

# **OPENCMS DEVELOPMENT GUIDE**

## VERSION 8.5.1

This document provides basic items/ steps to understand Open CMS 8.5.1. Trainee should read document which provided by Alkacon. It will describe details of templates, modules, structured content, navigation, paging, etc.

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Sutrix Media (Vietnam) JSC.

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## 1. Signature

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## 2. Revision History

**\*A – Added, M – Modified, D - Deleted**

Version	Date	A*, M, D	Change Description	Author	Approved By
1.0	11.02.14	A	Create document	Binh Mai	

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## 4. Overview

This document provides **basic** items/ steps to understand Open CMS 8.5.1. Trainee should read document which provided by Alkacon. It will describe details of [templates](#), [modules](#), [structured content](#), [navigation](#), [paging](#), etc.

We also describe steps to synchronize [Eclipse with Open CMS](#).

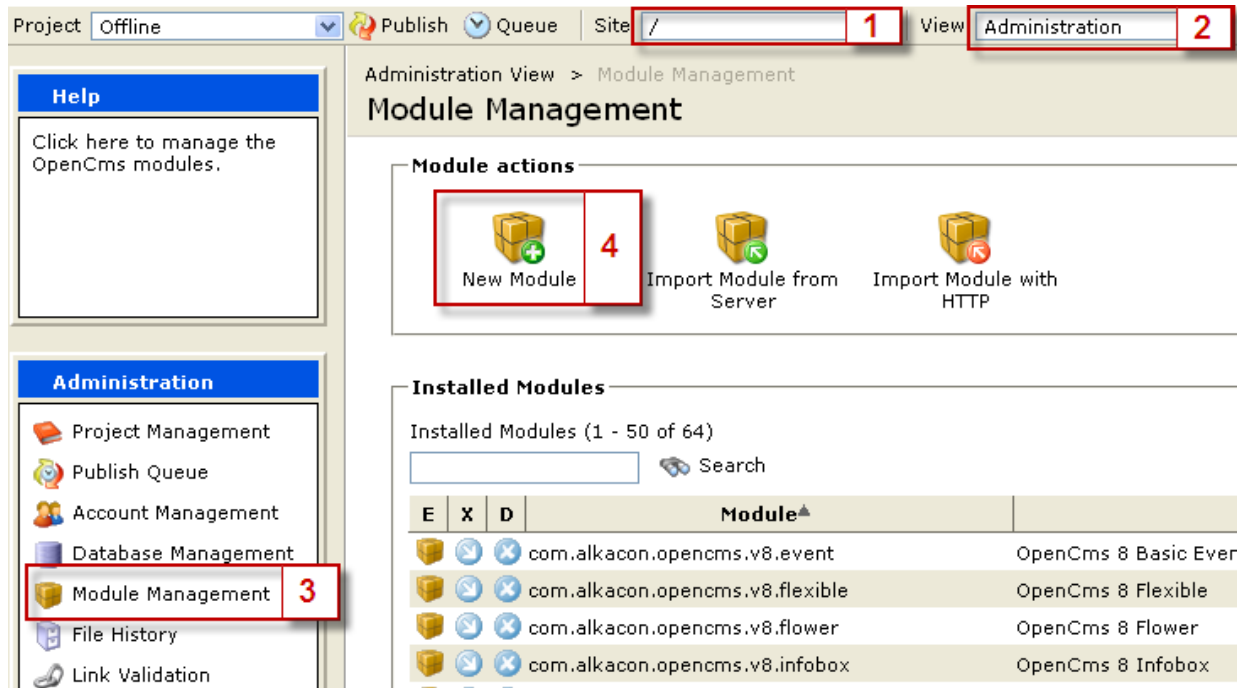


## 5. Module

### 5.1. Create Module

Create a module and give it a proper name (e.g. my.first.template)

In the OpenCms workplace, switch to the Administration view and select "Module Management". In the "Module Management", please click on "New Module". As package name enter "my.first.template" and as module name "My First Template". In the section Module folders check all the checkboxes (important: template JSPs must be placed in the template folder)



The screenshot shows the OpenCms Administration interface. At the top, there are navigation elements: 'Project Offline', 'Publish', 'Queue', 'Site /' (highlighted with a red box and '1'), and 'View Administration' (highlighted with a red box and '2'). The main content area is titled 'Administration View > Module Management' and 'Module Management'. Under 'Module actions', there are three buttons: 'New Module' (highlighted with a red box and '4'), 'Import Module from Server', and 'Import Module with HTTP'. On the left sidebar, under the 'Administration' section, 'Module Management' is highlighted with a red box and '3'. Below the sidebar, the 'Installed Modules' section shows a table of installed modules.

E	X	D	Module▲	
			com.alkacon.opencms.v8.event	OpenCms 8 Basic Ever
			com.alkacon.opencms.v8.flexible	OpenCms 8 Flexible
			com.alkacon.opencms.v8.flower	OpenCms 8 Flower
			com.alkacon.opencms.v8.infobox	OpenCms 8 Infobox

Administration View > Module Management > New Module

## New Module ↑ Up

**Module information**

Package name:

Module name:

Module description:

Module version:

Module group:

Action class:

**Author information**

Author name:

Author email:

**Module folders**

Create Modulefolder:

Create templates subfolder:

Create elements subfolder:

Create formatters subfolders:

Create resources subfolder:

Create schemas subfolder:

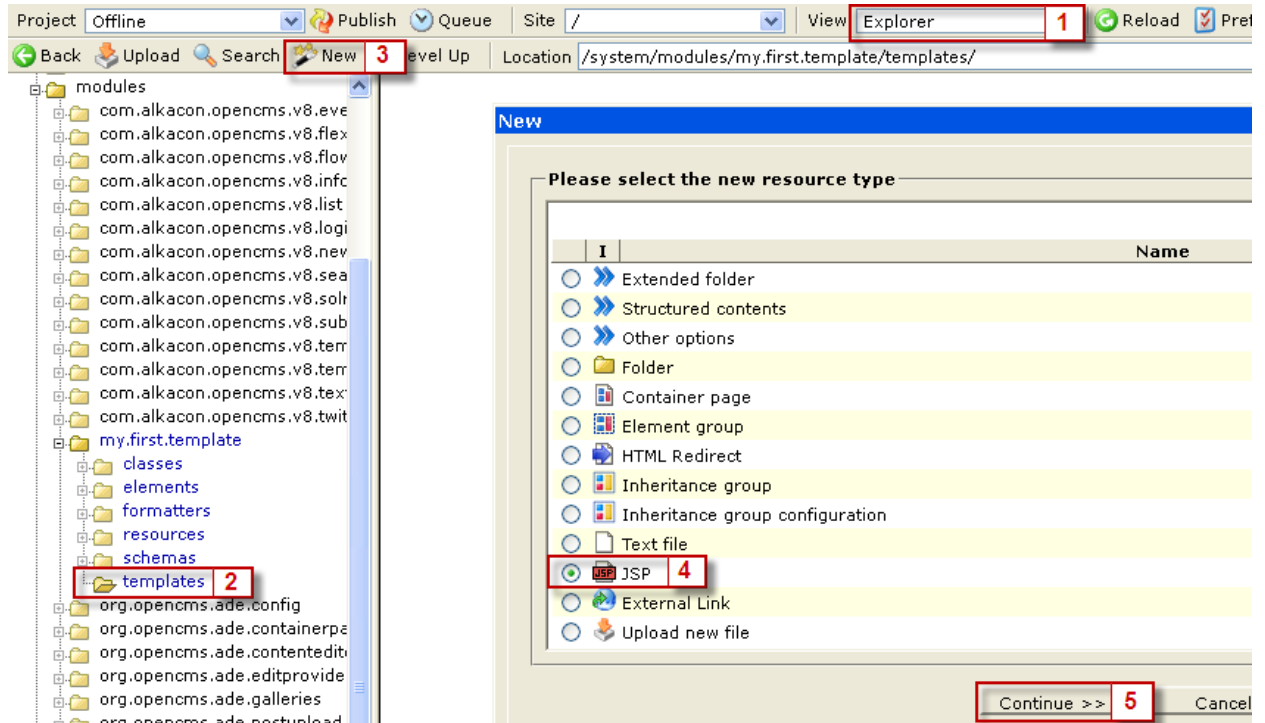
Create classes subfolder:

Click OK to create the module with these settings.

## 5.2. Create JSP file

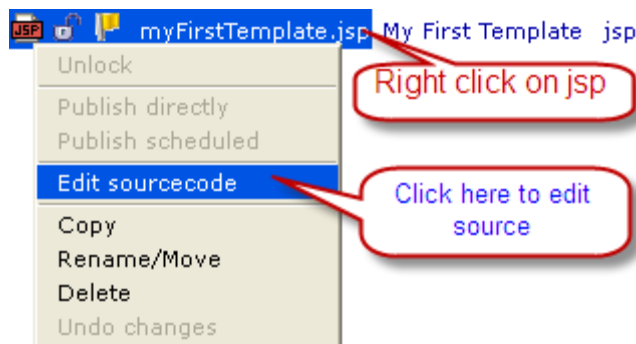
Switch back to the Explorer view and go to the folder

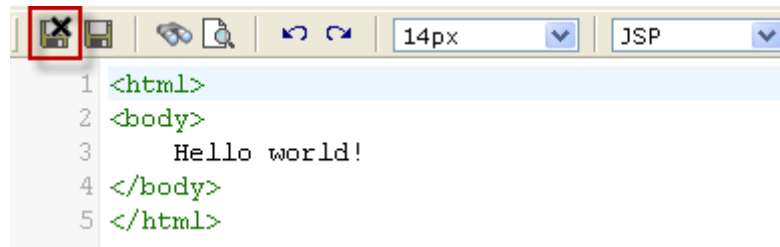
"/system/modules/my.first.template/templates/" and select "New" from the toolbar. In the opening dialog select "JSP".



In the following window name the file "myFirstTemplate.jsp" and if you want to edit the properties give it a proper title like "My First Template".

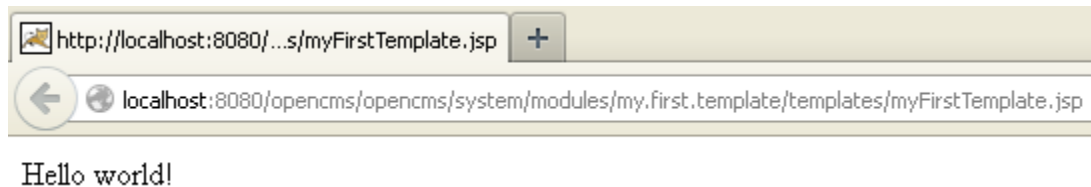
**Edit JSP content:**





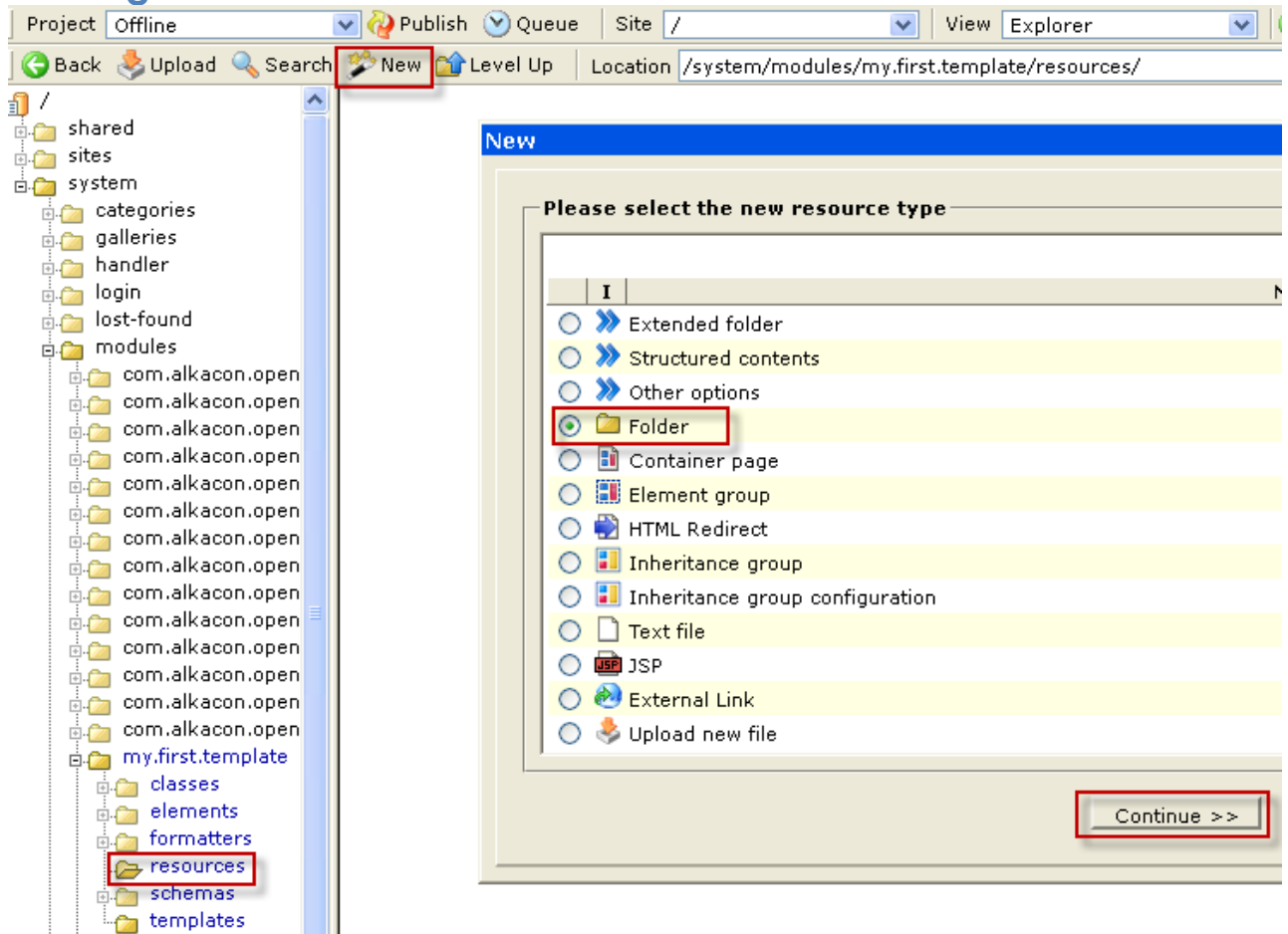
```
1 <html>
2 <body>
3     Hello world!
4 </body>
5 </html>
```

Double click on "myFirstTemplate.jsp" to see result



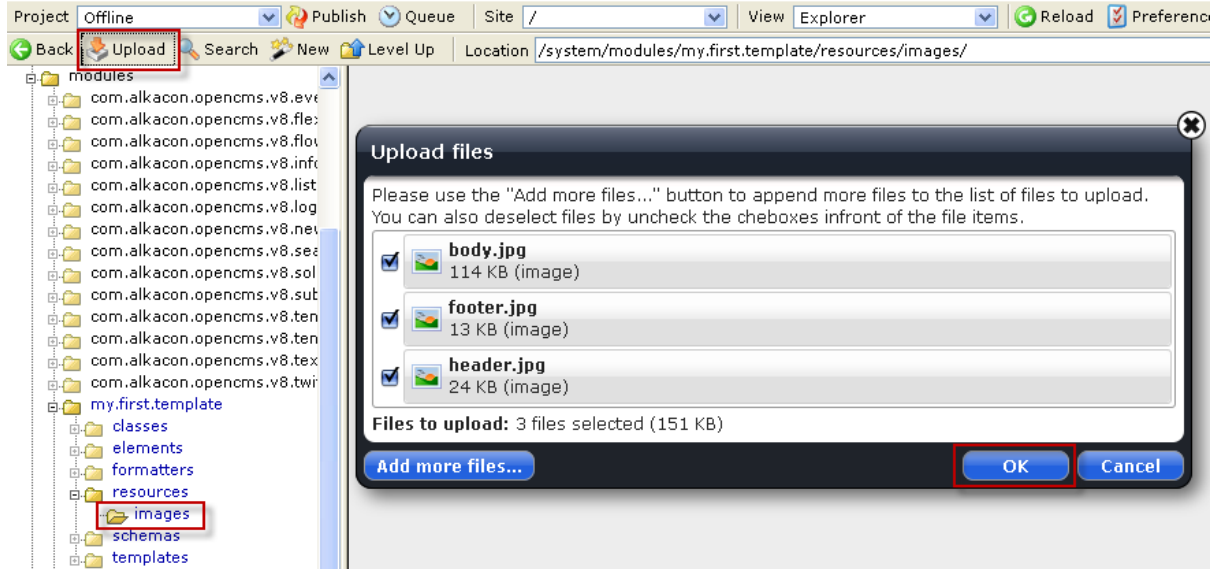
## 6. Resource

### 6.1. Image



In the following dialog enter the folder name "images" and click "Finish".

After you created the "images" folder click on the "Upload" icon from the toolbar and in the opening multiple file upload dialog select the header, body and footer parts from your local system. Click OK.



In the “**myFirstTemplate.jsp**”, please replace current content with text below. Then, click on it and see result in browser.

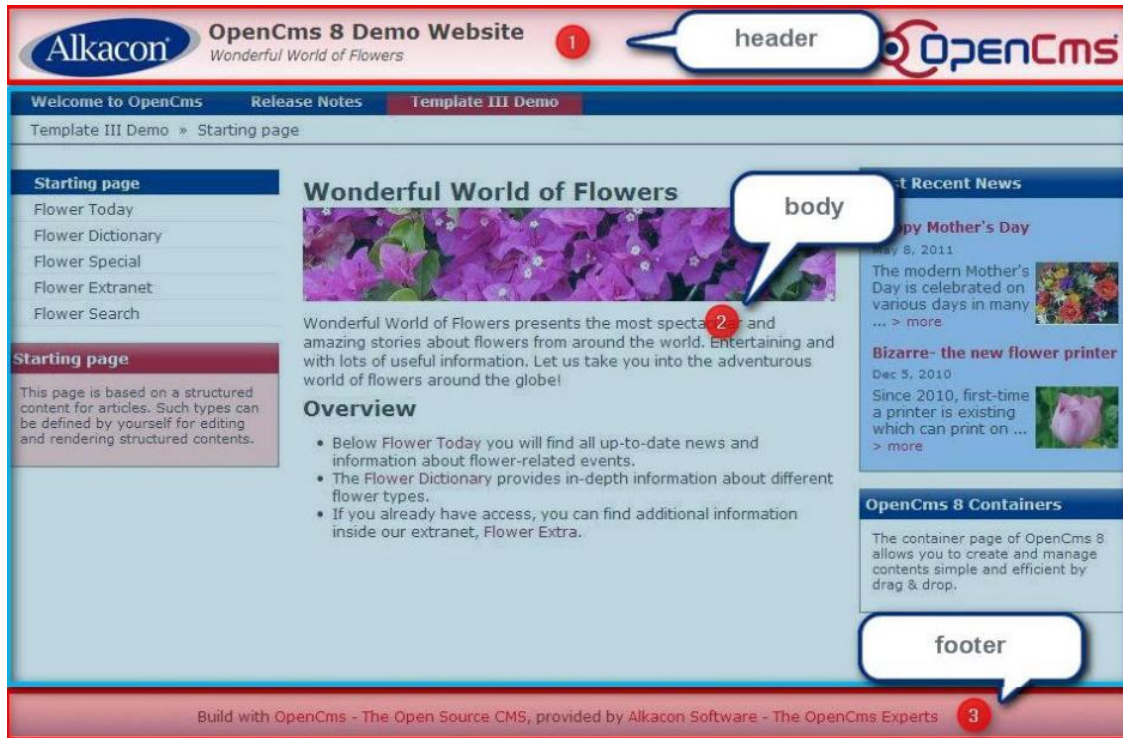
```

<html>
  <head>
    <title>Wonderful World of Flowers
  </title>
</head>
<body>
  <center>
    <div>
      
    </div>
    <div>
      
    </div>
    <div>
      
    </div>
  </center>
</body>

```

</html>

**Preview:**



## 7. Template Creation

### 7.1. Create a simple template

To make this static HTML file a simple template there is only a few steps:

Open your template file (**myFirstTemplate.jsp**) and copy & paste the following code

```
<%@page taglibs="c.cms.fn" %>
<html>
<head>
    <title><cms:info property="opencms.title" /></title>
    <cms:enable-ade />
</head>
<body>
    <div id="header">
```

```

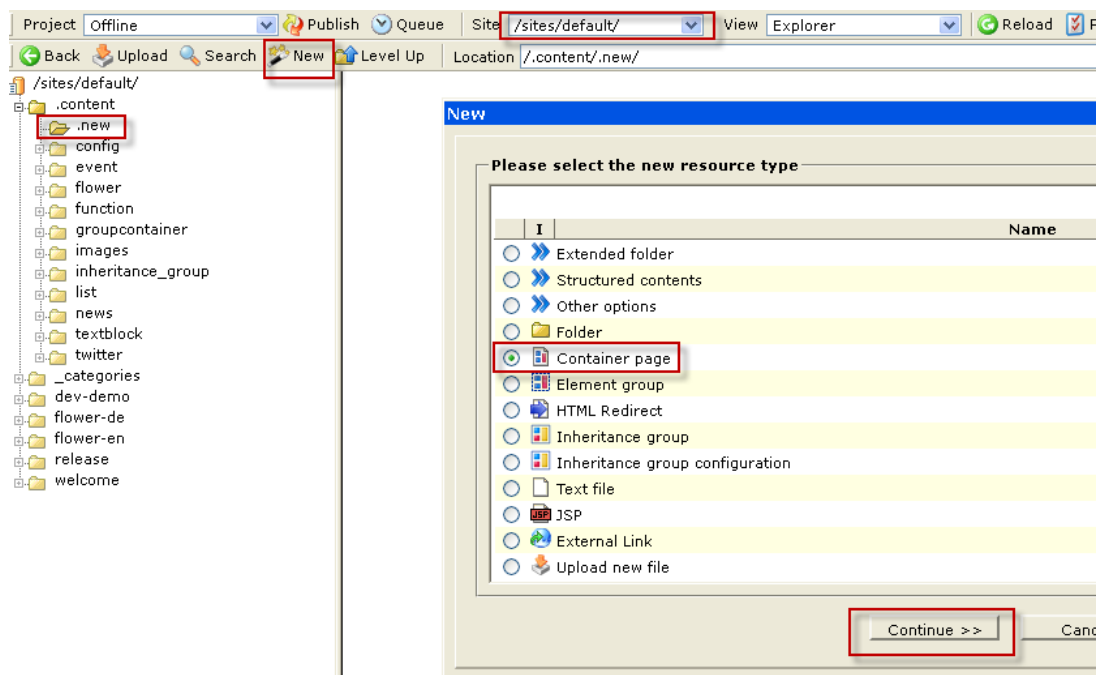
        <cms:container name="headercontainer" type="header" />
    </div>
    <div>
        
    </div>
    <div id="footer">
        <cms:container name="footercontainer" type="footer" />
    </div>
</body>
</html>

