

# **Introduction to HTML**

# A bit of history...

- The world wide web began as a way to share documents on the internet (which was starting to gain a foothold with other functionality like email & newsgroups).
- It was introduced in 1990 by English physicist Tim Berners-Lee and Belgian computer scientist Robert Cailliau while both were working at CERN.

# HyperText Markup Language

- Initially, the documents that were shared on the WWW were text documents that were “marked-up” with extra tags to define the structural or visual aspects of the document.
- Another effect of this language was to add extra functionality into the document, such as links to other online pages, creating a network of interconnected documents (this is the “hypertext” portion of the html name).

# Fast-forward to now...

- As computer technology and the WWW have evolved, html has continued to allow the content of web pages to evolve.
- Aside from just links, we now enjoy multimedia content and applications that are seamlessly integrated into dynamic web pages, allowing the WWW to do much more than facilitate the sharing of documents.

# Overview of HTML

- Files have the .html or .htm extension.
- Files can be composed in ordinary text editors.
- Subsets of the text can be enclosed in “tags” to give that portion of text some structure or functionality:

`<tag>blahblahblah</tag>`

- Tags have the general form:

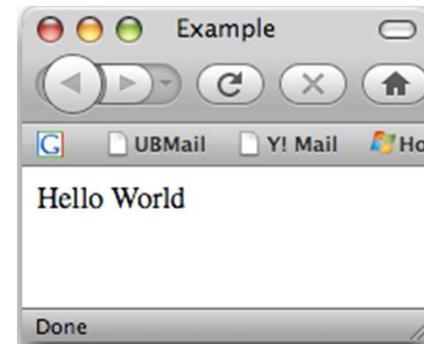
`<tagname attribute1=“value1” attribute2=“value2”>`

# An Example

The following code:

```
<html>  
<title>Example</title>  
<body>  
Hello World  
</body>  
</html>
```

Would look like:



# Some Formatting Tags

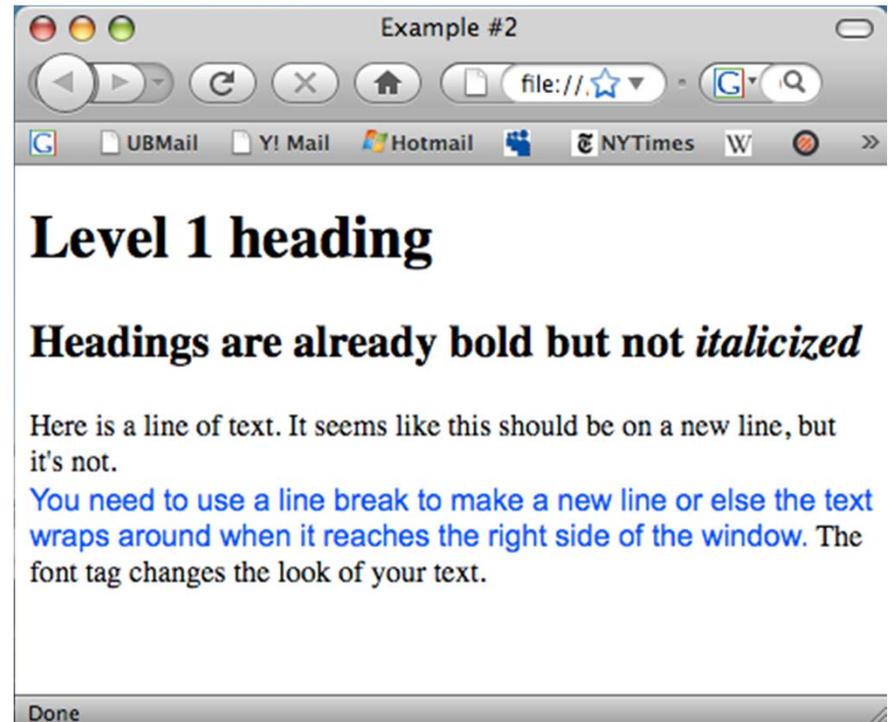
- `<p>`, `</p>` - start and end of a paragraph
- `<b>`, `</b>` - start and end of **bold** text
- `<i>`, `</i>` - start and end of *italicized* text
- `<u>`, `</u>` - start and end of underlined text
- `<br>` - insert a line break to override the default behavior of just wrapping the text around to the next line.

