ADOBE ILLUSTRATOR® 10 SCRIPTING GUIDE

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Adobe Illustrator 10 Scripting Guide

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1 Introduction

Welcome to scripting, arguably the most exciting new feature of Illustrator. No other feature, new or old, can save you as much time, effort, and money as scripting.

About this manual

This manual provides an introduction to scripting Adobe Illustrator 10 on Mac OS and Windows. We realize that not every Illustrator user will be familiar with programming terms, concepts, and techniques, so we've included Chapter 2, "Scripting Basics," which contains introductory information that should help get you started with scripting. If you're an experienced AppleScript scripter or Visual Basic programmer, you will probably want to skip to Chapter 3 to get the specifics on scripting Illustrator.

This manual consists of the following chapters:

1. An introduction to scripting.
2. The basics of each platform's scripting language: AppleScript in Mac OS and Visual Basic in Windows. If you are new to scripting, be sure to read this chapter. Beginners are heartily encouraged to consult the Bibliography for books on AppleScript and Visual Basic.
3. A brief introduction to the specifics of scripting Illustrator. Concepts and approaches specific to the application are covered here, such as measurement units, matrices, and color models.
4. The Illustrator AppleScript Reference. Here you'll find details and examples for every object and command in Illustrator's AppleScript dictionary.
5. The Illustrator Visual Basic Reference. Details and examples are provided for every class in Illustrator's Visual Basic type library.
6. A bibliography of helpful resources for learning more about scripting.

What is scripting?

A script is a series of commands that tells Illustrator to perform a series of actions. These actions can be simple, and affect only a single, selected object in the current document; or complex, and affect all of the objects in all of your Illustrator documents. The actions might involve only Illustrator, or they might involve other applications, such as word processors, spreadsheets, and database management programs. Many of the tasks you can perform with Illustrator's tools, menus, palettes, and dialog boxes can be performed by a script (a notable exception is third-party plug-ins, which cannot be scripted at this time).

We naturally think of scripting as a way to automate repetitive tasks, but it can also be a creative tool. You can use scripts for creative tasks that would be too difficult or time consuming to do manually. For example, you could write a script to systematically create a series of objects, modifying the new objects' position, stroke, and fill properties along the way. You could also write a script that accessed Illustrator's built-in transformation matrix functions to stretch, scale and distort a series of objects. Without scripting, you'll likely miss out on the creative potential of such labor-intensive techniques.

Scripting isn't just for computer programmers—it's for everybody. You don't need a degree in computer science or mathematics to write scripts that can automate a wide variety of common tasks. If you can read this text, you can write scripts.

Why use scripting?

Graphic design is a field characterized by creativity, but aspects of the actual work of illustration and page layout are anything but creative. When you think about the work that you do, chances are good you'll find that you spend most of your time doing the same or similar production tasks, over and over again. In fact, you'll probably notice that the time you spend placing and replacing images, correcting errors in text, and preparing files for printing at an imagesetting service provider often reduce the time you have available for doing creative work.

Wouldn't it be great if you had an assistant—one that wouldn't mind doing some or all of the boring, repetitive tasks for you? With that kind of help, you'd have more time to concentrate on the creative aspects of your work.

With a small investment of time, Illustrator scripting can be the assistant you need. You can start with short, simple scripts that save you a few seconds every day, and move on to scripts that work all night while you're sleeping.

Think about your work—is there a repetitive task that's driving you crazy? If so, you've identified a candidate for a script. What are the steps involved in performing the task? What are the conditions in which you need to do the task? Once you understand the process you go through to perform the task, you'll be ready to turn it into a script.

What about actions?

Illustrator actions are different from scripts. An Illustrator action is a series of tasks you have recorded while using the application—menu choices, tool choices, object selection, and other commands. When you "play" an action, Illustrator performs all of the recorded commands.

You record, play, edit and delete actions using Illustrator's built-in Actions palette. The "Automating Tasks" chapter in the Adobe Illustrator User Guide covers actions in detail.

With the introduction of scripting for Illustrator, it is important to avoid any confusion about the difference between actions and scripting. Actions and scripts are both ways of automating repetitive tasks, but they work very differently. The following points summarize the key differences.

- Actions use a program's user interface to do their work. As an action runs, menu choices are executed, objects are selected, and recorded paths are created. Scripts do not use a program's user interface to perform tasks, and can execute faster than actions.
- Actions have very limited facilities for getting and responding to information. You cannot add conditional logic to an action. Therefore, actions cannot make decisions based on the current situation. Scripts are capable of getting information and making decisions and calculations based on the information they receive from Illustrator.
- A script can execute an action, but actions cannot execute scripts.

System requirements

The language you use to write scripts depends on the operating system of the platform you're using: AppleScript for Mac OS; Visual Basic for Windows. While the two scripting systems differ, the ways that they work with Illustrator are very similar. Each example script shown in this manual will be shown in both systems. Make sure the scripting plug-in is installed on your system before attempting to script Illustrator.

Mac OS

To write scripts on Mac OS, you must have Mac OS version 8.6 or later. You will also need AppleScript and a script editor installed. AppleScript and the Script Editor application from Apple come installed on all supported versions of Mac OS. The default location for the Script Editor application is the Apple Extras folder. In the unlikely event that these items are not installed on your system, reinstall them from your original system software CD-ROM.

As your scripts become more complex, you may find the need for debugging and productivity features not found in Script Editor. Third-party script editors, such as Script Debugger (from Late Night Software, http://www.latenightsw.com) or Scripter (from Main Event Software, http://www.mainevent.com) provide additional features that aid script development.

If your script would benefit from a complete user interface, you might want to use FaceSpan (http://www.facespan.com) or Real Basic (http://www.realsoftware.com)—programs created in these development environments can have complete graphical user interfaces as well as send AppleScript commands to Illustrator.

We use the Script Editor from Apple in this manual.

Windows

To use Illustrator scripting in Windows, you must have Windows 98, Windows NT 4.0, or Windows 2000. You will also need the Microsoft Visual Basic development environment or one of the applications that contain a Visual Basic editor. Many applications that support the Visual Basic for Applications (VBA) language contain a built-in editor. Applications that contain a built-in editor include: Microsoft Word, Microsoft Excel, and Visio. You can use any Visual Basic editor to create your scripts.

As your scripts become more complex or require a user interface, you will find the need for a complete development environment than one of the built-in editors. The Microsoft Visual Basic development environment comes in a variety of package, all of which provide everything you need to script Illustrator.

In this manual, we use the Microsoft Visual Basic development environment's editor.

2

Scripting Basics

If you use Illustrator, then you work with documents and their contents. You create documents, layers, colors, and design elements. If you do all of this, you've probably gotten used to thinking of an Illustrator document as a series of objects.

Automating Illustrator with scripting uses the same object-oriented way of thinking. The heart of a scriptable application is the object model. In Illustrator, the object model is comprised of documents, layers, colors, and page items—objects that can appear in an Illustrator document. Each type of object has its own special properties, and every object in an Illustrator document has its own identity.

In this chapter, we'll cover the basic concepts of scripting for both AppleScript on Mac OS and Visual Basic on Windows. This brief introduction to the basic concepts and syntax of each scripting language is by no means complete or exhaustive. The bibliography contains references to more complete language guides for both scripting languages.

For detailed information on using your particular scripting system with Illustrator, see the appropriate reference chapter later in this manual. Experienced scripters may want to skip to those chapters now.

Object model concepts

The terminology of object oriented programming can be hard to understand, at first. "Objects" belong to "classes" and have "properties" you manipulate using "commands" (AppleScript) or "methods" (Visual Basic). What do these words mean in this context?

Here's a way to think about objects and their properties. Imagine that you live in a house that responds to your commands (you can think of this house as technologically advanced, or magical, or both). The house is an object, and its properties might include the number of rooms, the color of the exterior paint, or the date of its construction.

Your house can also contain other objects. Just like your house can contain other objects, the objects within the house can also contain a number of smaller objects. Each room, for example, is an object in the house, while each window, door, or appliance is an object inside of the room.

Each object can respond to various commands according to its capabilities. Windows and doors, for example, can open or close—but the floor and ceiling cannot. Using scripting, you can talk to each object directly, or you can talk to them as part of the house. You have to be very specific, though—you can't tell your house to open a window without telling it which window you want to open. So windows, just like all other objects, need names or at least a numbering system so you can refer to them specifically. "Tell the house to open the north window of the living room," you might say.

Objects also have properties that describe specific details about them, like color and size. Imagine that the properties of objects in your house can be changed. You might say, "Door, paint yourself blue." Because your door can respond to the command "paint," you'll soon have a door of a different color.

Now let's apply this object model idea to Illustrator. The Illustrator application is the house, its documents are the rooms, and the objects in your documents are the windows and doors. You can tell Illustrator documents to add and remove objects. You can ask objects to get or change their properties.

Object classes

Objects with the same properties and behaviors are grouped into "classes." In the house example, windows and doors belong to their own classes, since they have unique properties, like number of panes for windows or the door style for doors. In Illustrator, every type of graphic object—paths, text, meshes, etc.—belongs to its own class, each with its own set of properties and behaviors. Properties such as `visible bounds`, `width`, and `height`, for example, are common to all `page items`.

Object inheritance

Object classes may also "inherit," or share, the properties of a parent, or superclass. When an class inherits properties, we call that class a child, or subclass of the class from which it inherits properties. So in our house example, windows and doors are subclasses of an openings class, since they are both openings in a house. In Illustrator, `path items`, for example, inherit geometric properties like `width` and `height` from the `page item` class.

Classes will often have properties that aren't shared with their superclass. In our house, both a window and door inherit an opened property from the opening class, but a window has number of panes property which the opening class doesn't. In Illustrator, `path items`, for example, have the property `stroke color` which isn't inherited from the `page item` class.

Object elements or collections

Object elements (AppleScript) or collections (Visual Basic) are objects contained within other objects. For example, rooms are elements (or collections) of our house, contained within the house object. In Illustrator, documents are elements of the application object, and page items are elements of a document object.

Object references

The objects in your documents are arranged in a hierarchy like the house object—page items are in layers, which are inside a document, which is inside Illustrator. When you send a command to an Illustrator object, you need to make sure you send the message to the right object. To do this, you identify objects by their position in the hierarchy. You might, for example, write the following statement.

AppleScript

```
page item 1 of layer 1 of document 1
```

Visual Basic

```
Documents(1).Layers(1).PageItems(1)
```

When you identify an object in this fashion, you're creating an *object reference*. AppleScript and Visual Basic use different ways of creating object references, but the idea is the same—to give the script a way of finding the object you want to work with.

Scripting concepts

Comments

Comments are a way to add descriptive text to a script. Comments come in handy when you want to document the operation of a script (for yourself or for someone else). The use of comments is the most important technique for good scripting. Comments are where you should leave important notes about the specific operation of a script that might provide valuable help when the script is modified at a later date. The time you save later trying to figure out what the script does may be your own. Comments are ignored by the scripting system as the script executes and cause no run-time speed penalty.

AppleScript

To enter a single-line comment in an AppleScript, type “--” to the left of your description. For multiple line comments, start your comment with the characters “(*” and end it with “*)”.

```
-- this is a single-line comment
(* this is a
multiple line comment *)
```

Visual Basic

In Visual Basic, enter “'” (a single straight quote) to the left of the comment.

```
' This is a comment
```

About long script lines

In some cases, individual script lines are too long to print on a single line in this guide.

AppleScript

AppleScript uses the special character (¬) to show that the line continues to the next line. This continuation character denotes a “soft return” in the script. You can enter this character in the script editor by pressing Option-Return at the end of the line you wish to continue.

Visual Basic

Visual Basic uses a special character (_) to show that the line continues to the next line. This continuation character denotes a “soft return” in the script. You can enter this character in the editor by pressing Shift--(dash) at the end of the line you wish to continue.

Values

Values are the data your scripts use to do their work. Most of the time, the values used in your scripts will be numbers or text.

AppleScript

Value type:	What it is:	Example:
Boolean	Logical true or false.	true
Integer	Whole numbers (no decimal points). Integers can be positive or negative.	14
Real	A number which may contain a decimal point.	13.9972
String	A series of text characters. Strings appear inside (straight) quotation marks.	"I am a string"
List	An ordered list of values. The values of a list may be any type.	{10.0, 20.0, 30.0, 40.0}
Object reference	A specific reference to an object.	document 1
Record	An unordered list of properties, Each property is identified by its label.	{name: "you", index: 1}

Visual Basic

Value type:	What it is:	Example:
Boolean	Logical true or false	true
Long	Whole numbers (no decimal points). Longs can be positive or negative.	14
Double	A number which may contain a decimal point.	13.9972
String	A series of text characters. Strings appear inside (straight) quotation marks.	"I am a string"
Array	A list of values. Arrays contain a single value type unless the type is defined as Variant.	Array(10.0, 20.0, 30.0, 40.0)
Object reference	A specific reference to an object.	Application.Documents(1)

User-defined	A collection of elements referenced by a key and stored as a key-value pair.	Var.name = "you"
		Var.index = 1

Variables

Variables are containers for data. A variable might contain a number, a string, a list (or array), or an object reference. Variables have names, and you refer to a variable by its name. To put data into a variable, we assign the data to the variable. The file name of the current Illustrator document or the current date are both examples of data that can be assigned to a variable.

Why not simply enter the value directly in the script rather than using a variable? When you use a value directly the flexibility of script is reduced. By using variables the scripts you write will be reusable in a wider variety of situations. As a script executes, it can assign data to the variables that reflect the state of the current document and selection, for example, and then make decisions based on the content of the variables.

In AppleScript, it is not important to declare your variables before assigning values to them. In Visual Basic, however, it is considered good form to declare all of your variables before using them with the `Dim` statement. Using the `Dim` statement assigns a value type to the variable, which helps us keep our scripts clear and readable. Memory is also used more efficiently if variables are declared before use. If you start your scripts in Visual Basic with the line `Option Explicit`, you will be required to declare all variables before assigning data to them.

Visual Basic

```
Option Explicit
Dim thisNumber As Single
thisNumber = 10
```

Assigning values to variables is fairly simple, as shown below.

AppleScript

```
set thisNumber to 10
set thisString to "Hello, World!"
```

Visual Basic

```
thisNumber = 10
thisString = "Hello, World!"
```

Variables can also be used to store references to objects. In AppleScript, a reference is returned when you create a new object in an Illustrator document. This returned reference points to the newly created object. Storing references in variables is just the same as assigning any other value to the variable.

```
set thisLayer to make new layer at beginning of document 1
```

or you can fill the variable with a reference to an existing object:

```
set thisLayer to layer 1 of document 1
```

Visual Basic works similarly, however, there is an important distinction to note. If you are assigning an *object reference* to a variable you must use the `Set` command. For example, to assign a variable as you create a layer, use `Set`:

```
Set thisLayer = Illustrator.Documents(1).Layers.Add
```

or in reference to an existing layer, since it is also an *object reference,* use `Set`:

```
Set thisLayer = Illustrator.Documents(1).Layers(1)
```

If you are simply trying to assign a value to a variable in Visual Basic that is not an object reference, do not use `set` but simply use Visual Basic's assignment operator, the equals sign:

```
thisNumber = 12
```

Try to use descriptive names for your variables—something like `firstPage` or `corporateLogo`, rather than `x` or `c`. While it will take a little more time to type the longer names, using them will make your scripts much easier to read. The length of a variable's name has no effect on the execution speed of your script, so use descriptive names. You can also give your variable names a standard prefix so that they'll stand out from the objects, commands, and keywords of your scripting system. Variable names must be a single word, but you can use internal capitalization (such as `myFirstPage`) or underscore characters (`my_first_page`) to create more readable names. Variable names cannot begin with a number, and they can't contain punctuation or quotation marks.

Properties

Both AppleScript and Visual Basic allow you to define properties for your scripts. Script properties are much like variables, but with additional features and requirements specific to each language. Since the meaning and usage of script properties differs so greatly between AppleScript and Visual Basic, please consult the bibliography for appropriate language references.

Operators

Operators perform calculations (addition, subtraction, multiplication, and division) on variables or values and return a result. For example:

```
docWidth/2
```

would return a value equal to half of the content of the variable `docWidth`. So if `docWidth` contained the number `20.5`, the value returned would be `10.25`.

You can also use operators to perform comparisons (equal to, not equal to, greater than, or less than). For example:

```
docWidth > docHeight
```

Would return the value `true` if `docWidth` is greater than `docHeight`, or `false`, if it is not.

Some operators differ between AppleScript and Visual Basic. For example, AppleScript uses the non-equality symbol (≠, use Option- = from keyboard), while Visual Basic uses the greater and less than symbols juxtaposed: <>.

Both scripting systems use the ampersand (&) as the concatenation operator to join two strings.

```
"Pride " & "and Prejudice."
```

would return the string “Pride and Prejudice.”

Commands and methods

If objects are “nouns” and properties are “adjectives” in our scripting systems, then commands (AppleScript) or methods (Visual Basic) are the “verbs”—they’re the parts of the script that make things happen. The type of the object you’re working with determines which methods you can use to manipulate it.

AppleScript

In AppleScript, use the `make` command to create new objects, the `set` command to assign object references to variables and to change object properties, and the `get` command to retrieve objects and their properties.

Visual Basic

In Visual Basic, use the `Add` method to create new objects, the `Set` statement to assign object references to Visual Basic variables or properties, the assignment operator `( = )` to retrieve and change object properties.

Conditional statements

If you could speak to Illustrator in the course of a work session, you might say, “If the selected object is a path, then set its stroke width to 12 points.” Conditional statements make decisions—they give your scripts a way to evaluate something (the color of the selected object, or the number of color swatches in the document, or the date) and then act according to the result. Most conditional statements start with the word `if` in both scripting systems.

The following examples check the number of currently open documents. If no documents are open, the scripts display a messages in a dialog box.

AppleScript

```
tell application "Adobe Illustrator 10"
    activate
   set documentCount to count every document
      if documentCount = 0 then
         display dialog "No Illustrator documents are open!"
      end if
end tell
```

Visual Basic

```
Private Sub Command1_Click()
   Dim documentCount as long
   Dim appRef As New Illustrator.Application
   documentCount = appRef.Documents.Count
   If documentCount = 0 then
      MsgBox "No Illustrator documents are open!"
   End If
End Sub
```

Control structures

If you could talk to Illustrator, you might say, “Repeat the following procedure twenty times.” In scripting terms, this sort of direction is called a “control structure.” Control structures provide for repetitive processes, or “loops.” The idea of a loop is to repeat some action over and over again, with or without changes each time through the loop, until some condition is met.

Both AppleScript and Visual Basic have a variety of different control structures to choose from. The simplest form of a loop is one that repeats some series of script operations a set number of times.

AppleScript

```
repeat with counter from 1 to 20
   display dialog counter
end repeat
```

Visual Basic

```
For counter = 1 to 20
   MsgBox counter
Next
```

A more complicated type of control structure includes conditional logic, so that it loops while or until some condition is true or false.

AppleScript

```
repeat while flag = false
 set flag to (button returned of display dialog "Quit?") = "Cancel"
end repeat

repeat until flag = true
 set flag to (button returned of display dialog "Quit?") = "OK"
end repeat
```

Visual Basic

```
Do While flag = false
 flag = (MsgBox ("Quit?", vbOKCancel)) = vbCancel
loop

Do Until flag = true
 flag = (MsgBox ("Quit?", vbOKCancel)) = vbOK
loop
```

Handlers and subroutines

Handlers (in AppleScript) or subroutines (in Visual Basic) are scripting modules you can refer to from within your script. Handlers and subroutines are ways to re-use parts of scripts. Typically, you send one or more values to a handler (or subroutine), and it returns one or more values. Handlers (and subroutines) can be used for performing conversions from one measurement system to another, or for calculating the geometric center point of an object from its geometric bounds.

There’s nothing special about the code used in subroutines and handlers—they are simply conveniences that save you from having to type the same lines of code over and over again in your script. If you find yourself typing or pasting the same lines of code into several different places in a script, you’ve identified a good candidate for a subroutine or handler.

AppleScript

```
-- Calculate the geometric center of a selected art item
-- Assumes you have a single art item selected
tell application "Adobe Illustrator 10"

  -- Get the selection from the current document
  set selectedItems to selection

  (* Make sure there is a selected item, and that the selection is not 
text *)
  if selectedItems ≠ {} and class of selectedItems ≠ text then

  -- Get the first item from the list and get it bounds
    set firstItem to item 1 of selectedItems
    set itemBounds to geometric bounds of firstItem

  end if
end tell

set itemCenter to GetItemCenter(itemBounds)
display dialog "Center x:" & item 1 of itemCenter & ", y:" & item 2 of 
itemCenter


-- This handler finds the center of an item given its bounds
on GetItemCenter(itemBounds)
  -- Assign coordinates from the bounds to individual variables
  set {itemLeft, itemTop, itemRight, itemBottom} to itemBounds

  -- Calculate the center position
  set xCenter to (itemLeft + itemRight) / 2
  set yCenter to (itemTop + itemBottom) / 2
  return {xCenter, yCenter}
end GetItemCenter
```

Visual Basic

```
Private Sub Command1_Click()
     ' Calculate the geometric center of a selected art item
     ' Assumes you have a single art item selected
    Dim appRef As New Illustrator.Application
    Dim selectedObjects As Variant
    Dim objectBounds As Variant
    Dim objectCenter As Variant

    If appRef.Documents.Count > 0 Then
```

```
        selectedObjects = appRef.Documents(1).Selection

      If TypeName(selectedObjects) = "Variant()" Then
            objectBounds = selectedObjects(0).GeometricBounds
            objectCenter = GetItemCenter(objectBounds)

         MsgBox ("Center x:" & objectCenter(0) & ", y:" &
objectCenter(1))
        End If
    End If
End Sub


' The following lines define the function
Function GetItemCenter(sourceBounds As Variant) As Variant
    Dim left As Single
    Dim top As Single
    Dim right As Single
    Dim bottom As Single

   Dim xCenter As Single
    Dim yCenter As Single

    left = sourceBounds(0)
    top = sourceBounds(1)
    right = sourceBounds(2)
    bottom = sourceBounds(3)

   xCenter = (left + right) / 2
   yCenter = (top + bottom) / 2

    GetItemCenter = Array(xCenter, yCenter)
End Function
```

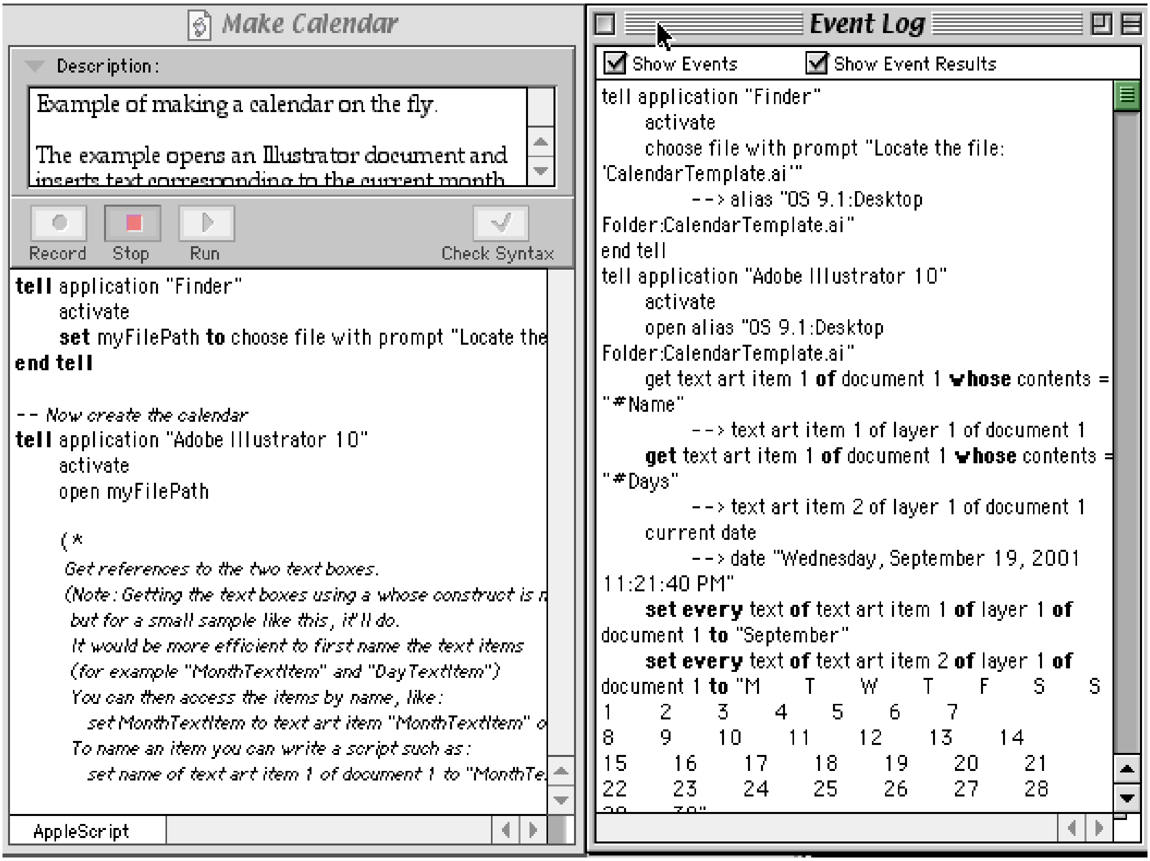
Testing and troubleshooting

Both scripting environments provide tools for monitoring the progress of your script while it is running—which make it easier for you to track down any problems your script might be encountering or causing.

AppleScript

While the basic syntax of your script will be checked when compiled, it is possible to create and compile scripts in AppleScript that will not run properly. The Script Editor doesn't have extensive debugging tools, but it does have the an Event Log window.

To watch the commands your script sends and the results it receives, choose Controls > Open Event Log. The Script Editor displays the Event Log window. Check the Show Events and Show Events Results options at the top of the Event Log window and then run your script. As the script executes, you'll see the commands sent to Illustrator, and Illustrator's responses.



Example of making a calendar on the fly.

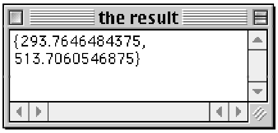
The example opens an Illustrator document and inserts text corresponding to the current month

```
tell application "Finder"
	activate
	set myFilePath to choose file with prompt "Locate the
end tell

-- Now create the calendar
tell application "Adobe Illustrator 10"
	activate
	open myFilePath

	(*
	 Get references to the two text boxes.
	 (Note: Getting the text boxes using a whose construct is n
	  but for a small sample like this, it'll do.
	  It would be more efficient to first name the text items
	  (for example "MonthTextItem" and "DayTextItem")
	  You can then access the items by name, like:
	     set MonthTextItem to text art item "MonthTextItem" o
	  To name an item you can write a script such as:
	     set name of text art item 1 of document 1 to "MonthTe
```

☑ Show Events ☑ Show Event Results

```
tell application "Finder"
	activate
	choose file with prompt "Locate the file:
'CalendarTemplate.ai'"
		--> alias "OS 9.1:Desktop
Folder:CalendarTemplate.ai"
end tell
tell application "Adobe Illustrator 10"
	activate
	open alias "OS 9.1:Desktop
Folder:CalendarTemplate.ai"
	get text art item 1 of document 1 whose contents =
"#Name"
		--> text art item 1 of layer 1 of document 1
	get text art item 1 of document 1 whose contents =
"#Days"
		--> text art item 2 of layer 1 of document 1
	current date
		--> date "Wednesday, September 19, 2001
11:21:40 PM"
	set every text of text art item 1 of layer 1 of
document 1 to "September"
	set every text of text art item 2 of layer 1 of
document 1 to "M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
```

In addition, the Result window (choose Controls > Show Result) will display the value from the last script statement evaluated. Third-party editors offer additional debugging features.



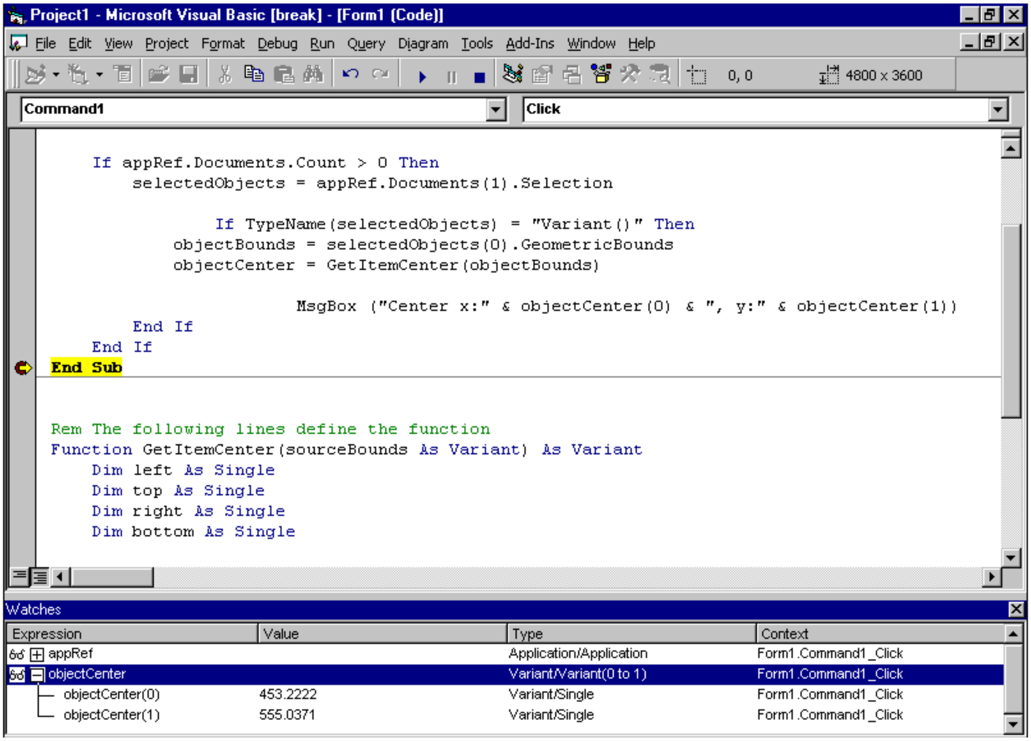
```
{293.7646484375,
513.7060546875}
```

Visual Basic

In Visual Basic, you can stop your script at any point, or step through your script one line at a time. To stop your script at a particular line, select that line in your script and choose

Debug > Toggle Breakpoint. When you run the script, Visual Basic will stop at the breakpoint you have set. Choose Debug > Step Into (or press F8) to execute the next line of your script, or choose Run > Start (or press F5) to continue normal execution of the script. You can also observe the values of variables defined in your script using the Watch window—a very valuable tool for debugging your scripts. To view a variable in the Watch window, select the variable and choose Debug > Quick Watch. Visual Basic displays the Quick Watch dialog box. Click the Add button. Visual Basic displays the Watch window.

If you have closed the Watch window, you can display it again by choosing View > Watch Window.


Project1 - Microsoft Visual Basic [break] - [Form1 (Code)]
File Edit View Project Format Debug Run Query Diagram Tools Add-Ins Window Help
0, 0
4800 x 3600
Command1
Click
Watches

```
    If appRef.Documents.Count > 0 Then
        selectedObjects = appRef.Documents(1).Selection

                If TypeName(selectedObjects) = "Variant()" Then
            objectBounds = selectedObjects(0).GeometricBounds
            objectCenter = GetItemCenter(objectBounds)

                        MsgBox ("Center x:" & objectCenter(0) & ", y:" & objectCenter(1))
        End If
    End If
End Sub

Rem The following lines define the function
Function GetItemCenter(sourceBounds As Variant) As Variant
    Dim left As Single
    Dim top As Single
    Dim right As Single
    Dim bottom As Single
```

Expression	Value	Type	Context
⊞ appRef		Application/Application	Form1.Command1_Click
⊟ objectCenter		Variant/Variant(0 to 1)	Form1.Command1_Click
objectCenter(0)	453.2222	Variant/Single	Form1.Command1_Click
objectCenter(1)	555.0371	Variant/Single	Form1.Command1_Click

About error handling

Imagine that you’ve written a script that formats the current text selection. What should the script do if the current selection turns out not to be text at all, but a path item? “Error handling” is code you add to your script to respond to conditions other than those you expect it to encounter.

If you have complete control over the situations in which your script will run, there's no need for you to worry about error handling. If not, however, you'll have to add some error handling capabilities to your script. The following examples show how to how you can stop a script from executing when a specific file cannot be found.

AppleScript

```
--Store a reference to the fifth path item of the document in a variable
--If the object does not exist in the current document, display a message
tell application "Adobe Illustrator 10"
  activate
  try
    set itemCount to count of path items in current document
    set fifthItem to path item 5 of current document

  on error
    display dialog "Couldn't locate 5th path object - Only " ¬
      & itemCount & " objects."
  end try
end tell
```

Visual Basic

```
Private Sub Command1_Click()
  ' Store a reference to the fifth path item of the document in a
  ' variable. If the object does not exist in the current document,
  ' display message.
  Dim appRef As New Illustrator.Application
  Dim docRef As Illustrator.Document
  Dim aiObject As Illustrator.PathItem
  Dim numObjects As Single
  Dim errorMessage As String

  Set docRef = appRef.ActiveDocument

  numObjects = docRef.PathItems.Count
  On Error GoTo DisplayError
  Set aiObject = docRef.PathItems(5)
Exit Sub

DisplayError:
  errorMessage = "Couldn't locate 5th path object - Only "
  errorMessage = errorMessage & numObjects & " objects."
  MsgBox errorMessage
End Sub
```

3

Scripting Illustrator

At this point, you should have a good idea of what scripting is and how it works. We are ready to begin looking at scripting Adobe Illustrator.

Looking at Illustrator’s objects and commands

While the objects and commands available in Illustrator are all documented in this guide, you can also view them from inside your scripting system.

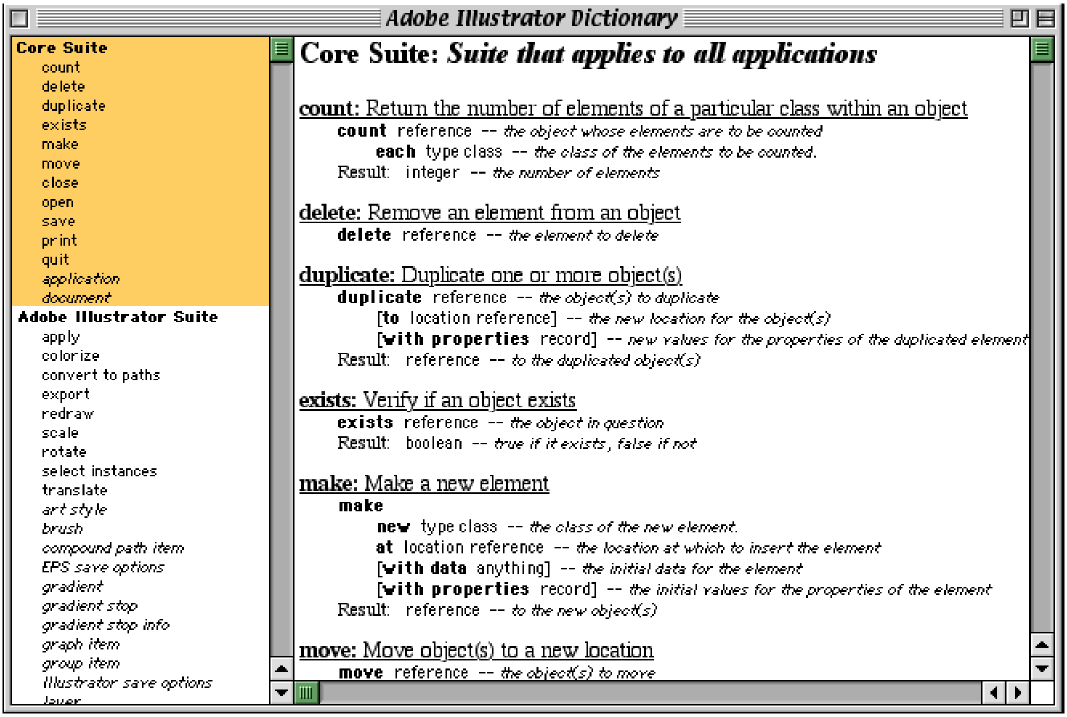
AppleScript

To view Illustrator’s AppleScript dictionary:

1. Start Illustrator and then your script editor. Apple’s Script Editor comes with all Macintosh systems. If you can’t find the Script Editor application, you’ll have to reinstall it from your Mac OS System CD.

2. In Script Editor, choose File > Open Dictionary. Script Editor displays an Open File dialog.

3. Find and then select the Illustrator application and click the OK button. Script Editor displays a list of Illustrator’s objects and commands. You’ll also be able to see the properties and elements associated with each object, as well as the parameters for each command.



Core Suite
count
delete
duplicate
exists
make
move
close
open
save
print
quit
application
document
Adobe Illustrator Suite
apply
colorize
convert to paths
export
redraw
scale
rotate
select instances
translate
art style
brush
compound path item
EPS save options
gradient
gradient stop
gradient stop info
graph item
group item
Illustrator save options
layer

Core Suite: *Suite that applies to all applications*

count: Return the number of elements of a particular class within an object
 count reference -- *the object whose elements are to be counted*
  each type class -- *the class of the elements to be counted.*
 Result: integer -- *the number of elements*

delete: Remove an element from an object
 delete reference -- *the element to delete*

duplicate: Duplicate one or more object(s)
 duplicate reference -- *the object(s) to duplicate*
  [**to** location reference] -- *the new location for the object(s)*
  [**with properties** record] -- *new values for the properties of the duplicated element*
 Result: reference -- *to the duplicated object(s)*

exists: Verify if an object exists
 exists reference -- *the object in question*
 Result: boolean -- *true if it exists, false if not*

make: Make a new element
 make
  new type class -- *the class of the new element.*
  at location reference -- *the location at which to insert the element*
  [**with data** anything] -- *the initial data for the element*
  [**with properties** record] -- *the initial values for the properties of the element*
 Result: reference -- *to the new object(s)*

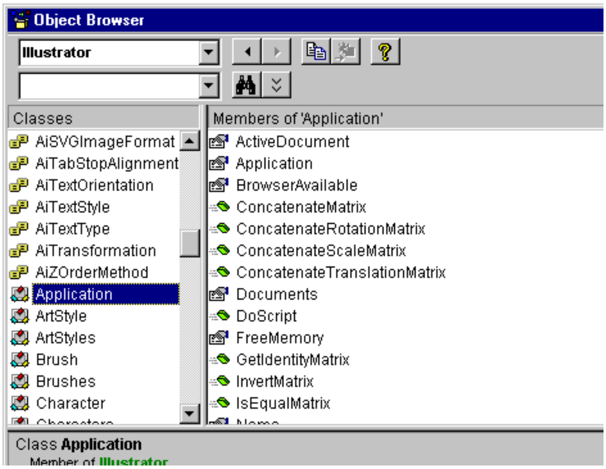
move: Move object(s) to a new location
 move reference -- *the object(s) to move*

Visual Basic

To view Illustrator’s type library:

1. In any Visual Basic project, choose Project > References. Visual Basic displays the References dialog box. If you are using a built-in editor in a VBA application, choose Tools > References.

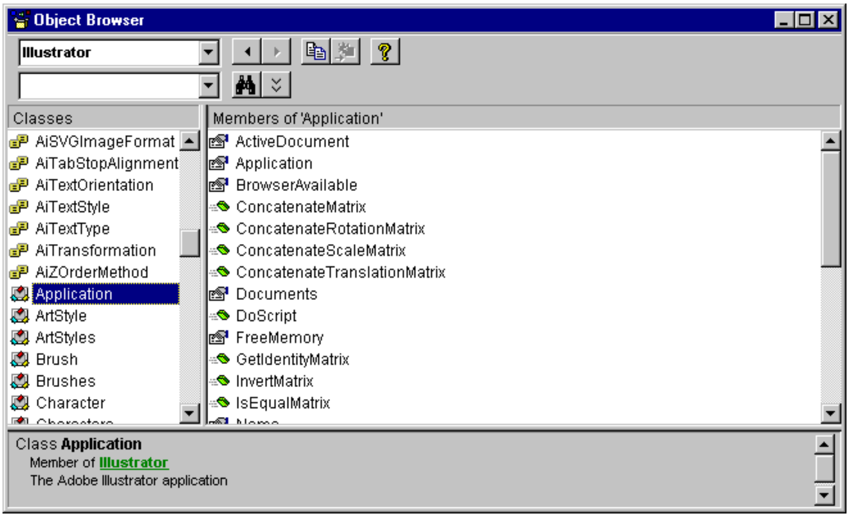
2. Turn on the “Adobe Illustrator 10.0 Type Library” option from the list of available references and click the OK button. If the library does not appear in the list of available references, reinstall Illustrator with your scripting plugins.



3. Choose View > Object Browser. Visual Basic displays the Object Browser window.

4. Choose “Illustrator” from the list of open libraries shown in the top-left pull-down menu. Visual Basic displays the classes and the members of those classes in the Object Browser window.

5. Click an object class or class member. Visual Basic displays more information about the object in the frame at the bottom of the Object Browser window.



Class **Application**
Member of **Illustrator**
The Adobe Illustrator application

The application

In all of your scripts, in either AppleScript or Visual Basic, the first thing you refer to is the application. As we're concerned here with Illustrator 10, that is the application your scripts will target.

Your first Illustrator script

The traditional first project in any programming language is to display the message "Hello World!" In this example, we'll create a new Illustrator document, then add a text art item containing this message.

Creating an AppleScript script

To create an AppleScript script follow these steps:

1. Locate and open Script Editor.
2. Enter the following script. The lines preceded by `--` are comments, and will be ignored by the scripting system. They're included to document the operation of the script. As you look through the script, you'll see how we create, then

address, each object in turn. The AppleScript command `tell` indicates the object that will receive the next message we send.

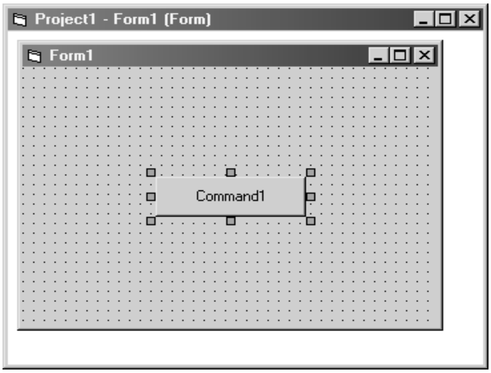
```
-- Send the following commands to Illustrator
tell application "Adobe Illustrator 10"
 -- Create a new document with the string "Hello World"
set docRef to make new document
    set textRef to make new text art item in docRef ¬
       with properties {contents: "Hello World!", position:{200,
200}}
end tell
```

3. Run the script. Illustrator will create a new document, add a text art item at position (200, 200) and set the text to “Hello World!”.

Creating a Visual Basic script

To create a Visual Basic script follow these steps:

1. Start Visual Basic and create a new project. Add the “Adobe Illustrator 10.0 Type Library” reference to the project, as shown earlier. If you are using a built-in editor in a VBA application, skip to step 4.
2. Add a form to the project.
3. Create a new button on the form. Double-click the button to open the Code window.



4. Enter the following code. The lines preceded by ʼ (single-quote) are comments, and will be ignored by the scripting system. They're included to describe the operation of the script. As you look through the script, you'll see how we create, then address each object in turn.

```
'Hello World! Script
Private Sub Command1_Click()
  Dim appRef As New Illustrator.Application
  Dim documentRef As Illustrator.Document
  Dim sampleText As Illustrator.TextArtItem

  'Create a new document and assign it to a variable
  Set documentRef = appRef.Documents.Add

  'Create a new text art item and assign it to a variable
  Set sampleText = documentRef.TextArtItems.Add
  'Set the contents and position of the TextArtItem
  sampleText.Position = Array(200, 200)
  sampleText.Contents = "Hello World!"
 End Sub
```

5. Save the form.
6. Start Illustrator.
7. Return to Visual Basic and run the program. If you created a form, click the button you created earlier.
8. Run the script. Illustrator will create a new document, add a text art item at the specified position, and set the text to "Hello World!".

VBScript

You don't need to use Visual Basic to run scripts on Windows. Another way to script Illustrator is to use a VBA editor (such as the one that is included in Microsoft Word) or to use Windows Scripting Host.

Windows Scripting Host is part of Windows2000. If you don't have Windows2000, you can download Windows Scripting Host from : http://msdn.microsoft.com/scripting/

Both VBA and Windows Scripting Host use VBScript as their scripting language. The syntax for VBScript is very similar to the Visual Basic syntax. The three main differences relating to the scripts shown in this guide are:

- VBScript is not as strongly typed as Visual basic. In Visual Basic you say:

  ```
  Dim aRef as Illustrator.PathItem
  ```

  in VBScript you say:

  ```
  Dim aRef
  ```

  For VBScript simply omit the "as X" part

- VBScript does not support the "as New Illustrator.Application" form.

  In Visual Basic you retrieve the Application object as:

  ```
  Dim appRef as New Illustrator.Application
  ```

  In VBScript you write the following to retrieve the Application object:

  ```
  Dim appRef
  Set appRef = CreateObject("Illustrator.Application")
  ```

- VBScript does not support enumerations. Here's an example of how to close the frontmost document without saving. In Visual Basic:

  ```
  Dim appRef As New Illustrator.Application
  appRef.ActiveDocument.Close (aiDoNotSaveChanges)
  ```

  In VBScript you must use integer values instead of the enumeration. (See “Enumerations reference” at the end of Chapter 5 to find the values that correspond to the various enumerations.) The corresponding VBScript is:

  ```
   Dim appRef
   Set appRef = CreateObject("Illustrator.Application")
   appRef.ActiveDocument.Close ( 2 )
  ```

  Here is an example of Hello World! for VBScript:

  ```
  'Hello World! script
  Dim appRef
  Dim documentRef
  Dim SampleText
  ```

```
'Create a new document and assign it to a variable
Set appRef = CreateObject("Illustrator.Application")
Set documentRef = appRef.Documents.Add


'Create a new text art item and assign it to a variable
Set SampleText = documentRef.TextArtItems.Add
'Set the contents and position of the TextArtItem
SampleText.Position = Array(200, 200)
SampleText.Contents = "Hello World!"
```

To run this script create a text file and copy the script into it. Save the file with a "vbs" extension. If you have Windows Scripting Host installed, you can double-click on the file to execute the script.

Another way to execute the script is to choose File>Scripts>Browse from the Scripts menu in Illustrator and select the file.

Adding features to “Hello World”

Next, let’s create a new script that makes changes to the Illustrator document you created with your first script. Don’t worry if you’ve closed the Illustrator document without saving it—just run your script to create a new one.

Our second script will demonstrate how to:

1. Get the active document.
2. Get the width of the active document.
3. Resize the text art item to match the document’s width.

Adding features to the AppleScript script

To create the enhanced script follow these steps:

1. Choose File > New in Script Editor to create a new script.
2. Enter the following code.

```
tell application "Adobe Illustrator 10"
    -- current document is always the active document
    set docRef to the current document
    set docWidth to the width of docRef

    -- resize the text art item to match the page width
    set width of text art item 1 of docRef to docWidth
   -- alternatively, one can reference the item directly, as follows:
    set width of text art item 1 of current document to docWidth
end tell
```

3. Save the script.
4. Make sure you have the document created by the original “Hello World” script open, then run the script.

Adding features to the Visual Basic script

To create the enhanced script follow these steps:

1. Open the project you created for the “Hello World” script, if it’s not already open.
2. Add a new button to the form.
3. Double-click the button to display the Code window, then enter the following code.

```
Private Sub Command1_Click()
   Dim appRef As New Illustrator.Application
   Dim documentRef As Illustrator.Document
   Dim sampleText As Illustrator.TextArtItem
   Dim documentWidth As Single
   ' Get the active document
   Set documentRef = appRef.ActiveDocument
   documentWidth = documentRef.Width
   Set sampleText = documentRef.TextArtItems(1)

   ' Resize the TextArtItem to match the document width
   sampleText.Width = documentWidth
   sampleText.Left = 0
End Sub
```

4. Save the form.
5. Open the original document you created using the “Hello World” script, then return to Visual Basic and run the script.

6. Click the button you created in Step 2.

Measurement units

Illustrator always uses points as the unit of distance measurement. One inch is equal to 72 points. Even if you change the current document ruler's units of measurement, Illustrator will still use points when communicating with your scripts. Your scripts will need to perform any unit conversions needed to represent your measurements as points. For example, to move the current selection to a position 2 inches to the right of and 6 inches above its current position, you'd use the following script in AppleSccript:

```
tell application "Adobe Illustrator 10"
(* first, manually select the text art item from the previous exercise or use AppleScript to make the
selection *)
    set selection to text art item 1 of current document
     (* There are 72 points per inch. To translate an item by 2 inches to the right and 6 inches to
       the left, multiply by 72 translate selection delta x (2 * 72) delta y (6 * 72) *)
end tell
```

and this script for Visual Basic:

```
Private Sub Command1_Click()
    Dim appRef As New Illustrator.Application
    Dim documentRef As Illustrator.Document
    Dim selectedObjects As Variant
    Dim objectRef As Variant

    Set documentRef = appRef.ActiveDocument
    selectedObjects = documentRef.Selection

    If TypeName(selectedObjects) = "Variant()" Then
        For Each objectRef In selectedObjects
             There are 72 points per inch, so the following will move the
            'object 2" to the right and 6" up
            objectRef.Translate 144, 226
        Next
    End If
End Sub
```

If your script depends on adding, subtracting, multiplying, or dividing specific measurement values for units other than points, the script will need to convert between the units numerically. For example, to use English measurements such as inch values for coordinates or measurement units, your script will need to multiply all inch values by 72 to convert to points, since there are 72 points in an inch. To use metric measurements such as centimeters, you will need to multiply all centimeter values by 28.346, since there are 28.346 points in a centimeter.

Unit conversion to points

This table displays the conversion formulae for various units of measurement:

Unit	Conversion formula
centimeters	28.346 points = 1 centimeter
inches	72 points = 1 inch
millimeters	2.834645 points = 1 millimeter
picas	12 points = 1 pica
Qs	0.709 point = 1 Q (1 Q equals 0.23 millimeter)

Coordinates

Illustrator uses simple two-dimensional geometry to record the position of objects in a document. The coordinates used in Illustrator are the same as the “traditional” geometric coordinate system you learned about in school. The horizontal component of a coordinate pair (or “point”) is referred to as “x” and the vertical position is denoted by “y”. You can see these coordinates in the Info palette when you select or create an object in Illustrator.

Illustrator scripting uses a special class called `fixed point` to receive and return coordinate data. The fixed point is represented as a list of two items in AppleScript and as a variant array of two elements in Visual Basic. In both cases, the first item is the horizontal or “x” coordinate, while the second item is the vertical or “y” coordinate. The `position` (`Position` in Visual Basic) of objects on a document are described with a fixed point.

Fixed points

In AppleScript, a fixed point with an x coordinate of 5.0 and a y coordinate of 10.2 is represented as a list that looks like this:

```
{5.0, 10.2}
```

In Visual Basic, a fixed point with an x coordinate of 5.0 and a y coordinate of 10.2 is represented as a variant array that looks like this:

```
Array (5.0, 10.2)
```

Note that if you declare an array to hold the values of a point, you should pass 1 as the dimension, since Visual Basic uses index position 0 for the first item in an array.

```
Dim aPoint(1) As Single
aPoint(0) = 5.0
aPoint(1) = 10.2
```

Zero point

The zero point (0, 0) for coordinate numbering in Illustrator is in the lower left corner of the document. On the horizontal axis, coordinates to the right of the ruler’s zero point are positive numbers, and on the vertical axis, coordinates above the zero point are positive. The `page origin` (`PageOrigin` in Visual Basic) of a document defines the lower left corner of the printable region of the document as a fixed point.

Fixed rectangle

To work with rectangular coordinates where there are a pair of x and y values, Illustrator uses the special class called a `fixed rectangle`. This class is comprised of a list with four items in AppleScript and a variant array with four elements in Visual Basic. The coordinates of a fixed rectangle in order are: left, top, right, bottom.

In AppleScript, a fixed rectangle with a left-top corner of (5.0, 200.0) and a right-bottom corner of (100.0, 20.0) is represented by a list that looks like this:

```
{5.0, 200.0, 100.0, 20.0}
```

In Visual Basic, a fixed rectangle with a left-top corner of (5.0, 200.0) and a right-bottom corner of (100.0, 20.0) is represented by a variant array that looks like this:

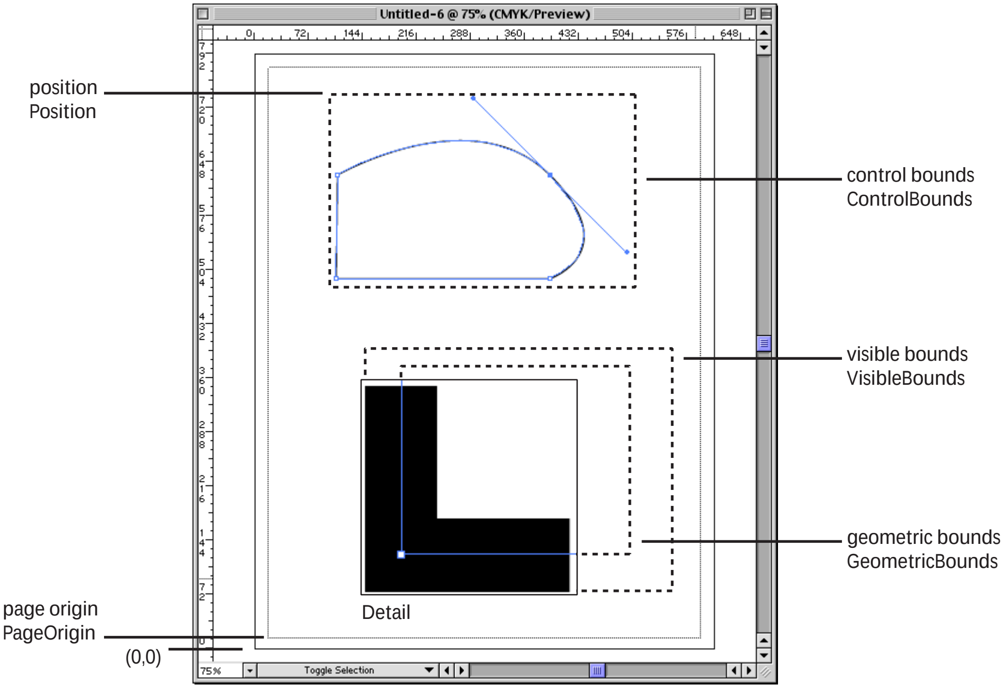
```
Array (5.0, 200.0, 100.0, 20.0)
```

Alternatively, you can define your array and assign values to its elements like this:

```
Dim boundsRect(3) As Single
boundsRect(0) = 5.0
boundsRect(1) = 20.0
boundsRect(2) = 100.0
boundsRect(3) = 200.0
```

Page item positioning and dimensions

Every object, or page item, in a document has a position described by a fixed point and a width and height. The maximum value allowed for the width or height of a page item is 16348 points.



Every page item also has three properties that describe the object's overall extent using fixed rectangles. The `geometric bounds` (`GeometricBounds` in Visual Basic) of a page item are the rectangular dimensions of the object excluding stroke width. The `visible bounds` (`VisibleBounds` in Visual Basic) of a page item are the dimensions of the object including any stroke widths. Finally, the `control bounds` (`ControlBounds` in Visual Basic) define the rectangular dimensions of the object including in- and out- control points.

Object references

The different scripting languages take different approaches to object references.

