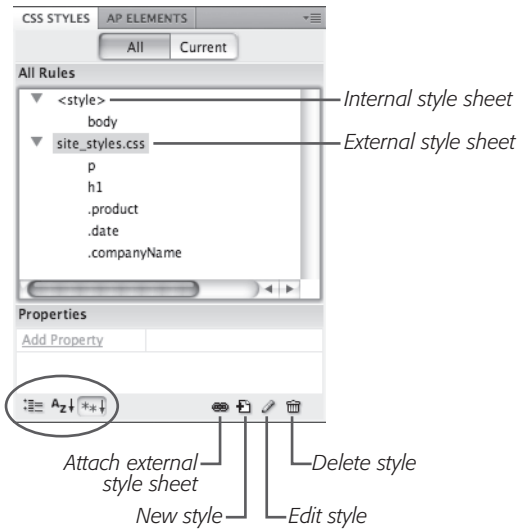

Figure B-1:
With the All button selected, the CSS Styles panel lists the names of all styles available to the current page, including external and internal style sheets. In this example, an internal style sheet contains a single style, and one external style sheet–headlines.css–contains seven styles.

Phase 1: Set Up the CSS Type

Dreamweaver gives you many ways to create a new style: click the new style button on the CSS Styles panel (see Figure B-1); right-click anywhere in the CSS Styles panel, and then select New from the menu that appears; or choose Format → CSS Styles → New. The New CSS Rule dialog box appears (Figure B-2), then you begin the process of creating your new style.

Here's a quick tour of your choices:

- **Selector Type.** From the Selector Type menu, choose the kind of style you wish to create: *Class* (page 51), *ID* (page 53), or *Tag* (page 50).

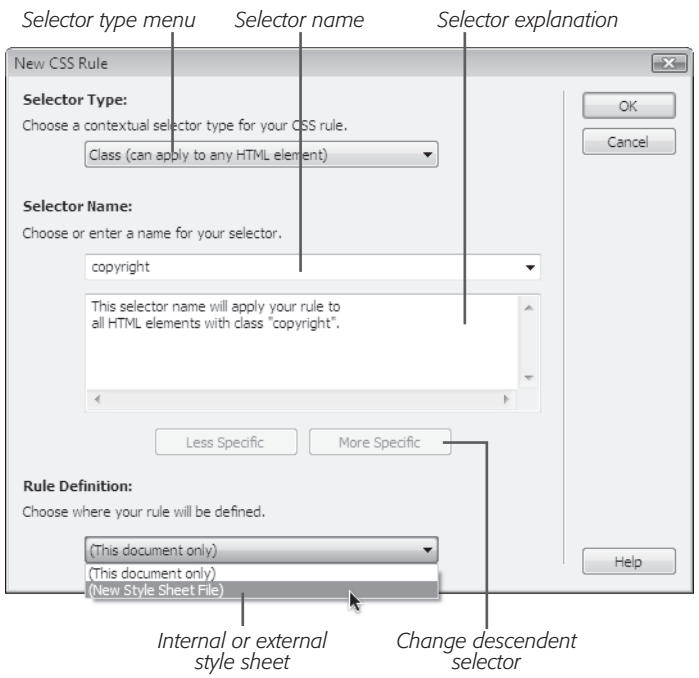

Figure B-2:
In the New CSS Rule dialog box, you choose a type of style, give it a name, and decide whether to place the style in an internal or external style sheet. If you've used previous versions of Dreamweaver, you'll notice that this dialog box has changed significantly in Dreamweaver CS4.

Use the fourth type, *Compound*, to create more advanced style types like pseudo-classes (page 62), attribute selectors (page 67), and descendent selectors (page 57).

In addition, if you've selected something on the page (like a paragraph, image, or headline), Dreamweaver highlights the Compound option and suggests a *descendent selector* in the Selector Name field. For example, if you click inside a paragraph that is itself inside a tag with an ID of *main,* then Dreamweaver suggests the descendent selector *#main p* when you create a new style.

- **Selector Name.** If you selected Class or ID from the Selector Type menu, enter a name for the new style. Class style names must begin with a period—*.copyright*, for example— and ID style names begin with a # symbol—*#banner*, for example. (Dreamweaver automatically adds the proper symbol, if you forget.)

  If you chose Tag instead, then, from the Tag pop-up menu that appears, select the HTML tag you want to redefine.

Note: If you're an HTML guru, you may find it faster to skip the Tag pop-up menu and just type the tag (minus the brackets) in the Name box. For example, if you want to create a style for all unordered (bulleted) lists, type *ul.*

If you selected the Compound option, Dreamweaver lets you type any valid CSS selector type in the Selector field. You use this feature to create attribute, descendent, and other advanced selectors, but you can also use it just to create a tag or class style.

When you add a Class, ID, tag, or other selector to the Selector Name field, Dreamweaver briefly explains which HTML elements the selector will apply to. For example, Figure B-2 displays the New CSS Rule dialog box in the process of creating a new class style named *copyright*. The dialog box explains that this rule will apply to all HTML tags that have the *class* property set to *copyright* (in other words, all tags that have the *copyright* class applied to them as described on page 51.) For simple styles like class and tag styles, this explanation may make you mutter, "Uhh, yeah. Tell me something I don't know, Dreamweaver." But for descendent selectors and other complex selectors, the explanation box helps clarify which page element a selector applies to.

- **Rule Definition.** The Rule Definition menu at the bottom of the dialog box lets you specify where the CSS code you're about to create gets stored. Choose "This document only" if you want to add an internal style sheet (page 35). To create a new *external* style sheet (page 36), choose New Style Sheet File from the pop-up menu. This option not only creates a new external CSS file (which you can save anywhere in your site folder), but also adds the necessary code in the current document to link it to that file.

  If you've previously linked this document to an external style sheet, that style sheet's name appears in the pop-up menu, indicating that Dreamweaver is going to store the new style in this style sheet file.

Note: If you create a bunch of internal styles in a particular page, and later realize you'd like to turn them into an external style sheet that you can use in other pages, you're in luck. Dreamweaver includes many tools for managing your style sheets. You'll learn how to use them starting on the next page.

If you indicated that you want to create an external style sheet, clicking OK makes a Save Style Sheet As dialog box appear. Navigate to your site's folder, and then type a name for the new external CSS file. Just as HTML files end in .html, CSS files end in .css.

Note: If you'll be using this style sheet for all your site's pages, you may want to save it in your site's root folder, or in a folder specifically dedicated to style sheets, and give it a general name like *site_styles.css* or *main.css*. (You don't have to type the .css file name extension, by the way. In this case, Dreamweaver adds it.)

No matter what "Define in" option you selected, clicking OK eventually brings you to the CSS Rule Definition window.

Phase 2: Defining the Style

The CSS Rule Definition window provides access to all of the available formatting for styling text and graphics (see Figure B-3). You'll learn about each of the different properties throughout this book.

Once you've defined the style, click OK at the bottom of the Rule Definition window. Dreamweaver adds the style to the specified style sheet and displays it in the CSS Styles panel.

The real trick to creating a style is mastering all the different properties available, such as borders, margins, and background colors, and *then* learning which ones work reliably in the different browsers.

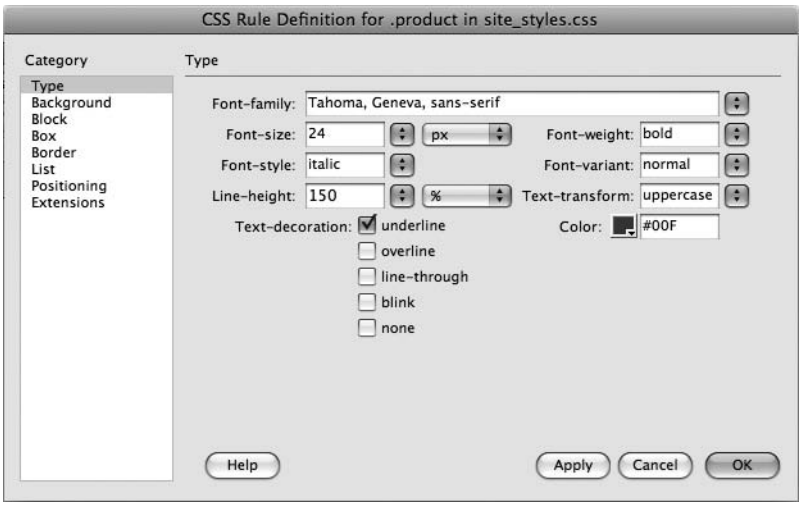

Figure B-3: *For ultimate formatting control, Dreamweaver lets you set dozens of different Cascading Style Sheet properties from the CSS Rule Definition window. Earlier versions of the program didn't use standard CSS property names–for example, Dreamweaver CS3 calls the "font-family" property simply "font" (which is really a separate CSS property entirely). Thankfully, Dreamweaver CS4 now uses standard CSS property names in its dialog boxes.*

Adding Styles to Web Pages

Once you've created styles, applying them is easy. In fact, if you created HTML tag styles, then you don't need to do anything to apply them because their selectors automatically dictate which tags they affect. When you put your styles in an external style sheet, Dreamweaver automatically links it to the current document. To use its styles in a *different* web page, you must *attach* it to the page, as described next.

Linking to an External Style Sheet

When you add a new web page to your site, usually you want to use the same CSS styles as you did in existing pages, for a consistent look. But you need to tell Dreamweaver which style sheet you're using by *attaching* it to the page. To do so, open the web page to which you wish to add the style sheet. Then click the Attach Style Sheet button (see Figure B-1) on the CSS Styles panel. (If the CSS Styles panel isn't open, choose Window → CSS Styles.)

Tip: You can also use Dreamweaver's Property inspector (at the bottom of the window) to attach a style sheet. Just choose Attach Style Sheet from the Style menu.

When the Attach External Style Sheet window appears (Figure B-4), click Browse. In the Select Style Sheet File dialog box that appears, go to the CSS (.css) file you wish to attach to the document, and then double-click it. If Dreamweaver offers to copy the style sheet file into your site's root folder, then click Yes.

Figure B-4:
Most of the options in the Media menu aren't very useful, since there aren't any devices programmed to work with them. However, "printer" and "screen" are handy ways to control how your page displays when viewed on a monitor and when printed on paper.

The Attach External Style Sheet window provides two other options: how to attach the style sheet and what type of media you want the styles to apply to.

- When attaching an external style sheet, you can choose to either **Link** or **Import** it. These two choices are nearly identical, as described on page 38.
- The **Media** menu defines which type of output device or display should use the style sheet. Selecting "print" means that the style sheet will apply *only* when the document is printed. Most of these options—such as TV for televisions, or TTY for teletype machines—aren't of any use to the average web designer. You can read about these different media types and the two most important ones, "printer" and "screen," starting on page 395. If you want the styles to appear both in print and onscreen, you can safely ignore this menu.

