

Session 6

Form Dataset

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Lecture Objectives

- Understand the relationship between HTML form elements and parameters that are passed to the servlet, particularly the form dataset

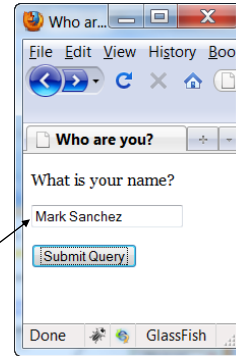
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Example - Form Input to a Servlet

```
<head>  
<title>Who are you?</title>  
</head>  
<body>  
<form method="get" action=  
"http://localhost:8080/CodeCSE336/helloyou.html">  
  What is your name?  
  <input type="text" name="fullName"  
  value="Enter name" />  
  <input type="submit" />  
</form>  
</body>  
</html>
```

Input components are grouped by a form element

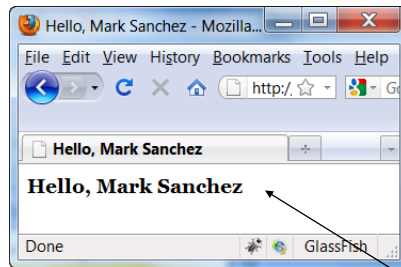


Entering a name in this component changes the value of this form parameter

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HelloYou Servlet



```
out.println(docType);  
String name = request.getParameter("fullName");  
out.println("<html>");  
out.println("<head><title>  
Hello, " + name + "</title></head>");  
out.println("<body>");  
out.println("Hello, " + name);  
out.println("</body></html>");  
out.close();
```

Servlet reads value of form data set

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Servlet Generates HTML

```
out.println(docType);  
String name =  
    request.getParameter("fullName");  
out.println("<html>");  
out.println("<head><title>Hello, Mark  
Hello, " + name +  
    "</title></head>");  
out.println("<body>");  
out.println("Hello, " + name);  
out.println("</body></html>");  
out.close();
```

→ <html>
→ <head><title>Hello, Mark Sanchez</title></head>
→ <body>
→ Hello, Mark Sanchez
→ </body></html>

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HTML Form Element ...

- A Form element contains component elements that are used to collect information on a Web page
- Each component typically has a name and a value
- The collection of name/value pairs is referred to as the form data set
- Form values are initially set to the value in the html, but changed when the user enters data
- The entire form is associated with a URL that will process the data (usually after the submit button is pressed)

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HTML Form Element

HTML control types:

- Buttons
- Text input (INPUT and TEXTAREA)
- Submit
- Password
- Check boxes
- File select
- Radio buttons
- Hidden controls
- Menus
- Object controls

- Users complete a form by modifying the form elements and then submitting to the server for servlet processing

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Example Form (Partial) ...

* Country

USA

```
<select name="icountry">  
  <option value="USA" selected="selected">USA</option>  
  <option value="IRELAND"> IRELAND </option>  
  <option value="ISRAEL"> ISRAEL </option>  
  <option value="ITALY"> ITALY </option>  
  <option value="JAMAICA"> JAMAICA </option>  
  <option value="UZBEKISTAN"> UZBEKISTAN </option>  
</select>
```

The value of the icountry form element is initially "USA", but changes when the user selects a different menu item

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Registration Form

■ Consider the following state drop-down form

```
<select name="CountryOfRes" id="countryResidence">  
  <option value="">Select one</option>  
  <option value="AF">Afghanistan</option>  
  <option value="FR">France</option>  
  <option value="DE">Germany</option>  
  <option value="IL">Israel</option>  
  ...  
</select>
```

Notice that the value attribute is not always the same as the text contained in the value element

Form Element Server Coordination

- A Form element specifies attributes for:
 - The program that will handle the completed and submitted form (ACTION attribute)
 - A script program that evaluates prior to submission to the server - and that can prevent data from being submitted. (ONSUBMIT attribute)
 - The method by which the user data will be sent to the server (METHOD attribute)
 - GET - form data set is appended to the URL with a ? (used when form causes no side effects)
 - POST - form data set is included in the body of the form
 - Character encoding that must be accepted by the server

Form Data Set

- GET method - Form data set is included in the URL query string (by the browser)

```
http://www.mysite.com/path/  
program?first_name=Mark&last_name=Sanchez
```

- Note the use of:
 - = associates a value with a name
 - & separates consecutive name/value pairs
- POST method - Form data set is encoded in a similar manner, but included with http header information
- Notes:
 - for Post requests, the input data cannot be bookmarked with the target URL - consistent with side effects
 - Post form data set is not immediately visible

Form dataset

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Form Element

- A form element's name is given by the name attribute
- A form element has an initial value and a current value (both are strings)
- A form element is displayed in the browser according to the value of the type attribute
- Form submission - for the successful submissions, the form element's value is paired with its name - all of these pairs are referred to as the form data set

```
<input  
name="ifirst_name"  
value=""  
type="text" />
```

Type attribute is not required (default value is "text"), but it is a good practice to do so