```

## 7.2. Model page

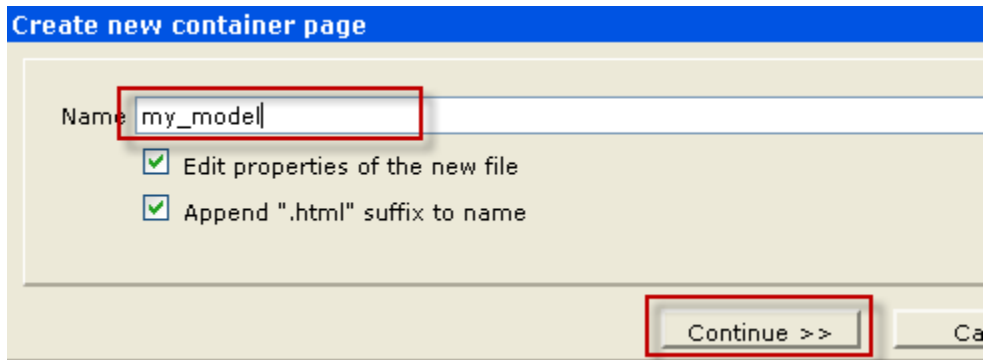
To test the template, switch to /sites/default/ and create a new model page. To do so, go to the folder /.content/.new/ and create a new "container page" by clicking the "New" icon in the toolbar and select "Container page" in the "New" dialog

- **Step 01:** Select as picture and click on button "Continue >>"



- **Step 02:** Enter "Name" and click on button "Continue >>"





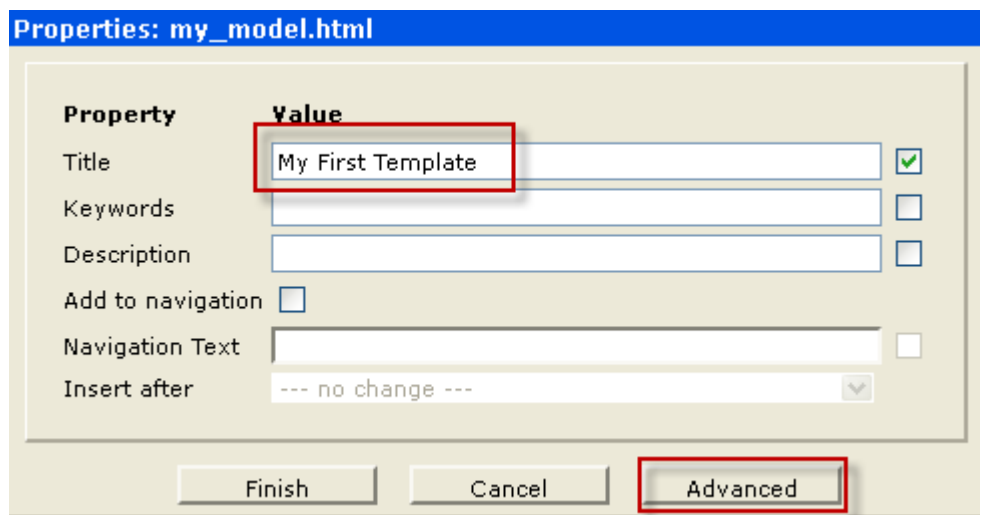
**Create new container page**

Name

Edit properties of the new file

Append ".html" suffix to name

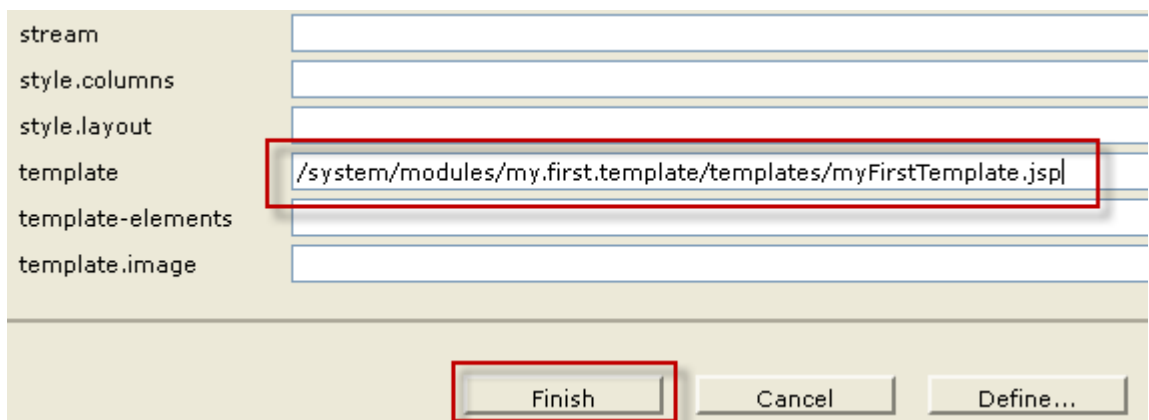
- **Step 03:** Enter "page title" and click on button "Advanced"



**Properties: my\_model.html**

Property	Value	
Title	<input type="text" value="My First Template"/>	<input checked="" type="checkbox"/>
Keywords	<input type="text"/>	<input type="checkbox"/>
Description	<input type="text"/>	<input type="checkbox"/>
Add to navigation	<input type="checkbox"/>	
Navigation Text	<input type="text"/>	<input type="checkbox"/>
Insert after	--- no change ---	<input type="button" value="v"/>

- **Step 04:** Enter "template path (/system/modules/my.first.template/templates/myFirstTemplate.jsp)" and click on button "Finish"



stream

style.columns

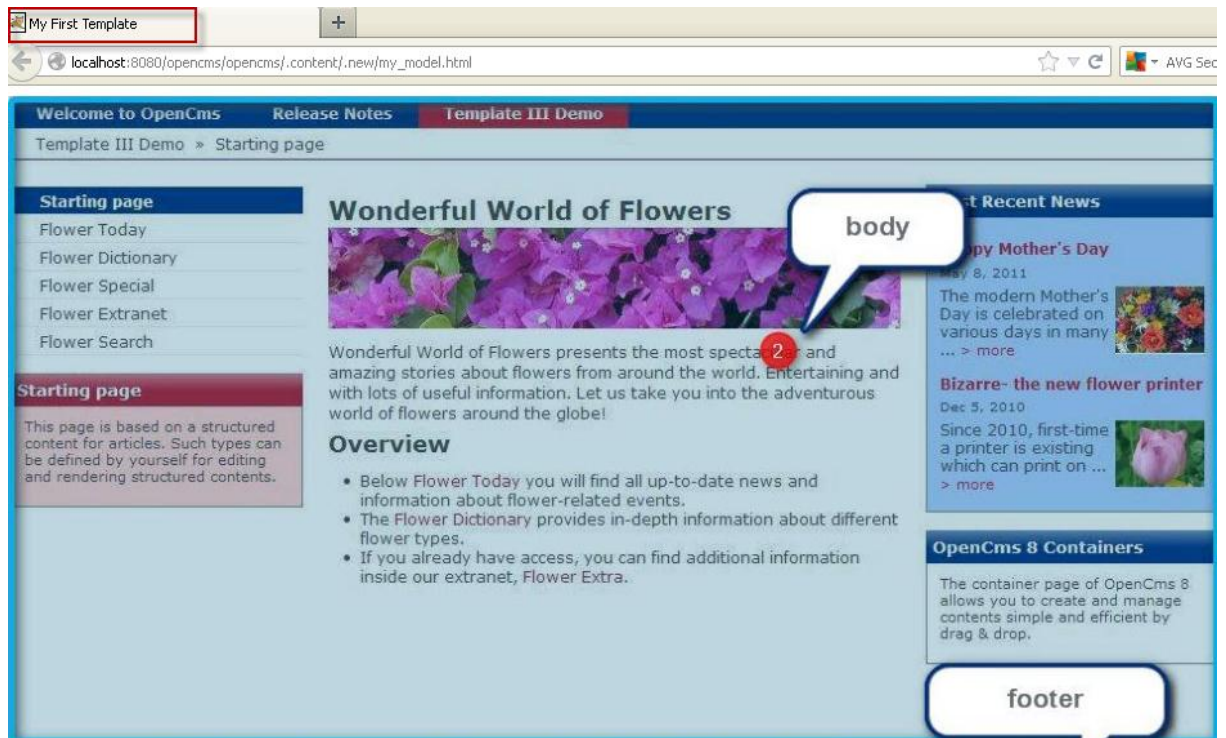
style.layout

template

template-elements

template.image

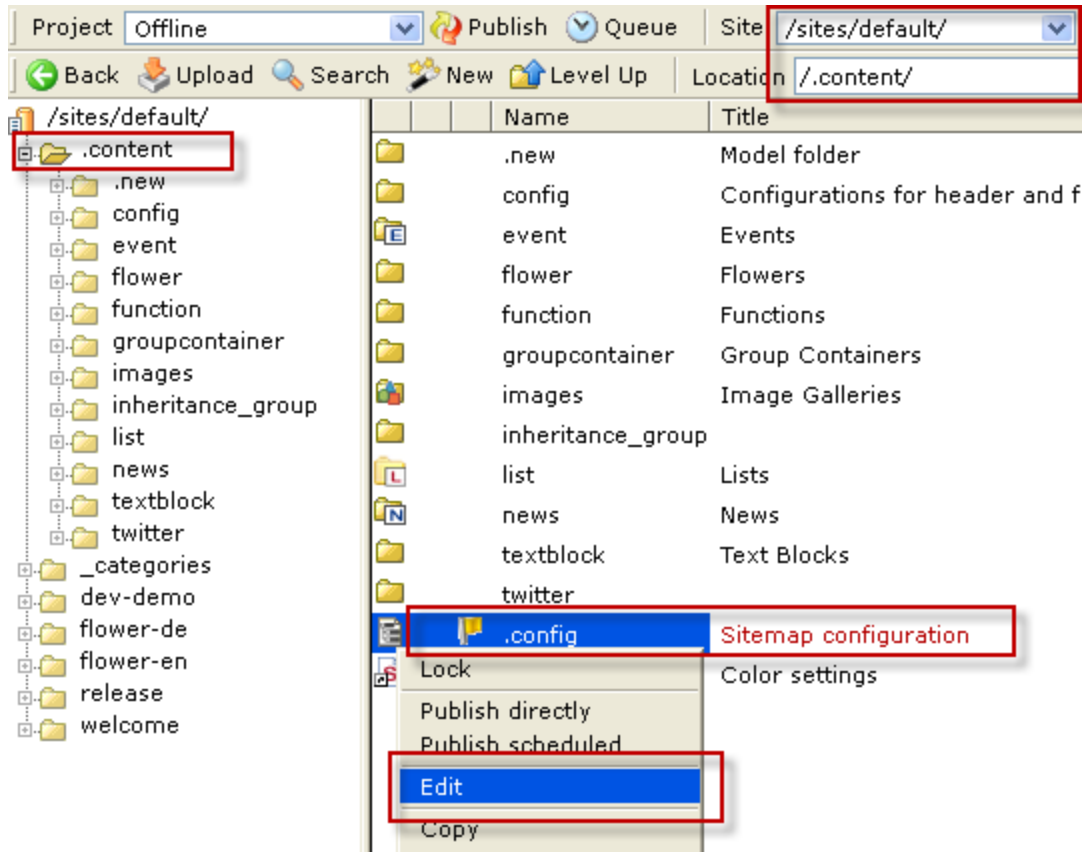
- **Preview:** Then, check it on your browser



### 7.3. Sitemap configuration

Now edit the sitemap configuration by opening the file `/.content/.config` and go to the tab "Page models". Here add a new page model and choose your new model page from the widget opening when the folder icon is clicked.

- **Step 01:** Right click on `/.config`. Then, select "Edit" on menu



- **Step 2:** Select tab “Model pages”. Click on “add” icon on the last model page and enter your path as picture below

Resource types **Model pages** Property configuration Detail pages

Disable all +

**Model** ✂ +

Page  
/.content/.new/default.html

▶ **Default page**  
Admin / Sep 12, 2012 7:51:21 PM

Disabled

Use as default

**Model** ✂ +

Page  
/.content/.new/twocolumn.html

▶ **Two column page**  
Admin / Aug 18, 2012 7:31:27 PM

Disabled

Use as default

**Model** ✂ +

Page  
/.content/.new/blank.html

▶ **Blank page**  
Admin / Aug 18, 2012 7:19:17 PM

Disabled

Use as default

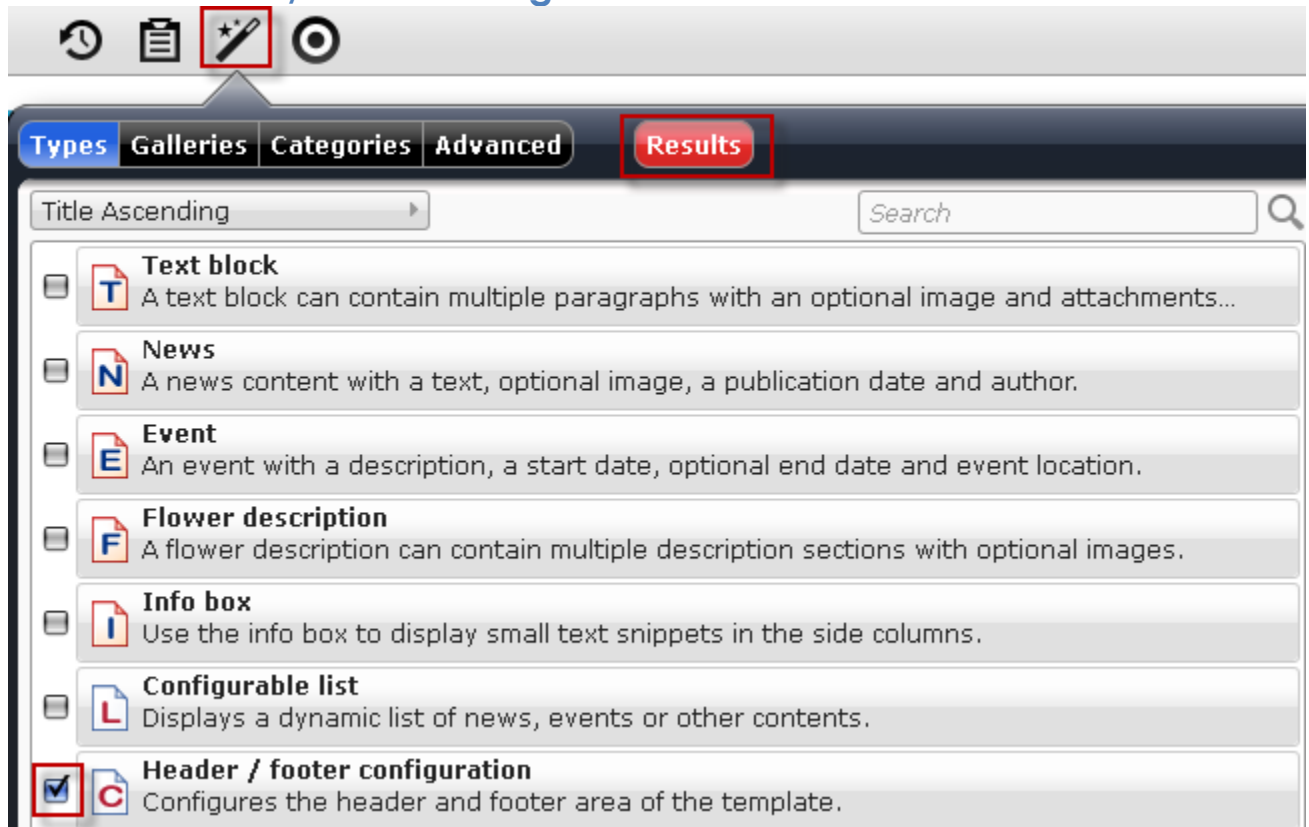
**Model** ✂ +

Page  
/.content/.new/my\_model.html

▶ **My First Template**  
Admin / Mar 14, 2013 11:33:24 AM

Disabled

## 7.4. Add Header / Footer configuration



## 7.5. Styling

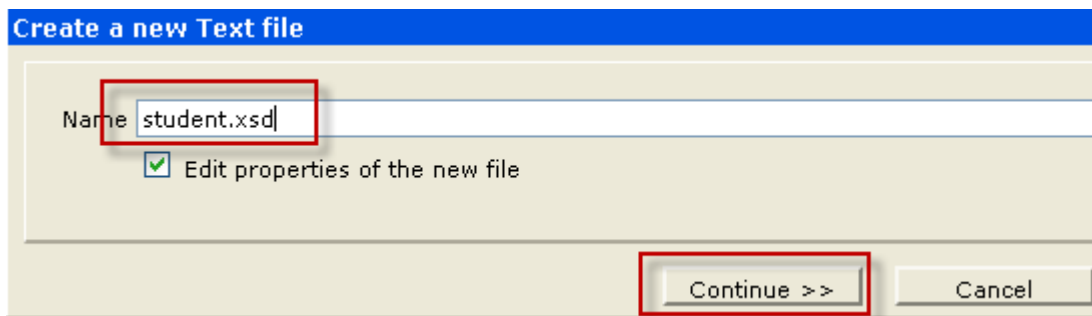
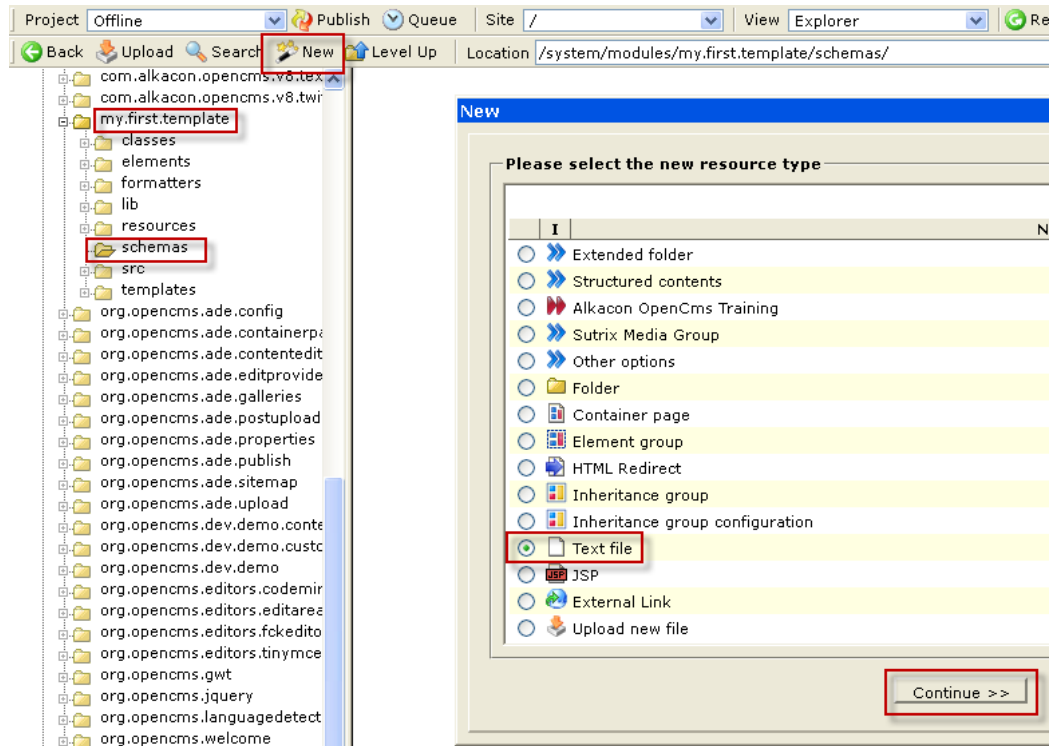
# 8. Structure Content

## 8.1. Overview

The structure content is the same component in CQ5. In CQ5, we will define properties / fields in a XML file; it's called dialog. In Open CMS, we will define properties/fields in a XSD, it is called schema. After you finished all steps of item **#4**, you have to **restart your Tomcat**.