  The "all" option in the Media menu is the same as not selecting anything—the style sheet applies when printed, viewed on a monitor, felt on a Braille reader, and so on. (Dreamweaver CS4 also includes a helpful toolbar for controlling the display of style sheets aimed at different media—see Figure B-5).

Note: You can preview the effect of the style sheet on your page by clicking the Preview button on the Attach External Style Sheet window.

After choosing your options, click OK. Dreamweaver adds the necessary HTML code to the head of the web page and automatically formats any tags in the document according to the style sheet's HTML tag styles. You'll see the formatting changes take place in the document window immediately after attaching the external style sheet.

If the style sheet contains *class* styles, on the other hand, you won't see their formatting effects until you apply them to an element on the page, as described next.

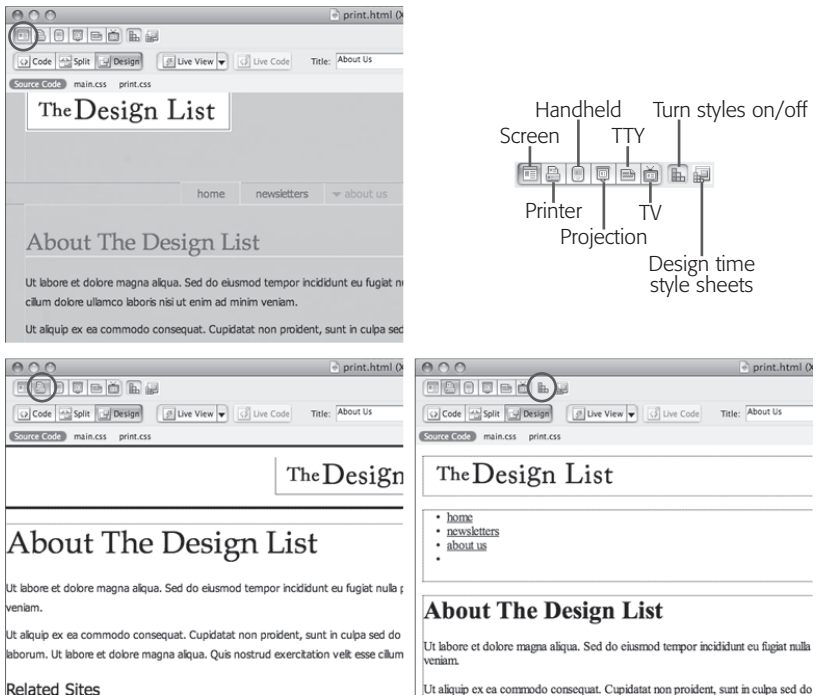

Figure B-5: *To turn on Dreamweaver's Style Rendering toolbar (top right), choose View → Toolbars → Style Rendering. Click a button on the toolbar to show styles that match the media type you selected when you attached the page. Screen (top-left, circled) and Print (bottom-left, circled) are the two most useful, though you can hide all CSS styles by clicking the button on the far right of the toolbar (bottom-right, circled).*

Applying a Class Style

You can apply class styles to any selection in the document window, whether it's a word, image, or entire paragraph. In fact, you can apply a class style to *any* individual HTML tag, like a <p> (paragraph), <td> (table cell), or <body> tag. You can even select a single word within a paragraph and apply a style to it.

Applying a class style to text

Start by selecting some words. Then, select the style name from the Property inspector—you can do this either in HTML mode, in which case you select the name from the class menu (Figure B-6, top), or in CSS mode, where you use the Targeted Rule menu (Figure B-6, bottom).

To style an entire paragraph, triple-click within the paragraph (or heading) to select it before using the Property inspector to select the style. When you style an entire paragraph, you're actually telling Dreamweaver to apply the style to the <p> tag. In that case, Dreamweaver adds the *class* property to the page's code, like this: *<p class="company">* (for a class style named *.company*).

Tip: You can also add a class to an entire paragraph or heading simply by clicking anywhere inside the paragraph and choosing the class name from the Property inspector–just make sure you don't select *any* text, otherwise the style is applied just to the selected text not the entire paragraph.

On the other hand, if you apply a class to a selection that isn't a tag—like a single word you've double-clicked—Dreamweaver wraps the selection within a tag like this: *Chia Vet*. This tag, in other words, applies a style to a *span* of text that can't be identified by a single tag.

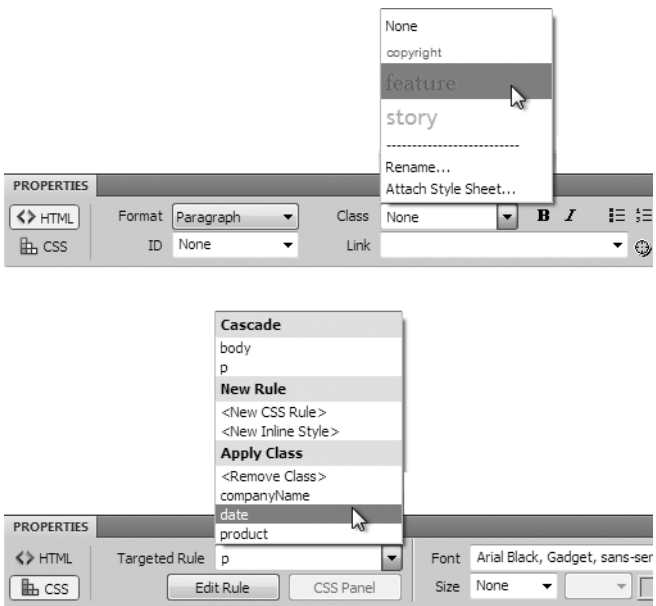

Figure B-6:
The Property inspector provides the easiest method of applying a class style. For non-text elements like images or tables, a Class menu appears in the top-right of the Property inspector. For text, you apply class styles using either the Class menu if the Property inspector is in HTML mode (top) or the Targeted Rule Menu in CSS mode (bottom). The bottom section of the Targeted Rule Menu (the stuff below Apply Class) is to the only place you can add (or remove) a class from a text selection. The other items are for creating new styles or viewing the styles that apply to the selection.

Applying a class style to objects

To apply a class style to an object (like an image or a table), start by selecting the object. As always, the Tag selector at the bottom of the document window is a great way to select a tag. Then use the Class pop-up menu at the top right of the Property inspector to select the style name.

Note: You can apply any class style to any element, although doing so doesn't always make sense. If you format a graphic with a style that specifies bold, red, Courier type, it won't look any different.

Other class styling options

You can also apply a class style by selecting whatever element you wish to style, choosing Format → CSS Styles, and then selecting the style from the submenu. Or you can right-click (Control-click) the style's name in the CSS Styles panel, and then, from the pop-up menu, choose Apply. Finally, you can also apply a class from the document window's Tag selector, as shown in Figure B-7.

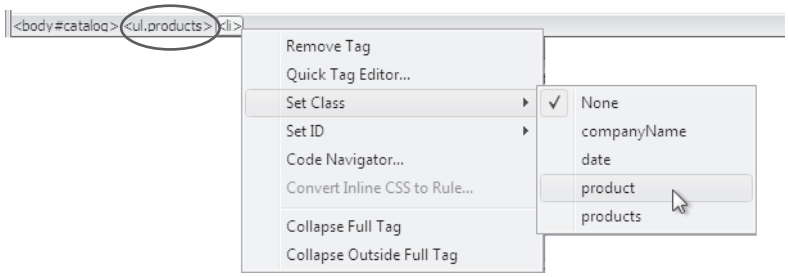

Figure B-7: *You can apply a class style directly to a tag using the document window's Tag selector at the bottom of the window. Just right-click (Control-click) the tag you wish to format, and then select the class style from the Set Class submenu. In addition, the Tag selector lets you know if a tag has a class style applied to it. If so, the style's name is added at the end of the tag. For example, here a class style named .products has been applied to a bulleted list (the <ul> tag) on the page (circled).*

Removing a Class Style

To remove a class style from text on a web page, simply select the text, and then, in the Property inspector (see Figure B-6) choose None from the Class menu (HTML mode) or <Remove Class> from the Targeted Rule menu (CSS mode). To remove a class style from another object (like an image), select the object and then choose None from the Property inspector's Class menu. You can also choose Format → CSS Styles → None to remove a style from any selection (even non text elements like images or tables).

Tip: If you've applied a class style to a selection of text, you don't actually have to select *all* the text to remove the style. Just click anywhere inside it, and then select None from the Property inspector's Class menu or <Remove Class> from the Targeted Rule menu. Dreamweaver is smart enough to realize you want to remove the style applied to the text. (If you applied the style to a tag, Dreamweaver removes the *class* property. If you applied the style using the tag, Dreamweaver removes the span tag.)

You can't, however, remove *tag* styles from HTML tags. For example, suppose you've redefined the <h2> tag. If your page has three Heading 1 (<h2>) paragraphs, and you want the third heading to have a different style from the other two, you can't simply remove the <h2> style from the third paragraph. Instead, what you need to do is create a new *class* style with all the formatting options you want for that third heading and then apply it directly to the <h2> tag. (By the magic of CSS's cascade, the class formatting options override any existing tag style options—see page 99 for more on this sleight of hand.)

Applying IDs to a Tag

To apply an ID to text, just select the text, and use the ID menu in the HTML mode of the Property inspector (see Figure B-6, top). Since you can only apply each ID name once per page, this menu lists only IDs that are in your style sheet but haven't yet been applied to a tag on the page.

For non-text elements, select the element and then type the ID name into the ID field in the Property inspector. (For some elements, the ID field is unlabelled, but you can always find it on the far left of the Property inspector.)

You can also use the Tag selector as outlined in Figure B-7. Just use the Set ID menu in the shortcut menu that appears when you right-click the tag.

Tip: The Tag selector tells you if an ID is applied to a tag. An ID is indicated with a # symbol, so in Figure B-7, for example, *body#catalog* indicates that the <body> tag has an ID of *catalog* applied to it.

Whenever you apply an ID to a tag, Dreamweaver adds a bit of HTML code to your page. For instance, an ID style named *#copyright* applied to a paragraph would look like this in the HTML: *<p id="copyright">*.

To remove an ID from a text element, select the text and then select None from the ID menu in the Property inspector. For non-text elements, just select the element and then delete the ID name in the Property inspector's ID field.

Editing Styles

While building a website, you'll almost always continually refine your designs. That chartreuse color you assigned to the background of your pages may have looked great at 2 a.m., but it loses something in the light of day.