Object references in AppleScript

In AppleScript, Illustrator returns object references by index position or name. For example, a reference to the first path in layer 2 would be: `path item 1 of layer 2 of document 1`. An object's index position may change when other objects are created or deleted. For example, when a new path item is created on layer 2, it will become `path item 1 of layer 2 of document 1`. This new object displaces our original path item, forcing it to index position 2. Therefore, any references made to `path item 1 of layer 2 of document 1` will refer to the new object. Consider the following sample script.

```
-- Make 2 new objects and try to select both
tell application "Adobe Illustrator 10"
  set newDocument to make new document
  set rectPath to make new rectangle in newDocument
  set starPath to make new star in newDocument
  set selection of newDocument to {rectPath, starPath}
end tell
```

This script will not select both the rectangle and the star. It will select only the star. Try running the script with the Event Log window open to observe the references returned from Illustrator for each of the consecutive `make` commands. You will notice that both commands return the same object reference: `path item 1 of layer 1 of document 1`.

Therefore, the script really says:

```
set selection of document 1 to ¬
  {path item 1 of layer 1 of document 1, path item 1 of layer 1 of
document 1}
```

Instead, you might try referencing the objects by name, such as:

```
tell application "Adobe Illustrator 10"
  set newDocument to make new document
  make new rectangle in newDocument with properties {name:"rectangle"}
  make new star in newDocument with properties {name:"star"}
  set selection of newDocument to ¬
    {path item "rectangle" of newDocument, path item "star" of
newDocument}
end tell
```

This example illustrates the need to uniquely identify objects. It is recommended that you assign names to objects you need to access at a later time, as there's no guarantee you're accessing the objects you expect when accessing them by index.

Object references in Visual Basic

Object references in Visual Basic are dynamic and remain valid until disposed.

To create a star and rectangle, and then select them, you could do:

```
Private Sub Command1_Click()
     'Make 2 new objects and select both
    Dim appRef As New Illustrator.Application
    Dim pathItemsRef As Illustrator.PathItems
    Dim rectPath As Illustrator.PathItem
    Dim starPath As Illustrator.PathItem

    Set pathItemsRef = appRef.ActiveDocument.ActiveLayer.PathItems
    Set rectPath = pathItemsRef.Rectangle(50, 70, 100, 200)
    Set starPath = pathItemsRef.Star(40, 70, 200, 110, 5, False)

    Dim pathSelection(1) As Variant
    Set pathSelection(0) = rectPath
    Set pathSelection(1) = starPath
    appRef.Selection = pathSelection
End Sub
```

Object containment: document vs. layer

In Illustrator, all artwork objects are contained in layers, groups or compound paths that are themselves contained in a document. The index of an object in a layer or group indicates the object's position in the stacking order of the layer or group. This means that `page item 1 of layer 1`, or `Layers(1).PageItems(1)` in Visual Basic, is the frontmost object in a document, while `page item 2 of layer 1`, or `Layers(1).PageItems(2)` in Visual Basic, lies directly behind in the stacking order.

Note that if you delete all the layers in a document, the document is left with the default empty layer called `Layer 1`.

When you refer to an object in your document, you can reference it directly as part of the document or by its complete containment hierarchy, including layers and any group or compound path if valid. When you refer to objects contained by the document directly, you can access the entire flattened contents of the document, without regard to the containment of objects within layers, groups, or compound paths. All objects, whether or not they are contained in groups or compound paths, are returned as individual objects contained by the document. The following scripts demonstrate how to reference an object as part of a document.

In AppleScript:

```
-- Get reference for first page item of document 1
tell application "Adobe Illustrator 10"
  set pageItemRef to page item 1 of document 1
end tell
```

In Visual Basic:

```
Private Sub Command1_Click()
     'Get reference for first page item of document 1
    Dim appRef As New Illustrator.Application
    Dim documentRef As Illustrator.Document
    Dim pageItemRef As Illustrator.PageItem

   Set documentRef = appRef.ActiveDocument
    Set pageItemRef = documentRef.PageItems(1)
End Sub
```

In the scripts below, the variable `pageItemRef` will not necessarily refer to the same object as the above script since this script includes a reference to a layer:

In AppleScript:

```
-- Get reference for first page item of layer 1 of document 1
tell application "Adobe Illustrator 10"
  set pageItemRef to page item 1 of layer 1 of document 1
end tell
```

In Visual Basic:

```
Private Sub Command1_Click()
     'Get reference for first page item of document 1
    Dim appRef As New Illustrator.Application
    Dim documentRef As Illustrator.Document
    Dim pageItemRef As Object
    Set documentRef = appRef.ActiveDocument
    Set pageItemRef = documentRef.Layers(1).PageItems(1)
End Sub
```

Working with selections

There are instances where you will want to write scripts that act upon the currently selected object(s). For example, you might want to have a script that applies formatting to selected text, or changes a selected path’s shape. To do this, you need to know the number of selected objects and the type of each object. The following scripts work with the current selection.

In AppleScript:

```
--selection sorter
tell application "Adobe Illustrator 10"
  set selectedObjects to selection
  try
    if selectedObjects is {} then
      display dialog "No objects are selected"
    else
      if class of selectedObjects = list and ¬
        (count of items in selectedObjects > 1) then
        --selection contains more than one object.
      else
        --a single object is selected. What is it?
        set selectedObjectClass to class of selectedObjects
        if selectedObjectClass = list then ¬
          set selectedObjectClass to class of item 1 of
              selectedObjects
        if selectedObjectClass = text then
          -- text is selected
        else
          -- determine what type of object is selected.
          if selectedObjectClass = path item then
            -- object is a path item
          else if selectedObjectClass = compound path item then
            -- object is a compound path
          else if selectedObjectClass = raster item then
            -- object is a raster image
          else if selectedObjectClass = placed item then
            -- object is a placed image
          else if selectedObjectClass = mesh item then
            -- object is a mesh
          else if selectedObjectClass = text art item then
            -- object is a text art item
          else if selectedObjectClass = plugin item then
            -- object is a plugin art item
          else if selectedObjectClass = path point then
            -- object is a point of a path
          else if selectedObjectClass = group item then
            -- object is a group
          end if
        end if
      end if
    end if
  on error errString
    display dialog errString
  end try
end tell
```

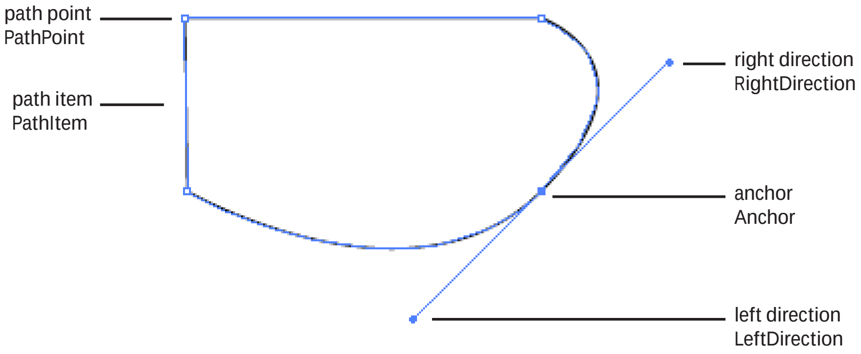
In Visual Basic:

```
'Selection sorter
Private Sub Command1_Click()
Dim appRef As New Illustrator.Application
Dim documentRef As Illustrator.Document
Set documentRef = appRef.ActiveDocument
selectedObjects = documentRef.Selection

If TypeName(selectedObjects) = "String" Then
'text is selected
Else
'Is anything selected?
    If selectedObjects = Empty Then GoTo noSelection

    For Each artObject In selectedObjects
        selectedObjectClass = TypeName(artObject)
        Select Case selectedObjectClass
         'Something is selected, let’s find out what it is.

   Case "PathItem"
            'Object is a path item
            Case "CompoundPathItem"
            'Object is a compound path
            Case "RasterItem"
            'Object is a raster image
            Case "PlacedItem"
            'Object is a placed image
            Case "MeshItem"
            'Object is a mesh
            Case "TextArtItem"
            'Object is a text art item
            Case "PluginItem"
            'Object is a plugin art item
            Case "PathPoint"
            'Object is a point of a path
            Case "GroupItem"
            'Object is a group of objects
        End Select
        Next
    End If
Exit Sub

noSelection:
MsgBox "Select an object and try again."
End Sub
```

Working with paths

Path items include all artwork that is comprised of paths, including rectangles, ellipses, polygons, as well as freeform paths. In Illustrator, every path is comprised of a series of points. Path items, as well as path points, can be created and manipulated from a script. Every aspect of a path point can be accessed from scripting, including the `anchor point` (`AnchorPoint` in Visual Basic) and both control points, known as the `left direction` (`LeftDirection` in Visual Basic) and `right direction` (`RightDirection` in Visual Basic) properties. Refer to the Illustrator Plug-in Software Development Kit Function Reference for more information on working with paths, bezier curves and path points. This document is available in Adobe Acrobat® Portable Document Format (PDF) as part of the Illustrator Software Development Kit (SDK). The

SDK can be downloaded from the Adobe Solutions Network web site (http://partners.adobe.com/asn/developer/sdks.html).



Working with color

Swatches can be created and manipulated from your scripts. You can also create new patterns, gradients and spot colors from scripts. Just as in the user interface, percentages (0.0 through 100.0) are used to specify grayscale, individual CMYK values and spot tints. The range 0.0 to 255.0 is used for the individual RGB color values. Special attention should be paid to working with CMYK and RGB color values. Illustrator 10 supports only a single color model within each document, either CMYK or RGB. When you specify a CMYK color value in a document that uses the RGB color model, Illustrator will convert the values to RGB and return an RGB color, and vice-versa when specifying RGB colors in a CMYK document. However, there is some data loss during this conversion. Refer to the “Applying Color” chapter in the Adobe Illustrator User Guide for more information on working with color.

Working with symbols

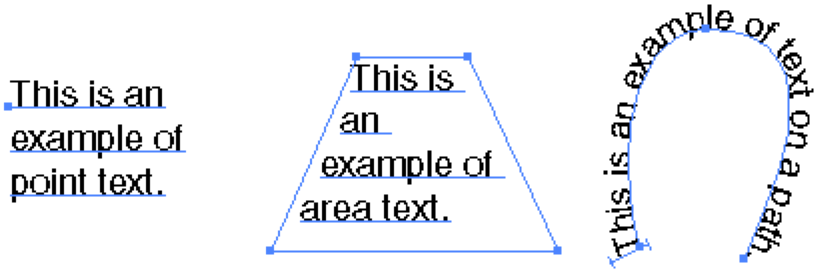
Symbols are art objects that are stored in the Symbols palette and applied to documents. You can create, delete and duplicate symbols. When you create symbols, Illustrator adds them to the Symbols Palette for the target document. When you save the document, Illustrator also saves the symbols you created and used in the document.

Working with symbol items

Symbol items refer to instances of symbols in a document. You can create, delete, and duplicate symbol items. They are “linked” to the symbol definition such that changing the definition of a symbol causes all of the instances of the symbol to change as well. Symbol items are Illustrator art objects and therefore can be treated as other art objects or page items. In other words, you can rotate, resize, select, lock, hide and perform other operations on them.

Working with text art

There are three types of text art items in Adobe Illustrator: point text, path text, and area text. The `kind` property (`Kind` in Visual Basic) of a text art item is used to determine the type of the text art item. While all three kinds of text art have some common characteristics, such as an orientation, each kind of text art also has unique characteristics.


This is an example of point text.
This is an example of area text.
This is an example of text on a path

All three kinds of text art have least one text path associated with them. A `text path` (`TextPath` in Visual Basic) is not the same as a path art item, but defines the text art item's position on the artboard and its orientation (horizontal or vertical). Point text is defined completely by the properties of its text art item and associated text path.

For path and area text, text paths are associated with normal path art items. These path art items can be accessed and manipulated to modify the appearance of the associated text art item. If the text art item is path text, it will have a `text path offset` property (`TextPathOffset` in Visual Basic), which indicates where on the path object the text begins.

All text art objects also have at least one line of text depending on the object's geometry. A `line` of text (`TextLine` in Visual Basic) is all of the characters that fit on a single line in the text art item. Text art will have multiple text lines if it contains hard line breaks or its characters flow to a new line because they do not fit in the width of the text art. Unlike characters, paragraphs and words, lines can only be created by the Illustrator application.

Refer to the “Using Type” chapter in the Adobe Illustrator User Guide for more information on working with text art.

Transformation matrices

Thanks to the matrix class and the many commands that support matrices, you have access to the power of geometric transformation matrices. Transformation matrices are mathematical concepts originating in the field of linear algebra. Geometric manipulations like scaling, rotating and moving can all be described using transformation matrices.

Matrices are the basis of how Illustrator internally performs a user's request to scale, rotate or move an object. Using the command set available to create, concatenate, and apply matrices, you can transform objects in documents with programmatic precision and control. By concatenating a series of rotation, translation and scaling matrices together and applying the resulting matrix, you can perform a large series of geometric transformations in record speed. The following examples demonstrate how to combine multiple modifications in a single matrix and then apply the matrix to every object in a document.

Refer to the Illustrator Plug-in Software Development Kit Function Reference for more information on working with transformation matrices.

Using a matrix in an AppleScript script

```
(* This script gets the identity matrix, combines it with a
    rotation matrix and a scale matrix and then applies the
    resulting matrix to all page items. *)
tell application "Adobe Illustrator 10"
  set transformationmatrix to get identity matrix
  set transformationmatrix to concatenate rotation matrix ¬
    transformationmatrix angle 45.0
  set transformationmatrix to concatenate scale matrix ¬
    transformationmatrix horizontal scale 60
  transform every page item of document 1 using transformationmatrix
end tell
```

Using a matrix in a Visual Basic script

```
'This example shows how to apply 2 transformations to all art in
'a document using the matrix command. This is more efficient than
'performing these transformations one at a time
Private Sub ApplyMatrix_Click()
    Dim appRef As New Illustrator.Application
    Dim moveMatrix As Illustrator.Matrix
    Dim totalMatrix As Illustrator.Matrix
    'Move art half an inch to the right and 1.5 inch up on the page
    Set moveMatrix = appRef.GetTranslationMatrix(72# * 0.5,
                                                    72# * 1.5)
    'Add a rotation to the translation. We rotate 10 degrees counter clockwise
    Set totalMatrix = appRef.ConcatenateRotationMatrix(moveMatrix,
                                                          10)

    'Apply the transformation to all art in the document
    Dim frontDocument As Illustrator.Document
    Dim artItem As Illustrator.PageItem

    Set frontDocument = appRef.ActiveDocument
    For Each artItem In frontDocument.PageItems
        artItem.Transform totalMatrix
    Next
End Sub
```

A matrix object in Illustrator is comprised of 6 properties. In AppleScript, these properties are: `mvalue_a`, `mvalue_b`, `mvalue_c`, `mvalue_d`, `mvalue_tx`, and `mvalue_ty`. In Visual Basic, these properties are: `MValueA`, `MValueB`, `MValueC`, `MValueD`, `MValueTX`, and `MValueTY`. By experimenting with the matrix concatenation commands in both AppleScript and Visual Basic, you can discover how to construct matrices that can applied to perform movement (also called translation), rotation, scaling, skewing and other transformations. See the script examples for the matrix commands for working samples.

Working with variables and datasets

By creating dynamic objects, you can create data-driven graphics. You can define dynamic objects by using `variables`. In scripting, the `variable` class corresponds to these variables. Variables are document-level objects; therefore, you create them in the document object. You can add and delete variables to/from a script by using the `Add` and `Remove`/ `RemoveAll` methods (Visual Basic) or `make` and `delete` (AppleScript).

Datasets

`Datasets` are closely related to variables in that a dataset collects variables and their associated dynamic data into a single object. The `DataSet` (VB) / `dataset` (AS) class is the object that corresponds to an `AI DataSet`. The `dataset` collection in the `document` class provides methods so you can create, update and delete datasets.

Launching and quitting Illustrator from a script

Your scripts can control the activation and quitting of the Illustrator application. Take note of the particular comments below for your scripting system.

Launching and quitting from AppleScript

Use the `activate` and `quit` commands to control Illustrator's run state. The `activate` command will bring the Illustrator application to the front if it is not already the frontmost application. Note that if the clipboard contains data at the time of quitting, Illustrator may show a dialog asking if the data on the clipboard should be saved for other applications. You can avoid this dialog by clearing the clipboard with the statement:

```
set the clipboard to {}
```

Launching and quitting from Visual Basic

In Visual Basic, the `Activate` method will bring the Illustrator application to the front if it is not already frontmost.

Note that if the clipboard contains data at the time of quitting, Illustrator may show a dialog prompting the user to save the data on the clipboard for other applications. You can avoid this dialog by clearing the clipboard with the command:

```
Clipboard.Clear
```

Some objects that cannot be created by a script

Following are some objects that cannot be created from a script:

- Art styles
- Brushes
- Graphs
- Mesh art
- Plugin art
- Spirals

User Interaction Levels

An application will usually present a dialog when it needs to provide feedback or request information. This is called user interaction, and is useful and expected when you are directly interacting with the application. On the other hand, when a script is interacting with an application, an unexpected dialog will bring the execution of the script to a halt until the dialog is dismissed. This can be a serious problem in an automation environment where there is typically no one present to deal with dialogs.

The Illustrator 10 application class contains a user interaction level property. By setting this property a script can control the level of interaction allowed during script execution. All interaction is normally suppressed in an automation environment, and some interaction might be useful where scripts are being used in a more interactive fashion.

AppleScript

There are four possible values for the user interaction level property in AppleScript:

• never interact	No interaction is allowed
• interact with self	Interact only with scripts executed from the scripts menu
• interact with local	Interact with script executed on the local machine (including self)
• interact with all	Interact with all scripts

Using AppleScript, it is possible to send commands from one machine to another. The four possible values allow you to control interaction based on the source of the script commands. For example, if the application is acting as a server for remote users, it would be difficult for a remote user to dismiss a dialog, but it would be no problem for someone sitting in front of the machine. In this case, an interaction level of ‘interact with local’ would prevent dialogs from halting remote scripts but would allow dialogs to be presented for local scripts.

Visual Basic and JavaScript

There are two possible values for the UserInteractionLevel property in Visual Basic:

• aiDontDisplayAlerts	No interaction is allowed
• aiDisplayAlerts	Interaction is allowed

The Illustrator 10 Windows scripting interface doesn't support remote script execution so it doesn't need to provide values based on where a script is being executed.

The Scripts menu

Illustrator 10's interface includes a Scripts menu (File>Scripts) which provides quick and easy access to your scripts. To execute a script from the Scripts menu simply select it in the menu. The script associated with the selected menu item will be then be executed.

Notes

If there is an error encounter during script execution an error dialog will be displayed containing the error message returned by the script.

It is not possible to execute scripts that contain the `do script` (`DoScript` in Visual Basic) command from the Scripts menu. Attempting to do so will result in an error.

Supported scripting languages

The Scripts menu supports AppleScript and JavaScript scripts for Mac OS, and VBScript, JavaScript, and Visual Basic scripts for Windows.

Script files

For a file to be recognized by Illustrator as a valid script file it must have the correct file type (Mac OS) or name extension (Mac OS and Windows).

Script Type	File Type	Extension	Platform(s)
AppleScript	compiled script	.scpt	Mac OS
JavaScript	text	.js	Mac OS & Windows
VBScript	text	.vbs	Windows
Visual Basic	executable	.exe	Windows

Note: For files on Mac OS (9.x and 10.x) it is possible for files to be identified by the classic file type and creator codes, file name extensions, or both. The `.scpt` extension is only required for AppleScript files which do not have file type information, such as those installed with Mac OS X. There is no harm in having a name extension when a file has file type codes.

Installing scripts

To install a script in the Scripts menu, place it in the Scripts folder (`Illustrator 10>Presets>Scripts`). The names of the scripts in the Scripts folder, less any file name extension, will be displayed in the Scripts menu. Any number of scripts may be installed in the Scripts menu.

Note: Scripts added to the Scripts folder while Illustrator is running will not appear in the Scripts menu until the next time you launch Illustrator.

If you have a large collection of scripts you wish to use, you may use sub-folders in the Scripts folder to help organize the scripts in the Scripts menu. Each subfolder will be displayed as a separate submenu containing the scripts in that subfolder.

Note: Because of a limitation in the Mac OS, there is a limit of 4 levels of nested sub-folders inside the Scripts folder for the Mac OS version of Illustrator.

Executing other scripts

A Browse item is provided at the end of the Scripts menu (`File>Scripts>Browse`...) which allows you to execute scripts which are not installed in the Scripts folder. Selecting the Browse menu item will display a file browser dialog which will allow you to select a script file for execution. Only files which are of one of the supported file types, as listed in the Script Files section above will be displayed in the browse dialog. When a script file is selected in the browse dialog, it will be executed the same way as an installed script.

4

AppleScript Reference

This reference section describes the objects and commands in Illustrator’s AppleScript dictionary. All of the objects in the dictionary are presented alphabetically. Following the objects is a command reference which lists all of the commands in the Illustrator dictionary.

Each object listing includes the following:

- Elements that are contained within the object.
- Properties of the object, including value type, read-only status, and an explanation.
- Valid commands.
- Notes to explain special issues.
- Script examples.

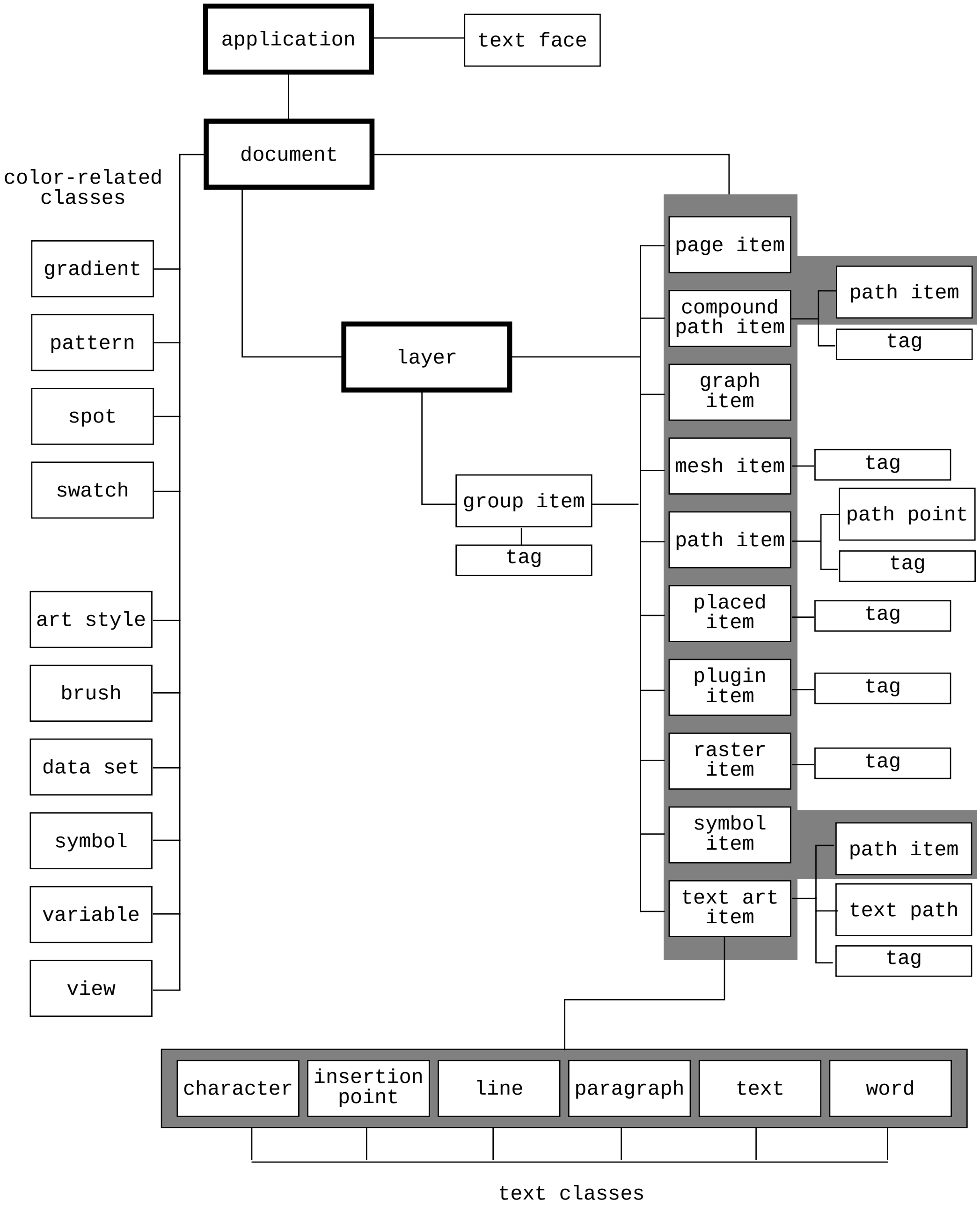
Throughout this guide, when an object inherits properties from another object, we repeat all of the property definitions to maximize usability.

About the script examples

The examples presented here do not necessarily represent the most efficient way to construct an AppleScript script. All example scripts are written in a manner that should be easy to read and understand. The samples contain little error checking, and assume that the proper context exists for the scripts to execute in, i.e., that there is a document open, items selected, etc. The purpose of these examples is to show you how to address and work with Illustrator’s objects. These examples may be combined to make scripts with greater functionality.

Illustrator’s object model

A good understanding of Illustrator’s object model will improve your scripting abilities. This diagram shows the containment hierarchy of the object model, starting with the application object. Note that the `layer`, `group item`, and all text classes can contain additional objects of the same class which can in turn contain additional nested objects.


application
text face
document
color-related classes
gradient
pattern
spot
swatch
art style
brush
data set
symbol
variable
view
layer
group item
tag
page item
compound path item
path item
tag
graph item
mesh item
tag
path item
path point
tag
placed item
tag
plugin item
tag
raster item
tag
symbol item
path item
text art item
text path
tag
character
insertion point
line
paragraph
text
word
text classes

application

The Adobe Illustrator application object, which contains all other Illustrator objects.

Elements

Element:	Refer to by:
document	name, index, before/after, range, test
text face	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the application object's value. Always returns `reference`.
browser available	R/O	boolean	Is a web browser available?
class	R/O	class	The application object's class, which is `application`.
current document		object reference	The active (frontmost) document in Illustrator.
default type	R/O	class	The default type for the application object's value. Always returns `reference`.
free memory	R/O	integer	The amount of unused memory (in bytes) within the Adobe Illustrator partition.
frontmost	R/O	boolean	Is this the frontmost (active) application?
name	R/O	string	The application's name (not related to the filename of the application file). Always returns `"Adobe Illustrator 10"`.
properties		record	All of the application's properties returned in a single record (properties which are individually read-only remain so in this record).
scripting version	R/O	string	The version of the Scripting plugin.

Property:	**R/O**	**Value type:**	**What it is:**
settings		Illustrator preferences	Preferences for the Illustrator application.
selection		list (of object references)	All of the currently selected objects in the active (frontmost) document. See the note for more information.
user interaction level		interact with all/interact with local/interact with self/never interact	The level of interaction with the user that is allowed when handling script commands. Default: interact with all
version	R/O	string	The version of the Adobe Illustrator application.

Valid Commands

- activate
- copy
- cut
- do script
- launch
- paste
- quit
- redraw

Notes

In Illustrator, the application's `selection` can be accessed as well as modified. The selection will contain an empty list, `{}`, when there are no selected objects. To deselect all objects in the current document, simply set the `selection` to an empty list. A reference to an insertion point is returned when there is an active insertion point in the contents of a text art item. Similarly, a reference to a range of text is returned when characters are selected in the contents of a text art item.

Illustrator does not support the `select` command to change the application's current selection. Use `set the selection to` in place of `select`.

```
-- Select the first object in the document
tell application "Adobe Illustrator 10"

  -- Make sure there is a page item to select
  if (document 1 exists) and (page item 1 of document 1 exists) then
    set the selection to page item 1 of document 1
  end if

end tell
```

Example 1.1

You don't need to make objects part of the selection to act on them. The selection is most useful for moving objects to and from the clipboard using the `cut`, `copy` and `paste` commands, which act on the current selection. The clipboard can be used effectively for moving data between applications that do not share common object classes.

Note that Illustrator must be the frontmost application when executing any command that deals with the clipboard. We bring Illustrator to the front in Example 1.1 by using AppleScript's `activate` command.

```
-- Copy the current selection to the clipboard then paste it into a new document
tell application "Adobe Illustrator 10"

  -- If Illustrator is not the frontmost application, activate it.
  if not frontmost then activate

  -- Make sure there is a document to copy from
  if (count of documents) > 0 then

    -- and a selection to work with
    set selectedItems to selection of current document
    if selectedItems is not {} then
      copy
      set colorSpace to color space of current document
      make new document with properties {color space:colorSpace}
      paste
    end if
  end if
end tell
```

art style, art styles

An art style or list of art styles. Each art style defines a set of appearance attributes that you can apply non-destructively to page items. Art styles are contained in documents.

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the art style object's value. Always returns `reference`.
class	R/O	class	The art style object's class, which is `art style`.
container	R/O	object reference	A reference to the document that contains this art style.
default type	R/O	class	The default type for the art style object, which is `reference`.
index	R/O	integer	The index of this art style.
name	R/O	string	The name of this art style.
properties	R/O	record	All of the properties of this object returned as a record.

Valid Commands

- apply
- count
- delete
- exists

Notes

Illustrator’s art styles can be accessed from scripting, but cannot be created.

You cannot delete default art styles.

Example 2.1

This example demonstrates how to apply art styles to newly created groups of objects. Note how this script deals with the fact that applying an art style to a group item does not apply the art style to the page items contained in the group.

```
-- Duplicate and group the selected path items, then apply
-- a user-selected art style to the items in the new group
tell application "Adobe Illustrator 10" to ¬
  set selectedItems to selection of document 1

-- Check for empty selection or a text selection before proceeding
if selectedItems is not {} and class of selectedItems is not text then
  tell application "Adobe Illustrator 10"

    -- Create the new group to contain the duplicated items
    set groupRef to make new group item at document 1

    -- Duplicate the selected items to the new group
    set newItemList to duplicate selectedItems to beginning of groupRef

    -- Get art style names for display in the choice list
    set artStyleNames to name of every art style of document 1
  end tell

  -- Present dialog and let user choose the style to apply
  set styleName to (choose from list artStyleNames ¬
    with prompt "Style for selection?") as string

  if styleName is not "" then
    tell application "Adobe Illustrator 10"
      (*
        The chosen art style is applied to the list of items returned by the
        duplicate command, rather than to the new group itself, because the
        apply command works on individual path items, not groups of items
      *)
      apply art style styleName of current document to newItemList
    end tell
  end if
end if
```

brush, brushes

A brush or list of brushes. Brushes are contained in documents.

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the brush object's value. Always returns `reference`.
class	R/O	class	The brush object's class, which is `brush`.
container	R/O	object reference	A reference to the document that contains this brush.
default type	R/O	class	The default type for the brush object, which is `reference`.
index	R/O	integer	The index of this brush.
name	R/O	string	The name of this brush.
properties	R/O	record	All of the properties of this object returned as a record.

Valid Commands

- apply
- count
- exists

Notes

Additional brushes may be created by the user within Illustrator. Illustrator’s brushes can be accessed from scripting, but cannot be created.

Example 3.1

This example demonstrates how to apply a series of brushes to objects.

```
-- Duplicate the current selection (if it is a single item)
-- and apply each available brush to the new object
tell application "Adobe Illustrator 10" to ¬
  set selectedItems to selection

-- Check for selection of single non-text object
if class of selectedItems is text or (count of items of selectedItems) is
not 1 then
  display dialog "Select a single path item before running this script"
else
  tell application "Adobe Illustrator 10"

    set pathItem to item 1 of selectedItems

    -- Get the item's position and use it to tile the new items below
    set {itemX, itemY} to position of pathItem

    -- Get a list of all brushes and apply each brush to the selectec item
    set brushList to every brush of current document

    -- Get coordinates of upper-left of document
    set docLeft to 0
    set docTop to height of current document

    set brushCount to count of items of brushList
    repeat with i from 1 to brushCount

      set aBrush to item i of brushList
      set itemOffset to i * 20 -- use to tile the duplicated items

      -- Duplicate the selected path item, tiling them from the
      -- upper-left of the document
      set pathRef to duplicate pathItem to beginning of current document ¬
        with properties {position:{docLeft + itemOffset, docTop -
                                                       itemOffset}}

      -- Must clear the document's selection before applying a brush
      -- since the duplicate above seems to add to it each time through
      set selection of current document to {}

      apply aBrush to pathRef
    end repeat
  end tell
end if
```

character, characters

A character or list of characters in the contents of a text art item.

Elements

Element:	Refer to by:
character	index, before/after, range, test
insertion point	index, before/after, range, test
line	index, before/after, range, test
paragraph	index, before/after, range, test
text	index, before/after, range
word	index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
auto kerning		boolean	Should the font's built-in kerning rules be used?
baseline		real	Bottom position of horizontally-oriented text or left position of vertically-oriented text.
baseline shift		real	The baseline offset.
best type	R/O	class	The best type for the character object's value. Always returns `reference`.
character offset	R/O	integer	Offset from beginning (in characters).
class	R/O	class	The character object's class, which is `text`.
clipping	R/O	boolean	Is there a clipping path associated with the text art item containing this character?
container	R/O	object reference	A reference to the text art item that contains this character.
contents		string	The contents of the character as a string.

Property:	R/O	Value type:	What it is:
default type	R/O	class	The default type for the character object, which is `string`. The string value returned is the value contained in the character's `contents` property.
direction		normal/rotated/KumiMoji	The direction of characters in a vertical text block.
evenodd		boolean	Should the even-odd rule be used to determine fills?
fill color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The character's fill color.
fill overprint		boolean	Should art beneath the filled character be overprinted?
filled		boolean	Should the character's path be filled?
font		string	The name of the text face (font).
index	R/O	integer	The index of this character in the complete string.
kerning		real	The character spacing between characters.
leading		real	The leading.
length	R/O	integer	Length (in characters).
note	R/O	string	A note associated with the text.
properties		record	All of the character's properties returned in a single record (properties which are individually read-only remain so in this record).
resolution		real	The resolution of the path in dots per inch.
scaling		fixed point	Horizontal and vertical scaling specified as a point value.
size		real	The font size.
stroke cap		butted/rounded/ projecting	The type of cap on the character's stroke.

Property:	R/O	Value type:	What it is:
stroke color		CMYK color info/gray color info/RGB color info/spot color info/pattern color info/gradient color info	The character's stroke color.
stroke dash offset		real	The default distance to start the stroke dash pattern.
stroke dashes		list (of real numbers)	The lengths for dashes and gaps in dashed lines, starting with the first dash length, followed by the first gap length, and so on. Set to an empty list, {}, for a solid line.
stroke join		mitered/rounded/beveled	The type of joins in the character's stroke.
stroke miter limit		real	The angle at which a stroke join switches from mitered to beveled.
stroke overprint		boolean	Should art beneath the stroked character be overprinted?
stroke width		real	The width of the stroke.
stroked		boolean	Should the character's path be stroked?
text orientation	R/O	horizontal/vertical	Should this text be displayed horizontally? Use the `text path` class to modify this value.
text path	R/O	object reference	A reference to the text path associated with the text art item containing this text.
tracking		real	The uniform spacing amount between characters.

Valid Commands

- count
- delete
- duplicate
- exists
- make

- move

Notes

The text contained within text art items in Illustrator can be accessed using the `character`, `insertion point`, `word`, `line`, `paragraph` and `text` classes. The properties and valid commands for all of these classes are similar, but not identical. For example, while `character` has a `kerning` property, the other text classes do not.

Example 4.1

In the example below, the `selection` property has all of the properties that `character` or any other text class would have.

```
-- Make the currently selected text superscript
tell application "Adobe Illustrator 10"

  -- Make sure one or more characters of text are selected
  set selectedText to selection of current document
  if class of selectedText is text ¬
    or class of selectedText is character then

    -- Adjust the properties of the selected text to superscript it
    set fontSize to size of selectedText
    set fontBaseline to baseline shift of selectedText

    set properties of selectedText to ¬
      {size:fontSize / 2, baseline shift:fontBaseline + (fontSize / 2)}
  end if
end tell
```

Example 4.2

This example demonstrates how to use character properties to create unique effects from a script.

```
(* Distort every character in the first text art item of a document by incrementally modifying the
horizontal scaling of each character to give the effect of stretching words out *)

-- A smaller value for this property means more difference between largest and
-- smallest horizontal scaling of the characters
property pVariability : 1.0
```

```
tell application "Adobe Illustrator 10"

 -- Is there is a document and a text art item to work with
 if (exists text art item 1 of current document) then

  -- Make sure the text art item contains some text
  set textArtItem to first text art item of current document
  if textArtItem is not "" then -- contains some text

   -- Gather info needed to calculate the scale factor
   set characterCount to count of characters in textArtItem
   set factor to (characterCount + 1) / 2

   -- Iterate over each character, changing its horizontal scale
   repeat with i from 1 to characterCount

    set hScaling to (factor - i) / factor
    if hScaling < 0 then set hScaling to -hScaling

    set widthScale to 100 * pVariability - (hScaling * 100)
    set scaling of character i of text art item 1 of document 1 ¬
     to {widthScale, 100.0}

   end repeat
  end if
 end if
end tell
```

CMYK color info

A CMYK color specification, used to specify a CMYK color in conjunction with the `color` property.

Properties

Property:	R/O	Value type:	What it is:
cyan		real	The cyan color value as a value in the range 0.0 - 100.0.
magenta		real	The magenta color value as a value in the range 0.0 - 100.0.
yellow		real	The yellow color value as a value in the range 0.0 - 100.0.
black		real	The black color value as a value in the range 0.0 - 100.0.

Valid Commands

none

Notes

This class is used to define a record which contains the color component values of a CMYK color. It is used for specifying and retrieving color information from an Illustrator document or from page items in a document.

If the `color space` of a document is `RGB` and you specify the color value for a page item in that document using `CMYK color info`, Illustrator will translate the CMYK color specification into a RGB color specification. The same thing happens if the document's `color space` is `CMYK` and you specify colors using `RGB color info`. Since this translation can cause information loss you should specify colors using the color info class that matches the document's `color space`.

Example 5.1

This example demonstrates how to create a new swatch in a document and assign a CMYK color to the swatch.

```
-- Make a new CYMK color swatch in the current document
tell application "Adobe Illustrator 10"
  if not (exists swatch "Yellow" in current document) then

    set swatchColor to {cyan:50.0, magenta:20.0, yellow:20.0, black:0.0}
    make new swatch at beginning of current document with properties ¬
      {name:"Yellow", color:swatchColor}

  end if
end tell
```

compound path item, compound path items

A compound path or list of compound paths. Compound paths are objects composed of multiple intersecting paths, resulting in transparent interior spaces where the original paths overlapped.

Elements

Element:	Refer to by:
path item	name, index, before/after, range, test
tag	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the compound path item object's value. Always returns `reference`.
blend mode		normal/multiply/screen/ overlay/soft light/hard light/color dodge/color burn/darken/lighten/ difference/exclusion/hue/ saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
class	R/O	class	The compound path item object's class, which is always `compound path item`.
container	R/O	object reference	A reference to the layer that contains this compound path item.
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the compound path item object, which is `reference`.
editable		boolean	Is this compound path editable?
geometric bounds	R/O	fixed rectangle	The object’s bounds excluding the stroke width.
graph item		graph item object	The graph item contained in this compound path.

Property:	R/O	Value type:	What it is:
group item		group item object	The group items contained in this compound path.
height		real	The height of the compound path item excluding stroke width, calculated from the geometric bounds.
hidden		boolean	Is this compound path item hidden?
index	R/O	integer	The position of this compound path item in the current stacking order of the containing layer, where compound path item 1 is always the topmost compound path item.
inheritance	R/O	class	The class that is the parent for this class. Always returns `page item`.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this compound path item belongs.
locked		boolean	Is this compound path item locked?
mesh item		mesh item object	The mesh item contained in this compound path item.
name		string	The name of this compound path item.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
path item		path item object	The path item contained in this compound path.
placed item		placed item object	The placed item contained in this compound path.
plugin item		plugin item object	The plugin item contained in this compound path.
position		fixed point	The position of the top left corner of the compound path item excluding stroke width.

Property:	R/O	Value type:	What it is:
properties		record	All of the compound path item's properties returned in a single record (properties which are individually read-only remain so in this record).
raster item		raster item object	The raster item contained in this compound path.
selected		boolean	Is this compound path item selected?
slices		boolean	Preserve slices?
symbol item		symbol item object	The symbol item contained in this compound path.
text art item		text art item object	The text art item contained in this compound path.
URL		string	The value of the Adobe URL tag assigned to this compound path item.
visibility variable		anything	The visibility variable to which this compound path is bound.
visible bounds	R/O	fixed rectangle	The object's visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the compound path item excluding stroke width, calculated from the geometric bounds.

Valid Commands

- count
- delete
- duplicate
- exists
- move
- translate
- rotate
- scale
- transform

Notes

Paths contained within a compound path or group in a document will be returned as individual paths when a script asks for the paths contained in the document. However, paths contained in a compound path or group will not be returned when a script asks for the paths in a layer which contains the compound path or group.

All paths inside of a compound path share property values. Therefore, if you set the value of a property of any one of the paths in the compound path, all other path's matching property will be updated to the new value.

Example 6.1

This example demonstrates how to get a list containing all of the paths in a document that are not part of a compound path or a group by iterating through each layer in the document.

```
-- A handler which return paths in a document that are not part of a
-- compound path or group
to GetPathItemsOfDocument(docRef)
  tell application "Adobe Illustrator 10"
    set pathItemList to {}
    set layerCount to count of layers of docRef
    repeat with i from 1 to layerCount
      set pathItemList to pathItemList & path items of layer i of docRef
    end repeat
  end tell

  return pathItemList
end GetPathItemsOfDocument

-- Call handler
tell application "Adobe Illustrator 10" to set docRef to current document
set allPathItems to GetPathItemsOfDocument(docRef)
```

Example 6.2

Compound paths contain path items that can be accessed from a script. This example shows how to duplicate the paths in a compound path and then group them in a new group item.

```
-- Create a group containing a set of paths duplicated from the
-- first compound path item of the document
tell application "Adobe Illustrator 10"

  set pathItemList to path every item of ¬
    compound path item 1 of current document

  set groupRef to make new group item at beginning of ¬
    layer 1 of document 1

  duplicate pathItemList to beginning of groupRef

end tell
```

dataset, datasets

An object, or list of objects, that contains variables and their dynamic data.

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the dataset's value. Always returns `reference`.
class	R/O	class	The dataset object's class, which is `dataset`.
container	R/O	object reference	A reference to the art object that contains this dataset.
default type	R/O	class	The default type for the dataset. Always returns `reference`.
index	R/O	integer	The index of this dataset in the art object.
name		string	The name of the dataset.
properties		record	all of the dataset's properties returned in a single record

Valid Commands

- count
- delete
- display
- exists
- make
- update

document, documents

An Illustrator document or a list of documents. Documents are contained in the `application` object.

Elements

Element:	Refer to by:
art style	name, index, before/after, range, test
brush	name, index, before/after, range, test
compound path item	name, index, before/after, range, test
dataset	name, index, before/after, range, test
gradient	name, index, before/after, range, test
graph item	name, index, before/after, range, test
group item	name, index, before/after, range, test
layer	name, index, before/after, range, test
mesh item	name, index, before/after, range, test
page item	name, index, before/after, range, test
path item	name, index, before/after, range, test
pattern	name, index, before/after, range, test
placed item	name, index, before/after, range, test
plugin item	name, index, before/after, range, test
raster item	name, index, before/after, range, test
spot	name, index, before/after, range, test
swatch	name, index, before/after, range, test
symbol	name, index, before/after, range, test
symbol item	name, index, before/after, range, test
tag	name, index, before/after, range, test
text art item	name, index, before/after, range, test
variable	name, index, before/after, range, test
view	index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the document object's value. Always returns `reference`.

Property:	R/O	Value type:	What it is:
class	R/O	class	The document object's class, which is `document`.
color space	R/O	RGB/CMYK	The color specification system to use for this document’s color space.
crop marks		fixed rectangle	The boundary of the document's cropping box for output.
crop style		standard/japanese	The style of the document's cropping box, either standard or japanese.
current dataset		object reference	The currently active dataset.
current layer		object reference	The active layer in the document.
current view	R/O	object reference	The document's current view.
default fill color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The color to fill new paths if default filled is `true`.
default fill overprint		boolean	Will art beneath a filled object be overprinted by default?
default filled		boolean	Should a new path be filled?
default stroke cap		butted/rounded/ projecting	Default type of line capping for paths created.
default stroke color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The stroke color for new paths if default stroked is `true`.
default stroke dash offset		real	The default distance into the dash pattern at which the pattern should be started for new paths.
default stroke dashes		list (of real numbers)	Default lengths for dashes and gaps in dashed lines, starting with the first dash length, followed by the first gap length, and so on. Set to an empty list, {}, for a solid line.
default stroke join		mitered/rounded/beveled	Default type of joints in new paths.

Property:	**R/O**	**Value type:**	**What it is:**
default stroke miter limit		real	Specifies when a join is mitered (pointed) or beveled (squared-off) by default, when default stroke join is set to mitered.
default stroke overprint		boolean	Will art beneath a stroked object be overprinted by default?
default stroke width		real	Default width of stroke for new paths.
default stroked		boolean	Should a new path be stroked?
default type	R/O	class	The default type for the document object's value. Always returns `reference`.
file path	R/O	file specification	The file associated with the document, which includes the complete path to the file.
geometric bounds	R/O	fixed rectangle	The object's bounds excluding the stroke width.
height	R/O	real	The height of the document, calculated from the geometric bounds.
index	R/O	integer	The position of this document in the stacking order of all open documents. The current (frontmost) document is always document 1.
modified		boolean	Has the document been modified since the last save?
name	R/O	string	The document's name (not the complete file path to the document).
output resolution	R/O	real	The current output resolution for the document in dots per inch (dpi).
page origin		fixed point	The zero-point of the page in the document without margins, relative to the overall height and width.
print tiles	R/O	boolean	Does this document print as tiled output?

Property:	R/O	Value type:	What it is:
properties		record	All of the document's properties returned in a single record (properties which are individually read-only remain so in this record).
ruler origin		fixed point	The zero-point of the rulers in the document relative to the bottom left of the document.
ruler units	R/O	unknown/inches/ centimeters/points/picas/ millimeters/qs	The default units for the rulers in the document.
selection		list (of object references)	The list of references to the objects in this document's current selection.
show placed images	R/O	boolean	Are placed images displayed in the document?
split long paths	R/O	boolean	Are long paths to be split when printing?
stationery	R/O	boolean	Is the document saved as a stationery file?
tile full pages	R/O	boolean	Should full pages be tiled when printing this document?
use default screen	R/O	boolean	Should the printer's default screen be used when printing this document?
visible bounds	R/O	fixed rectangle	The object’s visible bounds, including stroke width of any objects in the illustration.
width	R/O	real	The width of this document, calculated from the geometric bounds.

Valid Commands

- close
- count
- exists
- export
- make
- open

- print
- save

Notes

Illustrator’s default document settings—those properties starting with the word “default”—are global settings that affect the current document. Be sure to modify these default properties only when a document is open. Note that if you set default properties to desired values before creating new objects, you can streamline your scripts, eliminating the need to specify properties such as `fill color` and `stroked` that have analogous default properties.

A document’s `color space,` `height`, and `width` can only be set when the document is created. Once a document is created, these properties cannot be changed.

The frontmost document can be referred to as either `current document` or `document 1`.

Example 7.1

The following example shows how to make sure a document is open before setting any of the application’s default properties.

```
-- Check to make sure a document is open in Illustrator
-- before setting the application's default stroke width to 8 points
tell application "Adobe Illustrator 10"
  if not (document 1 exists) then
    make new document with properties {color space: CMYK, width: 100.0, 
height: 50.0}
  end if

  set the default stroke width of document 1 to 8.0
end tell
```

Example 7.2

The following example shows how to make new documents with custom defaults.

```
-- Present a dialog to the user to choose a new document type
-- from, then create a new document with its properties set accordingly
-- Note: You can only change writable document defaults when a document is open

-- Prompt user for new document properties from list of choices
set listChoice to (choose from list ¬
  {"CMYK, filled, 2 pt stroke with dashes", ¬
    "RGB, filled, no stroke", ¬
    "RGB, no fill, 1 pt stroke"} ¬
    with prompt "What kind of new document to create?")

if listChoice is not false then

  -- Gather the values needed to set the document's properties
  set documentType to item 1 of listChoice

  set fillPaths to (documentType contains "filled")
  set strokePaths to (documentType contains "pt stroke")

  set strokeWidth to 0.0
  if documentType contains "1 pt" then
    set strokeWidth to 1.0
  else if documentType contains "2 pt" then
    set strokeWidth to 2.0
  end if

  if documentType contains "with dashes" then
    set strokeDashes to {2.5, 1, 2.5, 1, 2.5, 1}
  else
    set strokeDashes to {}
  end if

  tell application "Adobe Illustrator 10"

    -- Create a document with the requested color space
    if documentType starts with "CMYK" then
      set docRef to make new document with properties {color space:CMYK}
    else
      set docRef to make new document with properties {color space:RGB}
    end if

    -- Set the document's properties with one command
    set properties of docRef to ¬
      {default filled:fillPaths ¬
        , default stroked:strokePaths ¬
        , default stroke width:strokeWidth ¬
        , default stroke dashes:strokeDashes}
  end tell
end if
```

Example 7.3

This example demonstrates how to use document properties in other applications. In this case, the script uses the `file path` property of the active document to open the folder containing the Illustrator document in the Finder.

```
-- Reveal and select a document’s file icon in the Finder
tell application "Adobe Illustrator 10"
  set filePath to file path of current document
end tell

tell application "Finder"
  activate
  reveal filePath
end tell
```

ellipse

A class used to create an elliptical path in an Illustrator document. This class can only be used to create new path item objects.

Properties

Property:	R/O	Value type:	What it is:
bounds	W/O	fixed rectangle	The bounds of the ellipse.
inscribed	W/O	boolean	Is the ellipse path inscribed (drawn inside the rectangle described by the bounds)?
reversed	W/O	boolean	Is the ellipse path reversed?

Valid Commands

- make

Notes

Illustrator’s `ellipse` object is available exclusively for use with the `make` command. The class of the object created will be a path item. Therefore, the properties for an ellipse are write-once (W/O) in the sense that they can be used only to specify the creation of a new path item. This special class allows you to quickly create complex path items using the straightforward properties provided. If you do not specify any properties when making a new ellipse, default values will be used. Properties usually associated with path items, such as `fill color`, can also be specified at the time of creation.

Example 8.1

This examples demonstrates how to create a series of ellipses based on the geometry of a single selected object.

```
-- Embellish a single selected path item by adding a bright red
-- ellipse to each point on the path

property pEllipseScale : 0.1

tell application "Adobe Illustrator 10"
  activate
  set selectedItems to selection

  -- A bit of sanity checking
  if (count of selectedItems) is not 1 ¬
    or class of selectedItems is text ¬
    or class of item 1 of selectedItems is not path item then

    display dialog "Please select a single path item before running this
script"
  else
    set pathItem to item 1 of selectedItems

    -- Set ellipse color based on document color space
    set docColorSpace to color space of current document
    if docColorSpace is RGB then
      set ellipseColor to {red:255.0, green:0.0, blue:0.0}
    else
      set ellipseColor to {cyan:0.0, magenta:100.0, yellow:100.0,
black:0.0}
    end if

    -- Gather needed info about the path item to be embellished
    set itemWidth to width of pathItem
    set itemHeight to height of pathItem
    set pathPointList to anchor of every path point of pathItem

    -- Calculate the position and bounds for each ellipse
    repeat with aPoint in pathPointList
      set {x, y} to aPoint

      set rectLeft to x - (itemWidth * pEllipseScale)
      set rectRight to x + (itemWidth * pEllipseScale)
      set rectTop to y + (itemHeight * pEllipseScale)
      set rectBottom to y - (itemHeight * pEllipseScale)

      set ellipseRect to {rectLeft, rectTop, rectRight, rectBottom}

      make new ellipse at beginning of current document ¬
        with properties {bounds:ellipseRect, inscribed:true ¬
        , reversed:false, stroke color:ellipseColor, fill
color:ellipseColor} ¬

    end repeat
  end if
end tell
```

EPS save options

Options which may be supplied when saving a document as an Illustrator EPS file. See the `save` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
CMYK PostScript		boolean	Use CMYK PostScript? default: `false`
compatibility		Illustrator 3/Illustrator 4/ Illustrator 5/Illustrator 6/ Illustrator 7/Illustrator 8/ Illustrator 9/Illustrator 10	Specifies the version of the Illustrator file format to create. default: `Illustrator 10`
embed all fonts		boolean	Include fonts used in the EPS file? default: `false`
embed linked files		boolean	Are linked image files to be included in the saved document? default: `false`
flatten output		preserve paths/preserve appearance	How should transparency be flattened for file formats before Illustrator 10. default: `preserve appearance`
included document thumbnails		boolean	Include thumbnail image of the EPS artwork? default: `true`
japanese file format		boolean	Save the file using Japanese version of file format? Valid only for Illustrator 3 - 5 compatibility. default: `false`
PostScript		level 1/level 2/level 3	Specifies the PostScript level to use when saving the file. default: `level 3`
preview		none/BW Macintosh/ color Macintosh/BW TIFF/color TIFF/ transparent color TIFF	Specifies the format for the EPS preview image. default: `color Macintosh`

Notes

Postscipt level 1 is only valid for compatibility with Illustrator 8 or earlier.

This class is used to define a record containing properties that specify options when saving a document as an EPS file. `EPS save options` can only be used in conjunction with the `save` command. It is not possible to get or create an `EPS save options` object.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 9.1

This handler processes a folder of Illustrator files, saving each as an EPS file with level 2 PostScript and Illustrator 10 compatibility. The files are save to the folder specified in the `destinationFolder` parameter. Note that the `class` property is specified in the record to ensure that Illustrator can determine the save option class.

```
-- fileList is a list of aliases to Illustrator files
-- destinationFolder is an alias to a folder where the EPS files are to be saved
set sourceFolder to choose folder with prompt "Source folder?"
tell application "Finder" to
  set fileList to every file of folder sourceFolder as alias list
set destinationFolder to choose folder with prompt "Destination folder?"

set destinationPath to destinationFolder as string

repeat with aFile in fileList

  tell application "Finder" to set fileName to name of aFile

  set newFilePath to destinationPath & fileName & ".EPS"
  tell application "Adobe Illustrator 10"
    open aFile

    save current document in file newFilePath as eps ¬
      with options {class:EPS save options ¬
      , compatibility:Illustrator 10 ¬
      , preview:color Macintosh ¬
      , embed linked files:true ¬
      , include document thumbnails:true ¬
      , embed all fonts:true ¬
      , japanese file format:false ¬
      , CMYK PostScript:true ¬
      , PostScript:level 2}
```

```
   close current document saving no
  end tell
end repeat
```

fixed point

A pair of values that defines the coordinates for a point. Stored as a list of two real numbers, where the first item is the horizontal (x) coordinate of the point and the second item is the vertical (y) coordinate of the point. For example, `{10.0, 5.0}` would specify a point where the x coordinate is 10.0 and the y coordinate is 5.0.

Notes

The point is used to specify the coordinates for many properties of objects in Illustrator. All distance and measurement values in Illustrator use the points unit of measure.