## 8.2. Schema

- First, we will create a XSD file, named "student.xsd" as below



- You can use an example below if needed

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified">
    <xsd:include schemaLocation="opencms://opencms-xmlcontent.xsd"/>
    <!-- <xsd:include
schemaLocation="opencms:/system/modules/my.first.template/schemas/student.xsd" /> -->
    <xsd:element name="AlkaconStudentInfos" type="OpenCmsAlkaconStudentInfos"/>
    <xsd:complexType name="OpenCmsAlkaconStudentInfos">
        <xsd:sequence>
            <xsd:element name="AlkaconStudentInfo"
```

```

type="OpenCmsAlkaconStudentInfo" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="OpenCmsAlkaconStudentInfo">
  <xsd:sequence>
    <xsd:element name="Username" type="OpenCmsString" />
    <xsd:element name="Description" type="OpenCmsHtml" />
    <xsd:element name="Salary" type="OpenCmsString" />
    <xsd:element name="ContactEmail" type="OpenCmsString" />
    <xsd:element name="Address" type="OpenCmsHtml" />
    <xsd:element name="Logo" type="OpenCmsVfsFile" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="language" type="OpenCmsLocale" use="required"/>
</xsd:complexType>

<xsd:annotation>
  <xsd:appinfo>
    <resourcebundles>
      <xmlbundle name="my.first.template.workplace.xml">
        <bundle locale="en">
          <resource
key="student.setting.boxschema">Color schema</resource>
          <resource
key="student.setting.imgalign">Alignment</resource>
          <resource
key="student.setting.imgalign.leff">Left</resource>
          <resource
key="student.setting.imgalign.right">Right</resource>
          <resource key="err.notempty">Salary is
incorrect</resource>
        </bundle>
        <bundle locale="de">
          <resource
key="student.setting.boxschema">Color schema</resource>
          <resource
key="student.setting.imgalign">Alignment</resource>
          <resource
key="student.setting.imgalign.leff">Left</resource>
          <resource
key="student.setting.imgalign.right">Right</resource>
          <resource key="err.notempty">Salary is
incorrect</resource>
        </bundle>
      </xmlbundle>
    </resourcebundles>
    <defaults>
      <default element="Username"
value="%[currentuser.fullname]" />
    </defaults>
    <layouts>
      <layout element="Description" widget="HtmlWidget"
configuration="source, link, anchor, formatselect, imagegallery" />
      <layout element="Logo" widget="ImageGalleryWidget" />
    </layouts>
  </appinfo>
</annotation>

```

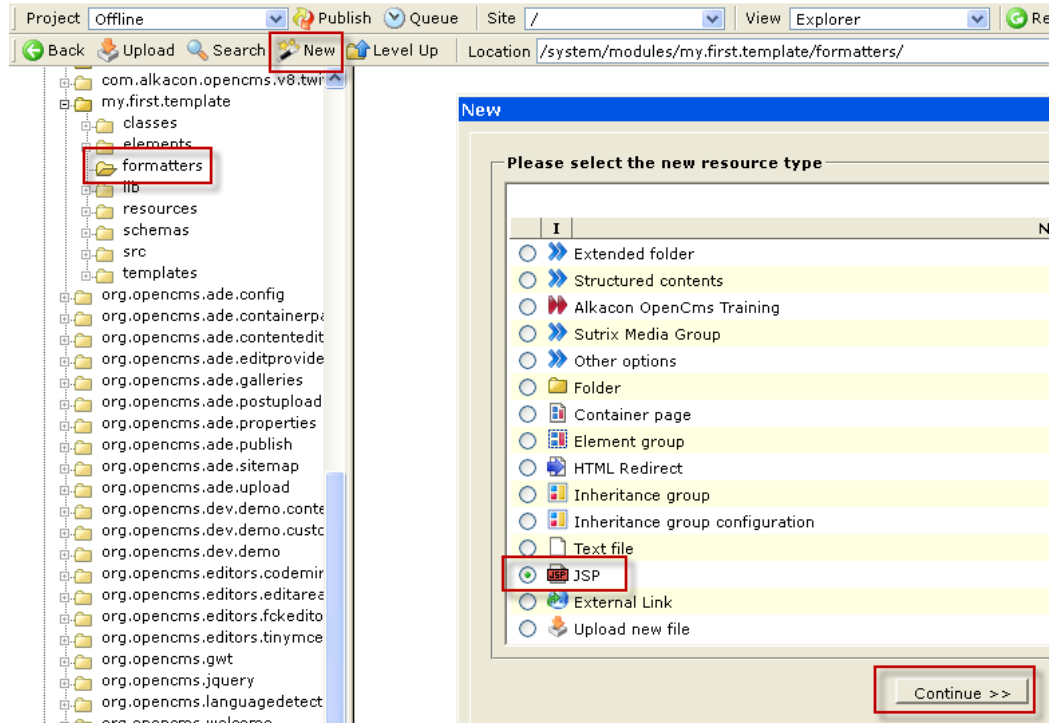
```
</layouts>
< mappings>
  < mapping element="Username" mapto="property:Title" />
</ mappings>
< formatters>
  < formatter minwidth="200"
uri="/system/modules/my.first.template/formatters/student.jsp" searchcontent="true" />
</ formatters>
< settings>
  < setting name="boxschema" nice-
name="%{key.student.setting.boxschema}" default="box_schema3" type="string"
widget="select" widget-config="box_schema3:Schema White | box_schema1:Schema
Blue | box_schema2:Schema Red" />
  < setting name="imgalign" nice-
name="%{key.student.setting.imgalign}" type="string" widget="select" widget-
config="left:%{key.student.setting.imgalign.left} | right:%{key.student.setting.imgalign.right}" />
</ settings>
< validationrules>
  < rule element="Salary" regex=".+" type="error"
message="%{key.err.notempty} %{validation.path}" />
</ validationrules>
</xsd:appinfo>
</xsd:annotation>
</xsd:schema>
```

### 8.3. Formatter

To display contain of structure content, we have to add a formatter to generate it.

- First, create a JSP from workplace, named "student.jsp".





- Then, you write content of JSP to generate data. You can use example below if needed

```

<%@ page session="false" %>
<%@ taglib prefix="cms" uri="http://www.opencms.org/taglib/cms" %>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
<%@ taglib prefix="fmt" uri="http://java.sun.com/jsp/jstl/fmt" %>

<cms:formatter var="content" val="value">
<div class="box ${cms.element.settings.boxschema}" style="padding: 20px;">
  <h1>Student Information</h1>
  <table cellpadding="5" cellspacing="1" border="0" bgcolor="#777" width="550"
  style="border: 0px!important;">
    <tr bgcolor="#fff" style="height: 22px;">
      <td width="120">Username</td>
      <td>${content.value.Username}</td>
    </tr>
    <tr bgcolor="#efef" style="height: 22px;">
      <td>Description</td>
      <td>${content.value.Description}</td>
    </tr>
    <tr bgcolor="#fff" style="height: 22px;">
      <td>Salary</td>
      <td>${content.value.Salary}</td>
    </tr>
    <tr bgcolor="#efef" style="height: 22px;">
      <td>ContactEmail</td>
      <td>${content.value.ContactEmail}</td>
    </tr>
  </table>
</div>
  
```

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```
<tr bgcolor="#fff" style="height: 22px;">
  <td>Address</td>
  <td>${content.value.Address}</td>
</tr>
<tr bgcolor="#fff" style="height: 22px;">
  <td colspan="2" align="<cms:elementsetting name="imgalign"
default="left" />">
  <c:if test="${not empty content.value.Logo}">
    
  </c:if>&nbsp;
  </td>
</tr>
</table>
</div>
</cms:formatter>
```

- How to configure formatter?

In Schema file (student.xsd), you can see a tag “<formatters></formatters>”. That is where you can configure your JSP file. Example:

```
<formatters>
  <formatter minwidth="200"
uri="/system/modules/my.first.template/formatters/student.jsp" searchcontent="true" />
</formatters>
```

## 8.4. Settings

It is the same “dialog\_design” in CQ5. You can add more settings into structure content (schema). Example:

```
<settings>
  <setting name="boxschema" nice-name="%{key.student.setting.boxschema}"
default="box_schema3" type="string" widget="select" widget-config="box_schema3:Schema
White | box_schema1:Schema Blue | box_schema2:Schema Red" />
  <setting name="imgalign" nice-name="%{key.student.setting.imgalign}" type="string"
widget="select" widget-
config="left:%{key.student.setting.imgalign.left} | right:%{key.student.setting.imgalign.right}" />
</settings>
```

### 8.4.1. Localization - Bundles

It's used to localize labels/values of settings.

- Bundle: we can add any message key into schema.

Example:

```
<resourcebundles>
  <xmlbundle name="my.first.template.workplace.xml">
    <bundle locale="en">
      <resource key="student.setting.boxschema">Color
```

Confidential document

```

schema</resource>
    <resource key="student.setting.imgalign">Alignment</resource>
    <resource key="student.setting.imgalign.left">Left</resource>
    <resource key="student.setting.imgalign.right">Right</resource>
    <resource key="err.notempty">Salary is incorrect</resource>
  </bundle>
  <bundle locale="de">
    <resource key="student.setting.boxschema">Color
schema</resource>
    <resource key="student.setting.imgalign">Alignment</resource>
    <resource key="student.setting.imgalign.left">Left</resource>
    <resource key="student.setting.imgalign.right">Right</resource>
    <resource key="err.notempty">Salary is incorrect</resource>
  </bundle>
</xmlbundle>
</resourcebundles>

```

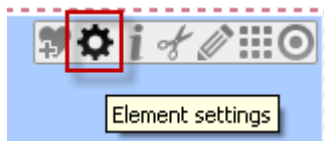
- Use it in tag <settings>: you can use it with pattern %(key.[YOUR MESSAGE KEY]).  
Example:

```

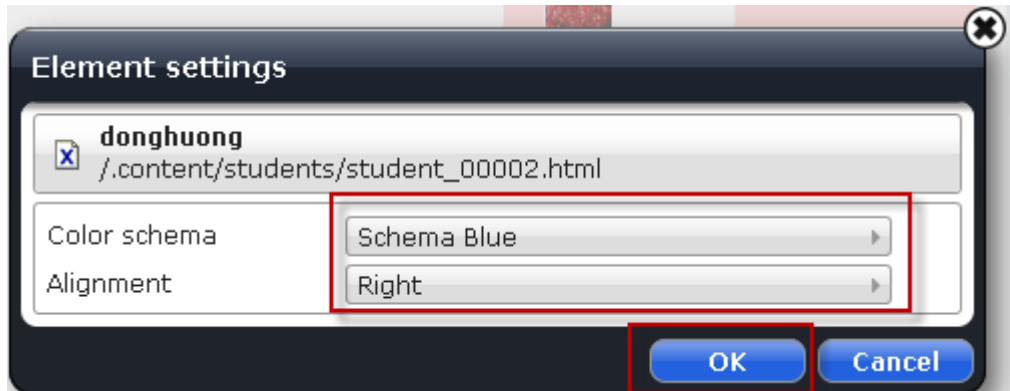
<setting name="boxschema" nice-name="%(key.student.setting.boxschema)"
default="box_schema3" type="string" widget="select" widget-
config="box_schema3:Schema White | box_schema1:Schema Blue | box_schema2:Schema
Red" />

```

- View in browser: In your browser
  - Click on setting icon as below



- Select your "Color and Alignment":



- Result:

### Student Information

Username	donghuong
Description	desc
Salary	1
ContactEmail	donghuong@gmail.com
Address	123



## 8.5. Module Configuration

After you created schema, formatter completely, you have to configure it in Open CMS to enable that schema.

- First, open file {TOMCAT\_HOME}/webapps/opencms/WEB-INF/config/opencms-modules.xml
- Then, modify your module. In this case, we will modify module my.first.template

```
<module>
  <name>my.first.template</name>
  <nickname><![CDATA[My First Template]]></nickname>
  <class/>
  <description><![CDATA[My First Template Description]]></description>
  <version>1.1</version>
  <authorname><![CDATA[Admin]]></authorname>
  <authoremail><![CDATA[donghuong@gmail.com]]></authoremail>
  <datecreated/>
  <userinstalled/>
  <dateinstalled/>
  <dependencies/>
  <exportpoints>
    <exportpoint uri="/system/modules/my.first.template/classes/"
```

**Confidential document**

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```
destination="WEB-INF/classes/">
  </exportpoints>
  <resources>
    <resource uri="/system/modules/my.first.template/">
  </resources>
  <parameters/>
  <resourcetypes>
    <type          class="org.opencms.file.types.CmsResourceTypeXmlContent"
name="student" id="1901">
      <properties>
        <property>
          <name>template-elements</name>
          <value><![CDATA[/system/modules/my.first.template/formatters/student.jsp]]></v
alue>
        </property>
      </properties>
      <param
name="schema">/system/modules/my.first.template/schemas/student.xsd</param>
    </type>
  </resourcetypes>
  <explorertypes>
    <explorertype          name="sutrixmedia"          key="fileicon.sutrixmedia"
icon="aculaicon.png" reference="xmlcontent">
      <newresource          uri="newresource.jsp?page=sutrixmedia"          order="11"
autosetnavigation="false" autosettitle="false" info="desc.sutrixmedia"/>
      <accesscontrol>
        <accessentry          principal="ROLE.WORKPLACE_USER"
permissions="+r+v+w+c"/>
      </accesscontrol>
    </explorertype>
    <explorertype          name="student"          key="fileicon.student"          icon="xmlcontent.gif"
reference="xmlcontent">
      <newresource          uri="newresource_xmlcontent.jsp?newresourcetype=student"          page="sutrixmedia"
order="70"
autosetnavigation="false" autosettitle="false" info="desc.student"/>
    </explorertype>
  </explorertypes>
</resources>
</exportpoints>
</type>
```

```

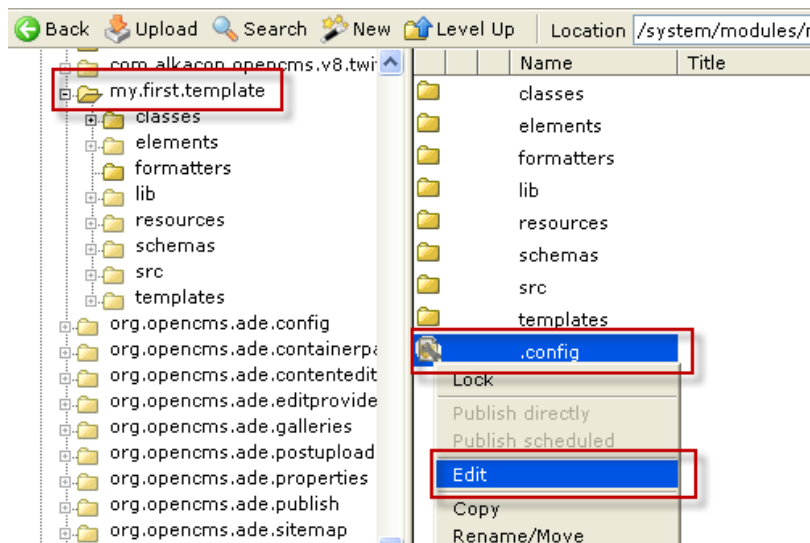
        <accesscontrol>
            <accessentry          principal="ROLE.WORKPLACE_USER"
permissions="+r+v+w+c"/>
        </accesscontrol>
    </explorertype>
</explorertypes>
</module>
    
```

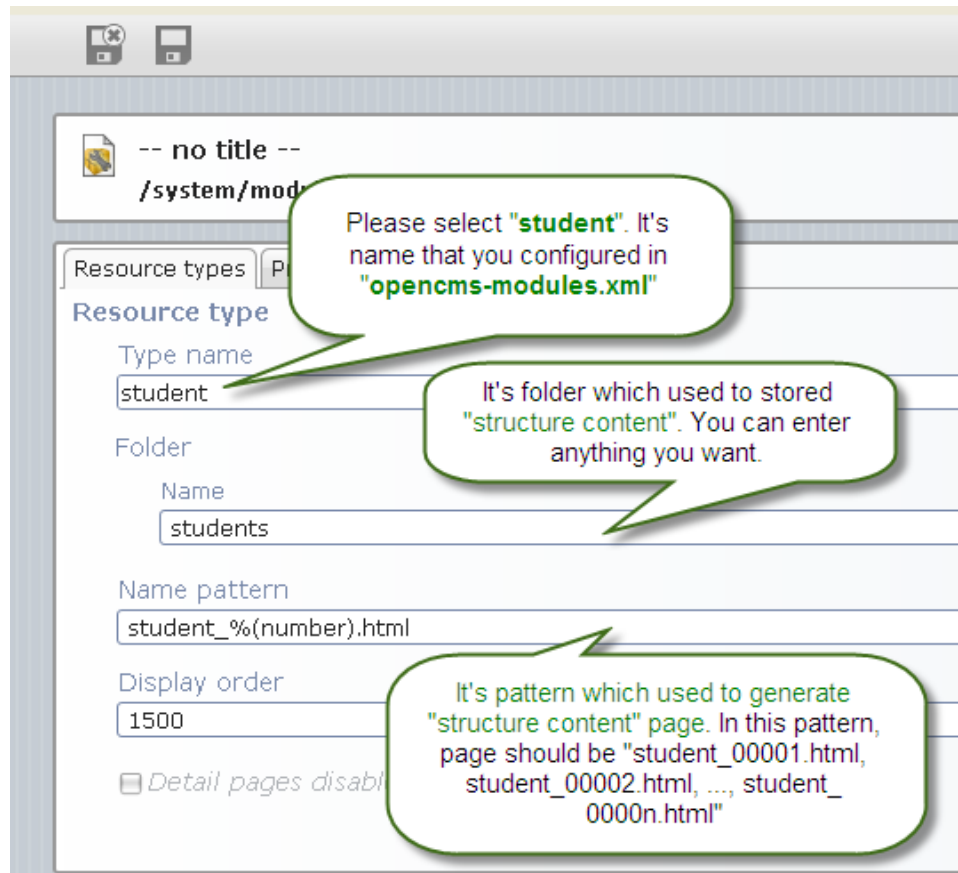
- Description:
  - Page="sutrixmedia": It's a group of structure content. If you don't want to create another group, you can use "structurecontent", or any group you have.
  - Page="student": It's a new structure content. This name will be use in file ".config" in your module. We will see it in next section

### 8.6. Configure file ".config"

If your module doesn't have file ".config", you can copy it from another module to your module

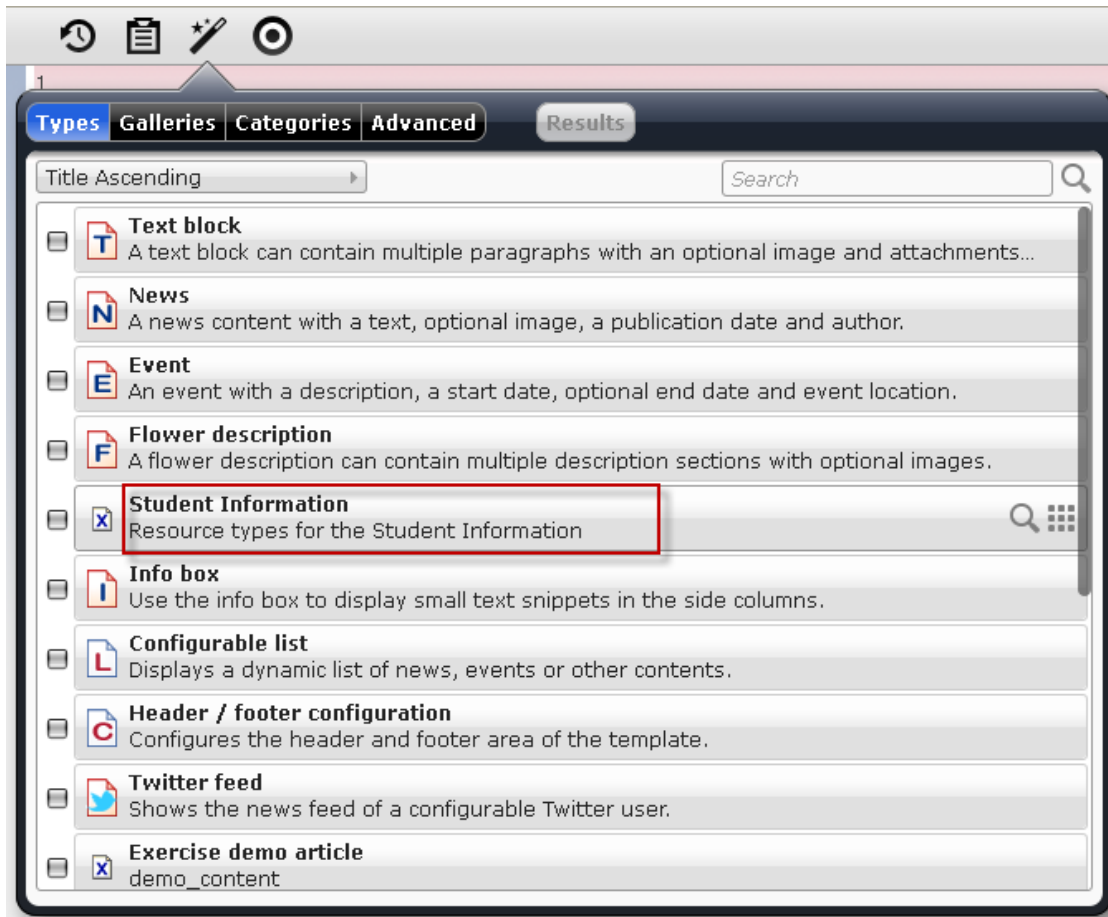
- Right click on file ".config"
- Select "Edit" in menu





### 8.7. Result

After you finish item #4, #5, you will see it in browser as below:



## Student Information

Username	123
Description	
Salary	2
ContactEmail	
Address	

### 8.8. Display structure content in other places

[http://arquivo.bng-galiza.org/opencms/opencms/alkacon-documentation/documentation\\_taglib/docu\\_tag\\_contentload.html](http://arquivo.bng-galiza.org/opencms/opencms/alkacon-documentation/documentation_taglib/docu_tag_contentload.html)

```
<cms:contentload collector="allInFolder"
param="/.content/demo_new_component/demo_new_component_%(number).html|demo_new_component|5"><cms:contentshow
element="Username"/></cms:contentload>
```



## 8.9. Nested Structure Content

It allows us to use / include structure content into existing structure content.

- First, we have to include structure content as below

```
<xsd:include
schemaLocation="opencms://system/modules/com.carlsonwagonlit.jobandcareers/sche
mas/jc-standard-picture.xsd" />
```

- Then, we will use it in property type as below