FREQUENTLY ASKED QUESTION

When Formatting Disappears

Sometimes when I copy text from one web page and paste it into another web page, all of the formatting disappears. What's going on?

When you use Cascading Style Sheets, keep in mind that the actual style information is stored either in the <head> of the web page (for internal style sheets) or in a separate CSS file (an external style sheet). If a page includes an internal style sheet, then when you copy text, graphics, or other page elements, Dreamweaver copies those elements and any class or ID style definitions used by that content. When you paste the HTML into another page, the styles are written into the <head> of that page. This feature can save you some time, but won't solve all of your woes. It doesn't, for example, copy any *tag styles* you've created, or most advanced styles you may create (see page 65 for more on advanced styles). So if you copy and paste some text–say, an <h1> tag styled with an h1 tag style–you paste the <h1> tag and its contents, but not the tag style.

In addition, if a page uses an external style sheet, when you copy and paste text, the styles themselves don't go along for the ride. If you copy a paragraph that has a class style applied to it, and paste it into another document, the code in the paragraph gets pasted (*<p class="company">*, for instance) but not the actual *company* style with all its formatting properties.

The best solution is to use a common external style sheet for all pages on your site. That way, when you copy and paste HTML, all the pages share the same styles and formatting. So in the example above, if you copy a paragraph that includes a class style–*class="company"*–into another page that shares the same style sheet, the paragraphs look the same on both pages. See page 95 for more on how to create one of these uber, site-wide external style sheets.

Fortunately, one of CSS's greatest selling points is how easy it makes updating the formatting on a website.

Note: When you edit and add styles to an external style sheet, Dreamweaver doesn't always let you undo the changes you make (see the box on page 501 for an explanation).

Dreamweaver provides many ways to edit styles:

- Select a style in the CSS Styles panel (see Figure B-1), and then click the Edit Style button to open the Rule Definition window (Figure B-3). (This window is the same one you used when first creating the style.) Make your changes, and then click OK to return to the document window. Dreamweaver reformats the page to reflect any changes you made to styles used in the current document.
- Double-clicking the name of a style in the CSS panel also opens the Rule Definition window. Actually, depending on a preference setting—or a setting someone else may have tweaked while using your computer—double-clicking a style in the CSS panel may display the raw CSS code in Code view. To change this behavior, open the Preferences window (Ctrl+U [⌘-U]), click the CSS Styles category, and then select the "Edit using CSS dialog" button.

- Right-click (Control-click) the name of a style in the CSS Styles panel, and then choose Edit from the shortcut menu, which also opens the Rule Definition window. Make your changes to the style, and then click OK to return to the document window.

GEM IN THE ROUGH

A Time to Design

A Dreamweaver feature called *Design Time style sheets* lets you quickly try different CSS style sheets while developing your web page. You can hide the (external) style sheets you've attached to a web page and substitute new ones.

Design Time style sheets come in handy when working on HTML that you intend to later make part of a complete web page. Dreamweaver Library items are a good example; this feature lets you create a chunk of HTML that any number of pages on your site can use. When you update the Library item, every page that uses it is updated. A timesaving feature, for sure, but since a Library item is only *part* of a page, it doesn't include the <head> portion needed to either store styles or attach an external style sheet. So when designing a Library item, you're working in the dark (or at least, without any style). But by using Design Time style sheets, you can access all the styles in an external style sheet and even preview the effects directly in Design view.

You'll also turn to this feature when working with Dreamweaver's server-side XML tools, which let you add an "XSLT fragment" to a complete web page—essentially letting you convert XML (like you'd find in an RSS news feed) into a chunk of HTML. But to accurately design these components, you'll need to use Design Time style sheets.

You can apply a Design Time style sheet by clicking the Design Time style sheet button in the Style Rendering toolbar (see Figure B-5) or by choosing Format → CSS Styles → Design Time. When the Design Time Style Sheets window appears, click the top + button to select an external style sheet to display in Dreamweaver. (Clicking this button doesn't attach the style sheet to the page; it merely selects a .css file to use when viewing the page in Dreamweaver.)

To properly view your page with this new style sheet, you may need to get an attached external style sheet out of the way. To do that, use the bottom + button to add it to the Hide list.

Design Time style sheets apply only when you're working in Dreamweaver. They have no effect on how the page looks in a web browser. That's both the good news and the bad news. Although Dreamweaver lets you apply class styles you take from a Design Time style sheet to your web page, it doesn't actually attach the external style sheet to the appropriate page. For example, if you use a Design Time style sheet to help design a Library item, Dreamweaver doesn't guarantee that the web page using the Library item has the style sheet attached to it. You have to attach it yourself, or else your visitors will never see your intended result.

Editing in the Properties Pane

The CSS Rule Definition window (Figure B-3) can be a rather tedious way of editing CSS properties. It's easy to use, but opening the window and jumping around the categories and menus may slow down experienced CSS jockeys. Fortunately, Dreamweaver offers the Properties pane (Figure B-8) for fast CSS editing. This pane displays a selected style's currently defined properties, as well as a list of other not-yet-set CSS properties.

Start by selecting the style you wish to edit in the CSS Styles panel. The Properties pane (found in the bottom third of the Styles panel) displays CSS properties in one of three different views: a set properties view, which displays only the properties that have been defined for the selected style (Figure B-8); a Category view, which groups the different CSS properties into the same seven categories used in the Rule Definition window (Figure B-9, left); and a List view, which provides an alphabetical listing of *all* CSS properties (Figure B-9, right). Clicking the view buttons at the bottom-left corner of the CSS Styles panel switches between these three displays (see the circled buttons in Figure B-8 and Figure B-9).

Property names are listed on the left, and their values are on the right. Figure B-8 shows an example of a style for the <body> tag, which lists six properties (such as *background-color* and *margin*) and their corresponding settings (#333333, 0px, and so on).

To add a new property, click the "Add Property" link below the list of properties on the Properties pane, and then select the property name from the pop-up menu. You set (and edit) the value of a particular property in the space to the right of the property name. Most of the time, you don't have to type the value. Dreamweaver provides the tools you're likely to need for each property: a color box for any property that requires a color, like font-color; a pop-up menu for properties that have a limited list of possible values, like Repeat-y for the *background-repeat* property shown in Figure B-8; and the "Browse for File" folder icon for properties that require a path to a file, like the *background-image* property.

Some other properties, however, require you to know enough CSS to enter them manually, in the correct format. That's what makes the Properties pane a good advanced option for experienced CSS gurus.

But even those more comfortable with Dreamweaver's friendly Rule Definition window should find the Properties pane helpful. First, it's the best way to get a bird's-eye view of a style's properties. Second, for really basic editing, like changing the colors used in a style or assigning it a different font, the Properties pane is as fast as it gets.

To remove a property from a style, just delete its value in the right column. Dreamweaver removes not only the value from the style sheet, but the property name as well. In addition, you can right-click (Control-click) a property name and then select "delete" from the pop-up menu, or simply click a property name and either press Delete or click the Trash can to banish it from your style sheet (see Figure B-8).

Managing Styles

Sometimes, instead of editing the properties of a style, you want to delete it and start over. Or you've come up with a way to better organize your website, and you want to rename some styles according to your new system. Dreamweaver makes it easy to do both those things. It even lets you duplicate a style, so you can quickly create a new style that bears some similarities to one you've already built from scratch.

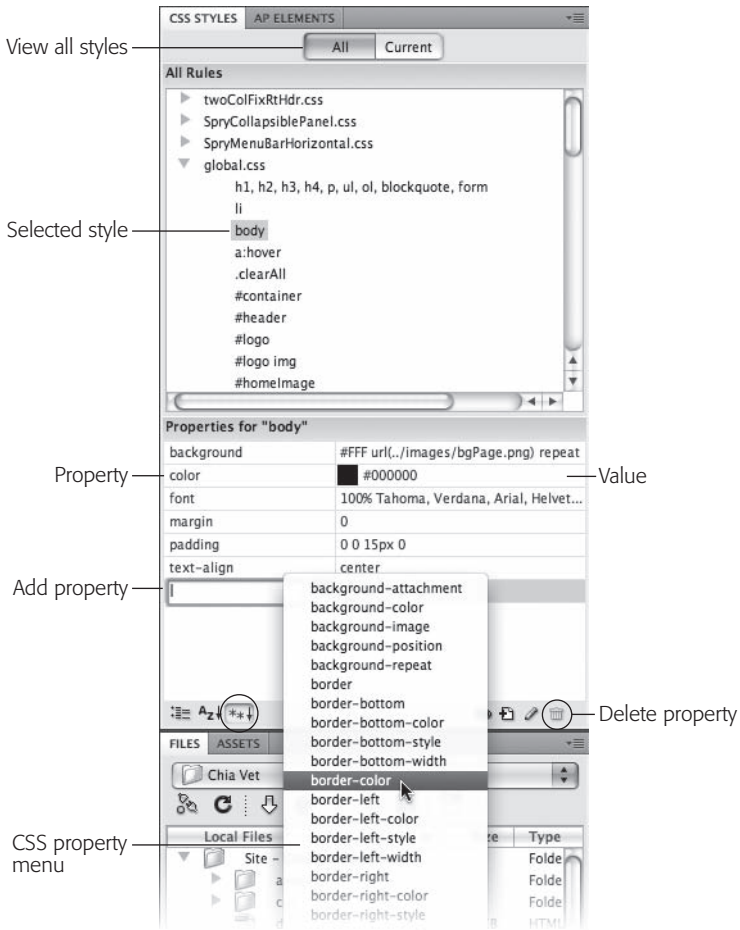

Figure B-8:
The CSS Styles panel has two views: All (shown here) and Current. The Properties pane is available in both views, but you access it slightly differently when in Current view (see Figure B-9). With the All button selected, you can click any style from the list of CSS styles (body in this case) and use the Properties pane to add and edit properties. The "show only set properties" view of the Properties pane, accessed by clicking the icon circled in this figure, provides a clear view of a particular style's properties. You can quickly see which CSS properties are used by the style, delete or edit them, and add a new property by clicking the Add Property link (hidden behind the pop-up menu) and selecting the new property's name from the CSS property menu.

Deleting a Style

At some point, you may find you've created a style that you don't need after all. Maybe you redefined the HTML <code> tag and realize you haven't even used the tag in your site. There's no need to keep it around, taking up precious space in the style sheet.

To delete a style, make sure the CSS Styles panel is open (Window → CSS Styles) and the All button is highlighted (see Figure B-10). Click the name of the style you wish to delete, and then press Delete (you can also click the Trash can at the bottom of the panel). You can also remove all the styles in an internal style sheet (as well as the style sheet itself) by selecting the style sheet—indicated by "<style>" in the CSS Styles panel—and pressing Delete or clicking the Trash can. If you trash an *external* style sheet, however, you merely unlink it from the current document without deleting the .css file.

