CS 83R : Server-Side Ruby Web Programming
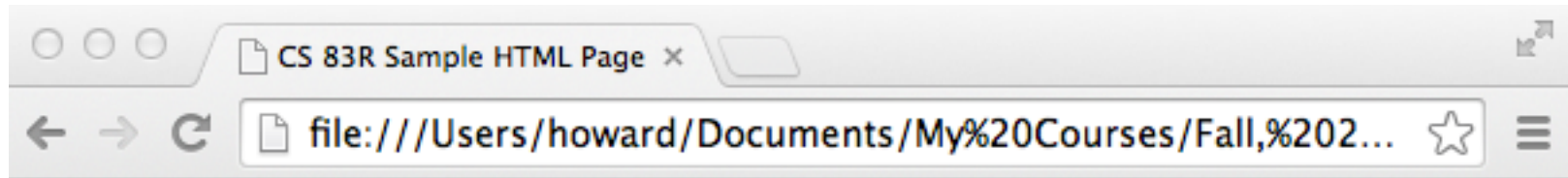
Howard A. Stahl

Agenda

- Hypertext Markup Language
  - Building Web Pages
  - Introductory Markup Tags

Hypertext Markup Language

- HTML Is A Textual Form Visualized In A Browser
  - It's Just Text, So You Can Use Many Tools To Create It…
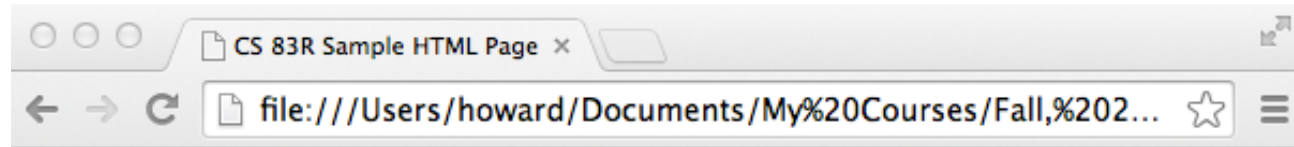 - Usually, Folks Migrate To A Web-Specific Markup Tool (Such As FrontPage Or DreamWeaver), Rather Than Just Notepad…

Sample HTML Page

Howard's CS 83R Sample HTML Page

Students need to have some familiarity with basic HTML tags.

Sample HTML Page

Howard's CS 83R Sample HTML Page

Students need to have some familiarity with basic HTML tags.

- Rendering Of The Document:

```
<html>
  <head><title>CS 83R Sample HTML Page</title></head>
  <body>
    <h1>Howard's CS 83R Sample HTML Page</h1>
    <p>Students need to have some familiarity with basic HTML tags.</p>
  </body>
</html>
```

HTML Features

- A "Document" Defines A Web Page Displayed By A Browser
  - Requires A .htm Or .html Extension
- Constructed From Coded Tags Within The Brackets (< >)
  - With Just A Few Tags, You Can Get Thru This Course
  - Tags Are Case In-Sensitive
  - Generally, Browsers Ignore A Document's Whitespace

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Avoid Filenames With Spaces… Use Underscores Instead…

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Avoid Filenames With Spaces… Use Underscores Instead…

A More Complete Example

- <!doctype html public "-//W3C//DTD HTML 4.0 Transitional//EN" >
<!-- A More Complete Example -->
<html>
  <head><title>CS 83R Sample HTML Page</title>
  </head>
  <body>
    <h1>Howard's CS 83R Sample HTML Page</h1>
    <p>Students need to have some familiarity with basic HTML tags.</p>
  </body>
</html>

Basic HTML Tags

Tag	Description
`<!doctype ... >`	Identifies the type of HTML document. This tag is often inserted automatically by the HTML editor.
`<html> </html>`	Marks the beginning and end of an HTML document.
`<head> </head>`	Marks the beginning and end of the Head section of the HTML document.
`<title> </title>`	Marks the title that is displayed in the title bar of the browser.
`<body> </body>`	Marks the beginning and end of the Body section of the HTML document.
`<h1> </h1>`	Tells the browser to use the default format for a heading-1 paragraph.

Basic HTML Tags

Tag	Description
`<h2> </h2>`	Tells the browser to use the default format for a heading-2 paragraph.
`<p> </p>`	Tells the browser to use the default format for a standard paragraph.
` `	Inserts a line break.
`<b> </b>`	Marks text as bold.
`<i> </i>`	Marks text as italic.
`<u> </u>`	Marks text as underlined.
`<!-- -->`	Defines a comment that is ignored by the browser.

Working With Browsers

- You Can Browse To Read A File On Your Local Hard Drive
    - File->Open…
    - File-Based URL: file:///SomeFolder/ADocument.htm

More HTML Tags

- Anchor Tags Build Links Between Pages

The Email List application 1
The Email List application 2

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The Anchor Tag

Tag	Description
`<a> </a>`	Defines a link to another URL. When the user clicks on the text that's displayed by the tag, the browser requests the page that is identified by the Href attribute of the tag.

