

Short Introduction to HTML

(With Forms and StyleSheets)

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SWE 642

Software Engineering for the World Wide Web

sources: HTML 4 for the World Wide Web, Castro, Peachtree Press
Core Web Programming, Hall, PTR

Why Learn HTML?

- Many HTML editors are available
- We can create reasonably good HTML without knowing the language
- But ...
 - We need to know the language to write excellent HTML
 - Editors get in the way of small changes
 - We need to write programs that create HTML
- Thus, a web software engineer needs to know HTML

HTML Basic Definitions

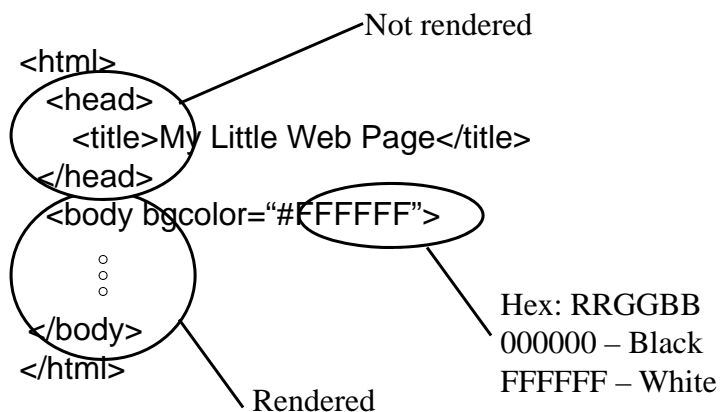
- Element: A piece of a document
sentence, paragraph, list, table, head, ...
- Tag: A command to control the format
`<name>` { Not case sensitive
`</name>` { Some people use upper case for tags as
 a matter of style
- Attribute: An option or parameter to a tag
- Rendering: A browser formats the text into a window according to the formatting rules

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HTML Structure



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Some HTML Tags

- Headers : `<h1>`, `<h2>`, ...
- Breaks : `<p>`, `
`, `<hr>`
- Fonts : ``, ``, `<i>`, `<tt>`, `<u>`
- Lists : ``, ``,
`<dl><dt>A<dd>stuff`
- Color : ``
- Special chars : `<`; `>`; `&`; ` `;
`ö`; (ö) `ñ`; (ñ) ```; (È)

Note that `` is deprecated in HTML 4 and not supported in XHTML, but still widely used

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Links in HTML

- `205`
- Relative links are:
 - Faster
 - Easier to move
 - Require less typing, thus less mistakes
- `target="_blank"` // new window
- `href="#NAME"` // within the current file
- `offutt`
- ``

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HTML Tables

```
<table>
  <tr>
    <td></td>
    <td></td>
  </tr>
  <tr>
    ⋮
  </tr>
</table>
```

```
<table border=2 cellspacing=2
  bgcolor="#FFFFFF" width=500 align="center">
```

Note that bgcolor and align are deprecated in HTML 4,
but still widely used

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HTML Forms

```
<form action="URL of program" method="post">

<input type = {text, radio, checkbox, file, hidden}>
<label>
<select>, <option>
<textarea>
<button>
<input type = {Submit, Reset}>
<fieldset>
<legend>
```

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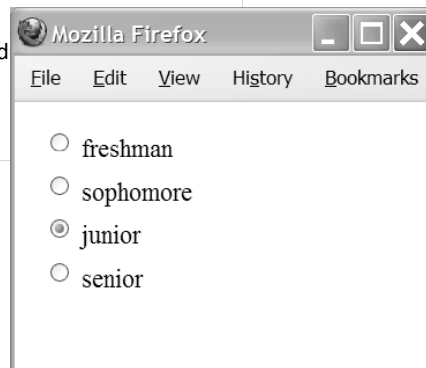
A Small Form

```
<form method="post" action="http://cs.gmu.edu:8080/offutt/servlet/calculate">
<table border=1<!-- outer table -->
<tr><td>
<table align="center">
<tr>
<td>First val:
<td><input type="text" name="LHS" value="" size=5>
</tr>
<tr>
<td>Second val:
<td><input type="text" name="RHS" value="" size=5>
</tr>
<tr>
<td>Result:
<td><input type="text" name="RSLT" value="" size=6>
</tr>
</table>
<tr>
<td><input type="submit" value="Add" name="Operation">
<td><input type="submit" value="Subtract" name="Operation">
<td><input type="submit" value="Multiply" name="Operation">
<td><input type="submit" value="Divide" name="Operation">
</tr>
<tr>
<td align=center><input type="reset" value="Reset" name="reset">
</tr>
</table><!-- outer table -->
</form>
```