```
<xsd:element name="mediaContent" type="OpenCmsAlkaconJcStandardPictureInfo"
minOccurs="1" maxOccurs="unbounded" />
```

- Example

```
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">

  <xsd:include schemaLocation="opencms://opencms-xmlcontent.xsd"/>

  <xsd:element name="AlkaconJcStandardPictureInfos"
type="OpenCmsAlkaconJcStandardPictureInfos"/>

  <xsd:complexType name="OpenCmsAlkaconJcStandardPictureInfos">
    <xsd:sequence>
      <xsd:element name="AlkaconJcStandardPictureInfo"
type="OpenCmsAlkaconJcStandardPictureInfo" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>

  <xsd:complexType name="OpenCmsAlkaconJcStandardPictureInfo">
    <xsd:sequence>
      <xsd:element name="Picture" type="OpenCmsVfsImage" />
      <xsd:element name="Size_length" type="OpenCmsString" />
      <xsd:element name="Size_large" type="OpenCmsString" />
      <xsd:element name="Title_on_picture" type="OpenCmsHtml" />
      <xsd:element name="Text_on_picture" type="OpenCmsHtml" />
      <xsd:element name="Clickable" type="OpenCmsBoolean" />
      <xsd:element name="Link" type="OpenCmsString" />
      <xsd:element name="Target_link" type="OpenCmsString" />
    </xsd:sequence>
    <xsd:attribute name="language" type="OpenCmsLocale" use="optional"/>
  </xsd:complexType>

  <xsd:annotation>
    <xsd:appinfo>
      <resourcebundles>
        <xmlbundle name="com.carlsonwagonlit.jobandcareers.workplace.xml"/>
      </resourcebundles>
    </xsd:appinfo>
  </xsd:annotation>
</xsd:schema>
```

```

        <bundle locale="en">
            <resource
key="label.AlkaconJcStandardPictureInfo.Picture">Picture</resource>
            <resource
key="label.AlkaconJcStandardPictureInfo.Size_length">Size length</resource>
            <resource
key="label.AlkaconJcStandardPictureInfo.Size_large">Size large</resource>
            <resource
key="label.AlkaconJcStandardPictureInfo.Title_on_picture">Title on picture</resource>
            <resource
key="label.AlkaconJcStandardPictureInfo.Text_on_picture">Has rollover effect</resource>
            <resource
key="label.AlkaconJcStandardPictureInfo.Clickable">Rollover background</resource>
            <resource
key="label.AlkaconJcStandardPictureInfo.Link">Rollover text color</resource>
            <resource
key="label.AlkaconJcStandardPictureInfo.Target_link">Rollover text color</resource>
        </bundle>
    </xmlbundle>
</resourcebundles>
<defaults>
    <default element="Clickable" value="false" />
</defaults>
<layouts>
    <layout element="Picture" widget="ImageGalleryWidget" />
    <layout element="Title_on_picture" widget="HtmlWidget"
configuration="source, link, anchor, formatselect, imagegallery" />
    <layout element="Text_on_picture" widget="HtmlWidget"
configuration="source, link, anchor, formatselect, imagegallery" />
</layouts>
<mappings>
    <!-- <mapping element="ContactEmail" mapto="property:Title" /> -->
</mappings>
<formatters>
    <formatter minwidth="200"
uri="/system/modules/com.carlsonwagonlit.jobandcareers/formatters/jc-standard-picture.jsp"
searchcontent="false" />
</formatters>
<validationrules>
    <rule element="Picture" regex="!^\s*$" type="error"
message="{key.editor.error.jcstandardpicture.Picture}" />
</validationrules>
</xsd:appinfo>
</xsd:annotation>
</xsd:schema>

```

```

<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
    <xsd:include schemaLocation="opencms://opencms-xmlcontent.xsd" />
    <xsd:include
schemaLocation="opencms://system/modules/com.carlsonwagonlit.jobandcareers/schemas/jc-
standard-picture.xsd" />
    <xsd:element name="AlkaconJcStandardMediaInfos"

```

```
type="OpenCmsAlkaconJcStandardMediaInfos"/>
  <xsd:complexType name="OpenCmsAlkaconJcStandardMediaInfos">
    <xsd:sequence>
      <xsd:element name="AlkaconJcStandardMediaInfo"
type="OpenCmsAlkaconJcStandardMediaInfo" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>

  <xsd:complexType name="OpenCmsAlkaconJcStandardMediaInfo">
    <xsd:sequence>
      <xsd:element name="Type" type="OpenCmsString" minOccurs="1"
maxOccurs="1" />
      <xsd:element name="mediaContent"
type="OpenCmsAlkaconJcStandardPictureInfo" minOccurs="1" maxOccurs="unbounded" />
    </xsd:sequence>
    <xsd:attribute name="language" type="OpenCmsLocale" use="optional"/>
  </xsd:complexType>

  <xsd:annotation>
    <xsd:appinfo>
      <defaults>
        <default element="Type" value="Visual" />
      </defaults>
      <layouts>
        <layout element="Type" widget="ComboWidget"
configuration="value='Visual' | value='Banner' | value='Video' default='Visual'" />
      </layouts>
      <formatters>
        <formatter minwidth="200"
uri="/system/modules/com.carlsonwagonlit.jobandcareers/formatters/jc-standard-media.jsp"
searchcontent="false" />
      </formatters>
    </xsd:appinfo>
  </xsd:annotation>
</xsd:schema>
```

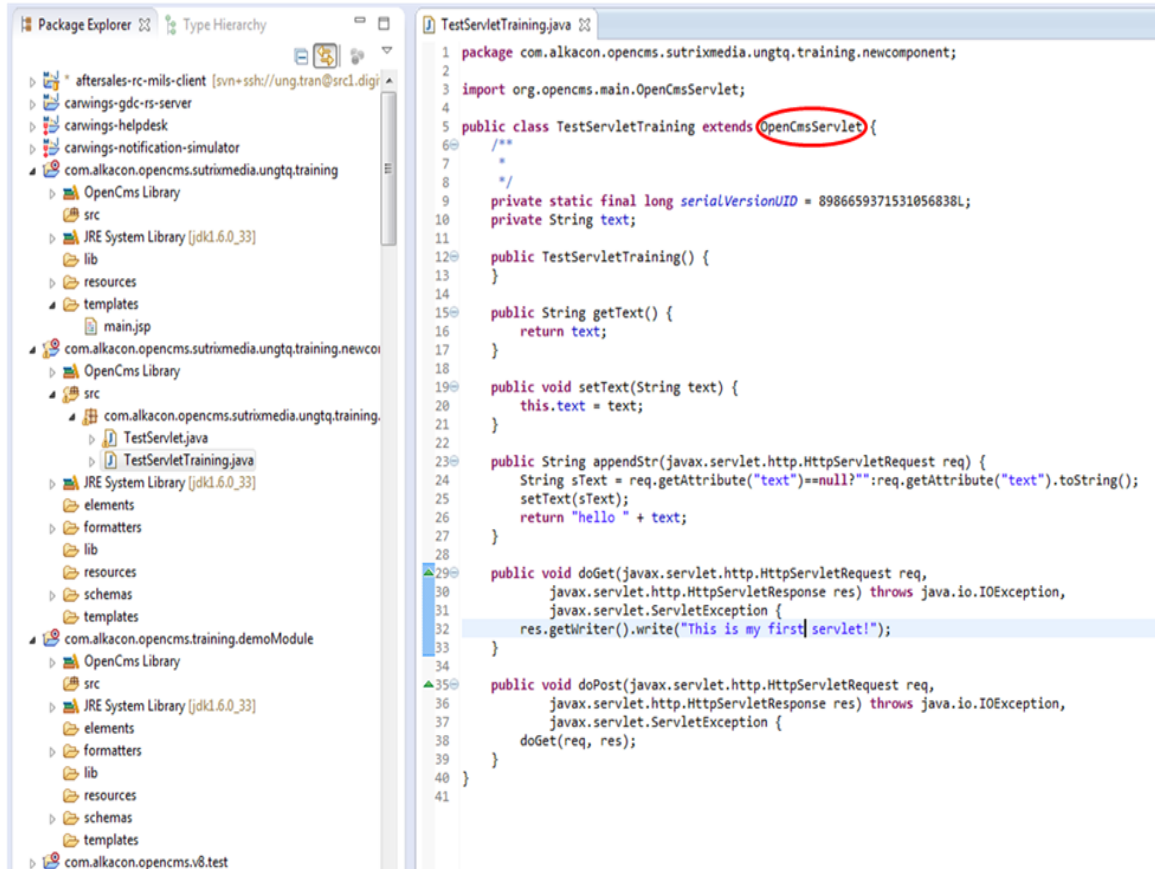
ddd

## 9. Servlets

You should go to this page and refer how to config it  
[https://opencms.cse.unsw.edu.au/alkacon-documentation/documentation\\_webdav/configuration\\_webdav.html](https://opencms.cse.unsw.edu.au/alkacon-documentation/documentation_webdav/configuration_webdav.html)

### 9.1. Add a new Servlet

Beside it don't forget create the Servlet that you want to use:



```
1 package com.alkacon.opencms.sutrixmedia.ungtg.training.newcomponent;
2
3 import org.opencms.main.OpenCmsServlet;
4
5 public class TestServletTraining extends OpenCmsServlet {
6     /**
7      *
8      */
9     private static final long serialVersionUID = 8986659371531056838L;
10    private String text;
11
12    public TestServletTraining() {
13    }
14
15    public String getText() {
16        return text;
17    }
18
19    public void setText(String text) {
20        this.text = text;
21    }
22
23    public String appendStr(javax.servlet.http.HttpServletRequest req) {
24        String sText = req.getAttribute("text")==null?"":req.getAttribute("text").toString();
25        setText(sText);
26        return "hello " + text;
27    }
28
29    public void doGet(javax.servlet.http.HttpServletRequest req,
30        javax.servlet.http.HttpServletResponse res) throws java.io.IOException,
31        javax.servlet.ServletException {
32        res.getWriter().write("This is my first servlet!");
33    }
34
35    public void doPost(javax.servlet.http.HttpServletRequest req,
36        javax.servlet.http.HttpServletResponse res) throws java.io.IOException,
37        javax.servlet.ServletException {
38        doGet(req, res);
39    }
40 }
41
```

```
package com.alkacon.opencms.sutrixmedia.ungtg.training.newcomponent;

import org.opencms.main.OpenCmsServlet;

public class TestServletTraining extends OpenCmsServlet {
    private static final long serialVersionUID = 8986659371531056838L;
    private String text;

    public TestServletTraining() {
    }

    public String getText() {
        return text;
    }
}
```

```
}

public void setText(String text) {
    this.text = text;
}



public String appendStr(javax.servlet.http.HttpServletRequest req) {
    String sText =
req.getAttribute("text")==null?"":req.getAttribute("text").toString();
    setText(sText);
    return "hello " + text;
}

public void doGet(javax.servlet.http.HttpServletRequest req,
javax.servlet.http.HttpServletResponse res) throws java.io.IOException,
javax.servlet.ServletException {
    res.getWriter().write("This is my first servlet!");
}

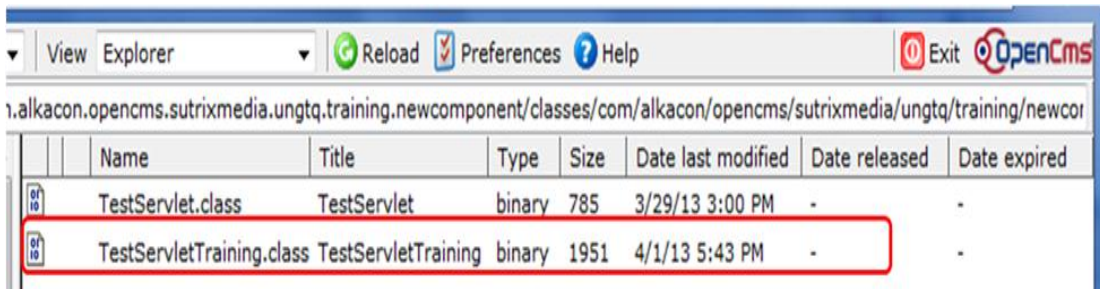
public void doPost(javax.servlet.http.HttpServletRequest req,
javax.servlet.http.HttpServletResponse res) throws java.io.IOException,
javax.servlet.ServletException {
    doGet(req, res);
}
}
```



Your servlet have to extends from **OpenCmsServlet** base on the recommend by Alkacon And then it, you should look for the .class file servlet and upload on openCMS. In my case, the servlet that I created automatically build with Eclipse.

## 9.2. Upload Classes

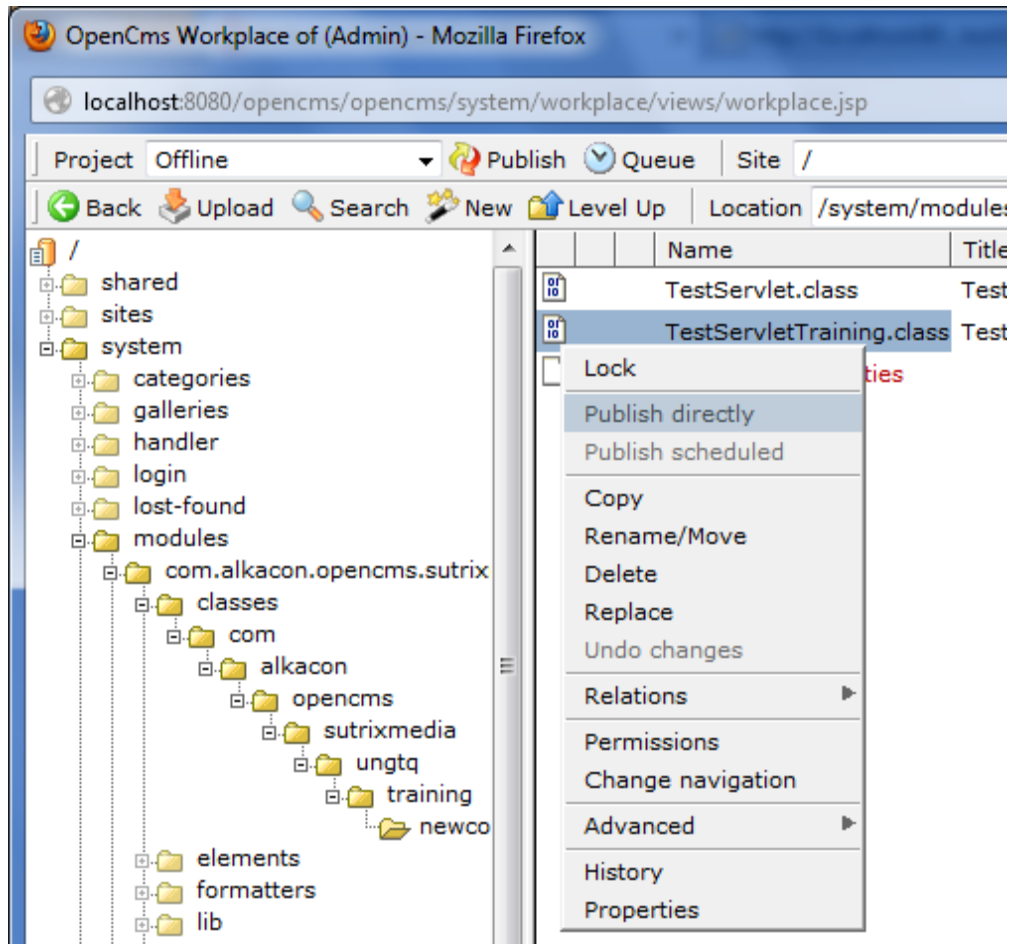
Name	Date modified	Type	Size
 TestServlet.class	3/29/2013 2:58 PM	CLASS File	1 KB
 TestServletTraining.class	4/1/2013 5:33 PM	CLASS File	2 KB

And then you should go the modules on openCMS and upload it. The question I'm sure you confuse that where the modules that we upload it, I'm really not sure about it because I see I could upload my servlet into any module and it still run.



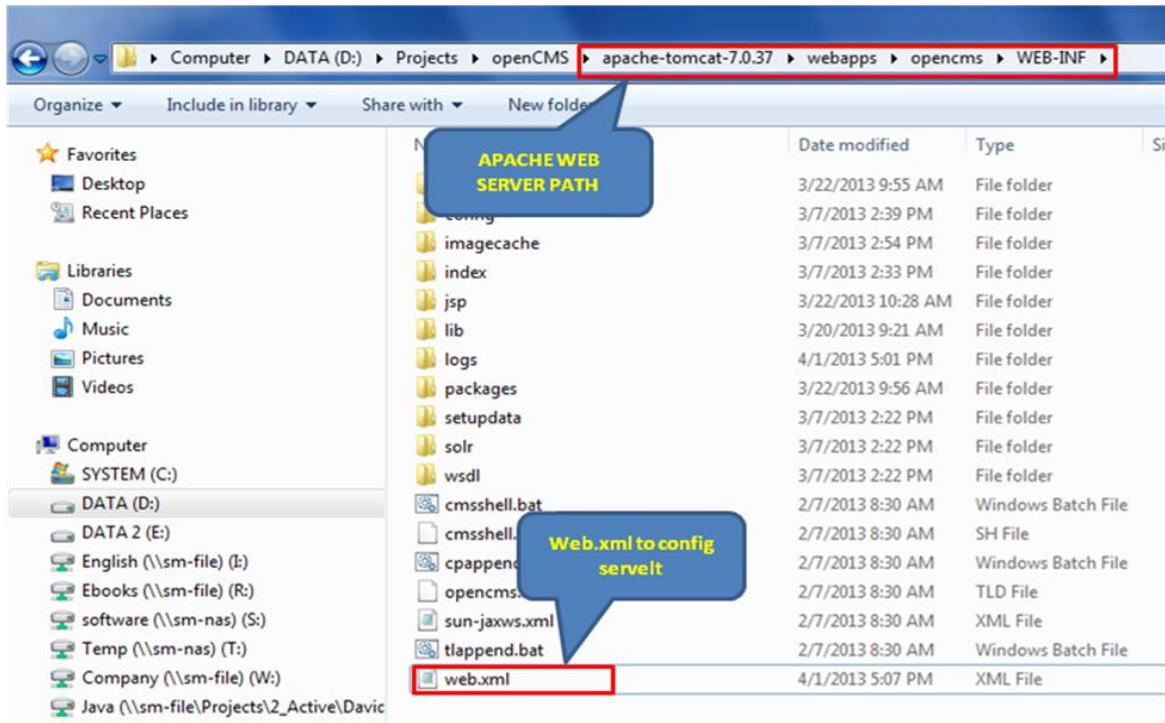
Name	Title	Type	Size	Date last modified	Date released	Date expired
 TestServlet.class	TestServlet	binary	785	3/29/13 3:00 PM	-	-
 TestServletTraining.class	TestServletTraining	binary	1951	4/1/13 5:43 PM	-	-

You must **publish** this class to generate new class servlet in Tomcat web server



### 9.3. Web configuration

A default configuration of openCMS servlet is already entered in the web.xml configuration provided by the OpenCms web application. You must go to the apache webserver path and look for web.xml file and config it.



**NOTES:** You must **restart Tomcat** after you add configuration or upload a new class.

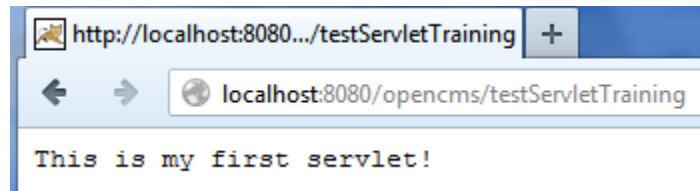
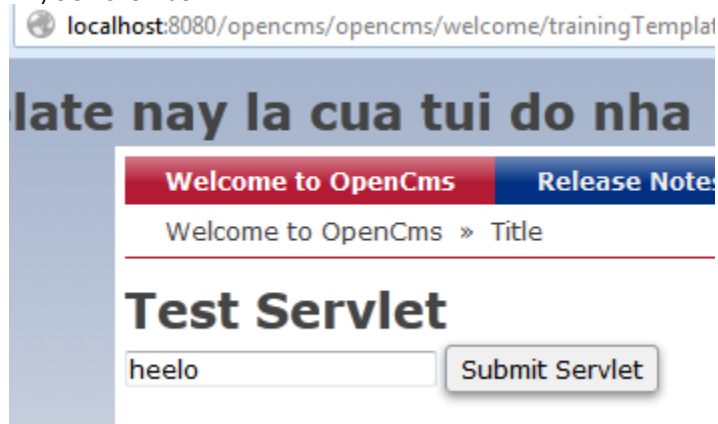
## 9.4. Test

- First, we should create a form and add it into any JSP or your template



