

# HTML Tables and Forms

Dr. Michele Weigle

<http://www.cs.odu.edu/~mweigle/CS418-S14/>

## Outline

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- ▶ Assigned Reading
  - ▶ Chapter 4 "Using Tables to Display Data"
  - ▶ Chapter 5 "Form Elements: Letting the User Work with Data"
- ▶ HTML Tables Review
- ▶ HTML Forms Review
- ▶ Chs 4, 5 Code Example Demo/Walkthrough

## HTML Tables

### Syntax

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- ▶ Tables are defined with the `<table>` tag
- ▶ Rows are defined with `<tr>`
- ▶ Cells are defined with `<td>`
- ▶ Headings are defined with `<th>`

## HTML Tables

### Simple Example

---

```
<table border="1">
<tr>
<td>row 1, cell 1</td>
<td>row 1, cell 2</td>
</tr>
<tr>
<td>row 2, cell 1</td>
<td>row 2, cell 2</td>
</tr>
</table>
```

<http://www.cs.odu.edu/~mweigle/cs312/html/table.html>

## HTML Tables

### Example with Headings

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```
<table border="1">
<tr>
<th>Heading</th>
<th>Another Heading</th>
</tr>
<tr>
<td>row 1, cell 1</td>
<td>row 1, cell 2</td>
</tr>
<tr>
<td>row 2, cell 1</td>
<td>row 2, cell 2</td>
</tr>
</table>
```

## HTML Tables

### Blank Cell

---

```
<table border="1">
<tr>
<td>row 1, cell 1</td>
<td>row 1, cell 2</td>
</tr>
<tr>
<td>row 2, cell 1</td>
<td></td>
</tr>
</table>
```

- ▶ Note: Some browsers will display the empty cell differently if it contains `&nbsp;`; rather than nothing (or just spaces).

# HTML Tables

## Attributes

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- ▶ **border**
  - ▶ default is no border (or border = "0")
- ▶ **cellpadding**
  - ▶ amount of space between the contents of the cell and the cell wall, default is 1
- ▶ **cellspacing**
  - ▶ defines the space between cells, default is usually 2
- ▶ **width**
  - ▶ width of table defined in pixels (width="300") or percentage of the browser window (width="75%")
  - ▶ if defined in percentage, resizing window resizes the table
- ▶ **Attributes such as this can also be specified via CSS**

<http://www.cs.odu.edu/~mweigle/cs312/html/table-attr.html>

# HTML Tables

## Multiple Rows/Columns

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- ▶ **colspan**
  - ▶ defines a cell to be a certain number of columns across
- ▶ **rowspan**
  - ▶ defines a cell to be a certain number of rows high
- ▶ **Both are defined as attributes of the cell**
  - ▶ either in <td> or <th>

## Outline

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- ▶ HTML Tables  
Review
- ▶ HTML Forms  
Review
- ▶ Chs 4, 5 Code  
Example Demo/  
Walkthrough

## HTML Forms

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- ▶ Form elements are elements that allow the user to enter information
  - ▶ text fields
  - ▶ radio buttons
  - ▶ checkboxes
  - ▶ buttons
  - ▶ drop-down menus
  - ▶ textareas
- ▶ The definition and layout of a form is HTML, but a server-side script is needed to process the data provided to the forms.

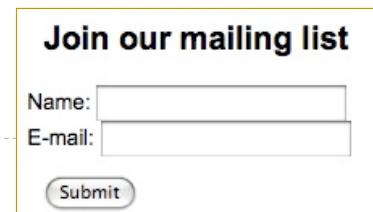
# HTML Forms

- ▶ Defined with the `<form>` tag:

```
<form action="">
<label> </label> <input />
...
<label> </label> <input />
</form>
```

- ▶ action attribute is required by XHTML.
- ▶ User input fields are defined by the `<input />` tag
  - ▶ attributes: type (type of input), name (used for referencing)
- ▶ Text label associated with an input field is defined with the `<label>` tag

## HTML Forms Example



**Join our mailing list**

Name:

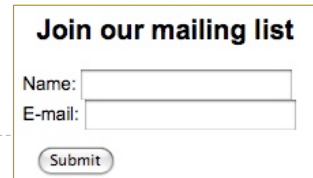
E-mail:

```
<form action="maillist.pl" method="post">
<h2>Join our mailing list</h2>
<label>Name:</label> <input type="text"
name="realname" />
<br /><label>E-mail:</label> <input type="text"
name="email" />
<p><input type="submit" value="Submit" /></p>
</form>
```

## HTML Forms

### Forms and Actions

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Join our mailing list

Name:

E-mail:

- ▶ The main attribute of a form tag is **action**
  - ▶ ex: `<form action="/cgi-bin/maillist.pl">`
- ▶ **action** tells the browser where to send the data for processing
- ▶ `input type="submit"` creates the submit button
  - ▶ when pressed, the data is sent to the action defined

## HTML Forms

### Forms and Methods

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`<form action="maillist.pl" method="post">`

- ▶ If the method is **get**
  - ▶ query string of the arguments is tacked onto the end of the URL (of action attribute)
    - ▶ `name=value`
    - ▶ `"?"` is separator between data-value pairs
  - ▶ URL is sent to the web server
  - ▶ should only be used when doing a search or requesting data
- ▶ If the method is **post**
  - ▶ client sends the query string directly to the server, separately from the URL
  - ▶ should be used when updating data on the server, for example, in a database

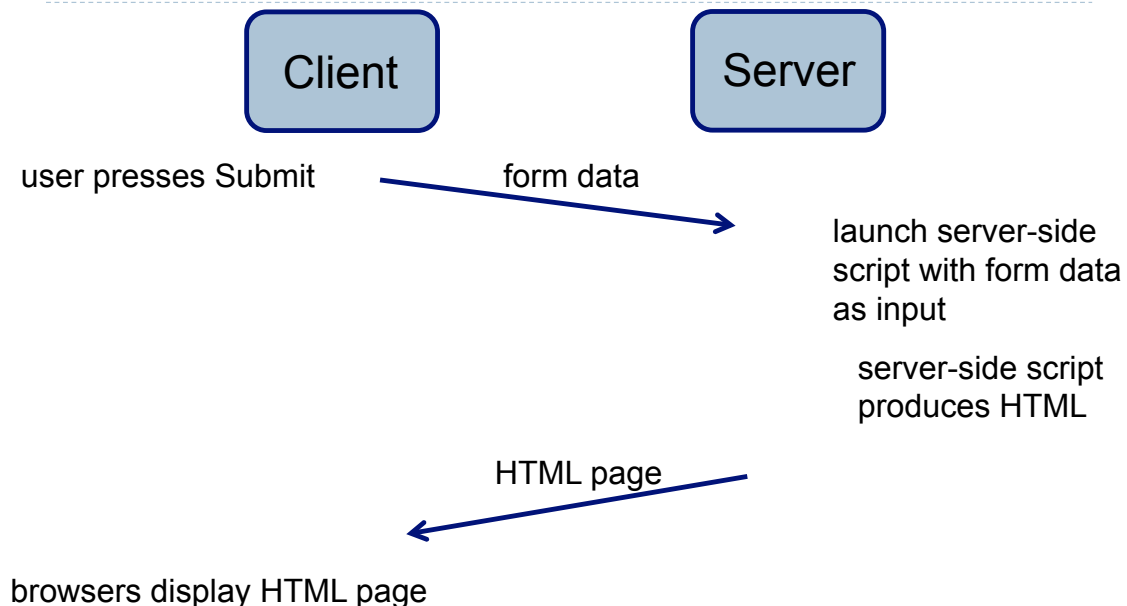
# Form Processing

## What Happens When Submit is Pressed?

- ▶ User presses "Submit" button
- ▶ Browser sends form data to web server
  - ▶ specifically, to server-side script defined in <form action>
- ▶ Web server launches the server-side script
- ▶ Server-side script executes, taking the data from the form as input
- ▶ Server-side script typically will generate a web page using HTML
- ▶ Server-side script passes the HTML page back to the web server
- ▶ Web server passes the HTML page back to the browser

# Form Processing

## What Happens When Submit is Pressed?





# HTML Forms

## Forms and Server-Side Scripts

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- ▶ For the simple examples, we'll use the HTML Code Tutorial's mycgi.pl script
  - ▶ <http://www.htmlcodetutorial.com>
- ▶ Displays name=value pairs that are sent to it

# HTML Forms

## Form Input Types

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- ▶ Text
- ▶ Submit Button
- ▶ Reset Button
- ▶ Password
- ▶ Radio Button
- ▶ Checkbox
- ▶ Non-Input Types
  - ▶ select (scrolling or drop-down list)
  - ▶ textarea

## Text Type

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- ▶ A one-line text entry field