It is not possible to get or create a fixed point object.

Example 10.1

The values in fixed point can be used in a number of way in a script.

```
tell application "Adobe Illustrator 10"
  if (count of documents)>0 then
    -- Get the position of a page item
    set itemPos to position of page item 1 of document 1
    --> {100.0, 200.0}

    -- Assigns the two values in a fixed point to two variables
    set {x, y} to itemPos
    --> x = 100.0, y = 200.0

    -- or assign to two variables directly
    set {x, y} to position of page item 1 of document 1
    --> x = 100.0, y = 200.0

    -- Change the x value in a fixed point
    set item 1 of itemPos to (item 1 of itemPos) + 100.0
    --> {200.0, 200.0}

    -- Change position of a page item
    set position of page item 1 of document 1 to itemPos

    -- or change it using the individual variables
    set position of page item 1 of document 1 to {x + 100.0, y}

  end if
end tell
```

fixed rectangle

Four coordinates that defines the rectangular geometry of an object. Stored as a list of four real numbers, where the first item is the leftmost horizontal coordinate of the rectangle, the second item is the top vertical coordinate of the rectangle, the third item is the rightmost horizontal coordinate, and the fourth item is the bottom vertical coordinate of the rectangle.

Notes

The fixed rectangle is used to specify the geometry for a number of properties for objects in Illustrator. All distance and measurement values in Illustrator use the points unit. It is not possible to get or create fixed rectangle object.

Remember that in the Illustrator coordinate system, vertical coordinates increase from bottom to top, which is the opposite of screen coordinates. This mean that the top coordinate value in a fixed rectangle will be larger than the bottom coordinate value.

Example 11.1

The values in a fixed rectangle can be used in a number of way in a script.

```
tell application "Adobe Illustrator 10"
   -- Get the bounds of a page item
   set itemBounds to geometric bounds of page item 1 of document 1
   --> {100.0, 400.0, 300.0, 200.0}

   -- Assigns the four values in a rectangle point to four variables
   set {l, t, r, b} to itemBounds
   --> l = 100.0, t = 400.0, r = 300.0, b = 200.0

   -- or assign to four variables directly
   set {l, t, r, b} to geometric bounds of page item 1 of document 1
   --> l = 100.0, t = 400.0, r = 300.0, b = 200.0

   -- Calculate center of page item from its bounds
   set xCenter to ((item 1 of itemBounds) + (item 3 of itemBounds)) / 2
   set yCenter to ((item 2 of itemBounds) + (item 4 of itemBounds)) / 2
   --> xCenter = 200.0, yCenter = 300.0

   -- or calculate the center using the individual coordinate variables
   set xCenter to (l + r) / 2
   set yCenter to (t + b) / 2
```

```
    -->  xCenter = 200.0, yCenter = 300.0

    -- Change the left value in a fixed rectangle
    set item 1 of itemBounds to (item 1 of itemBounds) + 100.0
    -->  {200.0, 400.0, 300.0, 200.0}
end tell
```

Flash export options

You can supply a number of options when exporting a document as Flash (.SWF). See the `export` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
artboard clipping		boolean	Should the resulting image be clipped to the artboard? default: `false`
curve quality		integer	How much curve information should be preserved (0-10, default: 7)
export style		Flash file/layers to files/ layers to Flash frames	How the Flash file should be created (default: Flash file)
frame rate		real	When exporting layers to Flash frames (0.01-120, default: 12)
generate HTML		boolean	export as HTML file (default: true)
JPEG method		optimized/standard	What method to use (default: standard)
JPEG quality		integer	Level of compression (0-10, default: 3)
looping		boolean	Should the Flash file be set to loop when run (default: false)
read only		boolean	Export as read only file (default: false)
replacing		yes/no/ask	If a file with the same name already exists, should it be replaced? Default: ask
resolution		real	Pixels per inch (72-2400, default: 72)

Notes

This class is used to define a record containing properties that specify options when exporting a document as a Flash (.SWF) file. `Flash export options` can only be supplied in conjunction with the `export` command. It is not possible to get or create a `Flash export options` object.

It is not necessary to specify values for all properties. Default values will be provided for all properties not specified.

GIF export options

Options which may be supplied when exporting a document as a GIF file. See the `export` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
antialiasing		boolean	Should the resulting image be anti-aliased? default: `true`
artboard clipping		boolean	Should the resulting image be clipped to the artboard? default: `false`
color count		integer	The number of colors in the exported color table. range: `2` - `256`. default: `128`
color dither		none/diffusion/pattern dither/noise	The method used to dither colors. default: `diffusion`
color reduction		selective/adaptive/ perceptual/web	The method used to reduce the number of colors in the document. default: `selective`
dither percent		integer	How much should the colors be dithered? range: `0` - `100`. default: `88`
horizontal scaling		real	The horizontal scaling factor to apply to the resulting image. range: `0.0` - `100.0`. default: `100.0`
information loss		integer	The level of information loss during compression (as a percentage). range: `0` - `100`. default: `0`
interlaced		boolean	Should the resulting image be interlaced? default: `false`
matte		boolean	Should the artboard be matted with a color? default: `true`

Property:	R/O	Value type:	What it is:
matte color		RGB color info	The color to use when matting the artboard. default: `{255.0, 255.0, 255.0}`
saving as HTML		boolean	Should the resulting image be saved with an accompanying HTML file? default: `false`
transparency		boolean	Should the resulting image use transparency? default: `true`
vertical scaling		real	The vertical scaling factor to apply to the resulting image. range: `0.0` - `100.0`
web snap		integer	How much should the color table be changed to match the web pallet? range: `0` - `100`, where 100 is the maximum change. default: `0`

Notes

This class is used to define a record containing properties that specify options when exporting a document as a GIF file. `GIF export options` can only be supplied in conjunction with the `export` command. It is not possible to get or create an `GIF export options` object.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 12.1

This handler processes all Illustrator files in a specific folder, exporting each as a scaled GIF image. Note that the `class` property is specified in the record to ensure that Illustrator can determine the export option class.

```
-- fileList is assumed to be a list of aliases to Illustrator files
-- destinationFolder is assumed to be an alias to a folder where the
-- GIF files are to be exported
on ExportFilesAsGIF(fileList, destinationFolder)

 set destinationPath to destinationFolder as string

 repeat with aFile in fileList

  tell application "Finder" to ¬
   set fileName to name of aFile

  set newFilePath to destinationPath & fileName & ".gif"

  tell application "Adobe Illustrator 10"
   open aFile

   export current document to file newFilePath as GIF with options ¬
    {class:GIF export options ¬
     , color count:256 ¬
     , color reduction:adaptive ¬
     , information loss:0 ¬
     , color dither:none ¬
     , dither percent:100 ¬
     , web snap:0 ¬
     , transparency:false ¬
     , interlaced:false ¬
     , matte:true ¬
     , matte color:{red:128, green:0, blue:60} ¬
     , horizontal scaling:50.0 ¬
     , vertical scaling:50.0 ¬
     , antialiasing:true ¬
     , artboard clipping:false ¬
     , saving as HTML:false}

   close current document saving no

  end tell
 end repeat
end ExportFilesAsGIF

-- Call handler
set sourceFolder to choose folder with prompt "Source folder?"
tell application "Finder" to ¬
  set fileList to every file of folder sourceFolder as alias list
set destinationFolder to choose folder with prompt "Destination folder?"
ExportFilesasGIF(fileList, destinationFolder)
```

gradient, gradients

A gradient definition or gradient definitions. Gradients are contained in documents.

Elements

Element:	Refer to by:
gradient stop	index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the gradient object's value. Always returns `reference`.
class	R/O	class	The gradient object's class, which is `gradient`.
container	R/O	object reference	A reference to the document that contains this gradient.
default type	R/O	class	The default type for the gradient object's value. Always returns `reference`.
entire gradient		list (of gradient stop info)	All of the gradient stops in the gradient.
gradient type		linear/radial	The type of the gradient.
index	R/O	integer	The position of this gradient in the application.
name		string	The gradient’s name.
properties		record	All of the gradient’s properties returned in a single record (properties which are individually read-only remain so in this record).

Valid Commands

- count
- delete
- duplicate
- exists
- make

Notes

Illustrator’s `gradient` object represents a gradient as defined in the Illustrator application. Additional gradients may be created by the user within Illustrator or via a script.

Example 13.1

This example shows how to create a linear RGB gradient.

```
-- create a new RGB gradient with three gradient stops
property pGradientName : "RGB Hot Streak"
tell application "Adobe Illustrator 10"
   if not (exists gradient pGradientName in current document) then
      set newgradient to make new gradient at beginning of ¬
      current document
    with properties {name:pGradientName, kind:linear}
      -- Since all new gradients are created with 2 gradient stops,
   -- create another stop for the 3 stop gradient
   make new gradient stop at beginning of newgradient
      set properties of gradient stop 1 of newgradient to ¬
    {midpoint:50.0, ramp point:0.0,¬
      color:{red:255.0, green:255.0, blue:0.0}}

      set properties of gradient stop 2 of newgradient to ¬
    {midpoint:50.0, ramp point:50.0, color:{red:255.0, green:127.0,
blue:127.0}}

      set properties of gradient stop 3 of newgradient to ¬
    {midpoint:50.0, ramp point:100.0, color:{red:255.0, green:0.0,
blue:0.0}}
  end if
end tell
```

gradient color info

A gradient color specification, used to specify a gradient color in conjunction with the `color` property.

Properties

Property:	R/O	Value type:	What it is:
angle		real	The gradient vector angle (in degrees).
gradient		object reference	A reference to the gradient object that defines the gradient to use in this color definition.
hilite angle		real	The gradient hilite vector angle (in degrees).
hilite length		real	The gradient hilite vector length.
length		real	The gradient vector length.
matrix		matrix	An additional transformation matrix to manipulate the gradient path.
origin		fixed point	The gradient vector origin.

Notes

This class is used to define a record which contains the color component values of a gradient color swatch. It is used for specifying and retrieving color information from an Illustrator document or from page items in a document.

Example 14.1

This example demonstrates how to set a path item’s fill color to a gradient color.

```
-- Set fill color of the first path in the current document
-- to the first gradient in the document
tell application "Adobe Illustrator 10"
  set the fill color of path item 1 of document 1 to ¬
    {gradient:gradient 1 of document 1}
end tell
```

gradient stop, gradient stops

A gradient stop definition or definitions contained in a specific gradient.

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the gradient stop object's value. Always returns `reference`.
class	R/O	class	The gradient stop object's class, which is `gradient stop`.
color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The color linked to this gradient stop.
container	R/O	object reference	A reference to the gradient that contains this gradient stop.
default type	R/O	class	The default type for the gradient stop object's value. Always returns `reference`.
index	R/O	integer	The position of this gradient stop in the gradient.
midpoint		real	The midpoint of the blend between this stop's and the next stop's colors. range: `13.0` - `87.0`
properties		record	All of the gradient stop's properties returned in a single record (properties which are individually read-only remain so in this record).
ramp point		real	The location of the color in the gradient. range: `0.0` - `100.0`

Valid Commands

- count
- delete

- duplicate
- exists
- make

Notes

Illustrator’s `gradient stop` object represents a point on a specific gradient defined in the Illustrator application. Each gradient stop specifies a color change in the containing gradient.

Example 15.1

This example demonstrates how to reverse the colors in a gradient by getting, then switching, the colors of the contained gradient stops.

```
-- This handler reverses the colors in gradient identified
-- by the gradientRef parameter
on ReverseGradientColors(gradientRef)

  tell application "Adobe Illustrator 10"

    -- Get a list of the gradient's colors
    set colorList to color of every gradient stop of gradientRef

    -- Tell AppleScript to reverse the order of the list
    set colorList to reverse of colorList

    -- Iterate over the gradient resetting its colors
    set colorCount to count of items in colorList
    repeat with i from 1 to colorCount
      set color of gradient stop i of gradientRef to (item i of colorList)
    end repeat

  end tell

end ReverseGradientColors

-- call handler
tell application "Adobe Illustrator 10" to set gradientRef to ¬
  gradient 1 of document 1
ReverseGradientColors(gradientRef)
```

gradient stop info

Gradient stop information of a specific gradient, returned by the `entire gradient` property of a gradient.

Properties

Property:	R/O	Value type:	What it is:
color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The color linked to this gradient stop.
midpoint		real	The midpoint of the blend between this stop's and the next stop's colors. range: `13.0` - `87.0`
ramp point		real	The location of the color in the gradient. range: `0.0` - `100.0`

Notes

When you get the `entire gradient` property of a gradient, a list of `gradient stop info` records is returned, one record for each gradient stop in the gradient.

The gradient stops for a new gradient can be specified by providing a list of `gradient stop info` records in the `entire gradient` property. The following applies when creating a gradient from a list of gradient stop info records:

- a gradient stop's location in the gradient is determined by its `ramp point` value, not the `gradient stop info` record's order in the entire gradient list.
- the `midpoint` value of the last `gradient stop info` record in the entire gradient list is not used for the newly created gradient and need not be provided. If it is present, its value must be in the valid range.

Example 16.1

This example shows how to create a circular CMYK gradient using a list of gradient stop info records.

```
-- Create a new CMYK gradient with 4 gradient stops
property pGradientName : "CMYK Circle"

tell application "Adobe Illustrator 10"

  if not (exists gradient pGradientName in current document) then

    set entireGradient to {{midpoint:50.0, ramp point:0.0 ¬
      , color:{cyan:0.0, magenta:0.0, yellow:0.0, black:100.0}} ¬
      , {midpoint:50.0, ramp point:33.3 ¬
      , color:{cyan:0.0, magenta:0.0, yellow:100.0, black:0.0}} ¬
      , {midpoint:50.0, ramp point:66.7 ¬
      , color:{cyan:0.0, magenta:100.0, yellow:0.0, black:0.0}} ¬
      , {midpoint:50.0, ramp point:100.0 ¬
      , color:{cyan:100.0, magenta:0.0, yellow:0.0, black:0.0}}}

    set gradientRef to make new gradient in current document with
properties ¬
      {name:pGradientName, kind:radial, entire gradient:entireGradient}

  end if
end tell
```

graph item, graph items

A graph item is a graph or a list of graphs.

Elements

Element:	Refer to by:
tag	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the graph item object's value. Always returns `reference`.
blend mode		normal/multiply/screen/overlay/soft light/hard light/color dodge/color burn/darken/lighten/difference/exclusion/hue/saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
class	R/O	class	The graph item object's class, which can be any one of the specific classes that are children of the page item class, including compound path item, group item, mesh item, path item, placed item, plugin item, raster item, and text art item.
compound path item		compound path object	The compound path contained in this graph item.
container	R/O	object reference	A reference to the layer that contains this graph item.
content variable		content variable	The content variable to which this graph item is bound.
control bounds	R/O	fixed rectangle	The bounds of the graph item including stroke width and controls.
default type	R/O	class	The default type for the graph item object's value. Always returns `reference`.
editable		boolean	Is this graph item editable?

Property:	R/O	Value type:	What it is:
geometric bounds	R/O	fixed rectangle	The object's bounds excluding the stroke width.
group item		group item object	The group items contained in this graph item.
height		real	The height of the graph item, calculated from the geometric bounds.
hidden		boolean	Is this graph item hidden?
index	R/O	integer	The position of this graph item in the current stacking order of the containing layer, where graph item 1 is always topmost.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this graph item belongs.
locked		boolean	Is this graph item locked?
mesh item		mesh item object	The mesh item contained in this graph item.
name		string	The name of this graph item.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
path item		path item object	The path item contained in this graph item.
placed item		placed item object	The placed item contained in this graph item.
plugin item		plugin item object	The plugin item contained in this graph item.
position		fixed point	The position of the top left corner of the graph item.
properties		record	All of the graph item's properties returned in a single record (properties which are individually read-only remain so in this record).
raster item		raster item object	The raster item contained in this graph item.
selected		boolean	Is this object selected?

Property:	R/O	Value type:	What it is:
slices		boolean	Preserve slices?
symbol item		symbol item object	The symbol item contained in this graph item.
text art item		text art item object	The text art item contained in this graph item.
URL		string	The value of the Adobe URL tag assigned to this graph item.
visibility variable		anything	The visibility variable to which this graph item is bound.
visible bounds	R/O	fixed rectangle	The object’s visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the graph item, calculated from the geometric bounds.

Valid Commands

- count
- delete
- duplicate
- exists
- move
- rotate
- scale
- transform
- translate

Notes

Note that it is not necessary to set the type of the `content variable` before binding. Illustrator automatically sets the type to `graph`.

Example

```
-- an AppleScript to demonstrate how to determine if a graph exists, set
-- its name, select it and move it.
tell application "Adobe Illustrator 10"
  set g1Exists to (exists graph item 1 of document 1)
    if (g1Exists = 1) then
    set name of graph item 1 of document 1 to "MyFirstGraph"

  set selected of graph item 1 of document 1 to true
  set strtPos to position of graph item 1 of document 1
    set newX to (item 1 of strtPos) + 50
    set newY to (item 2 of strtPos) + 50
    set position of graph item 1 of document 1 to {newX, newY}
    set endPos to position of graph item 1 of document 1
    end if
end tell
```

gray color info

A gray color specification, used to specify a gray color in conjunction with the `color` property.

Properties

Property:	R/O	Value type:	What it is:
gray value		real range: 0.0 - 100.0	The tint of the gray.

Notes

This class is used to define a record which contains the tint value of a gray color. It is used for specifying and retrieving color information from an Illustrator document or from page items in a document.

Gray colors are specified using a real value that ranges from 0.0 to 100.0 for the tint of color, where 0.0 represent white and 100.0 represents black.

Example 17.1

This example demonstrates how to create a gray color swatch.

```
-- Create a new gray color swatch (35% black) in the current document
property pSwatchName : "35% Gray Swatch"

tell application "Adobe Illustrator 10"

  if not (exists swatch pSwatchName in current document) then
   make new swatch at beginning of current document with properties ¬
    {name:pSwatchName, color:{gray value:35.0}}
  end if

end tell
```

group item, group items

A grouped set of art objects.

Elements

Element:	Refer to by:
compound path item	name, index, before/after, range, test
graph item	name, index, before/after, range, test
group item	name, index, before/after, range, test
mesh item	name, index, before/after, range, test
page item	name, index, before/after, range, test
path item	name, index, before/after, range, test
placed item	name, index, before/after, range, test
plugin item	name, index, before/after, range, test
raster item	name, index, before/after, range, test
symbol item	name, index, before/after, range, test
tag	name, index, before/after, range, test
text art item	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the group item object's value. Always returns `reference`.
blend mode		normal/multiply/screen/overlay/soft light/hard light/color dodge/color burn/darken/lighten/difference/exclusion/hue/saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
class	R/O	class	The group item object's class, which is always `group item`.
clipped		boolean	Is the group item clipped to its first path item?
compound path item		compound path object	The compound path contained in this group item.

Property:	**R/O**	**Value type:**	**What it is:**
container	R/O	object reference	A reference to the layer that contains this group item.
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the group item object's value. Always returns `reference`.
editable		boolean	Is this group item editable?
geometric bounds	R/O	fixed rectangle	The object’s bounds excluding the stroke width.
graph item		graph item object	The graph item contained in this group item.
height		real	The height of the group item excluding stroke width, calculated from the geometric bounds.
hidden		boolean	Is this group item hidden?
inheritance	R/O	class	The class that is the parent for this class. Always returns `page item`.
index	R/O	integer	The position of this group item in the current stacking order of the containing layer, where group item 1 is always the topmost group item.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this group item belongs.
locked		boolean	Is this group item locked?
mesh item		mesh item object	The mesh item contained in this group item.
name		string	The name of this group item.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
page item		page item object	The page item from which this group item inherits.

Property:	R/O	Value type:	What it is:
path item		path item object	The path item contained in this group item.
placed item		placed item object	The placed item contained in this group item.
plugin item		plugin item object	The plugin item contained in this group item.
position		fixed point	The position of the top left corner of the group item excluding stroke width.
properties		record	All of the group item's properties returned in a single record (properties which are individually read-only remain so in this record).
raster item		raster item object	The raster item contained in this group item.
slices		boolean	Preserve slices?
selected		boolean	Is this group item selected?
symbol item		symbol item object	The symbol item contained in this group item.
text art item		text art item object	The text art item contained in this group item.
URL		string	The value of the Adobe URL tag assigned to this group item.
visibility variable		anything	The visibility variable to which this group item is bound.
visible bounds	R/O	fixed rectangle	The visible bounds of all visible artwork, including stroke width of any objects in the illustration.
width		real	The width of the group item excluding stroke width, calculated from the geometric bounds.

Valid Commands

- count
- delete
- duplicate
- exists

- make
- move
- translate
- rotate
- scale
- transform

Notes

Group items can contain all of the same page items that a layer can contain, including other nested groups.

Paths contained within a group or compound path in a document will be returned as individual paths when a script asks for the paths contained in the document. However, paths contained in a group or compound path will not be returned when a script asks for the paths in a layer which contains the group or compound path.

A new group can be created that contains the contents of a vector art file if you provide a file specification to the vector file (EPS or PDF) in the `with data` parameter of the `make` command. The resulting group will be the same object as if the user had placed the file from the user interface using the File > Place… command with the embed checkbox checked.

Example 18.1

Create a new group item from the contents of a vector art file, either EPS or PDF.

```
-- Create a new group whose contents will be the contents of a vector art file
-- fileRef is an alias or file reference to the vector file to be placed
on EmbedVectorFile(fileRef)
  tell application "Adobe Illustrator 10"

    set groupRef to make new group item in document 1 with data fileRef ¬
      with properties {position:{0, 600}}

  end tell
  return groupRef
end EmbedVectorFile

-- Call handler
```

```
set fileRef to choose file with prompt "Select vector file to place"
set groupRef to EmbedVectorFile(fileRef)
```

Example 18.2

New groups can be easily created and populated with objects. This example demonstrates how path items can be created in a container group.

```
-- Create a new group, then add rectangles to it using
-- the available placement options
tell application "Adobe Illustrator 10"

  set groupRef to make new group item in document 1

  set rectRef to make new rectangle at beginning of groupRef with 
properties ¬
    {bounds:{150, 550, 350, 350}, fill color:{blue:255}}

  make new rectangle at after rectRef with properties ¬
    {bounds:{100, 600, 300, 400}, fill color:{red:255}}

  set rectRef to make new rectangle at end of groupRef with properties ¬
    {bounds:{0, 700, 200, 500}, fill color:{green:255}}

  make new rectangle before rectRef with properties ¬
    {bounds:{50, 650, 250, 450}, fill color:{black:100}}

end tell
```

Example 18.3

This example demonstrates how to select all of the page items in a document that are not part of a group by testing the `container` property of all items with a `whose` clause.

```
-- Select only the page items in a document that are not part of
-- a group and that are not themselves groups
tell application "Adobe Illustrator 10"

  -- First deselect everything in the document
  set selection of current document to {}

  if (count of page items of current document) > 0 then
  set layerCount to count of layers in current document
    repeat with i from 1 to layerCount

      set layerRef to layer i of current document
      set selected of (every page item of current document ¬
    whose container is layerRef ¬
    and class is not group item) to true

  end repeat
 end if
end tell
```

Example 18.4

This example shows how to create a clipping mask using the first path item in a group item. This is the same effect as you get when you use the Object > Clipping Mask > Make command in the user interface.

```
-- Create a group of paths, then clip the group to the first path in the group
tell application "Adobe Illustrator 10"

 -- Create a group to contain the paths to be clipped
 set groupRef to make new group item in document 1

 -- Add some path items to the group
 make new rectangle at end of groupRef with properties ¬
  {bounds:{200, 350, 300, 250}, fill color:{cyan:100}, stroked:false}
 make new rectangle at end of groupRef with properties ¬
  {bounds:{300, 250, 400, 150}, fill color:{magenta:100},
stroked:false}
 make new rectangle at end of groupRef with properties ¬
  {bounds:{300, 350, 400, 250}, fill color:{yellow:100}, stroked:false}
 make new rectangle at end of groupRef with properties ¬
  {bounds:{200, 250, 300, 150}, fill color:{green:255}, stroked:false}

 -- Get a little fancy and create a rotated star at the center of the group
 set pathRef to make new star at beginning of groupRef with properties ¬
  {center point:{300, 250}, radius:25, inner radius:4, point count:4 ¬
   , fill color:{black:100}, opacity:40, stroked:false}
 set rotationMatrix to get rotation matrix angle 45
 transform pathRef using rotationMatrix about center

 -- Create the path that the group will be clipped with
 --  The clipping path must be the first (frontmost) path in the group
 make new star at beginning of groupRef with properties ¬
  {center point:{300, 250}, radius:80, inner radius:25, point count:4 ¬
   , stroked:false, filled:false}

 -- Now clip the group to the top path
 set clipped of groupRef to true

end tell
```

Illustrator save options

Options which may be supplied when saving a document as an Illustrator file. See the `save` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
compatibility		Illustrator 3/Illustrator 4/ Illustrator 5/Illustrator 6/ Illustrator 7/Illustrator 8/ Illustrator 9/Illustrator 10	Specifies the version of the Illustrator file format to create. default: `Illustrator 10`
embed all fonts		boolean	Embed all fonts used by the document in the saved file? Only for Illustrator 9 or greater documents. default: `false`
embed ICC profile		boolean	Embed the document's ICC profile in the saved file? Only for Illustrator 9 or greater documents. default: `false`
flatten output		preserve paths/preserve appearance	How should transparency be flattened for file formats before Illustrator 9 or greater ?default: `preserve appearance`
font subset threshold		real	Include a subset of fonts when less than this percentage of characters are used. Only for Illustrator 9 or greater documents. range: `0.0` - `100.0`. default: `100.0`
include linked files		boolean	Are linked image files to be included in the saved document? Only for Illustrator 7 or later documents. default: `false`
japanese file format		boolean	Save using the Japanese version of the file format? Only for Illustrator 3, 4 or 5 documents. default: `true`

Valid Commands

- save

Notes

This class is used to define a record containing properties used to specify options when saving a document as an Illustrator file. `Illustrator save options` can only be supplied in conjunction with the `save` command. It is not possible to get or create an `Illustrator save options` object.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 19.1

This handler processes a folder of Illustrator files, saving each with Illustrator 7 compatibility. Note that the `class` property is specified in the record to ensure that Illustrator can determine the save option class.

```
-- fileList is a list of aliases to Illustrator files
-- destinationFolder is an alias to a folder where the Illustrator
-- files are to be saved
on SaveFilesAsIllustrator7(fileList, destinationFolder)

  set destinationPath to destinationFolder as string

  repeat with aFile in fileList

    tell application "Finder" to ¬
      set fileName to name of aFile

    set newFilePath to destinationPath & fileName & ".ai7"

    tell application "Adobe Illustrator 10"
      open aFile

      save current document in file newFilePath as Illustrator ¬
        with options {class:Illustrator save options ¬
        , compatibility:Illustrator 7 ¬
        , flatten output:preserve appearance}

      close current document saving no
    end tell
  end repeat
end SaveFilesAsIllustrator7


-- Call handler
set sourceFolder to choose folder with prompt "Source folder?"
tell application "Finder" to ¬
  set fileList to every file of folder sourceFolder as alias list
set destinationFolder to choose folder with prompt "Destination folder?"
SaveFilesAsIllustrator7(fileList, destinationFolder)
```

insertion point, insertion points

One or more insertion points in the contents of a text art item.

Elements

Element:	Refer to by:
character	index, before/after, range, test
insertion point	index, before/after, range, test
line	index, before/after, range, test
paragraph	index, before/after, range, test
text	index, before/after, range
word	index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
auto kerning	R/O	boolean	Should the font’s built-in kerning rules be used?
baseline		real	Bottom position of horizontally-oriented text or left position of vertically-oriented text.
baseline shift	R/O	real	The baseline offset.
best type	R/O	class	The best type for the insertion point object's value. Always returns `reference`.
character offset	R/O	integer	Offset from beginning (in characters).
class	R/O	class	The application object's class, which is `insertion point`.
clipping	R/O	boolean	Is there a clipping path associated with the text art item containing this insertion point?
container	R/O	object reference	A reference to the text art item that contains this insertion point.
contents		string	The contents of the insertion point as a string. Always returns an empty string.

Property:	R/O	Value type:	What it is:
default type	R/O	class	The default type for the insertion point object, which is `string`. The string value is always a null string, "".
direction	R/O	normal/rotated/KumiMoji	The direction of characters in a vertical text block.
evenodd	R/O	boolean	Should the even-odd rule be used to determine fills?
fill color	R/O	CMYK color info/gray color info/RGB color info/spot color info/pattern color info/gradient color info	The character's fill color.
fill overprint	R/O	boolean	Should art beneath the filled character be overprinted?
filled	R/O	boolean	Should the character's path be filled?
font	R/O	string	The name of the text face (font).
index	R/O	integer	The index of this insertion point in the complete string.
leading	R/O	real	The leading.
length	R/O	integer	Length (in characters).
note	R/O	string	A note assigned to the object.
properties		record	All of the insertion point's properties returned in a single record (properties which are individually read-only remain so in this record).
resolution	R/O	real	The resolution of the path in dots per inch.
scaling	R/O	fixed point	Horizontal and vertical scaling specified as a fixed point.
size	R/O	real	The font size.
stroke cap	R/O	butted/rounded/projecting	The type of cap on the character's stroke.
stroke color	R/O	CMYK color info/gray color info/RGB color info/spot color info/pattern color info/gradient color info	The character's stroke color.

Property:	R/O	Value type:	What it is:
stroke dash offset	R/O	real	The default distance to start the stroke dash pattern.
stroke dashes	R/O	list (of real numbers)	The lengths for dashes and gaps in dashed lines, starting with the first dash length, followed by the first gap length, and so on. Set to an empty list, {}, for a solid line.
stroke join	R/O	mitered/rounded/beveled	The type of joins in the character's stroke.
stroke miter limit	R/O	real	The angle at which a stroke join switches from mitered to beveled.
stroke overprint	R/O	boolean	Should art beneath the stroked character be overprinted?
stroke width	R/O	real	The width of the stroke.
stroked	R/O	boolean	Should the character's path be stroked?
text orientation	R/O	horizontal/vertical	The orientation of the text. Use the `text path` class to modify this value.
text path	R/O	object reference	A reference to the text path associated with the text art item containing this insertion point.
tracking	R/O	real	The uniform spacing amount between characters.

Valid Commands

- count
- exists

Notes

An insertion point is logically located between two characters in a text art item. Each insertion point is before the corresponding character in a text art item. Insertion point 1 is before character 1, etc.

The properties of an insertion point are the same as the character at the same position in the text art item. For example, the font for insertion point 2 of text art item 1 will be the same as the font for character 2 of text art item 1.

You can set the properties for an insertion point, but only setting the contents property will have any affect on the text art item. The result of setting the contents of an insertion point to a string value is to insert the string in the text art item at the insertion point's location. Setting the contents to an empty string has no affect.

Example 20.1

This example shows several way of working with insertion points.

```
tell application "Adobe Illustrator 10"

  -- Set insertion point karat to beginning of a text art item
  set selection to insertion point 1 of text art item 1 of document 1

  -- Add a string to end of a text art item
  set contents of insertion point -1 of text art item 1 of document 1 ¬
    to " Some new text."

  -- Since the default type of an insertion point is string, asking for
  -- a particular insertion point returns its contents. To get a reference
  -- to an insertion point you need to ask for a reference
  set insertionRef to ¬
    insertion point after word 3 of text art item 1 of document 1 as
reference
  set contents of insertionRef to " more words"

end tell
```

JPEG export options

Options which may be supplied when exporting a document as a JPEG file. See the `export` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
antialiasing		boolean	Should the resulting image be anti-aliased? default: `true`
artboard clipping		boolean	Should the resulting image be clipped to the artboard? default: `false`
blur		real	The amount of blurring to apply to the resulting image. range: `0.0` - `2.0`. default: `0.0`
horizontal scaling		real	The percent horizontal scaling factor to apply to the resulting image. range: `0.0` - `100.0`. default: `100.0`
matte		boolean	Should the artboard be matted with a color? default: `true`
matte color		RGB color info	The color to use when matting the artboard. default: `{255.0, 255.0, 255.0}`
optimization		boolean	Should the resulting image be optimized for web viewing? default: `true`
quality		integer	The quality of the resulting image. range: `0` - `100`. default: `30`
saving as HTML		boolean	Should the resulting image be saved with an accompanying HTML file? default: `false`
vertical scaling		real	The percent vertical scaling factor to apply to the resulting image. range: `0.0` - `100.0`. default: `100.0`

Notes

This class is used to define a record containing properties that specify options when exporting a document as a JPEG file. `JPEG export options` can only be supplied in conjunction with the `export` command. It is not possible to get or create an `JPEG export options` object.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 21.1

This handler processes all Illustrator files in a specific folder, exporting each file as a medium-quality JPEG image. Note that the `class` property is specified in the record to ensure that Illustrator can determine the export option class.

```
-- fileList is a list of aliases to Illustrator files
-- destinationFolder is an alias to a folder where the JPEGs are to be exported
on ExportFilesAsJPEGMedium(fileList, destinationFolder)

  set destinationPath to destinationFolder as string

  repeat with aFile in fileList

    tell application "Finder" to ¬
      set fileName to name of aFile

    set newFilePath to destinationPath & fileName & ".jpg"

    tell application "Adobe Illustrator 10"
      open aFile

      export current document to file newFilePath as JPEG with options ¬
        {class:JPEG export options ¬
          , quality:60 ¬
          , blur:0.5 ¬
          , horizontal scaling:50.0 ¬
          , vertical scaling:50 ¬
          , matte:false}

      close current document saving no
    end tell
  end repeat
end ExportFilesAsJPEGMedium


-- Call handler
set sourceFolder to choose folder with prompt "Source folder?"
tell application "Finder" to ¬
  set fileList to every file of folder sourceFolder as alias list
set destinationFolder to choose folder with prompt "Destination folder?"
ExportFilesAsJPEGMedium(fileList, destinationFolder)
```

layer, layers

A layer or list of layers. Layers may contain nested layers, which are called sublayers in the user interface.

Elements

Element:	Refer to by:
compound path item	name, index, before/after, range, test
graph item	name, index, before/after, range, test
group item	name, index, before/after, range, test
layer	name, index, before/after, range, test
mesh item	name, index, before/after, range, test
page item	name, index, before/after, range, test
path item	name, index, before/after, range, test
placed item	name, index, before/after, range, test
plugin item	name, index, before/after, range, test
raster item	name, index, before/after, range, test
symbol item	name, index, before/after, range, test
text art item	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the layer object's value. Always returns `reference`.
blending mode		color blend/color burn/ color dodge/darken/ difference/exclusion/hard light/hue/lighten/ luminosity/multiply/ normal/overlay/ saturation blend/screen/ soft light	The mode used when compositing an object.
class	R/O	class	The layer object's class, which is `layer`.
color		RGB color info	The layer's selection mark color.
container	R/O	object reference	A reference to the document that contains this layer.

Property:	R/O	Value type:	What it is:
default type	R/O	class	The default type for the layer object's value. Always returns `reference`.
dim placed images		boolean	Are placed images to be rendered as dimmed in this layer?
editable		boolean	Is this layer editable? Setting this property to `false` locks the layer.
has selected artwork		boolean	Is any object in this layer selected? Setting this property to false deselects all objects in the layer.
index	R/O	integer	The position of this layer in the current stacking order of layers in this document, where layer 1 is always the topmost layer in the stacking order.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
name		string	The name of this layer.
opacity		real	The opacity of this layer, where 100.0 is completely opaque and 0.0 is completely transparent.
preview		boolean	Is this layer displayed using preview mode?
printable		boolean	Is this layer printed when printing the document?
properties		record	All of the layer's properties returned in a single record (properties which are individually read-only remain so in this record).
slices		boolean	Preserve slices?
visible		boolean	Is this layer visible?

Valid Commands

- count
- delete

- duplicate
- exists
- make
- move

Notes

Illustrator's `layer` object contains all of the page items in the specific layer as elements. Your script can access page items as elements of either the `layer` object or as elements of the `document` object. When accessing page items as elements of a layer, only objects in that layer can be accessed. To access page items throughout the entire document, be sure to refer to them as elements of the document.

Example 22.1

The stacking order of existing layers in a document can be manipulated using the move command. Example 22.1 demonstrates how to move a layer to the top of the stacking order (index position 1).

```
-- Move the 2nd layer to the top of the stacking order
tell application "Adobe Illustrator 10"

  if (count of layers of current document) > 1 then
    move layer 2 of document 1 to before layer 1 of document 1
  end if

end tell
```

Example 22.2

Commands that deal with changes to an object's reference, including the creation of new objects with the make command, return a reference to the new or modified object in their result. This example takes makes use of this situation by storing the reference returned for a newly created layer and then creating a new path item in the layer using the reference.

```
-- Make a new layer at the top of the layer stack
-- then create a new path in the layer
tell application "Adobe Illustrator 10"
```

```
  set layerRef to make layer at document 1 with properties{name: "Our
Layer"}
  make new rectangle at beginning of layerRef

end tell
```

Example 22.3

Example 22.3 demonstrates the power of constructing simple tests (with the `whose` clause) to selectively delete layers in a document based on their names. In this case, the script deletes all layers in the current document that have names starting with the word "Temporary."

```
-- Delete layers that have a name which begin with a particular string
set partialName to "Layer"
tell application "Adobe Illustrator 10"

  delete (every layer of document 1 whose name starts with partialName)

end tell
```

line, lines

A line or lines of text in a text art item.

Elements

Element:	Refer to by:
character	index, before/after, range, test
insertion point	index, before/after, range, test
line	index, before/after, range, test
paragraph	index, before/after, range, test
text	index, before/after, range
word	index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
auto kerning		boolean	Should the font's built-in kerning rules be used?
baseline		real	The bottom of the text lines up on the screen here.
baseline shift		real	The baseline offset.
best type	R/O	class	The best type for the line object's value. Always returns `reference`.
character offset	R/O	integer	Offset from beginning (in characters).
class	R/O	class	The line object's class, which is `text`.
clipping	R/O	boolean	Is there a clipping path associated with the text art item containing this line?
container	R/O	object reference	A reference to the text art item that contains this line.
contents		string	The contents of the line as a string.
default type	R/O	class	The default type for the line object, which is `string`. The string value returned is the value contained in the line's `contents` property.

Property:	R/O	Value type:	What it is:
direction		normal/rotated/KumiMoji	The direction of characters in a vertical text block.
evenodd		boolean	Should the even-odd rule be used to determine fills?
fill color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The line's fill color.
fill overprint		boolean	Should art beneath the filled line be overprinted?
filled		boolean	Should the line's path be filled?
font		string	The name of the text face (font).
index	R/O	integer	The index of this line in the complete string.
leading		real	The leading.
length	R/O	integer	Length (in characters).
note	R/O	string	A note associated with the text.
properties		record	All of the line's properties returned in a single record (properties which are individually read-only remain so in this record).
resolution	R/O	real	The resolution of the path in dots per inch.
scaling		fixed point	Horizontal and vertical scaling specified as a fixed point.
size		real	The font size.
stroke cap		butted/rounded/ projecting	The type of cap on the character's stroke.
stroke color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The line's stroke color.
stroke dash offset		real	The default distance to start the stroke dash pattern.

Property:	R/O	Value type:	What it is:
stroke dashes		list (of real numbers)	The lengths for dashes and gaps in dashed lines, starting with the first dash length, followed by the first gap length, and so on. Set to an empty list, {}, for a solid line.
stroke join		mitered/rounded/beveled	The type of joins in the character's stroke.
stroke miter limit		real	The angle at which a stroke join switches from mitered to beveled.
stroke overprint		boolean	Should art beneath the stroked line be overprinted?
stroke width		real	The width of the stroke.
stroked		boolean	Should the line's path be stroked?
text orientation	R/O	horizontal/vertical	The orientation of the text. Use the `text path` class to modify this value.
text path	R/O	object reference	A reference to the text path associated with the text art item containing this line.
tracking		real	The uniform spacing amount between characters.

Valid Commands

- count
- delete
- duplicate
- exists

Notes

Illustrator's text can be accessed using the `character`, `insertion point`, `word`, `line`, `paragraph` and `text` classes.

Lines of text cannot be created. When the `contents` property of a text art item is modified, Illustrator will create text lines as it reflows the text within the text art item.

Example 23.1

Lines of text can be located with matching characteristics using the `whose` clause, as this script demonstrates.

```
-- Color red all lines of text containing more than 80 characters
tell application "Adobe Illustrator 10"

  if (count of text art items in document 1) > 0 then

    set textItemCount to count of text art items in document 1

    repeat with i from 1 to textItemCount

      set (fill color of every line of text art item i of document 1 ¬
        whose length > 80) to {red:255.0}

    end repeat
  end if
end tell
```

matrix

A transformation matrix specification, used to transform the geometry of objects.

Properties

Property:	R/O	Value type:	What it is:
mvalue_a		real	Matrix property a.
mvalue_b		real	Matrix property b.
mvalue_c		real	Matrix property c.
mvalue_d		real	Matrix property d.
mvalue_tx		real	Matrix property tx.
mvalue_ty		real	Matrix property ty.

Valid Commands

- concatenate matrix
- concatenate rotation matrix
- concatenate scale matrix
- concatenate translation matrix
- equal matrices
- get identity matrix
- get rotation matrix
- get scale matrix
- get translation matrix
- invert matrix
- singular matrix

Notes

This class is used to define a record which contains the component values of an Illustrator transformation matrix. It is used for specifying and retrieving matrix information from an Illustrator document or from page items in a document.

Matrices are used in conjunction with the `transform` command and as a property of a number of objects. A matrix specifies how to transform the geometry of an object. You can generate an original matrix using `get identity matrix`, `get translation matrix`, `get scale matrix`, or `get rotation matrix`.

A `matrix` is a record containing the matrix values, not a reference to a matrix object. The matrix commands listed above operate on the values of a matrix record. If a command modifies a matrix, a modified matrix record is returned as the result of the command. The original matrix record passed to the command is not modified.

Example 24.1

A matrix can be generated to effect a scale transformation using the `get scale matrix` command.

```
-- Scale all art in a document to 50% vertical size
tell application "Adobe Illustrator 10"

  if (count of page items in document 1) > 0 then
    set scaleMatrix to get scale matrix horizontal scale 100.0 vertical
scale 50.0
    transform every page item in document 1 using scaleMatrix

  end if

end tell
```

Example 24.2

If you need to apply multiple transformations to objects it is more efficient to use the matrix suite than to apply the transformations one at a time. The following script demonstrates how to combine multiple matrices together.

```
-- Scale, rotate, and translate all art in a document
tell application "Adobe Illustrator 10"

  if (count of page items in document 1) > 0 then

    set matrixDef to ¬
      get scale matrix horizontal scale 100.0 vertical scale 50.0
    set matrixDef to ¬
      concatenate rotation matrix matrixDef angle -45.0
    set matrixDef to ¬
      concatenate translation matrix matrixDef delta x 50.0 delta y -50.0
```

```
   transform every page item in document 1 using matrixDef

  end if
end tell
```

mesh item, mesh items

A gradient mesh art object or list of gradient mesh art objects.

Elements

Element:	Refer to by:
tag	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the mesh item object's value. Always returns `reference`.
blend mode		normal/multiply/screen/overlay/soft light/hard light/color dodge/color burn/darken/lighten/difference/exclusion/hue/saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
class	R/O	class	The mesh item object's class, which is always `mesh item`.
compound path item		compound path object	The compound path contained in this mesh item.
container	R/O	object reference	A reference to the layer that contains this mesh item.
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the mesh item object's value. Always returns `reference`.
editable		boolean	is this mesh item editable?
geometric bounds	R/O	fixed rectangle	The object’s bounds excluding the stroke width.
graph item		graph item object	The graph item contained in this mesh item.
group item		group item object	The group items contained in this mesh item.

Property:	R/O	Value type:	What it is:
height		real	The height of the mesh item, calculated from the geometric bounds.
hidden		boolean	Is this mesh item hidden?
inheritance	R/O	class	The class that is the parent for this class. Always returns `page item`.
index	R/O	integer	The position of this mesh item in the current stacking order of the containing layer, where page item 1 is always topmost.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this mesh item belongs.
locked		boolean	Is this mesh item locked?
name		string	The name of this mesh item.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
page item		page item object	The page item from which this mesh item inherits.
path item		path item object	The path item contained in this group item.
placed item		placed item object	The placed item contained in this mesh item.
plugin item		plugin item object	The plugin item contained in this mesh item.
position		fixed point	The position of the top left corner of the mesh item.
properties		record	All of the mesh item's properties returned in a single record (properties which are individually read-only remain so in this record).
raster item		raster item object	The raster item contained in this mesh item.
slices		boolean	Preserve slices?

Property:	R/O	Value type:	What it is:
selected		boolean	Is this mesh item selected?
symbol item		symbol item object	The symbol item contained in this mesh item.
text art item		text art item object	The text art item contained in this mesh item.
URL		string	The value of the Adobe URL tag assigned to this mesh item.
visibility variable		anything	The visibility variable to which this compound path is bound.
visible bounds	R/O	fixed rectangle	The object’s visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the mesh item, calculated from the geometric bounds.

Valid Commands

- count
- delete
- duplicate
- exists
- move
- translate
- rotate
- scale
- transform

Notes

Mesh items cannot be created from a script, but can be duplicated, copied and pasted.

page item, page items

Any art object or list of art objects. Every art object and group in a document is a `page item`. You may refer to a `page item` as an element of a document, layer, or group item.

Elements

Element:	Refer to by:
tag	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the page item object's value. Always returns `reference`.
blend mode		normal/multiply/screen/ overlay/soft light/hard light/color dodge/color burn/darken/lighten/ difference/exclusion/hue/ saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
class	R/O	class	The page item object's class, which can be any one of the specific classes that are children of the page item class, including `compound path item`, `group item`, `mesh item`, `path item`, `placed item`, `plugin item`, `raster item`, and `text art item`.
compound path item		compound path object	The compound path contained in this page item.
container	R/O	object reference	A reference to the layer that contains this page item.
content variable		anything	The content variable to which this page item is bound

Property:	R/O	Value type:	What it is:
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the path item object's value. Always returns `reference`.
editable		boolean	Is this page item editable?
geometric bounds	R/O	fixed rectangle	The object’s bounds excluding the stroke width.
graph item		graph item object	The graph item contained in this page item.
group item		group item object	The group items contained in this page item.
height		real	The height of the page item, calculated from the geometric bounds.
hidden		boolean	Is this page item hidden?
index	R/O	integer	The position of this page item in the current stacking order of the containing layer, where page item 1 is always topmost.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this page item belongs.
locked		boolean	Is this page item locked?
mesh item		mesh item object	The mesh item contained in this page item.
name		string	The name of this page item.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
path item		path item object	The path item contained in this page item.
placed item		placed item object	The placed item contained in this page item.
plugin item		plugin item object	The plugin item contained in this page item.

Property:	R/O	Value type:	What it is:
position		fixed point	The position of the top left corner of the page item.
properties		record	All of the page item’s properties returned in a single record (properties which are individually read-only remain so in this record).
raster item		raster item object	The raster item contained in this page item.
selected		boolean	Is this object selected?
slices		boolean	Preserve slices?
symbol item		symbol item object	The symbol item contained in this page item.
text art item		text art item object	The text art item contained in this page item.
URL		string	The value of the Adobe URL tag assigned to this page item.
visibility variable		anything	The visibility variable to which this page item path is bound.
visible bounds	R/O	fixed rectangle	The object’s visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the page item, calculated from the geometric bounds.

Valid Commands

- count
- delete
- duplicate
- exists
- move
- translate
- rotate
- scale
- transform

Notes

The `page item` class give you complete access to every art object contained in an Illustrator document. The `page item` class is the superclass of all artwork objects in a document. The classes `compound path item`, `group item`, `mesh item`, `path item`, `placed item`, `plugin item`, `raster item`, and `text art item`, each inherit a set of properties from the `page item` class.

You cannot create a `page item` directly. You must use create one of the specific page item subclasses, such as `path item`.

Example 25.1

The stacking order of existing page items in a layer can be manipulated using the move command. Example 1 demonstrates how to move a page item to the top of the stacking order (index position 1) in a layer.

```
-- Move the last page item of layer 1 to the top of the stacking order
tell application "Adobe Illustrator 10"

   if (count of page items of layer 1 of document 1) > 1 then
      move last page item of layer 1 of document 1 to ¬
         beginning of layer 1 of document 1
   end if

end tell
```

paragraph, paragraphs

A paragraph or list of paragraphs of text in the contents of a text art object.

Elements

Element:	Refer to by:
character	index, before/after, range, test
insertion point	index, before/after, range, test
line	index, before/after, range, test
paragraph	index, before/after, range, test
text	index, before/after, range
word	index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
auto kerning		boolean	Should the font’s built-in kerning rules be used?
baseline		real	Bottom position of horizontally-oriented text or left position of vertically-oriented text.
baseline shift		real	The baseline offset.
best type	R/O	class	The best type for the paragraph object's value. Always returns `reference`.
character offset	R/O	integer	Offset from beginning (in characters).
class	R/O	class	The paragraph object's class, which is `text`.
clipping	R/O	boolean	Is there a clipping path associated with the text art item containing this paragraph?
container	R/O	object reference	A reference to the text art item that contains this text.
contents		string	The contents of the character as a string.
default tab size		real	The default distance between tab stops.

Property:	R/O	Value type:	What it is:
default type	R/O	class	The default type for the paragraph object, which is `string`. The string value returned is the value contained in the paragraph's `contents` property.
desired letter spacing		real	The desired letter spacing expressed as a percentage, where 100.0 is 100%.
desired word spacing		real	The desired word spacing expressed as a percentage, where 100.0 is 100%.
direction		normal/rotated/KumiMoji	The direction of characters in a vertical text block.
evenodd		boolean	Should the even-odd rule be used to determine fills?
fill color		CMYK color info/gray color info/RGB color info/spot color info/pattern color info/gradient color info	The text's fill color.
fill overprint		boolean	Should art beneath the filled text be overprinted?
filled		boolean	Should the text's path be filled?
first line indent		real	The left indent of the first line of text.
font		string	The name of the text face (font).
hanging punctuation		boolean	Should punctuation appear outside the margins of the paragraph?
hyphenation		boolean	Is hyphenation enabled for the paragraph?
index	R/O	integer	The index of this text in the complete string.
justification		unknown/left/center/right/justify full lines/justify all lines	The text justification for the paragraph.
leading		real	The leading.
left indent		real	The left indent of the margin.
length	R/O	integer	Length (in characters).

Property:	**R/O**	**Value type:**	**What it is:**
limit consecutive hyphenations		boolean	Is there a limit on the number of consecutive hyphenated lines?
maximum consecutive hyphens		integer	The maximum number of consecutive hyphenated lines if `limit consecutive hyphenations` is set to `true`.
maximum letter spacing		real	The maximum letter spacing expressed as a percentage, where 100.0 is 100%.
maximum word spacing		real	The maximum word spacing expressed as a percentage, where 100.0 is 100%.
minimum after hyphen		integer	The minimum number of characters after a hyphen.
minimum before hyphen		integer	The minimum number of characters before a hyphen.
minimum letter spacing		real	The minimum letter spacing expressed as a percentage, where 100.0 is 100%.
minimum word spacing		real	The minimum word spacing expressed as a percentage, where 100.0 is 100%.
note	R/O	string	A note associated with the text.
properties		record	All of the character’s properties returned in a single record (properties which are individually read-only remain so in this record).
repeated character processing		boolean	Should Repeated Character Processing be used in the paragraph?
resolution	R/O	real	The resolution of the path in dots per inch.
right indent		real	The right indent of margin.
scaling		fixed point	Horizontal and vertical scaling specified as a fixed point.
size		real	The font size.
space before		real	The spacing before paragraphs.
stroke cap		butted/rounded/ projecting	The type of cap on the character’s stroke.

Property:	R/O	Value type:	What it is:
stroke color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The text's stroke color.
stroke dash offset		real	The default distance to start the stroke dash pattern.
stroke dashes		list (of real numbers)	The lengths for dashes and gaps in dashed lines, starting with the first dash length, followed by the first gap length, and so on. Set to an empty list, {}, for a solid line.
stroke join		mitered/rounded/beveled	The type of joins in the character's stroke.
stroke miter limit		real	The angle at which a stroke join switches from mitered to beveled.
stroke overprint		boolean	Should art beneath the stroked text be overprinted?
stroke width		real	The width of the stroke.
stroked		boolean	Should the text's path be stroked?
tab stops		list (of tab stop info)	The tab stop settings for the paragraph.
text orientation	R/O	horizontal/vertical	The orientation of the text. Use the `text path` class to modify this value.
text path	R/O	object reference	A reference to the text path associated with the text art item containing this paragraph.
tracking		real	The uniform spacing amount between characters.

Valid Commands

- count
- delete
- duplicate
- exists

- make

Notes

Illustrator's text can be accessed using the `character`, `insertion point`, `word`, `line`, `paragraph` and `text` classes. All text is contained within text art items.

The `paragraph` class has additional properties that other related classes do not share, including properties for margins, tab stop settings, hyphenation, and word/letter spacing.

Example 26.1

The hyphenation of all text can be quickly changed from a script, as this example shows.

```
-- Enable hyphenation for every paragraph of the current document
tell application "Adobe Illustrator 10"

  if (count of text art items of document 1) > 0 then

    set itemCounter to count of text art items of document 1

    repeat with i from 1 to itemCounter

      set hyphenation of (every paragraph of text art item i of document
1) to true

    end repeat
  end if
end tell
```

path item, path items

A path or list of paths. A path is comprised of path points that define its geometry.

Elements

Element:	Refer to by:
path point	index, before/after, range, test
tag	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
area	R/O	real	The area of this path in square points. An area may be negative or even 0. The paths winding order is determined by the sign of area. If the area is negative, the path is wound counter-clockwise. Self-intersecting paths may contain sub-areas that cancel each other out. Therefore, it is possible for a path's area to appear as zero even though it has apparent area.
best type	R/O	class	The best type for the path item object's value. Always returns `reference`.
blend mode		normal/multiply/screen/overlay/soft light/hard light/color dodge/color burn/darken/lighten/difference/exclusion/hue/saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
class	R/O	class	The path item object's class, which is always `path item`.
clipping		boolean	Is this path to be used as a clipping path?
closed		boolean	Is this path closed?

Property:	**R/O**	**Value type:**	**What it is:**
container	R/O	object reference	A reference to the compound path item, layer or group item that contains this path item.
compound path item		compound path object	The compound path contained in this path item.
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the path item object's value. Always returns `reference`.
editable		boolean	Is this path item editable?
entire path		list (of path point info)	All the path item's path points.
evenodd		boolean	Use the even-odd rule to determine insideness?
fill color		cmyk color info/gray color info/rgb color info/ spot color info/pattern color info/gradient color info	The fill color of the path.
fill overprint		boolean	Will art beneath a filled object be overprinted?
filled		boolean	Should the path be filled?
geometric bounds	R/O	fixed rectangle	The object’s bounds excluding the stroke width.
graph item		graph item object	The graph item contained in this path item.
group item		group item object	The group items contained in this path item.
guides		boolean	Is this path a guide object?
height		real	The height of the path item excluding stroke width, calculated from the geometric bounds.
hidden		boolean	Is this path item hidden?
index	R/O	integer	The position of this path item in the current stacking order of the containing layer, where path item 1 is always the topmost path item.