```
<form action="/opencms/testServletTraining" method="post">
  <input type="text" name="text" id="text"/>
  <input type="submit" value="Submit Servlet"/>
</form>
```

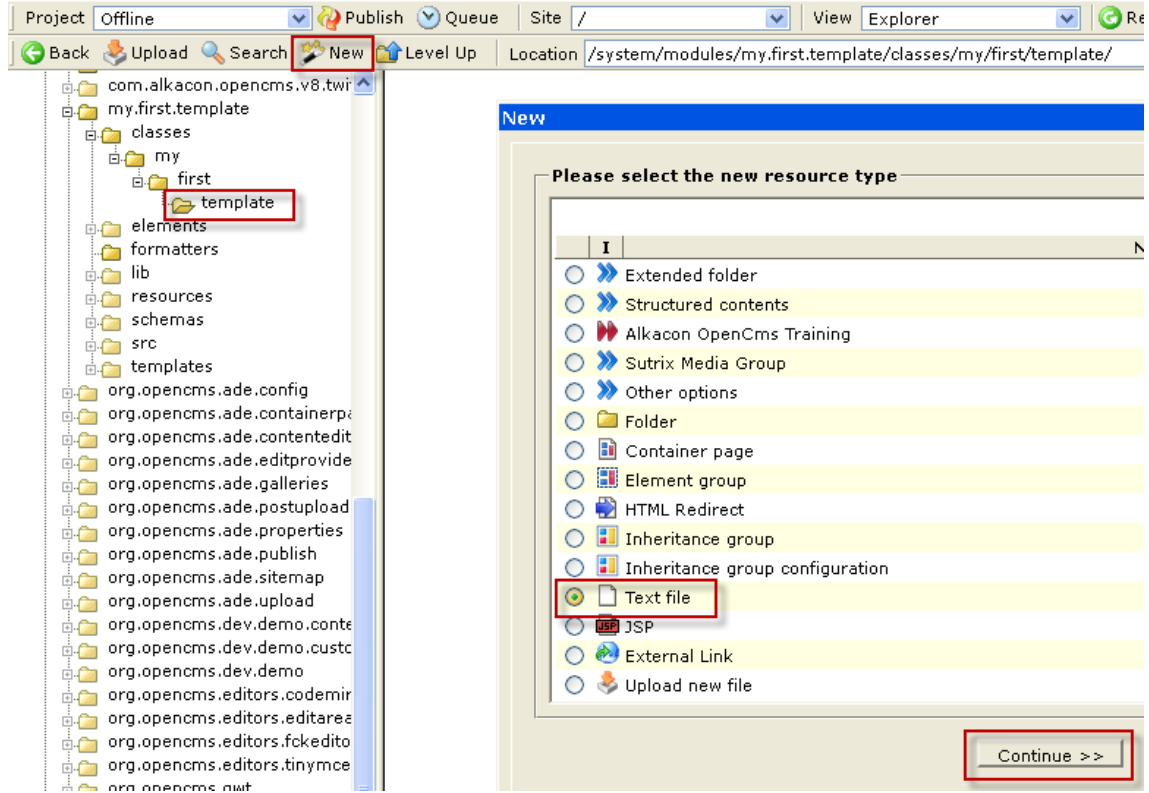
- Check Result in your browser



## 10. Localization

You can localize labels of your application by adding a property file in your module. After you finish, you have to **restart your Tomcat**.

- First, create a workplace.properties in your module, named "workplace.properties"



- Then, you can define all properties you want. You can use content below if needed

```
fileicon.sutrixmedia=Sutrix Media Group
desc.sutrixmedia=Resource types for the Sutrix Media Group
fileicon.student=Student Information
desc.student=Resource types for the Student Information

# Student information
label.AlkaconStudentInfo.Username=User name
label.AlkaconStudentInfo.ContactEmail=Contact Email
```

## 11. Navigation

### 11.1. Menu

To Create Menu in OpenCMS 8.5.1 we simply add some code to jsp page

```
<cms:navigation type="forSite" startLevel="1" endLevel="5" var="nav"/>
<ul>
  <c:set var="oldLevel" value="" />
  <c:forEach items="{nav.items}" var="elem">
```

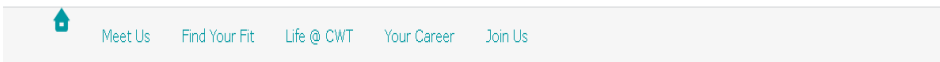
```

<c:set var="currentLevel" value="{elem.navTreeLevel}" />
<c:choose>
  <c:when test="{empty oldLevel}"></c:when>
  <c:when test="{currentLevel > oldLevel}"><ul></c:when>
  <c:when test="{currentLevel == oldLevel}"></li></c:when>
  <c:when test="{oldLevel > currentLevel}">
    <c:forEach begin="{currentLevel+1}" end="{oldLevel}">
      </li></ul>
    </c:forEach>
  </li>
</c:when>
</c:choose>
<c:choose>
  <c:when test="{fn:startsWith(cms.requestContext.uri, elem.resourceName)}">
    <c:set var="class1">highlight</c:set>
  </c:when>
  <c:otherwise><c:set var="class1">default</c:set></c:otherwise>
</c:choose>
<li><a href="{cms:link}{elem.resourceName}</cms:link>"
  class="{class1}">{elem.navText}</a>
  <c:set var="oldLevel" value="{currentLevel}" />
</c:forEach>
</ul>

```

To simply the above code I remove code css.It's depend on your template

Result:



## 11.2. Site Map

We will code in the menu section to generate site map. It's related to your CSS only.

<p><b>Meet Us</b></p> <ul style="list-style-type: none"> <li>&gt; Activities and know-how</li> <li>&gt; CWT at a glance</li> </ul>	<p><b>Find Your Fit</b></p> <ul style="list-style-type: none"> <li>&gt; fit</li> </ul> <p><b>Your Career</b></p>	<p><b>Life @ CWT</b></p> <ul style="list-style-type: none"> <li>&gt; life</li> </ul> <p><b>Join Us</b></p> <ul style="list-style-type: none"> <li>&gt; fit</li> </ul>
--	--	---

**Note:** We need to configure your site to get correct site map.

Configure in opencms-system.xml:

```

<sites>
  <workplace-server>http://localhost:8080</workplace-server>
  <!--default-uri>/sites/default/</default-uri-->
  <default-uri>/sites/myjourney/</default-uri>
  <shared-folder>/shared/</shared-folder>

```

```
<!--site server="http://localhost:8080" uri="/sites/default/"-->
  <site server="http://localhost:8080" uri="/sites/myjourney/" />
</sites>
```

We configure to myjourney to make menu just show all page in myjourney folder

## 12. Paging

### 12.1. Add a render (pagination.jsp)

We have all the necessary to create the navigation links, so let's write our pagination.jsp.

```
<%
//Store the info in the page Context
pageContext.setAttribute("info", request.getAttribute("info"));

%>

<c:if test="${info.resultSize > info.pageSize}">
  <!-- Show the first page if it is not in navigation links -->
  <c:if test="${info.pageNavStartIndex > 1}">
    <a class="pagelink" href="<cms:link><cms:info property="opencms.request.uri"
/></cms:link>?page=1">1</a><span class="pagdots">&nbsp;&nbsp;&nbsp;...</span>
  </c:if>
  <c:forEach var="i" begin="${info.pageNavStartIndex}" end="${info.pageNavEndIndex}">
    <c:choose>
      <c:when test="${(i == info.pageIndex) || (i == 1 && info.pageIndex ==
null)}">
        <a class="currentpagelink" href="<cms:link><cms:info
property="opencms.request.uri" /></cms:link>?page=<c:out
value="${i}" />"><c:out
value="${i}" /></a>&nbsp;&nbsp;&nbsp;
      </c:when>
      <c:otherwise>
        <a class="pagelink" href="<cms:link><cms:info
property="opencms.request.uri" /></cms:link>?page=<c:out
value="${i}" />"><c:out
value="${i}" /></a>&nbsp;&nbsp;&nbsp;
```

```
        </c:otherwise>
        </c:choose>
    </c:forEach>
    <%-- Show the last page if it is not in navigation links --%>
    <c:if test="${info.pageNavEndIndex < info.pageCount}">
        <span class="pagdots">...&nbsp;</span><a class="pagelink"
href="<cms:link><cms:info property="opencms.request.uri" /></cms:link>?page=<c:out
value="${info.pageCount}" />"><c:out value="${info.pageCount}" /></a>
    </c:if>
</c:if>
```

## 12.2. Apply Paging

Example code:

```
<cms:contentload collector="allInFolder" param="/jc/external/en/global/news-
releases/|jcstandardcontent" pageSize="8" pageIndex="${pagina}" pageNavLength="5">
    <cms:contentinfo var="info" scope="request" />
    <h3>
    <a href="<cms:link><cms:contentshow element="%{opencms.filename}" /></cms:link>">
        <cms:contentshow element="title" />
    </a>
    </h3>
    <div class="excerpt">
        <cms:contentshow element="excerpt" />
    </div>
</cms:contentload>

<div id="pagination">
    <cms:include page="pagination.jsp" />
</div>
```

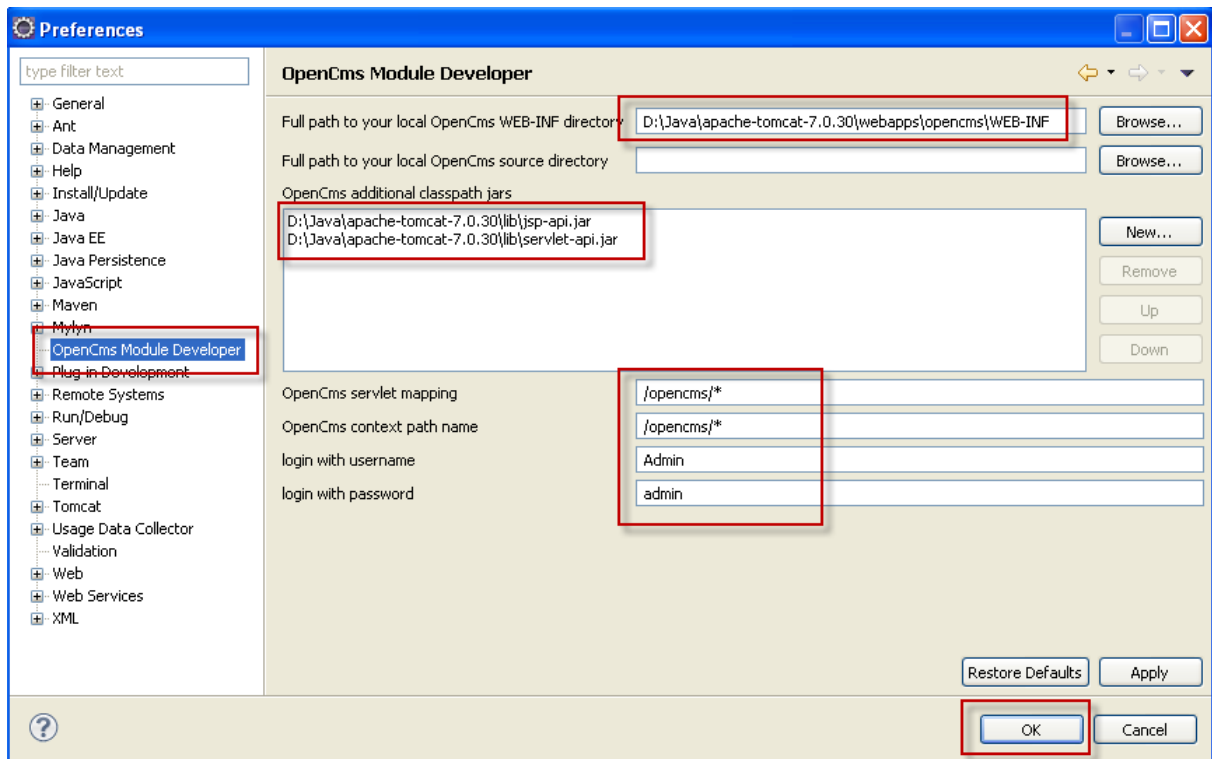
**Notes:** we only create a simple paging. We should create a custom paging (**selector**) with some condition on pages.

## 13. Eclipse Plug-in

We will use plug-in “info.rsdev.eclipse.opencms.module.developer\_0.0.9.jar” to synchronize Open CMS with Eclipse.

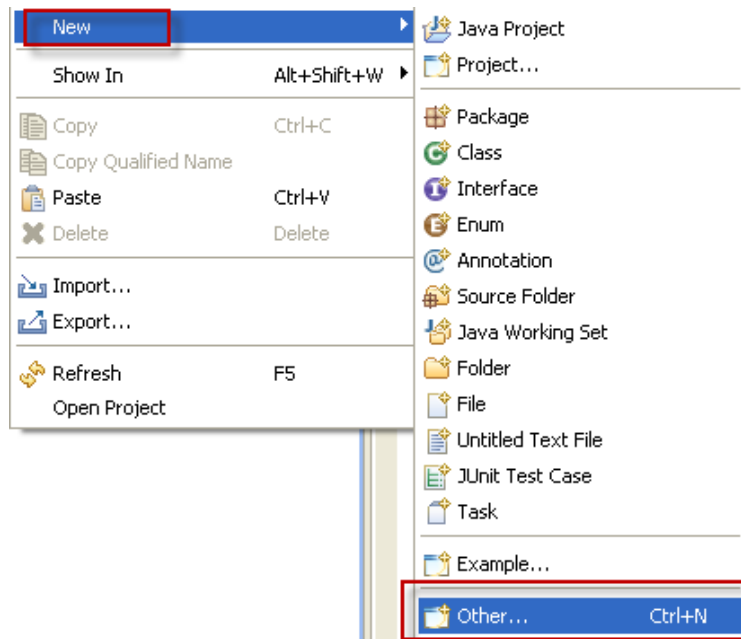
### 13.1. Configuration

- First, copy “info.rsdev.eclipse.opencms.module.developer\_0.0.9.jar” into your eclipse/plugin folder.
- Restart Eclipse
- Set up Open CMS in Eclipse: Window -> Reference

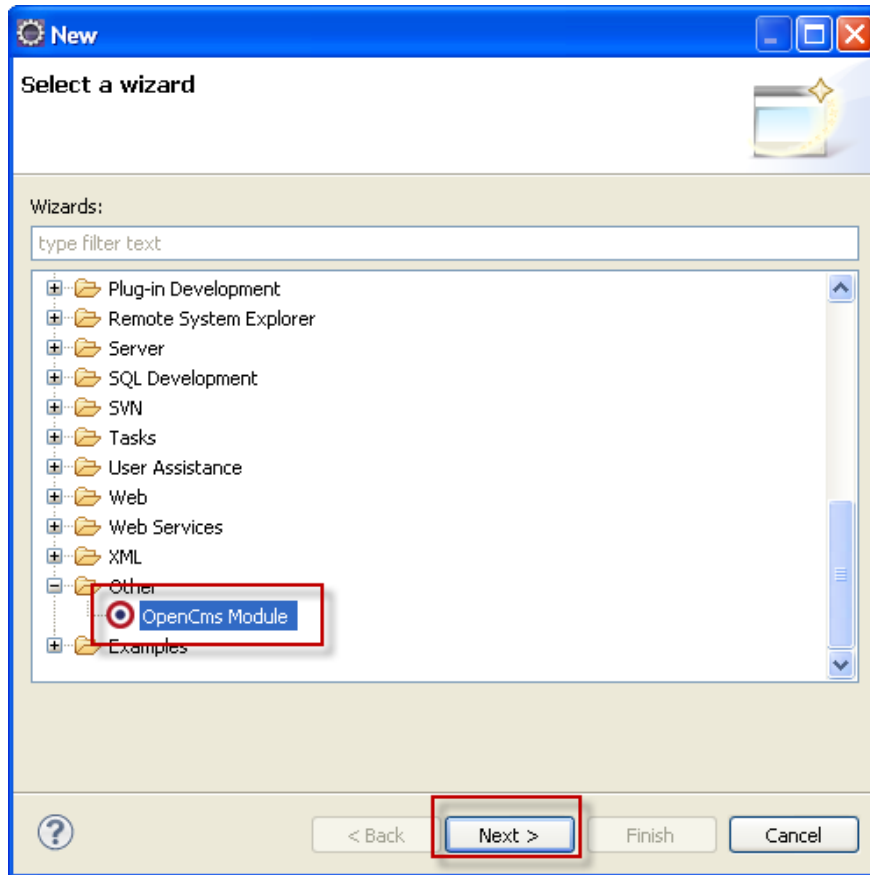


### 13.2. Import Module from Open CMS to Eclipse

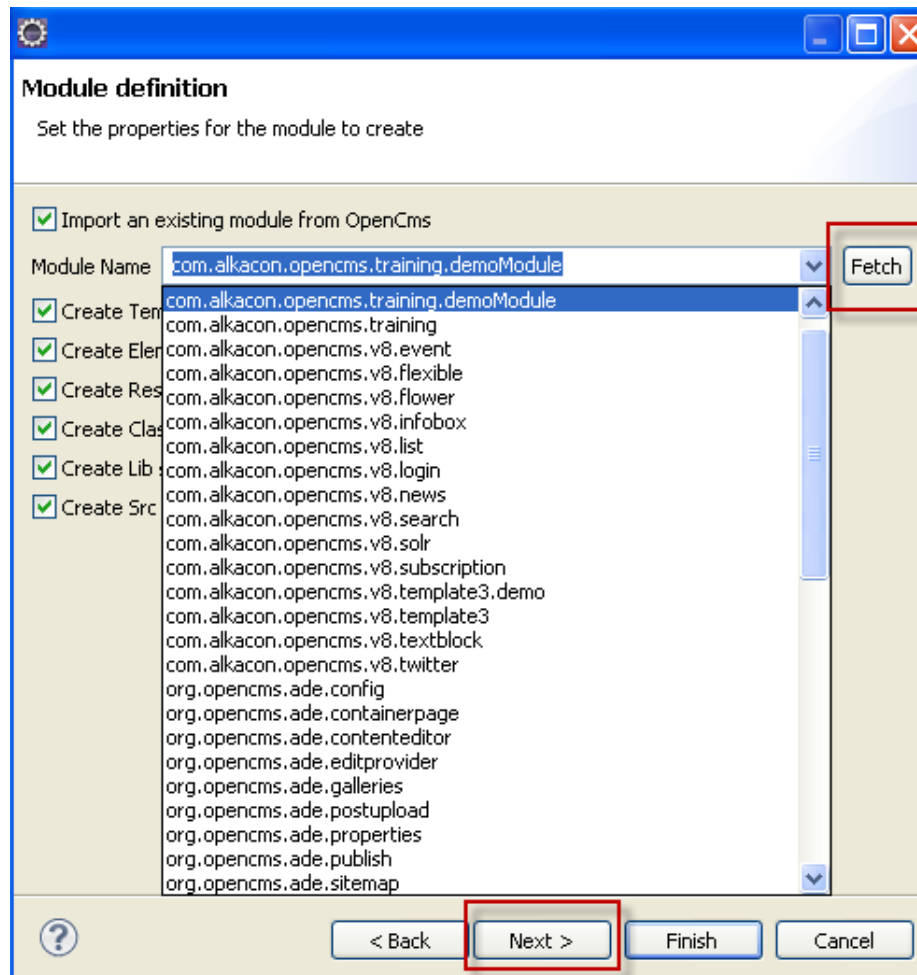
- First, we should import a module from Open CMS to workspace: From menu, select New -> Others.



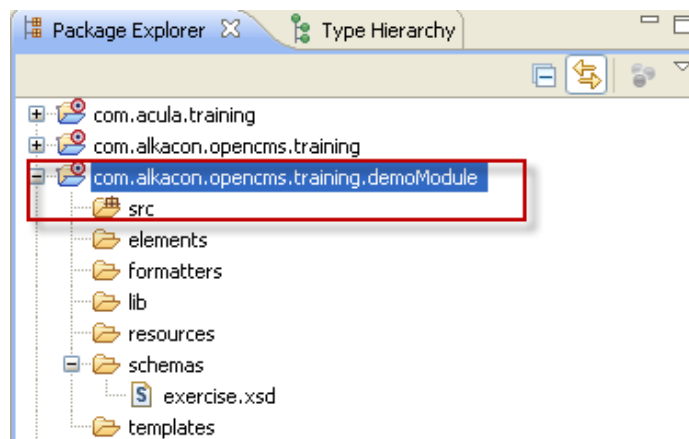
- Select OpenCms Module



- Click on button "**Fetch**" to load all module from Open CMS

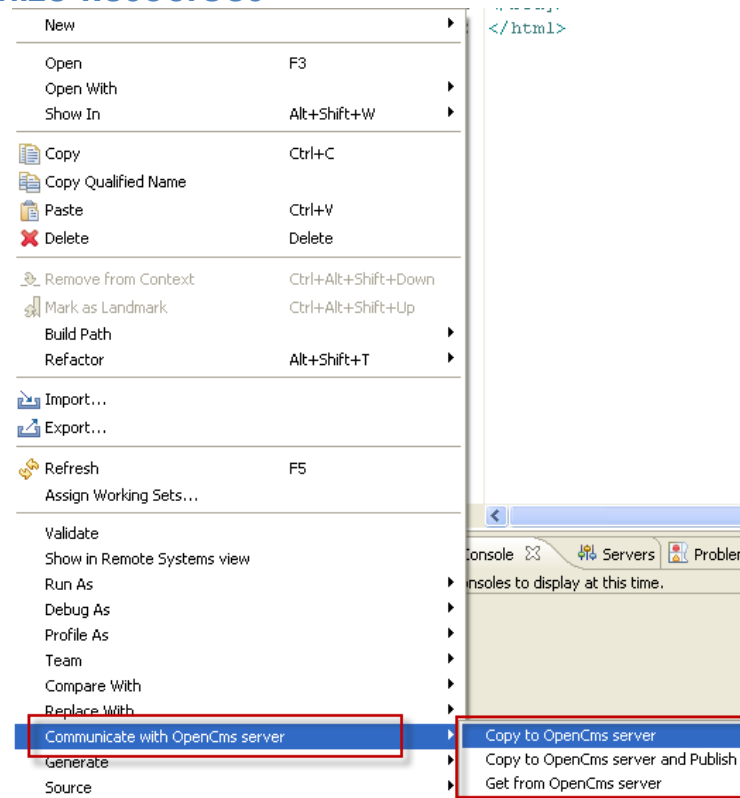


- Select a module from list and click button "**Next**" or "**Finish**"





## 13.3. Synchronize Resources



## 14. Technique

### 14.1. Available XML field types

- OpenCmsBoolean – Represents a Boolean value (TRUE/FALSE)
- OpenCmsCategory – Can handle one or more selected categories
- OpenCmsColor – Stores a hexadecimal color value
- OpenCmsDateTime – Handles a date value
- OpenCmsHtml – Used for rich text editor fields (keeps internal relations e.g. text links intact)
- OpenCmsLocale – Stores a locale value
- OpenCmsPlainTextString – Stores the extracted text for a field containing HTML
- OpenCmsString – Stores a simple String 1:1
- OpenCmsVarLink – Can handle internal and external at once
- OpenCmsVfsFile – Designated for storing internal file references
- OpenCmsVfsImage – Refers internal images (handles image format, scaling, description ...)

## 14.2. Widgets

```
widget="DisplayWidget"
widget="SelectorWidget"
widget="TextareaWidget"
widget="RadioSelectWidget"
  configuration="Radiobutton1* | Radiobutton2 | Radiobutton3 |
  Radiobutton4 | Radiobutton5 | Radiobutton6"
widget="MultiSelectWidget" configuration="1* | 2* | 3* | 4 | 5 | 6 | 7"
widget="ComboWidget" configuration="1 | 2 | 3 | 4 | 5 | 6 | 7"
widget="TypeComboWidget"
widget="HtmlWidget"
  configuration=" link,anchor,imagegallery,downloadgallery,formatselect"
widget="LocalizationWidget"
  configuration="org.opencms.workplace.messages | key=mykey | locale=en"
widget="CategoryWidget"
  configuration="category=onlyleaves=false | parentSelection"
widget="GroupWidget"
widget="GroupMultiSelectorWidget"
widget="VfsFileWidget"
  configuration="startsite=/sites/www.domain.org/repository | hidesiteselector"
widget="VfsImageWidget" configuration="
  {useformat:true,usedescription:true,formatnames:'left:Left | right:Right | top:Top',
  ['150x?', '250x300', '?x250']}"
widget="ImageGalleryWidget"
  configuration="{type: 'gallery', startup: '/demo_en/images/'}"
widget="LegacyDownloadGalleryWidget"
  configuration="{type: 'gallery', startup: '/demo_en/images/'}"
widget="HtmlGalleryWidget"
  configuration="{type: 'gallery', startup: '/demo_en/html/'}"
widget="TableGalleryWidget"
  configuration="{type: 'gallery', startup: '/demo_en/table/'}"
widget="LinkGalleryWidget"
  configuration="{type: 'gallery',
  startup: '/demo_en/link/'}"
```

## 14.3. Get Request Folder

We can get the current requested folder (example:

<http://localhost:8080/opencms/opencms/jc/external/en/global/index.html>) as below

```
<cms:info property="opencms.request.folder" />
```

After use code above, we have result below:

```
/jc/external/en/global/
```

## 14.4. Include and Parameter

We use code below to include a JSP file and parameter

```
<cms:include file
  ="%{link.weak:/system/modules/com.carlsonwagonlit.jobandcareers/templates/aaa.jsp}">
  <cms:param name="currency" value="aaa_$(iii)" />
</cms:include>
```

How to use?