```
<input type="text" name="user" value="Donald Smith" size="30" />
```

- ▶ Attributes:

- ▶ type
- ▶ name of this parameter
- ▶ value (optional) – default input value
- ▶ size (optional) – field width
- ▶ maxlength (optional) – limit the number of characters the user can enter

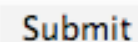
A screenshot of a text input field with a light green background. The field contains the text "Donald Smith" in a black font. The field has a thin border and a small shadow effect.

- ▶ When form is submitted, the information will be passed as user=Donald+Smith

## Submit Type

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- ▶ A submit button

A screenshot of a submit button with a light gray background and a thin border. The button contains the text "Submit" in a black font.

```
<input type="submit" value="Submit" />
```

- ▶ Value indicates the text that will be placed on the button
  - ▶ if nothing given, default is "Submit Query"
- ▶ **Important:** When pressed, the form data is submitted to the script specified the form's action attribute

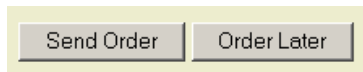
## Submit Type

### Multiple Submit Buttons

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- ▶ Can have multiple submit buttons in the same form
- ▶ We can have multiple submit buttons, e.g., two labeled Send Order and Order Later, respectively.

```
<input type="submit" name="action" value="Send Order" />  
<input type="submit" name="action" value="Order Later" />
```



## Submit Type

### Multiple Submit Buttons

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- ▶ When multiple submit buttons are used in a single form, they should have the same name but different value
- ▶ Only one submit button can be clicked
  - ▶ If the user clicked on the button labeled Send Order, then the corresponding part of the query string will be `action=Send+Order`

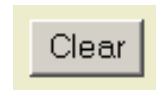
<http://www.cs.odu.edu/~mweigle/cs312/forms/form.html>

## Reset Type

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- ▶ A reset button

```
<input type="reset" value="Clear" />
```



- ▶ Value indicates the text that will be placed on the button
  - ▶ if nothing given, default is "Reset"
- ▶ When pressed, the all field data and selections in the form are reset back to their original, *default* values

<http://www.cs.odu.edu/~mweigle/cs312/forms/form.html>

## Hidden Field

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- ▶ Used to pass some value, not given in any current input fields, to the called procedure.

```
<input type="hidden" name="to" value="weigle" />
```

- ▶ In the query string, this field and value pair are passed as
  - ▶ to=weigle
- ▶ But, nothing is shown in the document text or form

<http://www.cs.odu.edu/~mweigle/cs312/forms/form.html>

## Password Type



- ▶ A one-line password entry field

```
<input type="password" name="passwd" value="xyzyz" size="10" />
```

- ▶ All characters, default or user input, in the password field are shown as asterisks or dots.
- ▶ When form is submitted, the information will be passed as
  - ▶ `passwd=xyzyz`
  - ▶ no encryption is performed (plain-text)

<http://www.cs.odu.edu/~mweigle/cs312/forms/form.html>

## Radio Button Type

- ▶ A group of radio buttons
  - ▶ Similar to checkboxes, but the user can select only one out of a group

Small  Medium  Large

```
<input type="radio" name="size" value="small" checked="checked" />Small
```

```
<input type="radio" name="size" value="medium" /> Medium
```

```
<input type="radio" name="size" value="large" />Large
```

<http://www.cs.odu.edu/~mweigle/cs312/forms/form.html>

## Checkbox Type

- ▶ A group of checkboxes

- ▶ Used to select multiple items.

Engine  Tire  Seat