Property:	R/O	Value type:	What it is:
inheritance	R/O	class	The class that is the parent for this class. Always returns `page item`.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this path item belongs.
locked		boolean	Is this path item locked?
mesh item		mesh item object	The mesh item contained in this path item.
name		string	The name of this path item.
note		string	The note text assigned to the path.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
page item		page item object	The page item from which this path item inherits.
placed item		placed item object	The placed item contained in this path item.
plugin item		plugin item object	The plugin item contained in this path item.
polarity	R/W	positive/negative	Used in the creation of compound paths.
position		fixed point	The position of the top left corner of the path item excluding stroke width.
properties		record	All of the path item's properties returned in a single record (properties which are individually read-only remain so in this record).
raster item		raster item object	The raster item contained in this path item.
resolution		real	The resolution of the path (in dots per inch).
selected		boolean	Is this object selected?

Property:	R/O	Value type:	What it is:
selected path points	R/O	list (of object references)	All of the selected path points in the path.
slices		boolean	Preserve slices?
stroke cap		butted/rounded/ projecting	The type of line capping.
stroke color		cmyk color info/gray color info/rgb color info/ spot color info/pattern color info/gradient color info	The stroke color for the path.
stroke dash offset		real	The default distance into the dash pattern at which the pattern should be started.
stroke dashes		list (of real numbers)	The lengths for dashes and gaps in dashed lines, starting with the first dash length, followed by the first gap length, and so on. Set to an empty list, {}, for a solid line.
stroke join		mitered/rounded/beveled	Type of joints for the path.
stroke miter limit		real	Are joins mitered (pointed) or beveled (squared-off)?
stroke overprint		boolean	Will art beneath a stroked object be overprinted?
stroke width		real	Width of stroke.
stroked		boolean	Should the path be stroked?
symbol item		symbol item object	The symbol item contained in this path item.
text art item		text art item object	The text art item contained in this path item.
URL		string	The value of the Adobe URL tag assigned to this path item.
visibility variable		anything	The visibility variable to which this path item is bound.
visible bounds	R/O	fixed rectangle	The object’s visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the path item excluding stroke width, calculated from the geometric bounds.

Valid Commands

- count
- delete
- duplicate
- exists
- move
- translate
- rotate
- scale
- transform

Notes

The `path item` class give you complete access to paths in Illustrator.

Example 27.1

The stroke width and color of a path can be easily set, as demonstrated in this example.

```
-- Set the stroke of the first path to a red 4 point line
tell application "Adobe Illustrator 10"

  if (count of path items of document 1) > 0 then

    set properties of path item 1 of document 1 to ¬
      {stroke width:4.0, stroke color:{red:255.0}}

  end if

end tell
```

path point, path points

A point or points on a specific path. Each path point is made up of a fixed point (`anchor`) and a pair of handles (`left direction` and `right direction`).

Properties

Property:	**R/O**	**Value type:**	**What it is:**
anchor		fixed point	The position of this point's anchor point.
best type	R/O	class	The best type for the path point object's value. Always returns `reference`.
class	R/O	class	The path point object's class, which is `path point`.
container	R/O	object reference	A reference to the path item that contains this path point.
default type	R/O	class	The default type for the path point object's value. Always returns `reference`.
index	R/O	integer	The position of this path point in the path item.
left direction		fixed point	The position of the path point's left direction point (in position).
point type		smooth/corner	Is this a corner path point or a curve path point?
properties		record	All of the path point's properties returned in a single record (properties which are individually read-only remain so in this record).
right direction		fixed point	The position of the path point's left direction point (out position).
selected		none/anchor selected/ left selected/right selected/left right selected	Which points in this path point are currently selected?

Valid Commands

- count
- delete

- duplicate
- exists
- make

Notes

A path point represents a point of a path, with its pair of control points, or handles. Any point can considered a corner point. Setting the `point type` property of a path point to a corner forces the left and right direction points to be on a straight line when the user attempts to modify them in the user interface.

Example 28.1

Example 28.1 demonstrates how a path point of a path can be modified.

```
-- Move the first point in a path to the same spot as the last point
tell application "Adobe Illustrator 10"

  if (count of path items of document 1) > 0 then
    set lastAnchor to anchor of last path point of path item 1 of document
1
    set anchor of path point 1 of path item 1 of document 1 to lastAnchor
  end if

end tell
```

Example 28.2

Example 28.2 demonstrates how to retrieve the coordinates of every point on a path.

```
-- Returns the coordinates of each point on a path
tell application "Adobe Illustrator 10"

  if (count of path items of document 1) > 0 then
    set anchorList to (anchor of every path point of path item 1 of
document 1)
  end if

end tell
```

path point info

Path point information for a specific path item, returned by the `entire path` property of a path item.

Properties

Property:	R/O	Value type:	What it is:
anchor		fixed point	The position of a path point’s anchor point.
left direction		fixed point	The position of a path point’s left direction point (in position).
point type		smooth/corner	Is this a corner path point or a curve path point?
right direction		fixed point	The position of a path point’s left direction point (out position).

Notes

All of the path points in a specific path item can be retrieved and specified using `entire path`, which returns a list of path point info records.

Example 29.1

Example 29.1 demonstrates how to get every path point for a specific path item.

```
-- Returns the path points of the first path
tell application "Adobe Illustrator 10"

  if (count of path items of document 1) > 0 then
    set pointList to entire path of path item 1 of document 1
  end if

end tell
```

pattern, patterns

A pattern definition or list of definitions contained in a document.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
best type	R/O	class	The best type for the pattern object's value. Always returns `reference`.
class	R/O	class	The pattern object's class, which is `pattern`.
container	R/O	object reference	A reference to the document that contains this pattern.
default type	R/O	class	The default type for the pattern object's value. Always returns `reference`.
index	R/O	integer	The position of this pattern in the application.
name		string	The pattern name.
properties		record	All of the pattern properties returned in a single record (properties which are individually read-only remain so in this record).

Valid Commands

- count
- delete
- duplicate
- exists

Notes

Illustrator’s `pattern` object represents a pattern as defined in the Illustrator application.

Example 30.1

Example 30.1 demonstrates how the name of a pattern can be retrieved.

```
-- Returns the name of the first pattern
tell application "Adobe Illustrator 10"
 set pathname to name of pattern 1 of document 1
end tell
```

pattern color info

A pattern color specification, used to specify a pattern color in conjunction with the `color` property.

Properties

Property:	R/O	Value type:	What it is:
matrix		matrix	An additional transformation matrix to manipulate the prototype pattern,
pattern		object reference	A reference to the pattern object that defines the pattern to use in this color definition.
reflect		boolean	Is the prototype reflected before filling?
reflect angle		real	The axis (in degrees) around which to reflect.
rotation		real	The angle (in degrees) to rotate the prototype pattern before filling.
scale factor		fixed point	The horizontal and vertical scaling to scale the prototype pattern expressed as a fixed point.
shear angle		real	The angle (in degrees) to slant the shear by.
shear axis		real	The axis (in degrees) to shear with respect to.
shift angle		real	The angle (in degrees) to translate the unscaled prototype pattern before filling
shift distance		real	The distance to translate the unscaled prototype pattern before filling.

Notes

Pattern colors are created using a reference to an existing pattern in a document. A matrix may be specified to further transform the pattern color.

Example 31.1

Example 31.1 demonstrates how the default fill color of the current document can be set to a pattern color specification.

```
--This script sets the default fill of the document to the first pattern
tell application "Adobe Illustrator 10"

   set default fill color of document 1 to {pattern:pattern 1 of document
1}

end tell
```

PDF open options

You can supply an option when opening a PDF file. See the `open` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
page		integer	What page should be used when opening a multipage document (default: 1)

Notes

This class is used to define a record containing properties used to specify options when opening a document as a PDF file. `PDF open options` can only be supplied in conjunction with the `open` command. It is not possible to get or create a `PDF open options` object.

It is not necessary to specify values for this property; Illustrator will assign it a default value.

PDF save options

Options which may be supplied when saving a document as an Acrobat PDF file. See the `save` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
color compression		none/automatic/JPEG minimum/JPEG low/ JPEG medium/JPEG high/JPEG maximum/ ZIP4bit/ZIP8bit	The type of color bitmap compression used. default: ZIP8bit
color downsampling		real	The downsampling resolution to use for color images in dots per inch (dpi). If set to zero (0), no downsampling occurs. default: `300.0`
compatibility		Acrobat 4/Acrobat 5	Specifies the version of the Acrobat file format to create. default: `Acrobat 5`
compress art		boolean	Is line art and text to be compressed? default: `true`
embed all fonts		boolean	Are all fonts to be embedded? default: true
embed ICC profile		boolean	Should the document’s ICC profile be embedded in the saved file? default: `true`
font subset threshold		real range: 0.0 - 100.0	Include a subset of fonts when less than this percentage of characters are used. default: `100.0`
generate thumbnails		boolean	Should thumbnails be generated for the saved document? default: true
grayscale compression		none/automatic/JPEG minimum/JPEG low/ JPEG medium/JPEG high/JPEG maximum/ ZIP4bit/ZIP8bit	Specifies type of grayscale bitmap compression used. default: `ZIP8bit`

Property:	R/O	Value type:	What it is:
grayscale downsampling		real	The downsampling resolution to use for grayscale images in dots per inch (dpi). If set to zero (0), no downsampling occurs. default: `ZIP8bit`
monochrome compression		none/CCITT3/CCITT4/ ZIP/run length	Specifies type of monochrome bitmap compression used. default: `ZIP`
monochrome downsampling		real	The downsampling resolution to use for monochrome images in dots per inch (dpi). If set to zero (0), no downsampling occurs. default: `1200`
preserve editability		boolean	Should Illustrator editing capabilities be preserved when saving the document? default: `true`

Notes

This class is used to define a record containing properties used to specify options when saving a document as a PDF file. `PDF save options` can only be supplied in conjunction with the `save` command. It is not possible to get or create a `PDF save options` object.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 32.1

This handler processes a folder of Illustrator files, saving each file as a PDF file, with Illustrator editability and Acrobat 4 compatibility. Note that the `class` property is specified in the record to ensure that Illustrator can determine the save option class.

```
-- fileList is a list of aliases to Illustrator files
-- destinationFolder is an alias to a folder where the PDF files are to be saved
on SaveFilesAsPDF(fileList, destinationFolder)

  set destinationPath to destinationFolder as string

  repeat with aFile in fileList
```

```
    tell application "Finder" to set fileName to name of aFile

    set newFilePath to destinationPath & fileName & ".pdf"

    tell application "Adobe Illustrator 10"
      open aFile

      save current document in file newFilePath as pdf ¬
        with options {class:PDF save options ¬
        , compatibility:Acrobat 4 ¬
        , preserve editability:true}

      close current document saving no

    end tell
  end repeat
end SaveFilesAsPDF


-- Call handler
set sourceFolder to choose folder with prompt "Source folder?"
tell application "Finder" to ¬
  set fileList to every file of folder sourceFolder as alias list
set destinationFolder to choose folder with prompt "Destination folder?"
SaveFilesAsPDF(fileList, destinationFolder)
```

Photoshop options

You can supply options when opening a Photoshop file.See the `open` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
area	R/O	real	The area of this path in square points. An area may be negative or even 0. The paths winding order is determined by the sign of area. If the area is negative, the path is wound counter-clockwise. Self-intersecting paths may contain sub-areas that cancel each other out. Therefore, it is possible for a path's area to appear as zero even though it has apparent area.
best type	R/O	class	The best type for the path item object's value. Always returns `reference`.
blend mode		normal/multiply/screen/ overlay/soft light/hard light/color dodge/color burn/darken/lighten/ difference/exclusion/hue/ saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
class	R/O	class	The path item object's class, which is always `path item`.
clipping		boolean	Is this path to be used as a clipping path?
closed		boolean	Is this path closed?
content variable		anything	The content variable to which this path item is bound.
container	R/O	object reference	A reference to the compound path item, layer or group item that contains this path item.

Property:	R/O	Value type:	What it is:
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the path item object's value. Always returns `reference`.
editable		boolean	Is this path item editable?
entire path		list (of path point info)	All the path item's path points.
evenodd		boolean	Use the even-odd rule to determine insideness?
fill color		cmyk color info/gray color info/rgb color info/ spot color info/pattern color info/gradient color info	The fill color of the path.
fill overprint		boolean	Will art beneath a filled object be overprinted?
filled		boolean	Should the path be filled?
geometric bounds	R/O	fixed rectangle	The object's bounds excluding the stroke width.
guides		boolean	Is this path a guide object?
height		real	The height of the path item excluding stroke width, calculated from the geometric bounds.
hidden		boolean	Is this path item hidden?
index	R/O	integer	The position of this path item in the current stacking order of the containing layer, where path item 1 is always the topmost path item.
inheritance	R/O	class	The class that is the parent for this class. Always returns `page item`.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this path item belongs.
locked		boolean	Is this path item locked?

Property:	R/O	Value type:	What it is:
name		string	The name of this path item.
note		string	The note text assigned to the path.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
polarity	R/W	positive/negative	Used in the creation of compound paths.
position		fixed point	The position of the top left corner of the path item excluding stroke width.
preserve image maps		boolean	Should image maps be preserved when the document is converted? (default: `true`)
preserve layers		boolean	Should layers be preserved when the document is converted? (default: `true`)
preserve slices		boolean	Should slices be preserved when the document is converted? (default: `true`)
properties		record	All of the path item’s properties returned in a single record (properties which are individually read-only remain so in this record).
resolution		real	The resolution of the path (in dots per inch).
selected		boolean	Is this object selected?
selected path points	R/O	list (of object references)	All of the selected path points in the path.
stroke cap		butted/rounded/ projecting	The type of line capping.
stroke color		cmyk color info/gray color info/rgb color info/ spot color info/pattern color info/gradient color info	The stroke color for the path.
stroke dash offset		real	The default distance into the dash pattern at which the pattern should be started.

Property:	R/O	Value type:	What it is:
stroke dashes		list (of real numbers)	The lengths for dashes and gaps in dashed lines, starting with the first dash length, followed by the first gap length, and so on. Set to an empty list, {}, for a solid line.
stroke join		mitered/rounded/beveled	Type of joints for the path.
stroke miter limit		real	Are joins mitered (pointed) or beveled (squared-off)?
stroke overprint		boolean	Will art beneath a stroked object be overprinted?
stroke width		real	Width of stroke.
stroked		boolean	Should the path be stroked?
URL		string	The value of the Adobe URL tag assigned to this path item.
visibility variable		anything	The visibility variable to which this path item is bound.
visible bounds	R/O	fixed rectangle	The object’s visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the path item excluding stroke width, calculated from the geometric bounds.

Photoshop export options

Options which may be supplied when exporting a document as a Photoshop file. See the `export` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
antialiasing		boolean	Should the exported image be anti-aliased? default: `true`
color space		Gray/RGB/CMYK	The color space of the exported file. default: `RGB`
compound shapes		boolean	Export compound shapes as shape layers? (default: `true`)
editable text		boolean	Export text objects as editable text layers? (default: `true`)
embed ICC profile		boolean	Should an ICC profile be embedded in the exported image? default: `false`
hidden layers		boolean	Should the hidden layers of the Illustrator document be preserved in the exported image? default: `false`
image map		boolean	For RGB documents, should the image maps be preserved in ImageReady 3.0 format? (default: `true`)
nested layers		boolean	Should the nested layers of the Illustrator document be preserved in the exported image? default: `false`
resolution		real	The resolution of the exported image (in dots per inch). default: `150.0`
slices		boolean	Preserve slices in exported document? (default: `true`)
warnings		boolean	Should a warning dialog be displayed because of conflicts in the export settings? (default: `true`)

Property:	R/O	Value type:	What it is:
write layers		boolean	Should the layers of the Illustrator document be preserved in the exported image? default: `true`

Notes

This class is used to define a record containing properties that specify options when exporting a document as a Photoshop file. `Photoshop export options` can only be supplied in conjunction with the `export` command. It is not possible to get or create an `Photoshop export options` object.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 33.1

This handler saves all files in a folder as layered Photoshop files. Note that the `class` property is specified in the record to ensure that Illustrator can determine the save option class.

```
-- fileList is a list of aliases to Illustrator files
-- destinationFolder is an alias to a folder where the Photoshop files
-- are to be saved
on SaveFilesAsPhotoshop(fileList, destinationFolder)

  set destinationPath to destinationFolder as string

  repeat with aFile in fileList

    tell application "Finder" to set fileName to name of aFile

    set newFilePath to destinationPath & fileName & ".ps"

    tell application "Adobe Illustrator 10"
      open aFile

      export current document to file newFilePath as Photoshop ¬
        with options {class:Photoshop export options ¬
        , embed ICC profile:true ¬
        , resolution:120}
```

```
     close current document saving no

   end tell
  end repeat
end SaveFilesAsPhotoshop


-- Call handler
set sourceFolder to choose folder with prompt "Source folder?"
tell application "Finder" to ¬
  set fileList to every file of folder sourceFolder as alias list
set destinationFolder to choose folder with prompt "Destination folder?"
SaveFilesAsPhotoshop(fileList, destinationFolder)
```

placed item, placed items

An artwork item (optionally stored in an external file) placed in a document. A placed item must correspond to a file containing vector-graphic data, such as a PICT, EPS or PDF file.

Elements

Element:	Refer to by:
tag	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the placed item object's value. Always returns `reference`.
blend mode		normal/multiply/screen/overlay/soft light/hard light/color dodge/color burn/darken/lighten/difference/exclusion/hue/saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
bounding box	R/O	fixed rectangle	Dimensions of placed item regardless of transformations.
class	R/O	class	The placed art item object's class, which is always `placed item`.
compound path item		compound path object	The compound path contained in this placed item.
container	R/O	object reference	A reference to the layer that contains this placed item.
content variable		anything	The content variable to which this placed item is bound.
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the placed item object's value. Always returns `reference`.
editable		boolean	Is this placed item editable?
file path		file specification	The file containing the placed artwork.

Property:	R/O	Value type:	What it is:
geometric bounds	R/O	fixed rectangle	The object's bounds excluding the stroke width.
graph item		graph item object	The graph item contained in this placed item.
group item		group item object	The group items contained in this placed item.
height		real	The height of the placed item, calculated from the geometric bounds.
hidden		boolean	Is this placed item hidden?
index	R/O	integer	The position of this placed item in the current stacking order of the containing layer, where page item 1 is always topmost.
inheritance	R/O	class	The class that is the parent for this class. Always returns `page item`.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this placed item belongs.
locked		boolean	Is this placed item locked?
matrix		matrix	The transformation matrix applied to the placed item.
mesh item		mesh item object	The mesh item contained in this placed item.
name		string	The name of this placed item.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
page item		page item object	The page item from which this placed item inherits.
path item		path item object	The path item contained in this placed item.
placed item		placed item object	The placed item contained in this placed item.
plugin item		plugin item object	The plugin item contained in this placed item.

Property:	R/O	Value type:	What it is:
position		fixed point	The position of the top left corner of the placed item.
properties		record	All of the placed item's properties returned in a single record (properties which are individually read-only remain so in this record).
raster item		raster item object	The raster item contained in this placed item.
selected		boolean	Is this placed item selected?
slices		boolean	Preserve slices?
symbol item		symbol item object	The symbol item contained in this placed item.
text art item		text art item object	The text art item contained in this placed item.
URL		string	The value of the Adobe URL tag assigned to this placed item.
visibility variable		anything	The visibility variable to which this placed item is bound.
visible bounds	R/O	fixed rectangle	The object's visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the placed item, calculated from the geometric bounds.

Valid Commands

- count
- delete
- duplicate
- exists
- move
- rotate
- scale
- transform
- translate

Notes

When you create a `placed item`, Illustrator may display a dialog. To avoid this dialog, check the box to turn the warning off the first time the dialog is displayed.

It is not necessary to set the type of the `content variable` before binding. Illustrator automatically sets the type to image.

Users can place vector art files, such as EPS and PDF files, with the `File > Place...` command in Illustrator. `Placed items` can be created from vector art files in a script using the technique illustrated in the following example.

Example 34.1

This example places a vector art file in the current document.

```
-- Create a new placed vector art item
-- fileRef is an alias or file reference to the vector file to be placed
-- itemPosition is a fixed point at which to position the placed item
property itemPosition: {100.0, 200.0}

set fileRef to choose file with prompt "Select vector art file"

tell application "Adobe Illustrator 10"

  set placedRef to make new placed item in document 1 with properties ¬
    {file path:fileRef, position:itemPosition}

end tell
```

plugin item, plugin items

An art object or objects created by an Illustrator plug-in.

Elements

Element:	Refer to by:
tag	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the plugin item object's value. Always returns `reference`.
blend mode		normal/multiply/screen/overlay/soft light/hard light/color dodge/color burn/darken/lighten/difference/exclusion/hue/saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
class	R/O	class	The plugin item object's class, which is always `plugin item`.
compound path item		compound path object	The compound path contained in this plugin item.
container	R/O	object reference	A reference to the layer that contains this plugin item.
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the document object's value. Always returns `reference`.
editable		boolean	Is this plugin item editable?
geometric bounds	R/O	fixed rectangle	The object’s bounds excluding the stroke width.
graph item		graph item object	The graph item contained in this plugin item.
group item		group item object	The group items contained in this plugin item.

Property:	**R/O**	**Value type:**	**What it is:**
height		real	The height of the plugin item, calculated from the geometric bounds.
hidden		boolean	Is this plugin item hidden?
index	R/O	integer	The position of this plugin item in the current stacking order of the containing layer, where plugin item 1 is always the topmost plugin item.
inheritance	R/O	class	The class that is the parent for this class. Always returns `page item`.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this plugin item belongs.
locked		boolean	Is this plugin item locked?
mesh item		mesh item object	The mesh item contained in this plugin item.
name		string	The name of this plugin item.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
page item		page item object	The page item from which this plugin item inherits.
path item		path item object	The path item contained in this plugin item.
placed item		placed item object	The placed item contained in this plugin item.
position		fixed point	The position of the top left corner of the plugin item.
properties		record	All of the plugin item’s properties returned in a single record (properties which are individually read-only remain so in this record).
raster item		raster item object	The raster item contained in this plugin item.
selected		boolean	Is this plugin item selected?

Property:	R/O	Value type:	What it is:
slices		boolean	Preserve slices?
symbol item		symbol item object	The symbol item contained in this plugin item.
text art item		text art item object	The text art item contained in this plugin item.
URL		string	The value of the Adobe URL tag assigned to this plugin item.
visibility variable		anything	The visibility variable to which this plugin item is bound.
visible bounds	R/O	fixed rectangle	The object's visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the plugin item, calculated from the geometric bounds.

Valid Commands

- count
- delete
- duplicate
- exists
- move
- translate
- rotate
- scale
- transform

Notes

Plug-in items cannot be created from a script, but can be duplicated, copied and pasted.

PNG24 export options

Options which may be supplied when exporting a document as a PNG file with 24-bit color. See the `export` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
antialiasing		boolean	Should the resulting image be anti-aliased? default: `true`
artboard clipping		boolean	Should the resulting image be clipped to the artboard? default: `false`
horizontal scaling		real	The percent horizontal scaling factor to apply to the resulting image. range: `0.0` - `100.0`. default: `100.0`
matte		boolean	Should the artboard be matted with a color? default: `true`
matte color		RGB color info	The color to use when matting the artboard. default: `{255.0, 255.0, 255.0}`
saving as HTML		boolean	Should the resulting image be saved with an accompanying HTML file? default: `false`
transparency		boolean	Should the resulting image use transparency? default: `true`
vertical scaling		real	The percentage vertical scaling factor to apply to the resulting image. range: `0.0` - `100.0`. default: `100.0`

Notes

This class is used to define a record containing properties that specify options when exporting a document as a PNG24 file. `PNG24 export options` can only be supplied in conjunction with the `export` command. It is not possible to get or create a `PNG24 export options` object.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 35.1

This handler saves all files in a folder as 24 bit PNG files in HTML format scaled to 50%. Note that the `class` property is specified in the record to ensure that Illustrator can determine the save option class.

```
-- fileList is a list of aliases to Illustrator files
-- destinationFolder is an alias to a folder where the PNG files are to be saved
on SaveFilesAsPNG24HTML(fileList, destinationFolder)

  set destinationPath to destinationFolder as string

  repeat with aFile in fileList

    tell application "Finder" to set fileName to name of aFile

    set newFilePath to destinationPath & fileName & ".png"

    tell application "Adobe Illustrator 10"
      open aFile

      export current document to file newFilePath as PNG24 ¬
        with options {class:PNG24 export options ¬
        , horizontal scaling:50.0 ¬
        , vertical scaling:50.0 ¬
        , saving as HTML:true}

      close current document saving no

    end tell
  end repeat
end SaveFilesAsPNG24HTML


-- Call handler
set sourceFolder to choose folder with prompt "Source folder?"
tell application "Finder" to ¬
  set fileList to every file of folder sourceFolder as alias list
set destinationFolder to choose folder with prompt "Destination folder?"
SaveFilesAsPNG24HTML(fileList, destinationFolder)
```

PNG8 export options

Options which may be supplied when exporting a document as a PNG file with 8-bit color. See the `export` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
antialiasing		boolean	Should the resulting image be anti-aliased? default: `true`
artboard clipping		boolean default: false	Should the resulting image be clipped to the artboard?
color count		integer range: 2 - 256 default: 128	The number of colors in the exported color table. This value can range from 2 to 256. The default value is 128 if the property is not set explicitly.
color dither		none/diffusion/pattern dither/ noise default: diffusion	The method used to dither colors.
color reduction		selective/adaptive/ perceptual/web default: selective	The method used to reduce the number of colors in the document.
dither percent		integer range: 0 - 100 default: 88	How much should the colors be dithered as a percentage?
horizontal scaling		real range: 0.0 - 100.0 default: 100.0	The percentage horizontal scaling factor to apply to the resulting image.
interlaced		boolean default: false	Should the resulting image be interlaced?
matte		boolean	Should the artboard be matted with a color? default: `true`
matte color		RGB color info	The color to use when matting the artboard. default: `{255.0, 255.0, 255.0}`
saving as HTML		boolean	Should the resulting image be saved with an accompanying HTML file?
transparency		boolean	Should the resulting image use transparency? default: `true`

Property:	R/O	Value type:	What it is:
vertical scaling		real	The percentage vertical scaling factor to apply to the resulting image. range: `0.0` - `100.0`. default: `100.0`
web snap		integer	How much should the color table be changed to match the web pallet as a percentage? range: `0` - `100`. default: `0`

Notes

This class is used to define a record containing properties that specify options when exporting a document as a PNG8 file. `PNG8 export options` can only be supplied in conjunction with the `export` command. It is not possible to get or create an `PNG8 export options` object.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 36.1

This handler saves all files in a folder as 8 bit PNG files in HTML format with dithering and interlacing. Note that the `class` property is specified in the record to ensure that Illustrator can determine the save option class.

```
-- fileList is a list of aliases to Illustrator files
-- destinationFolder is an alias to a folder where the PNG files are to be saved
on SaveFilesAsPNG8HTML(fileList, destinationFolder)

  set destinationPath to destinationFolder as string

  repeat with aFile in fileList

    tell application "Finder" to set fileName to name of aFile

    set newFilePath to destinationPath & fileName & ".png"

    tell application "Adobe Illustrator 10"
      open aFile

      export current document to file newFilePath as PNG8 ¬
      with options {class:PNG8 export options ¬
      , color count:64 ¬
      , color reduction:web ¬
      , color dither:pattern dither ¬
      , dither percent:50 ¬
      , interlaced:true ¬
      , saving as HTML:true}

     close current document saving no

   end tell
  end repeat
end SaveFilesAsPNG8HTML


-- Call handler
set sourceFolder to choose folder with prompt "Source folder?"
tell application "Finder" to ¬
  set fileList to every file of folder sourceFolder as alias list
set destinationFolder to choose folder with prompt "Destination folder?"
SaveFilesAsPNG8HTML(fileList, destinationFolder)
```

polygon

A class used to create a multi-sided path in an Illustrator document. This class can only be used to create new path item objects.

Properties

Property:	R/O	Value type:	What it is:
center point	W/O	fixed point	The center point for the polygon. default: `{200.0, 300.0}`
radius	W/O	real	The radius of the polygon's points. default: `50.0`
reversed	W/O	boolean	Is the polygon path reversed? default: `false`
sides	W/O	integer (unsigned)	The number of sides for the polygon. default: `8`

Valid Commands

- make

Notes

Illustrator's `polygon` object is available to use with the `make` command exclusively. The class of the object created will be a path item. Therefore, the properties for a polygon are write-once (W/O) in the sense that they can be used only to specify the creation of a new path item. This special class allows you to quickly create complex path items using the properties provided. If you do not specify any properties when making a new polygon, default values will be used. Properties usually associated with path items, such as `fill color`, can also be specified at the time of creation.

Example 37.1

Example 37.1 demonstrates how to create a polygon.

```
-- Make an octagon in document 1
tell application "Adobe Illustrator 10"
  set pathRef to make new polygon in document 1 with properties ¬
    {center point:{200.0, 200.0}, radius:40.0, sides:8}
end tell
```

raster item, raster items

A bitmap art object or list of objects.

Elements

Element:	Refer to by:
tag	name, index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the raster item object. Always returns `reference`.
blend mode		normal/multiply/screen/overlay/soft light/hard light/color dodge/color burn/darken/lighten/difference/exclusion/hue/saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
bounding box		fixed rectangle	Dimensions of raster item regardless of transformations.
class	R/O	class	The raster item's class.
color space	R/O	Gray/RGB/CMYK	The color space of the raster image.
compound path		compound path object	The compound path contained in this raster item.
container	R/O	object reference	A reference to the layer that contains this raster item.
content variable		anything	The contents of the variable to which this raster item is bound.
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the raster item. Always returns `reference`.
editable		boolean	Is this raster item editable?
embedded		boolean	Is the raster art embedded within the illustration?

Property:	**R/O**	**Value type:**	**What it is:**
file path		file specification	The file containing the raster artwork, if it is stored externally.
geometric bounds	R/O	fixed rectangle	The object's bounds excluding the stroke width.
graph item		graph item object	The graph item contained in this raster item.
group item		group item object	The group items contained in this raster item.
height		real	The height of the raster item, calculated from the geometric bounds.
hidden		boolean	Is this raster item hidden?
index	R/O	integer	The position of this raster item in the current stacking order of the containing layer, where raster item 1 is always the topmost raster item.
inheritance	R/O	class	The class that is the parent for this class. Always returns `page item`.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this raster item belongs.
locked		boolean	Is this raster item locked?
matrix		matrix	The transformation matrix of the raster art object.
name		string	The name of this raster item.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
page item		page item object	The page item from which this raster item inherits.
path item		path item object	The path item contained in this raster item.
placed item		placed item object	The placed item contained in this raster item.

Property:	R/O	Value type:	What it is:
plugin item		plugin item object	The plugin item contained in this raster item.
position		fixed point	The position of the top left corner of the raster item.
properties		record	All of the raster item's properties returned in a single record (properties which are individually read-only remain so in this record).d
selected		boolean	Is this raster item selected?
slices		boolean	Preserve slices?
status	R/O	no data/data from file/ modified data	The status of the linked image, if the image is stored externally.
symbol item		symbol item object	The symbol item contained in this raster item.
text art item		text art item object	The text art item contained in this raster item.
URL		string	The value of the Adobe URL tag assigned to this raster item.
visibility variable		anything	The visibility variable to which this raster item is bound.
visible bounds	R/O	fixed rectangle	The object's visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the raster item, calculated from the geometric bounds.

Valid Commands

- colorize
- count
- delete
- duplicate
- exists
- make
- move
- rotate

- scale
- transform
- translate

Notes

You can create `raster items` from a script if you use an external file. You can also create new raster items by duplicating or copying and pasting an existing `raster item`.

Note that it is not necessary to set the type of the `content variable` before binding. Illustrator automatically sets the type to image.

Example 38.1

This script creates a new raster item using a linked file selected by the user.

```
-- Make a new raster item in the first document
set rasterfile to choose file with prompt "Select file to import"

tell application "Adobe Illustrator 10"
 make new raster item in document 1 with properties ¬
  {position: {200, 300}, file path:rasterfile}
end tell
```

rectangle

A class used to create a rectangular path in an Illustrator document. This class can only be used to create new path item objects.

Properties

Property:	R/O	Value type:	What it is:
bounds	W/O	fixed rectangle	The bounds of the rectangle. default: `{100.0, 200.0, 175.0, 100.0}`
reversed	W/O	boolean	Is the path reversed? default: `false`

Valid Commands

- make

Notes

The rectangle can only be used with the `make` command. The class of the object created will be a path item. Therefore, the properties for a rectangle are write-once (W/O) in the sense that they can be used only to specify the creation of a new path item. This special class allows you to quickly create complex path items. Properties associated with path items, such as `fill color` and `note`, can also be specified at the time of creation.

Example 39.1

Example 39.1 demonstrates how to create a square rectangle with a note.

```
-- Make a square in document 1
tell application "Adobe Illustrator 10"
   set pathRef to make new rectangle at beginning of document 1 ¬
     with properties {bounds:{50.0,200.0,200.0, 50.0}, note:"square"}
end tell
```

RGB color info

An RGB color specification, used to specify a RGB color in conjunction with the `color` property.

Properties

Property:	R/O	Value type:	What it is:
red		real	The red color value as a value in the range 0.0 - 255.0
green		real	The green color value as a value in the range 0.0 - 255.0.
blue		real	The blue color value as a value in the range 0.0 - 255.0.

Notes

If the `color space` of a document is `CMYK` and you specify the color value for a page item in that document using `RGB color info`, Illustrator will translate the RGB color specification into a CMYK color specification. The same thing happens if the document's `color space` is `RGB` and you specify colors using `CMYK color info`. Since this translation can cause information loss you should specify colors using the color info class that matches the document's `color space`.

Example 40.1

Example 40.1 demonstrates how the default stroke color of the current document can be set to a RGB color specification.

```
-- Set the default stroke color of document 1 to yellow
tell application "Adobe Illustrator 10"
  set default stroke color of document 1 to {red:255, green:255, blue:0}
end tell
```

rounded rectangle

A class used to create a rectangular path with rounded corners in an Illustrator document. This class can only be used to create new path item objects.

Properties

Property:	R/O	Value type:	What it is:
bounds	W/O	fixed rectangle	The bounds of the rectangle to create. default: `{100.0, 100.0, 150.0, 200.0}`
horizontal radius	W/O	real	The horizontal radius of the rectangle's rounded corners. default: `15.0`
reversed	W/O	boolean	Is the rectangle path reversed? default: `false`
vertical radius	W/O	real	The vertical radius of the rectangle's rounded corners. default: `20.0`

Valid Commands

- make

Notes

The rounded rectangle can only be used with the `make` command. The class of the object created will be a path item. Therefore, the properties for a rounded rectangle are write-once (W/O) in the sense that they can be used only to specify the creation of a rounded rectangle path item. This special class allows you to quickly create complex path items. If you do not specify any properties when making a new rounded rectangle, default values will be used. Properties usually associated with path items, such as `fill color`, can also be specified at the time of creation.

Example 41.1

Example 41.1 demonstrates how to create a rounded rectangle that is square.

```
-- Make a rounded rectangle
tell application "Adobe Illustrator 10"
   set pathRef to make new rounded rectangle in document 1 with
properties ¬
    {bounds:{50.0,200.0,200.0, 50.0}, horizontal radius: 20.0, ¬
    vertical radius: 25.0}
end tell
```

spot, spots

A spot color definition, or list of definitions, contained in a document.

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the spot object. Always returns `reference`.
class	R/O	class	The spot object's class, which is `spot`.
color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The color information for this spot.
container	R/O	object reference	A reference to the document that contains this spot.
default type	R/O	class	The default type for the spot. Always returns `reference`.
index	R/O	integer	The position of this spot in the document.
name		string	The spot’s unique name.
properties		record	All of the spot’s properties returned in a single record (properties which are individually read-only remain so in this record).

Valid Commands

- count
- delete
- duplicate
- exists
- make

Notes

Illustrator’s `spot` object represents a spot color as defined by Illustrator. All Illustrator documents contain the spot color "[Registration]" which can be used to print to all plates of a separation.

If no properties are specified when creating a new spot, default properties will be provided. However, if specifying the color, you must use the same color space as the document, either CMYK or RGB. Otherwise, an error will result. When created, the spot is inserted into the swatch palette at the end.

Example 42.1

Example 42.1 demonstrates how a spot color can be created.

```
-- Make a new spot with name and color properties
tell application "Adobe Illustrator 10"
 -- set up the appropriate color record for the document color space
 set docColorSpace to color space of document 1

 if (docColorSpace is CMYK) then
  set newSpotColor to {cyan:25.0, magenta:75.0, yellow:0.0, black:0.0}
 else
  set newSpotColor to {red:255.0, green:0.0, blue:25.0}
 end if

 -- now create the new spot
 make new spot in document 1 with properties ¬
   {name:"My Spot", color:newSpotColor}
end tell
```

spot color info

A spot color specification, used to specify a spot color in conjunction with the `color` property.

Properties

Property:	R/O	Value type:	What it is:
spot		object reference	A reference to the spot object which defines the color.
tint		real	The tint of the color as a value in the range 0.0 - 100.0.

Notes

The `spot` property must be set to a reference to an existing spot color definition.

Example 43.1

Example 43.1 demonstrates how the default stroke color of the current document can be set to a new spot color specification.

```
-- Make a new spot color and apply a 50% tint to the default stroke color
tell application "Adobe Illustrator 10"

  -- create a document with RGB color space
  make new document with properties {color space:RGB}
  set newSpot to make new spot in document 1 with properties ¬
     {name:"Big Blue", color:{red:0.0, green:0.0, blue:255.0}}
  set default stroke color of document 1 to {spot:newSpot, tint:50.0}
end tell
```

star

A class used to create a star-shaped path in an Illustrator document. This class can only be used to create new path item objects.

Properties

Property:	R/O	Value type:	What it is:
center point	W/O	fixed point	The center point of the star. default: `{200.0, 300.0}`
inner radius	W/O	real	The inner radius of the star. default: `20.0`
point count	W/O	integer	The number of points on the star. default: `5`
radius	W/O	real	The radius of the star's points. default: `50.0`
reversed	W/O	boolean	Is the star path reversed? default: `false`

Valid Commands

- make

Notes

The star can only be used with the `make` command. The class of the object created will be a path item. Therefore, the properties for a star are write-once (W/O) in the sense that they can be used only to specify the creation of a star path item. This special class allows you to quickly create complex path items. If you do not specify any properties when making a new star, default values will be used. Properties usually associated with path items, such as `fill color`, can also be specified at the time of creation.time of creation.

Example 44.1

Example 44.1 demonstrates how to create a star.

```
-- Make a 6-pointed star
tell application "Adobe Illustrator 10"
  make new star in document 1 with properties ¬
    {center point:{200.0, 500.0}, inner radius:50, radius:100, point
count:6}
end tell
```

SVG export options

Options which may be supplied when exporting a document as an SVG file. See the `export` command in the command reference for additional details.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
CSS properties		entities/style attributes/ style elements/ presentation attributes	How should the CCS properties of the document be included in the exported file? default: `style attributes`
compressed		boolean	Should the exported file be compressed? (default: `false)`
coordinate precision		integer	The decimal precision for element coordinate values. range: `1` - `7`. default: `3`
document encoding		ASCII/UTF8/UTF16	How should the text in the document be encoded? default: `ASCII`
embed all fonts		boolean	Should the fonts used in the document be included in the exported file? default: `true`
embed raster image		boolean	Should the raster images used in the document be included in the exported file? default: `true`
font subsetting		none/glyphs used/ common english/glyphs used plus english/ common roman/glyphs used plus roman/all glyphs	What font glyphs should be included in the exported file? default: `all glyphs`
include file info		boolean	Should the XAP library be included? default: `false`
include variables and datasets		boolean	Should variables and datasets be included? default: `false`
optimize for SVG Viewer		boolean	Should the Adobe namespace be included? default: `false`

Property:	R/O	Value type:	What it is:
preserve image maps		boolean	Should image maps be preserved when the document is converted? (default: `true`)
preserve layers		boolean	Should layers be preserved when the document is converted? (default: `true`)
preserve slices		boolean	Should slices be preserved when the document is converted? (default: `true`)

Notes

This class is used to define a record containing properties that specify options when exporting a document as a SVG file. `SVG export options` can only be supplied in conjunction with the `export` command. It is not possible to get or create an SVG `export options` object.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 45.1

This handler saves all files in a folder as SVG files with linked raster imaged embedded in the exported files. Note that the `class` property is specified in the record to ensure that Illustrator can determine the save option class.

```
-- fileList is a list of aliases to Illustrator files
-- destinationFolder is an alias to a folder where the PNG files are to be saved
on SaveFilesAsSVG(fileList, destinationFolder)

  set destinationPath to destinationFolder as string

  repeat with aFile in fileList

    tell application "Finder" to set fileName to name of aFile

    set newFilePath to destinationPath & fileName & ".svg"

    tell application "Adobe Illustrator 10"
      open aFile
```

```
     export current document to file newFilePath as SVG ¬
      with options {class:SVG export options ¬
      , embed raster images:true}

     close current document saving no

   end tell
  end repeat
end SaveFilesAsSVG

-- Call handler
set sourceFolder to choose folder with prompt "Source folder?"
tell application "Finder" to ¬
  set fileList to every file of folder sourceFolder as alias list
set destinationFolder to choose folder with prompt "Destination folder?"
SaveFilesAsSVG(fileList, destinationFolder)
```

swatch, swatches

A color swatch or list of swatches contained in a document.

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the swatch. Always returns `reference`.
class	R/O	class	The swatch object's class, which is `swatch`.
color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The color information for this swatch.
container	R/O	object reference	A reference to the document that contains this swatch.
default type	R/O	class	The default type for the swatch. Always returns `reference`.
index	R/O	integer	The position of this swatch in the document.
name		string	The unique name of the swatch.
properties		record	All of the swatch’s properties returned in a single record (properties which are individually read-only remain so in this record).

Valid Commands

- count
- delete
- duplicate
- exists
- make

Notes

The swatches correspond to the swatch palette in Illustrator’s user interface. Additional swatches can be created either manually by a user or by a script. The swatch can hold all types of color data (i.e., pattern, gradient, CMYK, RGB, gray, spot).

Example 46.1

Example 46.1 demonstrates how to create a swatch with a specified name.

```
-- Make a new swatch
tell application "Adobe Illustrator 10"
  make new swatch in document 1 with properties ¬
       {name:"My Swatch", color:{red:175.0, green:50.0, blue:0.0}}
end tell
```

symbol, symbols

A `symbol` or list of `symbols`. A `symbol` is an `art object` that is stored in the symbols palette, and can be reused one or more times in the document without duplicating the art data. `symbols` are contained in documents.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
best type	R/O	class	The best type for the symbol object's value. Always returns `reference`.
class	R/O	class	The symbol's class, which is `symbol`.
container	R/O	object reference	A reference to the object that contains this symbol.
default type	R/O	class	The default type for the symbol.
index	R/O	integer	The index of this symbol.
name	R/O	string	The name of the symbol. Defaults to "New Symbol nnn" where n is an integer, starting at 1 and increasing with each newly created symbol.
properties	R/O	record	All of the properties of this symbol returned as a record.

Valid Commands

- count
- delete
- duplicate
- exist
- make

Example

```
--Create a symbol. Assumes the document has a group item.
set symbolRef1 to make new symbol in document 1 ¬
with properties {source art: group item 1 of document1}
```

symbol item, symbol items

A `symbol item` is an instance of a `symbol` in a document. `symbol items` are linked to the `symbol` from which they are created and will change with any modification of that `symbol`.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
best type	R/O	class	The best type for the symbol item object's value. Always returns `reference`.
blend mode		normal/multiply/screen/overlay/soft light/hard light/color dodge/color burn/darken/lighten/difference/exclusion/hue/saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0 (or 100%).
class	R/O	class	The symbol item object's class, which can be any one of the specific classes that are children of the page item class, including `compound path item`, `group item`, `mesh item`, `path item`, `placed item`, `plugin item`, `raster item`, and `text art item`.
compound path item		compound path object	The compound path contained in this symbol item.
container	R/O	object reference	A reference to the layer that contains this symbol item.
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the symbol item object's value.
editable		boolean	Is this symbol item editable?
geometric bounds	R/O	fixed rectangle	The object’s bounds excluding the stroke width.

Property:	R/O	Value type:	What it is:
graph item		graph item object	The graph item contained in this symbol item.
group item		group item object	The group items contained in this symbol item.
height		real	The height of the symbol item, calculated from the geometric bounds.
hidden		boolean	Is this symbol item hidden?
index	R/O	integer	The position of this symbol item in the current stacking order of the containing layer, where symbol item 1 is always topmost.
isolated		boolean	Is this object isolated?
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this symbol item belongs.
locked		boolean	Is this symbol item locked?
mesh item		mesh item object	The mesh item contained in this symbol item.
name		string	The name of this symbol item.
opacity		real	The opacity of this object, where 100.0 is completely opaque and 0.0 is completely transparent.
page item		page item object	The page item from which this symbol item inherits.
path item		path item object	The path item contained in this symbol item.
placed item		placed item object	The placed item contained in this symbol item.
plugin item		plugin item object	The plugin item contained in this symbol item.
position		fixed point	The position of the top left corner of the symbol item.
properties		record	All of the symbol item’s properties returned in a single record (properties which are individually read-only remain so in this record).

Property:	R/O	Value type:	What it is:
raster items		raster item object	The raster item contained in this symbol item.
selected		boolean	Is this object selected?
slices		boolean	Preserve slices?
symbol	R/O	class	The symbol class from which this instance is derived.
text art item		text art object	The text art contained in this symbol item.
URL		string	The value of the Adobe URL tag assigned to this symbol item.
visibility variable		anything	The visibility variable to which this compound path is bound.
visible bounds	R/O	fixed rectangle	The object’s visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the symbol item, calculated from the geometric bounds.

Valid Commands

- count
- delete
- duplicate
- exists
- move
- rotate
- scale
- transform
- translate

tab stop info

Tab stop information for a paragraph.

Properties

Property:	R/O	Value type:	What it is:
alignment		unknown/left/center/ right/decimal	The alignment of the tab stop.
decimal character		string	The character to use for decimal tab stops.
position		real	The position of the tab stop.

Notes

All of the tab stops in a paragraph can be retrieved and specified using `tab stops`, which returns a list of `tab stop info` records.

Example 47.1

Example 47.1 demonstrates how to get the tab stops for a paragraph.

```
-- Return the tab stops of the first paragraph
tell application "Adobe Illustrator 10"
  set allTabs to tab stops of paragraph 1 of text art item 1 of document 1
end tell
```

tag, tags

A tag or list of tags associated with a specific page item.

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the tag object. Always returns `reference`.
class	R/O	class	The tag object's class, which is `tag`.
container	R/O	object reference	A reference to the page item that contains this tag.
default type	R/O	class	The default type for the tag. Always returns `reference`.
index	R/O	integer	The index of this tag in the page item.
name		string	The tag’s name.
properties		record	All of the tag’s properties returned in a single record (properties which are individually read-only remain so in this record).
value		string	The data stored in this tag.

Valid Commands

- count
- delete
- duplicate
- exists
- make

Notes

Tags allows you to assign an unlimited number of key-value pairs to any page item in a document.

Example 48.1

Example 48.1 demonstrates how to get the tags for a page item.

```
-- Get the tags for the first page item in the document
tell application "Adobe Illustrator 10"
  make rectangle in document 1 with properties {name: "rectPath"}
  set URL of path item "rectPath" of document 1 to "http://www.adobe.com/
"
  get properties of tags of path item "rectPath" of document 1
end tell
```

text

Any text in the contents of a text art item.

Elements

Element:	Refer to by:
character	index, before/after, range, test
insertion point	index, before/after, range, test
line	index, before/after, range, test
paragraph	index, before/after, range, test
text	index, before/after, range
word	index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
auto kerning		boolean	Should the font’s built-in kerning rules be used?
baseline		real	Bottom position of horizontally-oriented text or left position of vertically-oriented text.
baseline shift		real	The baseline offset.
best type	R/O	class	The best type for the text object. Always returns `string`.
character offset	R/O	integer	Offset from beginning (in characters).
class	R/O	class	The text object's class, which is `text`.
clipping	R/O	boolean	Is there a clipping path associated with the text art item containing this text?
container	R/O	object reference	A reference to the text art item that contains this text.
contents		string	The contents of the character as a string.
default type	R/O	class	The default type for the text object, which is `string`. The string value returned is the value contained in the text’s `contents` property.

Property:	**R/O**	**Value type:**	**What it is:**
direction		normal/rotated/KumiMoji	The direction of characters in a vertical text block.
evenodd		boolean	Should the even-odd rule be used to determine fills?
fill color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The character's fill color.
fill overprint		boolean	Should art beneath the filled character be overprinted?
filled		boolean	Should the character's path be filled?
font		string	The name of the text face (font).
index	R/O	integer	The index of this text in the complete string.
leading		real	The leading.
length	R/O	integer	Length (in characters).
note	R/O	string	A note associated with the text.
properties		record	All of the character's properties returned in a single record (properties which are individually read-only remain so in this record).
resolution	R/O	real	The resolution of the path in dots per inch.
scaling		fixed point	Horizontal and vertical scaling specified as a point value.
size		real	The font size.
stroke cap		butted/rounded/ projecting	The type of cap on the character's stroke.
stroke color		CMYK color info/gray color info/RGB color info/ spot color info/pattern color info/gradient color info	The stroke color of the text.
stroke dash offset		real	The default distance to start the stroke dash pattern.

Property:	R/O	Value type:	What it is:
stroke dashes		list (of reals)	The lengths for dashes and gaps in dashed lines, starting with the first dash length, followed by the first gap length, and so on. Set to an empty list, {}, for a solid line.
stroke join		mitered/rounded/beveled	The type of joins in the text stroke.
stroke miter limit		real	The angle at which a stroke join switches from mitered to beveled.
stroke overprint		boolean	Should art beneath the stroked text be overprinted?
stroke width		real	The width of the stroke.
stroked		boolean	Should the text path be stroked?
text orientation	R/O	horizontal/vertical	The orientation of the text. Use the `text path` class to modify this value.
text path	R/O	object reference	A reference to the text path associated with the text art item containing this text.
tracking		real	The uniform spacing amount between characters.

Valid Commands

- count
- delete
- duplicate
- exists
- make

Notes

Text can be accessed using the `character`, `insertion point`, `word`, `line`, `paragraph` and `text` classes. All text is contained within text art items.

Example 49.1

In this example, all characters set to 12 point type in the current document will be changed to 18 point type.

```
-- Change all 12pt text to 18pt
tell application "Adobe Illustrator 10"
   set textArtItemCount to count of text art items of document 1

   -- Loop through all the text art items
   repeat with itemCount from 1 to textArtItemCount
    set textRef to text of text art item itemCount of document 1 as
reference
    if (size of textRef = 12) then
      set size of textRef to 18
    end if
   end repeat
end tell
```

text art item, text art items

A text art object or objects. From the user interface, this is text created with the Text tool.

Elements

Element:	Refer to by:
character	index, before/after, range, test
insertion point	index, before/after, range, test
line	index, before/after, range, test
paragraph	index, before/after, range, test
path item	name, index, before/after, range, test
tag	name, index, before/after, range, test
text	index, before/after, range
text path	name, index, before/after, range, test
word	index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the text art item. Always returns `reference`.
blend mode		normal/multiply/screen/overlay/soft light/hard light/color dodge/color burn/darken/lighten/difference/exclusion/hue/saturation blend/color blend/luminosity/numeric	The mode to use when compositing this object. An object is considered composited when its opacity is set to less than 100.0.
class	R/O	class	The text art item’s class, which is always `text art item`.
compound path item		compound path object	The compound path item contained in this text art item.
container	R/O	object reference	A reference to the layer that contains this text art item.
content variable		anything	The content variable to which this text art item is bound.

Property:	**R/O**	**Value type:**	**What it is:**
contents		string	The textual contents of the text art item, represented as a string.
control bounds	R/O	fixed rectangle	The bounds of the object including stroke width and controls.
default type	R/O	class	The default type for the text art item. Always returns `string`.
editable		boolean	Is this text art item editable?
geometric bounds	R/O	fixed rectangle	The object's bounds excluding the stroke width.
graph item		graph item object	The graph item contained in this text art item.
group item		group item object	The group items contained in this text art item.
height		real	The height of the text art item, calculated from the geometric bounds.
hidden		boolean default: false	Is this text art item hidden?
index	R/O	integer	The position of this text art item in its container, where text art item 1 is always the topmost text art item.
isolated		boolean	Is this object isolated?
kind		point text/area text/path text	The type of text art.
knockout		unknown/disabled/ enabled/inherited	Is this object used to create a knockout?
layer	R/O	object reference	The layer to which this text art item belongs.
locked		boolean	Is the text art item locked?
mesh item		mesh item object	The mesh item contained in this text art item.
name		string	The name of the text art item.
opacity		real	The opacity, where 0.0 is completely transparent and 100.0 is completely opaque.

Property:	R/O	Value type:	What it is:
page item		page item object	The page item from which this text art item inherits.
path item		path item object	The path item contained in this text art item.
placed item		placed item object	The placed item contained in this text art item.
plugin item		plugin item object	The plugin item contained in this text art item.
position		fixed point	The position of the top left corner of the text art item.
properties		record	All of the text art item's properties returned in a single record (properties which are individually read-only remain so in this record).
raster item		raster item object	The raster item contained in this text art item.
selected		boolean	Is this text art item selected?
selection		object reference	The reference to the text range in this text art item's current selection, if any.
slices		boolean	Preserve slices?
symbol item		symbol item object	The symbol item contained in this text art item.
URL		string	The value of the Adobe URL tag assigned to this text art item.
visibility variable		anything	The visibility variable to which this text art item is bound.
visible bounds	R/O	fixed rectangle	The object's visible bounds, including stroke width of any objects in the illustration.
width		real	The width of the text art item, calculated from the geometric bounds.
wrapped		boolean	Does the text wrap around other objects? (valid only for area text)

Valid Commands

- count

- delete
- duplicate
- exists
- make
- move
- rotate
- scale
- transform
- translate

Notes

There are three types of text art in Illustrator, as specified by the text art item’s `kind` property. See “Working with text art” on page 51 for more information on working with the three kinds of `text art items`.

It is not necessary to set the type of the `content variable` before binding. Illustrator automatically sets the type to be the same as the `page item` to which it is bound.

Example 50.1

This script scales only text art items that are area text, which means they are rectangular regions of text.

```
-- Scale all area text art items to 50% wide
tell application "Adobe Illustrator 10"

    set textArtItemCount to count of text art items in document 1
    repeat with itemCount from 1 to textArtItemCount
      set textKind to kind of text art item itemCount of document 1
      if (textKind = area text) then
        set curwidth to the width of text art item itemCount of document 
1
        set width of text art item itemCount of document 1 to curwidth / 
2
      end if
    end repeat
end tell
```

text face, text faces

A text face (currently available font) or list of faces in the application.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
best type	R/O	class	The best type for the text face. Always returns `reference`.
class	R/O	class	The text face object's class, which is `text face`.
default type	R/O	class	The default type for the text face. Always returns `string`.
index	R/O	integer	The index of this text face in the application.
name	R/O	string	The name of the text face.
properties	R/O	record	All of the text face’s properties returned in a single record (properties which are individually read-only remain so in this record).

Valid Commands

- count
- exists

Notes

Text faces provide access to the name of every font available to the Illustrator application.

