Creating a Webpage

A webpage is a text file
Contains markup data
- special formatting codes
- example: bold, font, color
Hypertext
- text that "linked" to other text or documents
- example: web page links

What is a Webpage?

A webpage
- a visible page you see in your browser
- contains words, pictures, etc...
A website
- is a collection of related webpages
- for example, the CSc 1 website

Webpages vs. Websites

HTML

Hypertext Markup Language
- text is “marked” with tags
- tags are delimited with < and >
- tags usually have a start and end - not always
HTTP communications protocol
- application layer – based on data
- used by browsers when requesting specific pages

Tags

Start tags are denoted as <...>
End tags are denoted as </...>
Usually ...
- a start tag must have an end tag
- not in all cases, though - some tags "insert" stuff

Tag Attributes

Often, tags need additional information
So, HTML allows you to add “attributes” to tags
There are too many to cover in class!

<tag attribute = value>
Tag Attribute Notation

- The attribute is placed between the tag's name and the ending `>`.
- Looks similar to a Java/C assignment statement

```html
<tag attribute = value>
```

HTML Spacing Rules

- Browsers ignore formatting in HTML
  - areas containing more than two spaces
  - line breaks
  - tabs
- In both cases, a *single space* is used
- This makes it easy to write HTML – trust me

Some Paragraph Tags

<table>
<thead>
<tr>
<th>Tag</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;br&gt;</code></td>
<td>Break (new line)</td>
</tr>
<tr>
<td><code>&lt;p&gt;</code></td>
<td>New paragraph</td>
</tr>
</tbody>
</table>

Example

```
Hello <br>
World! <br>
<br>
This is a test.
```
Example Output

Hello
World!

This is a test.

Example 2

Hello <br>
World!
<p>This is a test.</p>

The <b> Tag

- This tag is used to denote text that will be displayed in bold
- Very useful for making text "stand out"
- The tag must be ended

&lt;b&gt; ... &lt;/b&gt;

The <i> Tag

- This tag is used to denote text that will be displayed in italics
- The tag must be ended

&lt;i&gt; ... &lt;/i&gt;

The <u> Tag

- This tag denotes text to be underlined
- Many browsers underline links
  - so, only underline when it is necessary
  - ... or you'll confuse users
- The tag must be ended

&lt;u&gt; ... &lt;/u&gt;

Basic Formatting Tags Summary

<table>
<thead>
<tr>
<th>Tag</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;b&gt; ... &lt;/b&gt;</td>
<td>Bold</td>
</tr>
<tr>
<td>&lt;i&gt; ... &lt;/i&gt;</td>
<td>Italics</td>
</tr>
<tr>
<td>&lt;u&gt; ... &lt;/u&gt;</td>
<td>Underline</td>
</tr>
</tbody>
</table>
Example

```
<i> Italics </i> <br>
<b> Bold </b> <br>
<u> Underline </u> <br>
```

Example Output

```
Italics
Bold
Underlined
```

Example

```
<i><b>CSc 21</b></i> <br>
```

Example Output

```
CSc 21
```

The `<center>` Tag

- The center tag denotes text that will be centered on the screen.
- The tag must be ended

```
<center> ... </center>
```

The `<font>` Tag

- The font tag lets you change:
  - the font color
  - the font face (name)
  - the font size
- Attributes are used in each case

```
<font> ... </font>
```
This text is red!

<table>
<thead>
<tr>
<th>Tag</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;h1&gt;</code> ... <code>&lt;h1&gt;</code></td>
<td>Main heading</td>
</tr>
<tr>
<td><code>&lt;h2&gt;</code> ... <code>&lt;h2&gt;</code></td>
<td>2nd heading</td>
</tr>
<tr>
<td><code>&lt;h3&gt;</code> ... <code>&lt;h3&gt;</code></td>
<td>3rd heading</td>
</tr>
<tr>
<td><code>&lt;h4&gt;</code> ... <code>&lt;h4&gt;</code></td>
<td>4th heading</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tag</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;h1&gt;</code></td>
<td>Universities</td>
</tr>
<tr>
<td><code>&lt;h2&gt;</code></td>
<td>United States</td>
</tr>
<tr>
<td><code>&lt;h3&gt;</code></td>
<td>California</td>
</tr>
<tr>
<td><code>&lt;h4&gt;</code></td>
<td>Sacramento State</td>
</tr>
</tbody>
</table>

Page Structure

HyperText Markup Language
Every page consists of a `<html>` tag
- the first tag must be `<html>`
- the last tag must be `</html>`
Between these two tags, you define
- the webpage's header
- the webpage's body

- **Header**
  - tells the title of the page
  - contains scripts, style sheets and other add-ins
  - its optional, but good to define
- **Body**
  - visible content of the page
  - this is the vast majority of the HTML

<table>
<thead>
<tr>
<th>Tag</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;html&gt;</code> ... <code>&lt;html&gt;</code></td>
<td>Main tag</td>
</tr>
<tr>
<td><code>&lt;head&gt;</code> ... <code>&lt;head&gt;</code></td>
<td>Header</td>
</tr>
<tr>
<td><code>&lt;title&gt;</code> ... <code>&lt;title&gt;</code></td>
<td>Page Title</td>
</tr>
<tr>
<td><code>&lt;body&gt;</code> ... <code>&lt;body&gt;</code></td>
<td>Page Body</td>
</tr>
</tbody>
</table>