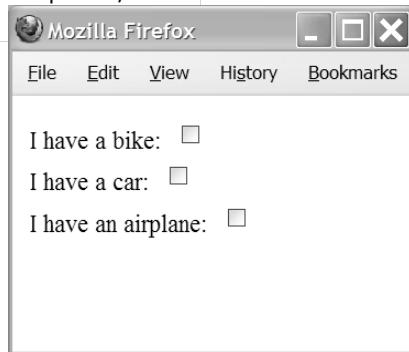
Radio Buttons

```
<form>
<input type="radio" name="Year" value="freshman" id="freshman" />
<label for="Year">freshman <label>
<br/>
<input type="radio" name="Year" value="sophomore" id="sophomore" />
<label for="Year">sophomore<label>
<br/>
<input type="radio" name="Year" value="junior" id="junior" />
<label for="Year">junior<label>
<br/>
<input type="radio" name="Year" value="senior" id="senior" />
<label for="Year">senior<label>
<br/>
</form>
```



Checkboxes

```
<form>
I have a bike:
<input type="checkbox" name="vehicle" value="Bike" />
<br/>
I have a car:
<input type="checkbox" name="vehicle" value="Car" />
<br/>
I have an airplane:
<input type="checkbox" name="vehicle" value="Airplane" />
</form>
```



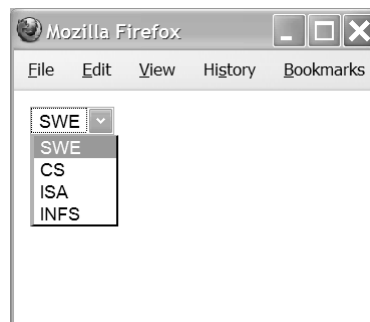
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Dropdown

```
<form>
<select name="major">
<option value="SWE" selected="selected">SWE</option>
<option value="CS">CS</option>
<option value="ISA">ISA</option>
<option value="INFS">INFS</option>
</select>
</form>
```



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Select Box

```
<form>
  <select name="classes" size="5" multiple="multiple">
    <option value="619">619</option>
    <option value="620">620</option>
    <option value="621">621</option>
    <option value="622">622</option>
    <option value="623">623</option>
    <option value="625">625</option>
    <option value="626">626</option>
    <option value="630">630</option>
    <option value="632">632</option>
    <option value="637">637</option>
    <option value="641">641</option>
    <option value="642">642</option>
    <option value="645">645</option>
    <option value="699">699</option>
  </select>
</form>
```



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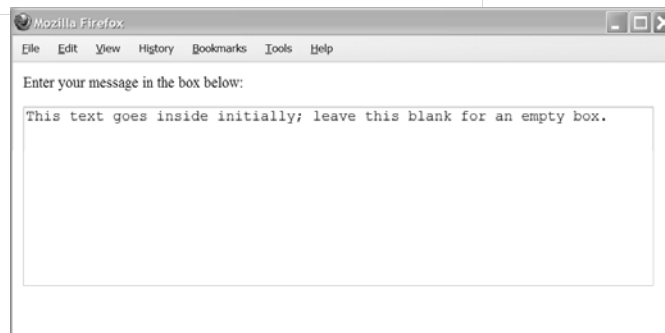
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Text Area

```
<p align="justify">
  Enter your message in the box below:
</p>

<form>
  <textarea rows="10" cols="70">
    This text goes inside initially; leave this blank for an empty box.
  </textarea>
</form>
```



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Buttons

```
<form>  
<input type="button" value="Don't click me!" />  
</form>
```



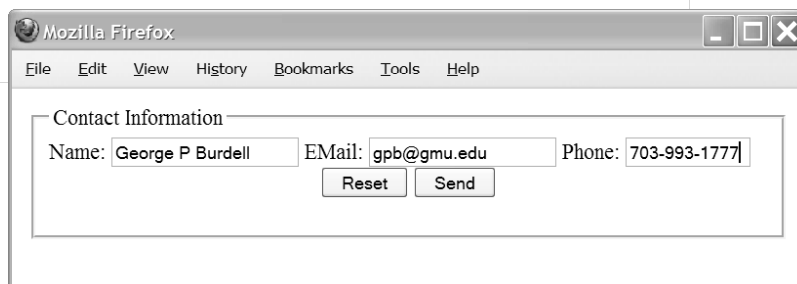
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Fieldset Borders and Mailto

```
<fieldset>  
<legend>  
  Contact Information  
</legend>  
<form action="mailto:offutt@gmu.edu" method="post" enctype="text/plain">  
  Name: <input type="text" name="theName">  
  EMail: <input type="text" name="EMail">  
  Phone: <input type="text" name="Phone" maxlength="12" size="12">  
  <center>  
    <input type="reset" value="Reset">  
    <input type="submit" value="Send">  
  </center>  
</form>  
</fieldset>
```