Example 51.1

Example 51.1 demonstrates how to make use of the names of the text faces.

```
-- Change the font of all text to a user-selected font
set fontNamesList to {}
tell application "Adobe Illustrator 10" to ¬
   set fontNamesList to name of every text face

set aFont to (choose from list fontNamesList) as string

tell application "Adobe Illustrator 10" to ¬
   set font of text of every text art item of document 1 to aFont
```

text path, text paths

A text path or list of paths. A text art item always has at least one text path.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
best type	R/O	class	The best type for the text path object's value. Always returns `reference`.
class	R/O	class	The text path object's class, which is `text path`.
container	R/O	object reference	A reference to the text art item that contains this text path.
default type	R/O	class	The default type for the text path. Always returns `reference`.
index	R/O	integer	The index of this text path in the text art item.
matrix		matrix	The transformation matrix for the text path.
name		string	The name of the text path.
path item	R/O	object reference	The path item associated with the text path (only valid for path text and area text).
properties		record	All of the text path’s properties returned in a single record (properties which are individually read-only remain so in this record).
text orientation		horizontal/vertical	The orientation of the text.
text path offset		real	The offset position where characters are anchored on the text path (only valid for path text).

Valid Commands

- count
- delete
- duplicate

- exists
- make

Notes

Text paths provide access to a number of special properties for text art items. See Chapter 3 for additional information on text paths.

Example 52.1

Example 52.1 forces all text on paths to be oriented vertically.

```
-- Set the orientation of all path text to be vertical
tell application "Adobe Illustrator 10"
   set pathTextCount to count (text art items of document 1 whose kind is
path text)

   if (pathTextCount > 0) then
     set the text orientation of every text path of ¬
       (text art items of document 1 whose kind is path text) to vertical
   end if
end tell
```

variable, variables

A class of variables that can be imported and exported. Variables are document-level, created in the document object.

Elements

Element:	Refer to by:
page item	by name, by numeric index, before/after another element, as a range of elements, satisfying a test

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the text path object's value. Always returns `reference`.
class	R/O	class	The variable object's class, which is `variable`.
container	R/O	object reference	A reference to the art object that contains this variable.
default type	R/O	class	The default type for the variable. Always returns `reference`.
index	R/O	integer	The index of this variable in the art object.
kind		graph/image/textual/ unknown/visibility	The kind of variable
name		string	The name of the variable.
properties		record	all of the variable’s properties returned in a single record

Valid Commands

- count
- delete
- exists
- make

view, views

A document view or list of views in an Illustrator document.

Properties

Property:	R/O	Value type:	What it is:
best type	R/O	class	The best type for the view object. Always returns `reference`.
bounds	R/O	fixed rectangle	The bounding rectangle of this view relative to the current document's bounds.
center point		fixed point	The center point of this view relative to the current document's bounds.
class	R/O	class	The view object's class, which is `view`.
container	R/O	object reference	A reference to the document that contains this view.
default type	R/O	class	The default type for the view object. Always returns `reference`.
index	R/O	integer	The index of the view in the document.
properties		record	All of the view's properties returned in a single record (properties which are individually read-only remain so in this record).
screen mode		multiwindow/desktop/full screen	The mode of display for this view.
zoom		real	The zoom factor of this view, where 100.0 is 100%.

Valid Commands

- count
- exists

Notes

Illustrator's `view` object represents a window view onto a document. New views cannot be created, but some properties of existing views can be modified, including the center point, screen mode and zoom.

Example 53.1

Example 53.1 demonstrates how a view can be centered to the currently selected page item.

```
-- Center the view on the first selected object
tell application "Adobe Illustrator 10"
  set selectedItems to the selection
  if selectedItems is not {} then
    set firstObject to item 1 of selectedItems
    set newPosition to position of firstObject
    set center point of view 1 of document 1 to newPosition
  end if
end tell
```

Example 53.2

Example 53.2 shows how a view can be toggled to fill the entire screen.

```
-- Fill the entire screen with the first view
tell application "Adobe Illustrator 10"
  if (count of documents) > 0 then
    set screen mode of view 1 of document 1 to full screen
  end if
end tell
```

word

A string of text in a text art item that is separated by whitespace.

Elements

Element:	Refer to by:
character	index, before/after, range, test
insertion point	index, before/after, range, test
line	index, before/after, range, test
paragraph	index, before/after, range, test
text	index, before/after, range
word	index, before/after, range, test

Properties

Property:	R/O	Value type:	What it is:
auto kerning		boolean	Should the font’s built-in kerning rules be used?
baseline		real	Bottom position of horizontally-oriented text or left position of vertically-oriented text.
baseline shift		real	The baseline offset.
best type	R/O	class	The best type for the word object's value. Always returns `string`.
character offset	R/O	integer	Offset from beginning (in characters).
class	R/O	class	The word object's class, which is `word`.
clipping	R/O	boolean	Is there a clipping path associated with the text art item containing this word?
container	R/O	object reference	A reference to the text art item that contains this word.
contents		string	The contents of the word as a string.

Property:	R/O	Value type:	What it is:
default type	R/O	class	The default type for the word object, which is `string`. The string value returned is the value contained in the word's `contents` property.
direction		normal/rotated/KumiMoji	The direction of characters in a vertical text block.
evenodd		boolean	Should the even-odd rule be used to determine fills?
fill color		CMYK color info/gray color info/RGB color info/spot color info/pattern color info/gradient color info	The word's fill color.
fill overprint		boolean	Should art beneath the filled word be overprinted?
filled		boolean	Should the word's path be filled?
font		string	The name of the text face (font).
index	R/O	integer	The index of this word in the complete string.
leading		real	The leading.
length	R/O	integer	Length (in characters).
note	R/O	string	A note associated with the text.
properties		record	All of the word's properties returned in a single record (properties which are individually read-only remain so in this record).
resolution	R/O	real	The resolution of the path in dots per inch.
scaling		fixed point	Horizontal and vertical scaling specified as a point value.
size		real	The font size.
stroke cap		butted/rounded/projecting	The type of cap on the word's stroke.
stroke color		CMYK color info/gray color info/RGB color info/spot color info/pattern color info/gradient color info	The word's stroke color.

Property:	R/O	Value type:	What it is:
stroke dash offset		real	The default distance to start the stroke dash pattern.
stroke dashes		list (of reals)	The lengths for dashes and gaps in dashed lines, starting with the first dash length, followed by the first gap length, and so on. Set to an empty list, {}, for a solid line.
stroke join		mitered/rounded/beveled	The type of joins in the word's stroke.
stroke miter limit		real	The angle at which a stroke join switches from mitered to beveled.
stroke overprint		boolean	Should art beneath the stroked word be overprinted?
stroke width		real	The width of the stroke.
stroked		boolean	Should the word's path be stroked?
text orientation	R/O	horizontal/vertical	The orientation of the text. Use the `text path` class to modify this value.
text path	R/O	object reference	A reference to the text path in which this word is contained.
tracking		real	The uniform spacing amount between characters.

Valid Commands

- count
- delete
- duplicate
- exists
- make

Notes

Illustrator's text can be accessed using the `character`, `insertion point`, `word`, `line`, `paragraph` and `text` classes. All text is contained within text art items.

Example 54.1

This example demonstrates how to use the matching abilities of the `whose` clause in conjunction with word properties to modify words that match a specific string.

```
-- Change the color of every occurrence of a specific
-- word in all text art items

set searchString to text returned of ¬
  (display dialog "Word to set color of?" default answer "the")

tell application "Adobe Illustrator 10"
   set textArtItemCount to (count of text art items in document 1)
   if (textArtItemCount > 0) then

     repeat with itemCounter from 1 to textArtItemCount
      if (((contents of text art item itemCounter of document 1) as
string) ¬
           contains searchString) then
        set fill color of (words of text art item itemCounter of document
1 ¬
         whose contents = searchString) to {red:100, green:0, blue:0}
      end if
     end repeat
   end if
end tell
```

Command reference

This section covers the commands in the Illustrator AppleScript dictionary, as well as some of the important standard AppleScript commands. When you look at a command in an AppleScript dictionary, you can see only that the command returns an object, or that the command takes an object reference as a parameter. The specific objects that can respond to a particular command are not distinguished in an AppleScript dictionary. Not all Illustrator objects can respond to all commands, so we've documented which objects respond to which commands, and what type of object each command returns (if any).

The following shows how to read the table associated with each command.

Column heading:	What it means:
Parameters	Constants, keywords, and values needed by the command are shown in bold face. Required terms are shown in plain face. All items surrounded by brackets [ ] are optional.
What it is	An explanation of the parameters.
Objects supported	Which objects understand the command and/or which objects the command can operate upon. The `document` object, for example, understands the command `close`, but doesn't understand the command `quit`.
Returns	Many commands return values (text, numbers, lists, and object references). This column shows you what kind of reference you can expect the command to return (if any).

activate

Makes Illustrator the active (frontmost) application. This standard AppleScript command is included because of its requirement for clipboard manipulations.

Parameters:	What it is:	Objects supported:	Returns:
none	nothing	application	nothing

Notes

Use `activate` when you want to bring Illustrator in front of all other open applications. Illustrator must be the frontmost application to perform commands that manipulate the clipboard (`cut`, `copy`, and `paste`). Having the application frontmost can also be useful if you would like to watch your script execute. In general, you should probably avoid using `activate` at the beginning of a script, as script execution slows when Illustrator is the active application due to the time it takes to redraw objects on the screen. You can also use `activate` at the end of any script to return the user to the Illustrator application.

Example 55.1

```
-- This script makes Illustrator the frontmost application
tell application "Adobe Illustrator 10"
  activate
end tell
```

apply

Applies a brush or art style to one or more page items.

Parameters:	What it is:	Objects supported:	Returns:
object reference	The brush or art style to apply to the referenced object(s).	art style, brush	nothing
to **object reference or list (of object references)**	The object(s) you want to apply a brush or art style to.	compound path item, group item, mesh item, page item, path item, placed item, plugin item, raster item, text art item	

Notes

Use `apply` to affect one or more page items by applying an existing brush or art style. Brushes and art styles can be created in the user interface, but not from a script.

Example 56.1

```
-- Draws a circle in the center of the document
-- and applies an art style to it
tell application "Adobe Illustrator 10"
 make new document with properties {color space:CMYK}
 set docWidth to (width of document 1) / 2
 set docHeight to (height of document 1) / 2
 set pathItemRef to make new ellipse in document 1 with properties ¬
  {bounds:{docWidth-50, docHeight+50, docWidth+50, docHeight-50}}
 apply art style "Fantasmic" of document 1 to pathItemRef
end tell
```

close

Closes a document.

Parameters:	What it is:	Objects supported:	Returns:
object reference	The document you want to close.	document	nothing
[saving **yes/no/ask**]	Save the publication before closing?		

Example 57.1

```
-- Close the first document and prompt the user with a "Save as" dialog
tell application "Adobe Illustrator 10"
 activate
 close document 1 saving ask
end tell
```

colorize

Colorize a raster item.

Parameters:	What it is:	Objects supported:	Returns:
object reference	The raster item to colorize.	raster item	nothing
raster color CMYK color info/gradient color info/gray color info/pattern color info/RGB color info/spot color info	The color to use when coloring the TIFF image.		

concatenate matrix

Concatenates two transformation matrices to form a single resulting matrix.

Parameters:	What it is:	Objects supported:	Returns:
matrix	The first matrix.	matrix	matrix
with **matrix**	The second matrix.		

Example 58.1

```
-- This script concatenates 2 matrices
tell application "Adobe Illustrator 10"
  set someMatrix to get identity matrix
  set anotherMatrix to get rotation matrix angle 30.0
  set newMatrix to concatenate matrix someMatrix with anotherMatrix
end tell
```

concatenate rotation matrix

Concatenates a rotation angle together with a matrix and returns the resulting matrix.

Parameters:	What it is:	Objects supported:	Returns:
matrix	The first matrix.	matrix	matrix
angle **real**	The rotation angle in degrees.		

Example 59.1

```
-- This script adds a 45 degree rotation to an existing matrix
tell application "Adobe Illustrator 10"
  set someMatrix to get identity matrix
  set newMatrix to concatenate rotation matrix someMatrix angle 45.0
end tell
```

concatenate scale matrix

Concatenates a horizontal and/or vertical scaling with a matrix to form a single resulting matrix.

Parameters:	What it is:	Objects supported:	Returns:
matrix	The first matrix	matrix	matrix
[horizontal scale **real]**	The horizontal scaling factor, where 100.0 is 100%.		
[vertical scale **real]**	The vertical scaling factor, where 100.0 is 100%.		

Example 60.1

```
-- This script combines a 75% horizontal scaling with an existing matrix
tell application "Adobe Illustrator 10"
  set someMatrix to get identity matrix
  set newMatrix to concatenate scale matrix someMatrix ¬
    horizontal scale 75 vertical scale 25.0
end tell
```

concatenate translation matrix

Concatenates a translation (specified by a horizontal and/or vertical offset) with a matrix to form a single resulting matrix.

Parameters:	What it is:	Objects supported:	Returns:
matrix	The first matrix	matrix	matrix
[delta x **real]**	The horizontal translation offset.		
[delta y **real]**	The vertical translation offset.		

Example 61.1

```
--This script combines a 25 point horizontal offset with an existing matrix
tell application "Adobe Illustrator 10"
  set someMatrix to get identity matrix
  set newMatrix to concatenate translation matrix someMatrix delta x 25.0
end tell
```

convert to paths

Converts text art items into a compound path item or a group item containing path items and/or compound path items. Returns a reference to the newly created object.

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	The text art item(s) to convert into path items.	text art item	object references

Notes

This command will convert any text art item into a series of one or more path items and/or compound path items. If more than one object is created, all objects will be grouped and a reference to the new group item will be returned. Once converted, text art items cannot be recovered from a script.

Example 62.1

```
--This script converts all text art
tell application "Adobe Illustrator 10"
  convert to paths (every text art item of document 1)
end tell
```

copy

Copies the selection.

Parameters:	What it is:	Objects supported:	Returns:
none	nothing	compound path item, group item, mesh item, path item, placed item, plugin item, raster item, text, text art item	nothing

Notes

Commands that manipulate the clipboard (`cut`, `copy`, and `paste`) require that Illustrator be the frontmost application during these operations. Use `activate` to bring Illustrator to the front before executing the `copy` command. No error is returned if there is no selection to copy. If the application is not frontmost, an error is returned.

Example 63.1

```
--This script copies the selected objects (if any)
tell application "Adobe Illustrator 10"
  activate
  copy
end tell
```

count

Counts the objects (elements) of the specified class (or the objects matching a test).

Parameters:	**What it is:**	**Objects supported:**	**Returns:**
[each/every**] class**	The class of the objects you want to count. The class should be specified using the singular form if one of the optional terms is used. Otherwise, you can use the singular or plural form, i.e. `document` or `documents`.	art style, brush, character, compound path item, document, gradient, gradient stop, group item, insertion point, layer, line, mesh item, page item, paragraph, path item, path point, pattern, placed item, plugin item, raster item, spot, tag, text, text art item, text face, text path, view, word	integer
[of/in **object reference]**	The object whose contained elements you want to count.	application, character, compound path item, document, gradient, group item, insertion point, layer, line, mesh item, page item, paragraph, path item, placed item, plugin item, raster item, text, text art items, word	

Notes

This command can be used to return the total number of objects of any single class contained by a specific object. The `count` command can also be used in conjunction with the `whose` clause to return the number of objects that match a test.

Example 64.1

```
-- This script shows the user how many paths
-- are filled out of the total number in document 1
tell application "Adobe Illustrator 10"
  set pathCount to count every path item of document 1
  set numberFilled to ¬
    count (path items of document 1 whose filled is true)
end tell
display dialog numberFilled & " paths are filled out of " & ¬
  pathCount & " paths in this document." as string
```

cut

Cuts the current selection.

Parameters:	What it is:	Objects supported:	Returns:
none	nothing	compound path item, group item, mesh item, path item, path, point, placed item, plugin item, raster item, text, text art item	nothing

Notes

Commands that manipulate the clipboard (`cut`, `copy`, and `paste`) require that Illustrator be the frontmost application. Use `activate` to bring Illustrator to the front before executing the `cut` command. No error is returned if there is no selection to cut. If the application is not frontmost, an error is returned.

Example 65.1

```
--This script cuts the selected objects (if any)
tell application "Adobe Illustrator 10"
  activate
  cut
end tell
```

delete

Deletes the specified object or objects.

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	Object(s) to delete.	compound path item, gradient, gradient stop, group item, layer, mesh item, page item, path item, path point, pattern, placed item, plugin item, raster item, spot, swatch, tag, text, text art item, text path	nothing

Example 66.1

```
-- This script deletes the second layer in the document
tell application "Adobe Illustrator 10"
  if (count of layers of document 1) > 1 then ¬
    delete layer 2 of document 1
end tell
```

display

Display the current dataset or not.

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	dataset to display.	display	true/false

do javascript

Execute a java script.

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	javascript to execute.	none	nothing

do script

Plays an action from the Actions palette.

Parameters:	What it is:	Objects supported:	Returns:
string	The name of the action to play (this is case-sensitive)	none	nothing
from **string**	The name of the Action Set containing the action to play (this is case-sensitive)		
[dialogs **boolean]**	Are dialog boxes associated with the action to be presented to the user?		

Notes

If the action is selected in the Actions palette in Illustrator's user interface, an error will be returned by this command.

duplicate

Duplicates an object(s). Returns reference(s) to newly created object(s).

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	The object(s) to duplicate.	all objects except application, mesh item, plugin items	object reference or list (of object references)
[to **location reference]**	The new location for the object(s).		
[with properties **record**]	The new values for the properties of the duplicated object(s).		

Notes

It is permissible to duplicate page items from one document to another. This avoids having to set the selection, perform a cut or copy, bring another document to the front, and then paste. However, when duplicating objects from one document to another, it is required that the location reference is fully specified.

Example 68.1

```
-- Duplicate the first page item in document 1 to document 2
tell application "Adobe Illustrator 10"
  set pageItemRef to duplicate page item 1 of document 1 to beginning of
document 2
end tell
```

equal matrices

Compares two matrices for equality. If equal, the result is true.

Parameters:	What it is:	Objects supported:	Returns:
matrix	The first matrix for the comparison.	matrix	boolean
with **matrix**	The second matrix for the comparison.		

Example 69.1

```
-- This script compares 2 matrices and beeps if they are equal
tell application "Adobe Illustrator 10"
  set someMatrix to get identity matrix
  set anotherMatrix to get identity matrix
  if (equal matrices someMatrix with anotherMatrix) then beep
end tell
```

exists

Determines if an object exists, and returns true if it does.

Parameters:	What it is:	Objects supported:	Returns:
object reference	The object to test for existence	Any Illustrator object except application	boolean

Example 70.1

```
-- Check if a document exists and beep twice if one does
tell application "Adobe Illustrator 10"
  if exists document 1 then beep 2
end tell
```

export

Exports a document.

Parameters:	What it is:	Objects supported:	Returns:
object reference	The document to export.	document	nothing
to [file] **file specification**	The file to export the document into, specified as a string containing the full file path or an alias. When using a string, precede the string with the term `file`.		
as **JPEG/Photoshop/ SVG/PNG8/PNG24/ GIF**	The file type to export the document as.		
[with options **JPEG export options/ Photoshop export options/SVG export options/PNG8 export options/PNG24 export options/GIF export options/Flash export options]**	The export options for the specified file type.		

Example 71.1

```
-- This script exports the current document as JPEG
on SaveFilesAsPhotoshop(fileList, destinationFolder)
  set destinationPath to destinationFolder as string
  repeat with aFile in fileList
    tell application "Finder" to set fileName to name of aFile
    set newFilePath to destinationPath & fileName & ".ps"

tell application "Adobe Illustrator 10"
```

```
 export current document to newFilePath as JPEG with options ¬
     {class:JPEG export options, quality:60}
end tell
```

export variables

Exports a variable library or libraries.

Parameters:	What it is:	Objects supported:	Returns:
variable library	The variable library to export.	variables	nothing
to [file] **file specification**	The file to export the variable library into, specified as a string containing the full file path or an alias. When using a string, precede the string with the term `file`.		

get

Gets data from an object. This standard AppleScript command is included because it illustrates AppleScript's ability to coerce values from one value type to another.

Parameters:	What it is:	Objects supported:	Returns:
object reference/ property/	The object or property you want to return a reference to or data from.	Any Illustrator object	data from an object property, an object reference or a list (of object references)
[as **class or list (of classes)]**	The type of data you want to retrieve.		

Notes

You don't need to use `get` when you're assigning values to a variable.

Example 72.1

```
-- This script gets the contents both as a string and as a reference
tell application "Adobe Illustrator 10"
  set textString to contents of text art item 1 of document 1
  set textRef to contents of text art item 1 of document 1 as reference
end tell
```

get identity matrix

Gets an identity matrix.

Parameters:	What it is:	Objects supported:	Returns:
none	nothing	matrix	matrix

Notes

The identity matrix is a transformation matrix that causes no transformation. This command is very useful for getting a base matrix to use with the matrix concatenation commands.

Example 73.1

```
-- This script gets the identity matrix,
-- combines with rotation and scale and applies to object
tell application "Adobe Illustrator 10"
  set transformMatrix to get identity matrix
  set transformMatrix to concatenate rotation matrix ¬
    transformMatrix angle 45.0
  set transformMatrix to concatenate scale matrix ¬
    transformMatrix horizontal scale 60
  transform page item 1 of document 1 using transformMatrix
end tell
```

get rotation matrix

Returns a rotation matrix based on a specified rotation angle.

Parameters:	What it is:	Objects supported:	Returns:
[angle **real]**	The rotation angle in degrees.	matrix	matrix

Notes

If no angle is supplied, the standard identity matrix is returned.

Example 74.1

```
-- Get a 30-degree rotation matrix
tell application "Adobe Illustrator 10"
  set rotateMatrix to get rotation matrix angle 30.0
end tell
```

get scale matrix

Returns a scale matrix based on specified horizontal and vertical scaling factor.

Parameters:	What it is:	Objects supported:	Returns:
[horizontal scale **real]**	The horizontal scaling factor, where 100.0 is 100%.	matrix	matrix
[vertical scale **real]**	The vertical scaling factor, where 100.0 is 100%.		

Notes

If no parameters are supplied, the standard identity matrix is returned.

Example 75.1

```
-- This script gets a scale matrix
tell application "Adobe Illustrator 10"
  set scaleMatrix to get scale matrix horizontal scale 100.0 vertical
scale 50.0
end tell
```

get translation matrix

Returns a translation matrix based on a single movement with horizontal and vertical offsets.

Parameters:	**What it is:**	**Objects supported:**	**Returns:**
[delta x **real]**	The horizontal offset.	matrix	matrix
[delta y **real]**	The vertical offset.		

Notes

If no parameters are supplied, the standard identity matrix is returned.

Example 76.1

```
-- This script gets a translation matrix
tell application "Adobe Illustrator 10"
 set translateMatrix to get translation matrix delta x 10.0 delta y
100.0
```

end tell

import variables

Import a variable library from a file of saved variables.

Parameters:	**What it is:**	**Objects supported:**	**Returns:**
from [file] **file specification**	The file to import the variables from, specified as a string containing the full file path or an alias. When using a string, precede the string with the term `file`.	variables	
[appending **boolean**]	should the variables be appended? Defaults to `true`.		

invert matrix

Inverts an existing matrix.

Parameters:	What it is:	Objects supported:	Returns:
matrix	The matrix to invert	matrix	matrix

Notes

If a matrix is singular, it cannot be inverted. You can use the singular matrix command to test if a matrix is singular.

Example 77.1

```
-- This script gets the inverse matrix of a 50% vertical scale matrix
-- When applied, the inverse matrix scales the object 200% vertically
tell application "Adobe Illustrator 10"
  set transformMatrix to get scale matrix vertical scale 50.0
  set transformMatrix to invert matrix transformMatrix
  transform page item 1 of document 1 using transformMatrix
end tell
```

make

Creates a new object. Returns reference to newly created object.

Parameters:	What it is:	Objects supported:	Returns:
[new] **type class**	The class of object to create. The term `new` is optional.	all objects except application, mesh item, plugin item	object reference
at **location reference**	Location to insert new object		
[with properties **record**]	Any property of the object you wish to set at creation.		
[with data **record]**	Any data needed for creation that isn't a property.		

Example 78.1

```
-- Make 2 layers, one at the top and one at the bottom
-- demonstrating the power of location references like beginning and end
tell application "Adobe Illustrator 10"
  set topLayer to make new layer ¬
    at beginning of document 1 with properties {name:"Top Layer"}
  set bottomLayer to make new layer ¬
    at end of document 1 with properties {name:"Bottom Layer"}
end tell
```

move

Moves one or more objects. Returns references to the moved object or objects at the new location.

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	Object(s) to move.	compound path item, group item, layer, mesh item, page item, path item, placed item, plugin item, raster item, text art item	object reference or list (of object references)
to **location reference**	Specifies new location of the object.		

Notes

Objects cannot be moved between documents.

Example 79.1

```
-- This script moves all objects in a document to the first layer
tell application "Adobe Illustrator 10"
  set allPageItems to every page item of document 1
  move allPageItems to beginning of layer 1 of document 1
end tell
```

Example 79.2

```
-- This script moves the bottommost layer to the top of the current document
tell application "Adobe Illustrator 10"
  tell document 1 to move last layer to before first layer
end tell
```

open

Opens one or more documents.

Parameters:	What it is:	Objects supported:	Returns:
[file] **file specification or list (of file specifications)**	The file to export the document into, specified as a string containing the full file path or an alias, or a list of aliases. When using a string, precede the string with the term `file`.	any file Illustrator can open	nothing
[forcing **RGB/CMYK]**	Opens the document(s) using the specified color space, converting if necessary. Does not work on Illustrator 10 files, only pre-Illustrator 9.		

Notes

If the `forcing` parameter is omitted and you attempt to open a pre-Illustrator 9 document that contains both RGB and CMYK colors, Illustrator will display a dialog to the user. When the `forcing` parameter is supplied and Illustrator encounters documents containing both color spaces, the document will be opened without a dialog and all colors will be converted to the specified color space.

Example 80.1

```
-- This script opens a PDF document
-- selected by the user and forcing the use of the RGB color space
set fileToOpen to choose file with prompt ¬
  "Select file to open as RGB" of type {"PDF "}

tell application "Adobe Illustrator 10"
  open fileToOpen forcing RGB
end tell
```

paste

Pastes the clipboard contents into the current layer of the current document.

Parameters:	What it is:	Objects supported:	Returns:
none	nothing	compound path item, group item, mesh item, path item, path point, placed item, plugin item, raster item, text, text art item	nothing

Notes

Commands that manipulate the clipboard (`cut`, `copy`, and `paste`) require that Illustrator be the frontmost application. Use `activate` to bring Illustrator to the front before executing the `paste` command. No error is returned if there is no selection to paste. If the application is not frontmost, an error is returned.

Example 81.1

```
-- Paste the contents of the clipboard into the current document
tell application "Adobe Illustrator 10"
  activate
  paste
end tell
```

print

Print one or more documents or files.

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	Document, file or list of documents and/or files to print.	document, any file Illustrator can open	nothing
[dialog **boolean]**	Should a print dialog be presented to the user. The default value is true.		

Example 82.1

```
-- Print the current document without displaying a dialog
tell application "Adobe Illustrator 10"
  print document 1 without dialog
end tell
```

quit

Forces Illustrator to quit

Parameters:	What it is:	Objects supported:	Returns:
none	nothing	application	nothing

Notes

If there is Illustrator data on the clipboard, Illustrator will display a dialog asking if you want to save the clipboard for other applications. To prevent this dialog from being displayed, send the following command to the frontmost application:

```
set the clipboard to {}
```

Example 83.1

```
-- Quit Illustrator after clearing the clipboard
tell application "Adobe Illustrator® 10.0"
  activate
    tell application "Finder"
      activate
      set the clipboard to {}
    end tell
    quit
end tell
```

redraw

Redraws all documents.

Parameters:	What it is:	Objects supported:	Returns:
none		application	nothing

Example 84.1

```
-- This script redraws all windows in Illustrator
tell application "Adobe Illustrator® 10" to redraw
```

rotate

Rotates one or more page items by a specified rotation angle.

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	The object(s) you want to perform the rotation upon.	compound path item, group item, mesh item, page item, path item, path point, placed item, plugin item, raster item, text art item	nothing
angle **real**	The rotation angle to rotate object(s) in degrees.		
[transforming objects **boolean]**	Should page item positions and their orientations be affected by this rotation?		
[transforming fill patterns **boolean]**	Should fill patterns assigned to paths be affected by this rotation?		
[transforming fill gradients **boolean]**	Should fill gradients assigned to paths be affected by this rotation?		
[transforming stroke patterns **boolean]**	Should stroke patterns assigned to paths be affected by this rotation?		
[about **document origin/top left/left/ bottom left/top/ center/bottom/top right/right/bottom right]**	The point on the bounding box of the page item(s) to which the rotation is applied.		

Notes

The `rotate` command provides many variations when used in conjunction with the `about` parameter. Experiment with different choices for the `about` parameter to see what the results are for each setting.

Example 85.1

```
-- Rotate the first page time by 45 degrees
tell application "Adobe Illustrator 10"
  rotate page item 1 of document 1 angle 45.0 about center
end tell
```

save

Saves an Illustrator document. Returns a reference to the saved document.

Parameters:	What it is:	Objects supported:	Returns:
object reference	The document to save.	document	object reference
[in [file] **file specification]**	The file to save the document into, specified as a string containing the full file path or an alias. When using a string, precede the string with the term `file`. If no file is specified, the document is saved in its existing file.		
[as **Illustrator/eps/pdf]**	The file type to save the document as.		
[with options **Illustrator save options/EPS save options/PDF save options]**	The saving options for the specified file type.		

Example 86.1

This example shows to batch process folders of Illustrator documents, saving each as a PDF file with specific settings.

```
-- Processes all files in folders dropped on this script
-- (when saved as an applet) and save each Illustrator file as a PDF file
on run
  tell me to open {choose folder}
end run

on open droppedItems

  set destinationFolder to choose folder with prompt "Destination
folder?"

  repeat with anItem in droppedItems
    tell application "Finder"

      -- Make sure each item processed by this script is a folder
      if class of item anItem is not folder then

        -- Not a folder, notify the user of the error
        display dialog "Please drop only folders on this script"
      else

        -- It is a folder, so get the Illustrator files in it and process them
        set fileList to ¬
          (every file of anItem whose creator type is "ART5") as alias list
      end if

    end tell

    -- See PDF save options section for isolated example of this handler
    SaveFilesAsPDF(fileList, destinationFolder)

  end repeat
end open


-- fileList is a list of aliases to Illustrator files
-- destinationFolder is an alias to a folder where the PDF files are to be saved
on SaveFilesAsPDF(fileList, destinationFolder)

  set destinationPath to destinationFolder as string
```

```
 repeat with aFile in fileList

  tell application "Finder" to set fileName to name of aFile

  set newFilePath to destinationPath & fileName & ".pdf"

  tell application "Adobe Illustrator 10"
   open aFile

   save current document in file newFilePath as pdf ¬
    with options {class:PDF save options ¬
    , compatibility:Acrobat 4 ¬
    , preserve editability:true}

   close current document saving no

  end tell
 end repeat
end SaveFilesAsPDF
```

scale

Scales one or more page items by the specified horizontal and vertical amounts.

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	The object(s) you want to scale.	compound path item, group item, mesh item, page item, path item, path point, placed item, plugin item, raster item, text art item	nothing
horizontal scale **real**	The horizontal scaling factor, where 100.0 is 100%.		
vertical scale **real**	The vertical scaling factor, where 100.0 is 100%.		
[transforming objects **boolean]**	Should page item positions and their orientations be affected by this scaling?		
[transforming fill patterns **boolean]**	Should fill patterns assigned to paths be affected by this scaling?		
[transforming fill gradients **boolean]**	Should fill gradients assigned to paths be affected by this scaling?		
[transforming stroke patterns **boolean]**	Should stroke patterns assigned to paths be affected by this scaling?		
[line scale **real**]	If specified, the amount that line widths are to be scaled.		
[about **document origin/top left/left/ bottom left/top/ center/bottom/top right/right/bottom right]**	The point in the bounding box of the page item(s) to which the scaling is applied.		

Notes

The `scale` command provides many variations when used in conjunction with the `about` parameter. Experiment with different choices for the `about` parameter to see what the results are for each setting.

Example 87.1

```
-- Scale a page item by 50% horizontally
tell application "Adobe Illustrator 10"
  tell document 1
    scale page item 1 horizontal scale 50.0 vertical scale 100.0 about
center
  end tell
end tell
```

set

Changes a variable's value or an object's data or property. This is a standard AppleScript command used to assign values to variables and object properties.

Parameters:	What it is:	Objects supported:	Returns:
property/variable	The object property or script variable to modify.	any property or variable	nothing
to **anything**	Any valid value.		

Example 88.1

```
-- Set the zoom property of the frontmost view window to 100%
tell application "Adobe Illustrator 10"
  set zoom of view 1 of document 1 to 100.0
end tell
```

singular matrix

Tests an existing matrix to see if it can be inverted.

Parameters:	What it is:	Objects supported:	Returns:
object reference	The matrix to test.	matrix	boolean

Notes

A singular matrix cannot be inverted.

Example 89.1

```
-- This script gets an identity matrix and then
-- test to see if it can be inverted (if not singular)
-- If it can, then it inverts it
tell application "Adobe Illustrator 10"
  set someMatrix to get identity matrix
  if (not singular matrix someMatrix) then ¬
      set someMatrix to invert matrix someMatrix
end tell
```

transform

Transform one or more page items by a specified matrix.

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	The object(s) you want to transform.	compound path item, group item, mesh item, page item, path item, path point, placed item, plugin item, raster item, text art item	nothing
using **matrix**	The matrix to use for the transformation of the object(s).		
[transforming objects **boolean]**	Should page item positions and their orientations be affected by this transformation?		
[transforming fill patterns **boolean]**	Should fill patterns assigned to paths be affected by this transformation?		
[transforming fill gradients **boolean]**	Should fill gradients assigned to paths be affected by this transformation?		
[transforming stroke patterns **boolean]**	Should stroke patterns assigned to paths be affected by this transformation?		
[line scale **real**]	If specified, the amount that line widths are to be scaled.		
[about **document origin/top left/left/bottom left/top/center/bottom/top right/right/bottom right]**	The point in the bounding box of the page item(s) to which the transformation is applied.		

Notes

This command can be used to generate any combination of transformations contained in a matrix, making it possible to skew objects among other modifications. The `transform` command provides many variations when used in conjunction with the `about` parameter.

Experiment with different choices for the `about` parameter to see what the results are for each setting.

Example 90.1

```
-- This script skews an object 45 degrees to the right horizontally
-- by generating a rotation matrix and setting the appropriate matrix values
tell application "Adobe Illustrator 10"
  set baseMatrix to get rotation matrix angle 45.0
  set mvalue_b of baseMatrix to 0
  transform page item 1 of document 1 using baseMatrix
end tell
```

translate

Moves one or more page items from their existing position in a document to a new position defined by relative coordinates.

Parameters:	What it is:	Objects supported:	Returns:
object reference or list (of object references)	The object(s) you want to translate.	compound path item, group item, mesh item, page item, path item, path point, placed item, plugin item, raster item, text art item	nothing
[delta x **real]**	The horizontal coordinate of the new position.		
[delta y **real]**	The vertical coordinate of the new position.		
[transforming objects **boolean**]	Should object positions and orientations be affected by the translate?		
[transforming fill patterns **boolean**]	Should fill patterns be affected by the translate?		
[transforming fill gradients **boolean**]	Should fill gradients be affected by the translate?		
[transforming stroke patterns **boolean**]	Should stroke patterns be affected by the translate?		

Notes

Use `translate` to move objects relatively from their existing position. Set the `position` property of an object to move the object to absolute coordinates.

Example 91.1

```
--This script moves the first page item to new relative coordinates
tell application "Adobe Illustrator 10"
  tell document 1 to translate page item 1 delta x 200.0 delta y 200.0
end tell
```

update

Updates a dataset.

Parameters:	What it is:	Objects supported:	Returns:
object reference	Dataset to be updated	datasets	updated dataset

5

Visual Basic Reference

This reference section describes the objects and commands in Illustrator's Visual Basic type library. All of the classes in the type library are presented alphabetically. The chapter concludes with an enumerations reference which lists all of the enumerations in the Illustrator type library.

Each class listing includes the following:

- Properties of the class, including value type, read-only status, and an explanation.
- Methods for the class. Enumerations and value types needed by the method are shown in bold face. Required terms are shown in plain face. All items surrounded by brackets [ ] are optional.
- Notes to explain special issues.
- Script examples.

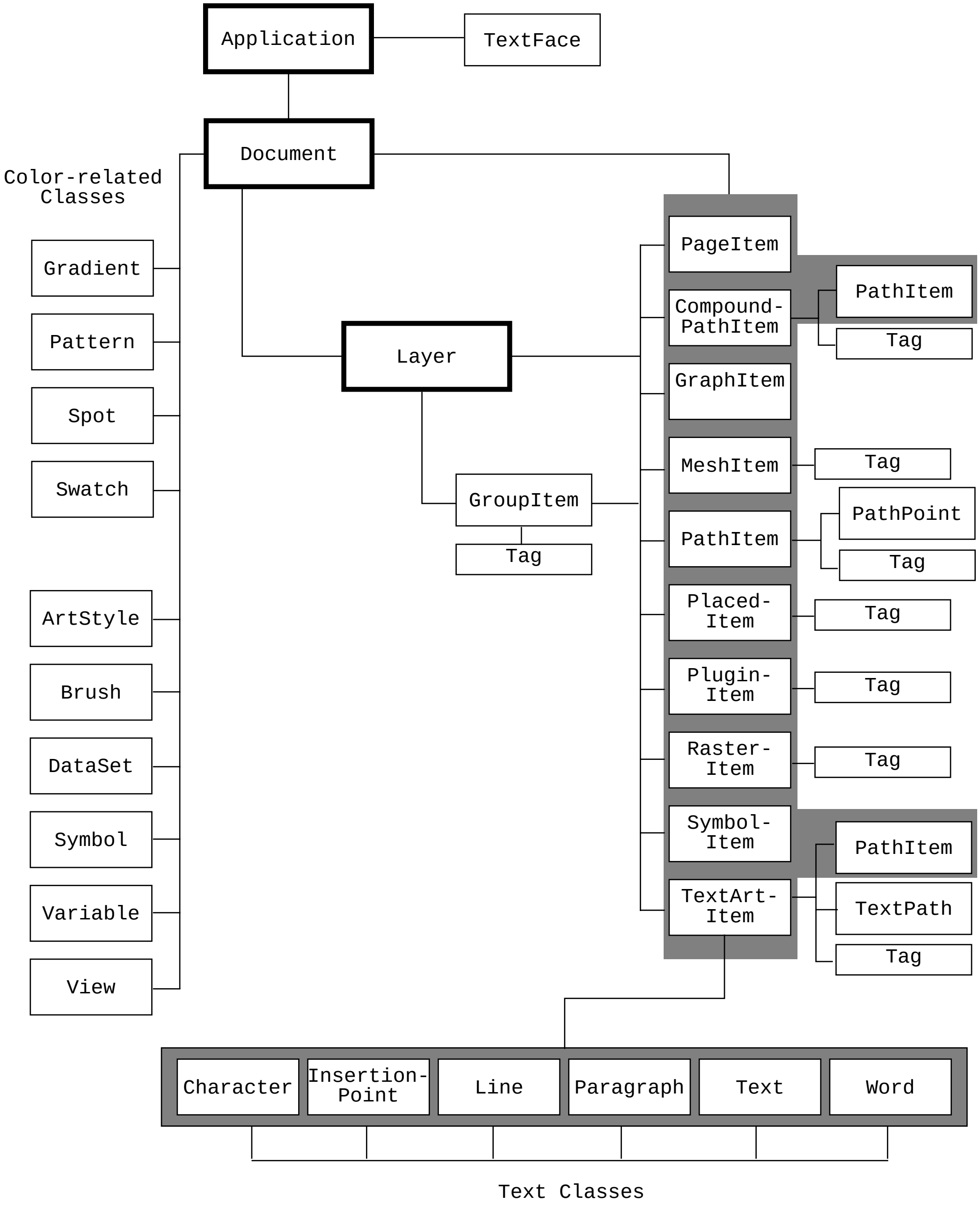
About the script examples

Most of the examples do not necessarily represent the most efficient way to construct a Visual Basic statement. All example scripts are written in a manner that should be easy to read and understand. Error checking code, for example, is brief in most of the examples—the point is to show you how to address and work with the Illustrator objects. Many of the examples may be combined to make scripts with greater functionality.

Each script contains a single subroutine that can be pasted into any event in a Visual Basic form if you are using the Visual Basic development environment. A standard button click event is used for all examples. If you are using a built-in Visual Basic editor in a VBA application, you can paste the script into a macro routine. In either case, modify the `Sub` statement in the example to work with your situation.

Illustrator’s object model

A good understanding of Illustrator’s object model will improve your scripting abilities. This diagram shows the containment hierarchy of the object model, starting with the application object. It is useful to note that all text classes as well as the `Layer` and `GroupItem` classes can contain additional objects of the same class which can in turn contain additional nested objects.


Application
TextFace
Document
Color-related Classes
Gradient
Pattern
Spot
Swatch
ArtStyle
Brush
DataSet
Symbol
Variable
View
Layer
GroupItem
Tag
PageItem
Compound-PathItem
PathItem
Tag
GraphItem
MeshItem
Tag
PathItem
PathPoint
Tag
Placed-Item
Tag
Plugin-Item
Tag
Raster-Item
Tag
Symbol-Item
PathItem
TextArt-Item
TextPath
Tag
Character
Insertion-Point
Line
Paragraph
Text
Word
Text Classes

Referencing and creating objects in Visual Basic

As the object model diagram shows, all objects are arranged in a hierarchy. To obtain a reference to a specific object you need to navigate the hierarchy. For example, to store a reference to the first PathItem in the second layer of the active document in the variable `myPath` you would write:

```
Set myPath = appRef.ActiveDocument.layers(2).PathItems(1)
```

Since all objects in the hierarchy are referenced through the `Application` object, you must have a reference to the Illustrator application before you can start modifying any other objects. There are several ways to obtain a reference to an Illustrator application object. For example, the following line will create a new reference to the `Application` if Illustrator is already running.

```
Dim appRef As New Illustrator.Application
```

As with `New`, `GetObject` will create a reference to a running instance of Illustrator. If Illustrator is not running an error is returned.

```
Dim appRef As Illustrator.Application
Set appRef = GetObject(, "Illustrator.Application")
```

`CreateObject` will launch Illustrator as an invisible application if it is not already running. Note that if Illustrator was launched as an invisible application you have to manually activate the application to make it visible.

```
Dim appRef As Illustrator.Application
 Set appRef = CreateObject("Illustrator.Application")
```

There are a number of objects in addition to `Application` that cannot be obtained by using the hierarchy shown in the object model diagram. These objects must created directly using the techniques shown above for the `Application` object. These objects are:

- CMYKColor
- Color
- EPSSaveOptions
- GradientColor

- GrayColor
- IllustratorSaveOptions
- Matrix
- PDFSaveOptions
- PatternColor
- RGBColor
- SpotColor
- ExportOptionsGIF
- ExportOptionsJPEG
- ExportOptionsPhotoshop
- ExportOptionsPNG8
- ExportOptionsPNG24
- ExportOptionsSVG
- OpenOptionsPDF

The following example demonstrates how to create new objects such as `EPSSaveOptions`.

```
' Create a reference to the Illustrator Application
Dim appRef As New Illustrator.Application
' Create an EPS-save option object
Dim myEPSSaveOptions As New Illustrator.EPSSaveOptions
' Set the options according to how you want the save to occur
myEPSSaveOptions.EmbedAllFonts = True
myEPSSaveOptions.Compatibility = aiIllustrator7
myEPSSaveOptions.Preview = aiColorTIFF
' Save the active document
appRef.ActiveDocument.SaveAs "C:\Temp\AI_TestDocument.eps",
myEPSSaveOptions
```

Syntax differences between Sub and Function methods

Visual Basic supports different types of methods. When scripting Illustrator, your scripts will call both Sub and Function methods. The difference between the two methods is that a Function returns a value while a Sub, or method call, does not. For example, the `Add` method is a function because it returns a reference to the newly added object.

When calling a Function, Visual Basic expects you to put parentheses around the function's arguments. With a Sub, however, Visual Basic disallows the use of parentheses around the arguments unless you use an alternative syntax. The following lines demonstrate the difference between the syntax for calling a Function, `Add`, and a Sub, `ApplyTo`, in Visual Basic.

```
Set newDoc = appRef.Open("C:\myfile.eps")
```

```
appRef.ActiveDocument.ArtStyles(2).ApplyTo artItem
```

Application

The Adobe Illustrator application object, which contains all other Illustrator objects.

Properties

Property:	R/O	Value type:	What it is:
ActiveDocument		Document object	The active (frontmost) document in Illustrator.
Application	R/O	Application object	The Illustrator Application object.
ActionIsRunning	R/O	Boolean	Is an action still running?
BrowserAvailable	R/O	Boolean	Is a web browser available?
Documents	R/O	Documents collection object	The documents in the application.
FreeMemory	R/O	Long	The amount of unused memory (in bytes) within the Adobe Illustrator partition.
Name	R/O	String	The application's name (not related to the filename of the application file).
Path	R/O	String	The file path to the application.
Preferences		Preference Object	Photoshop save settings.
ScriptingVersion	R/O	String	The version of the Scripting plugin.
Selection		Variant Array (of objects)	All of the currently selected objects in the active (frontmost) document. See note for more information.
TextFaces	R/O	Textfaces collection object	The text faces (fonts) available to the application.
UserInteractionLevel		AiUserInteractionLevel	Whether or not to interact with users by displaying dialogs during the running of a script.
Version	R/O	String	The version of the Adobe Illustrator application.
Visible	R/O	Boolean	Is the application visible?

Methods

Method:	Returns:	What it does:
ConcatenateMatrix(Matrix As **Matrix**, secondMatrix As **Matrix**)	Matrix object	Concatenates two matrices together.
ConcatenateRotationMatrix(Matrix As **Matrix**, angle As **Single**)	Matrix object	Concatenates a rotation translation to a transformation matrix.
ConcatenateScaleMatrix(Matrix As **Matrix**, [scaleX As **Single**], [scaleY As **Single**])	Matrix object	Concatenates a scale translation to a transformation matrix.
ConcatenateTranslationMatrix(Matrix As **Matrix**, [deltaX As **Single**], [deltaY As **Single**])	Matrix object	Concatenates a translation to a transformation matrix.
DoJavaFile(action As **String**, from As **String**, [dialogs As **Boolean**])	String	Execute a Java file.
DoJavaScript(action As **String**, from As **String**, [dialogs As **Boolean**])	String	Execute a Java script.
DoScript(action As **String**, from As **String**, [dialogs As **Boolean**])	Nothing	Plays an action from the Actions palette.
GetIdentityMatrix	Matrix object	Returns an identity matrix.
GetRotationMatrix([angle As **Single]**)	Matrix object	Returns a transformation matrix containing a single rotation.
GetScaleMatrix([scaleX As **Single**], [scaleY As **Single**])	Matrix object	Returns a transformation matrix containing a single scale.
GetTranslationMatrix([deltaX As **Single**], [deltaY As **Single**])	Matrix object	Returns a transformation matrix containing a single translation.
InvertMatrix(Matrix As **Matrix**)	Matrix object	Inverts a matrix.
IsEqualMatrix(Matrix As **Matrix**, secondMatrix As **Matrix**)	Boolean	Checks whether two matrices are equal.
IsSingularMatrix(Matrix As **Matrix**)	Boolean	Checks whether a matrix is singular and cannot be inverted.
Open(files As **String**, [DocumentColorSpace As **AiDocumentColorSpace**])	Document object	Opens the file or files specified by the string or array of strings containing file paths.

Method:	Returns:	What it does:
Quit	Nothing	Quits Illustrator. Note that if the clipboard contains data, Illustrator may show a dialog prompting the user to save the data for other applications. Avoid the possibility of this dialog by manually emptying the clipboard with the VB method Clipboard.Clear.
Redraw	Nothing	Allow Illustrator to redraw all its windows.

Notes

To open a document and obtain a reference to the document that was opened use this code:

```
' Open a document and get the reference to it
Dim appRef as New Illustrator.Application
Dim docRef as Illustrator.Document
set docRef = appRef.Open
appRef.Open("C:\temp\aFile.ai")
```

In Illustrator, the application’s `Selection` can be accessed as well as modified. The selection will contain `Empty` when there are no selected objects. To deselect all objects in the current document, simply set the selection to `Empty`, as the following example shows.

```
Private Sub DeselectAll_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Set frontDocument = appRef.ActiveDocument
    frontDocument.Selection = Empty
End Sub
```

A reference to a text range is returned when there is an active insertion point in the contents of a TextArtItem. Similarly, a reference to a range of text is returned when characters are selected in the contents of a TextArtItem.

If the Open method is called to open a pre-Illustrator 9 (or greater) document that contains both RGB and CMYK colors and the `DocumentColorSpace` parameter is not supplied, Illustrator will display a dialog to the user. When the `DocumentColorSpace` parameter is supplied and Illustrator encounters documents containing both color spaces, the document will be opened without a dialog and all colors will be converted to the specified color space.

You can run an action from the Action Palette from a script by using the `DoScript` method. When you do this the control returns to your script before the action has completed. You should use the `ActionIsRunning` property to test for when the action has completed before executing any other VB command. If you are using VBScript, you can use the `Sleep` method defined on the WScript object to insert a pause to test this property. If you are using Visual Basic please refer to the "Windows DoAction" example for an example of how to wait for an action to complete.

VBScript example:

```
Dim appRef
Set appRef = CreateObject("Illustrator.Application")
appRef.DoScript "Opacity 60 (selection)", "Default Actions"

WHILE(appRef.ActionIsRunning)
        WScript.sleep 1000
WEND
msgbox "Done"
```

`DoJavaScript` and `DoJavaScriptFile` can be used to invoke script written in JavaScript for Illustrator. Please refer to the JavaScript documentation for how to write

JavaScripts for Illustrator. Both methods returns the value of the last executed JavaScript statement. The following script will display an alert using the JavaScript alert method.

```
appRef.DoJavaScript "alert( 'Number of open documents: ' +
                             documents.length);"
```

The following JavaScript returns the number of open documents to Visual Basic.

```
Dim myNumberOfDocuments
myNumberOfDocuments = appRef.DoJavaScript("documents.length;")
MsgBox myNumberOfDocuments
```

Example 1.1

In this script, we use the application property `ActiveDocument` to copy the current document's selection to the clipboard before pasting it into our new document. This script demonstrates how to create a new document with a specific color space and dimensions.

```
' This script copies the active document's selection to the clipboard
' and pastes onto a new document with explicit color space and dimensions specified
Private Sub MakeNewDocument_Click()

    Dim appRef As New Illustrator.Application
    Dim newDocument As Illustrator.Document

    If appRef.Documents.Count > 0 Then
        If TypeName(appRef.ActiveDocument.Selection) = "Variant()" Then
            appRef.ActiveDocument.Copy
           Set newDocument = appRef.Documents.Add(aiDocumentCMYKColor, _
                250#, 400#)
            newDocument.Paste
        End If
    End If
End Sub
```

ArtStyle

An art style. Each art style defines a set of appearance attributes that you can apply non-destructively to PageItems. Art styles are contained in documents.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Name	R/O	String	The ArtStyle name.
Parent	R/O	Document object	The document that contains this ArtStyle.

Methods

Method:	**Returns:**	**What it does:**
ApplyTo(artItem As **PageItem**)	Nothing	Applies the ArtStyle to a specific art object.

Notes

Illustrator's `ArtStyle` object represents an art style as defined in the Illustrator application. Additional art styles may be created by the user within Illustrator. Art styles cannot be created by a script.

Example 2.1

This example duplicates and groups the current selection, applying the second art style in the document to the items in the group.

```
' This script duplicates and groups the current selection
' then applies an art style to the new group's items
Private Sub ArtStyle_Click()
    Dim appRef As New Illustrator.Application
    Dim newGroup As Illustrator.GroupItem
    Dim artItem As Illustrator.PageItem

    If appRef.Documents.Count > 0 Then
        If TypeName(appRef.ActiveDocument.Selection) = "Variant()" Then
            appRef.ActiveDocument.Copy
            Set newGroup = appRef.ActiveDocument.GroupItems.Add
            newGroup.Paste
            For Each artItem In newGroup.PageItems
                appRef.ActiveDocument.ArtStyles(2).ApplyTo artItem
            Next
        End If
    End If
End Sub
```

ArtStyles

A collection of art styles in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of artstyles in the document.
Parent	R/O	Document object	The document that contains this ArtStyles object

Methods

Method:	Returns:	What it does:
Index(item As **ArtStyle**)	Long	Returns the index position of the object within the collection.
item(itemKey)	ArtStyle object	Returns an object reference to the object identified by itemKey. You can obtain an item either by index or by name.
Remove/RemoveAll	Nothing	Removes the ArtStyle from the Document.

Notes

Illustrator's `ArtStyle` object represents an art style as defined in the Illustrator application. Additional art styles may be created by the user within Illustrator. Art styles cannot be created by a script.

Example 3.1

This script displays the total number of available art styles in the current document.

```
' This script counts all art styles in current document and returns the total
Private Sub CountArtStyles_Click()
    Dim appRef As New Illustrator.Application
    Dim numberOfStyles As Long

    If appRef.Documents.Count > 0 Then
        numberOfStyles = appRef.ActiveDocument.ArtStyles.Count
        MsgBox ("There are " & numberOfStyles & " art styles in the
document.")
    End If
End Sub
```

Brush

A brush in an Illustrator document. Brushes are contained in documents.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Name	R/O	String	The Brush name.
Parent	R/O	Document object	The document that contains this Brush.

Methods

Method:	Returns:	What it does:
ApplyTo(artItem As **PageItem**)	Nothing	Applies the Brush to a specific art object.

Notes

Additional brushes may be created by the user within Illustrator. Illustrator's brushes can be accessed from scripting, but cannot be created.

Example 4.1

This example duplicates and groups the current selection, applying the second art style in the document to the items in the group.

```
' This script duplicates and groups the current selection
' then applies a brush to the new group's items
Private Sub BrushTest_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim newGroup As Illustrator.GroupItem
    Dim artItem As Illustrator.PageItem

    If appRef.Documents.Count > 0 Then
        If TypeName(appRef.ActiveDocument.Selection) = "Variant()" Then
            appRef.ActiveDocument.Copy
            Set newGroup = appRef.ActiveDocument.GroupItems.Add
            newGroup.Paste
            For Each artItem In newGroup.PageItems
```

```
                appRef.ActiveDocument.Brushes(2).ApplyTo artItem
            Next
        End If
    End If
End Sub
```

Brushes

A collection of brushes in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this Brushes object.

Methods

Method:	Returns:	What it does:
Index(item As **Brush**)	Long	Returns the index position of the object within the collection.
item(itemKey)	ArtStyle object	Returns an object reference to the object identified by itemKey. By name or index.

Notes

Illustrator's `Brush` object represents a brush as defined in the Illustrator application. Additional brushes may be created by the user within Illustrator. Brushes cannot be created by a script.