# Some More Formatting Tags

- `<h1>` , `</h1>` - set enclosed text to be a “Level 1 heading” (also `<h2>`, `<h3>`, etc.)
- `<font>` , `</font>` - set font for enclosed text with style options set in tag. i.e. -  
`<font face = “Arial” color = “blue” size = “10”>blahblahblah</font>`
- Note: web browsers ignore all but the first space between pieces of text, and any line breaks in your .html file. It is the tags you include which determine how the page will look, not the way it looks in your text editor.

# Another Example

```
<html>
<title>Example #2</title>
<body>
<p><h1>Level 1 heading</h1></p>
<p><h2>Headings are already
    <b>bold</b> but not
    <i>italicized</i></h2>
    Here is a line of text.
    It seems like this should be
    on a new line, but it's not.
    <br>
<font face = "arial" size = "3"
  color = "blue"> You need to
  use a line break to make a
  new line or else the text
  wraps around when it reaches
  the right side of the
  window. </font> The font tag
  changes the look of your
  text.
</body>
</html>
```



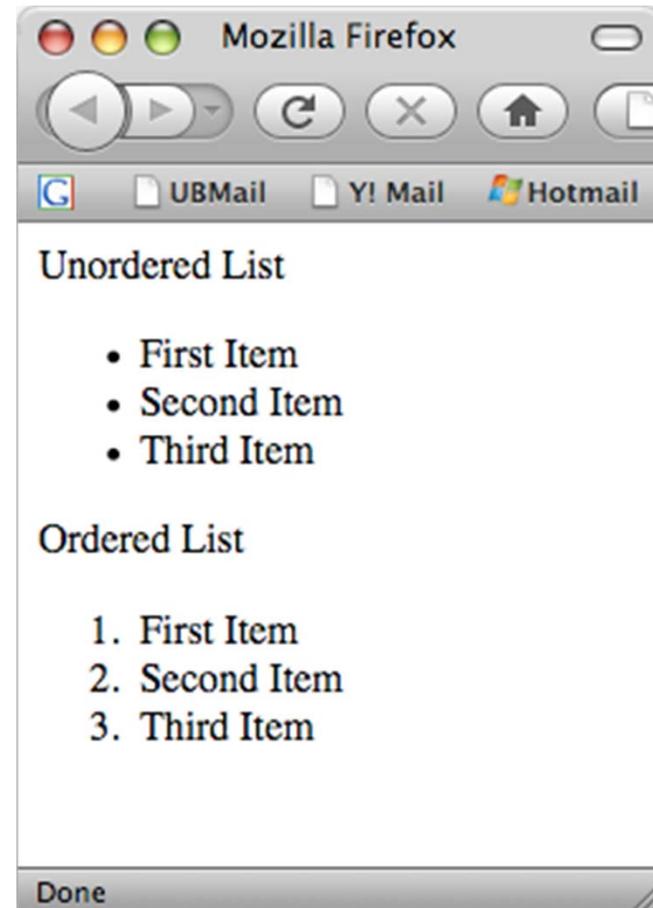
# Lists

Unordered List

```
<ul>
<li>First Item
<li>Second Item
<li>Third Item
</ul>
<p>
```

Ordered List

```
<ol>
<li>First Item
<li>Second Item
<li>Third Item
</ol>
```



# Images

- Obviously, additional content besides text is crucial to an effective webpage.
- Images can be added to your page with the `<img>` tag : ``
- The file's location can be a URL for its location on the internet or its location on a local disk.
- Ex: `` would look like:

# Links

- Links enable the web to be a network of interconnected documents, rather than a static collection of pages.
- Links use the `<a>` , `</a>` tag (short for anchor) and can link to other pages, other locations in the current page, or even an email address.

