WEB/404 COURSE NOTES

WK 1	HTML Structure	Lists	Spacing	Formatting	Links	Graphics
WK 2	Table	Frames	Design Standards	Best Practices	Page Design	Site Structure
WK 3	Forms	Styles				
WK 4	JavaScript	Function				
WK 5	Image Swap	Controlling Windows				

Press <Esc> to exit full screen view.

HTML (HyperText Markup Language) and XHTML (Extensible HTML) files are text files that have an “htm” or “html” extension. HTML uses tags to tell a browser what to display. An opening HTML tag begins the command, while a closing HTML tag ends the command. The command is applied to any content between the tags. For example, <b>sample</b> tells a browser to bold the word “**sample**.” The open tag is <> and the close tag is </>. If a browser does not understand a tag, it ignores the tag entirely. All HTML Web pages must have the following three sets of tags: <html>…</html> as the first and last tags, <head>…</head> as the first section, and <body>…</body> as the main section. These tags are nested as follows: <html><head>…</head><body>…</body></html>.

In the following example:

- <title> in the head creates the title of the Web page.
- <h1> is a heading in the body. The heading levels 1-6 decease in font size as the number increases.
- <p> marks a paragraph.
- <p align=“center”> <p align=“left”> <p align=“right”> justifies the paragraph.

Example

```
<html>
<head>
<title>Guide to HTML</title>
</head>
<body>
  <h1>Tags</h1>
    <p>HTML uses tags to tell a browser what to do.</p>
    <p align=“center”>Tags are in pairs with an opening and closing tag.</p>
</body>
</html>
```

In the following example:

- <ul> is an unordered (bulleted) list where <li> is the list item.
- <ol> is an ordered (numbered) list where <li> is the list item.
- <dl> is a definition list where <dt> is the term and <DD> is the definition.
- <!-- comment --> is a comment. Comments do not display in the browser.

Example

```
<body>
<!-- A bulleted list follows. -->
<ul>
  <li>Bulleted item 1</li>
  <li>Bulleted item 2</li>
  <li>Bulleted item 3</li>
</ul>
<!-- A numbered list follows. -->
<ol>
  <li>Item 1</li>
  <li>Item 2</li>
  <li>Item 3</li>
</ol>
<!-- A definition list follows. -->
<dl>
  <dt>Term 1</dt>
    <dd>Definition of Term 1</dd>
  <dt>Term 2</dt>
    <dd>Definition for Term 2</dd>
</dl>
<!-- nested lists -->
<ul>
  <li>Item 1</li>
  <ul>
    <li>Sub Item 1 of Item 1</li>
    <li>Sub Item 2 of Item 1</li>
  </ul>
  <li>Item 2</li>
  <ul>
    <li>Sub Item 1 of Item 2</li>
    <li>Sub Item 2 of Item 2</li>
    <li>Sub Item 3 of Item 2</li>
  </ul>
  <li>Item 3</li>
</ul>
</body>
```

In the following example:

- <p> leaves a blank line after the paragraph.
- <br/> forces a line break without a blank line after.
- <pre> recognizes preformatted text, including spaces, new lines and tabs (HTML generally disregards spacing).
- <pre width= “40”> width gives the maximum number of characters per line.
- <blockquote> is for an indented block quotation.
- <hr/> produces a horizontal (rule) line.
- <hr size=“4” width=“100%” /> size is thickness and width is length, which can be in pixels or percentage.

