

Session 22

Intra Server Control

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Lecture Objectives

- Understand the differences between a server side forward and a redirect
- Understand the differences between an include and a forward - and when each should be used

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Servlets and JSP

We can pass control from a servlet to a JSP with a redirect or a forward.

```

    graph TD
      UA[User agent] --> WS[Web Server]
      WS --> UA
      WS <--> S[servlet]
      S <--> J1[JSP]
      S <--> J2[JSP]
      B[Bean] -.-> S
      B -.-> J2
      J1 <--> TH[Tag Handler]
    
```

A redirect is an HTTP status code that causes the browser to load a different page

```
response.sendRedirect("results-page.jsp");
```

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RequestDispatcher Interface

- An object that receives a request (and response) and sends these objects to a named resource (e.g., servlet, JSP file) on the server
- Operates entirely within the server

```
String url = "/presentations/presentation1.jsp";
RequestDispatcher dispatcher =
    request.getRequestDispatcher(url);
dispatcher.forward(request, response);
```

/ indicates the path is relative to the root of the Web application. Otherwise relative to the original request

You can also get a handle from the ServletContext

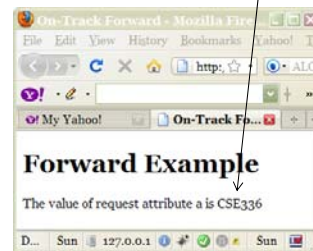
the forward method transfers control

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Are We on Track?

- Code a servlet that
 - Adds an attribute to the request object
 - Forwards to a JSP that displays (using EL) the value of the request attribute (in a paragraph tag)

RequestDispatcher is in the
javax.servlet package



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Were We on Track?

Servlet

```
...
request.setAttribute("a", "CSE336");
RequestDispatcher r =
    request.getRequestDispatcher("JSPs/Tracks/TrackForward.jsp");
r.forward(request, response);
```

JSP

```
<h1>Forward Example</h1>
<p>The value of request attribute a is {requestScope.a}</p>
```

Or

```
<p>The value of request attribute a is ${a}</p>
```

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Forward / Include

■ RequestDispatcher provides 2 methods

■ forward

- | Forwards a request to another resource on the server
- | The destination resource generates the response
- | Called before response buffer is flushed

■ include

- | Includes the response of the target in the response generated by the servlet using the dispatcher

You will not likely use the include method in your project - it is mainly for library tags

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Forward / Include Issues

■ Use the include method of RequestDispatcher to have the servlet provide response body

■ Included page:

- Must be dynamic
- Cannot set the status code
- Cannot set headers
- Must use the flush attribute (and set it to true)

■ JSP provides support for includes and forwards

- `<jsp:include page="pathName" flush="true" />` occurs at request time
c:import is more powerful, so you may not need to use jsp:include

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Example

servlet

```
...
InfoBean b = new InfoBean();
b.setValue(request.getParameter("value"));
request.setAttribute("myBean", b);
RequestDispatcher r = request.getRequestDispatcher("Next.jsp");
r.forward(request, response);
}
```

The servlet forwards to next.jsp

Next.jsp

```
...
<p>The value that was forwarded is ${myBean.value}</p>
```

A request attribute is not the same as a request parameter

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... Example

■ Bean used in the example:

```
package lectures;

public class InfoBean {

    private String value;

    public void setValue(String s) {
        value = s;
    }

    public String getValue() {
        return value;
    }
}
```

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Have You Satisfied the Lecture Objectives?

- Understand the differences between a server side forward and a redirect
- Understand the differences between an include and a forward - and in which cases each would be used