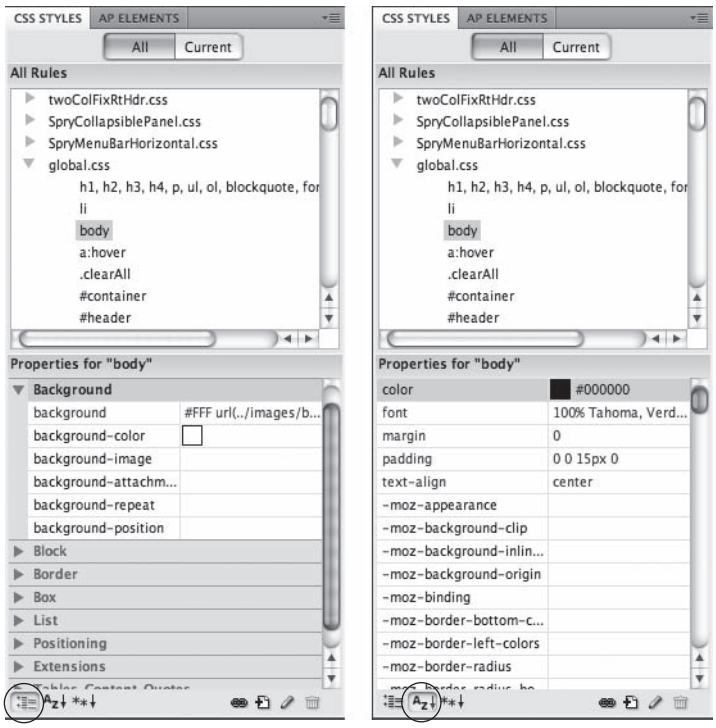

Figure B-9:
The Properties pane's two other views aren't as streamlined or as easy to use as the "show only set properties" view. Add new properties in these views by simply typing a value in the empty box to the right of the property name—in the left view, in the empty box to the right of "background-color," for example. However, since these views aren't the fastest way to edit CSS with the Properties pane, you're better off not using them.

FREQUENTLY ASKED QUESTION

When Undo Won't Do

Sometimes when I edit a style—say, to change the font color—I can undo that change. But sometimes, I'm unable to undo changes I've made to a style. What gives?

You can undo only changes made to the document you're currently working on. So say you've added an internal style sheet (see page 35) to a document. If you edit one of those styles, Dreamweaver lets you undo those changes. Because the styles in an internal style sheet are a part of the web page you're working on, choosing Edit → Undo undoes the last change you've made to that style.

However, if you're using an external style sheet, you're actually working on two *different* files at the same time—the web page you're building and the style sheet file in which you add, delete, or edit styles. So if you're designing a web page and edit a style contained in the external style sheet, you're actually making a change to the style sheet file. In this case, choosing Edit → Undo will undo only the last change made to the *web page*. If you want to undo the change you made to the external style sheet, you need to use the related files feature, new to Dreamweaver CS4. The name of the external style sheet will appear on the Related Files toolbar, which appears below the title of the web page file; click the file's name to move to its code and then choose Edit → Undo. Click the Source Code button to return to the Web.

Unfortunately, deleting a class style *doesn't* delete any references to the style in your site's pages. For example, if you've created a style called *.company* and applied it throughout your site, and you then delete that style from the style sheet, Dreamweaver doesn't remove the tags or class properties that refer to the style. Your pages are still littered with orphaned code like this—*CosmoFarmer*—even though the text loses the styling. You have to remove them manually using Dreamweaver's powerful Find and Replace tool.

Renaming a Class Style

You can rename any style by selecting it in the CSS Styles panel, pausing a second, and then clicking the name again. This makes the name editable, at which point you can type a new name in its place. Of course, if you change a style named *p* to a style named *h1*, you've essentially removed a <p> tag style and added an <h1> tag style—in other words, all paragraphs would lose the style's formatting, and all h1 tags would suddenly change appearance. Alternatively, you can open the .css file in Code view, and then edit the name. However, when it comes to class styles, just changing the name doesn't do much good if you've already applied the style throughout your site. The *old* class name still appears in the HTML in each place you used it.

What you have to do is rename the class style, and *then* perform a find-and-replace operation to change the name wherever it appears in your site. Dreamweaver includes a handy tool to simplify this process.

To rename a class style:

1. **In the Class menu on the Property inspector (Figure B-10), choose Rename.**

   The Rename Style window appears .

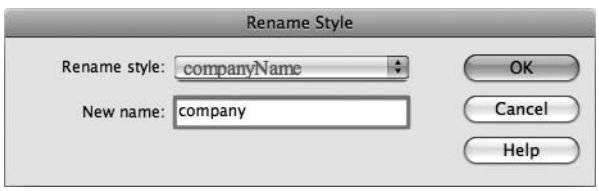

Figure B-10:
The Rename Style tool is a fast and easy way to change the name of a class style even if you've already used the style hundreds of times throughout your site.

2. **From the top menu, choose the name of the style you wish to rename.**

   This menu lists all class styles available on the current page, including external and internal styles.

3. **Type the new style name in the "New name" box.**

   You must follow the same rules for naming class styles described on page 51. But, just as when creating a new class, you don't need to precede the name with a period—Dreamweaver takes care of that.

4. **Click OK.**

   If the style whose name you're changing is an internal style, Dreamweaver makes the change. Your job is complete.

   However, if the style belongs to an external style sheet, Dreamweaver warns you that other pages on the site may also use this style. To successfully rename the style, Dreamweaver must use its "Find and Replace" tool to search the site and update all pages that use the old style name. In that case, continue to step 5.

5. **If you get cold feet, click Cancel to call off the name change, or click Yes to open the "Find and Replace" window, where you should click Replace All.**

   One last warning appears, reminding you that this action can't be undone.

Note: If you click No in the warning box that appears after step 4, Dreamweaver still renames the style in the external style sheet, but doesn't update your pages.

---

6. **Click Yes.**

   Dreamweaver goes through each page of your site, dutifully updating the name of the style in each place it appears.

Duplicating a Style

Dreamweaver makes it easy to duplicate a CSS style, which is handy when you've created, say, an HTML tag style, and then decide you'd rather make it a class style. Or you may want to use the formatting options from one style as a starting-off point for a new style. Either way, you start by duplicating an existing style.

You can duplicate a style in two ways. The easiest method is to open the CSS Styles panel (Window → CSS Styles), right-click (Control-click) the name of the style you wish to duplicate, and then choose Duplicate from the shortcut menu.

The Duplicate CSS Rule window appears (Figure B-11), where you can give the duplicated style a new name, reassign its Type setting, use the "Define in" menu to move it from an internal to an external style sheet, and so on.

When you click OK, Dreamweaver adds the duplicate style to the page or external style sheet. You can then edit the new style just as you would any other, as described on page 496.

Moving and Managing Styles

In the old days, when web browsers were just beginning to adopt CSS, web designers used just a handful of styles to format headlines and text. Keeping track of a site's styles back then wasn't too hard. Today, CSS works great in almost all web browsers and CSS-based layout is becoming the norm, so a style sheet may include hundreds of styles.

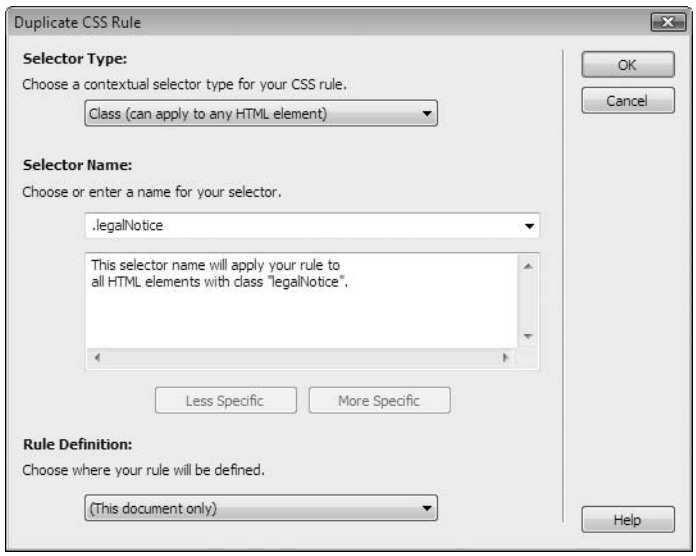

Figure B-11:
The Duplicate CSS Rule dialog box looks and acts just like the New CSS Rule box (Figure B-2). You can select a new style type, name it, and then add it to an external or internal style sheet. The only difference is that the duplicated style retains all the original style's CSS properties.

You might want to take a really long, complicated style sheet and split it up into several smaller, easier-to-read external style sheets. One common web design practice is to store styles that serve a related function in a separate style sheet—for example, all the styles related to formatting forms in one style sheet, styles for text in another, and styles for page layout in yet another. You can then link each of the external style sheets to your site's pages.

Even if you don't have enough styles to warrant multiple style sheets, it's still useful to organize the styles *within* a style sheet. To keep track of their CSS, web designers frequently group related styles together in a style sheet; for example, all the styles for basic layout in one section of the style sheet, basic tag selectors in another section, and specific styles for text, images, and other content grouped according to the part of the page where they're used (sidebar, banner, and so on). By grouping related styles, it's a lot easier to find any particular style when it comes time to edit it.

Dreamweaver provides a simple and logical way to move styles within a style sheet and to move styles from one style sheet to another.

- **To move a style from one place to another in the same style sheet,** drag the style in the CSS Styles panel (see Figure B-12, left). The order the styles are listed in the CSS Styles panel represents their order in the actual CSS code—so dragging one style below another repositions the CSS code in the style sheet. You can select and move more than one style at a time by Ctrl-clicking (⌘-clicking) each style you wish to select, and then dragging the highlighted group of styles (Ctrl-click [⌘-click] a selected style to deselect it). Select a range of styles by clicking one style and then Shift-clicking another style: This also selects every style between the two.

Note: You'll see the full list of styles in a style sheet (and be able to rearrange those styles) only when the All button (circled in Figure B-12, left) is selected in the CSS Styles panel.