```
<input type="checkbox" name="items" value="engine" />Engine
```

```
<input type="checkbox" name="items" value="tire"  
checked="checked" /> Tire
```

```
<input type="checkbox" name="items" value="seat" /> Seat
```

<http://www.cs.odu.edu/~mweigle/cs312/forms/form.html>

## Select Tag

- ▶ A drop-down or scrolling list

- ▶ drop down - `<select name="cars">`
  - ▶ scrolling - `<select name="favorites" size="4"  
multiple="multiple">`



- ▶ Each option in the list is surrounded by `<option>...</option>` tags

- ▶ ex: `<option>jogging</option>`
  - ▶ for default selection, use selected attribute on option tag
    - ▶ ex: `<option selected="selected">swimming</option>`

<http://www.cs.odu.edu/~mweigle/cs312/forms/form.html>

## Button Type

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- ▶ A push button

```
<input type="button" value="Press Me!" />
```

- ▶ Used to implement client-side scripts

- ▶ e.g., JavaScript
- ▶ nothing is sent to the server

- ▶ Example with simple JavaScript

```
<input type="button" value="Click!"  
onclick="javascript:alert('Clicked!');" />
```

<http://www.cs.odu.edu/~mweigle/cs312/forms/form.html>

## Textarea Tag

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- ▶ textarea tag, not an input tag

- ▶ For defining a large input text area, not just a field of a single line, use textarea tag.

```
<textarea name="longtext" rows="5" cols="60">  
</textarea>
```



<http://www.cs.odu.edu/~mweigle/cs312/forms/form.html>

## Communicating with Scripts Via URLs

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- ▶ Scripts may or may not require arguments from users.
- ▶ The arguments are called a query string and may be appended at the end of a URL with the question mark "?" leading it.
- ▶ If argument has blank space
  - ▶ use "+" or "%20"
- ▶ If there are two or more name/value pairs
  - ▶ use "&" to delimit

## Communicating with Scripts Via URLs

### Examples

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- ▶ One argument with parameter and value
  - ▶ <http://www.google.com/search?q=titanic>
- ▶ Argument value has blank space
  - ▶ <http://www.google.com/search?q=john+smith>
- ▶ Two or more parameters, using '&' to link pairs
  - ▶ <http://finance.yahoo.com/q/bc?s=AAPL&t=2y>



## When a Web Server Receives a Server-Side Request...

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- ▶ It creates a set of environment variables containing information about
  - ▶ the server itself
  - ▶ the remote browser
  - ▶ the current request, including `QUERY_STRING`
- ▶ It calls the corresponding script with any arguments in the environment variable `QUERY_STRING`.

## When a Web Server Receives a Server-Side Request...

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- ▶ The script picks up any information it wants from the environment variables, particularly the arguments from `QUERY_STRING`
  - ▶ i.e. the parameters with corresponding values
  - ▶ many programming languages provide tools for easy picking of parameter values by procedures
- ▶ The script then executes its own instructions
- ▶ The output by the script, typically a HTML page, is sent back to the client by the server

# Outline

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- ▶ HTML Tables

Project 1 assigned today  
Status Reports: Feb 4  
In-Class Demos: Feb 11-13

- ▶ HTML Forms

- ▶ Chs 4, 5 Code  
Example Demo/  
Walkthrough

Up Next: Forms + MySQL  
Assigned Reading: Ch 6

## Demo/Walkthrough Time

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- ▶ Examples from Chapters 4, 5

- ▶ Ch 4      <http://weiglevm.cs.odu.edu/~mweigle/textbook/ch04.htm>

- ▶ Creating an HTML Table
- ▶ Populating the HTML Table
- ▶ Master/Child Relationships
- ▶ Relationships

- ▶ Ch 5      <https://weiglevm.cs.odu.edu/~mweigle/textbook/ch05.htm>

- ▶ Simple Form
- ▶ Movie Search Form
- ▶ Simulate Search/Add Form for Movie, Actor, and Director