

CS320 Web and Internet Programming

Introduction to JSPs

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Why JSP?

- ◆ Creating HTML pages is hard using `HttpServletResponse.getWriter().println()`
- ◆ Separating web presentation and backend processing

JSP Hello World Examples

- ◆ `HelloWorld1.jsp`
- ◆ `HelloWorld2.jsp`

HelloWorld2.jsp

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0  
Transitional//EN">  
<HTML>  
<HEAD><TITLE>A Little Bit Java</TITLE></HEAD>  
<BODY>Hello World on <%= new java.util.Date() %>  
after working 12 long long hours.  
</BODY>  
</HTML>
```

JSP Tags

- ◆ Expressions
 - `<%= Java Expression %>`
- ◆ Scriptlets
 - `<% Java Code %>`
- ◆ Declarations
 - `<%! Java Code %>`
- ◆ Directives
 - `<%@ attribute="value" %>`
- ◆ Comments
 - `<%-- Hidden Comments --%>`
 - `<!-- Output Comments -->`

JSP And Servlet

- ◆ A JSP are automatically converted to a servlet
 - `Visitors.jsp`
 - `Visitors_jsp.java`

JSP to Servlet Correspondence

- Declarations → Class fields
- `_jspService()`
HTML content → `out.write()`
Expressions → `out.print()`
Scriptlet → code
- Hidden comments → ignored

Mixing Scriptlets and HTML

```
<% if( Math.random() > 0.5 ) { %>  
Good morning!  
<% } else { %>  
Good afternoon!  
<% } %>
```

Structure Comparison between JSP and Servlet

- | | |
|--------------------------|------------------------------|
| ◆ Servlet | ◆ JSP |
| ▪ <code>init()</code> | ▪ <code>jspInit()</code> |
| ▪ <code>service()</code> | ▪ <code>jspService()</code> |
| • <code>doGet()</code> | • <code>_jspService()</code> |
| • <code>doPost()</code> | ▪ <code>jspDestroy()</code> |
| ▪ <code>destroy()</code> | |

Directives

- ◆ `page`
- ◆ `include`
 - `<%@ include file="another.jsp" %>`
- ◆ `taglib`

page

- ◆ `import`
 - `<%@ page import="java.util.*, some.other.package.*" %>`
- ◆ `isThreadSafe`
 - `<%@ page isThreadSafe="true" %>`
- ◆ `session`
 - `<%@ page session="true" %>`
- ◆ `errorPage`
 - `<%@ page errorPage="URL" %>`

Predefined Variables

- ◆ `request` – `HttpRequest`
- ◆ `response` – `HttpResponse`
- ◆ `out` – `PrintWriter`
- ◆ `session` – `HttpSession`
 - `setAttribute(String, Object)`
 - `getAttribute(String)`
- ◆ `application` – `ServletContext`
 - `setAttribute(String, Object)`
 - `getAttribute(String)`

Cart.jsp

- ◆ Use of Servlet Session Tracking API