```
<%
String exchange = request.getParameter("currency");
%>
<%=exchange %>
```

## 14.5. Get a resource

```
CmsJspActionElement cmsJspAction = new CmsJspActionElement(pageContext, request,
response);
String path = "/jc/external/en";
CmsJspNavElement navElm = cmsJspAction.getNavigation().getNavigationForResource(path);
```

## 14.6. Get a list of resources

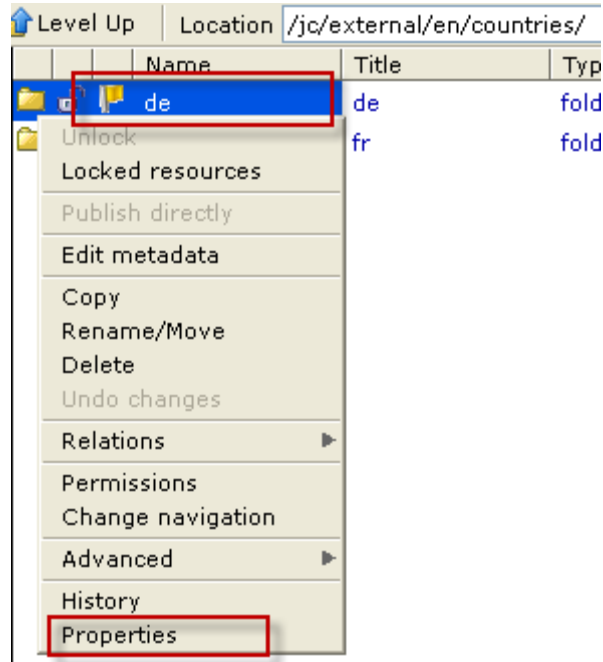
```
CmsJspActionElement cmsJspAction = new CmsJspActionElement(pageContext, request,
response);
CmsJspNavBuilder cmsJspNavBuilder = cmsJspAction.getNavigation();
String path = "/jc/external/en";
List<CmsJspNavElement> items = cmsJspNavBuilder.getNavigationForFolder(path);
```

## 14.7. Custom Property

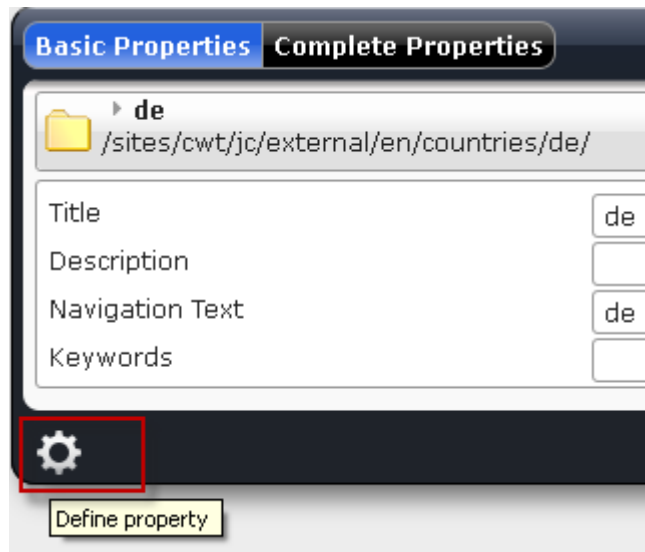
### 14.7.1. Add a custom property

We can add and set value for any custom property on a folder / page in Open CMS with steps below (In this case, we will create a property "**countryAbbr**")

- Right click on a folder / page, then select properties



- Click on icon "Define property" as below

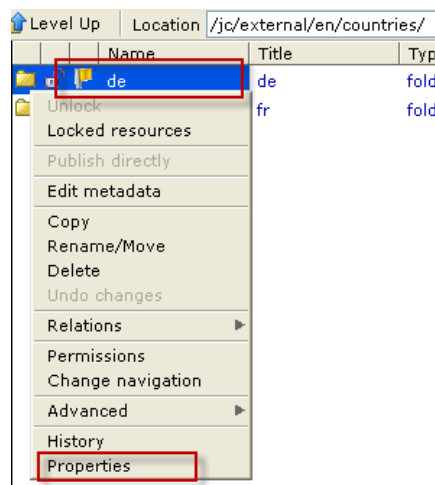


- Enter a custom property "**countryAbbr**"

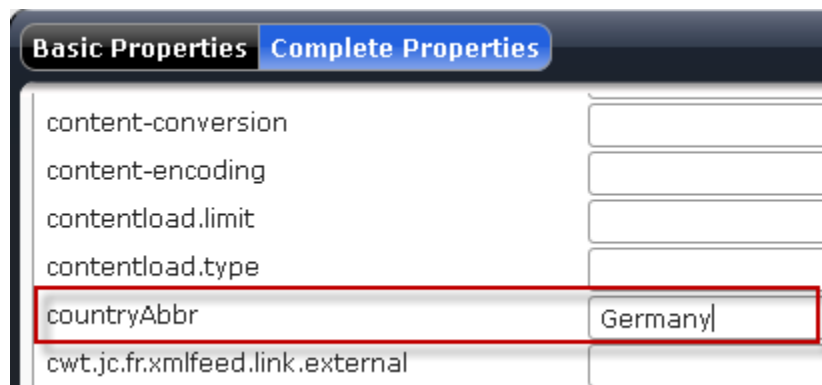


### 14.7.2. Set a value for property

- Right click on a page / folder, then select properties



- Select tab "**Complete Properties**", then expand "**Unused properties**"
- Scroll to property "**countryAbbr**", then enter its value "**Germany**"



### 14.7.3. Get value

```
CmsJspActionElement cmsJspAction = new CmsJspActionElement(pageContext, request, response);
String path = "/jc/external/en/countries/de";
CmsJspNavElement navElm = cmsJspAction.getNavigation().getNavigationForResource(path);
String navElm = navElm.getProperty("countryAbbr");
```

## 14.8. Custom Collector

### 14.8.1. Extends A\_CmsResourceCollector

A\_CmsResourceCollector is an abstract class. So we will have to implement all abstract methods as getCollectorNames, getCreateLink, getCreateParam, getResults

#### **Example code:**

```
package com.carlsonwagonlit.jobandcareers.collector;

import java.util.Arrays;
import java.util.Collections;
import java.util.List;

import org.apache.commons.logging.Log;
import org.opencms.file.CmsDataAccessException;
import org.opencms.file.CmsObject;
import org.opencms.file.CmsResource;
import org.opencms.file.CmsResourceFilter;
import org.opencms.file.collectors.A_CmsResourceCollector;
import org.opencms.file.collectors.CmsCollectorData;
import org.opencms.file.collectors.CmsExtendedCollectorData;
import org.opencms.file.collectors.Messages;
import org.opencms.main.CmsException;
import org.opencms.main.CmsLog;

public class NewsResourceCollector extends A_CmsResourceCollector {

    private static final Log logger = CmsLog.getLog(NewsResourceCollector.class);

    /** Static array of the collectors implemented by this class. */
    private static final String[] COLLECTORS = { "allNewsInHomePage" };

    /** Array list for fast collector name lookup. */
    private static final List<String> COLLECTORS_LIST = Collections.unmodifiableList(Arrays.asList(COLLECTORS));

    /**
     * @see org.opencms.file.collectors.I_CmsResourceCollector#getCollectorNames()
     */
    public List<String> getCollectorNames() {
        return COLLECTORS_LIST;
    }

    /**
     * @see org.opencms.file.collectors.I_CmsResourceCollector#getCreateLink(org.opencms.file.CmsObject,
     * java.lang.String, java.lang.String)
     */
}
```

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```
public String getCreateLink(CmsObject cms, String collectorName,
    String param) throws CmsDataAccessException, CmsException {

    logger.debug("getCreateLink collectorName: " + collectorName + ", param: " + param);

    // if action is not set, use default action
    collectorName = null;
    if (collectorName == null) {
        collectorName = COLLECTORS[0];
    }
    return getCreatelnFolder(cms, new CmsExtendedCollectorData(param));
}

/**
 * @see
 * org.opencms.file.collectors.I_CmsResourceCollector#getCreateParam(org.opencms.file.CmsObject,
 *     java.lang.String, java.lang.String)
 */
public String getCreateParam(CmsObject cms, String collectorName,
    String param) throws CmsDataAccessException {

    logger.debug("getCreateParam collectorName: " + collectorName + ", param: " + param);

    // if action is not set, use default action
    collectorName = null;
    if (collectorName == null) {
        collectorName = COLLECTORS[0];
    }
    return param;
}

/**
 * @see org.opencms.file.collectors.I_CmsResourceCollector#getResults(org.opencms.file.CmsObject,
 *     java.lang.String, java.lang.String)
 */
public List<CmsResource> getResults(CmsObject cms, String collectorName,
    String param) throws CmsDataAccessException, CmsException {

    logger.debug("getResults collectorName: " + collectorName + ", param: " + param);

    // if action is not set, use default action
    collectorName = null;
    if (collectorName == null) {
        collectorName = COLLECTORS[0];
    }

    switch (COLLECTORS_LIST.indexOf(collectorName)) {
    case 0:
        // "allNewsInHomePage"
        return getNewsInHomePage(cms, param);
    case 1:
        //return allNewsInHomePage(cms, param);
    default:
        throw new
        CmsDataAccessException(Messages.get().container(Messages.ERR_COLLECTOR_NAME_INVALID_1,
        collectorName));
    }
}

/**
 * Returns a List of all resources in the folder pointed to by the parameter

```

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```
* sorted by the selected dates
*
* @param cms
*     the current {@link CmsObject}
* @param param
*     must contain an extended collector parameter set as described
*     by {@link CmsExtendedCollectorData}
* @return a List of all resources in the folder pointed to by the parameter
*     sorted by the selected dates
* @throws CmsException
*/
protected List<CmsResource> getNewsInHomePage(CmsObject cms, String param) throws CmsException
{
    CmsCollectorData data = new CmsCollectorData(param);
    String foldername = CmsResource.getFolderPath(data.getFileName());
    CmsResourceFilter filter =
    CmsResourceFilter.DEFAULT.addRequireType(data.getType()).addExcludeFlags(CmsResource.FLAG_TEMPFILE);
    List<CmsResource> result = cms.readResourcesWithProperty(foldername,
    "news.display.in.home.page", "%1", filter);
    return shrinkToFit(result, data.getCount());
}
}
```

### 14.8.2. Configuration

After we have a custom collector, we have to add it into **opencms-vfs.xml** (`{TOMCAT_HOME}/webapps/opencms/WEB-INF/config/opencms-vfs.xml`) to make sure Open CMS can understand it.

```
<collectors>
  <collector
    class="org.opencms.file.collectors.CmsPriorityResourceCollector"
    order="100" />
  <collector class="org.opencms.file.collectors.CmsDefaultResourceCollector"
    order="110" />
  <collector class="org.opencms.file.collectors.CmsDateResourceCollector"
    order="120" />
  <collector
    class="org.opencms.file.collectors.CmsTimeFrameCategoryCollector"
    order="130" />
  <collector
    class="org.opencms.file.collectors.CmsCategoryResourceCollector"
    order="140" />
  <collector class="org.opencms.file.collectors.CmsSubscriptionCollector"
    order="150" />
  <collector class="org.opencms.file.collectors.CmsChangedResourceCollector"
    order="160" />
  <collector class="org.opencms.file.collectors.CmsSolrCollector"
    order="170" />
  <collector class="com.carlsonwagonlit.jobandcareers.collector.NewsResourceCollector"
    order="180" />
</collectors>
```



```
</collectors>
```

### 14.8.3. Use It in JSP

We will use code below in JSP file.

```
<cms:contentload collector="allNewsInHomePage" param="/jc/external/en/global/news-and-  
media/key-points/|jstandardcontent" pageSize="5" pageIndex="1" pageNavLength="5">  
  <cms:contentshow element="Title" />  
</cms:contentload>
```

### 14.8.4. Refers

<https://github.com/alkacon/alkacon->

[oamp/blob/master/com.alkacon.opencms.newsletter/src/com/alkacon/opencms/news  
letter/CmsNewsletterResourceCollector.java](https://github.com/alkacon/alkacon-)

[http://grepcode.com/file/repo1.maven.org/maven2/org.opencms/opencms-  
core/8.0.3.1/org.opencms/file/collectors/CmsPriorityResourceCollector.java](http://grepcode.com/file/repo1.maven.org/maven2/org.opencms/opencms-<br/>core/8.0.3.1/org.opencms/file/collectors/CmsPriorityResourceCollector.java)

<https://opencms.cse.unsw.edu.au/alkacon->

[documentation/documentation\\_taglib/docu\\_tag\\_contentload.html](https://opencms.cse.unsw.edu.au/alkacon-)

## 14.9. Online or Offline

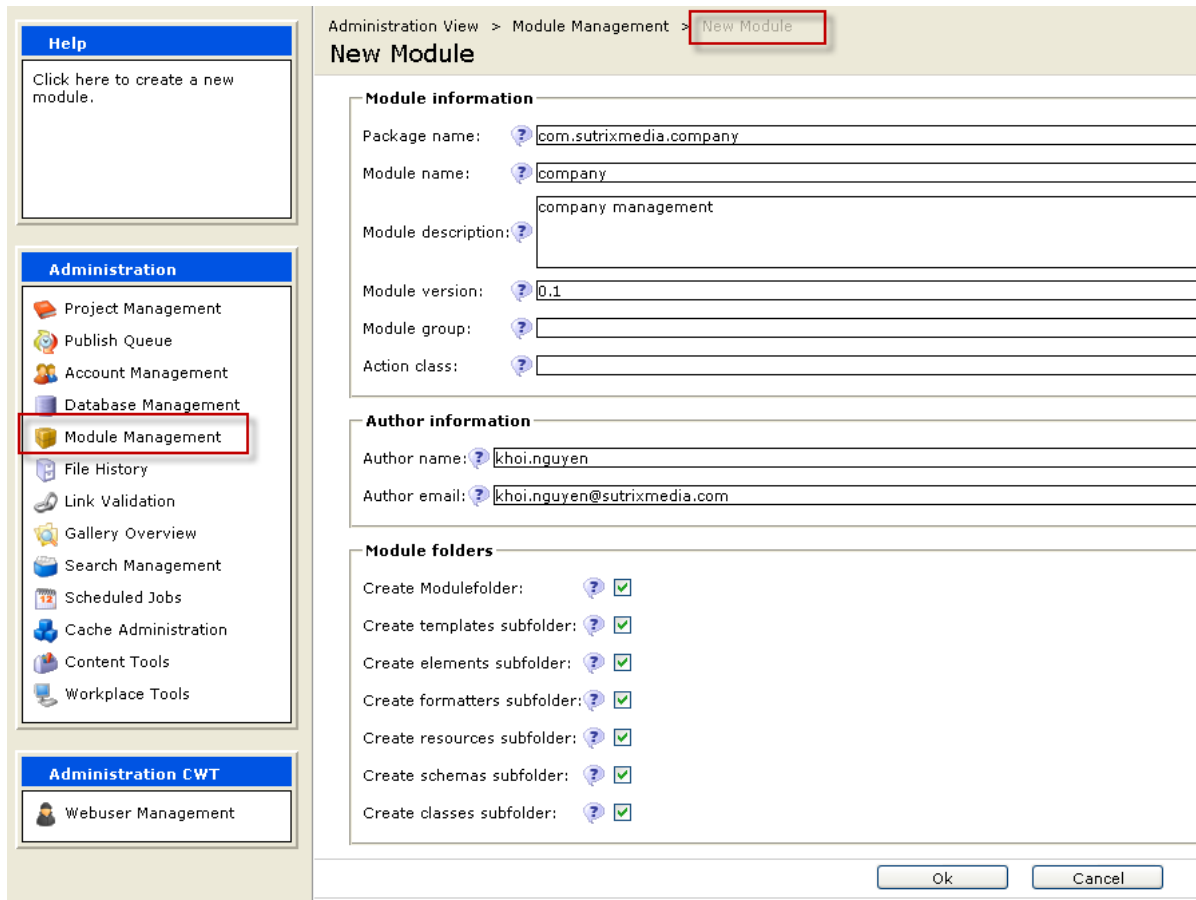
We can use code below to get Open CMS mode