Attribute	Description
`href`	Specifies the URL for the link.

Building Tables

- Tables Help In Making Nicer Output
- Unless You Are Doing Something Simple, Tables Just Cry Out For An HTML Editor…

Table Example

- Tables Build Nice Output

Here is the information that you entered:

First name:	John
Last name:	Smith
Email address:	jsmith@hotmail.com

Table Example

- Tables Build Nice Output

Here is the information that you entered:

First name:	John
Last name:	Smith
Email address:	jsmith@hotmail.com

```
<table cellspacing="5" cellpadding="5" border="1">
<tr><td align="right">First name:</td><td>John</td></tr>
<tr><td align="right">Last name:</td><td>Smith</td></tr>
<tr><td align="right">Email:</td><td>jsmith@hotmail.com</td></tr></table>
```

Table Tags

Tag	Description
<table> </table>	Marks the start and end of the table.
<tr> </tr>	Marks the start and end of each row.
<td> </td>	Marks the start and end of each cell within a row.

Attributes Of The TABLE Tag

| Attribute	Description
border	Specifies the visual border of the table. To turn the border off, specify a value of 0. To specify the width of the border in pixels, specify a value of 1 or greater.
cellspacing	Specifies the number of pixels between cells.
cellpadding	Specifies the number of pixels between the contents of a cell and the edge of the cell.
width	Specifies the width of the table. To specify the width in pixels, use a number such as 300. To specify a percent of the browser's display space, use a number followed by the percent sign such as 60%.
height	Specifies the height of the table in pixels or as a percentage of the browser's display space. This works like the Width attribute.

Attributes Of The TR Tag

Attribute	Description
`valign`	Specifies the vertical alignment of the contents of the row. Acceptable values include Top, Bottom, and Middle.

Attributes Of The TD Tag

Attribute	Description
`align`	Specifies the horizontal alignment of the contents of the cell. Acceptable values include Left, Right, and Center.
`colspan`	Specifies the number of columns that the cell will span.
`rowspan`	Specifies the number of rows that the cell will span.
`height`	Specifies the height of the cell in pixels.
`width`	Specifies the width of the cell in pixels.
`valign`	Specifies the vertical alignment of the contents of the row. Acceptable values include Top, Bottom, and Middle and will override any settings in the TR tag.

Working With Images

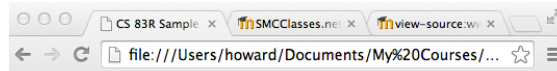- Images Make For Much More Interesting Pages

Working With Images

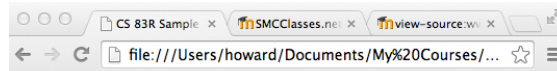- Images Make For Much More Interesting Pages
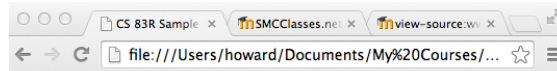

```
<p>Santa Monica College Logo</p><img
src="http://www.smcclasses.net/SMClogo.jpg"
alt="Santa Monica College Logo" />
```

Working With Images

- Images Make For Much More Interesting Pages

Santa Monica College Logo

```
<p>Santa Monica College
src="http://www.smcclass
alt="Santa Monica College
```

Most Browsers Work With GIF Or JPEG Image Formats…

The Image Tag

Tag	Description
`<img>`	Specifies how to place a GIF or JPEG image within an HTML page.

Attribute	Description
`src`	Specifies the relative or absolute URL for the GIF or JPEG file.
`height`	Specifies the height of the image in pixels.
`width`	Specifies the width of the image in pixels.
`alt`	Specifies the text that's displayed when the image can't be displayed.
`border`	Specifies the width of the border in pixels with 0 specifying no border at all.
`hspace`	Specifies the horizontal space in pixels. This space is added to the left and right of the image.
`vspace`	Specifies the vertical space in pixels. This space is added to the top and bottom of the image.
`align`	Specifies the alignment of the image on the page.