# Linking to Another Web Page

- You can enclose some text with the `<a>` tags to make it a link, and you must provide a destination for that link to point to using the **href** attribute:

```
<a href="some url">link text</a>
```

- Example:

```
<a href="http://www.ccr.buffalo.edu">CCR</a>
```

Would translate to: [CCR](http://www.ccr.buffalo.edu)

# Linking to Another Web Page

`target="_blank"` Opens new page in a new browser window

`"_self"` Loads the new page in current window

`"_parent"` Loads new page into a frame that is superior to where the link lies

`"_top"` Loads new page into the current browser window, cancelling all frames

```
<a href="http://www.sicom"target="_blank">  
SI.COM</a>
```

# Linking Elsewhere In The Page

- The anchor tag can be used to name a location in your document:

```
<a name="topofpage"></a>
```

- A link later on in the document can refer to this anchor by name and take the reader there: 

```
<a href="#topofpage">Back to top</a>
```

# Linking To An Email Address

- Instead of pointing to the URL of another webpage, or a location in the current document, the href attribute can point to an email address:

```
<a href="mailto:emailaddress" >
```

- Ex:

```
<a href="mailto:pitman@buffalo.edu">Send me an email</a>
```

Would look like:

[Send me an email](mailto:pitman@buffalo.edu)

# Using Images as Links

- Like other tags, the `<a>` and `<img>` tags can be nested so an image can function as the link activator instead of text:

```
<a href="http://www.ccr.buffalo.edu">
```

```

```

```
</a>
```

Would yield:

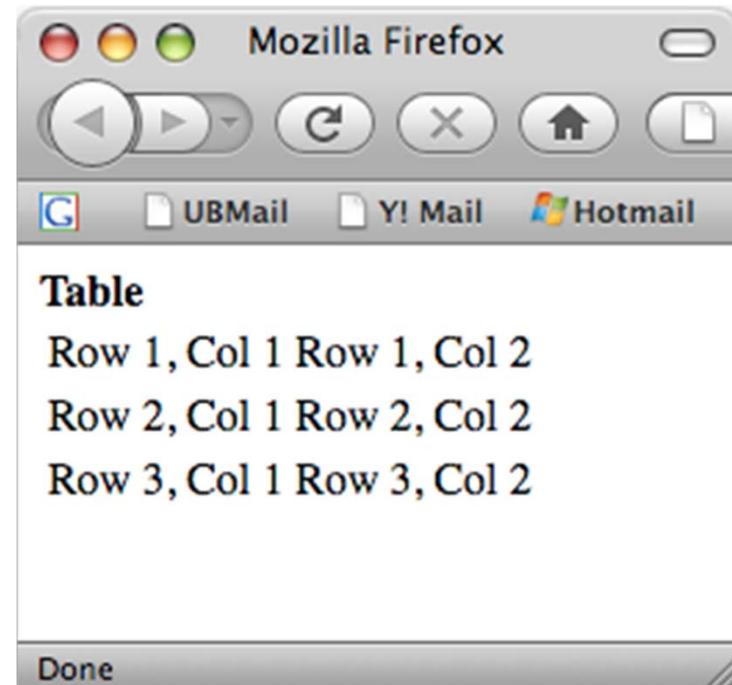


# Tables

- More than just adding a table for data, html tables can be used to structure the text, images, links, etc. that make up your webpage.
- You can use tables to define the layout for your page, and then fill the appropriate table cells with the content you want.
- A table is defined with `<table>` & `</table>`. Within the table, rows are defined with `<tr>` & `</tr>`. Within each row, cells are defined with the `<td>` & `</td>` tags.