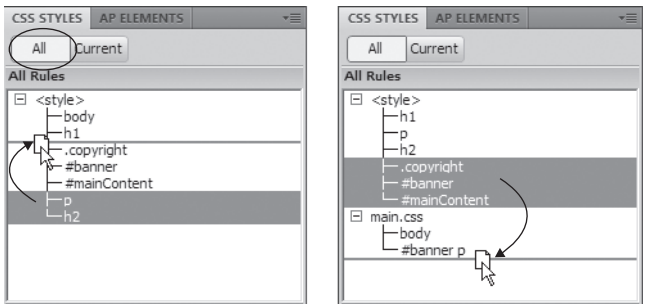

Figure B-12:
In the CSS Styles panel, you can drag styles to different locations within a style sheet (left). In this case, dragging the styles below the h1 style groups all the basic tag selectors (body, h1, p, and h2) together. You can also drag styles between style sheets to move a style from one style sheet to another. In the Styles panel on the right, three styles are being moved from an internal style sheet to a CSS file named main.css.

- **To move one or more styles between two style sheets,** drag the style from one style sheet to another in the CSS Styles panel. This works both for moving a style from an internal style sheet to an external style sheet, and for moving a style from one external style sheet to another. Say you've created an internal style sheet for the current page and also attached an external style sheet to the same page. Dragging a style from the internal style sheet (represented by <style> in the CSS Styles panel) to the external style sheet (represented by the file name—*main.css,* for example) moves the style *out* of the internal style sheet and *into* the external style sheet (Figure B-13, right). Dreamweaver then deletes the CSS code for the style from the first style sheet. You can also use this method to move a style between two attached external style sheets as well.

  If you drag a style into another style sheet and the destination style sheet already contains a style with the same name, you can run into some confusion. For example, say you've got a tag style for the <body> tag defined in an internal style sheet; in addition, you've got an external style sheet attached to the same page, and it also has a body tag style (perhaps with different properties). If you drag the body tag style from one style sheet into another, you're suddenly trying to add the same named style a second time. When this happens, Dreamweaver informs you of the potential problem .

Note: Unfortunately, Dreamweaver doesn't provide a way to reorder the sequence of internal and external style sheets on a page. They're attached to the page in the order in which you add them. For example, if you attached an external style sheet to a web page, and then created an internal style sheet, the internal style sheet's code appears *after* the link to the external style sheet. The order can have some serious effects on how the cascade works (see page 91). To change the order of the style sheets in the HTML, you have to go to Code view and cut and paste the code.

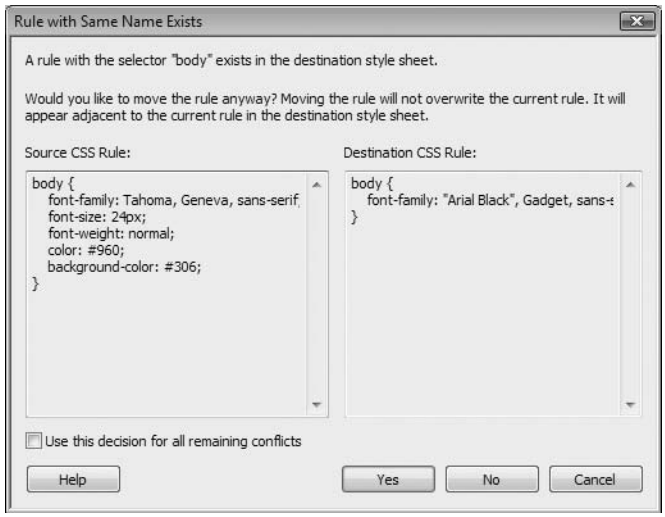

Figure B-13:
When dragging a style from one style sheet to another, it's possible that a style by the same name already exists in the destination style sheet. When that happens, this dialog box appears, letting you either cancel the move or move the style anyway. To help you figure out what to do, Dreamweaver lists the properties in both the style you're trying to move and the one that's present in the style sheet you're dragging into. You can use this information to determine which of the two styles you wish to keep or to note which properties from each style are most important.

You have two choices at this point. You can decide not to move the style: Click the No button (the Cancel button has the same effect), then the window closes and no styles are moved. Or click Yes, and Dreamweaver moves the style to the style sheet. It doesn't replace the old style, nor does it try to merge the properties from the two styles into a single style with the same name. Instead, it just places the new style along with the old style in the same style sheet—in other words, you end up with one style sheet containing two separate styles with the same name. Even though this setup is perfectly valid CSS, it's very confusing to have the same style twice in one style sheet. You should delete one of the styles, and, if necessary, edit the remaining style to match any properties from the deleted style.

Note: Dreamweaver says that it will place a style adjacent to the style with the same name when moving like-named styles (see Figure B-13), but it doesn't. Dreamweaver places the moved style wherever you drop it in the list of styles in the destination style sheet.

- You can also **move one or more styles into an external style sheet** that's not attached to the current page. As discussed on page 34, external style sheets are the most efficient way of styling a website's collection of pages. However, it's often easier to use an internal style sheet when you're first starting a design.

This way, as you tweak your CSS, you only have to edit the one file (the web page with the internal style sheet) instead of two (the web page *and* the external CSS file). But once you've completed the design, it's best to move the styles from the internal style sheet to an external style sheet. This process is as easy as a right-click (Ctrl-click).

In the CSS Styles panel, select the styles you wish to move to an external style sheet (Ctrl-click [⌘-click] each style name to select it). Right-click (Ctrl-click) the selected styles and choose "Move CSS Rules" (see Figure B-14, top). The "Move to External Style Sheet" window opens (Figure B-14, bottom). You can then either add the rules to an existing external style sheet by clicking the browse button and selecting an external CSS file in the site, or turn on the "A new style sheet…" radio button to create a new CSS file and move the styles there. When you click OK, the styles are either moved to an existing CSS file, or a dialog box appears letting you name and save a new CSS file. Either way, Dreamweaver removes the styles from the internal style sheet and places them into an external style sheet; even better, if the external CSS file isn't already attached to the current page, Dreamweaver attaches it for you, which lets you skip the manual process of attaching the style sheet.

Tip: If you move all the styles from an internal style sheet to an external style sheet, Dreamweaver still leaves some useless <style> tags in the web page. To remove those, just select <style> from the list of styles in the CSS Styles panel, then press the Delete key or click the trash can icon in the lower-right corner of the Styles panel.

Examining Your CSS in the Styles Panel

As you read in Chapter 4 and Chapter 5, inheritance and the cascade are two very important CSS concepts. Inheritance provides a way of passing on common properties like a font color to descendents of a styled tag. Giving the page's <body> tag a font color causes other tags inside the page to use (inherit) that same font color. The cascade is a set of rules for determining what a web browser should do if multiple styles apply to the same tag and there are conflicts between the two styles. The cascade helps decide what to do when one style dictates that a particular paragraph should be displayed in 24-pixel type, while another style dictates that the type should be 36 pixels tall.

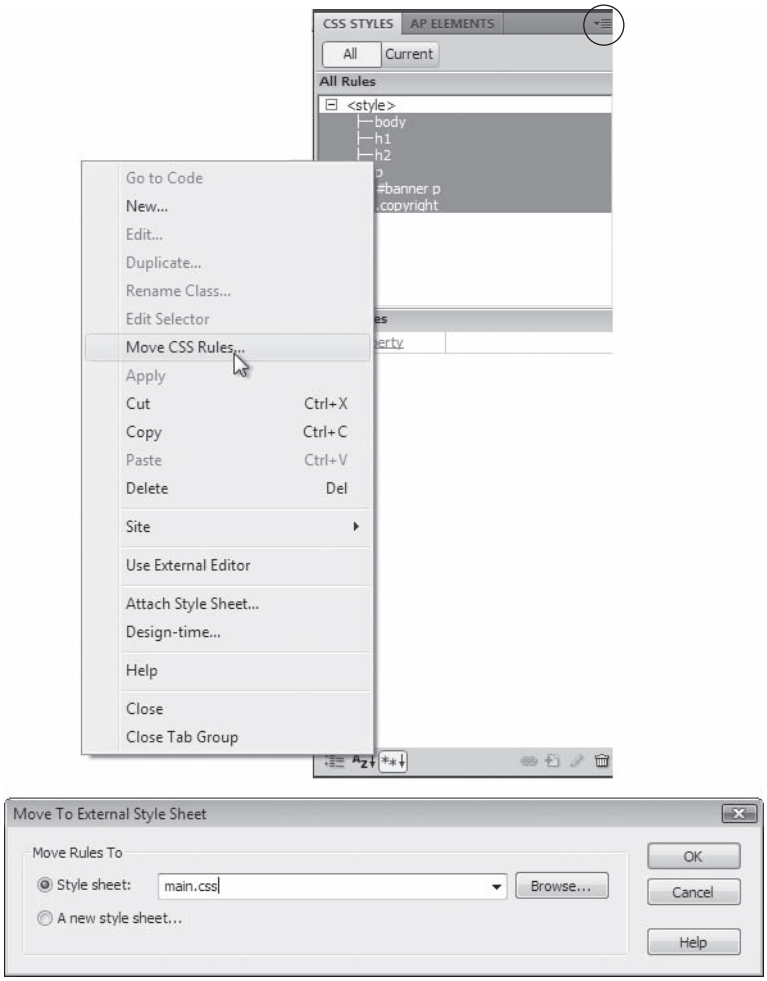

Figure B-14: *Moving internal styles to an external style sheet is a two-step process. First, select the styles you wish to move and right-click to select Move CSS Rules. Second, tell Dreamweaver which style sheet to move the style to. You can also access the Move CSS Rules option from the Option menu on the CSS Styles panel (circled). This technique is also a good way to take one really long external style sheet file and move related styles into several, smaller CSS files.*

Current Selection Mode

With all this inheritance and cascading going on, it's very easy for styles to collide in unpredictable ways. To help you discern how styles interact and ferret out possible style conflicts, Dreamweaver CS4 includes another view of the CSS Styles Panel (see Figure B-15). When you click the Current button, the panel switches to Current Selection mode, which provides insight into how a selected item on a page—an image, a paragraph, a table—is affected by inherited styles.

Current Selection mode is really an incredible tool that's invaluable in diagnosing weird CSS behavior associated with inheritance and cascading. But like any incredible tool, it requires a good user's manual to learn how it works. The panel crams in a lot of information; here's a quick overview of what it provides:

- **A summary of style properties for the currently selected item is in the** "Summary for Selection" pane. Remember that whole thing about how parents pass on attributes to child tags, and how as styles cascade through a page, they accumulate (which means, for example, it's possible to have an <h1> tag formatted by multiple styles from multiple style sheets)? The "Summary for Selection" pane is like the grand total at the bottom of a spreadsheet. It tells you, in essence, what the selected element—a paragraph, a picture, and so on—looks like when a web browser tallies up all of the styles and displays the page. For serious CSS fans, this pane is almost worth the entire price of Dreamweaver.
- **The origin of a particular property is displayed in the About pane** (Figure B-15, top). If a headline is orange, but you never created an <h1> tag with an orange color, you can find out which style from which style sheet is passing its hideous orangeness to the heading. You can get the same information by mousing over any property listed in the Summary section. In addition, when the About pane is visible, you can't see the much more useful Rules pane, discussed next. So you're better off skipping this pane.
- **A list of styles that apply to the current selection appears in the Rules pane** (Figure B-15, bottom). Since any element can be on the receiving end of countless CSS properties handed down by parent tags, it's helpful to see a list of all the styles contributing to the current appearance of the selected object on the page.
- **The order of the cascade is in the Rules pane** (Figure B-15, bottom). Not only are styles that apply to the current selection listed here, they're also listed in a particular order, with the most general style at the top and the most specific ones at the bottom. This means that when the same property exists in two (or more) styles, the style listed last (farthest down the list) wins.