Example 5.1

This script displays the total number of available brushes in the current document.

```
' This script counts all brushes in current document and returns the total
Private Sub Brushes_Click()
    Dim appRef As New Illustrator.Application
    Dim numberOfBrushes As Long

    If appRef.Documents.Count > 0 Then
        numberOfBrushes = appRef.ActiveDocument.Brushes.Count
        MsgBox ("There are " & numberOfBrushes & " brushes in the
document.")
    End If
End Sub
```

Character

A single character of text in the contents of a TextArtItem.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
AutoKerning		Boolean	Should a font’s built-in kerning information be used?
BaselineShift		Single	Baseline offset of text.
Clipping	R/O	Boolean	Should the character be used as a clipping path?
Contents		String	The text contained in the text range.
Direction		AiCharacterDirection enumeration	The orientation of the characters in a vertical text block.
Evenodd		Boolean	Should the even-odd rule be used to determine insideness?
FillColor		Color	Fill color of text
Filled		Boolean	Should the text be filled?
FillOverprint		Boolean	Should the art beneath the text be overprinted?
Font		String	The text face of the text.
Kerning		Single	The spacing between two characters in milli-ms.
Leading		Single	The vertical leading of the text.
Length	R/O	Long	The number of character in the text.
Note	R/O	String	The note associated with this text.
Offset	R/O	Long	Offset of selected text in text range (in characters).
Orientation	R/O	AiTextOrientation enumeration	The orientation of the text. Use the TextPath class to alter this property.
Paragraph	R/O	Paragraph object	The paragraph containing the character.

Property:	**R/O**	**Value type:**	**What it is:**
Parent	R/O	Document object	The document that contains this Character.
Resolution	R/O	Single	The resolution of the object (in dots per inch).
Scaling		Variant Array (of 2 Singles)	The Character scaling supplied as a point with the first coordinate as horizontal scale and the second coordinate as vertical scale, where 100.0 is 100%.
Size		Single	Font size of text.
StrokeCap		AiStrokeCap enumeration	The type of line capping.
StrokeColor		Color object	The stroke color for the path.
Stroked		Boolean	Should the path be stroked?
StrokeDashes		Variant Array	Dash lengths. Set to an empty array for a solid line.
StrokeDashOffset		Single	The default distance into the dash pattern at which the pattern should be started.
StrokeJoin		AiStrokeJoin enumeration	Type of joints for the path.
StrokeMiterLimit		Single	Are joins mitered (pointed) or beveled (squared-off)?
StrokeOverprint		Boolean	Will art beneath a stroked object be overprinted?
StrokeWidth		Single	Width of stroke.
TextLine	R/O	TextLine object	The line of text containing the character.
TextPath	R/O	TextPath object	A reference to the text path associated with the TextArtItem containing this text.
Tracking		Single	The spacing between multiple characters.
Word	R/O	Word object	The word containing this character.

Methods

Method:	Returns:	What it does:
Copy	Nothing	Copies the character to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the character onto the clipboard. The associated document must be the frontmost document.
Paste	Nothing	Replaces character with the contents of the clipboard.

Notes

The text contained within TextArtItems in Illustrator can be accessed using the `Character`, `Word`, `TextLine`, `Paragraph` and `TextRange` classes. The properties and valid commands for all of these classes are similar, but not identical. For example, while `Character` has a `Kerning` property, the other text classes do not.

Example 6.1

This example demonstrates how to use character properties to create unique effects from a script.

```
' This script distorts all characters in all TextArtItems
' by incrementally modifying the vertical scaling of each character
' to give the effect of stretching words out.
Private Sub CharacterSample_Click()
    Dim appRef As New Illustrator.Application
    Dim textArt As Illustrator.TextArtItem
    Dim textArtRange As Illustrator.TextRange
    Dim textCharacter As Illustrator.Character

    Dim verticalScale As Double
    Dim CharacterCount As Long

    Dim index As Long
    Dim pi As Double
    pi = 3.1415

    Dim horizScale As Double
    Dim curTextRange As Illustrator.TextRange
    If appRef.Documents.Count = 0 Then
        MsgBox "No documents are open"
        Exit Sub
    End If

    For Each textArt In appRef.ActiveDocument.TextArtItems
        Set textArtRange = textArt.TextRange
        index = 0
        CharacterCount = textArtRange.Characters.Count
        For Each textCharacter In textArtRange.Characters
            verticalScale = Sin(pi * index / CharacterCount) * 200 + 200
            index = index + 1
            textCharacter.Scaling = Array(100, verticalScale)
        Next
    Next
End Sub
```

Characters

A collection of characters.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of characters in the collection.
Parent	R/O	Document object	The document that contains this Characters object.

Methods

Method:	Returns:	What it does:
Add	Character object	Add a character after the last character in the current collection.
AddBefore	Character object	Add a character to the beginning of the current collection.
Index(item As **Character**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Character object	Returns an object reference to the object identified by itemKey. Only by index.
Remove(item As **Character**)	Nothing	Deletes a character from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 7.1

This script displays the total number of characters contained in all of the TextArtItems in the current document.

```
' This script counts all characters in current document and returns the total
Private Sub CountCharacters_Click()
    Dim appRef As New Illustrator.Application
    Dim numberOfCharacters As Long
    Dim textArt As Illustrator.TextArtItem
    Dim textArtRange As Illustrator.TextRange

    If appRef.Documents.Count > 0 Then
        numberOfCharacters = 0
        For Each textArt In appRef.ActiveDocument.TextArtItems
            Set textArtRange = textArt.TextRange
           numberOfCharacters = numberOfCharacters + textArtRange.Length
        Next
        MsgBox ("There are " & numberOfCharacters & " characters in the 
document.")
    End If
End Sub
```

CMYKColor

A CMYK color specification, used in conjunction with the `CMYK` property of the `Color` object.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Black		Single	The black color value as a value in the range 0.0 - 100.0.
Cyan		Single	The cyan color value as a value in the range 0.0 - 100.0.
Magenta		Single	The magenta color value as a value in the range 0.0 - 100.0.
Yellow		Single	The yellow color value as a value in the range 0.0 - 100.0.

Notes

If the `DocumentColorSpace` of a document is `aiDocumentRGBColor` and you specify the color value for a PageItem in that document using `CMYKColor`, Illustrator will translate the CMYK color specification into a RGB color specification. The same thing happens if the document's `DocumentColorSpace` is `aiDocumentCMYKColor` and you specify colors using `RGBColor`. Since this translation can cause information loss you should specify colors using the class that matches the document's `DocumentColorSpace`.

Example 8.1

This script sets the fill color for the frontmost PathItem in the active document to a light shade of purple.

```
' This script sets the fill color of the frontmost PathItem in
' the current document to a light purple CMYK color
Private Sub SetFill_Click()
    Dim appRef As New Illustrator.Application
    Dim frontPath As Illustrator.PathItem
    Dim newCMYKColor As New Illustrator.CMYKColor
    Dim newColor As New Illustrator.Color
```

```
     ' Get a reference to the frontmost path in the document
    Set frontPath = appRef.ActiveDocument.PathItems(1)

     ' Set color values for the CMYK objects. Then wrap the color in a standard color object
    newCMYKColor.Black = 0
    newCMYKColor.Cyan = 30.4
    newCMYKColor.Magenta = 32
    newCMYKColor.Yellow = 0
    Set newColor.CMYK = newCMYKColor

    frontPath.Filled = True
    frontPath.fillColor = newColor
End Sub
```

Color

A general color specification that includes a color space specification as well as a specific color specification for the color space selected.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
CMYK		CMYKColor object	A CMYK color specification.
Color	R/O	AiColor enumeration	The color space for this color. Any color specification included in the color info specification must correspond to the color space, i.e. if model is `aiColorCMYK`, the color specification object included must be a CMYKColor object.
Gradient		GradientColor object	A gradient color specification.
Gray		GrayColor object	A gray color specification.
Pattern		PatternColor object	A pattern color specification.
RGB		RGBColor object	A RGB color specification.
Spot		Spot object	A spot color specification.

Notes

All colors are specified in Illustrator using `Color`, except the `Color` property of layers which is specified directly as a RGB Color specification using `RGBColor`. To set a color, you do not need to specify the `Color` property. Illustrator will imply the color space based on the other properties included.

Example 9.1

The following script examines the color of the frontmost PathItem in the current document. Note that a document using the CMYK color space will never return an RGB color. A document using the RGB color space will never return a CMYK color.

```
' This script examines the fill color of the frontmost PathItem in
' the current document
Private Sub ColorTest_Click()
```

```
    Dim appRef As New Illustrator.Application
    Dim frontPath As Illustrator.PathItem
    Dim fillColor As New Illustrator.Color

    ' Get a reference to the frontmost path in the document
    Set frontPath = appRef.ActiveDocument.PathItems(1)

    If (frontPath.Filled) Then
        Set fillColor = frontPath.fillColor
        Select Case (fillColor.Color)
            Case aiColorCMYK
                MsgBox "FillColor of PathItem is a CMYK color"
            Case aiColorGradient
                MsgBox "FillColor of PathItem is a Gradient"
            Case aiColorGray
                MsgBox "FillColor of PathItem is a Gray shade"
            Case aiColorNone
                MsgBox "FillColor of PathItem is <none>"
            Case aiColorPattern
                MsgBox "FillColor of PathItem is a Pattern"
            Case aiColorRGB
                MsgBox "FillColor of PathItem is a RGB color"
            Case aiColorSpot
                MsgBox "FillColor of PathItem is a Spot"
            Case Else
                MsgBox "Unknown FillColor of PathItem"
        End Select
    End If
End Sub
```

CompoundPathItem

A compound path. Compound paths are objects composed of multiple intersecting paths, resulting in transparent interior spaces where the original paths overlapped.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this object used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object including stroke width and controls.
Editable		Boolean	Is this CompoundPathItem editable?
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object excluding stroke width.
Height		Single	The height of the CompoundPathItem, excluding stroke width, calculated from the Geometric bounds.
Hidden		Boolean	Is this CompoundPathItem hidden?
IsIsolated		Boolean	Is this object isolated?
Layer	R/O	Layer object	The layer to which this CompoundPathItem belongs.
Left		single	The left position of the CompoundPathItem.
Locked		Boolean	Is this CompoundPathItem locked?
Name		String	The name of this CompoundPathItem.
Opacity		Single	The opacity of the object . The value is between 0.0 and 100.0.
PageItem	R/O	PageItem object	The PageItem object corresponding to the CompoundPathItem.

Property:	R/O	Value type:	What it is:
Parent	R/O	Document object	The document that contains this CompoundPathItem.
PathItems	R/O	PathItems collection object	The path art items in this compound path.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the CompoundPathItem excluding stroke width.
Selected		Boolean	Is this CompoundPathItem selected?
Slices		Boolean	Is this CompoundPathItem sliced? Default: `false`
Tags	R/O	Tags collection object	The tags contained in this object.
Top		Single	The top position of the CompoundPathItem.
URL		String	The value of the Adobe URL tag assigned to this CompoundPathItem.
VisibilityVariable		Variable	The VisibilityVariable bound to this CompoundPathItem.
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the CompoundPathItem including stroke width.
Width		Single	The width of the CompoundPathItem, excluding stroke width, calculated from the GeometricBounds.
ZOrderPosition	R/O	Long	The position of this art object within the stacking order of the group or layer (Parent) that contains the art object.

Methods

Method:	Returns:	What it does:
Copy	Nothing	Copies the compound path to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the compound path onto the clipboard. The associated document must be the frontmost document.
Duplicate	CompoundPathItem	Duplicate the CompoundPathItem.
Resize(scaleX As **Single**, scaleY As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [scaleAbout As **AiTransformation**])	Nothing	Scales the compound path where scaleX is the horizontal scaling factor and scaleY is the vertical scaling factor; 100.0 = 100%.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the art object relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the compound path by applying a transformation matrix.

Method:	Returns:	What it does:
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the compound path relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the compound path's position in the stacking order of the group or layer (Parent) of this object.

Notes

Paths contained within a compound path or group in a document will be returned as individual paths when a script asks for the paths contained in the document. However, paths contained in a compound path or group will not be returned when a script asks for the paths in a layer which contains the compound path or group.

All paths inside of a compound path share property values. Therefore, if you set the value of a property of any one of the paths in the compound path, all other path's matching property will be updated to the new value.

The `PathItems` property provides access to the paths that make up the compound path.

Example 10.1

This example demonstrates how to select all of the paths in a document that are not part of a compound path or a group by testing the type of the `Parent` property with a `TypeName` function.

```
' This script selects all paths not part of a compound path.
Private Sub SelectNonCPI_Click()
    Dim appRef As New Illustrator.Application
    Dim pathArt As Illustrator.PathItem

    If appRef.Documents.Count > 0 Then
        If appRef.ActiveDocument.PathItems.Count > 0 Then
            For Each pathArt In appRef.ActiveDocument.PathItems
```

```
                If (Not TypeName(pathArt.Parent) = "CompoundPathItem")
Then _
                    pathArt.Selected = True
            Next
        End If
    End If
End Sub
```

Example 10.2

This example demonstrates how to create a new compound path containing 3 PathItems. The example then modifies the stroke of the paths in the compound path. Note that when you modify the properties of a PathItem inside a compound path you affect all paths contained in the compound path. The example also shows how to access swatches in a document by name.

```
' This script creates a CompoundPath containing 3 PathItems. It then sets the width and the color
' of the stroke. Note that when you modify a path in a compound path you affect all paths in the
' compound path.
Private Sub NewCPI_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim activeLayer As Illustrator.Layer
    Dim newCompoundPath As Illustrator.CompoundPathItem
    Dim newPath As Illustrator.PathItem

    Set frontDocument = appRef.ActiveDocument
    Set activeLayer = frontDocument.activeLayer

    Set newCompoundPath = activeLayer.CompoundPathItems.Add

     ' Create the PathItems
    Set newPath = newCompoundPath.PathItems.Add
    newPath.SetEntirePath Array(Array(30, 50), Array(30, 100))

    Set newPath = newCompoundPath.PathItems.Add
    newPath.SetEntirePath Array(Array(40, 100), Array(100, 100))

    Set newPath = newCompoundPath.PathItems.Add
    newPath.SetEntirePath Array(Array(100, 110), Array(100, 300))

     ' Set the gradient of the compound path
    newPath.Stroked = True
    newPath.StrokeWidth = 3.5
    newPath.StrokeColor = frontDocument.Swatches("Orange").Color
End Sub
```

CompoundPathItems

A collection of compound paths.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this CompoundPathItems object.

Methods

Method:	Returns:	What it does:
Add	CompountPathItem object	Creates a new CompoundPathItem.
Index(item As **CompoundPathItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	CompoundPathItem object	Returns an object reference to the object identified by itemKey.
MoveAfter	Nothing	Move the CompoundPath behind another object.
MoveBefore	Nothing	Move the CompoundPath in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the CompoundPath to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the CompoundPath to the front of a container.
Remove(item As **CompoundPathItem**)	Nothing	Deletes a CompoundPathItem from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 11.1

This example displays the total number of compound paths contained in the first layer of the current document.

```
' This script counts all compound paths in layer 1 of current document
```

```
Private Sub CountCPI_Click()
    Dim appRef As New Illustrator.Application
    Dim numPaths As Long
    Dim textArt As Illustrator.TextArtItem

    If appRef.Documents.Count > 0 Then
        numPaths =
appRef.ActiveDocument.Layers(1).CompoundPathItems.Count
        MsgBox ("There are " & numPaths & " compound paths in the
document.")
    End If
End Sub
```

DataSet

```
A set of data used for dynamic publishing.
```

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Name		String	The name of the DataSet.
Parent	r/o	Document object	The name of the object that is this DataSet object’s parent.

Methods

Method:	Returns:	What it does:
Display	Nothing	Displays the DataSet.
Update	Nothing	Updates the DataSet.

Notes

A DataSet allows you to collect a number of variables and their dynamic data into one object. You must have at least one variable bound to an art object in order to create a DataSet. See the class definition for `variable` in this chapter and “Working with variables and datasets” on page 53 for more information.

DataSets

A collection of `DataSets`.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of datasets in the collection.
Parent	r/o	Document object	The name of the object that is this DataSet object’s parent.

Methods

Method:	Returns:	What it does:
Add(Variable)	DataSet object	Creates a new DataSet.
Index(item As **Variable**)	String	Name of a Variable in the DataSet.
item(itemKey)	DataSet object	Returns an object reference to the object identified by itemKey.
Remove	DataSet object	Removes a DataSet from the collection.
RemoveAll	DataSet object	Removes all DataSets from the collection.

Document

An Illustrator document. Documents are contained in the `Application` object.

Properties

Property:	R/O	Value type:	What it is:
ActiveDataSet		DataSet object	The active DataSet object in the document.
ActiveLayer		Layer object	The active Layer in the document.
ActiveView	R/O	View object	The document's current View.
Application	R/O	Application object	The Illustrator Application object.
ArtStyles	R/O	ArtStyles collection object	The ArtStyles contained in the document.
Brushes	R/O	Brushes collection object	The Brushes contained in the document.
CompoundPathItems	R/O	CompoundPathItems collection object	The CompoundPathItems contained in the document.
CropBox		Variant Array (of 4 Singles)	The boundary of the document's cropping box for output. A document does not have a default CropBox. In order to read this property you have to set the CropBox first.
CropStyle		AiCropOptions enumeration	The style of the document's cropping box.
DataSets		DataSet object	A DataSets collection in the document.
DefaultFillColor		Color object	The Color to fill new paths if default filled is `true`.
DefaultFilled		Boolean	Should a new path be filled?
DefaultFillOverprint		Boolean	Will art beneath a filled object be overprinted by default?
DefaultStrokeCap		AiStrokeCap enumeration	Default type of line capping for paths created.
DefaultStrokeColor		Color object	The stroke color for new paths if default stroked is `true`.
DefaultStroked		Boolean	Should a new path be stroked?

Property:	**R/O**	**Value type:**	**What it is:**
DefaultStrokeDashes		Variant Array (of Singles)	Default lengths for dashes and gaps in dashed lines, starting with the first dash length, followed by the first gap length, and so on. Set to an empty variant array for solid line.
DefaultStrokeDashOffset		Single	The default distance into the dash pattern at which the pattern should be started for new paths.
DefaultStrokeJoin		AiStrokeJoin enumeration	Default type of joints in new paths.
DefaultStrokeMiterLimit		Single	Specifies when a join is mitered (pointed) or beveled (squared-off) by default, when default stroke join is set to mitered.
DefaultStrokeOverprint		Boolean	Will art beneath a stroked object be overprinted by default?
DefaultStrokeWidth		Single	Default width of stroke for new paths.
DocumentColorSpace	R/O	AiDocumentColorSpace enumeration	The color specification system to use for this document’s color space.
FullName	R/O	String	The file associated with the document, which includes the complete path to the file.
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the illustration excluding the stroke width of any objects in the document.
Gradients	R/O	Gradients collection object	The Gradients collection contained in the document.
GraphItems		GraphItems object	The GraphItems collection contained in the document.
GroupItems	R/O	GroupItems collection object	The GroupItems collection contained in the document.
Height	R/O	Single	The height of the document., calculated from the GeometricBounds.
Layers	R/O	Layers collection object	The layers contained in the document.

Property:	R/O	Value type:	What it is:
MeshItems	R/O	MeshItems collection object	The mesh art items contained in the document.
Name	R/O	String	The document's name (not the complete file path to the document).
OutputResolution		Single	The current output resolution for the document in dots per inch (dpi).
PageItems	R/O	PageItems collection object	The PageItems (contains all art object classes) contained in the document.
PageOrigin		Variant Array (of 2 Singles)	The zero-point of the page in the document without margins, relative to the overall height and width.
Parent	R/O	Application object	The application that contains this document.
Path	R/O	String	The file associated with the document, which includes the complete path to the file.
PathItems	R/O	PathItems collection object	The PathItems contained in this document.
Patterns	R/O	Patterns collection object	The patterns contained in this document.
PlacedItems	R/O	PlacedItems collection object	The PlacedItems contained in this document.
PluginItems	R/O	PluginItems collection object	The PluginItems contained in this document.
PrintTiles	R/O	Boolean	Does this document print as tiled output?
RasterItems	R/O	RasterItems collection object	The raster items contained in this document.
RulerOrigin		Variant Array (of 2 Singles)	The zero-point of the rulers in the document relative to the bottom left of the document.
RulerUnits	R/O	AiRulerUnits enumeration	The default measurement units for the rulers in the document.
Saved		Boolean	False if the document has never been saved or if the document has been changed since last time it was saved.

Property:	**R/O**	**Value type:**	**What it is:**
Selection		Variant Array (of objects)	The array of references to the objects in this document's current selection.
ShowPlacedImages	R/O	Boolean	Are placed images displayed in the document?
SplitLongPaths	R/O	Boolean	Are long paths to be split when printing?
Spots	R/O	Spots collection object	The SpotColors contained in this document.
Swatches	R/O	Swatches collection object	The Swatches contained in this document.
Symbols		Symbols collection object	The Symbols collection contained in this document.
SymbolItems		SymbolItems collection object	The SymbolItems collection contained in this document.
Tags	R/O	Tags collection object	The tags contained in this document.
TextArtItems	R/O	TextArtItems collection object	The TextArtItems contained in this document.
TileFullPages	R/O	Boolean	Should full pages be tiled when printing this document?
UseDefaultScreen	R/O	Boolean	Should the printer's default screen be used when printing this document?
Variables		Variables collection object	The Variables collection contained in this document.
VariablesLocked		Boolean	Are the Variables in this document locked?
Views	R/O	Views collection object	The views contained in this document.
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the document, including stroke width of any objects in the illustration.
Width	R/O	Single	The width of this document, calculated from the GeometricBounds

Methods

Method:	**Returns:**	**What it does:**
Activate	Nothing	Bring the first window associated with the document to the front.
Close([saving As **AiSaveOptions**])	Nothing	Closes a document.
Copy	Nothing	Copies the current selection in the document to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the current selection in the document to the clipboard. The associated document must be the frontmost document.
Export(exportFile As **String**, exportFormat as **AiExportType**, [options As **ExportOptionsGIF/ ExportOptionsJPEG/ ExportOptionsPhotoshop/ ExportOptionsPNG24/ ExportOptionsPNG8/ ExportOptionsSVG**]	Nothing	Exports the document to the specified file using one of the export file formats.
ExportVariables filename As **String**	Nothing	Exports Variables from this document to a specified file.
ImportVariables filename As **String**	Nothing	Import Variables from specified file into this document.
Paste	Nothing	Pastes the contents of the clipboard into the current layer of the document. If the document is the frontmost then all pasted objects remain selected after the paste.
PrintOut([showDialog As **Boolean**])	Nothing	Prints the document.
Save	Nothing	Saves the document in it current location.
SaveAs([saveIn As **String**], [options As **EPSSaveOptions/ IllustratorSaveOptions/ PDFSaveOptions**])	Nothing	Saves the document in the specified file as an Illustrator, EPS, or PDF file.

Notes

Illustrator's default document settings—those properties starting with the word "Default"—are global settings that affect the current document. Be sure to modify these default properties only when a document is open. Note that if you set default properties to desired values before creating new objects, you can streamline your scripts, eliminating the need to specify properties such as `FillColor` and `Stroked` that have analogous default properties.

A document's `DocumentColorSpace, Height`, and `Width` can only be set when the document is created. Once a document is created, these properties cannot be changed.

The frontmost document can be referred to as either `AppRef.ActiveDocument` or `AppRef.Documents(1)`.

If you close the document, you should set your document reference to `Nothing` to prevent your script accidentally trying to access closed documents. Example:

Example 12.1

The following example shows how to make sure a document is open before setting any of the default properties.

```
' In this example it is assumed that aiDocument
' holds a reference to an open Illustrator document
DocRef.Close aiSaveChanges
Set aiDocument = Nothing
```

Example 12.2

This example demonstrates how to create a new document with specific default properties.

```
' This script creates a document if none exist
' and then sets fill and stroke defaults
Private Sub MakeNewDocument_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document

    If (appRef.Documents.Count = 0) Then
        Set frontDocument = appRef.Documents.Add
    Else
        Set frontDocument = appRef.Documents(1)
    End If
    frontDocument.DefaultFilled = True
    frontDocument.DefaultStroked = True
End Sub
```

Documents

A collection of documents.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Object	The parent of this object.

Methods

Method:	Returns:	What it does:
Add([DocumentColorSpace As **AiDocumentColorSpace**], [Width As **Single**], [Height As **Single**])	Document object	Creates a new document using optional parameters and returns a reference to the new document.
Index(item As **Document**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Document object	Returns an object reference to the object identified by itemKey.

Example 13.1

This examples demonstrates how to create a new document with a specific color space.

```
' This script creates a document with RGB color space
Private MakeNewDocument_Click()
    Dim appRef As New Illustrator.Application
    appRef.Documents.Add(aiDocumentRGBColor)
End Sub
```

EPSSaveOptions

Options which may be supplied when saving a document as an Illustrator EPS file. See the `SaveAs` method for additional details.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
CMYKPostScript		Boolean	Use CMYK PostScript?
Compatibility		AiCompatibility enumeration	Specifies the version of the EPS file format to save.
EmbedAllFonts		Boolean	Include fonts used in the EPS file?
EmbedLinkedFiles		Boolean	Are linked image files to be included in the saved document?
FlattenOuput		AiOutputFlattening enumeration	How should transparency be flattened for file formats older than Illustrator 9 or greater?
IncludeDocumentThumbnails		Boolean	Include thumbnail image of the EPS artwork?
JapaneseFileFormat		Boolean	Save file using Japanese version of file format?
PostScript		AiPostScriptLevel enumeration	Specifies the PostScript level to use when saving the file.
Preview		AiEPSPreview enumeration	Specifies the format for the EPS preview image.

Notes

`EPSSaveOptions` can only be supplied in conjunction with the `SaveAs` method.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 14.1

This example demonstrates how to save the current document as an Illustrator 8-compatible EPS file using CMYK PostScript with all fonts embedded.

```
' This script saves the current document as an EPS with specific options
Private Sub SaveAsEPS_Click()
    Dim appRef As New Illustrator.Application
    Dim newSaveOptions As New Illustrator.EPSSaveOptions
    Dim frontDocument As Illustrator.Document

    If appRef.Documents.Count > 0 Then
        newSaveOptions.CMYKPostScript = True
        newSaveOptions.Compatibility = aiIllustrator8
        newSaveOptions.EmbedAllFonts = True
        Set frontDocument = appRef.ActiveDocument
        frontDocument.SaveAs "C:\temp\sample.eps", newSaveOptions
    End If
End Sub
```

ExportOptionsFlash

Options you can supply when exporting a document as Flash (.SWF).

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtBoardClipping		Boolean	Should the exported image be clipped to the art board? The default value is `false`.
CurveQuality		Long (0 -10)	The amount of curve information that should be preserved. Default: `7`.
ExportStyle		AiFlashExportStyle	The style in which the exported data should be created in Flash. Default: `Flash file`.
FrameRate		Single (0.01 - 120)	The display rate in frames per second. Default: `12`.
GenerateHTML		Boolean	Should the image be exported as an HTML file? Default: `true`
ImageFormat		AiFlashImageFormat enumeration	How should the image in the exported Flash file be compressed? Default: `Lossless`
JPEGMethod		AiFlashJPEGMethod enumeration	The JPEG method to use. Default: either `JPEGStandard` or `JPEGOptimized`
JPEGQuality		Long (0 -3)	Level of compression to use. Default: `3`
Looping		Boolean	Should the Flash file be set to loop when run? Default: `false`
ReadOnly		Boolean	Export as a read-only file? Default: `false`

Property:	R/O	Value type:	What it is:
Replacing		AiSaveOptions	If a file with the same name already exists, should it be replaced? Default: `AiPromptToSaveChanges`
Resolution		Single (72 - 2400)	Pixels per inch. Default: `72`

ExportOptionsGIF

Options which may be supplied when exporting a document as a GIF file. See the `Export` method for additional details.

Properties

Property:	R/O	Value type:	What it is:
AntiAliasing		Boolean	Should the exported image be anti-aliased? The default value is `true`.
Application	R/O	Application object	The Illustrator Application object.
ArtBoardClipping		Boolean	Should the exported image be clipped to the art board? The default value is `false`.
ColorCount		Long	The number of colors in the exported image's color table. Acceptable values range from 2 to 256. The default value is 128.
ColorDither		AiColorDitherMethod enumeration	The method used to dither colors in the exported image. The default value is `aiDiffusionDither`.
ColorReduction		AiColorReductionMethod enumeration	The method used to reduce the number of colors in the exported image. The default value is `aiSelective`.
DitherPercent		Long	How much should the colors of the exported image be dithered, where 100.0 is 100%.
HorizontalScale		Single	The horizontal scaling factor to apply to the exported image, where 100.0 is 100%. The default value is 100.0.
InfoLossPercent		Long	The level of information loss allowed during compression, where 100.0 is 100%. Default: `0%`
Interlaced		Boolean	Should the exported image be interlaced? The default value is `false`.

Property:	R/O	Value type:	What it is:
Matte		Boolean	Should the art board be matted with a color? The default value is `true`.
MatteColor		RGBColor object	The color to use when matting the art board. The default value is `white`.
SaveAsHTML		Boolean	Should the exported image be saved with an accompanying HTML file? The default value is `false`.
Transparency		Boolean	Should the exported image use transparency? The default value is `true`.
VerticalScale		Single	The vertical scaling factor to apply to the exported image, where 100.0 is 100%. The default value is 100.0.
WebSnap		Long	How much should the color table be changed to match the web palette, where 100 is maximum. The default value is 0.

Notes

`ExportOptionsGIF` can only be supplied in conjunction with the `Export` method.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 15.1

This example demonstrates how to export the current document as a GIF.

```
' This script saves the current document as a GIF file with specific options
Private Sub ExportGIF_Click()
    Dim appRef As New Illustrator.Application
    Dim gifExportOptions As New Illustrator.ExportOptionsGIF
    Dim docRef As Illustrator.Document
    If appRef.Documents.Count > 0 Then
        gifExportOptions.AntiAliasing = False
        gifExportOptions.ColorCount = 64
        gifExportOptions.ColorDither = aiDiffusion
        Set docRef = appRef.ActiveDocument
        docRef.Export "C:\temp\sample.gif", aiGIF, gifExportOptions
    End If
End Sub
```

ExportOptionsPhotoshop

Options which may be supplied when exporting a document as a Photoshop file. See the `Export` method for additional details.

Properties

Property:	R/O	Value type:	What it is:
AntiAliasing		Boolean	Should the exported image be anti-aliased? Default: `true`.
Application	R/O	Application object	The Illustrator Application object.
CompoundShapes		Boolean	Export compound shapes as shape layers? Default: `true`
EditableText		Boolean	Export text objects as editable text layers? Default: `true`
EmbedICCProfile		Boolean	Should a ICC profile be embedded in the exported file? Default: `false`
HiddenLayers		Boolean	Should hidden layers be included in the exported file? Default: `false`
ImageColorSpace		AiImageColorSpace enumeration	The color space of the exported file.
ImageMap		Boolean	For RGB documents, should the image maps be preserved in ImageReady 3.0 format? Default: `true`
NestedLayers		Boolean	Should nested layers be included in the exported file? Default: `true`
Resolution		Single (72 - 2400)	The resolution of the exported file (in dots per inch). Default: `150`
Slices		Boolean	Should slice data be preserved in the exported document? Default: `true`

Property:	R/O	Value type:	What it is:
Warning		Boolean	Should a warning dialog be displayed because of conflicts in the export settings? Default: `true`
WriteLayers		Boolean	Should the document layers be preserved in the exported file? The default value is `true`.

Notes

`ExportOptionsPS5` can only be supplied in conjunction with the `Export` method.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 19.1

This example exports the current document as a Photoshop 5 file with layers.

```
' This script exports the current document as a Photoshop 6 with specific options
Dim appRef As New Illustrator.Application
Dim psExportOptions As New Illustrator.ExportOptionsPhotoshop
Dim docRef As Illustrator.Document
If appRef.Documents.Count > 0 Then
   psExportOptions.Resolution = 150
   Set docRef = appRef.ActiveDocument
   docRef.Export "C:\temp\sample.psd", aiPhotoshop, psExportOptions
End If
```

ExportOptionsJPEG

Options which may be supplied when exporting a document as a JPEG file. See the `Export` method for additional details.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
AntiAliasing		Boolean	Should the exported image be anti-aliased? The default value is `true`.
Application	R/O	Application object	The Illustrator Application object.
ArtBoardClipping		Boolean	Should the exported image be clipped to the art board? The default value is `false`.
BlurAmount		Single	The amount of blur to apply to the exported image. This value ranges from 0.0 to 2.0. The default value is 0.0.
HorizontalScale		Single	The horizontal scaling factor to apply to the exported image, where 100.0 is 100%. The default value is 100.0.
Matte		Boolean	Should the art board be matted with a color? The default value is `true`.
MatteColor		RGBColor object	The color to use when matting the art board. The default value is `white`.
Optimization		Boolean	Should the exported image be optimized for web viewing? The default value is `true`.
QualitySetting		Long	The quality of the exported image. This value ranges from 0 to 100. The default value is 30.
SaveAsHTML		Boolean	Should the exported image be saved with an accompanying HTML file? The default value is `false`.

Property:	R/O	Value type:	What it is:
VerticalScale		Single	The vertical scaling factor to apply to the exported image, where 100.0 is 100%. The default value is 100.0.

Notes

`ExportOptionsJPEG` can only be supplied in conjunction with the `Export` method.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 16.1

This example demonstrates how to export the current document as a JPEG with specific options.

```
' This script exports the current document as a JPEG with specific options
Private Sub ExportAsJPEG_Click()
    Dim appRef As New Illustrator.Application
    Dim jpegExportOptions As New Illustrator.ExportOptionsJPEG
    Dim docRef As Illustrator.Document
    If appRef.Documents.Count > 0 Then
        jpegExportOptions.AntiAliasing = False
        jpegExportOptions.QualitySetting = 70
        Set docRef = appRef.ActiveDocument
        docRef.Export "C:\temp\sample.jpg", aiJPEG, jpegExportOptions
    End If
End Sub
```

ExportOptionsPNG24

Options which may be supplied when exporting a document as a 24-bit PNG file. See the `Export` method for additional details.

Properties

Property:	R/O	Value type:	What it is:
AntiAliasing		Boolean	Should the exported image be anti-aliased? The default value is `true`.
Application	R/O	Application object	The Illustrator Application object.
ArtBoardClipping		Boolean	Should the exported image be clipped to the art board? The default value is `false`.
HorizontalScale		Single	The horizontal scaling factor to apply to the exported image, where 100.0 is 100%. The default value is 100.0.
Matte		Boolean	Should the art board be matted with a color? The default value is `true`.
MatteColor		RGBColor object	The color to use when matting the art board. The default value is `white`.
SaveAsHTML		Boolean	Should the exported image be saved with an accompanying HTML file? The default value is `false`.
Transparency		Boolean	Should the exported image use transparency? The default value is `true`.
VerticalScale		Single	The vertical scaling factor to apply to the exported image, where 100.0 is 100%. The default value is 100.0.

Notes

`ExportOptionsPNG24` can only be supplied in conjunction with the `Export` method.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 17.1

This example exports the current document as a PNG24 file with specific options.

```
' This script exports the current document as a PNG24 with specific options
Private Sub ExportAsPNG24_Click()
    Dim appRef As New Illustrator.Application
    Dim png24ExportOptions As New Illustrator.ExportOptionsPNG24
    Dim docRef As Illustrator.Document
    If appRef.Documents.Count > 0 Then
        png24ExportOptions.AntiAliasing = False
        png24ExportOptions.Transparency = False
        Set docRef = appRef.ActiveDocument
        docRef.Export "C:\temp\sample.png", aiPNG24, png24ExportOptions
    End If
End Sub
```

ExportOptionsPNG8

Options which may be supplied when exporting a document as an 8-bit PNG file. See the `Export` method for additional details.

Properties

Property:	R/O	Value type:	What it is:
AntiAliasing		Boolean	Should the exported image be anti-aliased? The default value is `true`.
Application	R/O	Application object	The Illustrator Application object.
ArtBoardClipping		Boolean	Should the exported image be clipped to the art board? The default value is `false`.
ColorCount		Long	The number of colors in the exported image's color table. Acceptable values range from 2 to 256. The default value is 128.
ColorDither		AiColorDitherMethod enumeration	The method used to dither colors in the exported image. The default value is `aiDiffusionDither`.
ColorReduction		AiColorReductionMethod enumeration	The method used to reduce the number of colors in the exported image. The default value is `aiSelective`.
DitherPercent		Long	How much should the colors of the exported image be dithered, where 100.0 is 100%.
HorizontalScale		Single	The horizontal scaling factor to apply to the exported image, where 100.0 is 100%. The default value is 100.0.
Interlaced		Boolean	Should the exported image be interlaced? The default value is `false`.
Matte		Boolean	Should the art board be matted with a color? The default value is `true`.

Property:	R/O	Value type:	What it is:
MatteColor		RGBColor object	The color to use when matting the art board. The default value is `white`.
SaveAsHTML		Boolean	Should the exported image be saved with an accompanying HTML file? The default value is `false`.
Transparency		Boolean	Should the exported image use transparency? The default value is `true`.
VerticalScale		Single	The vertical scaling factor to apply to the exported image, where 100.0 is 100%. The default value is 100.0.
WebSnap		Long	How much should the color table be changed to match the web palette, where 100 is maximum. The default value is 0.

Notes

`ExportOptionsPNG8` can only be supplied in conjunction with the `Export` method.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 18.1

This example exports the current document as a PNG8 file.

```
' This script exports the current document as a PNG8 with specific options
Private Sub ExportAsPNG8_Click()
    Dim appRef As New Illustrator.Application
    Dim png8ExportOptions As New Illustrator.ExportOptionsPNG8
    Dim docRef As Illustrator.Document
    If appRef.Documents.Count > 0 Then
        png8ExportOptions.AntiAliasing = False
        png8ExportOptions.Interlaced = True
        Set docRef = appRef.ActiveDocument
        docRef.Export "C:\temp\sample.png", aiPNG8, png8ExportOptions
    End If
End Sub
```

ExportOptionsSVG

Options which may be supplied when exporting a document as a SVG file. See the `Export` method for additional details.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
CompressedDocument		Boolean	Should the exported file be compressed? The default value is `false`.
CoordinatePrecision		Long (1 - 7)	The decimal precision for element coordinate values. Default: `3`.
CSSProperties		AiSVGCSSPropertyLocation enumeration	How should the CSS properties of the document be included in the exported file?
DocumentEncoding		AiSVGDocumentEncoding enumeration	How should the text in the document be encoded?
EmbedAllFonts		Boolean	Embed all fonts used by the document in the saved file?
EmbedRasterImages		Boolean	Embed raster images contained in the document in the saved file?
FontSubsetting		AiSVGFontSubsetting enumeration	What font glyphs should be included in the export file?
IncludeFileInfo		boolean	Should the XAP library be included? Default: `false`
IncludeVariablesAndDatasets		boolean	Should Variables and Datasets be included? Default: `false`
OptimizeForSVGViewer		Boolean	Should the Adobe namespace be included? Default: `false`
PreserveEditability		Boolean	Preserve Illustrator editing capability when exporting the document? Default: `false`

Property:	R/O	Value type:	What it is:
Slices		Boolean	Preserve slice data in exported document? Default: `false`

Notes

`ExportOptionsSVG` can only be supplied in conjunction with the `Export` method.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 20.1

This example exports the current document as a SVG file.

```
' This script exports the current document as a SVG with specific options
Private Sub ExportAsSVG_Click()
    Dim appRef As New Illustrator.Application
    Dim svgExportOptions As New Illustrator.ExportOptionsSVG
    Dim docRef As Illustrator.Document
    If appRef.Documents.Count > 0 Then
        svgExportOptions.EmbedRasterImages = True
        svgExportOptions.EmbedAllFonts = True
        Set docRef = appRef.ActiveDocument
        docRef.Export "C:\temp\sample.svg", aiSVG, svgExportOptions
    End If
End Sub
```

Gradient

A gradient definition contained in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
GradientStops	R/O	GradientStops collection object	The gradient stops contained in this gradient.
Name		String	The gradient's name.
Parent	R/O	Document object	The document that contains this gradient.
Type		AiGradientType enumeration	The kind of the gradient, either radial or linear.

Notes

Illustrator's `Gradient` object represents a gradient as defined in the Illustrator application. Additional gradients may be created by the user within Illustrator or via a script.

Example 21.1

This example shows how you can create a new gradient and apply it as a fill pattern to the frontmost PathItem.

```
' This example shows how you can create a new gradient and apply it to the
' frontmost PathItem in the document
Private Sub Gradient_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim newGradient As Illustrator.Gradient
    Dim locationSpecification As Illustrator.GradientStop
    Set frontDocument = appRef.ActiveDocument

     ' Create a color for both ends of the gradient
    Dim startColorRGB As New Illustrator.RGBColor
    Dim startColor As New Illustrator.Color
    Dim endColorRGB As New Illustrator.RGBColor
    Dim endColor As New Illustrator.Color
    startColorRGB.Red = 0
    startColorRGB.Green = 100
    startColorRGB.Blue = 255
    startColor.RGB = startColorRGB

    endColorRGB.Red = 220
    endColorRGB.Green = 0
    endColorRGB.Blue = 100
    endColor.RGB = endColorRGB

    ' Create a new gradient
    ' A new gradient always have 2 stops
    Set newGradient = frontDocument.Gradients.Add
    newGradient.Name = "Gradient created from script"
    newGradient.Type = aiLinearGradient

    ' Modify the first gradient stop.
    Set locationSpecification = newGradient.GradientStops(1)
    locationSpecification.RampPoint = 30
    locationSpecification.MidPoint = 60
    locationSpecification.Color = startColor

   ' Modify the last gradient stop. The MidPoint for the last gradient stop is ignored.
    Set locationSpecification = newGradient.GradientStops(2)
    locationSpecification.RampPoint = 80
    locationSpecification.Color = endColor

    ' Construct an Illustrator.Color object referring to the newly created gradient
    Dim ColorOfGradient As New Illustrator.GradientColor
    Dim pathFillColor As New Illustrator.Color
    ColorOfGradient.Gradient = newGradient
    pathFillColor.Gradient = ColorOfGradient

    ' Now get the frontmost PathItem and apply the new gradient as its fill
    Dim topPath As Illustrator.PathItem
    Set topPath = frontDocument.PathItems(1)
    topPath.Filled = True
    topPath.FillColor = pathFillColor
End Sub
```

Gradients

A collection of gradients in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The parent document of this object.

Methods

Method:	Returns:	What it does:
Add	Gradient object	Creates a new object.
Index(item As **Gradient**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Gradient object	Returns an object reference to the object identified by itemKey.
Remove(item As **Gradient**)	Nothing	Deletes a gradient from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Notes

Illustrator's `Gradient` object represents a gradient as defined in the Illustrator application. Additional gradients may be created by the user within Illustrator or via a script.

Example 22.1

This example illustrates how you can remove a gradient from a document.

```
' This example shows how to delete the first gradient in the active document
Private Sub DeleteGradient_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim gradientToDelete As Illustrator.Gradient
    Set frontDocument = appRef.ActiveDocument

   ' Get a reference to the gradient that you want to delete
    Set gradientToDelete = frontDocument.Gradients(1)

    ' Now delete the gradient using the collection
    frontDocument.Gradients.Remove gradientToDelete
End Sub
```

GradientColor

A gradient color specification, used in conjunction with the `Gradient` property of the `Color` specification.

Properties

Property:	R/O	Value type:	What it is:
Angle		Single	The gradient vector angle (in degrees).
Application	R/O	Application object	The Illustrator Application object.
Gradient		Gradient object	Reference to the object defining the gradient.
HiliteAngle		Single	The gradient hilite vector angle (in degrees).
HiliteLength		Single	The gradient hilite vector length.
Length		Single	The gradient vector length.
Matrix		Matrix object	An additional transformation matrix to manipulate the gradient path.
Origin		Variant Array (of 2 Singles)	The gradient vector origin.

Notes

`A GradientColor` can be created using a reference to an existing gradient in the application. If no existing gradient object is referenced, a default gradient will be supplied. An origin is used to specify the center point of the gradient in this specific gradient color. Single values are used to specify the gradient vector angles and lengths. A matrix may be specified to further transform the gradient color.

Example 23.1

The following script obtains the gradient called “Black, White Radial” from the current document and changes the color of the first gradient stop. The Gradient “Black, White

Radial” is one of the default gradients that appear when you create a new Illustrator document.

```
Dim appRef As New Illustrator.Application
Dim docRef As Illustrator.Document
Dim firstGradient As Illustrator.Gradient
Set docRef = appRef.Documents.Add(aiDocumentRGBColor)
' Get a reference to the gradient that you want to modify
Set firstGradient = docRef.Gradients("Black, White Radial")
' Create the new color
Dim startRGBColor As New Illustrator.RGBColor
Dim startColor As New Illustrator.Color
startRGBColor.Red = 255
startRGBColor.Green = 238
startRGBColor.Blue = 98
Set startColor.RGB = startRGBColor
firstGradient.GradientStops(1).Color = startColor
```

GradientStop

A gradient stop definition contained in a specific gradient.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Color		Color object	The color linked to this gradient stop.
Midpoint		Single	The distance between two GradientStops, in percentage, ranging between 0.0 and 1.0
Parent		Document object	The document that contains this gradient stop.
RampPoint		Single	The location of the color in the blend in a range from 0.0 to 100.0, where 100.0 is 100%.

Notes

Illustrator's `GradientStop` object represents a point on a specific gradient defined in the Illustrator application. Each gradient stop specifies a color change in the containing gradient. Example 24.1 shows how to use GradientStop.

GradientStops

A collection of gradient stops in a specific gradient.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this gradient stops object.

Methods

Method:	Returns:	What it does:
Add	GradientStop object	Creates a new object.
Index(item As **GradientStop**)	Long	Returns the index position of the object within the collection.
item(itemKey)	GradientStops object	Returns an object reference to the object identified by itemKey.
Remove(item As **GradientStop**)	Nothing	Deletes a gradient stop from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Notes

Illustrator's `GradientStop` object represents a point on a specific gradient defined in the Illustrator application. Each gradient stop specifies a color change in the containing gradient.

Example 24.1

This example illustrates how to add a new gradient stop to an existing gradient.

```
' This example shows how to add a gradient stop to a gradient
Private Sub AddGradientStop_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim gradientToChange As Illustrator.Gradient
    Dim lastGradientStop As Illustrator.GradientStop
    Dim newGradientStop As Illustrator.GradientStop
    Set frontDocument = appRef.ActiveDocument

    ' Get a reference to the gradient that you want to change
    Set gradientToChange = frontDocument.Gradients(1)

    ' Get a reference to the gradient stop that is the last one before you add a new
    ' gradient stop
    Dim originalCount As Long
    originalCount = gradientToChange.GradientStops.Count
    Set lastGradientStop = gradientToChange.GradientStops(originalCount)

    ' Add the new gradient stop
    Set newGradientStop = gradientToChange.GradientStops.Add

    ' Set the values of the new gradient stop. We move the original last gradient stop a bit
    ' to the left and insert the new gradient stop at the old gradient stops position
    newGradientStop.RampPoint = lastGradientStop.RampPoint
    lastGradientStop.RampPoint = lastGradientStop.RampPoint - 10

    ' Create a new color to apply to the newly created gradient stop. We choose a Gray tint value
    ' of 70%
    Dim colorOfGradientStop As New Illustrator.GrayColor
    Dim newStopColor As New Illustrator.Color
    colorOfGradientStop.Gray = 70
    newStopColor.Gray = colorOfGradientStop
    newGradientStop.Color = newStopColor
End Sub
```

GraphItem

A graph artwork item.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this GraphItem used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
CompoundPathItem		CompoundPath object	The CompoundPath contained in this GraphItem.
ContentVariable		Variable object	The Variable bound to this GraphItem.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object including stroke width and controls.
Editable	R/O	Boolean	Is the GraphItem editable?
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the GraphItem excluding stroke width.
GroupItems	R/O	GroupItems collection object	The GroupItems contained in this GraphItem.
Height		Single	The height of the GraphItem, calculated on the GeometricBounds.
Hidden		Boolean	Is this GraphItem hidden?
Isolated		Boolean	Is this GraphItem isolated?
Layer	R/O	Layer object	The Layer to which this GraphItem belongs.
Left		single	The left position of the GraphItem.
Locked		Boolean	Is this GraphItem locked?
MeshItem		meshitem object	The MeshItem contained in this GraphItem.
Name		String	The name of this GraphItem.
Opacity		Single (0.0 - 100.0)	The opacity of the GraphItem.

Property:	**R/O**	**Value type:**	**What it is:**
PageItem		pageitem object	The PageItem object this GraphItem inherits from.
Parent	R/O	Layer object or GroupItem object	The parent of this GraphItem.
PlacedItems	R/O	PlacedItems collection object	The PlacedItems contained in this GraphItem.
PluginItems	R/O	PluginItems collection object	The PluginItems contained in this GraphItem.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the GraphItem.
RasterItem		RasterItem object	The RasterItem contained in this GraphItem.
Selected		Boolean	Is this GraphItem selected?
Sliced		Boolean	Is this GraphItem sliced? Default: `false`.
SymbolItems		symbolitems object	The SymbolItems contained in GraphItem.
Tags		Tags object	The collection of Tags contained in this GraphItem.
Top		Single	The top position of the GraphItem.
URL		String	The value of the Adobe URL tag assigned to this GraphItem.
VisibilityVariable		Variable	The Variable bound to this GraphItem.
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the GraphItem including stroke width.
Width		Single	The width of the GraphItem, based on the GeometricBounds.
ZOrderPosition	R/O	Long	The position of this GraphItem within the stacking order of the GroupItem or Layer (Parent) that contains the GraphItem.

Methods

Method:	Returns:	What it does:
Copy	Nothing	Copies the GraphItem to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the GraphItem to the clipboard. The associated document must be the frontmost document.
Duplicate	GraphItem	Duplicate the GraphItem.
MoveAfter	Nothing	Move the GraphItem behind another object.
MoveBefore	Nothing	Move the GraphItem in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the GraphItem to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the GraphItem to the front of a container.
Resize(scaleX As **Single**, scaleY As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [scaleAbout As **AiTransformation**])	Nothing	Scales the GraphItem where scaleX is the horizontal scaling factor and scaleY is the vertical scaling factor; 100.0 = 100%.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the GraphItem relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.

Method:	**Returns:**	**What it does:**
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the GraphItem by applying a transformation matrix.
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the GraphItem relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZSetOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the GraphItem's position in the stacking order of the group or layer (Parent) of this object.

Notes

It is not necessary to set the type of the `ContentVariable` before binding. Illustrator automatically sets the type to `AiGraph`.

It is not necessary to set the type of the `VisibilityVariable` before binding. Illustrator automatically sets the type to `AiVisibility`.

GraphItems

A collection of GraphItems.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this GraphItem.

Methods

Method:	**Returns:**	**What it does:**
Index(item As **GraphItem**)	Long	Returns the index position of the GraphItem within the collection.
item(itemKey)	GraphItem object	Returns an object reference to the GraphItem identified by itemKey.
Remove(item As **GraphItem**)	Nothing	Deletes a GraphItem from this collection.
RemoveAll	Nothing	Deletes all GraphItems in this collection.

GrayColor

A gray color specification, used in conjunction with the `Gray` property of the `Color` specification.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Gray		Single	The tint of the gray as a value in the range 0.0 - 100.0, where 0.0 is black and 100.0 is white.

Example 25.1

This example illustrates how to change the color of the first word in the active document to a shade of gray.

```
' the following script shows how to set the color of the first
' word in the active document to a shade of gray
Private Sub GrayColor_Click()
    Dim appRef As New Illustrator.Application
    Dim text As Illustrator.TextRange
    Dim firstWord As Illustrator.Word
    Dim grayColorOfWord As New Illustrator.grayColor
    Dim textColor As New Illustrator.Color

     ' Get a reference to the first word in the active document
    Set text = appRef.ActiveDocument.TextArtItems(1).TextRange
    Set firstWord = text.Words(1)

     ' Create the new color
    grayColorOfWord.Gray = 45
    textColor.Gray = grayColorOfWord

    firstWord.Filled = True
    firstWord.FillColor = textColor
End Sub
```

GroupItem

A grouped set of art objects.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this object used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
Clipped		Boolean	Is the GroupItem clipped to its first PathItem?
CompoundPathItems	R/O	CompoundPathItems collection object	The CompoundPathItems contained in this GroupItem.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object including stroke width and controls.
Editable	R/O	Boolean	Is this GroupItem editable?
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object excluding stroke width.
GraphItems	R/O	GraphItems collection object	The raster items contained in this GroupItem.
GroupItems	R/O	GroupItems collection object	The GroupItems contained in this GroupItem.
Height		Single	The height of the GroupItem, based on the GeometricBounds.
Hidden		Boolean	Is this GroupItem hidden?
IsIsolated		Boolean	Is this object isolated?
Layer	R/O	Layer object	The layer to which this GroupItem belongs.
Left		single	The left position of the GroupItem.
Locked		Boolean	Is this GroupItem locked?
MeshItems	R/O	MeshItems collection object	The MeshItems contained in this GroupItem.
Name		String	The name of this GroupItem.

Property:	R/O	Value type:	What it is:
Opacity		Single	The opacity of the object . The value is between 0.0 and 100.0.
PageItem	R/O	PageItem object	The PageItem object corresponding to the GroupItem.
PageItems	R/O	PageItems collection object	The PageItems contained in this GroupItem.
Parent	R/O	Document object	The document that contains this GroupItem.
PathItems	R/O	PathItems collection object	The PathItems contained in this GroupItem.
PlacedItems	R/O	PlacedItems collection object	The PlacedItems contained in this GroupItem.
PluginItems	R/O	PluginItems collection object	The PluginItems contained in this GroupItem.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the GroupItem.
RasterItem		RasterItem	The RasterItems contained in this GroupItem.
Selected		Boolean	Is this GroupItem selected?
Sliced		boolean	Is this GroupItem sliced? Default: `false`
SymbolItems		symbolitems object	The SymbolItems contained in this GroupItem.
Tags	R/O	Tags collection object	The tags contained in this GroupItem.
TextArtItems	R/O	TextArtItems collection object	The TextArtItems contained in this GroupItem.
Top		Single	The top position of the GroupItem.
URL		String	The value of the Adobe URL tag assigned to this GroupItem.
VisibilityVariable		Variable	The Variable bound to this GroupItem.
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the GroupItem including stroke width.
Width		Single	The GroupItem of the PageItem, based on the GeometricBounds.

Property:	R/O	Value type:	What it is:
ZOrderPosition	R/O	Long	The position of this art object within the stacking order of the group or layer (Parent) that contains the art object.

Methods

Method:	Returns:	What it does:
Copy	Nothing	Copies the GroupItem to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the GroupItem to the clipboard. The associated document must be the frontmost document.
Duplicate	GroupItem	Duplicate the GroupItem.
MoveAfter	Nothing	Move the GroupItem behind another object.
MoveBefore	Nothing	Move the GroupItem in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the GroupItem to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the GroupItem to the front of a container.
Paste	Nothing	Inserts the contents of the clipboard at the beginning of the GroupItem. You may only paste into a group that is contained in the active document.
Resize(scaleX As **Single**, scaleY As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [scaleAbout As **AiTransformation**])	Nothing	Scales the art object where scaleX is the horizontal scaling factor and scaleY is the vertical scaling factor; 100.0 = 100%.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the art object relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.

Method:	Returns:	What it does:
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the art object by applying a transformation matrix.
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the art object relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the art object's position in the stacking order of the group or layer (Parent) of this object.

Notes

Group items can contain all of the same PageItems that a layer can contain, including other nested groups.

Paths contained within a group or compound path in a document will be returned as individual paths when a script asks for the paths contained in the document. However, paths contained in a group or compound path will not be returned when a script asks for the paths in a layer which contains the group or compound path.