Example

```
<body>
<p> This produces a paragraph with a blank line after it.</p>
This produces a line break without a blank line after.<br/>
This line will be directly below the last line.<br/>
<pre width=“40”>
C:\htmldocs\example1.htm
Location that browser can find HTML files.
</pre>
<blockquote>
The mission of the University of Phoenix is to educate working adults to develop the knowledge and skills that will enable them
to achieve their professional goals, improve the productivity of their organizations, and provide leadership and service to their
communities.
</blockquote>
<hr size= “4” width="80%" align=“center” />
</body>
```

In the following example:

- <font> defines font properties, such as font face, font size and font color.
- <b> bolds text.
- <i> italicizes text.
- <u> underlines text.
- <tt>is typewriter text
- Special characters (escape sequence):
  - &nbsp; is a space
  - &lt; is a less than sign (<)
  - &gt; is a greater than sign(>)
  - &amp; is an ampersand (&)
  - &Egrave; is E grave accent (È)
  - &ntilde; is n tilde (ñ)
  - &ouml; is o umlaut (ö)

Example

```
<body>
<font size=“6”>
<b>bolded text</b>
<i>italicized text</i>
<u>underlined text</u>
<u>&nbsp; &nbsp; &nbsp; &nbsp; &nbsp;</u>
<tt>It was a dark, rainy night…</tt>
</font>
</body>
```

Text and images can link to other HTML pages or to a place within the same HTML page. A link may also be used to prompt an email message.

In the following example:

- <a href="URL">Link name</a> is a hyperlink reference anchor to the URL.
- The pound sign (#) is an anchor that links to another place within the same HTML page.
- <a href= "mailto:name@emailaddress?subject=This is the subject line" will open a blank email message and automatically populate the subject line.

Example

```
<body>
<a href="C:\htmldocs\sample.htm">Sample</a>
<a href="C:\htmldocs\sample.htm#Sec1">Section One in Sample</a>
<!-- inside sample.htm document is <a name="Sec1">Section One</a> which locates the section title in the document-->
<a href="mailto:webmaster@phoenix.edu?subject=Request for information">Please email us for more information.</a>
<a href="sound1.wav">sound link</a>
<a href="movie1.mov">QuickTime movie link</a>
<a href="movie2.mpg">mpeg movie link</a>
</body>
```

In the following example:

- <img src="filename" /> is an image source file.
- <alt="alternate text" /> displays alternate text if the graphic cannot be displayed or when the mouse is rolled over the graphic.
- <a href="C:\htmldocs\sample.htm"><img src="picture2.jpg"></a> is an image hyperlink.
- Image height, width, border and alignment can be controlled.

Example

```
<body>
<img src=“picture1.gif” />
<img src=“picture2.jpg” />
<img src=“picture2.jpg” height= “40px” width=“60px” />
<img src=“picture2.jpg” align=“top” />
<img src=“picture2.jpg” alt=“This is picture 2.” />
<img src=“picture2.jpg” border=“6” />
<a href=“C:\htmldocs\sample.htm”> <img src= “picture2.jpg”></a>
</body>
```

In the following example:

- The table <table> has a title <caption>, headers <th>, rows <tr> and columns <td>. The intersection of a row and column creates a cell.
- The table width, border, cell spacing and cell padding can be defined in pixels and percentages. If unwanted, these properties should be “0” in order to eliminate browser interpretation.

Example

```
<body>
<table width=“100%” border="1" cellspacing="0" cellpadding="5">
<caption align=“top”> Table Title </caption>
<tr>
  <th>header cell 1</th>
  <th>header cell 2 </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>
</body>
```

Frames are used to divide the browser window up into two or more sections that can display different HTML pages at the same time. Individual frames compose a frameset.

In the following example:

- <frameset cols= “width1, width2”>
- < frame src= “filename”>
- The asterisk (*) is a wildcard used to fill the rest of the browser window.

Example

```
<body>
<frameset cols="500,*">
  <frame src="navigation.htm" />
  <frame src="aboutus.htm" />
</frameset>
</body>
```

Design standards refer to:

- **World Wide Web Consortium (W3C)**: organization that maintains and promotes Web design and programming standards
  - HTML Validator
  - CSS Validator
- **Accessibility**: making Web sites accessible to people with disabilities
  - Section 508 Compliant
  - Bobby Approved

Some best practices are recommended below:

- **Workflow:**
  - Desktop → Development Server → Production Server

- **Navigation:**
  - Clear and consistent
  - A user should always know what page he or she is on (i.e. include a site id or a page title)
  - Link secondary pages back to the homepage