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Radio Buttons

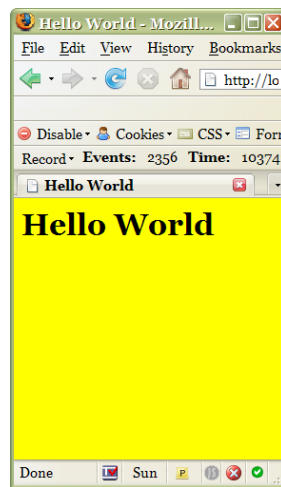
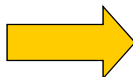
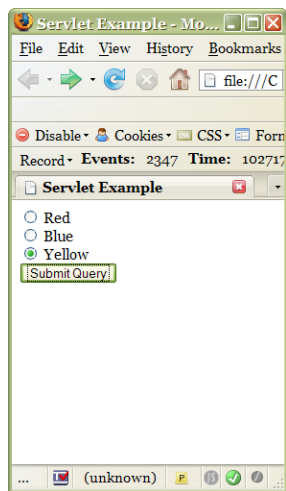
* Do you need hotel reservations? Yes
 To ensure that you receive the discounted JavaOne Conference hotel rate, please make your hotel reservations through us. No

How is the radio button group specified?

```
<td><span class="asterisk">*</span> Do you need hotel
reservations?<br /> To ensure that you receive the discounted
JavaOne Conference hotel rate, please make your hotel
reservations through us.</td>
<td> <input name="ihotel" value="Yes" type="radio" /> Yes<br />
<input name="ihotel" value="No" type="radio" /> No </td>
</td></td>
```

You can optionally specify the default selected button or checkbox

Example - Hello Background Color



BackgroundColor Launch Page

```
<?xml version="1.0" encoding="iso-8859-1"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Servlet Example</title>
<meta http-equiv="Content-Type"
  content="text/html; charset=iso-8859-1" /> </head>
<body>
<form action="http://localhost:8080/CodeCSE336/BackgroundColor">
<div> <label>
<input name="bgColor" type="radio" value="red" checked="checked" />
Red</label> <br /> <label>
<input name="bgColor" type="radio" value="blue" /> Blue</label>
<br /> <label>
<input name="bgColor" type="radio" value="yellow" /> Yellow</label>
<br />
<input type="submit" /> </div> </form> </body> </html>
```

What does the label tag do?

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Background Servlet Fragment

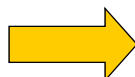
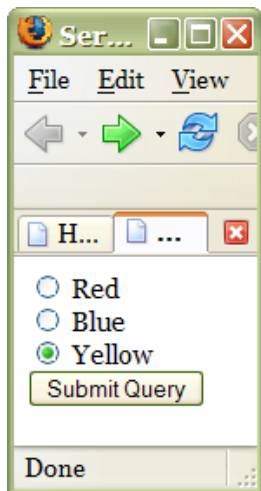
```
String color = "white";
try {
  color = request.getParameter("bgColor");
} catch (Exception e) {
  e.printStackTrace();
}
out.println("<html>");
out.println(
  "<head><title>Hello World</title>");
out.print(
  "<style> body {background-color:");
out.print(color);
out.println("}</style>");
out.println("</head>");
out.println("<body>");
out.println("<h1>Hello World</h1>");
out.println("</body></html>");
out.close();
}
```

Note: the value of bgcolor is "yellow" (not "Yellow")

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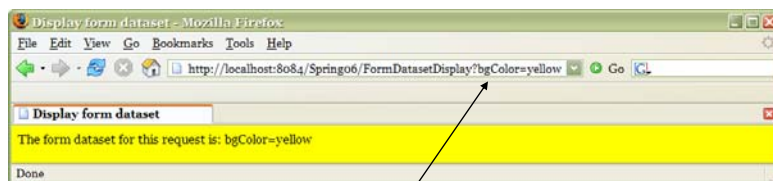
Example - Display the Form dataset



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FormDataset



For GET requests,
the form dataset is
contained in the
URL query string

```
<form action="http://localhost:34908/  
CodeCSE336/formdataset"  
method="get">  
What's your favorite color?  
<input value="Enter color"  
name="bgColor" />  
<input type="submit"  
value="Submit Query" />  
</form>
```

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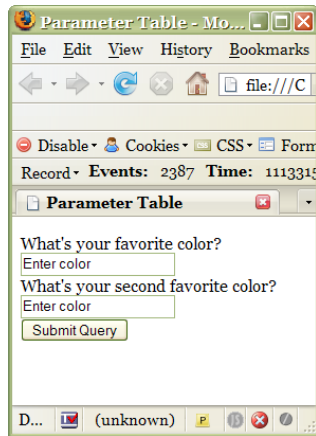
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FormDataSet Servlet Fragment

```
out.println("The form dataset for this request is ");  
out.println(request.getQueryString());
```

Example

- Display all the form name value pairs in a table



Have You Satisfied the Lecture Objectives?

- Understand the relationship between HTML form elements and parameters that are passed to the servlet, particularly the form dataset