# A Table Example

```
<b>Table</b><br>
<table>
  <tr>
    <td>Row 1, Col 1</td>
    <td>Row 1, Col 2</td>
  </tr>
  <tr>
    <td>Row 2, Col 1</td>
    <td>Row 2, Col 2</td>
  </tr>
  <tr>
    <td>Row 3, Col 1</td>
    <td>Row 3, Col 2</td>
  </tr>
</table>
```



# Some Refinements

- Well, that table seemed to help with the layout, but it could definitely look better.
- There are lots of attributes that can be modified to adjust the look and layout of your table. Some of these are illustrated in this next example.

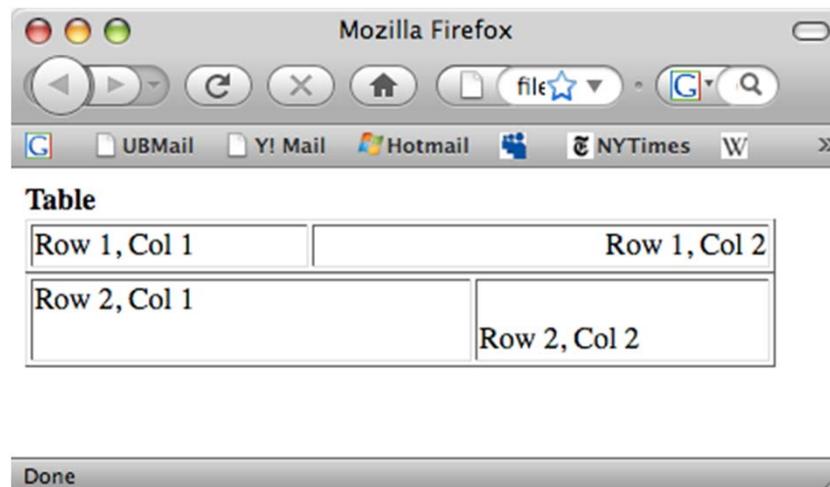
# Attributes

- Attributes amplify tags. That is, when a browser interprets a tag, it will also search for attributes and then display the element (tags+attributes).
- Examples: background color, table width
  - `<h2 align="center">Centered Heading</h2>`
  - `<h2 title="Hello There!">Title Heading Tag</h2>`

What does these do?

<b>Attribute</b>	<b>Options</b>	<b>Function</b>
align	right, left, center	Horizontal alignment
valign	top, middle, bottom	Vertical alignment
bgcolor	numeric, RGB values	Background color
width	Numeric	Width of tables, images, or table cells.
height	Numeric	Height of tables, images, or table cells.

```
<b>Table</b><br>
<table border width=400>
  <tr>
    <td width=150 align=left>Row 1, Col 1</td>
    <td width=250 align=right>Row 1, Col 2</td>
  </tr>
</table>
<table border width=400 height=50>
  <tr>
    <td width="60%" valign=top>Row 2, Col 1</td>
    <td width="40%" valign=bottom>Row 2, Col 2</td>
  </tr>
</table>
```



# Multi-column and Multi-row

```
<table border="1">
  <tr>
    <td> Column 1 </td>
    <td> Column 2 </td>
    <td> Column 3 </td>
  </tr>
  <tr>
    <td rowspan="2"> Row 1 Cell 1 </td>
    <td> Row 1 Cell 2 </td>
    <td> Row 1 Cell 3 </td>
  </tr>
  <tr>
    <td> Row 2 Cell 2 </td>
    <td> Row 2 Cell 3 </td>
  </tr>
  <tr>
    <td colspan="3"> Row 3 Cell 1 </td>
  </tr>
</table>
```

# Cell padding

```
< table border="1" cellpadding="10" bgcolor="rgb(0,255,0)" >
```

```
<tr>
```

```
<td> Column 1 </td>
```

```
<td> Column 2 </td>
```

```
</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>
```

# Comments

- Tables can be given backgrounds using the *bgcolor* attribute.
- Also, backgrounds are not limited to the `<table>` tag; you can give separate backgrounds to `<td>` and `<tr>`.
- The `<tr>` tag must always be placed before the `<td>` tag.
- As you see, good form is important in organizing the table code. It may seem a bit complicated, but if you keep everything organized it will be much easier to manage later.
- `<!-- A comment -->`