```
CmsJspActionElement cmsJspAction = new CmsJspActionElement(pageContext, request,  
response);  
CmsObject cmsObj = cmsJspAction.getCmsObject();  
Boolean isOnlineProject, cmsJspAction.getRequestContext().getCurrentProject().isOnlineProject();
```

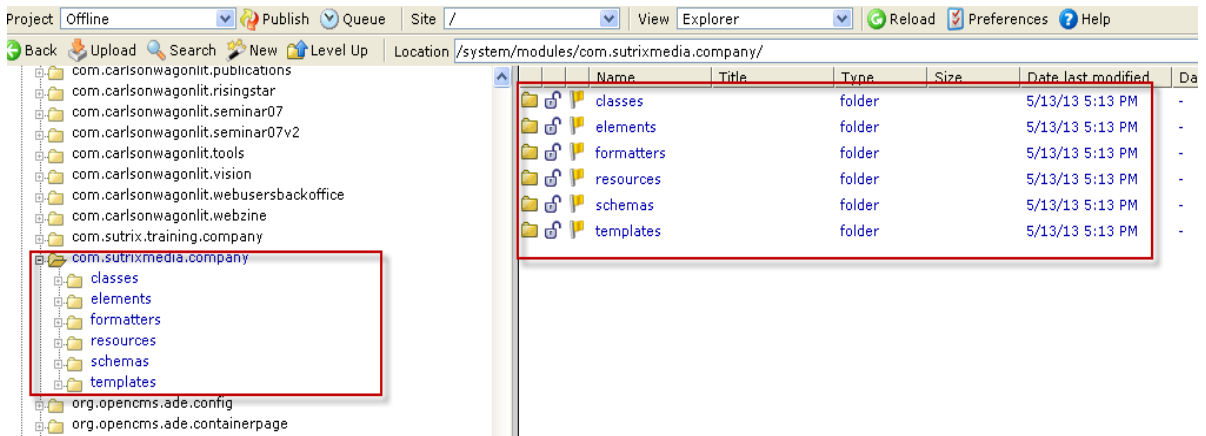
## 15. Open CMS for dummy

### 15.1. Create new module

- Go to "Module Management" > "New Module", enter package name and check create module folders



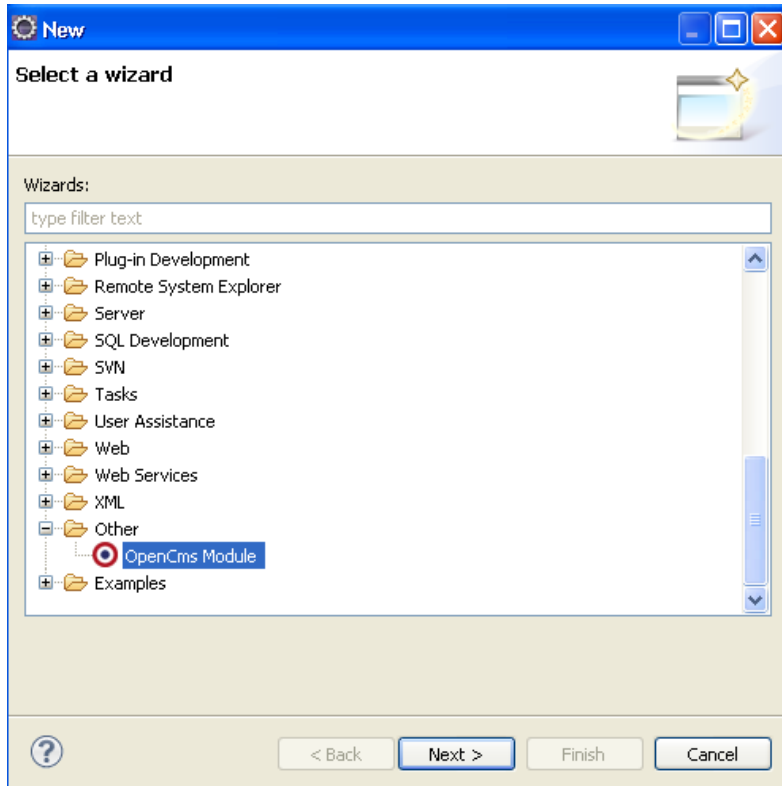
➤ After that, you can see the module created as below



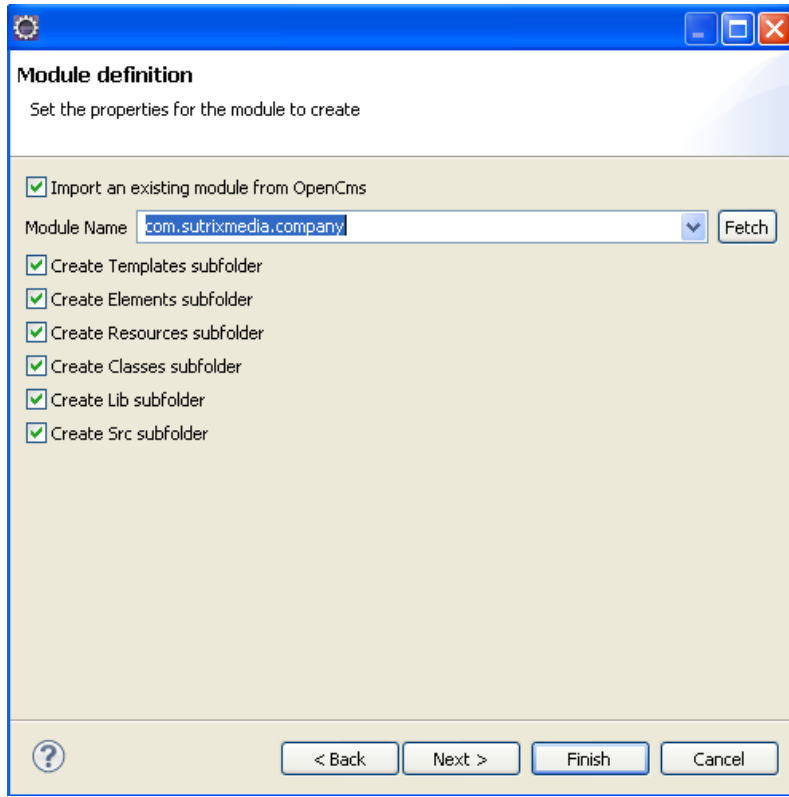
## 15.2. Get module from server to eclipse

Install eclipse plug-in as 11

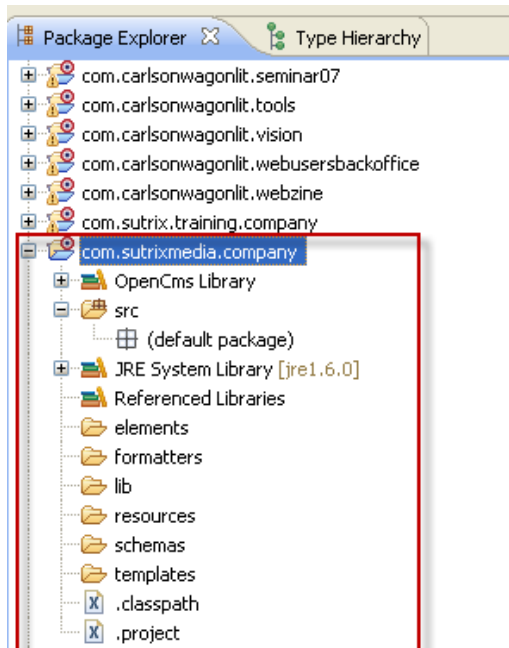
- Select "OpenCms Module" and next



- Fetch, select "com.sutrixmedia.company" module and finish

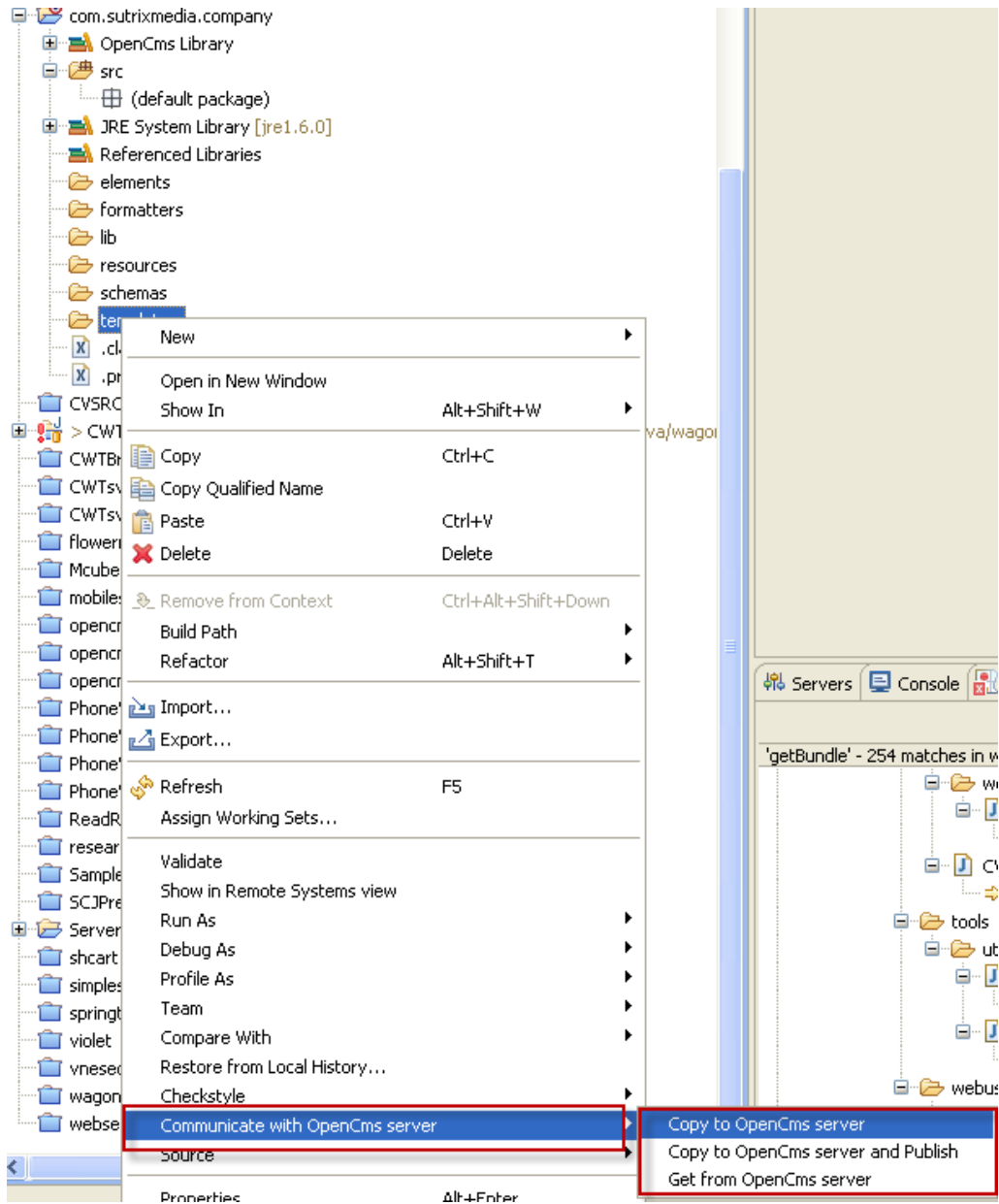


- You can see on eclipse the result:



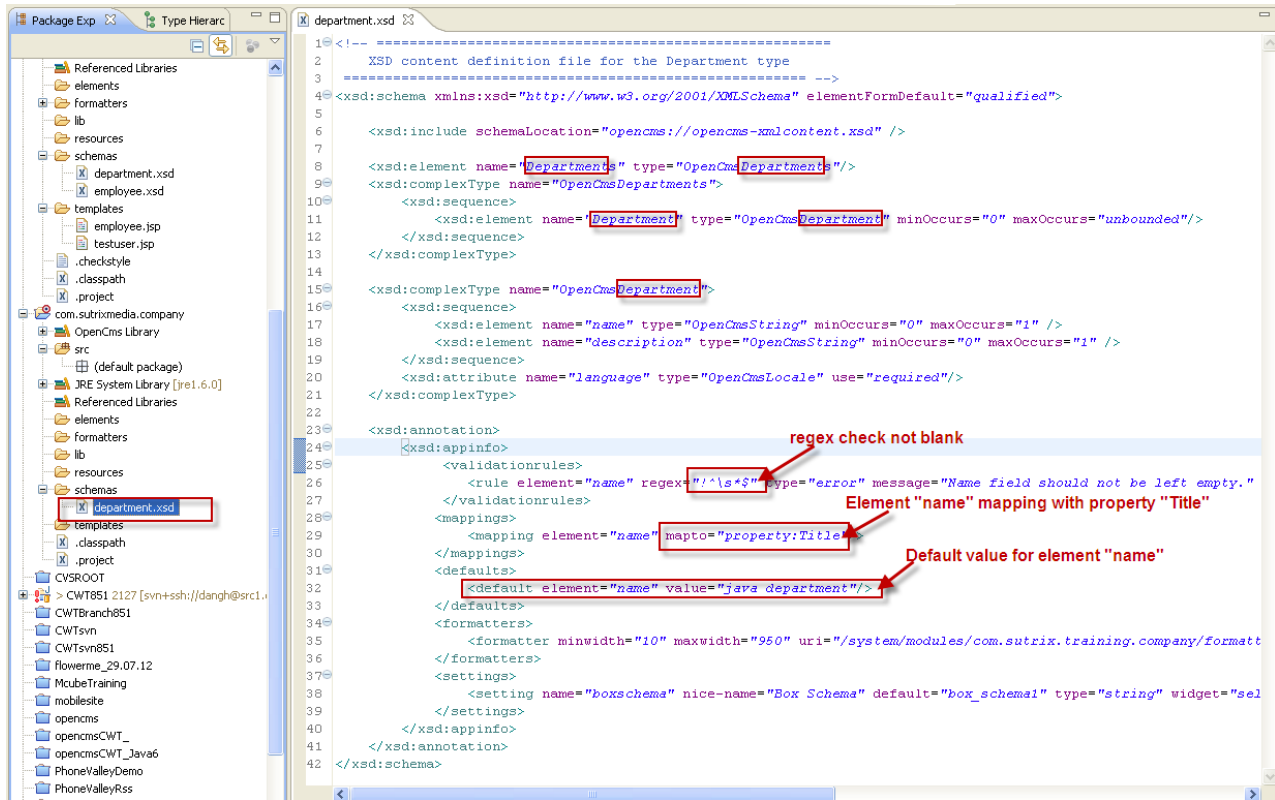
- Now, If have any change on eclipse, you just right click and select “copy to OpenCms server” (“Copy to OpenCms server and publish” if want)

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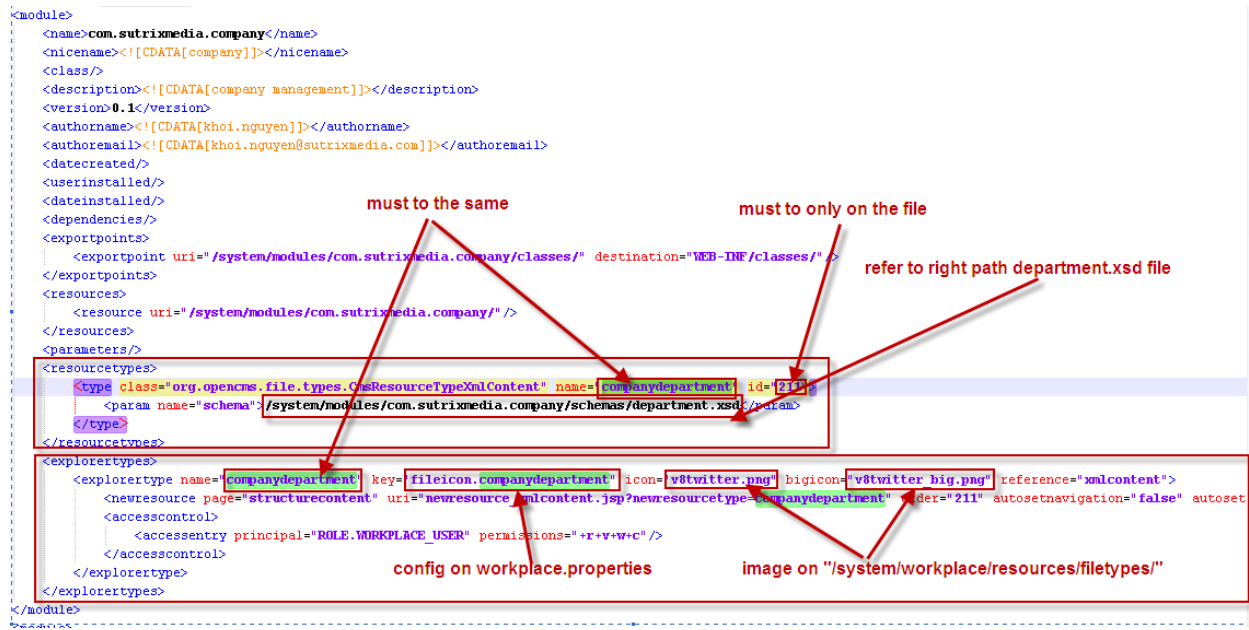


### 15.3. Create a new structured content

- New file "department.xsd" on "Schemas" folder.

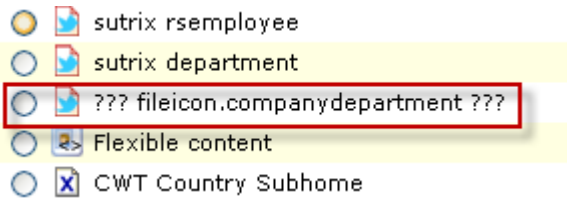


- Right Click, copy to OpenCms Server
- Opencms the file "\Tomcat 7.0\webapps\opencms\WEB-INF\config\ opencms-modules.xml", find to line "com.sutrixmedia.company" and add cofig.



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- Restart tomcat, go to "New" > "Structured contents" and see the result:



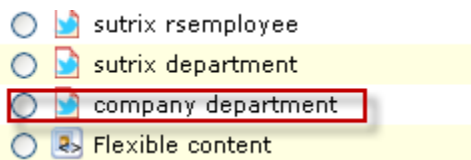
- You must to locale it as below:

- o Created new file with name "workplace.properties" at path: /com.sutrixmedia.company/classes/com/sutrixmedia/company/workplace.p  
roperties
- o And set:

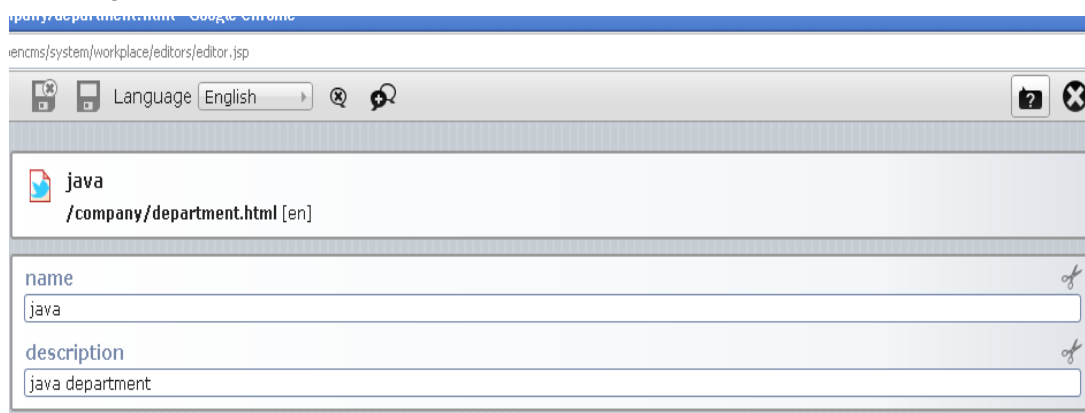
A screenshot of a code editor window. The title bar shows 'department.xsd' and 'workplace.properties'. The code content is as follows:

```
1 fileicon.companydepartment = company department
2 desc.companydepartment = company department description
```

- o Restart tomcat and see the result:



- Create new file with structured content "company department", edit, save are okie. That's good.



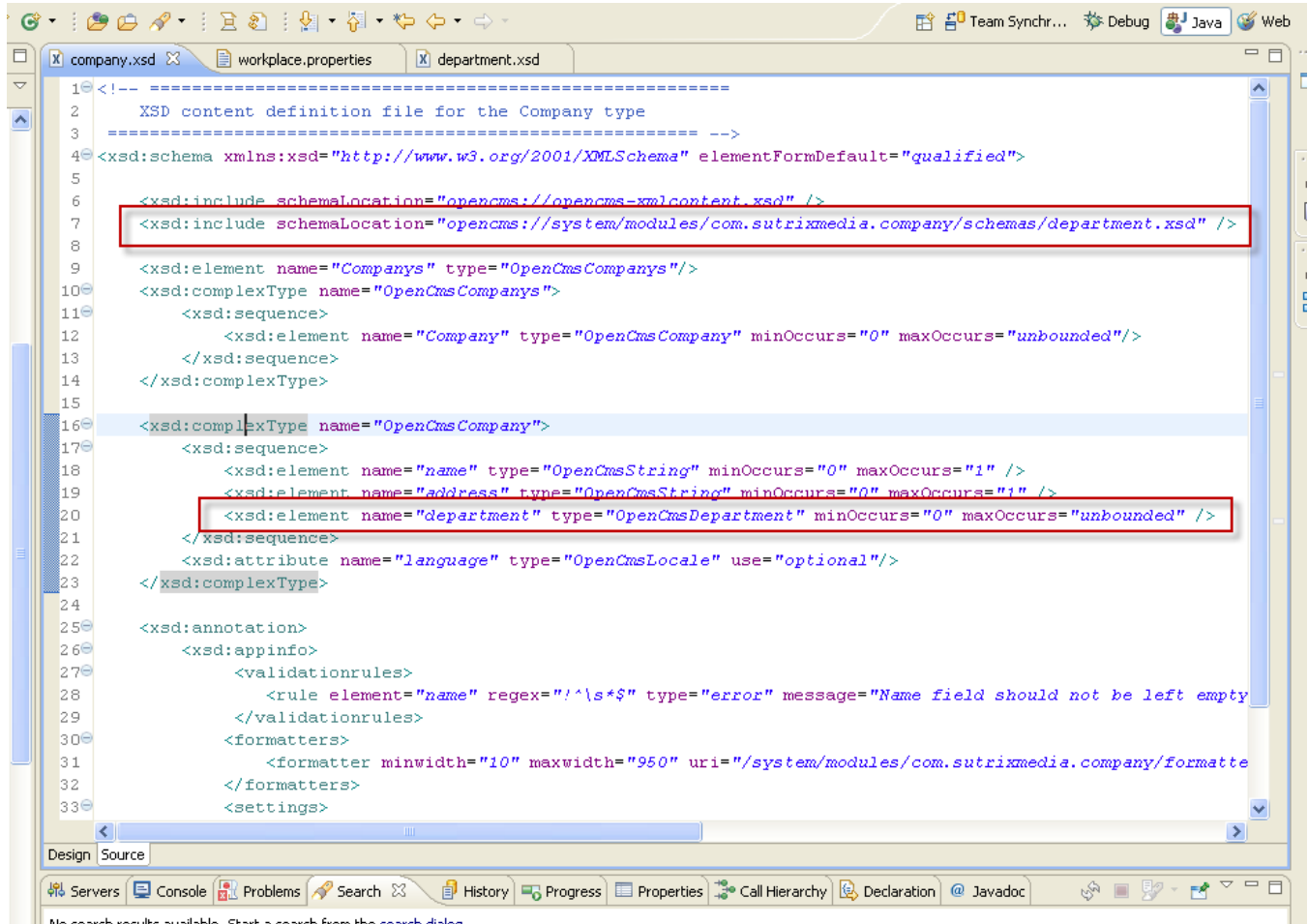
## 15.4. Create a structured content with nested

- Example, the company has many departments. And you will create a structured content "Company" contain "Department".

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- Create new file "company.xsd" on "Schemas" folder: (as 13.3 Create a new structured content)