- **Testing:**
  - Test in more than one Web browser
  - Usability testing involves observing a user without directing him or her how to use the site

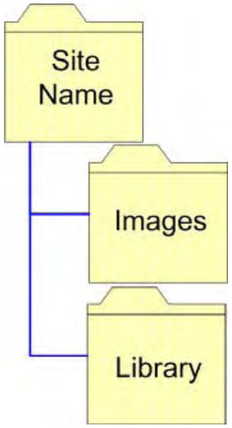
- **Optimization**:
  - Search Engine Optimization
  - Metadata on each HTML page
  - Include alternative text descriptions for all non-text elements
  - Multimedia should be purposeful and optimized to small file sizes
  - Graphics should be no larger than 50k

Page design involves:

- **Page layout:**
  - Consistent layout
  - Balance
  - Text color and background color should contrast well
  - Resolution-independent design

- **Page content:**
  - Clear content; succinct and purposeful
  - Chunk content for easier viewing
  - Use HTML for content
  - Use styles to specify presentation (format)
  - Use default font types or list alternative fonts, such as Sans Serif or Serif.
  - Avoid horizontal scrolling

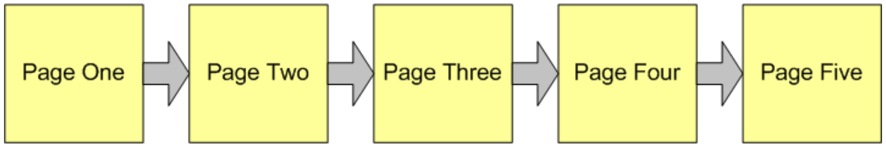
Web sites are simply a collection of HTML pages, organized in a folder, related and connected to one another with HyperText links. One common way to organize the site files is illustrated below:



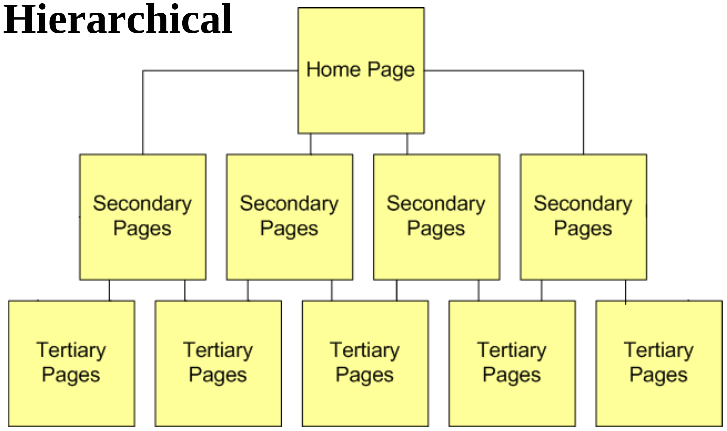
- **Site folder**: includes all HTML files; homepage file should be saved as “index.html” or “default.html”
  - **Images folder**: includes all images used in the site
  - **Library folder**: may include external style sheets, JavaScript pages, and/or multimedia elements

Common site architectures include:

Linear



Hierarchical



In the following example:

- <form name="form1"> defines the form.
- <input type=“input type” name=“fieldname” value= “default data” size=“the number of characters”> is a form field where the input type may be one of the following:
  - button
  - checkbox
  - hidden
  - image
  - password
  - radio
  - reset
  - submit
  - text
  - text area

Example

```
<body>
<form name=“address”>
  Street:<input type=“text" name=“street”>
  City:<input type=“text” name=“city” size=“25”>
  State:<select name=“state” size=“2”>
    <option>AZ</option>
    <option>CA</option>
  </select>
  Zip code:<input type=“text” name=“zip” size=“5”>
</form>
</body>
```

While HTML and XHTML determine the browser content and structure, Cascading Style Sheets (CSS) are used to format the content. Ideally, formatting should be applied using styles that are either inline (in the same line as the HTML tag), internal (in the <head> of the HTML document), or external (an external file with a “css” extension). These styles are referred to as “cascading” because they will override one another in order of specificity. For example, the internal CSS would override the external CSS; however, the inline CSS would override both internal and external CSS.