# Putting It All Together

- Each cell of a table can contain any other html object: links, images, lists, etc.
- The code for this table is on the next slide.



```
<table width=800>
<tr>
  <td width=640 height=84>
    
  </td>
  <td rowspan=2>
    <ul>
      <li>Bioinformatics
      <li>Consulting Services
      <li>Grid Computing
      <li>Visualization
    </ul>
  </td>
</tr>
<tr>
  <td align=center valign=top>
    <a href="http://www.ccr.buffalo.edu">CCR Website</a>
  </td>
</tr>
</table>
```

# Music Links

```
<embed src="Good Riddance (Time of Your  
Life).wma" autostart="true" loop="false"  
volume="60" />
```

# Exercise

Find the music files in your directory, and the associated album covers.

Make a table with 3 columns, 2 rows, giving the artist, cover image, and a link to the music file, for each song.

```
/var/www/workshop/images for the cover images  
/var/www/workshop/music for the music files.
```

# Forms

- Input fields can have attributes that you should be aware of.
- *type* - Determines what kind of input field it will be: text, submit, and password.
- *name* - Assigns a name to the given field so that you may reference it later.
- *size* - Sets the horizontal width of the field. The unit of measurement is in blank spaces.
- *maxlength* - Dictates the maximum number of characters that can be entered

# Text Forms

```
<form method="post"
  action="mailto:youremail@email.com">
Name: <input type="text" size="10"
  maxlength="40" name="name"> <br />
Password: <input type="password"
  size="10" maxlength="10"
  name="password">
</form>
```

# Text Forms

Name:

Password:

# Check Boxes

```
<form method="post"
  action="mailto:youremail@email.com">
Select your favorite Movie.
<input type="checkbox" name="mov"
  value="SawVI">Saw VI
<input type="checkbox" name=" mov "
  value="30Days">30 Days of Darkness
<input type="checkbox" name="mov "
  value="Dawn">Dawn of the Dead
<input type="checkbox" name="mov "
  value="Evil">The Evil Dead
<input type="submit" value="Email Myself">
</form>
```

# Selection Form

```
<form method="post"
  action="mailto:youremail@email.com">
Musical Taste <select multiple name="music" size="4">
<option value="emo" selected>Emo</option>
<option value="metal/rock" >Metal</option>
<option value="hiphop" >Hip Hop</option>
<option value="jazz" >Jazz</option>
<option value="classical" >Classical</option>
<option value="alternative" >Alternative</option>
<option value="oldies" >Classic Rock</option>
<option value="techno" >Techno</option>
</select>
<input type="submit" value="Email Yourself">
</form>
```

# Actions

- For a submission button to accomplish anything it must be placed inside of a form tag with an action and a method. The action is always set to a server side scripting file such as a PHP, PERL, or ASP file.
- Another choice may be to set the action to *mailto* followed by an email address, and the form will be emailed to the specified address. *mailto* isn't the action of choice usually, but it works fine for the examples we're doing here.

# Actions

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

```
<input type="submit" value="Send" /><br />
```

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

# Reset

The reset button yields a button that clears the form and allows you to start over.

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

# Further Reading

- There are lots of resources on the web about HTML, so you can always look up how to do something for your page.
- In some of the other talks this week, you'll hear how you can integrate some applications for your projects into your webpages.
- Some links:

<http://www.tizag.com>

<http://html-codes.1keydata.com/>

<http://www.cse.buffalo.edu/faculty/miller/Courses/WWW-Sem/Sp97/Presentations/HTML-Kempton/tutor/dir.html>

<http://www.utoronto.ca/webdocs/HTMLdocs/NewHTML/htmlindex.html>

<http://www.htmlcodetutorial.com/>

<http://www.htmlgoodies.com/primers/html/>

<http://www.jmarshall.com/easy/html/>

[http://www.w3schools.com/html/tryit.asp?filename=tryhtml\\_intro](http://www.w3schools.com/html/tryit.asp?filename=tryhtml_intro)