```

1 <!-- =====
2 XSD content definition file for the Company type
3 ===== -->
4 <xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
5
6 <xsd:include schemaLocation="opencms://opencms-xmlcontent.xsd" />
7 <xsd:include schemaLocation="opencms://system/modules/com.sutrixmedia.company/schemas/department.xsd" />
8
9 <xsd:element name="Companys" type="OpenCmsCompanys"/>
10 <xsd:complexType name="OpenCmsCompanys">
11 <xsd:sequence>
12 <xsd:element name="Company" type="OpenCmsCompany" minOccurs="0" maxOccurs="unbounded"/>
13 </xsd:sequence>
14 </xsd:complexType>
15
16 <xsd:complexType name="OpenCmsCompany">
17 <xsd:sequence>
18 <xsd:element name="name" type="OpenCmsString" minOccurs="0" maxOccurs="1" />
19 <xsd:element name="address" type="OpenCmsString" minOccurs="0" maxOccurs="1" />
20 <xsd:element name="department" type="OpenCmsDepartment" minOccurs="0" maxOccurs="unbounded" />
21 </xsd:sequence>
22 <xsd:attribute name="language" type="OpenCmsLocale" use="optional"/>
23 </xsd:complexType>
24
25 <xsd:annotation>
26 <xsd:appinfo>
27 <validationrules>
28 <rule element="name" regex="!^!s*$" type="error" message="Name field should not be left empty" />
29 </validationrules>
30 <formatters>
31 <formatter minWidth="10" maxWidth="950" uri="/system/modules/com.sutrixmedia.company/formatter" />
32 </formatters>
33 <settings>

```

- o Xsd:include chemasLocation="refer to the xsd file was nested"
  - o Type = "OpenCmsxxx", with xxx = name structured content nested.
- Insert code into the "opencms-modules.xml"

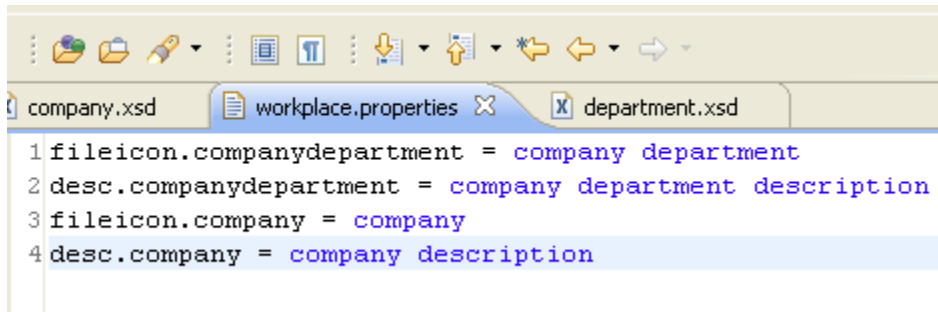


```

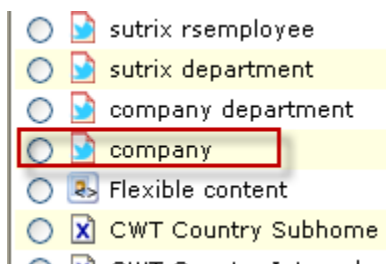
</resources>
<parameters/>
<resourcetypes>
  <type class="org.opencms.file.types.CmsResourceTypeXmlContent" name="companydepartment" id="211">
    <param name="schema">/system/modules/com.sutrixmedia.company/schemas/department.xsd</param>
  </type>
  <type class="org.opencms.file.types.CmsResourceTypeXmlContent" name="company" id="212">
    <param name="schema">/system/modules/com.sutrixmedia.company/schemas/company.xsd</param>
  </type>
</resourcetypes>
<explorertypes>
  <explorertype name="companydepartment" key="fileicon.companydepartment" icon="v8twitter.png" bigicon="v8twitter_big.png">
    <newresource page="structurecontent" uri="newresource_xmlcontent.jsp?newresourcetype=companydepartment" order="211">
      <accesscontrol>
        <accessentry principal="ROLE.WORKPLACE_USER" permissions="+r+v+w+c" />
      </accesscontrol>
    </explorertype>
    <explorertype name="company" key="fileicon.company" icon="v8twitter.png" bigicon="v8twitter_big.png" reference="xmlcontent">
      <newresource page="structurecontent" uri="newresource_xmlcontent.jsp?newresourcetype=company" order="212" autosetnav="true">
        <accesscontrol>
          <accessentry principal="ROLE.WORKPLACE_USER" permissions="+r+v+w+c" />
        </accesscontrol>
      </explorertype>
    </explorertypes>
  </module>
</module>


```

- Locale on "workplace.properties"



- Restart tomcat, create structured content "Company" and see the result:



 **Company**  
 /company/company.html [en]

**name** ✂

**address** ✂

**department** ✂ +

**name** ✂

**description** ✂

**department** ✂ +

**name** ✂

**description** ✂

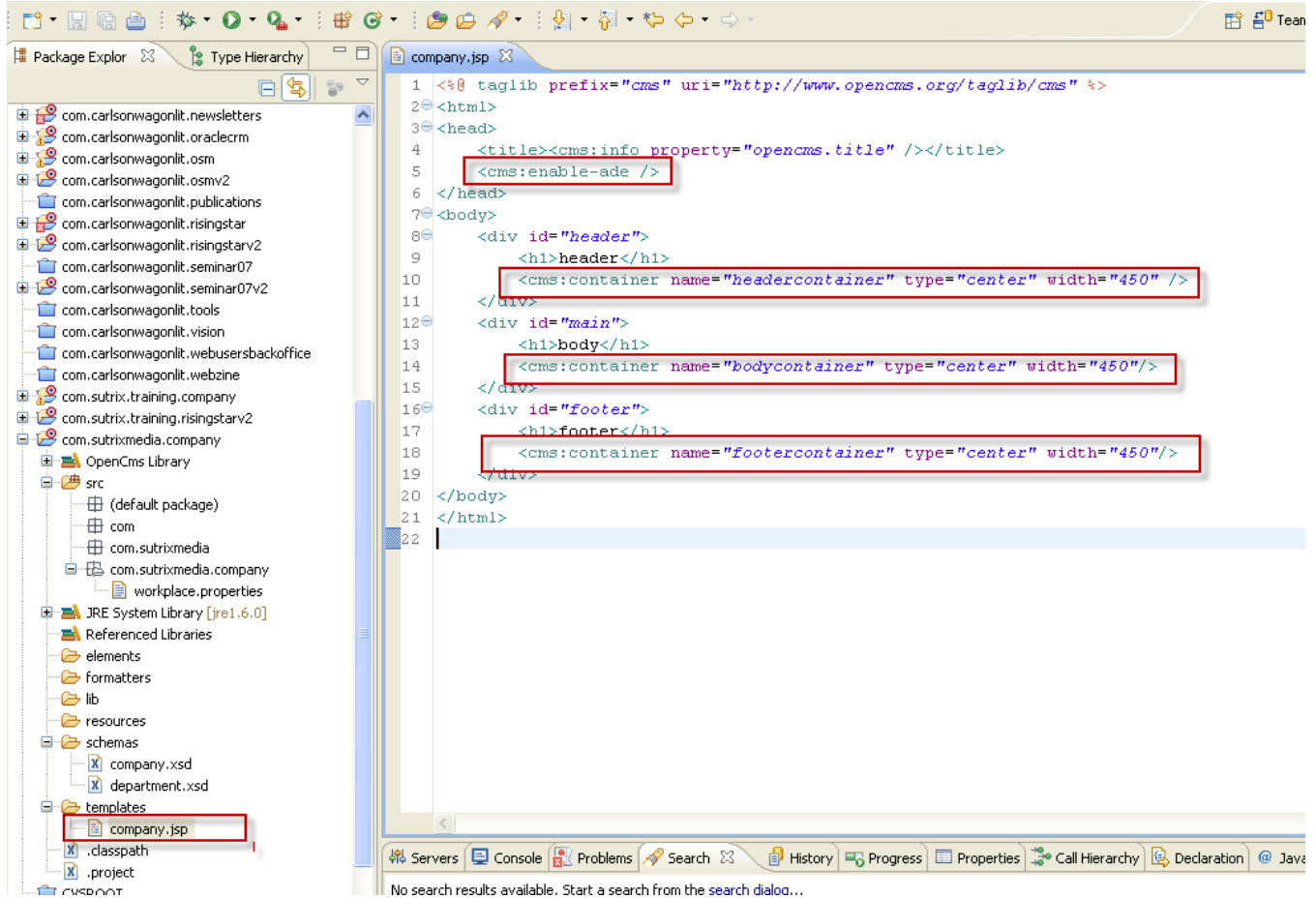
**department** ✂ +

**name** ✂

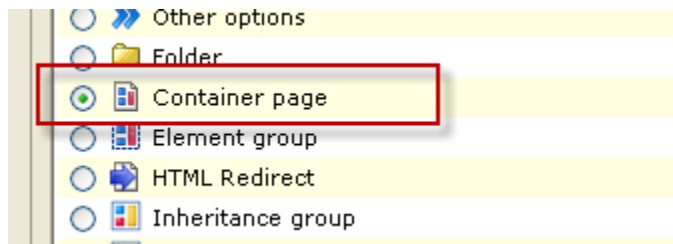
**description** ✂

## 15.5. Create a template

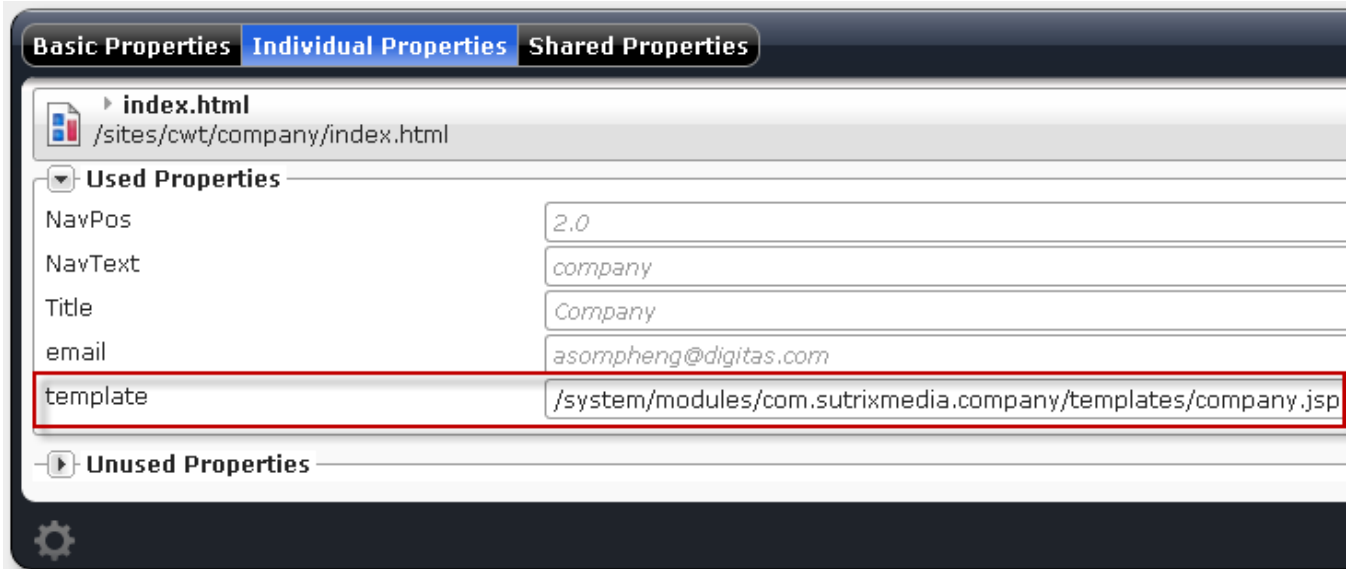
- Create new jsp with name "company.jsp" on "templates" folder



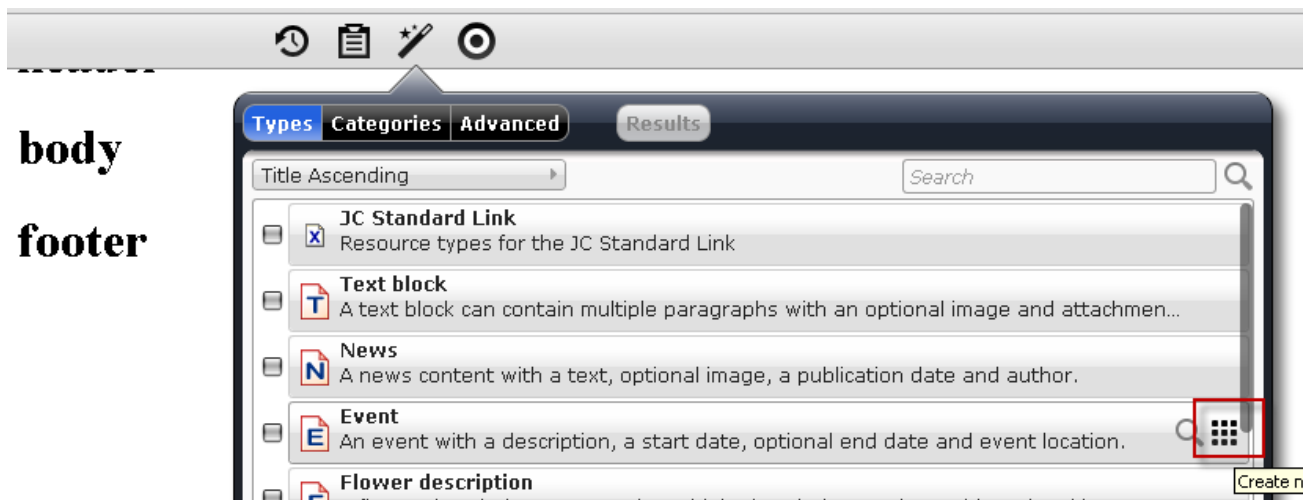
- Create new container page "index.html",



- Set `template` refer to: `/system/modules/com.sutrixmedia.company/templates/company.jsp`



- Run index.html, drag and drop a structured content successfully, that's good.



## header

## body

### New event


*5/20/13 2:18 PM*

Please edit the event text.

## footer

### 15.6. Create a formatter

- Create ".config" file on and config:  
`/system/modules/com.sutrixmedia.company/.config`

 -- no title --  
**/system/modules/com.sutrixmedia.company/.config [en]**

Resource types Property configuration Functions

**Resource type**

Type name

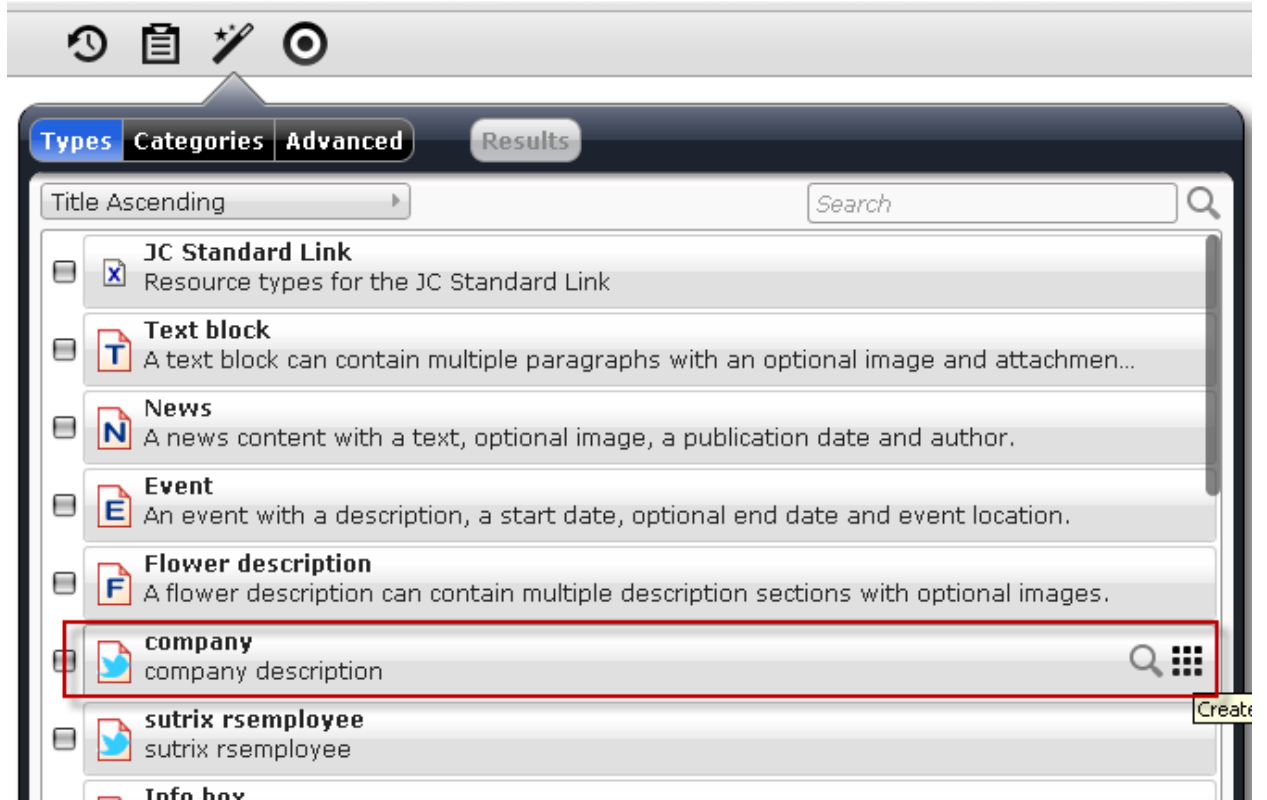
Folder  
Name

Name pattern

Display order

*Detail pages disabled*

- Should see as below:



- Create formatter with name "company.jsp" on "formatter" folder:

```

1 <%@ page session="false" %>
2 <%@ taglib prefix="cms" uri="http://www.opencms.org/taglib/cms" %>
3 <%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
4 <%@ taglib prefix="fmt" uri="http://java.sun.com/jsp/jstl/fmt" %>
5
6 <cms:formatter var="content" val="value" rdfa="rdfa">
7
8 <div class="row-fluid" style="min-height: 100px">
9   <div class="span5">
10    <h2>${content.value.name}</h2>
11    <h4>${content.value.address}</h4>
12  </div>
13  <div class="pull-right">
14    <table>
15      <c:forEach items="${content.valueList.department}" var="department">
16        <tr>
17          <td>${department.value.name}</td>
18          <td>${department.value.description}</td>
19        </tr>
20      </c:forEach>
21    </table>
22  </div>
23 </div>
24 </cms:formatter>
25

```

- Make sure company.xsd refer to formatter company.jsp right.


```

<formatters>
  <formatter minwidth="10" maxwidth="950" uri="/system/modules/com.sutrixmedia.company/formatters/company.jsp" searchcontent="tr">
</formatters>

```

- Run index.html, drag and drop "company" and see the result:



 <b>Company</b> /company/company.html [en]	
<b>name</b>	<input type="text" value="sutrix media"/>
<b>address</b>	<input type="text" value="Truong Quoc Dung stress, Phu Nhuan district, HCMC"/>
<b>department</b>	<input type="text" value="java department"/>
<b>department</b>	<input type="text" value="php department"/>
<b>department</b>	<input type="text" value="design department"/>

Index.html

# body

**sutrix media**

**Truong Quoc Dung stress, Phu Nhuan district, HCMC**

java java department

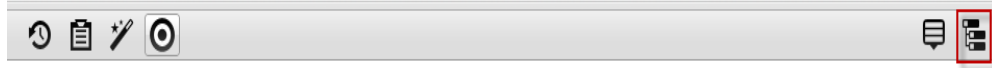
PHP php department

Design design department

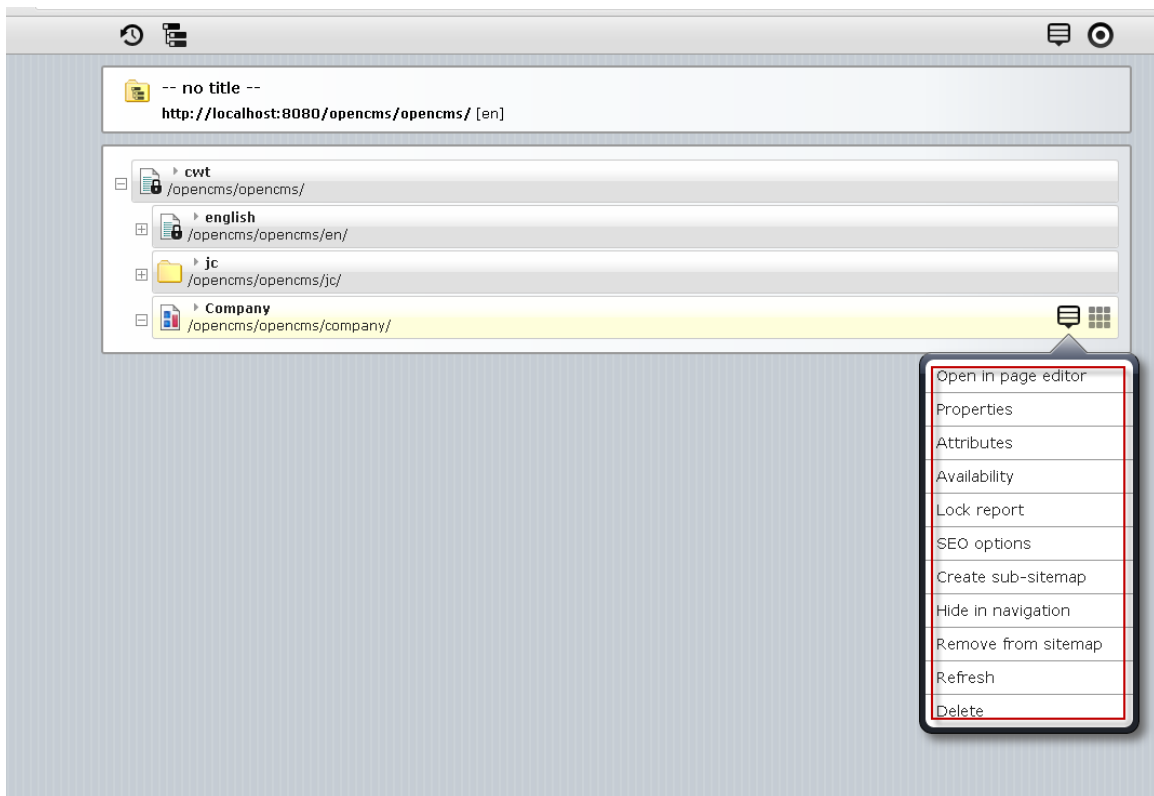
# footer

## 15.7. Sitemap editor

- Click button "open sitemap editor"



- And see the result:



- With function list on menu, you can control your site on sitemap.

## 16. Reference

<http://www.opencms.org/en/modules/downloads/dl-template-creation-beginners-guide.html>

+++++ BLANK PAGE +++++