In the following example:

- The link to an external style sheet is in the <head>.
- Internal CSS is placed within an HTML comment in the <head>.

Example

```
<head>
<link href="mywebstyles.css" rel="stylesheet" type="text/css" />
<style type="text/css">
<!--
p       {
        font-family: Geneva, Arial, Helvetica, sans-serif;
        font-size: 15px;
        font-style: normal;
        color: #000000;
}
-->
</style>
</head>
```

JavaScript is a distinct programming language used to enhance the interactivity of Web pages. JavaScript code can be placed inline, in a script block (or container) in the <head> or <body> of the HTML file or in an external “js” file.

In the following example:

- The JavaScript code is placed in a script block in the <body>.
- The JavaScript writes a new page. HTML can be embedded inside the text field.

Example

```
<body>
<script language="JavaScript">
<!--
document.write(“<b>Order Confirmation</b>”);
document.write(“Your order has been received”);
document.write(“Thank you”);
//-->
</script>
</body>
```

In order to perform calculations on numbers entered into a text form field, a function needs to convert the data from characters to an amount value.

In the following example:

- A JavaScript function to calculate money exchange is defined in the <head>.
- parseFloat changes a number entered as characters in a text field to a floating point number.
- Math.round is used to get a number into dollars and cents (2 decimal places).
- The document.write field combines text with numbers.

Example

```
<head>
<title>Money Exchange</title>
<script language="JavaScript">
<!--
function convert() {
        var amt = parseFloat(exchange.amount.value);
        var euro = Math.round((amt * .7) * 100) / 100;
        document.write(exchange.amount.value + " dollars is " + euro + " Euros");
}
//-->
</script>
</head>
<body>
<form name="exchange" action="javascript:convert()" method="post">
dollar amount
<input type="text" name="amount"><br/>
<input type="submit" value="Submit Form">
</form>
</body>
```

A JavaScript array and simple function can swap small image thumbnails for larger images. This technique can be used for a Web photo gallery.

In the following example:

- The array and swap function are placed in the <head>.
- The <body> tag prompts the browser to load a default image.
- The larger image is placed in the array, while the thumbnail image is placed in the <body> and calls the JavaScript swap function as a link.
- “imgMain” is the placeholder where larger images will be displayed.

Example

```
<head>
<script language="JavaScript" type="text/javascript">
<!--
  var aryImages = new Array();
  aryImages[0] = "image1.jpg";
  aryImages[1] = "image2.jpg";
  for (i=0; i < aryImages.length; i++) {
    var preload = new Image();
    preload.src = aryImages[i];
  }
  function swap(imgIndex) {
    document['imgMain'].src = aryImages[imgIndex];
  }
//-->
</script>
</head>
<body onLoad="swap(0);">
<p><a href="javascript:swap(0)"><img src="image1thumbnail.jpg" width="75" height="79" border="0"></a> <a href="javascript:swap(1)"><img
src="image2thumbnail.jpg" width="75" height="79" border="0"></a></p>
<p><img name="imgMain" width="300" height="317" border="1" id="imgMain" /></p>
</body>
```

Browser windows are an object that can be manipulated with JavaScript.

In the following example:

- The status bar of the window displays a unique message.
- A popup window is launched by an image hyperlink. The location, size and scrollbars are designated within the function.

Example

```
<head>
<script language="JavaScript" type="text/javascript">
<!--
window.defaultStatus = "This is where you place text to appear in the status bar."
function openwindow(address)
{
      window.open(address,"","height=675,width=690,left=0,top=0,screenX=0,screenY=0,scrollbars")
}
//-->
</script>
</head>
<body>
<a href="javascript:openwindow('popup.htm')"><img src="image1.jpg" width="88" height="100 border="0" /></a>
</body>
```