Web Design Basics

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HTML and CSS

HTML stands for Hypertext Markup Language. It is the main language of the Web. While there are other languages used on the Web (programming languages that provide interactivity functions), most websites have HTML in some form as the basis of the site code. HTML files are text files that describe the content of the page. You use HTML to structure your content on an html page without regard to style. A Web browser interprets the markup and renders the page on a user's computer.

CSS (Cascading Stylesheets) is another text-based language, used in conjunction with HTML, but it is used to style the content on the page. CSS can be used to control color, fonts and layout. By using a single CSS page linked to each HTML page, an entire website's style and layout can be centrally controlled. This allows for easy changes to design without affecting content.

HTML/CSS files can be developed in a simple text editor like TextEdit or Notepad, but many HTML editors exist that provide additional coding functionality, like line numbers and color context. We are using Text Wrangler, but others include Sublime Text, TextMate, KomodoEdit or Notepad++. Adobe Dreamweaver is a graphical HTML editing program, but learning to work with code will help when you need to troubleshoot problems or work with existing files or frameworks.

HTML5 is the next generation of HTML. It functions in the same manner as HTML, but adds semantic tags, rich media and animation features and works with CSS3.

The basis of HTML is in its elements or tags. Tags are designated by opening and closing angle brackets.

```
<html>
```

Some tags have additional options, called attributes. The attributes have values designated by the designer. Values are surrounded by quotation marks.

```
<tag attribute = "value">

<body bgcolor = "blue">
<body bgcolor = "#AACC00">
```

Most tags must be closed after inserting the contained text. This tag bolds the text enclosed within it. The closing tag makes sure no other text is bolded.

```
<strong>Cindy Royal's page</strong>
```

Proper coding style requires tags to be written in lowercase.

Format of an HTML File
You open and close an HTML page with the <html> tag. That tells the browser to expect HTML. There are two sections of a Web page.

```
<head>
```

The head of the document contains information about the page. In the head section, you can include the title of the page (renders in title bar of browser), links to stylesheets and other related files and meta tags.

```
<body>
```

The body of the document contains all the content on the page.

```
<html>
<head>

…head information goes here

</head>
<body>

…body information goes here

</body>
</html>
```

Notice that there is no content between the closing <head> tag and the opening <body> tag. Content for the site goes either in the head or body sections.

In most cases, all tags that are opened, need to be closed after the content that it marks up.

Basic Site Tags
<title> - The title tag puts the title in the title bar of the browser. Insert in the head section.
<p> - Use this tag for paragraphs of text
<h1> - <h6> - Use these tags for headings
<strong> - bold; you may also see <b>.
<em> - italics; you may also see <i>.

Tags with attributes
<a> - This tag, in conjunction with the href attribute, creates a link.

```
<a href="http://www.google.com">Google</a> - is my favorite
search engine.
```

Notice the placement of the quotation marks around the value of the attribute, in this case, the URL of the page. The text that will show up on the page is the word "Google" and it will appear as a link. Everything after the closing tag will not appear as a link. If you want to open the link in a new window, use the "target" attribute with the "_blank" value.

```
<a href="http://www.google.com" target="_blank">Google</a> - is
my favorite search engine.
```

You can use the <a> tag for internal links (links to other pages on your site) as well.

```
<a href="resume.html">Resume</a>
```

Internal links should open in the same window.

<img> -This tag allows you to insert images.

```
<img src="photo.jpg" />
```

The src (source) is the filename of the image. The file must be uploaded to your Web host so that your page can access it.

Standalone tags
You will notice that <img> included a "/" within the original tag.

```
<img src="photo.jpg" />
```

Since you are not surrounding any text with the markup, this is considered a "standalone" tag. The proper way to close a standalone tag is to put the "/" inside the tag just before the closing angle bracket >.

```
<br />
```

This provides a line break. It is also considered a standalone tag, because there is nothing for it to surround and should be closed with a / before the closing >.

Block vs. Inline Elements
Some tags automatically create new blocks of text by nature. These are block elements. You can't include a block element inside another block element. Elements like <p>, <h1>...<h6> are considered block elements. You can't have one paragraph inside another or headings inside of paragraphs or other headings.

Inline elements all you to insert the tag inline or within another element. Things like <strong>, <em>, <img> and <a> are all inline elements. They can be included within paragraphs or headings and function just as other elements do within the line.

```
<p>
<img src="cindy.jpg" />Cindy Royal is an associate professor at
<a href=http://txstate.edu>Texas State University</a>.
</p>
```

Layout
Divs and Spans
HTML allows you to divide the page into containers for content. Use the <div> tag for this. You will then apply classes or ids to the <div> to style it for layout. <div> is a block element.