Example 26.1

It is easy to modify all of the objects contained in a group. This example demonstrates how to simplify your operations on multiple objects by creating group to contain them.

```
' The following script show how to create new art in a separate group
Private Sub GroupItem_Click()
    Dim appRef As New Illustrator.Application
    Dim triangleGroup As Illustrator.GroupItem
    ' Create a new group in the active document. This will be the group the holds
    ' the new triangle art
    Set triangleGroup = appRef.ActiveDocument.GroupItems.Add

    ' Create a triangle and add text. All new art are created inside a group
    Dim triangulates As Illustrator.PathItem
    Dim captionText As Illustrator.TextArtItem

    Set trianglePath = triangleGroup.PathItems.Add
    trianglePath.SetEntirePath Array(Array(100, 100), Array(300, 100), _
        Array(200, Math.Tan(1.0471975) * 100 + 100))

    Set captionText = triangleGroup.TextArtItems.Add
    captionText.Position = Array(100, 100)
    captionText.Contents = "A triangle"
End Sub
```

GroupItems

A collection of grouped art objects.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document Object	The document that contains this GroupItems object.

Methods

Method:	Returns:	What it does:
Add	GroupItem object	Creates a new object.
CreateFromFile(imageFile As **String**)	GroupItem object	Places an external vector art file as a GroupItem in the document.
Index(item As **GroupItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	GroupItem object	Returns an object reference to the object identified by itemKey.
Remove(item As **GroupItem**)	Nothing	Deletes a GroupItem from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 27.1

The following script shows how you can import a PDF document using the CreateFromFile function. Before running this script you have to create a one page PDF file and put it in the following location: “C:\testPDF.pdf”

```
' This example shows how to create a group form a file
' In order to run this example you need a PDF file at the path "C:\testPDF.pdf"
Private Sub GroupFromFile_Click()
    Dim appRef As New Illustrator.Application
    Dim importedGroup As Illustrator.GroupItem

    Set importedGroup = appRef.ActiveDocument.GroupItems.CreateFromFile
```

```
_
        ("C:\testPDF.pdf")
End Sub
```

IllustratorSaveOptions

Options which may be supplied when saving a document as an Illustrator file. See the `Save` method for additional details.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Compatibility		AiCompatibility enumeration	Specifies the version of the Illustrator file format to create.
Compressed		Boolean	Should the saved file be compressed? Default: `true` (version 10 or late)r
EmbedAllFonts		Boolean	Are all fonts used in the document to be embedded in the saved document? Only valid for Illustrator 10file format.
EmbedICCProfile		Boolean	Should a ICC profile be embedded in the saved file?
EmbedLinkedFiles		Boolean	Are linked image files to be included in the saved document. Only valid for SaveOptions that specify an Illustrator compatibility of version 7 or later.
FlattenOutput		AiOutputFlattening enumeration	How should transparency be flattened for file formats older than Illustrator 9 or greater?
FontSubsetThreshold		Single	Include a subset of fonts when less than this percentage of characters is used in the document. Valid for Illustrator 9 or greater file format.
JapaneseFileFormat		Boolean	Save using the Japanese version of the file format?
PDFCompatible		Boolean	Save in PDF compatible format?

Notes

`IllustratorSaveOptions` can only be supplied in conjunction with the `SaveAs` method.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

`JapaneseFileFormat` is only a property in Illustrator versions 3, 4 and 5.

`PDFCompatible` is only a property of Illustrator 10 or greater.

Example 28.1

This example illustrates how to save the frontmost document as Illustrator 7 format. Because the document is saved as a version earlier than 9, the example specifies to convert opacity by breaking paths up in to sub-path to preserve the appearance of the illustration. After the `SaveAs` command the frontmost document will refer to the document located at “C:\temp\Ai7Sample.ai”

```
' This script saves the active document as Illustrator 7 format
' Opacity is flattened with the preserve appearance option
Private Sub SaveAsIllustrator_Click()
    Dim appRef As New Illustrator.Application
    Dim saveOptions As New Illustrator.IllustratorSaveOptions
    saveOptions.Compatibility = aiIllustrator7
    saveOptions.FlattenOutput = aiPreserveAppearance
    appRef.Documents(1).SaveAs "C:\temp\Ai7Sample.ai", saveOptions
End Sub
```

Layer

A layer in an Illustrator document. Layers may contain nested layers, which are called sublayers in the user interface.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this Layer used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
Color		RGBColor object	The Layer's selection mark color.
CompoundPathItems	R/O	CompoundPathItems collection object	The CompoundPathItems contained in this layer.
DimPlacedImages		Boolean	Are placed images to be rendered as dimmed in this layer?
GraphItems		GraphItems collection object	The GraphItems collection contained in this Layer.
GroupItems	R/O	GroupItems collection object	The GroupItems contained in this Layer.
HasSelectedArtwork		Boolean	Is any object in this Layer selected? Setting this property to false deselects all objects in the Layer.
Isolated		Boolean	Is this Layer isolated?
Layers	R/O	Layers collection object	The Layers contained in this Layer.
Locked		Boolean	Is this Layer editable? Setting this property to `true` locks the Layer.
MeshItems	R/O	MeshItems collection object	The MeshItems contained in this Layer.
Name		String	The name of this Layer.
Opacity		Single	The opacity of the Layer. The value is between 0.0 and 100.0.

Property:	R/O	Value type:	What it is:
PageItems	R/O	PageItems collection object	The PageItems contained in this layer.
Parent	R/O	Document object or Layer Object	The document or Layer that contains this Layer.
PathItems	R/O	PathItems collection object	The PathItems contained in this Layer.
PlacedItems	R/O	PlacedItems collection object	The PlacedItems contained in this Layer.
PluginItems	R/O	PluginItems collection object	The PluginItems contained in this Layer.
Preview		Boolean	Is this Layer displayed using preview mode?
Printable		Boolean	Is this Layer printed when printing the document?
RasterItems	R/O	RasterItems collection object	The RasterItems contained in this Layer.
Sliced		Boolean	Is this Layer sliced?
SymbolItems		SymbolItems collection object	The SymbolItems contained in this Layer.
TextArtItems	R/O	TextArtItems collection object	The TextArtItems contained in this Layer.
Visible		Boolean	Is this Layer visible?
ZOrderPosition	R/O	Long	The position of this Layer within the stacking order of Layers in the document.

Methods

Method:	**Returns:**	**What it does:**
MoveAfter	Nothing	Move the Layer behind another object.
MoveBefore	Nothing	Move the Layer in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the Layer to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the Layer to the front of a container.
Paste	Nothing	Pastes the contents of the clipboard into the Layer. If the associated document is the frontmost then all pasted objects remain selected after the paste.
ZOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the Layer's position in the stacking order of Layers in this document.

Notes

Illustrator's `Layer` object contains all of the PageItems in the specific layer as elements. Your script can access PageItems as elements of either the `Layer` object or as elements of the `Document` object. When accessing PageItems as elements of a layer, only objects in that layer can be accessed. To access PageItems throughout the entire document, be sure to refer to them as contained by the document.

The `MoveAfter` and `MoveBefore` methods do not change the position of the object on the art board. They change the order in which Illustrator draws the objects, and the containment hierarchy.

The `MoveToBeginning` and `MoveToEnd` methods place the object in the specified container, behind all other such objects.

Example 29.1

```
' this example shows how to move the bottom layer to the top
Dim appRef As New Illustrator.Application
Dim frontDocument As Illustrator.Document
Dim bottomLayer As Illustrator.Layer
Dim countOfLayers As Long
' Get a reference to the layers, and obtain the total number
Set frontDocument = appRef.ActiveDocument countOfLayers =
      frontDocument.Layers.Count
If (frontDocument.Layers.Count < countOfLayers) Then
    MsgBox "The frontmost application only has 1 layer"
    Exit Sub
End If
' Move the bottom layer to the front
Set bottomLayer = frontDocument.Layers(countOfLayers)
bottomLayer.MoveToBeginning frontDocument
```

Layers

A collection of layers.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this Layer.

Methods

Method:	Returns:	What it does:
Add	Layer object	Creates a new object.
Index(item As **Layer**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Layer object	Returns an object reference to the object identified by itemKey.
Remove(item As **Layer**)	Nothing	Deletes a layer from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Notes

Illustrator's `Layer` object contains all of the PageItems in the specific layer. Your script can access objects through the `Layer` object or through the `Document` object.

Example 30.1

This example illustrates how to delete all layers whose name starts with the word “Temporary” in all open documents.

```
' Example of how to delete all layers
' whose name begins with "Temporary" in all open documents
Private Sub DeleteLayers_Click()
    Dim appRef As New Illustrator.Application
    Dim targetDocument As Illustrator.Document
    Dim targetLayer As Illustrator.Layer
    Dim countOfLayers As Long
    Dim layerIndex As Long
    Dim layerName As String

    ' loop through all open documents
    For Each targetDocument In appRef.Documents
        countOfLayers = targetDocument.Layers.Count

      ' For each document loop through it's layers
      ' Loop through layers from the back because this way we don't change
      ' the index of unvisited layers when we remove a layer
        For layerIndex = countOfLayers To 1 Step -1
            Set targetLayer = targetDocument.Layers(layerIndex)
            layerName = targetLayer.Name

            If (Left(layerName, 9) = "Temporary") Then
                targetDocument.Layers.Remove targetLayer
            End If

        Next layerIndex
    Next
End Sub
```

Matrix

A transformation matrix specification, used to transform the geometry of objects.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
MValueA		Single	Matrix property a.
MValueB		Single	Matrix property b.
MValueC		Single	Matrix property c.
MValueD		Single	Matrix property d.
MValueTX		Single	Matrix property tx.
MValueTY		Single	Matrix property ty.

Notes

This class is used to define a record which contains the component values of an Illustrator transformation matrix. It is used for specifying and retrieving matrix information from an Illustrator document or from PageItems in a document.

Matrices are used in conjunction with the `Transform` method and as a property of a number of objects. A matrix specifies how to transform the geometry of an object. You can generate an original matrix using the application methods `getTranslationMatrix`, `getScaleMatrix`, or `getRotationMatrix`.

A `Matrix` is a record containing the matrix values, not a reference to a matrix object. The matrix commands listed above operate on the values of a matrix record. If a command modifies a matrix, a modified matrix record is returned as the result of the command. The original matrix record pass to the command is not modified.

Example 31.1

If you need to apply multiple transformations to objects it is more efficient to use the matrix suite than to apply the transformations one at a time. The following script demonstrates how to combine multiple matrices together.

```
' This example shows how to apply 2 transformations to all art in a document
' using the matrix command
' This is more efficient than to perform these transformations
' one at a time
Private Sub ApplyMatrix_Click()
    Dim appRef As New Illustrator.Application
    Dim moveMatrix As Illustrator.Matrix
    Dim totalMatrix As Illustrator.Matrix

    ' move art half an inch to the right and 1.5 inch up on the page
    Set moveMatrix = appRef.GetTranslationMatrix(72# * 0.5, 72# * 1.5)

    ' Add a rotation to the translation. We rotate 10 degrees counter clockwise
    Set totalMatrix = appRef.ConcatenateRotationMatrix(moveMatrix, 10)

    ' apply the transformation to all art in the document
    Dim frontDocument As Illustrator.Document
    Dim artItem As Illustrator.PageItem

    Set frontDocument = appRef.ActiveDocument
    For Each artItem In frontDocument.PageItems
        artItem.Transform totalMatrix
    Next
End Sub
```

MeshItem

A gradient mesh art object.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this object used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object including stroke width and controls.
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object excluding stroke width.
Editable	R/O	Boolean	Is this MeshItem editable?
Height		Single	The height of the MeshItem, based on the GeometricBounds.
Hidden		Boolean	Is this MeshItem hidden?
IsIsolated		Boolean	Is this object isolated?
Layer	R/O	Layer object	The layer to which this MeshItem belongs.
Left		Single	The left position of the MeshItem.
Locked		Boolean	Is this MeshItem locked?
Name		String	The name of this MeshItem.
Opacity		Single	The opacity of the object . The value is between 0.0 and 100.0.
PageItem	R/O	PageItem object	The PageItem object corresponding to the MeshItem.
Parent	R/O	Document objects	The document that contains this MeshItem.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the MeshItem.
RasterItem		RasterItem object	The RasterItem contained in this MeshItem.

Property:	R/O	Value type:	What it is:
Selected		Boolean	Is this MeshItem selected?
Sliced		boolean	Is this MeshItem sliced?
SymbolItems		symbolitems object	The SymbolItems contained in this MeshItem.
Tags	R/O	Tags collection object	The tags contained in this MeshItem.
Top		Single	The top position of this MeshItem.
URL		String	The value of the Adobe URL tag assigned to this MeshItem.
VisibilityVariable		Variable	The Variable bound to this MeshItem.
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the MeshItem including stroke width.
Width		Single	The width of the MeshItem, based on the GeometricBounds.
ZOrderPosition	R/O	Long	The position of this art object within the stacking order of the group or layer (Parent) that contains the art object.

Methods

Method:	Returns:	What it does:
Copy	Nothing	Copies the art object to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the art object onto the clipboard. The associated document must be the frontmost document.
Duplicate	MeshItem	Duplicate the MeshItem.
MoveAfter	Nothing	Move the PageItem behind another object.
MoveBefore	Nothing	Move the PageItem in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the PageItem to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the PageItem to the front of a container.
Resize(scaleX As **Single**, scaleY As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [scaleAbout As **AiTransformation**])	Nothing	Scales the art object where scaleX is the horizontal scaling factor and scaleY is the vertical scaling factor; 100.0 = 100%.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the art object relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.

Method:	Returns:	What it does:
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the art object by applying a transformation matrix.
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the art object relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the art object's position in the stacking order of the group or layer (Parent) of this object.

Notes

Mesh items cannot be created from a script, but can be copied and pasted.

Example 32.1

This script illustrates how to lock all MeshItems in the active document.

```
' Example of how to lock all MeshItems in the frontmost document
Private Sub LockMeshes_Click()
    Dim appRef As New Illustrator.Application
    Dim meshItem As Illustrator.meshItem

    For Each meshItem In appRef.ActiveDocument.MeshItems
        meshItem.Locked = True
    Next
End Sub
```

MeshItems

A collection of gradient mesh art objects.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document Object	The document that contains this MeshItems object.

Methods

Method:	Returns:	What it does:
Index(item As **MeshItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	MeshItem object	Returns an object reference to the object identified by itemKey.
Remove(item As **MeshItem**)	Nothing	Deletes a MeshItem from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Notes

MeshItems cannot be created from a script, but can be copied and pasted.

Example 33.1

The following script illustrates how to copy MeshItems from one document to another. To run this script you need to have two open documents. One document should contain at least one MeshItem, the other document can be empty. Make the empty document the frontmost before running the script.

```
' example of how to copy all MeshItems from one document to an other document
Private Sub CopyMeshItems_Click()
    Dim appRef As New Illustrator.Application
    Dim sourceDocument As Illustrator.Document
    Dim targetDocument As Illustrator.Document
    Dim meshItem As Illustrator.meshItem
    Dim newMeshItem As Illustrator.meshItem
    Dim targetSelection As Variant
    Dim locationOffset As Single

    Set targetDocument = appRef.Documents(1)
    Set sourceDocument = appRef.Documents(2)

    locationOffset = 0
    For Each meshItem In sourceDocument.MeshItems
        sourceDocument.Activate
        meshItem.Copy

        targetDocument.Activate
        targetDocument.Paste

        ’ Get a reference to the item that was just copied into the document
        targetSelection = appRef.Selection
        If (IsEmpty(targetSelection)) Then
            MsgBox "Copy/Paste failed"
            Exit Sub
        End If
        Set newMeshItem = targetSelection(0)

        newMeshItem.Position = Array(100, 40 + locationOffset)
        locationOffset = locationOffset + 50
    Next
End Sub
```

PageItem

Any art object in a document. Every art object and group in a document is a `PageItem`. You may refer to `PageItems` as contained by a document, layer(s), or group(s).

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this PageItem used to create a knockout? If so, what kind of knockout? You cannot set this value to aiKnockoutUnknown.
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
CompoundPathItem	R/O	CompoundPathItem object	If the PageItem is a CompoundPathItem, a reference to object as a CompoundPathItem.
ContentVariable		Variable	The Variable bound to this PageItem.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object including stroke width and controls.
Editable	R/O	Boolean	Is this PageItem editable?
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the PageItem excluding stroke width.
GraphItem		GraphItem object	The GraphItem contained in this PageItem.
GroupItem	R/O	GroupItem object	If the PageItem is a GroupItem, a reference to object as a GroupItem.
Height		Single	The height of the PageItem, calculated from the GeometricBounds.
Hidden		Boolean	Is this PageItem hidden?
IsIsolated		Boolean	Is this object isolated?
Layer	R/O	Layer object	The layer to which this PageItem belongs.
Left		single	The left position of the PageItem.

Property:	R/O	Value type:	What it is:
Locked		Boolean	Is this PathItem locked?
MeshItem	R/O	MeshItem object	If the PageItem is a MeshItem, a reference to object as a MeshItem.
Name		String	The name of this PageItem.
Opacity		Single	The opacity of the object . The value is between 0.0 and 100.0.
PageItemType	R/O	AiPageItemType enumeration	The type (class) of art object that is represented by this PageItem.
Parent	R/O	Document object	The document that contains this PageItem.
PathItem	R/O	PathItem object	If the PageItem is a PathItem, a reference to object as a PathItem.
PlacedItem	R/O	PlacedItem object	If the PageItem is a PlacedItem, a reference to object as a PlacedItem.
PluginItem	R/O	PluginItem object	If the PageItem is a PluginItem, a reference to object as a PluginItem.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the PathItem.
RasterItem	R/O	RasterItem object	If the PageItem is a RasterItem, a reference to object as a raster item.
Selected		Boolean	Is this object selected?
Sliced		boolean	Is this PageItem sliced?
SymbolItems		symbolitems object	The SymbolItems contained in this PageItem.
Tags	R/O	Tags collection object	The tags contained in this PathItem.
TextArtItem	R/O	TextArtItem object	If the PageItem is a TextArtItem, a reference to object as a TextArtItem.
Top		Single	The top position of the PageItem.
URL		String	The value of the Adobe URL tag assigned to this PathItem.
VisibilityVariable		variable	The Variable bound to this PageItem.

Property:	R/O	Value type:	What it is:
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the PathItem including stroke width.
Width		Single	The width of the PathItem, calculated from the GeometricBounds.
ZOrderPosition	R/O	Long	The position of this art object within the stacking order of the group or layer (Parent) that contains the art object.

Methods

Method:	**Returns:**	**What it does:**
Copy	Nothing	Copies the art object to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the art object onto the clipboard. The associated document must be the frontmost document.
Duplicate	PageItem	Duplicate the PageItem.
MoveAfter	Nothing	Move the PageItem behind another object.
MoveBefore	Nothing	Move the PageItem in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the PageItem to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the PageItem to the front of a container.
Resize(scaleX As **Single**, scaleY As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [scaleAbout As **AiTransformation**])	Nothing	Scales the art object where scaleX is the horizontal scaling factor and scaleY is the vertical scaling factor; 100.0 = 100%.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the art object relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.

Method:	**Returns:**	**What it does:**
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the art object by applying a transformation matrix.
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the art object relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the art object's position in the stacking order of the group or layer (Parent) of this object.

Notes

The `PageItem` class give you complete access to every art object contained in an Illustrator document. `PageItem` is the superclass of all artwork objects in a document. The classes `CompoundPathItem`, `GroupItem`, `MeshItem`, `PathItem`, `PlacedItem`, `PluginItem`, `RasterItem`, and `TextArtItem`, each inherit a set of properties from the `PageItem` class.

You cannot create a `PageItem` directly. You must use create one of the specific `PageItem` subclasses, such as `PathItem`.

The `MoveAfter` and `MoveBefore` methods do not change the position of the object on the art board. They change the order in which Illustrator draws the objects, and the containment hierarchy.

The `MoveToBeginning` and `MoveToEnd` methods place the object in the specified container, behind all other such objects.

Example 34.1

This example illustrates how to hide all PlacedItems and all raster items using the PageItem object.

```
' The following script hides all RasterItems and PlacedItems in the front document
Private Sub HideImages_Click()
    Dim appRef As New Illustrator.Application
    Dim artItem As Illustrator.PageItem

    For Each artItem In appRef.ActiveDocument.PageItems
        If ((artItem.PageItemType = aiPlacedItem) Or _
            (artItem.PageItemType = aiRasterItem)) Then
            artItem.Hidden = True
        End If
    Next
End Sub
```

PageItems

A collection of PageItems.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this PageItems object.

Methods

Method:	Returns:	What it does:
Index(item As **PageItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	PathItem object	Returns an object reference to the object identified by itemKey.
Remove(item As **PageItem**)	Nothing	Deletes a PageItem from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Notes

The `PageItem` class give you complete access to every art object contained in an Illustrator document.

Example 35.1

This example illustrates how to obtain all references to external files in the current document. The result is presented in a new Illustrator document. Before running this, open a document that contains one or more linked images.

```
' The following script shows how to get all file-references
' using the PageItem object
Private Sub GetFileReferences_Click()
    Dim appRef As New Illustrator.Application
    Dim sourceDocument As Illustrator.Document
    Dim artItem As Illustrator.PageItem
    Dim rasterArt As Illustrator.RasterItem
    Dim placedArt As Illustrator.PlacedItem
    Dim fileReferences(10) As String
    Dim Index As Long

    Index = 0
    Set sourceDocument = appRef.ActiveDocument
    For Each artItem In sourceDocument.PageItems

        Select Case artItem.PageItemType
            Case Is = aiPlacedItem
                Set placedArt = artItem.PlacedItem
                fileReferences(Index) = placedArt.File
                Index = Index + 1

            Case Is = aiRasterItem
                Set rasterArt = artItem.RasterItem
                fileReferences(Index) = rasterArt.File
                Index = Index + 1
        End Select

        If (Index = 9) Then
            MsgBox "More than 10 file-references in the active document"
            Exit For
        End If
    Next

    ' Write the file references to a new document
    Dim reportDocument As Illustrator.Document
    Dim fileNameText As Illustrator.TextArtItem
    Set reportDocument = appRef.Documents.Add

    Set fileNameText = reportDocument.TextArtItems.Add
    fileNameText.Position = Array(50, 520)
    fileNameText.Contents = "File references in "
                                        & sourceDocument.Name & ":"
    Dim counter As Long
    For counter = 0 To (Index - 1)
        Set fileNameText = reportDocument.TextArtItems.Add
        fileNameText.Position = Array(65, 500 - 20 * counter)
        fileNameText.Contents = fileReferences(counter)
    Next
End Sub
```

Paragraph

A single paragraph of text in the contents of a text art object.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
AutoKerning		Boolean	Should a font's built-in kerning information be used?
BaselineShift		Single	Baseline offset of text.
Characters	R/O	Characters collection object	The characters contained in this text range.
Clipping	R/O	Boolean	Is there a clipping path associated with the TextArtItem containing this paragraph?
Contents (default value)		String	The text contained in the text range.
DefaultTabSize		Single	The default distance for tab stops.
DesiredLetterSpacing		Single	The desired letter spacing. 100.0 is normal letter spacing.
DesiredWordSpacing		Single	The desired word spacing. 100.0 is normal word spacing.
Direction		AiCharacterDirection enumeration	The orientation of the characters in a vertical text block.
Evenodd		Boolean	Should the even-odd rule be used to determine insideness?
FillColor		Color	Fill color of text
Filled		Boolean	Should the text be filled?
FillOverprint		Boolean	Should the art beneath the text be overprinted?
FirstLineIndent		Single	The indent of the first line.
Font		String	The text face of the text.
HangingPunctuation		Boolean	Should punctuation appear outside the margins of the paragraph?
Hyphenation		Boolean	Is hyphenation enabled for the paragraph?

Property:	R/O	Value type:	What it is:
Justification		AiJustification enumeration	The paragraph alignment or justification.
Leading		Single	The vertical leading of the text.
LeftIndent		Single	The left indent of the paragraph's margin.
Length	R/O	Long	The number of character in the text.
LimitConsecutiveHyphenations		Boolean	Is there a limit on the number of consecutive hyphenated lines in this paragraph?
MaximumConsecutiveHyphenations		Long	The maximum number of consecutive hyphenated lines.
MaximumLetterSpacing		Single	The maximum letter. 100.0 is normal letter spacing.
MaximumWordSpacing		Single	The maximum letter spacing. 100.0 is normal word spacing
MinimumAfterHyphen		Long	The minimum number of characters after a hyphen.
MinimumBeforeHyphen		Long	The minimum number of characters before a hyphen.
MinimumLetterSpacing		Single	The minimum letter spacing.100.0 is normal letter spacing
MinimumWordSpacing		Single	The minimum letter spacing.100.0 is normal word spacing
Note	R/O	String	The note associated with this text.
Offset	R/O	Long	Offset of selected text in text range (in characters).
Orientation	R/O	AiTextOrientation enumeration	The orientation of the text. Use the TextPath class to alter this property.
Parent	R/O	Document Object	The document that contains this Paragraph.
RepeatedCharacterProcessing		Boolean	Should Repeated Character Processing be used?
Resolution	R/O	Single	The resolution of the object (in dots per inch).
RightIndent		Single	The right indent of the paragraph's margin.

Property:	R/O	Value type:	What it is:
Scaling		Variant Array (of 2 Singles)	The character scaling supplied as a point with the first coordinate as horizontal scale and the second coordinate as vertical scale, where 100.0 is 100%.
Size		Single	Font size of text.
SpaceBefore		Single	The spacing before this paragraph.
StrokeCap		AiStrokeCap enumeration	The type of line capping.
StrokeColor		Color object	The stroke color for the path.
Stroked		Boolean	Should the path be stroked?
StrokeDashes		Variant Array	Dash lengths. Set to an empty array for a solid line.
StrokeDashOffset		Single	The default distance into the dash pattern at which the pattern should be started.
StrokeJoin		AiStrokeJoin enumeration	Type of joints for the path.
StrokeMiterLimit		Single	Are joins mitered (pointed) or beveled (squared-off)?
StrokeOverprint		Boolean	Will art beneath a stroked object be overprinted?
StrokeWidth		Single	Width of stroke.
TextLines	R/O	TextLines collection object	The lines of text contained in this paragraph.
TextPath	R/O	TextPath object	A reference to the text path associated with the TextArtItem containing this text.
Tracking		Single	The spacing between multiple characters.
Words	R/O	Words collection object	The words contained in this paragraph.

Methods

Method:	**Returns:**	**What it does:**
Copy	Nothing	Copies the text range to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the text range onto the clipboard. The associated document must be the frontmost document.
Paste	Nothing	Replaces text range with the contents of the clipboard.
TextRange([rangeStart As **Long**], [rangeEnd As **Long**])	TextRange object	Returns a text range object referencing a substring of the current text range, where rangeStart is the beginning character position and rangeEnd is the ending position. The first character position is one. If omitted, rangeStart defaults to 1. If omitted, rangeEnd defaults to the last character of the range.

Notes

Illustrator's text can be accessed using the `Character`, `Word`, `TextLine`, `Paragraph` and `TextRange` classes. All text is contained within TextArtItems.

The `Paragraph` class has additional properties that other related classes do not share, including properties for margins, hyphenation, and word/letter spacing.

Example 36.1

This script illustrates how to turn on hyphenation on for all paragraphs in the frontmost document.

```
' Example of how to set hyphenation to true for all paragraphs in
' the frontmost document
Private Sub Paragraph_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim textArt As Illustrator.TextArtItem
    Dim textArtTextRange As Illustrator.TextRange
    Dim currentParagraph As Illustrator.Paragraph

    Set frontDocument = appRef.ActiveDocument

    For Each textArt In frontDocument.TextArtItems
        Set textArtTextRange = textArt.TextRange
        For Each currentParagraph In textArtTextRange.Paragraphs
            currentParagraph.Hyphenation = True
        Next
    Next
End Sub
```

Paragraphs

A collection of paragraphs.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this Paragraphs object.

Methods

Method:	Returns:	What it does:
AddBefore	Paragraph object	Add the Paragraph at the beginning of a TextArt object.
Add	Paragraph object	Add a Paragraph to the contents of a TextArt object.
Index(item As **Paragraph**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Paragraph object	Returns an object reference to the object identified by itemKey.
Remove(item As **Paragraph**)	Nothing	Deletes a Paragraph from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 37.1

This script displays the total number of paragraphs contained in all of the TextArtItems in the current document.

```
' This script counts all paragraphs in current document and returns the total.
Private Sub Command1_Click()
    Dim appRef As New Illustrator.Application
    Dim curTextArt As Illustrator.TextArtItem
    Dim curTextRange As Illustrator.TextRange
    Dim numberOfParas As Long

    If appRef.Documents.Count > 0 Then
```

```
        numberOfParas = 0
        For Each curTextArt In appRef.ActiveDocument.TextArtItems
            Set curTextRange = curTextArt.TextRange()
           numberOfParas = numberOfParas + curTextRange.Paragraphs.Count
        Next
        If (numberOfParas > 1) Then
            MsgBox ("There are " & numberOfParas & " paragraphs in the
document.")
        Else
            MsgBox ("There is only one paragraph in the document.")
        End If
    End If
End Sub
```

PathItem

A path. A path is comprised of path points that define its geometry.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Area	R/O	Single	The area of this path in square points. An area may be negative or even 0. The paths winding order is determined by the sign of area. If the area is negative, the path is wound counter-clockwise. Self-intersecting paths may contain sub-areas that cancel each other out. Therefore, it is possible for a path’s area to appear as zero even though it has apparent area.
ArtworkKnockout		AiKnockoutState enumeration	Is this object used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
Clipping		Boolean	Is this path to be used as a clipping path?
Closed		Boolean	Is this path closed?
CompoundPath		CompoundPath object	The CompoundPath contained in this PathItem.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object including stroke width and controls.
Edtiable	r/o	boolean	Is this PathItem editable?
Evenodd		Boolean	Use the even-odd rule to determine insideness?
FillColor		Color object	The fill color of the path.
Filled		Boolean	Should the path be filled?
FillOverprint		Boolean	Will art beneath a filled object be overprinted?

Property:	R/O	Value type:	What it is:
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object excluding stroke width.
GraphItem		GraphItem object	The GraphItem contained in this PathItem.
GroupItem	R/O	GroupItem object	If the PathItem is a GroupItem, a reference to object as a GroupItem.
Guides		Boolean	Is this path a guide object?
Height		Single	The height of the PathItem excluding stroke width, based on the GeometricBounds.
Hidden		Boolean	Is this PathItem hidden?
IsIsolated		Boolean	Is this object isolated?
Layer	R/O	Layer object	The layer to which this PathItem belongs.
Left		single	The left position of the PathItem.
Locked		Boolean	Is this PathItem locked?
MeshItem		meshitem object	The MeshItem contained in this PathItem.
Name		String	The name of this PathItem.
Note		String	The note text assigned to the path.
Opacity		Single	The opacity of the object . The value is between 0.0 and 100.0.
PageItem	R/O	PageItem object	The PageItem object corresponding to the PathItem.
Parent	R/O	Document object	The document that contains this PathItem.
PathPoints	R/O	PathPoints collection object	The path points contained in this PathItem.
PlacedItem		PlacedItem object	The PlacedItem object contained in this PathItem.
PluginItem		PluginItem object	The PluginItem contained in this PathItem
Polarity		AiPolarityValues	The polarity of the path.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the PathItem excluding stroke width.

Property:	**R/O**	**Value type:**	**What it is:**
RasterItem		RasterItem object	The RasterItem contained in this object.
Resolution	R/O	Single	The resolution of the path (in dots per inch).
Selected		Boolean	Is this object selected?
SelectedPathPoints	R/O	PathPoints collection object	All of the selected path points in the path.
Sliced		Boolean	Is this PathItem sliced?
StrokeCap		AiStrokeCap enumeration	The type of line capping.
StrokeColor		Color object	The stroke color for the path.
Stroked		Boolean	Should the path be stroked?
StrokeDashes		Variant Array	Dash lengths. Set to an empty array for a solid line.
StrokeDashOffset		Single	The default distance into the dash pattern at which the pattern should be started.
StrokeJoin		AiStrokeJoin enumeration	Type of joints for the path.
StrokeMiterLimit		Single	Are joins mitered (pointed) or beveled (squared-off)?
StrokeOverprint		Boolean	Will art beneath a stroked object be overprinted?
StrokeWidth		Single	Width of stroke.
SymbolItems		symbolitems collection object	The SymbolItems collection contained in this PathItem.
Tags	R/O	Tags collection object	The tags contained in this PathItem.
Top		Single	The top position of this PathItem.
URL		String	The value of the Adobe URL tag assigned to this PathItem.
VisibilityVariable		Variable	The Variable bound to this PathItem.
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the PathItem including stroke width.
Width		Single	The width of the PathItem excluding stroke width, based on the GeometricBounds.

Property:	R/O	Value type:	What it is:
ZOrderPosition	R/O	Long	The position of this art object within the stacking order of the group or layer (Parent) that contains the art object.

Methods

Method:	**Returns:**	**What it does:**
Copy	Nothing	Copies the art object to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the art object onto the clipboard. The associated document must be the frontmost document.
Duplicate	PathItem	Duplicate the PathItem.
MoveAfter	Nothing	Move the PathItem behind another object.
MoveBefore	Nothing	Move the PathItem in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the PathItem to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the PathItem to the front of a container.
Resize(scaleX As **Single**, scaleY As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [scaleAbout As **AiTransformation**])	Nothing	Scales the art object where scaleX is the horizontal scaling factor and scaleY is the vertical scaling factor; 100.0 = 100%.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the art object relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.
SetEntirePath(pathSpecification As **Variant Array of Variant Array of 2 Singles**)	Nothing	Defines path points for this path using the supplied array of fixed points (each comprised of a Variant Array of 2 singles). Each fixed point represents the Anchor for a path point.

Method:	Returns:	What it does:
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the art object by applying a transformation matrix.
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the art object relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the art object's position in the stacking order of the group or layer (Parent) of this object.

Notes

The `PathItem` class give you complete access to paths in Illustrator.

The `SetEntirePath` method provides an extremely efficient way to create paths comprised of straight lines.

Example 38.1

This script sets the stroke color and the fill color of the first path in the frontmost document.

```
' Example of how to set the stroke and fill of a PathItem
Private Sub SetPathOptions_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim firstPath As Illustrator.PathItem

    Set frontDocument = appRef.ActiveDocument
    Set firstPath = frontDocument.PathItems(1)
    firstPath.Filled = True
    firstPath.FillColor = frontDocument.Swatches(10).Color
    firstPath.Stroked = True
    firstPath.StrokeWidth = 5
    firstPath.StrokeColor = frontDocument.Swatches(15).Color
End Sub
```

Example 38.2

This script illustrates the use of the `SetEntirePath` method to create a new path consisting of straight lines.

```
' Example of how to create a new path consisting of 10 straight lines
Private Sub MakeNewPath_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim newPath As Illustrator.PathItem

    Dim lineList(10) As Variant
    Dim index As Long
    For index = 0 To 10
       lineList(index) = Array(index * 10 + 50, (index - 5) ^ 2 * 5 + 50)
    Next

    Set frontDocument = appRef.ActiveDocument
    Set newPath = frontDocument.PathItems.Add
    newPath.SetEntirePath lineList
End Sub
```

PathItems

A collection of paths.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this PathItems object.

Methods

Method:	**Returns:**	**What it does:**
Add	PathItem object	Creates a new object.
Ellipse([top As **Single**], [left As **Single**], [Width As **Single**], [Height As **Single**], [reversed As **Boolean**], [inscribed As **Boolean**])	PathItem object	Creates a new PathItem in the shape of an ellipse using the supplied parameters.
Index(item As **PathItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	PathItem object	Returns an object reference to the object identified by itemKey.
Polygon([centerX As **Single**], [centerY As **Single**], [radius As **Single**], [sides As **Long**], [reversed As **Boolean**])	PathItem object	Creates a new PathItem in the shape of an polygon using the supplied parameters.
Rectangle([top As **Single**], [left As **Single**], [Width As **Single**], [Height As **Single**], [reversed As **Boolean**])	PathItem object	Creates a new PathItem in the shape of an polygon using the supplied parameters.
Remove(item As **PathItem**)	Nothing	Deletes a PathItem from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Method:	Returns:	What it does:
RoundedRectangle([top As **Single**], [left As **Single**], [Width As **Single**], [Height As **Single**], [horizontalRadius As **Single**], [verticalRadius As **Single**], [reversed As **Boolean**])	PathItem object	Creates a new PathItem in the shape of a rectangle with rounded corners using the supplied parameters.
Star([centerX As **Single**], [centerY As **Single**], [radius As **Single**], [innerRadius As **Single**], [points As **Long**], [reversed As **Boolean**])	PathItem object	Creates a new PathItem in the shape of a star using the supplied parameters.

Notes

The methods `Ellipse`, `Polygon`, `Rectangle`, `RoundedRectangle`, and `Star` allow you to create complex PathItems using straightforward parameters. If you do not provide any parameters when calling these methods, default values will be used.

Example 39.1

This script illustrates how to create a new rectangle in the first layer of the frontmost document.

```
' Example of how to create a rectangle in layer 1 of document 1
Private Sub CreateRectangle_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim pathsInDocument As Illustrator.PathItems
    Dim newRectangle As Illustrator.PathItem

    Set frontDocument = appRef.ActiveDocument
    Set pathsInDocument = frontDocument.PathItems

     ' create a new rectangle with
     ' top = 400, left side = 50, width = 150 and height = 100
    Set newRectangle = pathsInDocument.Rectangle(400, 50, 150, 100)
End Sub
```

PathPoint

A point on a specific path. Each path point is made up of an anchor point (`Anchor`) and a pair of handles (`LeftDirection` and `RightDirection`).

Properties

Property:	R/O	Value type:	What it is:
Anchor		Variant Array (of 2 Singles)	The position of this point's anchor point.
Application	R/O	Application object	The Illustrator Application object.
LeftDirection		Variant Array (of 2 Singles)	The position of this path point's in control point.
Parent	R/O	Document object	The document that contains this PathPoint object.
PointType		AiPointType enumeration	The type of path point, either a curve or a corner.
RightDirection		Variant Array (of 2 Singles)	The position of this path point's out control point.
Selected		AiPathPointSelection enumeration	Are points of this path point selected? If so, which one(s)?.

Notes

A `PathPoint` represents a point on a path, with its pair of control points, or handles. Any point can considered a corner point. Setting the `PointType` property of a path point to a corner forces the left and right direction points to be on a straight line when the user attempts to modify them in the user interface.

Example 40.1

This script illustrates how to change the shape of a PathItem by modifying the left direction and the right direction of the PathPoint.

```
' example of how to modify the LeftDirection and
' RightDirection of PathPoints to create a curve
Private Sub ChangePoints_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim firstPath As Illustrator.PathItem
    Dim currentPoint As Illustrator.PathPoint
    Dim nextPoint As Illustrator.PathPoint
    Dim countOfPoints As Long
    Dim index As Long

    Dim deltax, deltay, length As Double

    Set firstPath = appRef.ActiveDocument.PathItems(1)
    countOfPoints = firstPath.PathPoints.Count

    'Loop through all PathPoints except for the last one and set the
    ' left/right direction according to where the next point is
    For index = 1 To (countOfPoints - 1)
        Set currentPoint = firstPath.PathPoints(index)
        Set nextPoint = firstPath.PathPoints(index + 1)

        deltax = nextPoint.Anchor(0) - currentPoint.Anchor(0)
        deltay = currentPoint.Anchor(1) - nextPoint.Anchor(1)
         length = Math.Sqr(deltax ^ 2 + deltay ^ 2)

        currentPoint.LeftDirection = Array(currentPoint.Anchor(0) - _
          (50 * deltax / length), currentPoint.Anchor(1) - (50 * deltay
/ length))
        currentPoint.RightDirection = Array(currentPoint.Anchor(0) + _
          (50 * deltax / length), currentPoint.Anchor(1) + (50 * deltay
/ length))
    Next
End Sub
```

PathPoints

A collection of path points in a specific path.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this PathPoints object.

Methods

Method:	Returns:	What it does:
Add	PathPoint object	Creates a new object.
Index(item As **PathPoint**)	Long	Returns the index position of the object within the collection.
item(itemKey)	PathPoint object	Returns an object reference to the object identified by itemKey.
Remove(item As **PathPoint**)	Nothing	Deletes a path point from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 41.1

This script illustrates how to add a new path point to an existing path.

```
' Example of how to add a new PathPoint to an existing path
Private Sub AddPathPoint_Click()
    Dim appRef As New Illustrator.Application
    Dim firstPath As Illustrator.PathItem
    Dim newPoint As Illustrator.PathPoint

    Set firstPath = appRef.ActiveDocument.PathItems(1)
    Set newPoint = firstPath.PathPoints.Add

    newPoint.Anchor = Array(75, 300)
    newPoint.LeftDirection = Array(10, 280)
    newPoint.RightDirection = Array(165, 330)
    newPoint.PointType = aiCorner
End Sub
```

Pattern

A pattern definition contained in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Name	R/O	String	The pattern name.
Parent	R/O	Document object	The document that contains this pattern.

Notes

Illustrator's `Pattern` object represents a pattern as defined in the Illustrator application.

Example 42.1

This script illustrates how to set the default fill color of document 1 to pattern 1.

```
Dim appRef As New Illustrator.Application
Dim frontDocument As Illustrator.Document
Set frontDocument = appRef.Documents(1)
frontDocument.DefaultFilled = True

Dim PatternName As String
PatternName = frontDocument.Patterns(1).Name
frontDocument.DefaultFillColor =
      frontDocument.Swatches(PatternName).Color
```

Patterns

A collection of patterns in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document	The document that contains this Patterns object.ß

Methods

Method:	Returns:	What it does:
Add	Pattern object	Creates a new object.
Index(item As **Pattern**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Pattern object	Returns an object reference to the object identified by itemKey.
Remove(item As **Pattern**)	Nothing	Deletes a pattern from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 43.1

This script illustrates how to remove a pattern. Note after removing Illustrator objects you should set the variable that referenced the object you just removed to Nothing.

```
' Example of how to remove the second pattern in document 1
Private Sub RemovePattern_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim patternToRemove As Illustrator.Pattern

     ' Remove the second pattern. Then set the patternToRemove reference to
     ' nothing because it no longer references an existing Illustrator pattern
    Set frontDocument = appRef.Documents(1)
    Set patternToRemove = frontDocument.Patterns(2)
    frontDocument.Patterns.Remove patternToRemove
    Set patternToRemove = Nothing
End Sub
```

PatternColor

A pattern color specification, used in conjunction with the `Pattern` property of the `Color` specification.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Matrix		Matrix object	An additional transformation matrix to manipulate the prototype pattern,
Pattern		Pattern object	A reference to the pattern object that defines the pattern to use in this color definition.
Reflect		Boolean	Is the prototype reflected before filling?
ReflectAngle		Single	The axis (in degrees) around which to reflect.
Rotation		Single	The angle (in degrees) to rotate the prototype pattern before filling.
ScaleFactor		Variant Array (of 2 Singles)	The fraction to scale the prototype pattern before filling, represented as point containing horizontal and vertical scaling percentages.
ShearAngle		Single	The angle (in degrees) to slant the shear by.
ShearAxis		Single	The axis (in degrees) to shear with respect to.
ShiftAngle		Single	The angle (in degrees) to translate the unscaled prototype pattern before filling
ShiftDistance		Single	The distance to translate the unscaled prototype pattern before filling.

Notes

Pattern colors are created using a reference to an existing pattern in the document. A matrix may be specified to further transform the pattern color.

Example 44.1

This script illustrates how to modify the first pattern in a document.

```
Dim appRef As New Illustrator.Application
Dim colorOfPattern As New Illustrator.PatternColor
Dim swatchRef As Illustrator.Swatch
Dim swatchColor As Illustrator.Color
Dim firsthPath As Illustrator.PathItem
For Each swatchRef In appRef.ActiveDocument.Swatches
     ' Get the generic color object of the swatch
     Set swatchColor = swatchRef.Color
        ' Only operate on patterns
        If (swatchColor.Color = aiColorPattern) Then
           ' Obtain the PatternColor from generic color object
           colorOfPattern = swatchColor.Pattern
           ' Change the pattern properties
           colorOfPattern.Rotation = 10
           ' Set the PatternColor of the original Color object
           swatchColor.Pattern = colorOfPattern
           ' Apply the color to the frontmost path
           Set firstPath = appRef.ActiveDocument.PathItems(1)
           firstPath.Filled = True
           firstPath.FillColor = swatchColor
           ' Change the definition of the pattern in the palette
swatchRef.Color = swatchColor
        End If
Next
```

PDFOpenOptions

You can supply an option when opening a PDF file. See the `open` command in the command reference for additional details.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
PageToOpen		Long	What page should be used when opening a multipage document (default: 1)

Notes

This class is used to define a record containing properties used to specify options when opening a document as a PDF file. `OpenOptionsPDF` can only be supplied in conjunction with the `Open` method. It is not possible to get or create a `OpenOptionsPDF` object.

It is not necessary to specify values for this properly; Illustrator will assign it a default value.

PDFSaveOptions

Options which may be supplied when saving a document as an Acrobat PDF file. See the Save method for additional details.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ColorCompression		AiCompressionQuality enumeration	The type of color bitmap compression used.
ColorDownsampling		Single	The color downsampling resolution in dots per inch (dpi). If the value is 0, no downsampling is performed.
Compatibility		AiPDFCompatibility enumeration	Specifies the version of the Acrobat file format to create.
CompressArt		Boolean	Is line art and text to be compressed?
EmbedAllFonts		Boolean	Are all fonts to be embedded?
EmbedICCProfile		Boolean	Should a ICC profile be embedded in the saved file?
FontSubsetThreshold		Single	Include a subset of fonts when less than this percentage of characters is used in the document. Valid for Illustrator 10 file format.
GenerateThumbnails		Boolean	Should thumbnail images be generated with the saved file?
GrayscaleCompression		AiCompressionQuality enumeration	Quality of grayscale bitmap compression.
GrayscaleDownsampling		Single	Downsampling resolution in dots per inch (dpi). If the value is 0, no downsampling is performed.
MonochromeCompression		AiMonochromeCompression enumeration	Specifies type of monochrome bitmap compression used.
MonochromeDownsampling		Single	Downsampling resolution in dots per inch (dpi). If the value is 0, no downsampling is performed.

Property:	R/O	Value type:	What it is:
PreserveEditability		Boolean	Should Illustrator editing capabilities be preserved when saving the document?

Notes

PDF save options can only be supplied in conjunction with the `SaveAs` method.

It is not necessary to specify values for all properties. Default values will be provided for any properties not specified.

Example 45.1

This script illustrates how to save the frontmost document as PDF.

```
' This script shows how to save the current document as PDF
Private Sub SaveAsPDF_Click()
    Dim appRef As New Illustrator.Application
    Dim saveOptions As New Illustrator.PDFSaveOptions
    saveOptions.ColorCompression = aiJPEGHigh
    saveOptions.Compatibility = aiAcrobat4

    appRef.Documents(1).SaveAs "C:\temp\AipdfSample.pdf", saveOptions
End Sub
```

PhotoshopFileOptions

You can supply options when opening a Photoshop file.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
PreserveImageMaps		Boolean	Should image maps be preserved when the document is converted? (default: `true`)
PreserveLayers		Boolean	Should layers be preserved when the document is converted? (default: `true`)
PreserveSlices		Boolean	Should slices be preserved when the document is converted? (default: `true`)

PlacedItem

An artwork item (optionally stored in an external file) placed in a document. A PlacedItem must correspond to a file containing vector-graphic data, such as a PICT, EPS or PDF file.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this object used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
BoundingBox	R/O	Variant Array (of 4 Singles)	Dimensions of PlacedItem regardless of transformations.
ContentVariable		Variable	The Variable bound to this PlacedItem.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object including stroke width and controls.
Editable		Boolean	Is this PlacedItem editable?
File		String	The file containing the placed object.
GraphItem		GraphItem object	The GraphItem contained in this PlacedItem.
GroupItem	R/O	GroupItem object	If the PlacedItem is a GroupItem, a reference to object as a GroupItem.
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object excluding stroke width.
Height		Single	The height of the PlacedItem, based on GeometricBounds.
Hidden		Boolean	Is this PlacedItem hidden?
IsIsolated		Boolean	Is this object isolated?
Layer	R/O	Layer object	The layer to which this PlacedItem belongs.
Left		single	The left position of the PlacedItem.
Locked		Boolean	Is this PlacedItem locked?

Property:	R/O	Value type:	What it is:
Matrix		Matrix object	The transformation matrix applied to the PlacedItem.
MeshItem		meshitem object	The MeshItem contained in this PlacedItem.
Name		String	The name of this PlacedItem.
Opacity		Single	The opacity of the object . The value is between 0.0 and 100.0.
PageItem	R/O	PageItem object	The PageItem object containing the PlacedItem.
Parent	R/O	Document object	The document that contains this PlacedItem.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the PlacedItem.
RasterItem		RasterItem object	The RasterItem contained in this PlacedItem.
Selected		Boolean	Is this PlacedItem selected?
Sliced		boolean	Is this PlacedItem sliced?
SymbolItems		symbolitems object	The SymbolItems collection contained in this PlacedItem.
Tags	R/O	Tags collection object	The tags contained in this PlacedItem.
Top		Single	The top position of the PlacedItem.
URL		String	The value of the Adobe URL tag assigned to this PlacedItem.
VisibilityVariable		Variable	The Variable bound to this PlacedItem.
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the PlacedItem including stroke width.
Width		Single	The width of the PlacedItem, based on GeometricBounds.
ZOrderPosition	R/O	Long	The position of this art object within the stacking order of the group or layer (Parent) that contains the art object.

Methods

Method:	Returns:	What it does:
Copy	Nothing	Copies the art object to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the art object onto the clipboard. The associated document must be the frontmost document.
Duplicate	PlacedItem	Duplicate the PlacedItem.
MoveAfter	Nothing	Move the PlacedItem behind another object.
MoveBefore	Nothing	Move the PlacedItem in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the PlacedItem to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the PlacedItem to the front of a container.
Resize(scaleX As **Single**, scaleY As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [scaleAbout As **AiTransformation**])	Nothing	Scales the art object where scaleX is the horizontal scaling factor and scaleY is the vertical scaling factor; 100.0 = 100%.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the art object relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.

Method:	Returns:	What it does:
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the art object by applying a transformation matrix.
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the art object relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the art object's position in the stacking order of the group or layer (Parent) of this object.

Notes

When you create a `PlacedItem`, Illustrator may display a dialog. To avoid this dialog check the box to turn the warning off the first time the dialog is displayed.

PlacedItems work only with embedded vector files: EPS, PDF, SVG and embedded AI.

Users can place vector art files, such as EPS and PDF files, with the `File > Place...` command in Illustrator.

It is not necessary to set the type of the `ContentVariable` before binding. Illustrator automatically sets the type to be the same as the `PageItem` to which it is bound.

Example 46.1

This script illustrates how to change the selection of PlacedItems.

```
' This example selects all PlacedItems
' that were not selected before this script was run
' and deselects all PlacedItems that were selected when the script was run
Private Sub PlacedItemSelection_Click()
    Dim appRef As New Illustrator.Application
    Dim placedArt As Illustrator.PlacedItem

    For Each placedArt In appRef.ActiveDocument.PlacedItems
        placedArt.Selected = Not (placedArt.Selected)
    Next
End Sub
```

PlacedItems

A collection of placed art items.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this PlacedItems object.

Methods

Method:	**Returns:**	**What it does:**
Add	PlacedItem object	Creates a new object.
Index(item As **PlacedItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	PlacedItem object	Returns an object reference to the object identified by itemKey.
Remove(item As **PlacedItem**)	Nothing	Deletes a PlacedItem from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

See example 46.1 for sample script using `PlacedItem`.

PluginItem

An art object created by an Illustrator plug-in.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this object used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object including stroke width and controls.
Editable		Boolean	Is this PluginItem editable?
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object excluding stroke width.
GraphItem		GraphItem object	The GraphItem contained in this PluginItem.
GroupItem	R/O	GroupItem object	If the PluginItem is a GroupItem, a reference to object as a GroupItem.
Height		Single	The height of the PluginItem, based on GeometricBounds.
Hidden		Boolean	Is this PluginItem hidden?
IsIsolated		Boolean	Is this object isolated?
Layer	R/O	Layer object	The layer to which this PluginItem belongs.
Left		single	The left position of the PluginItem.
Locked		Boolean	Is this PluginItem locked?
MeshItem		meshitem object	The MeshItem contained in this PluginItem.
Name		String	The name of this PluginItem.
Opacity		Single	The opacity of the object . The value is between 0.0 and 100.0.
PageItem	R/O	PageItem object	The PageItem object corresponding to the PluginItem.

Property:	R/O	Value type:	What it is:
Parent	R/O	Document object	The document that contains this PluginItem.
PlacedItem		placeditem object	The PlacedItem contained in this PluginItem.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the PluginItem.
RasterItem		RasterItem object	The RasterItem contained in this PlacedItem.
Selected		Boolean	Is this PluginItem selected?
Sliced		boolean	Is this PluginItem sliced?
SymbolItems		symbolitems collection object	The SymbolItems collection contained in this PluginItem.
Tags	R/O	Tags collection object	The tags contained in this PluginItem.
Top		Single	The top position of the PluginItem.
URL		String	The value of the Adobe URL tag assigned to this PluginItem.
VisibilityVariable		Variable	The Variable bound to this PluginItem.
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the PluginItem including stroke width.
Width		Single	The width of the PluginItem, based on GeometricBounds.
ZOrderPosition	R/O	Long	The position of this art object within the stacking order of the group or layer (Parent) that contains the art object.

Methods

Method:	**Returns:**	**What it does:**
Copy	Nothing	Copies the art object to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the art object onto the clipboard. The associated document must be the frontmost document.
Duplicate	PlacedItem	Duplicate the PluginItem.
MoveAfter	Nothing	Move the PluginItem behind another object.
MoveBefore	Nothing	Move the PluginItem in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the PluginItem to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the PluginItem to the front of a container.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the art object relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the art object by applying a transformation matrix.

Method:	**Returns:**	**What it does:**
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the art object relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the art object's position in the stacking order of the group or layer (Parent) of this object.

Notes

Plug-in items cannot be created from a script, but can be copied and pasted.

Example 47.1

This example demonstrates how to create a new PluginItem by copying an existing PluginItem.

```
' Example of how to create Plug-in art by copying existing plugin art items
Private Sub CopyPlugInArt_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim pluginArt As Illustrator.PluginItem

    Set frontDocument = appRef.ActiveDocument
    If (frontDocument.PluginItems.Count > 0) Then
        Set pluginArt = frontDocument.PluginItems(1)
        pluginArt.Copy
        frontDocument.Paste
    Else
        MsgBox "There is no plug-in art in the front document"
    End If
End Sub
```

PluginItems

A collection of PluginItems in a document.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this PluginItems object.

Methods

Method:	**Returns:**	**What it does:**
Index(item As **PluginItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	PluginItem object	Returns an object reference to the object identified by itemKey.
Remove(item As **PluginItem**)	Nothing	Deletes a PluginItem from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Notes

Plugin items cannot be created from a script.

See example 47.1 for a script that uses `PluginItem`.

