CS320 Web and Internet Programming

Working with Multiple JSP Pages

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Overview

- Include and include
- Forward and redirect
- Scopes again
- Error pages

<%@ include>

```
<%@ include file="path_to_file" %>
```

- For all intent and purposes, the included file is simply part of the host page
- "Inclusion" happens at the translation time
- Example:
  - Header, footer, and host.jsp

Path to the Included File

- Relative path (relative to who??)
  - e.g. <%@ include file="page1.jsp" %>
- Absolute path (absolute from where??)
  - e.g. <%@ include file="**/**page1.jsp" %>
- Hide pages under *WEB-INF*

```
<%@ include file="/WEB-INF/header.jsp" />
```

<jsp:include>

```
<jsp:include page="path_to_page" />
```

- Inclusion happens at request time
  - *Output* of JSP page
  - *Output* of servlet
  - Static resources
    - HTML pages
    - Plain text files

Requests and Parameters

- Access to request and parameters??
- Add additional parameters
  - header.jsp in Heather

```
<jsp:include page="/WEB-INF/header.jsp">
   <jsp:param name="title" value="Student Home"/>
   <jsp:param name="name" value="${stu.fname} ${stu.lname}"/>
   <jsp:param name="p1" value="${sys.quarterYear}"/>
   <jsp:param name="p2" value="${sys.date}"/>
</jsp:include>
```

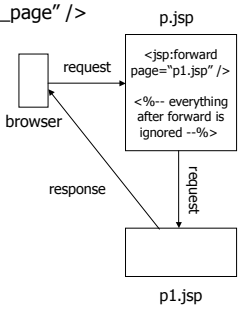
<%@ include> vs. <jsp:include>

- <%@ include>
  - content of the page
  - translation time
    - better performance
    - may cause maintenance problem
  - become part of the host page
- <jsp:include>
  - output of the page
  - request time
    - better flexibility
    - no maintenance problem
  - become part of the HTTP response produced by the host page
    - cannot set host page response status code, header etc.

<jsp:forward>

<jsp:forward page="path_to_page" />

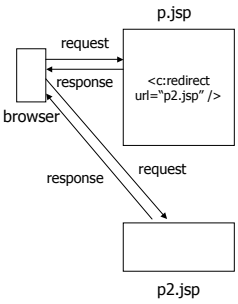
- forward the same request to another page
- Add more parameters to the request using <jsp:param>
- terminates the execution of the current page
- Don't use it (see MVC)



<c:redirect>

<c:redirect url="url" />

- redirect the browser to another URL
- the browser sends a new request to the URL
- terminates the execution of the current page??



Scoped Variables

- Sharing data among multiple JSP pages using *scoped variables*
- Scoped variables: data associated with one of the scopes
  - <name, value> pairs

Access Scoped Variables in Servlets

- application scope – ServletContext
  - getAttribute(String name)
  - setAttribute(String name, Object value)
- sessoin scope – HttpSession
  - getAttribute(String name)
  - setAttribute(String name, Object value)
- request scope – HttpServletRequest
  - getAttribute(String name)
  - setAttribute(String name, Object value)
- page scope – PageContext
  - getAttribute(String name)
  - setAttribute(String name, Object value)

Access Scoped Variables in JSPs

```
<c:set var="v1" value="abc" scope="page" />
<c:set var="v1" value="bcd" scope="request" />
<c:set var="v2" value="hello" scope="session" />

${v1}, or ${pageScope.v1}

<c:remove var="v2" />
<c:remove var="v1" scope="request" />
```

Scopes and Data Sharing

	page	request	session	application
<%@ include>				
<jsp:include>				
<jsp:forward>				
<c:redirect>				

Error Page

- In a production system
  - Hide runtime exception details from users
  - Make the web application look more professional

Error page:

```
<%@ page isErrorPage="true" %>
```

Use error page:

```
<%@ page errorPage="path_to_errorPage" %>
```

Error Data

- Access details about the exception

```
${pageContext.errorData.requestURI}
${pageContext.errorData.servletName}
${pageContext.errorData.statusCode}
${pageContext.errorData.throwable}
```

javax.servlet.jsp.ErrorData

- getRequestURI()
- getServletName()
- getStatusCode()
- getThrowable()

java.lang.Throwable

- getMessage()
- getStackTrace()

Alternative to Error Page

- Handle exceptions within the JSP page

```
<c:catch var="e">
   <%-- some code that may throw an exception --%>
</c:catch>

<c:if test="${! empty e}">
   <%-- an exception happened. --%>
   <%-- do something about it --%>
</c:if>
```

Preparing for the Midterm ...

- Read all the notes and sample code
- Write a bean with an int property, a boolean property, a String property, and a collection property
- Write a simple example for each of the JSTL Core tags
  - Try use your bean in the examples
  - Try use EL in the examples
  - Make sure the examples work on the CS server

... Preparing for the Midterm

- Put all your code samples on the CS server (or somewhere handy)
- Disclaimer: you may still not do well in the midterm after all the preparation (programming can not be learned in 3 days)