Adding Images

HyperText Markup Language
Image Overview

- All images are linked from the webpage
- Only a few types of images are supported
- You must use these types on your website

Supported Image Files

<table>
<thead>
<tr>
<th>Extension</th>
<th>What is it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>.jpg</td>
<td>Photograph</td>
</tr>
<tr>
<td>.gif</td>
<td>Graphic Interchange File</td>
</tr>
<tr>
<td>.png</td>
<td>Portable Network Graphic</td>
</tr>
</tbody>
</table>

The `<IMG>` Tag

- Inserts an image into a webpage
- The `src` attribute is used to link the source image
- This tag has no ending tag

```html
<img src="link">
```

Example Output

```html
<center>
<img src="cat.jpg">
</center>
```

Example 2

```html
<center>
<img src="cat.jpg"><br>Fraternity of Mu Mu Mu Mu
</center>
```
Fraternity of Mu Mu Mu

Some Advanced `<img>` Attributes

- **Width and Height**
  - allows you to increase the size of the image
  - either by percentage or pixel size
- **Alt**
  - stands for "alternate"
  - used for mouse-over text

Some Advanced `<img>` Attributes

- **Align**
  - allows the image to "float" on the page
  - quite easy to use
  - possible values: right, left
- **Border**
  - allows you to add a solid border
  - looks good on photos

Example 3

```html
<html>
<head>
  <title>Adorable Cat</title>
</head>
<body>
  <center>
    <img src="cat.jpg" width="100%">
    <br>
    <i><b>The Adorable Cat</b></i>
  </center>
</body>
</html>
```
Links to pages use the `<A>` tag
- "A" stands for anchor
- yes, it doesn’t make much sense
- The `href` attribute
  - contains the `hypertext reference`
  - links to another website or webpage

Types of `<A>` Links

- **External links**
  - links to pages outside of the website
  - typically start with `http://`
- **Internal links**
  - links to other pages on the same site
  - tend to simply contain the name of the file

Types of `<A>` Links

- **Bookmark links**
  - jumps to a location within same page
  - The URL contains a # sign
  - Also called intrapage links
- **E-Mail links**
  - Opens an e-mail application
  - Starts with `mailto:` and then the e-mail address

Internal Link Example

```
<a href = "resume.htm"> My Resume </a>
```
Internal Link Example Output

My Resume

External Link Example

This is a link: <a href="http://www.csus.edu">CSUS</a>

HTTP

External Link Example Output

This is a link: CSUS

E-Mail Link Example

Questions? Please <a href="mailto:dcook@csus.edu">e-mail</a> me.

mailto:

E-Mail Link Example Output

Questions? Please e-mail me.

Adding Lists

HyperText Markup Language
### List Tags

<table>
<thead>
<tr>
<th>Tag</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;ol&gt;</code> ... <code>&lt;/ol&gt;</code></td>
<td>Ordered List</td>
</tr>
<tr>
<td><code>&lt;ul&gt;</code> ... <code>&lt;/ul&gt;</code></td>
<td>Unordered List</td>
</tr>
<tr>
<td><code>&lt;li&gt;</code>... <code>&lt;/li&gt;</code></td>
<td>List Item</td>
</tr>
</tbody>
</table>

### `<UL>` Example

```html
<ul>
  <li>Peter</li>
  <li>Quagmire</li>
  <li>Joe</li>
  <li>Cleveland</li>
</ul>
```

### `<UL>` Example Output

- Peter
- Quagmire
- Joe
- Cleveland

### `<OL>` Example

```html
<ol>
  <li>Tappa Kegga Bru</li>
  <li>Kuppa Kappa Chino</li>
  <li>Getta Loda Yu</li>
</ol>
```

### `<OL>` Example Output

1. Tappa Kegga Bru
2. Kuppa Kappa Chino
3. Getta Loda Yu

### HTML Tables

HyperText Markup Language
### Building HTML Tables

- Tables allow you to organize data into rows and columns.
- Many websites use tables for visual effects.

### Table Tags

<table>
<thead>
<tr>
<th>Tag</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;table&gt; ... &lt;/table&gt;</td>
<td>Start / End</td>
</tr>
<tr>
<td>&lt;tr&gt; ... &lt;/tr&gt;</td>
<td>Table Row</td>
</tr>
<tr>
<td>&lt;td&gt; ... &lt;/td&gt;</td>
<td>Table Cell</td>
</tr>
</tbody>
</table>

### <TABLE> Example

```html
<table>
  <tr>
    <td>Computer</td>
    <td>Generation</td>
  </tr>
</table>
```

### <TABLE> Example 2

```html
<table width=80% bgcolor="lightblue">
  <tr>
    <td>Name</td>
    <td>Major</td>
  </tr>
  <tr>
    <td>Joe Gunchy</td>
    <td>CSc</td>
  </tr>
</table>
```

### <TABLE> Example 2 Output

<table>
<thead>
<tr>
<th>Name</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joe Gunchy</td>
<td>CSc</td>
</tr>
</tbody>
</table>