RasterItem

A bitmap art object in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this RasterItem used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
BoundingBox		Variant Array (of 4 Singles)	Dimensions of RasterItem regardless of transformations.
ContentVariable		Variable	The Variable that is bound to this RasterItem.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the RasterItem including stroke width and controls.
Editable		Boolean	Is this RasterItem editable?
Embedded		Boolean	Is the Raster art embedded within the illustration?
File		String	The file containing the RasterItem, if it is stored externally.
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object excluding stroke width.
GraphItem		GraphItem object	The GraphItem contained in this RasterItem.
GroupItem	R/O	GroupItem object	If the RasterItem is a GroupItem, a reference to object as a GroupItem.
Height		Single	The height of the PluginItem, based on GeometricBounds.
Hidden		Boolean	Is this RasterItem hidden?
ImageColorSpace		AiColorSpace enumeration	The color space of the Raster image.
IsIsolated		Boolean	Is this RasterItem isolated?
Layer	R/O	Layer object	The layer to which this RasterItem belongs.

Property:	R/O	Value type:	What it is:
Left		single	The left position of the RasterItem.
Locked		Boolean	Is this RasterItem locked?
MeshItem		meshitem object	The MeshItem contained in this RasterItem.
Matrix		Matrix object	The transformation matrix of the RasterItem.
Name		String	The name of this RasterItem.
Opacity		Single	The opacity of the RasterItem, between 0.0 -100.0
PageItem	R/O	PageItem object	The PageItem object containing to the RasterItem.
Parent	R/O	Document object.	The document that contains this RasterItem.
PathItem		pathitem object	The PathItem containing this RasterItem.
PlacedItem		placeditem object	The PlacedItem contained in this RasterItem.
PluginItem		pluginitem object	The PluginItem contained in this RasterItem.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the RasterItem.
Selected		Boolean	Is this RasterItem selected?
Sliced		boolean	Is this RasterItem sliced?
Status		AiRasterLinkState enumeration	The status of the linked image, if the image is stored externally.
SymbolItems		SymbolItems object	The SymbolItems object collection in this RasterItem.
Tags	R/O	Tags collection object	The tags contained in this raster art item.
Top		Single	The top position of the RasterItem.
URL		String	The value of the Adobe URL tag assigned to this RasterItem.
VisibilityVariable		Variable	The Variable that is bound to this RasterItem.
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the RasterItem including stroke width.

Property:	**R/O**	**Value type:**	**What it is:**
Width		Single	The width of the RasterItem, based on GeometricBounds.
ZOrderPosition	R/O	Long	The position of this art object within the stacking order of the group or layer (Parent) that contains the art object.

Methods

Method:	Returns:	What it does:
Colorize **color object**	Nothing	Specifies color to color TIFF image.
Copy	Nothing	Copies the art object to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the art object onto the clipboard. The associated document must be the frontmost document.
Duplicate	RasterItem	Duplicate the RasterItem.
MoveAfter	Nothing	Move the PluginItem behind another object.
MoveBefore	Nothing	Move the PluginItem in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the PluginItem to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the PluginItem to the front of a container.
Resize(scaleX As **Single**, scaleY As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [scaleAbout As **AiTransformation**])	Nothing	Scales the art object where scaleX is the horizontal scaling factor and scaleY is the vertical scaling factor; 100.0 = 100%.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the art object relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.

Method:	Returns:	What it does:
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the art object by applying a transformation matrix.
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the art object relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the art object's position in the stacking order of the group or layer (Parent) of this object.

Notes

You can create `RasterItems` a script if you use an external file. You can also create new `RasterItems` by copying and pasting an existing `RasterItem`.

Note that it is not necessary to set the type of the `ContentVariable` before binding. Illustrator automatically sets the type to be the same as the `PageItem` to which it is bound.

Example 48.1

This example illustrates how to create a new `RasterItem` in the frontmost document. The script assumes that you have a file called "c:\temp\sample.jpg".

```
' Example of how to create a new RasterItem in the frontmost document
Private Sub RasterItem_Click()
    Dim appRef As New Illustrator.Application
    Dim newRasterArt As Illustrator.RasterItem
    Set newRasterArt = appRef.ActiveDocument.RasterItems.Add
    newRasterArt.File = "C:\temp\sample.jpg"
    newRasterArt.Position = Array(100, 400)
End Sub
```

RasterItems

A collection of raster art items.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this RasterItems object.

Methods

Method:	Returns:	What it does:
Add	RasterItem object	Creates a new object.
Index(item As **RasterItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	RasterItem object	Returns an object reference to the object identified by itemKey.
Remove(item As **RasterItem**)	Nothing	Deletes a raster item from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 49.1

This script illustrates how to obtain the color space of a raster item.

```
' This script examines the color space of the first raster item in the document
Private Sub CheckRasterItems_Click()
    Dim appRef As New Illustrator.Application
    Dim rasterArt As Illustrator.RasterItem
    Set rasterArt = appRef.ActiveDocument.RasterItems(1)
    Select Case (rasterArt.ImageColorSpace)
    Case Is = aiImageCMYK
        MsgBox "The first raster item is a CMYK raster item"
    Case Is = aiImageRGB
        MsgBox "The first raster item is an RGB raster item"
    Case Is = aiImageGrayScale
        MsgBox "The first raster item is a Grayscale raster item"
    End Select
End Sub
```

RGBColor

A RGB color specification, used in conjunction with the `RGB` property of the `Color` specification.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Blue		Single	The blue color value as a value in the range 0.0 - 255.0.
Green		Single	The green color value as a value in the range 0.0 - 255.0.
Red		Single	The red color value as a value in the range 0.0 - 255.0.

Notes

If the `DocumentColorSpace` of a document is `aiDocumentCMYKColor` and you specify the color value for a PageItem in that document using `RGBColor`, Illustrator will translate the RGB color specification into a CMYK color specification. The same thing happens if the document's `DocumentColorSpace` is `aiDocumentRGBColor` and you specify colors using `CMYKColor`. Since this translation can cause information loss you should specify colors using the class that matches the document's `DocumentColorSpace`.

Example 50.1

This script sets the default fill color of the frontmost document to yellow using an RGB object. If the color space of the frontmost document is CMYK, then Illustrator will regard the RGB fill color as a CMYK color although it is specified using RGB.

```
' This script sets the default fill color to yellow. If the color space is CMYK
' then Illustrator automatically translates the RGB color to its CMYK equivalence
Private Sub SetDefaultFillColor_Click()
    Dim appRef As New Illustrator.Application
    Dim newRGBColor As New Illustrator.RGBColor
    Dim newFillColor As New Illustrator.Color

     ' Define the new color
    newRGBColor.Red = 255#
    newRGBColor.Green = 255#
    newRGBColor.Blue = 0

     ' Wrap the RGB color in a generic color object and set that as the default fill color
    newFillColor.RGB = newRGBColor
    appRef.ActiveDocument.DefaultFillColor = newFillColor
End Sub
```

Spot

A spot color definition contained in the Illustrator document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Color		Color object	The color information for this spot color.
ColorType		AiColorMode	Color model of the spot.
Name	R/O	String	The spot color’s name.
Parent	R/O	Document object	The document that contains this spot color.

Notes

Illustrator’s `Spot` object represents a spot color as defined by Illustrator. All Illustrator documents contain the spot color "[Registration]" which can be used to print to all plates of a separation.

If no properties are specified when creating a new spot, default properties will be provided. However, if specifying the color, you must use the same color space as the document, either CMYK or RGB. Otherwise, an error will result. When created, the spot is inserted into the swatch palette at the end.

Example 51.1

This script illustrates how to create a new spot in the frontmost document.

```
' Example of creating a new spot in the frontmost document
Private Sub NewSpotColor_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim newRGBColor As New Illustrator.RGBColor
    Dim newColor As New Illustrator.Color
    Dim newSpot As Illustrator.Spot

     ' Define the new color value
    newRGBColor.Red = 255#
    newRGBColor.Green = 0
    newRGBColor.Blue = 0

    ' Create the new spot
    Set frontDocument = appRef.ActiveDocument
    Set newSpot = frontDocument.Spots.Add

    ' Define the new SpotColor as 80% of the specified RGB color
    newSpot.Name = "Red spot color"
    newColor.RGB = newRGBColor
    newSpot.Color = newColor
End Sub
```

Spots

A collection of spot colors in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this Spots object.

Methods

Method:	Returns:	What it does:
Add	Spot object	Creates a new object.
Index(item As **Spot**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Spot object	Returns an object reference to the object identified by itemKey.
Remove(item As **Spot**)	Nothing	Deletes a spot from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 52.1

This script illustrates how to remove all spots defined in the frontmost document.

```
' Example of how to remove all spots from the frontmost document
Private Sub RemoveSpot_Click()
    Dim appRef As New Illustrator.Application
    Dim documentSpots As Illustrator.Spots

    Set documentSpots = appRef.ActiveDocument.Spots
    documentSpots.RemoveAll
End Sub
```

SpotColor

A spot color specification, used in conjunction with the `Spot` property of the `Color` specification.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Spot		Spot object	A reference to the spot color object which defines the color.
Tint		Single	The tint of the color as a value in the range 0.0 - 100.0.

Notes

Spot colors are specified using a Single value that ranges from 0.0 to 100.0 for the tint of the color. The `color` property must be set to a reference to an existing spot color.

Example 53.1

This script shows how to create a new spot, and apply a tint of that spot to the fill of a PathItem.Your frontmost document must already have a PathItem before you can run this script.

```
' Example of how to define and apply a spot color
Private Sub ApplyNewSpotColor_Click()
    Dim appRef As New Illustrator.Application
    Dim frontDocument As Illustrator.Document
    Dim newRGBColor As New Illustrator.RGBColor
    Dim newColor As New Illustrator.Color
    Dim newSpot As Illustrator.Spot
    Dim frontPath As Illustrator.PathItem

    ' Define the new color value
    newRGBColor.Red = 255#
    newRGBColor.Green = 0
    newRGBColor.Blue = 0

    ' Create the new spot
    Set frontDocument = appRef.ActiveDocument
    Set newSpot = frontDocument.Spots.Add
    ' Define the new SpotColor as 80% of the specified RGB color
    newSpot.Name = "Red spot color"
    newColor.RGB = newRGBColor
    newSpot.Color = newColor

    ' Now apply a 50% of the spot color we just created to the frontmost PathItem.
    ' We do this by creating a spotcolor object and setting the specifications on that object.
    ' We then wrap the spot color object in a generic color object and use it to set the fill color for
    ' the first PathItem in the frontmost document
    Dim newSpotColor As New Illustrator.SpotColor
    Dim newPathColor As New Illustrator.Color
    newSpotColor.Spot = newSpot
    newSpotColor.Tint = 50#
    newPathColor.Spot = newSpotColor

    Set frontPath = frontDocument.PathItems(1)
    frontPath.Filled = True
    frontPath.FillColor = newPathColor
End Sub
```

Swatch

A color swatch definition contained in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Color		Color object	The color information for this swatch.
Name		String	The swatch's name.
Parent	R/O	Document object	The document that contains this swatch.

Notes

The swatches correspond to the swatch palette in Illustrator's user interface. Additional swatches can be created either manually by a user or by a script. The swatch can hold all types of color data (i.e., pattern, gradient, CMYK, RGB, gray, spot).

Example 54.1

This script illustrates how to change the name of the fifth swatch.

```
' Example of how to change the name of the fifth swatch
Private Sub SetSwatchName_Click()
    Dim appRef As New Illustrator.Application
    Dim firstSwatch As Illustrator.Swatch

    Set firstSwatch = appRef.ActiveDocument.Swatches(5)
    firstSwatch.Name = "New SwatchName"
End Sub
```

Swatches

A collection of swatches in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this Swatches object.

Methods

Method:	Returns:	What it does:
Add	Swatch object	Creates a new object.
Index(item As **Swatch**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Swatch object	Returns an object reference to the object identified by itemKey.
Remove(item As **Swatch**)	Nothing	Deletes a Swatch from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 55.1

This script illustrates how to first obtain a Swatch by index and then how to delete that Swatch.

```
' Example of how to remove the second Swatch in the frontmost document
Private Sub DeleteSwatch_Click()
    Dim appRef As New Illustrator.Application
    Dim swatchToDelete As Illustrator.Swatch
    Dim documentSwatches As Illustrator.Swatches

    Set documentSwatches = appRef.ActiveDocument.Swatches
    Set swatchToDelete = documentSwatches(2)

    documentSwatches.Remove swatchToDelete
End Sub
```

Symbol

A `Symbol` is an `ArtObject` that is stored in the Symbols Palette, and can be reused one or more times in the document without duplicating the art data. `Symbols` are contained in documents.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Name	R/W	String	The name of the Symbol.
Parent	R/O	Document object	The document that contains this Symbol.

Methods

Method:	**Returns:**	**What it does:**
Duplicate	Symbol	Duplicates the Symbol.

Symbols

A collection of symbols in a document.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this Symbols object.

Methods

Method:	**Returns:**	**What it does:**
Add	Swatch object	Creates a new object.
Index(item As **Symbol**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Swatch object	Returns an object reference to the object identified by itemKey.
Remove(item As **Symbol**)	Nothing	Deletes a Symbol from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

SymbolItem

A `SymbolItem` is an instance of a `Symbol` in a Document. `SymbolItems` are linked to the Symbol from which they were created and will change with any modification of those Symbols.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this SymbolItem used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the SymbolItem including stroke width and controls.
Editable	R/O	Boolean	Can the SymbolItem be modified?
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the SymbolItem excluding stroke width.
GraphItem		GraphItem object	The GraphItem contained in this SymbolItem.
GroupItem	R/O	GroupItem object	If the SymbolItem is a GroupItem, a reference to object as a GroupItem.
Height		Single	The height of the SymbolItem, based on GeometricBounds.
Hidden		Boolean	Is this SymbolItem hidden?
Isolated		Boolean	Is this SymbolItem isolated?
Layer	R/O	Layer object	The layer to which this SymbolItem belongs.
Left		single	The left position of the SymbolItem.
Locked		Boolean	Is this SymbolItem locked?
Name		String	The name of this SymbolItem.
MeshItem		MeshItem object	The MeshItem contained in this SymbolItem.
Opacity		Single (0.0 - 100.0)	The opacity of the SymbolItem.

Property:	**R/O**	**Value type:**	**What it is:**
PageItem		PageItem object	The PageItem that contains this SymbolItem.
Parent	R/O	Document object	The document that contains this SymbolItem.
PathItem		pathitem object	The PathItem containing this SymbolItem.
PlacedItem		placeditem object	The SymbolItem contained in this RasterItem.
PluginItem		pluginitem object	The SymbolItem contained in this RasterItem.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the SymbolItem.
RasterItem		RasterItem object	The RasterItem contained in this SymbolItem.
Selected		Boolean	Is this SymbolItem selected?
Sliced		Boolean	Is this SymbolItem sliced? Default: `false`.
Symbol		Symbol object	The Symbol contained in this SymbolItem.
Tags	R/O	Tags collection object	The tags contained in this SymbolItem.
Top		Single	The top position of the SymbolItem.
URL		String	The value of the Adobe URL tag assigned to this SymbolItem.
VisibilityVariable		Variable	The Variable bound to this SymbolItem.
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the SymbolItem including stroke width.
Width		Single	The width of the SymbolItem, based on GeometricBounds.
ZOrderPosition	R/O	Long	The position of this SymbolItem within the stacking order of the group or layer (Parent) that contains the SymbolItem.

Methods

Method:	**Returns:**	**What it does:**
Copy	Nothing	Copies the SymbolItem to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the SymbolItem to the clipboard. The associated document must be the frontmost document.
Duplicate	SymbolItem	Duplicate the SymbolItem.
Editable		
MoveAfter	Nothing	Move the SymbolItem behind another object.
MoveBefore	Nothing	Move the SymbolItem in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the SymbolItem to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the SymbolItem to the front of a container.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the SymbolItem relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.
Resize(scaleX As **Single**, scaleY As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [scaleAbout As **AiTransformation**])	Nothing	Scales the SymbolItem where scaleX is the horizontal scaling factor and scaleY is the vertical scaling factor; 100.0 = 100%.

Method:	**Returns:**	**What it does:**
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the SymbolItem by applying a transformation matrix.
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the SymbolItem relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZSetOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the SymbolItem's position in the stacking order of the group or layer (Parent) of this object.

Notes

The `MoveAfter` and `MoveBefore` methods do not change the position of the object on the art board. They change the order in which Illustrator draws the objects, and the containment hierarchy.

The `MoveToBeginning` and `MoveToEnd` methods place the object in the specified container, behind all other such objects.

SymbolItems

A collection of swatches in a document.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this SymbolItems object.

Methods

Method:	**Returns:**	**What it does:**
Add	Swatch object	Creates a new object.
Index(item As **SymbolItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	SymbolItem object	Returns an object reference to the object identified by itemKey.
Remove(item As **SymbolItem**)	Nothing	Deletes a SymbolItem from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Tag

A tag associated with a specific PageItem.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Name		String	The Tag’s name.
Parent	R/O	Document object	The document that contains this Tag.
Value		String	The data stored in this Tag.

Notes

Tags allows you to assign an unlimited number of key-value pairs to any PageItem in a document.

Example 56.1

This example illustrates how to list the tags associated with the first selected item. The name and value of the tags are listed in a new document.

```
' The following example shows the tags of the selected art item
' the tags are shown in a separate document
Private Sub ShowAllTags_Click()
    Dim appRef As New Illustrator.Application
    Dim reportDocument As Illustrator.Document
    Dim selection As Variant
    Dim selectedArt As Illustrator.PageItem
    Dim tagList As Illustrator.Tags
    Dim tagItem As Illustrator.Tag
    Dim top_offset As Single

    selection = appRef.selection
    If (Not IsEmpty(selection)) Then
     ' Get the selected item. We only need to access a property defined on the pageitem class,
     ' so we don't have to look at the type of the selected item. Instead we use the "PageItem"
     ' property, as every art item has one.
        Set selectedArt = selection(0).PageItem

        Set tagList = selectedArt.Tags
        If (tagList.Count = 0) Then
            MsgBox "The selected art has no tags"
            Exit Sub
        End If

        ' Create a document and add a line of text per tag
        Set reportDocument = appRef.Documents.Add
        top_offset = 400
        For Each tagItem In tagList
            Dim tagText As Illustrator.TextArtItem
            Set tagText = reportDocument.TextArtItems.Add
            tagText = "Tag: (" & tagItem.Name & " , " & tagItem.Value &
")"
            tagText.Position = Array(100, top_offset)
            top_offset = top_offset - 20
        Next
    End If
End Sub
```

Tags

A collection of tags.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this Tags object.

Methods

Method:	Returns:	What it does:
Add	Tag object	Creates a new object.
Index(item As **Tag**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Tag object	Returns an object reference to the object identified by itemKey.
Remove(item As **Tag**)	Nothing	Deletes a tag from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 57.1

This example illustrates how to mark all images in a document with a specific tag. If your script creates temporary PageItems, you can then later look at the "MyInfo" tag. If it exist for a particular PageItem and it's value is "OriginalItem" you know not to delete it.

```
Dim appRef As New Illustrator.Application
Dim frontDocument As Illustrator.Document
Dim imageArt As Illustrator.PageItem
Dim tagRef As Illustrator.Tag
Set frontDocument = appRef.ActiveDocument
For Each imageArt In frontDocument.PageItems
    If ((imageArt.PageItemType = aiPlacedItem) Or _
        (imageArt.PageItemType = aiRasterItem)) Then
        ' Create a new Tag with the name myInfo and the value originalItem
        Set tagRef = imageArt.Tags.Add
        tagRef.Name = "MyInfo"
        tagRef.Value = "OriginalItem"
    End If
Next
```

TextArtItem

A text art object or objects. From the user interface, this is text created with the Text tool.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
ArtworkKnockout		AiKnockoutState enumeration	Is this object used to create a knockout? If so, what kind of knockout?
BlendingMode		AiBlendModes enumeration	The mode used when compositing an object.
Contents		String (default property)	The textual contents of the TextArtItem.
ContentVariable		Variable	The Variable to which this TextArtItem is bound.
ControlBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object including stroke width and controls.
GeometricBounds	R/O	Variant Array (of 4 Singles)	The bounds of the object excluding stroke width.
GraphItem		GraphItem object	The GraphItem contained in this TextArtItem.
GroupItem	R/O	GroupItem object	If the TextArtItem is a GroupItem, a reference to object as a GroupItem.
Editable		Boolean	Is this TextArtItem editable?
Height		Single	The height of the TextArtItem, based on GeometricBounds. You should only try to set the height of a textartitem that contains text.
Hidden		Boolean	Is this TextArtItem hidden?
IsIsolated		Boolean	Is this object isolated?
Kind		AiTextType enumeration	The type of text art displayed by this object.
Layer	R/O	Layer object	The Layer to which this TextArtItem belongs.
Left		single	The left position of the TextArtItem.

Property:	R/O	Value type:	What it is:
Locked		Boolean	Is this TextArtItem locked?
MeshItem		meshitem object	The MeshItem contained in this TextArtItem.
Name		String	The name of this TextArtItem.
Opacity		Single	The opacity of the object . The value is between 0.0 and 100.0.
PageItem	R/O	PageItem object	The PageItem object containing the TextArtItem.
Parent	R/O	Document object	The document that contains this TextArtItem.
PathItem		pathitem object	The PathItem containing this TextArtItem.
PlacedItem		placeditem object	The PlacedItem contained in this TextArtItem.
PluginItem		pluginitem object	The PluginItem contained in this TextArtItem.
Position		Variant Array (of 2 Singles)	The position of the top left corner of the TextArtItem.
RasterItem		RasterItem object	The RasterItem contained in this TextArtItem.
Selected		Boolean	Is this TextArtItem selected?
Selection		TextRange collection object	The selected text in the contents of this TextArtItem.
Sliced		Boolean	Is this TextArtItem sliced?
SymbolItems		SymbolItems collection object	The SymbolItems contained in this TextArtItem.
Tags	R/O	Tags collection object	The tags contained in this TextArtItem.
TextPath_PathItems	R/O	PathItems collection object	The PathItems associated with in-path and on-path text.
TextPaths	R/O	TextPaths collection object	The text paths contained in this TextArtItem,
Top		Single	The top position of the TextArtItem.
URL		String	The value of the Adobe URL tag assigned to this TextArtItem.
VisibilityVariable		Variable	The Variable to which this TextArtItem is bound.

Property:	R/O	Value type:	What it is:
VisibleBounds	R/O	Variant Array (of 4 Singles)	The visible bounds of the TextArtItem including stroke width.
Width		Single	The width of the TextArtItem, based on the GeometricBounds. You should only try to set the width of a TextArtItem that contains text.
Wrapped		Boolean	Does the text wrap around other objects (valid only for area text)?
ZOrderPosition	R/O	Long	The position of this art object within the stacking order of the group or layer (Parent) that contains the art object.

Methods

Method:	**Returns:**	**What it does:**
Copy	Nothing	Copies the art object to the clipboard. The associated document must be the frontmost document.
CreateOutline	GroupItem object	Converts a TextArtItem into a GroupItem consisting of paths and compound paths.
Cut	Nothing	Cuts the art object onto the clipboard. The associated document must be the frontmost document.
Duplicate	TextArtItem	Duplicate the TextArtItem.
MoveAfter	Nothing	Move the TextArtItem behind another object.
MoveBefore	Nothing	Move the TextArtItem in front of another object.
MoveToEnd(Document/Layer/GroupItem)	Nothing	Move the TextArtItem to the end of a container.
MoveToBeginning(Document/Layer/GroupItem)	Nothing	Move the TextArtItem to the front of a container.
Resize(scaleX As **Single**, scaleY As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [scaleAbout As **AiTransformation**])	Nothing	Scales the art object where scaleX is the horizontal scaling factor and scaleY is the vertical scaling factor; 100.0 = 100%.
Rotate(Angle As **Single**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [rotateAbout As **AiTransformation**])	Nothing	Rotates the art object relative to the current rotation. The object is rotated counter-clockwise if the Angle value is positive, clockwise if the value is negative.

Method:	Returns:	What it does:
TextRange([rangeStart As **Long**], [rangeEnd As **Long**])	TextRange object	Returns a text range object referencing a substring of the current text range, where rangeStart is the beginning character position and rangeEnd is the ending position. The first character position is one. If omitted, rangeStart defaults to 1. If omitted, rangeEnd defaults to the last character of the range.
Transform(transformationMatrix As **Matrix**, [changePositions As **Boolean**], [changeFillPatterns As **Boolean**], [changeFillGradients As **Boolean**], [changeStrokePattern As **Boolean**], [changeLineWidths As **Single**], [transformAbout As **AiTransformation**])	Nothing	Transforms the art object by applying a transformation matrix.
Translate([deltaX As **Single]**, [deltaY As **Single]**, [transformObjects As Boolean], [transformFillPatterns As Boolean], [transformFillGradients As Boolean], [transformStrokePatterns As Boolean])	Nothing	Repositions the art object relative to the current position, where deltaX is the horizontal offset and deltaY is the vertical offset.
ZOrder(zOrderCmd As **AiZOrderMethod**)	Nothing	Arranges the art object's position in the stacking order of the group or layer (Parent) of this object.

Notes

There are three types of text art in Illustrator, as specified by the TextArtItem's `Kind` property. See "Working with text art" on page 51 for more information on working with the three kinds of TextArtItems.

Note that it is not necessary to set the type of the `ContentVariable` before binding. Illustrator automatically sets the type to be aiTextual.

Example 58.1

This example illustrates how to create a series of rotated TextArtItems from a selected TextArtItem. Before running this script you should create and select a TextArtItem in Illustrator.

The example also illustrates how you can use the parent property of an objects to make sure that new objects are put into the same layer or group as the original item belongs to.

```
Dim appRef As New Illustrator.Application
Dim selection As Variant
Dim frontDocument As Illustrator.Document
Dim sourceTextArt As Illustrator.TextArtItem
Dim newTextArt As Illustrator.TextArtItem
Dim textArtGroup As Illustrator.TextArtItems
' First check the selection of the application. It has to be a TextArtItem in order for this script to run.
selection = appRef.selection
If (IsEmpty(selection)) Then
    MsgBox "Select a text item before running this script"
    Exit Sub
End If
If (TypeName(selection) = "String") Then
    MsgBox "Remove the insertion point from the text and select
             the text item before running this script "
    Exit Sub
End If
If (TypeName(selection) = "String" Or
    TypeName(selection(0)) <> "TextArtItem") Then
       MsgBox "Select a text item before running this script"
       Exit Sub
End If
Set frontDocument = appRef.ActiveDocument
Set sourceTextArt = selection(0)
' Get the parent of the text art so new TextArtItems can be inserted in the same group or layer as
' the selected text art is in
Set textArtGroup = sourceTextArt.Parent.TextArtItems
' Create 5 new versions of the text art each rotated a bit
Dim i As Long
For i = 1 To 5
    Set newTextArt = textArtGroup.Add
    newTextArt.Position = sourceTextArt.Position
    newTextArt.Contents = sourceTextArt.Contents
    newTextArt.Rotate 180 * i / 6
Next
```

TextArtItems

A collection of TextArtItems.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this TextArtItems object.

Methods

Method:	Returns:	What it does:
Add	TextArtItem object	Creates a new object.
Index(item As **TextArtItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	TextArtItem object	Returns an object reference to the object identified by itemKey.
Remove(item As **TextArtItem**)	Nothing	Deletes a TextArtItem from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

See example 58.1 for a script that uses `TextArtItem`.

TextFace

A text face (currently available font) in the application.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Name	R/O	String (default property)	The text face's name.
Parent	R/O	Document object	The document that contains this TextFace.

Notes

Text faces provide access to the name of all fonts currently available to the Illustrator application.

Example 59.1

The following script illustrates how to apply the first text face to all text art in the frontmost document.

```
' Example of how to set the font of all the text in the document to the first
' text face
Private Sub SetTextFace_Click()
    Dim appRef As New Illustrator.Application
    Dim fontToApply As Illustrator.TextFace
    Dim textArt As Illustrator.TextArtItem
    Dim textArtRange As Illustrator.TextRange

     ' Get the first text face in the document
    Set fontToApply = appRef.TextFaces(1)

     ' Iterate through all text art and apply the font
    For Each textArt In appRef.ActiveDocument.TextArtItems
        Set textArtRange = textArt.TextRange
        textArtRange.Font = fontToApply.Name
    Next
End Sub
```

TextFaces

A collection of text faces (currently available font) in the application.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this TextFaces object.

Methods

Method:	Returns:	What it does:
Index(item As **TextFace**)	Long	Returns the index position of the object within the collection.
item(itemKey)	TextFace object	Returns an object reference to the object identified by itemKey.

Example 60.1

This example illustrates how to check if the Symbol text face is installed on the current machine.

```
' Example of how to check to see if
' a specific text face is installed on the current machine
Private Sub CheckForTimes_Click()
    Dim appRef As New Illustrator.Application
    Dim fontToTest As Illustrator.TextFace
    Dim foundTextFace As Boolean
    Dim fontName As String

    fontName = "Symbol"
    foundTextFace = False
    For Each fontToTest In appRef.TextFaces
        If (fontToTest.Name = fontName) Then
            foundTextFace = True
            Exit For
        End If
    Next
    If (foundTextFace) Then
        MsgBox fontName & " is installed on this machine"
    Else
        MsgBox fontName & " is not installed on this machine"
    End If
End Sub
```

TextLine

A line of text in a specific text art object.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
AutoKerning		Boolean	Should a font’s built-in kerning information be used?
Baseline		Single	The bottom position of horizontally-oriented text or the left position of vertically-oriented text.
BaselineShift		Single	Baseline offset of text.
Characters	R/O	Characters collection object	The characters contained in this text line.
Clipping	R/O	Boolean	Is there a clipping path associated with the TextArtItem containing this text line?
Contents		String (default property)	The text contained in the text range.
Direction		AiCharDirection enumeration	The orientation of the characters in a vertical text block.
Evenodd		Boolean	Should the even-odd rule be used to determine insideness?
FillColor		Color	Fill color of text
Filled		Boolean	Should the text be filled?
FillOverprint		Boolean	Should the art beneath the text be overprinted?
Font		String	The text face of the text.
Leading		Single	The vertical leading of the text.
Length		Long	The number of character in the text.
Note	R/O	String	The note associated with this text.
Offset	R/O	AiText	Offset of selected text in text range (in characters).

Property:	R/O	Value type:	What it is:
Orientation	R/O	AiOrientation enumeration	The orientation of the text. Use the TextPath class to alter this property.
Paragraph	R/O	Paragraph object	The paragraph containing this line of text.
Parent	R/O	Document object	The document that contains this TextLine.
Resolution	R/O	Single	The resolution of the object (in dots per inch).
Scaling		Variant Array (of 2 Singles)	The character scaling supplied as a point with the first coordinate as horizontal scale and the second coordinate as vertical scale, where 100.0 is 100%.
Size		Single	Font size of text.
StrokeCap		AiStrokeCap enumeration	The type of line capping.
StrokeColor		Color object	The stroke color for the path.
Stroked		Boolean	Should the path be stroked?
StrokeDashes		Variant Array	Dash lengths. Set to an empty array for a solid line.
StrokeDashOffset		Single	The default distance into the dash pattern at which the pattern should be started.
StrokeJoin		AiStrokeJoin enumeration	Type of joints for the path.
StrokeMiterLimit		Single	Are joins mitered (pointed) or beveled (squared-off)?
StrokeOverprint		Boolean	Will art beneath a stroked object be overprinted?
StrokeWidth		Single	Width of stroke.
TextPath	R/O	TextPath object	A reference to the text path associated with the TextArtItem containing this text.
Tracking		Single	The spacing between multiple characters.

Methods

Method:	Returns:	What it does:
Copy	Nothing	Copies the text range to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the text range onto the clipboard. The associated document must be the frontmost document.
Paste	Nothing	Replaces text range with the contents of the clipboard.
TextRange([rangeStart As **Long**], [rangeEnd As **Long**])	TextRange object	Returns a text range object referencing a substring of the current text range, where rangeStart is the beginning character position and rangeEnd is the ending position. The first character position is one. If omitted, rangeStart defaults to 1. If omitted, rangeEnd defaults to the last character of the range.

Notes

`TextLine` gives you complete access to the text contained in a line of text art objects in Illustrator.

Lines of text cannot be created. When the `Contents` property of a TextArtItem is modified, Illustrator will create text lines as it reflows the text within the TextArtItem.

Example 61.1

This example illustrates how to color lines of more than 80 characters red.

```
' Example of how to color lines of more than 80 characters red
Private Sub ColorLongTextLines_Click()
    Dim appRef As New Illustrator.Application
    Dim textArt As Illustrator.TextArtItem
    Dim textArtRange As Illustrator.TextRange
    Dim lineToExamine As Illustrator.TextLine
    Dim redRGB As New Illustrator.RGBColor
    Dim redColor As New Illustrator.Color

    ' Make a reference to a red door
    redRGB.Red = 255
    redRGB.Green = 0
    redRGB.Blue = 0
    redColor.RGB = redRGB

    ' Apply the red color to lines longer than 80 characters
    For Each textArt In appRef.ActiveDocument.TextArtItems
        Set textArtRange = textArt.TextRange
        For Each lineToExamine In textArtRange.TextLines
            If (Len(lineToExamine.Contents) > 80) Then
                lineToExamine.Filled = True
                lineToExamine.FillColor = redColor
            End If
        Next
    Next
End Sub
```

TextLines

A collection of lines of text.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this TextLines object.

Methods

Method:	Returns:	What it does:
Index(item As **TextLine**)	Long	Returns the index position of the object within the collection.
item(itemKey)	TextLine object	Returns an object reference to the object identified by itemKey.
Remove(item As **TextLine**)	Nothing	Deletes a text line from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Notes

Lines of text cannot be created. When the contents of a TextArtItem is modified, Illustrator will create text lines as it reflows the text within the TextArtItem.

Example 62.1

This script displays the total number of lines of text contained in all of the TextArtItems in the current document.

```
' This script counts all text lines in current document and returns the total
Private Sub CountLines_Click()
    Dim appRef As New Illustrator.Application
    Dim numLines As Long
    Dim textArt As Illustrator.TextArtItem
    Dim textArtRange As Illustrator.TextRange
    If appRef.Documents.Count > 0 Then
        numLines = 0
        For Each textArt In appRef.ActiveDocument.TextArtItems
            Set textArtRange = textArt.TextRange()
            numLines = numLines + textArtRange.TextLines.Count
        Next
        MsgBox ("There are " & numLines & " lines of text in the 
document.")
    End If
End Sub
```

TextPath

A text path. A TextArtItem always has at least one text path.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Matrix		Matrix object	The transformation matrix for the text path.
Name		String	The text path's name.
Orientation		AiOrientation enumeration	The orientation of the text.
Parent	R/O	Document object	The document that contains this TextPath.
TextPathObject	R/O	PathItem object	Path associated with the text path (only valid for path text and area text).
TextPathOffset		Single	The offset position where characters are anchored on the text path (only valid for path text).

Notes

Text paths provide access to a number of special properties for TextArtItems. See Chapter 3 for additional information on text paths.

Example 63.1

This example illustrates how to set all text paths in the frontmost document to vertical.

```
' Example of how to change the orientation of all textpaths to vertical
Private Sub TextPathOrientation_Click()
    Dim appRef As New Illustrator.Application
    Dim textArt As Illustrator.TextArtItem
    Dim textArtPath As Illustrator.TextPath

    For Each textArt In appRef.ActiveDocument.TextArtItems
        For Each textArtPath In textArt.TextPaths
            textArtPath.Orientation = aiVertical
        Next
    Next
End Sub
```

TextPaths

A collection of text paths in a specific TextArtItem.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this TextPaths object.

Methods

Method:	Returns:	What it does:
Add	TextPath object	Creates a new object.
Index(item As **TextPath**)	Long	Returns the index position of the object within the collection.
item(itemKey)	TextPath object	Returns an object reference to the object identified by itemKey.
Remove(item As **TextPath**)	Nothing	Deletes a text path from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

See Example 63.1 for a sample script that uses `TextPath`.

TextPath_PathItems

A collection of PathItems associated with area text and path text.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this TextPath_PathItems object.

Methods

Method:	Returns:	What it does:
Index(item As **PathItem**)	Long	Returns the index position of the object within the collection.
item(itemKey)	**PathItem** object	Returns an object reference to the object identified by itemKey.

Example 64.1

This example illustrates how to create new on-path text. On-path text uses the first path specified in the TextPath_PathItems to shape the text.

```
' example of how to use the TextPath_PathItems collection
' to create an on-path text item
Private Sub OnPathText_Click()
    Dim appRef As New Illustrator.Application
    Dim newTextArt As Illustrator.TextArtItem
    Dim newTextPath As Illustrator.PathItem

    Set newTextArt = appRef.ActiveDocument.TextArtItems.Add
    newTextArt.Position = Array(200, 200)
    newTextArt.Contents = "My new on-path text art"
    newTextArt.Kind = aiPathText

    Set newTextPath = newTextArt.TextPath_PathItems(1)
    newTextPath.SetEntirePath Array(Array(200, 200), Array(250, 250),
Array(300, 200))
End Sub
```

TextRange

A range of text in a specific text art object.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
AutoKerning		Boolean	Should a font's built-in kerning information be used?
BaselineShift		Single	Baseline offset of text.
Characters	R/O	Characters collection object	The characters contained in this text range.
Clipping	R/O	Boolean	Is there a clipping path associated with the TextArtItem containing this text range?
Contents		String (default property)	The text contained in the text range.
Direction		AiCharDirection enumeration	The orientation of the characters in a vertical text block.
Evenodd		Boolean	Should the even-odd rule be used to determine insideness?
FillColor		Color	Fill color of text
Filled		Boolean	Should the text be filled?
FillOverprint		Boolean	Should the art beneath the text be overprinted?
Font		String	The text face of the text.
Leading		Single	The vertical leading of the text.
Length		Long	The number of character in the text.
Note	R/O	String	The note associated with this text.
Offset	R/O	Long	Offset of selected text in text range (in characters).
Orientation	R/O	AiOrientation enumeration	The orientation of the text. Use the TextPath class to alter this property.
Paragraphs	R/O	Paragraphs collection object	The paragraphs contained in this text range.

Property:	R/O	Value type:	What it is:
Parent	R/O	Document object	The document that contains this TextRange.
Resolution	R/O	Single	The resolution of the object (in dots per inch).
Scaling		Variant Array (of 2 Singles)	The character scaling supplied as a point with the first coordinate as horizontal scale and the second coordinate as vertical scale, where 100.0 is 100%.
Size		Single	Font size of text.
StrokeCap		AiStrokeCap enumeration	The type of line capping.
StrokeColor		Color object	The stroke color for the path.
Stroked		Boolean	Should the path be stroked?
StrokeDashes		Variant Array	Dash lengths. Set to an empty array for a solid line.
StrokeDashOffset		Single	The default distance into the dash pattern at which the pattern should be started.
StrokeJoin		AiStrokeJoin enumeration	Type of joints for the path.
StrokeMiterLimit		Single	Are joins mitered (pointed) or beveled (squared-off)?
StrokeOverprint		Boolean	Will art beneath a stroked object be overprinted?
StrokeWidth		Single	Width of stroke.
TextLines	R/O	TextLines collection object	The lines of text contained in this text range.
TextPath	R/O	TextPath object	A reference to the text path associated with the TextArtItem containing this text.
Tracking		Single	The spacing between multiple characters.
Words	R/O	Words collection object	The words contained in this text range.

Methods

Method:	Returns:	What it does:
Copy	Nothing	Copies the text range to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the text range onto the clipboard. The associated document must be the frontmost document.
DeleteRange	Nothing	Deletes the text range.
Paste	Nothing	Replaces text range with the contents of the clipboard.
TextRange([rangeStart As **Long**], [rangeEnd As **Long**])	TextRange object	Returns a text range object referencing a substring of the current text range, where rangeStart is the beginning character position and rangeEnd is the ending position. The first character position is one. If omitted, rangeStart defaults to 1. If omitted, rangeEnd defaults to the last character of the range.

Notes

`TextRange` gives you complete access to the text contained in text art objects in Illustrator.

Example 65.1

This example illustrates how to resize the first part of every word in the frontmost document. The example illustrates how to obtain a sub-range from a text object.

```
' Example of how to use ranges and sub ranges to change the size of the first two
' characters of each word
Private Sub ChangeSize_Click()
    Dim appRef As New Illustrator.Application
    Dim textArt As Illustrator.TextArtItem
    Dim textArtRange As Illustrator.TextRange
    Dim textWord As Illustrator.Word
    Dim wordLen As Long
    Dim charsToChange As Long
    Dim firstChars As Illustrator.TextRange

    For Each textArt In appRef.ActiveDocument.TextArtItems
        Set textArtRange = textArt.TextRange
        For Each textWord In textArtRange.Words

          ' For each word we check to see if it is longer than 2 characters. If it is we'll resize
          ' the first 2 characters. If it is not, we'll resize the whole word.
            wordLen = Len(textWord.Contents)
            If (wordLen < 2) Then
                charsToChange = wordLen
            Else
                charsToChange = 2
            End If
            If (charsToChange > 0) Then
               ' Here we are obtaining a sub range. By omitting the first argument, we say:
               ' From the beginning to character number charsToChange. Note the first
               ' character in a TextRange has an index of 0. We therefore have to subtract 1.
                Set firstChars = textWord.TextRange(, charsToChange - 1)
                firstChars.Size = firstChars.Size * 1.5
            End If
        Next
    Next
End Sub
```

Variable

A class of document-level variables that can be imported and exported.

Elements

Element:	Refer to by:
Document	By name, by numeric index, before/after another element, as a range of elements, satisfying a test

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Kind		Graph/Image/Textual/ UnknonwnKind/Visibility	The kind of variable
Name		String	The name of the variable.
Parent	R/O	Document object	The document that contains this Variable.

Valid Commands

- Add
- Remove/RemoveAll

Variables

A collection of Variables in a document.

Properties

Property:	**R/O**	**Value type:**	**What it is:**
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this Variables object.

Methods

Method:	**Returns:**	**What it does:**
Index(item As **Variable**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Variable object	Returns an object reference to the object identified by itemKey.

View

A document view in an Illustrator document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Bounds	R/O	Variant Array (of 4 Singles)	The bounding rectangle of this View relative to the current document's bounds.
CenterPoint		Variant Array (of 2 Singles)	The center point of this View relative to the current document's bounds.
Parent	R/O	Document object	The document that contains this View.
ScreenMode		AiScreenMode enumeration	The mode of display for this View.
Zoom		Single	The zoom factor of this View, where 100.0 is 100%.

Notes

Illustrator's `View` object represents a window view onto a document. New views cannot be created, but some properties of existing views can be modified, including the center point, screen mode and zoom.

Example 66.1

This example illustrates how to set the first view of the frontmost document to full screen mode.

```
' Example of how to set the first view of the frontmost document to full screen
Private Sub SetViewToFullScreen_Click()
    Dim appRef As New Illustrator.Application
    appRef.Documents(1).Views(1).ScreenMode = aiFullScreen
End Sub
```

Views

A collection of views in a document.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this Views object.

Methods

Method:	Returns:	What it does:
Index(item As **View**)	Long	Returns the index position of the object within the collection.
item(itemKey)	View object	Returns an object reference to the object identified by itemKey.

See Example 66.1 for a sample script that uses `View`.

Word

A string of text in a TextArtItem that is separated by whitespace.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
AutoKerning		Boolean	Should a font's built-in kerning information be used?
BaselineShift		Single	Baseline offset of text.
Characters	R/O	Characters collection object	The characters contained in this word.
Clipping	R/O	Boolean	Is there a clipping path associated with the TextArtItem containing this word?
Contents		String (default property)	The text contained in the text range.
Direction		AiCharacterDirection enumeration	The orientation of the characters in a vertical text block.
Evenodd		Boolean	Should the even-odd rule be used to determine insideness?
FillColor		Color	Fill color of text
Filled		Boolean	Should the text be filled?
FillOverprint		Boolean	Should the art beneath the text be overprinted?
Font		String	The text face of the text.
Leading		Single	The vertical leading of the text.
Length	R/O	Long	The number of character in the text.
Note	R/O	String	The note associated with this text.
Offset	R/O	Long	Offset of selected text in text range (in characters).
Orientation	R/O	AiTextOrientation enumeration	The orientation of the text. Use the TextPath class to alter this property.
Paragraph	R/O	Paragraph object	The paragraph containing the character.

Property:	R/O	Value type:	What it is:
Parent	R/O	Document object	The document that contains this Word.
Resolution	R/O	Single	The resolution of the object (in dots per inch).
Scaling		Variant Array (of 2 Singles)	The character scaling supplied as a point with the first coordinate as horizontal scale and the second coordinate as vertical scale, where 100.0 is 100%.
Size		Single	Font size of text.
StrokeCap		AiStrokeCap enumeration	The type of line capping.
StrokeColor		Color object	The stroke color for the path.
Stroked		Boolean	Should the path be stroked?
StrokeDashes		Variant Array	Dash lengths. Set to an empty array for a solid line.
StrokeDashOffset		Single	The default distance into the dash pattern at which the pattern should be started.
StrokeJoin		AiStrokeJoin enumeration	Type of joints for the path.
StrokeMiterLimit		Single	Are joins mitered (pointed) or beveled (squared-off)?
StrokeOverprint		Boolean	Will art beneath a stroked object be overprinted?
StrokeWidth		Single	Width of stroke.
TextPath	R/O	TextPath object	A reference to the text path associated with the TextArtItem containing this text.
Tracking		Single	The spacing between multiple characters.

Methods

Method:	Returns:	What it does:
Copy	Nothing	Copies the text range to the clipboard. The associated document must be the frontmost document.
Cut	Nothing	Cuts the text range onto the clipboard. The associated document must be the frontmost document.
Paste	Nothing	Replaces text range with the contents of the clipboard.
TextRange([rangeStart As **Long**], [rangeEnd As **Long**])	TextRange object	Returns a text range object referencing a substring of the current text range, where rangeStart is the beginning character position and rangeEnd is the ending position. The first character position is one. If omitted, rangeStart defaults to 1. If omitted, rangeEnd defaults to the last character of the range.

Notes

`Word` gives you complete access to the individual words contained in text art objects in Illustrator.

Example 67.1

This example illustrates how to color every instance of the word “the.”

```
' Example of how to color certain words
Private Sub FindWord_Click()
    Dim appRef As New Illustrator.Application
    Dim textArt As Illustrator.TextArtItem
    Dim textArtRange As Illustrator.TextRange
    Dim textWord As Illustrator.Word
    Dim searchWord As String

     ' Create the color to apply to the words
    Dim wordColor As New Illustrator.RGBColor
    Dim newColor As New Illustrator.Color
    wordColor.Red = 255
    wordColor.Green = 0
    wordColor.Blue = 255
    newColor.RGB = wordColor

    ' Set the value of the word to look for
    searchWord = "the"

    ' Iterate through all words in the document and color the words that match searchWord
    For Each textArt In appRef.ActiveDocument.TextArtItems
        Set textArtRange = textArt.TextRange
        For Each textWord In textArtRange.Words
            If (textWord = searchWord) Then
                textWord.Filled = True
                textWord.FillColor = newColor
            End If
        Next
    Next
End Sub
```

Words

A collection of words.

Properties

Property:	R/O	Value type:	What it is:
Application	R/O	Application object	The Illustrator Application object.
Count	R/O	Long	The number of objects in the collection.
Parent	R/O	Document object	The document that contains this Words object.

Methods

Method:	Returns:	What it does:
Add	Word object	Add a Word to the contents of a TextArt object.
AddBefore	Word object	Add a Word to the beginning of a TextArt object
Index(item As **Word**)	Long	Returns the index position of the object within the collection.
item(itemKey)	Word object	Returns a reference to the object identified by itemKey.
Remove(item As **Word**)	Nothing	Deletes a Word from this collection.
RemoveAll	Nothing	Deletes all objects in this collection.

Example 68.1

This script displays the total number of words contained in all of the TextArtItems in the current document.

```
' This script counts all words in current document and returns the total
Private Sub CountWords_Click()
    Dim appRef As New Illustrator.Application
    Dim numWords As Long
    Dim textArt As Illustrator.TextArtItem
    Dim textArtRange As Illustrator.TextRange

    If appRef.Documents.Count > 0 Then
```

```
        numWords = 0
        For Each textArt In appRef.ActiveDocument.TextArtItems
            Set textArtRange = textArt.TextRange()
            numWords = numWords + textArtRange.TextLines.Count
        Next
        MsgBox ("There are " & numWords & " words in the document.")
    End If
End Sub
```

Enumerations reference

Enumeration type:	Values:	What it means:
AiBlendModes	aiColorBlend	The blend mode used when compositing an object.
	aiColorBurn	
	aiColorDodge	
	aiDarken	
	aiDifference	
	aiExclusion	
	aiHardLight	
	aiHue	
	aiLighten	
	aiLuminosity	
	aiMultiply	
	aiNormalBlend	
	aiNumeric	
	aiOverlay	
	aiSaturation	
	aiScreen	
	aiSoftLight	
AiCharacterDirection	aiKumiMoji	The orientation of the characters in a vertical text block.
	aiNormal	
	aiRotated	
AiColor	aiColorCMYK =1	The color specification for an individual color.
	aiColorGradient =6	
	aiColorGray = 2	
	aiColorNone = 0	
	aiColorPattern = 5	
	aiColorRGB =3	
	aiColorSpot =4	
AiColorDitherMethod	aiBlueNoise	The method used to dither colors in exported GIF and PNG8 images.
	aiDiffusion	
	aiNoReduction	
	aiPatternDither	
	aiWhiteNoise	

Enumeration type:	Values:	What it means:
AiColorReductionMethod	aiAdaptive	The method used to reduce the number of colors in exported GIF and PNG8 images.
	aiPerceptual	
	aiSelective	
	aiWeb	
AiCompatibility	aiIllustrator3	The version of the Illustrator file format to create when saving an EPS or Illustrator file.
	aiIllustrator4	
	aiIllustrator5	
	aiIllustrator6	
	aiIllustrator7	
	aiIllustrator8	
	aiIllustrator9	
AiCompressionQuality	aiAutomatic	The quality of bitmap compression used when saving a PDF file.
	aiJPEGHigh	
	aiJPEGLow	
	aiJPEGMaximum	
	aiJPEGMedium	
	aiJPEGMinimum	
	aiNoCompression	
	aiZIP4Bit	
	aiZIP8Bit	
AiCropOptions	aiCropJapanese	The style of a document's cropping box.
	aiCropStandard	
AiDocumentColorSpace	aiDocumentCMYKColor	The color space of a document.
	aiDocumentRGBColor	
AiDocumentType	aiEPS	The file format used to save a file.
	aiIllustrator	
	aiPDF	
AiEPSPreview	aiBWMacintosh	The preview image format used when saving an EPS file.
	aiBWTIFF	
	aiColorMacintosh	
	aiColorTIFF	
	aiNoPreview	
	aiTransparentColorTIFF	

Enumeration type:	Values:	What it means:
AiExportType	aiGIF	The file format used to export a file.
	aiJPEG	
	aiPhotoshop	
	aiPNG24	
	aiPNG8	
	aiSVG	
AiGradientType	aiLinearGradient	The type of the gradient, radial or linear.
	aiRadialGradient	
AiImageColorSpace	aiImageCMYK	The color space of a raster item or an exported Photoshop 5 file.
	aiImageGrayScale	
	aiImageRGB	
AiJustification	aiAllLines	The alignment or justification for a paragraph of text.
	aiCenter	
	aiFullLines	
	aiLeft	
	aiRight	
	aiUnknown	
AiKnockoutState	aiDisabled	The type of knockout to use on a PageItem.
	aiEnabled	
	aiInherited	
	aiKnockoutUnknown	
AiMonochromeCompression	aiCCIT3	The type of monochrome bitmap compression to use when saving a PDF.
	aiCCIT4	
	aiMonoZIP	
	aiNoMonoCompression	
	aiRunLength	
AiOutputFlattening	aiPreserveAppearance	How should transparency be flattened when saving EPS and Illustrator file formats with compatibility set to versions of Illustrator less than 9?
	aiPreservePaths	

Enumeration type:	Values:	What it means:
AiPageItemType	aiCompoundPathItem = 1	The type (class) of art object that is represented by a particular PageItem.
	aiGraphItem = 2	
	aiGroupItem =3	
	aiMeshItem = 4	
	aiPathItem = 5	
	aiPlacedItem = 6	
	aiPluginItem =7	
	aiRasterItem =8	
	aiSymbolItem = 9	
	aiTextArtItem = 10	
AiPathPointSelection	aiAnchorPoint	Which points, if any, of a path point are selected?
	aiLeftDirection	
	aiLeftRightPoint	
	aiNoSelection	
	aiRightDirection	
AiPDFCompatibility	aiAcrobat4	The version of the Acrobat file format to create when saving a PDF file.
	aiAcrobat5	
AiPointType	aiCorner	The type of path point, either a curve or a corner.
	aiSmooth	
AiPostScriptLevel	aiLevel1	Specifies the PostScript level to use when saving an EPS file.
	aiLevel2	
	aiLevel3	
AiRasterLinkState	aiDataFromFile	The status of a raster item’s linked image, if the image is stored externally.
	aiDataModified	
	aiNoData	
AiRulerUnits	aiUnitsCM	The default measurement units for the rulers in a document.
	aiUnitsInches	
	aiUnitsMM	
	aiUnitsPicas	
	aiUnitsPoints	
	aiUnitsQ	
	aiUnitsUnknown	

Enumeration type:	Values:	What it means:
AiSaveOptions	aiDoNotSaveChanges	Save options provided when closing a document.
	aiPromptToSaveChanges	
	aiSaveChanges	
AiScreenMode	aiDesktop	The mode of display for a view.
	aiFullScreen	
	aiMultiWindow	
AiStrokeCap	aiButtEndCap	The type of line capping for a path stroke.
	aiProjectingEndCap	
	aiRoundEndCap	
AiStrokeJoin	aiBevelEndJoin	The type of joints for a path stroke.
	aiMiterEndJoin	
	aiRoundEndJoin	
AiSVGCSSPropertyLocation	aiEntities	How should the CSS properties of the document be included in an exported SVG file?
	aiStyleAttributes	
	aiStyleElements	
AiSVGDocumentEncoding	aiASCII	How should the text in the document be encoded when exporting an SVG file?
	aiUTF16	
	aiUTF8	
AiSVGFontSubsetting	aiAllGlyphs	What font glyphs should be included in an exported SVG file?
	aiCommonEnglish	
	aiCommonRoman	
	aiGlyphsUsed	
	aiGlyphsUsedPlusEnglish	
	aiGlyphsUsedPlusRoman	
	aiNoFonts	
AiTabStopAlignment	aiCenterTab	The alignment of a tab stop.
	aiDecimalTab	
	aiLeftTab	
	aiRightTab	
	aiUnknownTab	
AiTextOrientation	aiHorizontal	The orientation of text in a TextArtItem.
	aiVertical	
AiTextType	aiAreaText	The type of text art displayed by this object.
	aiPathText	
	aiPointText	

Enumeration type:	Values:	What it means:
AiTransformation	aiTransformBottom	The point to use as the anchor point about which an object is rotated, resized or transformed.
	aiTransformBottomLeft	
	aiTransformBottomRight	
	aiTransformCenter	
	aiTransformDocumentOrigin	
	aiTransformLeft	
	aiTransformRight	
	aiTransformTop	
	aiTransformTopLeft	
	aiTransformTopRight	
AiVariableKind	aiGraph	The enumerated type of the kind of variable
	aiImage	
	aiTextual	
	aiUnknown	
	aiVisibility	
AiZOrderMethod	aiBringForward	The method used to arrange an art object’s position in the stacking order of its parent group or layer, as specified with the ZOrder method.
	aiBringToFront	
	aiSendBackward	
	aiSendToBack	

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Visual Basic

Microsoft Developers Network (MSDN) scripting website
msdn.microsoft.com/scripting