A few examples can help demonstrate how to read the CSS Styles panel when it's in Current Selection mode. Figure B-15 shows the CSS properties affecting a selection of text (in this case, a paragraph within the main content area) on a web page. The "Summary for Selection" pane lets you know that if you viewed this page in a web browser, this paragraph would be displayed using the Tahoma typeface, in black (#000000), left-aligned, with no padding, at a font size of 14 pixels, with a 130% line height (space between each line of text), and with 5 pixels of space for the top margin. When you select a property from the "Summary for Selection" pane and then click the Show Property Information button (Figure B-15, top), the About pane displays where the property comes from—in this case, that the margin property settings belong to a descendent selector—*#mainContent p*—which is defined in an external style sheet named *global.css*.

You've seen the bottom part of this pane before. It's the Properties pane, and it's used to delete, add, and edit the properties of a style. Simply click in the area to the right of the property's name to change its value, or click the Add Property link to select a new property for the style. Notice that in this example, the Properties pane contains fewer properties than the summary view. That's because it only displays properties of a single style (the *#mainContent p* descendent selector), while the Summary view shows all properties inherited by the current selection.

Note: Sometimes one or more of the three panes are too small for you to see all the information displayed. You can use the gray bars containing the panes' names as handles and drag them up or down to reveal more or less of each pane.

Deciphering the Cascade

Clicking the Show Cascade button (Figure B-15, bottom) reveals a list of all styles that affect the current selection. In this case, you can see that six different styles—the body tag style, two ID styles (*#container* and *#mainWrapper*), a descendent selector, a group selector (*h1, h2, h3, h4, p*), and, finally, the descendent selector *#mainContent p*—contribute to styling the selected paragraph of text. In addition, as mentioned above, the order in which the styles are listed is important. The lower the name appears in the list, the more "specific" that style is—in other words, when several styles contain the same property, the property belonging to the style *lower* on the list wins out.

Tip: You can also see the cascade of rules listed in the Property inspector. On the document, select the text you want analyze; click the CSS button on the Property inspector, and then select the Targeted Rule menu–the top group of items in the menu is a listing of the cascade exactly as it appears in the Rules pane of the CSS Styles panel.

Clicking a style name in the Rules pane reveals that style's properties in the Properties pane below. This pane not only lists the style's properties, but also crosses out any properties that don't apply to the selected tag. A property doesn't apply to a selection for one of two reasons: Either the property is overridden by a more specific style, or that property isn't inherited by the selected tag.

For example, Figure B-16 shows that four styles affect the formatting of a single headline: three tag styles (<body>, <h2>, and <h2>) and one class style (*.highlight*). In the left-hand image, the color and font-size properties for the h2 style are crossed out—meaning those properties don't apply to the current selection. The font-family property, on the other hand, isn't crossed out, indicating that the current selection is displayed using the font Trebuchet MS. Because that h2 appears near the top of the list of styles in the Rules pane, you can determine that that style is less "specific" (less powerful) than styles listed later. The style that appears last on the list—*.highlight* in this example—is most "specific," and its properties override conflicts from any other style. Selecting *.highlight* in the rules pane (Figure B-16, bottom right) demonstrates that, yes indeed, its font-size and color properties "win" in the battle of cascading style properties.

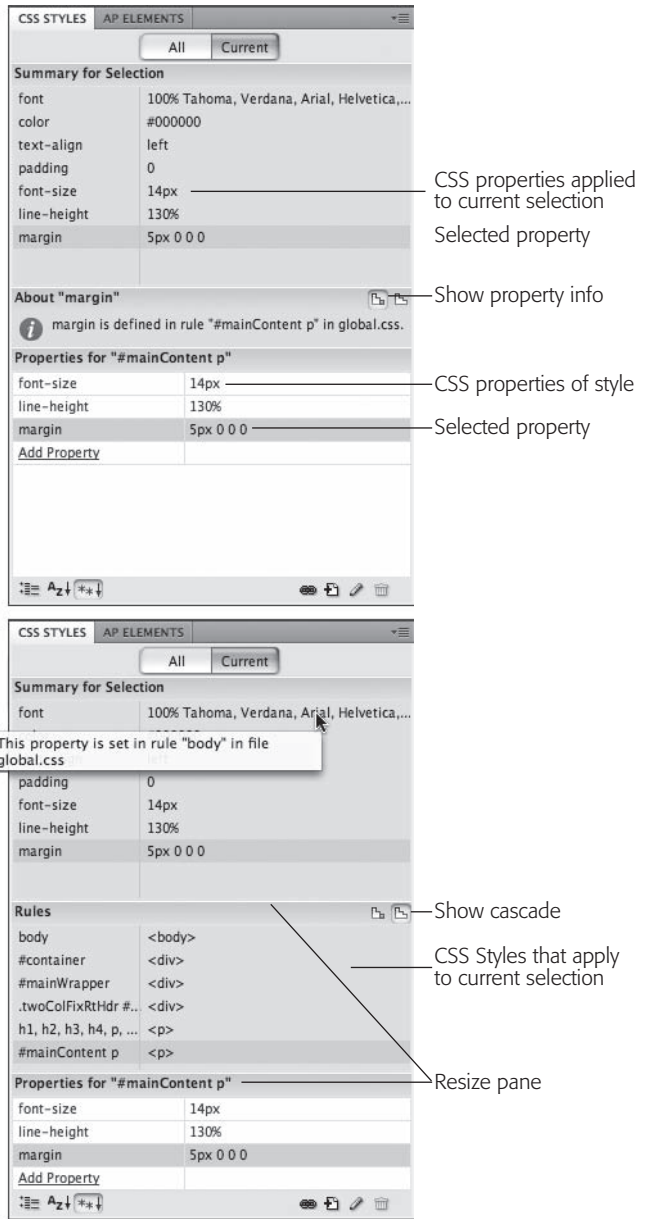

Figure B-15:
The two views of the Styles panel–Property Information (top) and Cascade (bottom)–are mostly the same. Both show a summary of properties that apply to the current selection, and both display, at bottom, the Property list pane used to edit those properties. Property Information view shows where a selected property "comes from"–that is, which style and which style sheets were used in defining a property. Cascade view, however, is by far the more useful option. You can get the same information as in Property Information view simply by mousing over a CSS property in the Summary pane. For example, in the bottom image, hovering the mouse over the font property opens a pop-up tooltip that explains that this particular property is set in a body tag style that's defined in an external style sheet named global.css. In addition, Cascade view lists all styles that apply to the currently selected tag: In this case, six different styles help format the text currently selected in the document.

Tip: If you mouse over a property that's crossed out in the Properties pane, Dreamweaver pops up a tooltip explaining why a browser won't apply that property. If the property is crossed out because it's overruled by a more specific style, Dreamweaver also tells you which style won out.

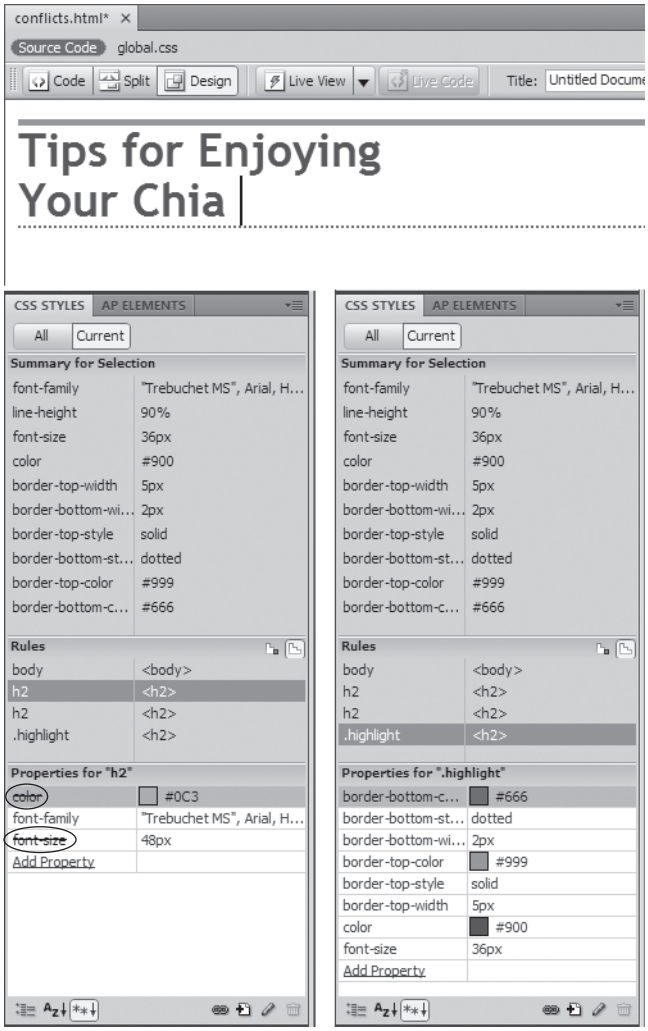

Figure B-16:
Selecting the Current view of the CSS Styles panel lets you easily view all the properties that apply to the currently selected item–in this example it's the headline (an <h2> tag) pictured at top. A line (circled in the left corner of the panel below) strikes out properties from a style that don't apply to the headline. In this case, the font-size and color in the first <h2> style is overridden by the same properties in the more specific .highlight class style (bottom right).

If your web pages are elegantly simple and use only a couple of styles, you may not find much need for this aspect of the CSS Styles panel. But as you become more proficient (and adventurous) with CSS, you'll find that this panel is a great way to untangle masses of colliding and conflicting styles.

Tip: One way to make a style more powerful–so that its properties override properties from conflicting styles–is to use a descendent selector (see page 57). For example a *body p* descendent selector has more authority than just a plain *p* tag style, even though both styles target the exact same tags. You can quickly rename a style or create a more longwinded and powerful descendent selector using the CSS Styles panel: Select the name of the style in the CSS Styles panel (use the "All" view); click the style name a second time to edit it.