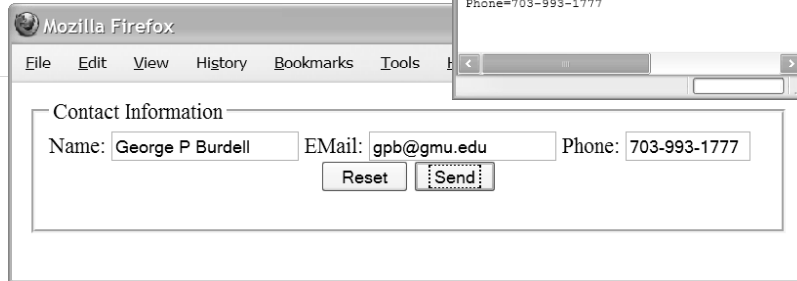
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Fieldset Borders and Mailto

```
<fieldset>
<legend>
  Contact Information
</legend>
<form action="mailto:offutt@gmu.edu" method="post" e
  Name: <input type="text" name="theName">
  EMail: <input type="text" name="EMail">
  Phone: <input type="text" name="Phone" maxlength="1
<center>
  <input type="reset" value="Reset">
  <input type="submit" value="Send">
</center>
</form>
</fieldset>
```



Styling and Cascading

- Original HTML used attributes and tags to control the style of text and objects
 -
- Style Sheets and Cascading Style Sheets (CSS) were added to allow for more abstraction
 - The same style commands can be used in different places in a document
 - The same style commands can be applied to different documents

Some Style Commands

- Size : `font-size:110%`
- Color: `color:#900000; background-color:#FFFF00`
- Font: `font-weight:bold; font-style:italic; text-decoration:underline; font-family:helvetica`
- Many many more ...
 - <http://www.yourhtmlsource.com/stylesheets/introduction.html>
 - <http://www.w3.org/Style/Examples/011/firstcss>

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Embedding Style in HTML

- The HTML style attribute can be inserted into various HTML tags
 - `Do they vote?`
 - ``
 - ``
 - `<p style="text-align:justify; font-style:italic; font-family:comic sans ms; font-size:85%">`

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Defining Style Classes in HTML

- In the head:

```
<head>
  <title>...
  <style>
    P{text-align:justify}
    P.menu{font-size:75%;color:#555555;background-color:E4F4E4}
    A:hover {background:white}
  </style>
```

- In the body:

```
<p class="menu">
  <a href="#CLASSES">Classes</a> *
  <a href="#RSRCH">Research</a>
</p>
```

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Defining Style in a .CSS File

```
/* For use in 205 web site pages. */
P {text-align:justify}
LI {text-align:justify}
A:hover {background:white}
DT {font-weight:bold;font-size:90%}
.noteI {color:red}
.noteII {color:red; font-weight:bold}
.big {font-size:110%}
.small {font-size:90%}
.head {font-size:150%; font-weight:bold; text-align:center}
.offsite {font-size:90%; font-style:italic; font-family:"comic sans ms"}
.commands {font-family:helvetica;color:green;font-weight:bold;font-size:90%}
.quote {font-size:60%; font-style:italic;color:#800000}
.exam {color:#900000; font-weight:bold;font-size:105%;background-
color:#FFFF00}
.snow {color:#800000; font-weight:bold; font-size:105%; background-
color:#bbbbbb}
.hwkquote {font-size:95%; font-style:italic; font-weight:bold; color:#800000}
```

File: 205-style.css

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Using Style from a .CSS File

- In the head:

```
<head>  
<link rel="stylesheet" href="/205-style.css" type="text/css" />
```

- In the body:

```
<div class="head">  
<span class="notel">  
<tr class="snow">  
<span class="quote">
```

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HTML Suggestions

- Don't build: Borrow, modify, experiment
- Maintenance is crucial: Make your HTML readable
 - Choose a style and stick with it
 - Use white space and carriage returns
 - Use comments liberally
 - Indent lists and nested elements
- Let the browsers make as many decisions as possible when they render your HTML
 - Don't over-specify the fonts
- Look at your HTML with different browsers

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HTML Suggestions (2)

- Always use descriptive titles
- Specifying the height and width of images will help browsers display faster
 - But may not work as well on different size browser windows
- Use ALT on every image
- Forms:
 - Be sure to use unique descriptive names
 - Radio buttons must have the same name or users can select multiple buttons
- Close all tags (SGML standard)

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HTML Suggestions (3)

- Many UI experts recommend against frames
 - They make navigation difficult
 - They make it hard to print web pages
 - Browsers render them differently
 - They make bookmarking impossible
- Frames may be acceptable for small, internal use web sites
- The same affect can be achieved by using CSS or tables

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Your Home Page

- You can create a home page on osf1
- Unix commands:
 - `cd` // Go to your home directory
 - `chmod 755 .` // Make your home directory readable
 - `mkdir public_html` // Create the standard home page directory
 - `chmod 755 public_html`
 - `cd public_html` // Go to the home page directory
 - *Create an HTML page with the name "index.html"*
 - `chmod 644 index.html` // Make the file readable
- Your URL will be: `http://mason.gmu.edu/~username/`

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Conclusions

Learning HTML syntax is not hard

Designing good web pages is VERY hard

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