Working With Forms

- HTML Forms Allow You To Acquire Information From The User
  - Typically, These Use The POST HTTP Method
  - Typically, We Will Wire Form Input To A Servlet To Be Processed

Example Form

- Forms Are Made Up Of Various Controls

Here's a form that contains two text boxes and a button:

First name: John

Last name: Smith Submit

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```
<p>Here's a form that contains two text boxes and a
   button:</p>
   <form action="entry.jsp" method="POST">
      First name: <input type="text" name="firstName"><br>
      Last name: <input type="text" name="lastName">
      <input type="submit" value="Submit">
   </form>
```

The FORM Tag

Tag	Description
`<form> </form>`	Defines the start and end of the form.
`<input>`	Defines the input type.

Attribute	Description
`action`	The Action attribute specifies the URL of the servlet or JSP that will be called when the user clicks on the Submit button.
`method`	The Method attribute specifies the HTTP method that the browser will use for the HTTP request. The default method is the Get method, but the Post method is also commonly used.

Common Control Attributes

Attribute	Description
`name`	The name of the control. When writing Java code, you can use this attribute to refer to the control.
`value`	The default value of the control. This varies depending on the type of control. For a text box, this attribute sets the default text that's displayed in the box. For a button, this attribute sets the text that's displayed on the button.

Textbox Example

- Forms Support Different Kinds Of Textboxes

Textbox Example

- Forms Support Different Kinds Of Textboxes

Username: jsmith
Password: ●●●●●●●●●

Username:
<input type="text" name="username" value="jsmith">
Password:
<input type="password" name="password" value="psswd">

<input type="hidden" name="productCode" value="jr01">

TEXTBOX Attributes

Attribute	Description
type	Specifies the type of input control. Acceptable types for text boxes are Text, Password, and Hidden.
name	Specifies the name of the control. This is the name that is used to refer to the data in the control from a servlet or JSP.
value	Specifies the value of data in the control.
size	The width of the text control field in characters based on the average character width of the font.
maxlength	The maximum number of characters that can be entered into the text box.

CheckBox / RadioButton Example

- ## Different Kinds Of Prompts Are Available

Here's a form that contains 4 check boxes and 3 radio buttons:

☑ Yes, add me to your mailing list.

Contact me by:
○ Email ○ Postal mail ⊙ Both

I'm interested in these types of music:
☐ Rock
☐ Country
☐ Bluegrass

CheckBox / RadioButton Example

- ## Different Kinds Of Prompts Are Available

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☐ Country
☐ Bluegrass

```
<input type="checkbox" name="addEmail" checked>  Yes, add me.<br>
 Contact me by:<br>
<input type="radio" name="contactVia" value="Email">Email
<input type="radio" name="contactVia" value="Postal Mail">Postal mail
<input type="radio" name="contactVia" value="Both" checked>Both<br>
I'm interested in these types of music:<br>
<input type="checkbox" name="rock">Rock<br>
<input type="checkbox" name="country">Country<br>
<input type="checkbox" name="bluegrass">Bluegrass<br>
```
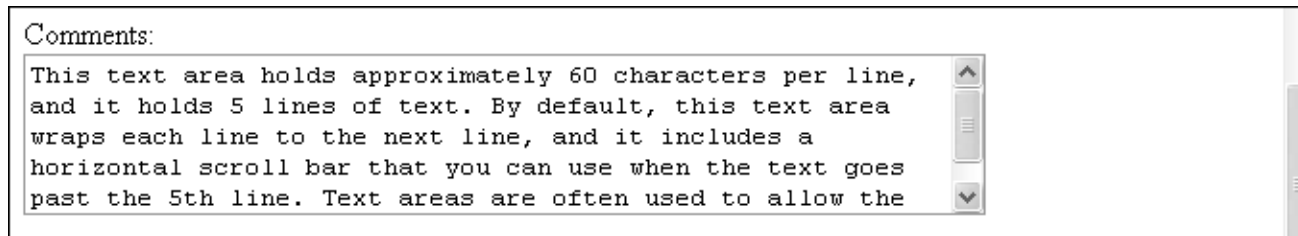
CheckBox / RadioButton Attributes

Attribute	Description
`type`	Specifies the type of control. A value of Checkbox creates a check box while a value of Radio creates a radio button.
`checked`	Selects the control. When several radio buttons share the same name, only one radio button can be selected at a time.

TextArea Example

- TextAreas Allow For Larger Piles Of Text

Comments:
```
This text area holds approximately 60 characters per line,
and it holds 5 lines of text. By default, this text area
wraps each line to the next line, and it includes a
horizontal scroll bar that you can use when the text goes
past the 5th line. Text areas are often used to allow the
```

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```

Comments:
<textarea name="comment" rows="5" columns="60"></textarea>

Attribute Of TEXTAREA Tag

Attribute	Description
`rows`	Specifies the number of visible lines in the text area. If the number of lines in the text box exceeds this setting, the text area will display a vertical scroll bar.
`cols`	Specifies the width of the text area based on the average character width of the font that's being used.

Summary

- HTML
  - Defines A Specific Vocabulary For Visually Rendered Documents
  - Tag Case Is Irrelevant
  - Some Attributes Do Not Require A Value
  - Attribute Values Must Only Be Quoted When They Contain Embedded Spaces
  - Browser Is Very Forgiving
  - Unrecognized Tags Are Ignored
  - All Extra Whitespace Is Stripped Off

Summary

- Hypertext Markup Language
  - Building Web Pages
  - Introductory Markup Tags