Using the Code Navigator

Dreamweaver CS4 introduces a new tool for CSS pros: Code Navigator, which provides a quick way to view all CSS styles that apply to any element you click on. In this way, it's kind of like the Rules Pane of the CSS Styles panel (discussed in the previous section). However, Code Navigator is a pop-up window that appears directly in the document window (see Figure B-17).

To access the Code Navigator, hold down the Alt key and click an element on the page (for Macs, you need to press ⌘-Option and click). You can click any element whose CSS you wish to examine: for example, an image, a heading, a paragraph, a table, and so on. For example, in Figure B-18, ⌘-Option clicking the "Tips" headline (that would be Alt-click for Windows) opens the Code Navigator, which lists the styles that apply to that headline.

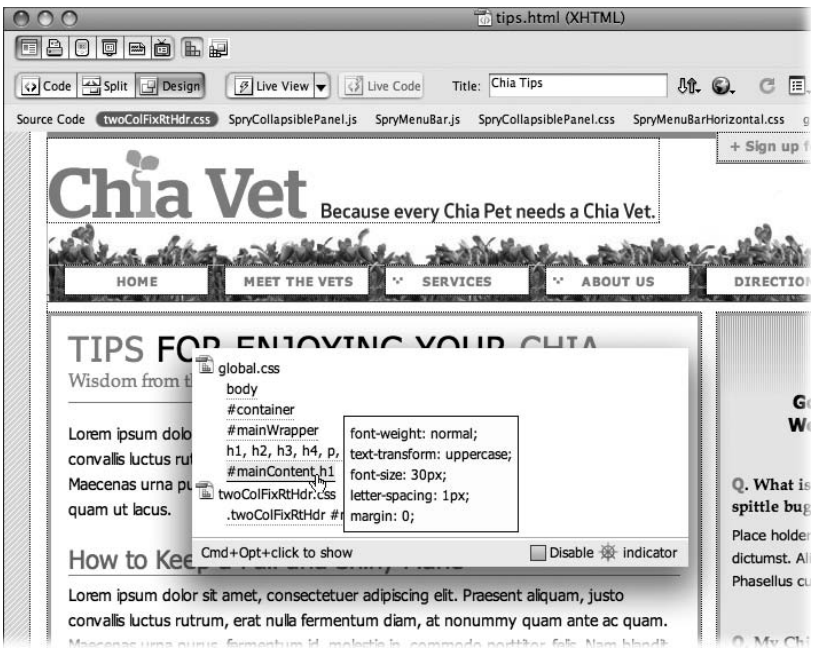

Figure B-17: *The Code Navigator, new in Dreamweaver CS4, lets you view a list of CSS styles for any element on a page. In fact, it can show more than just CSS: If you're working with templates or dynamic, database-driven websites (see Part 6), the Code Navigator may list other files that impact the current document such as a template file, or a file containing server-side programming.*

There are several other ways to access the Code Navigator window, as well:

- Click the Code Navigator icon (circled in Figure B-18). This ship steering wheel icon appears above an element that you've selected on the page (or above the element where the cursor is currently placed). It usually takes a second or so to appear, so you may want to stick with the keyboard shortcut (Alt-click or ⌘-Option-click).

- Right-click any item on the page and choose Code Navigator from the pop-up shortcut menu.
- Select an item on a page (a table, image, paragraph, and so on) and choose View → Code Navigator, or press Ctrl-Alt-N (Windows) or ⌘-Option-N (Mac).

Figure B-18: *If the Code Navigator's constantly appearing ship steering wheel icon bothers you, you can turn it off by turning on the disable box in the Code Navigator window (see Figure B-17). At that point, you need to use the keyboard shortcut or one of the other methods discussed in this chapter for opening the Code Navigator.*

Once the Code Navigator window opens, you'll see all CSS styles that affect the current item. In Figure B-18, for example, the Code Navigator lists six styles that impact the formatting of the headline "Tips for Enjoying Your Chia"—five styles are in the *global.css* external style sheet, and one is in the *twoColFixRtHdr.css* external style sheet. If you move your mouse over one of the styles, you'll see a list of that style's CSS properties.

Code Navigator provides a quick way to see properties for all styles that affect the page element as well. In Figure B-18, hovering over the *#mainContent h1* style lists that style's properties: a *font-size* of 30 pixels, 1 pixel of *letter-spacing*, and so on. Although the Code Navigator is a quick way to view styles and their properties, it isn't as useful as the Current view of the CSS Styles panel (page 507), which shows exactly which *properties* (not just which styles) apply to the current selection. In

addition, the Code Navigator window doesn't always accurately display the CSS Cascade (page 510)—it does list the styles in order of specificity, but it splits up the list of styles by style sheet, so if a page has more than one style sheet you may not get a clear picture of the cascade. The CSS Rules Pane, on the other hand, shows a complete list of styles from least to most specific, regardless of how many style sheets you use.

If you're a code jockey who prefers to type CSS code instead of relying on Dreamweaver's windows and panels, the Code Navigator lets you jump immediately to CSS code. Once the Code Navigator window is open, just click any style listed. Dreamweaver will jump into Split mode (a view of raw code and the page's Design view) and display the CSS code for the selected style.

APPENDIX
C

CSS Resources

No one book—not even this one—can answer all of your CSS questions. Luckily, CSS resources abound for both beginning and expert web designers. In this appendix, you'll find resources to help you with general CSS concepts as well as specific CSS tasks, like building a navigation bar or laying out a web page.

References

References that cover CSS properties range from the official to the obscure. There are websites and online tutorials, of course, but you don't have to be on the Web to learn about CSS. Some of these guides come on good old-fashioned paper.

World Wide Web Consortium (W3C)

- **CSS 2.1 Specification** (*www.w3c.org/TR/CSS21*). For the official word, go to the source—the W3C—and read the actual set of rules that make up the most widely recognized version of CSS, version 2.1.
- **CSS 3 Current Work** (*www.w3.org/Style/CSS/current-work*). If you want to take a look at what the future holds, check out the current work being done on the CSS 3 specification. Some of the properties are already available in some browsers (see Chapter 16), but it's probably going to take a few years before these innovations are finalized and even longer before web browsers understand them all.

Books and PDFs

- **Cascading Style Sheets: The Definitive Guide** by Eric Meyer (O'Reilly). For comprehensive technical (yet readable) coverage of CSS, check out this guide.
- **CSS Cheat Sheet** (*www.addedbytes.com/cheat-sheets/css-cheat-sheet*). This one-page PDF document provides a compact reminder of most every CSS property, covers every type of CSS selector under the sun, and includes a handy diagram of the box model (page 151). Print it out, fold it up, and carry it in your back pocket.

Other Online References

- **SitePoint CSS Reference** (*http://reference.sitepoint.com/css*). A very complete guide to CSS, including instruction on concepts, live examples, and coverage of CSS3.
- **WesternCiv's Complete CSS Guide** (*www.westciv.com/style_master/academy/css_tutorial/index.html*). A detailed online guide to CSS.
- **CSS3.Info** (*www.css3.info*). Up-to-date coverage of CSS 3's evolution including live examples and a useful "CSS Selectors Test," which lets you test a browser for how well it understands the selector syntax for CSS 2 and 3.
- **Mozilla's CSS Center** (*https://developer.mozilla.org/En/CSS*). This information comes from the makers of Firefox and contains information specific to that browser. However, it also has lots of great information on CSS in general, including some excellent in-depth articles on some of CSS's quirks.

CSS Help

Even with the best references (like this book), sometimes you need to ask an expert. You can join a discussion list, where CSS-heads answer questions by email, or peruse a wealth of information in an online forum.

Email List

- **CSS-Discuss** (*http://css-discuss.org*). The longest living mailing list dedicated to just CSS. You'll find CSS masters willing to help get you out of your CSS troubles.

Note: Before pestering the *CSS-Discuss* list with a question that 47,000 people have previously asked, check out their *wiki*—a collaborative website where group members freely add, edit, and update each other's articles. This wiki has evolved into a terrifically convenient index of tips and tricks, best practices, and in-depth treatment of CSS topics. Visit *http://css-discuss.incutio.com*.

Discussion Boards

- **CSSCreator Forum** (*www.csscreator.com/css-forum*). A very active online forum offering help and advice for everything from basic CSS to advanced layout.

- **SitePoint.com's CSS Forum** (*www.sitepoint.com/forums/forumdisplay.php?f=53*). Another helpful group of CSS addicts.
- **CSS-Tricks.com Forum** (*http://css-tricks.com/forums*). A relative newcomer, this small forum holds some good information. (If you like PHP and JavaScript, there's some good discussion on those topics here as well.)

CSS Tips, Tricks, and Advice

The Web makes it easy for anyone to become a publisher. That's the good news. The bad news is, when everyone's a publisher, it's harder to sort through all the chaff to find the golden wheat of clear, concise, and accurate information. There's plenty of good CSS information on the Web—and a lot that's not good. Here are a few of the best destinations for CSS information:

- **CSS-Tricks.com** (*http://css-tricks.com*). This one-man blog is full of great CSS tips. You'll find frequently updated tips and tricks as well as comprehensive video tutorials.
- **Sitepoint** (*www.sitepoint.com/subcat/css*). Sitepoint's CSS tutorials are very good (even though they're not updated frequently).
- **Smashing Magazine** (*www.smashingmagazine.com/category/css*). Smashing Magazine gathers some of the best resources on the Web, and in the CSS category you'll find a nearly endless number of links highlighting some of the most creative thinking on CSS and web design.

CSS Navigation

Chapter 9 shows you how to create navigation buttons for your website from scratch. But online tutorials are a great way to solidify your knowledge. Also, once you understand the process in detail, you don't have to do it yourself every single time. On the Web you can find examples of navigation features for inspiration.

Tutorials

- **Listutorial** (*http://css.maxdesign.com.au/listutorial*). Step-by-step tutorials on building navigation systems from unordered lists.
- **30 Excellent CSS Based Navigation and Buttons Tutorial** (*www.instantshift.com/2009/01/11/30-excellent-css-based-navigation-and-buttons-tutorial*). More tutorials than you can shake a stick out.
- **Create Apple's Navigation Bar with CSS** (*http://westciv.com/style_master/blog/apples-navigation-bar-using-only-css*). If you like the simple, clean appearance of Apple.com, you might be interested in how to create their menu with CSS.

- **CSS Vertical Navigation Bar with Teaser** (*www.sohtanaka.com/web-design/css-vertical-navigation-with-teaser*). This very cool technique creates a navigation bar that's so interactive you'd think it had to be done with JavaScript. Nope—CSS only!

Online Examples

- **CSS Navigation Bar Code Generator** ***(http://lab.mattvarone.com/navbar***). Feeling lazy? Let this online tool create all the code you need to use the pixy method described on page 246.
- **CSS Menus** (*http://13styles.com/category/css-menus*). Download free CSS menus—the coding is already done for you!
- **CSS Showcase** (*www.alvit.de/css-showcase*). A gallery of navigation menus, tabs, and CSS navigation techniques.
- **Listamatic** (*http://css.maxdesign.com.au/listamatic*). Showcase of CSS-based navigation systems. Also lots of links to related websites.
- **Listamatic2** (*http://css.maxdesign.com.au/listamatic2*). More CSS menus, including nested lists with submenus.
- **CSS Play Menu Showcase** (*www.cssplay.co.uk/menus/index.html*). Lots of cool menus, many useful techniques. A must see.

CSS and Graphics

Once you've tried the photo gallery in Chapter 8, you're ready to get even more creative. Here are some websites that showcase CSS graphics tricks.

- **CSS Slideshow** (*www.cssplay.co.uk/menu/slide_show.html*). CSS-only slideshow from the creative mind of Stu Nicholls.
- **Sliding PhotoGalleries** (*www.cssplay.co.uk/menu/gallery3l.html*). Dynamic, CSS-driven gallery.
- **CSS Image Maps** (*www.frankmanno.com/ideas/css-imagemap*). Create pop-up labels for your photos.
- **CSS Photo Caption Zoom** (*http://randsco.com/_miscPgs/cssZoomPZ3.html*). Make a ginormous version of a photo appear just by mousing over a thumbnail image.
- **Revised Image Replacement** (*www.mezzoblue.com/tests/revised-image-replacement*). Overview of different ways to swap out HTML headlines with stylish graphics.

CSS Layout

CSS layout is so flexible, you could spend a lifetime exploring the possibilities. And some people seem to be doing just that. You can gain from their labors by reading articles, checking out online examples, and experimenting with tools that can do some of the CSS work for you.

Box Model Information

- **Interactive CSS Box Model** (*www.redmelon.net/tstme/box_model*). Fun, interactive tool for visualizing the box model.
- **On Having Layout** (*www.satzansatz.de/cssd/onhavinglayout.html*). Not for the faint of heart, this highly technical analysis of Internet Explorer explains the main cause (and some solutions) for many of the CSS bugs that plague Windows Internet Explorer 6 and earlier (and some of the bugs that vex IE7).

Float Layouts

- **Perfect Multi-Column CSS Liquid Layouts** (*http://matthewjamestaylor.com/blog/perfect-multi-column-liquid-layouts*). Great examples of many different types of liquid (full-screen) layouts that work on everything from IE 5.5 to an iPhone.
- **In search of the one true layout** (*www.positioniseverything.net/articles/onetruelayout*). Interesting—if slightly mind-bending—presentation on how to create a float-based layout that overcomes most of the limitations of floats.
- **CSS-Discuss Wiki page on float-based layouts** (*http://css-discuss.incutio.com/?page=FloatLayouts*). Even more links to float-based layout resources.

Absolute Position Layouts

- **CSS-Discuss Wiki on Absolute Layouts** (*http://css-discuss.incutio.com/?page=AbsoluteLayouts*). Good resources with some helpful background information.
- **Learn CSS Positioning in Ten Steps** (*www.barelyfitz.com/screencast/html-training/css/positioning*). Quick, hands-on overview of CSS positioning.
- **Making the Absolute, Relative** (*http://stopdesign.com/archive/2003/09/03/absolute.html*). Guide to using absolute positioning for subtle design effects.

Layout Examples

- **CSS Layout Generator** (*www.pagecolumn.com*). Pick the number of columns, tweak a few knobs, and this website generates all the HTML and CSS required. With a site like this, who needs a book (just kidding).
- **Even More Layout Generators** (*www.webdesignbooth.com/15-extremely-useful-css-grid-layout-generator-for-web-designers*). If you can't get enough of websites that automatically create your CSS and HTML, you'll find a list of 15 different online tools.
- **960 Grid System** (*http://960.gs*). One of the better CSS frameworks that provides a set of basic styles and a technique for using divs and class names to create complex, multicolumn, fixed-width layouts. (You can find a detailed video introduction to this system at *http://nettuts.com/videos/screencasts/a-detailed-look-at-the-960-css-framework/*)

- **YUI Grids CSS** (*https://developer.yahoo.com/yui/grids*). Yahoo's very own CSS-layout system. It's a bit techy, but like the 960 Grid System above, provides a basic framework for building complicated multicolumn layouts.
- **Blueprint** (*www.blueprintcss.org*). Another popular CSS framework.
- **Intensivstation Templates** (*http://intensivstation.ch/en/templates*). Cool templates, weird domain name.

Miscellaneous Layout Resources

- **Adaptive CSS Layouts** (*www.smashingmagazine.com/2009/06/09/smart-fixes-for-fluid-layouts*). Provides many resources for building flexible layouts that adapt to the full width of the browser window.
- **One clean HTML markup, many layouts** (*http://tjkdesign.com/articles/one_html_markup_many_css_layouts.asp*). Great blog post that takes a single HTML page and demonstrates eight different ways to lay it out with just CSS.
- **Variable fixed width layout** (*www.clagnut.com/blog/1663*). Short blog post about a technique for adjusting the number of columns on a page, based on the width of the browser window.
- **3-Column Layout Index** (*http://css-discuss.incutio.com/?page=ThreeColumnLayouts*). A nearly exhaustive (or at least exhausting) list of different three-column layouts.

Browser Bugs

CSS is the best way to format web pages, and Internet Explorer 6 for Windows is the world's most popular browser…so why doesn't IE 6 do a better job displaying CSS? That's a question for the ages, but one thing's for sure: You'd be holding a thinner book if it didn't have to devote so much paper to IE workarounds. (And the following websites would go out of business.)

Windows Internet Explorer

- **How to Attack an Internet Explorer (Win) Display Bug** (*www.communitymx.com/content/article.cfm?page=1&cid=C37E0*). A great introduction to debugging Internet Explorer CSS problems.
- **RichInStyle's guide to IE 5/5.5 Bugs** (*www.richinstyle.com/bugs/ie5.html*). That pesky browser is still around and still causing web designers trouble. If you need help making your pages work for IE 5, check this page out.
- **Explorer Exposed!** (*www.positioniseverything.net/explorer.html*). Information on the most common Internet Explorer bugs and how to fix them.

Showcase Sites

Knowing the CSS standard inside out is no help when your imagination is running dry. A great source of inspiration is the creative work of others. There are more CSS showcase sites than you can shake a search engine at, so here's a handful of sites where you can appreciate and study beautiful CSS designs.

- **CSS ZenGarden** (*www.csszengarden.com*). The mother of all CSS showcase sites: many different designs for the exact same HTML.
- **CSS Beauty** (*www.cssbeauty.com*). A wonderful gallery of inspirational CSS designs.
- **CSS Elite** (*www.csselite.com*). "Showcasing the best in CSS web design"…of course they all say that.
- **CSS Mania** (*http://cssmania.com*). Yet another showcase site, whose ungrammatical claim to fame is "Since March 2004, the most updated CSS showcase all over the globe."
- **Showcase of Showcases** (*http://css-discuss.incutio.com/?page=ShowCase*). The CSS-Discuss wiki presents a list of showcase sites and great examples of CSS design.

CSS Books

Hey, not even this book can tell you *everything* there is to know about CSS!

- **Web Standards Solutions** by Dan Cederholm (Friends of Ed). Though not strictly about CSS, this book provides an excellent presentation on how to write good HTML. If you have any doubts about what tags you should use to create a navigation bar, how to best create HTML forms, or what's the best method for making your HTML code as simple as possible, this book is a must read.
- **Bulletproof Web Design** by Dan Cederholm (New Riders). A great book covering how best to create CSS styles that can withstand the pressure of visitors changing text sizes, resizing their browser windows, and the general instability of the browser environment. Great tips on building layouts, navigation bars and more.
- **CSS Mastery: Advanced Web Standards Solutions** by Andy Budd (Friends of Ed). Many advanced tips for using CSS, including good examples of CSS-based layouts and techniques for streamlining your CSS and HTML code.
- **Head First HTML with CSS & XHTML** by Elisabeth Freeman and Eric Freeman (O'Reilly). A lively, highly illustrated introduction to websites integrating HTML and CSS.
- **Flexible Web Design** by Zoe Mickley Gillenwater (New Riders) teaches you everything you need to know to build flexible (meaning liquid, full-screen) layouts.

- **CSS Cookbook** by Christopher Schmitt (O'Reilly). Straightforward, recipe-like explanations of the most common CSS tasks.

CSS Software

There are lots of different ways to create Cascading Style Sheets. Keeping it simple, you can stick with the free text editors that come with Windows and Mac OS, like Notepad or TextEdit. There are also CSS-only editors and full-fledged web-page-development programs like Dreamweaver that include CSS creation tools.

- **CSS-Discuss list of CSS Editors** (*http://css-discuss.incutio.com/?page= CssEditors*). A long list of many different programs available for editing CSS.

Windows and Mac

- **Style Master** (*www.westciv.com/style_master/product_info*). This powerful CSS editor with a long history includes many tools, including simple wizards to get you started, sample templates, tutorials, and a complete CSS guide.
- **Dreamweaver** (*www.adobe.com/dreamweaver*). Definitely not just for CSS, this premium web-development tool includes everything you need to build complete websites. Visual editing tools make it easier to see the effect of CSS on your web pages as you work.

Windows Only

- **Top Style** (*www.newsgator.com/NGOLProduct.aspx?ProdID=TopStyle*). The venerable CSS editor that also lets you edit your HTML documents—a one-stop shop for web page building. Includes many tools to increase your productivity. There's also a free "lite" version.
- **Microsoft Expression Web** (*www.microsoft.com/expression/products/Web_Overview.aspx*) is a complete website-construction tool that works very well with CSS.

Mac Only

- **CSSEdit** (*www.macrabbit.com/cssedit*). Simple, inexpensive CSS editor.

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The cover of this book is based on a series design originally created by David Freedman and modified by Mike Kohnke, Karen Montgomery, and Fitch (*www.fitch.com*). Back cover design, dog illustration, and color selection by Fitch.

David Futato designed the interior layout, based on a series design by Phil Simpson. This book was converted by Abby Fox to FrameMaker 5.5.6. The text font is Adobe Minion; the heading font is Adobe Formata Condensed; and the code font is LucasFont's TheSansMonoCondensed. The illustrations that appear in the book were produced by Robert Romano using Macromedia FreeHand MX and Adobe Photoshop CS.