<span> is similar to <div> except that you can use it inline. Use <span> when you want to style something inline differently than other items in the block.

<div> and <span> will make more sense as we work with CSS.

Classes and IDs
<div> and <span> will take classes and ids as attributes. You can define the names of classes and ids in CSS. An id can be used once, for a section of a page that will not be used again. Classes can be used multiple times, for styles that you want to use in multiple places. This will make more sense as we work with CSS.

Comments
Sometimes you want to include a comment on your HTML page that doesn't get rendered by the browser. A comment might be a note to yourself or to another designer working on the page. It could be a way to delineate different sections of the page. Comments are handled differently by different languages. Use comments in html like this:

```
<!-- This is a comment -->
```

Doctype
Open the page, before any HTML, with the proper Doctype. A Doctype tells the browser which version of HTML you are using. For HTML5, the doctype is simple.

```
<!DOCTYPE html>
```

Format of an HTML Page With Divs For Layout
A basic page is created using <div> tags to designate header, nav and section containers on the page.

```
<!DOCTYPE html>
<html>
<head>
<title>My New Website</title>
</head>

<body>
<div id="main">

<div id="header">
<h1>My New Website</h1>
</div>

<div id="nav">
<p><a href="index.html">Home</a> <a href="resume.html">Resume</a>
<a href="links.html">Links</a></p>
</div>

<div id="section">
<h2>Welcome</h2>
<p><img src="royal.jpg" width="150" />Welcome to my new website.
I am an associate professor at <a href="http://txstate.edu"
target="_blank">Texas State University</a> teaching <span class =
"red">Web design and digital media concepts</span>.
</p>
</div>

<div id="aside">
<h3>Courses</h3>
<p>Web Design<br />
Issues in New Media<br />
</p>
</div>

</div><!-- closing main div -->
</body>
</html>
```

My New Website

Home Resume Links

Welcome

Welcome to my new website. I am an associate professor at Texas State University teaching Web design and digital media concepts.

Courses
Web Design
Issues in New Media

The image above shows what the sample html looks like in the browser before applying a stylesheet.

Other tags
Lists
Lists can provide a way to structure content with bullets (or other items depending on attributes). Lists use two nested tags.

```
<ul>
<li>Dogs</li>
<li>Cats</li>
<li>Rabbits</li>
</ul>
```

Lists are sometimes used, in conjunction with CSS, to style navigation bars. You style the list elements to create the proper spacing and layout.

```
<ul>
<li><a href="index.html">Home</a></li> <li><a
href="resume.html">Resume</a> </li><li><a
href="links.html">Links</a></li>
</ul>
```

You can use styles to remove bullets and display inline instead of down, and use CSS padding for spacing.

Tables
Tables provide a more advanced way to layout content on a page. It uses three nested elements.
<table> - main table tag
<tr> - table row
<td> - table data

```
<table>
<tr><td>Cats</td><td>Dogs</td><td>Rabbits</td></tr>
</table>
```

The code above creates a one-row table with three items in it.

Early HTML pages used tables to control the layout of the page, but now we have more advanced methods using divs and css to control page layout. Only use <table> for presenting data on a page.

CSS
CSS (Cascading Stylesheets) is a separate set of codes that allow you to style the elements of your page. You can use CSS in a separate stylesheet linked to each page of your site (preferred), in the <head> of the document or inline on a specific element.

To link a CSS page in an html page, include a line like this in the <head> section.

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

Make sure you use your stylesheet's name in the href, save it in the folder with your html pages (or identify the folder to which you save it in the href) and you also upload the stylesheet to your server when you post to the Web.

You open a style by indicating the element. Within curly braces, you indicate properties and their values. For example,

```
p {
color: #000000;
font-size: 12px;
}
```

Sample CSS
Apply this CSS to the HTML page above and see what happens.
Notice that comments in CSS are handled like this:
/* This is a comment */

The code below is commented to explain the styles.

```css
/* Use body styles to control most of the site */
body {
color: #000000;
background-color: #FFFFFF;
margin-left: 20px;
font-family: Helvetica;
}

/* Designate paragraphs and headings as needed */
p
{
font-size: 1em;
margin: 10px;
margin-top: 0px;
}

h1
{
font-size: 1.8em;
color: #8ca571;
margin: 10px;
}

h2
{
font-size: 1.2em;
margin: 10px;
}

h3
{
font-size: 1.1em;
margin-bottom: 0px;
}
```

```css
/* Modify the colors and presentation of the <a> tag. In CSS,
lists can have a hover effect */
a {color: #000000; text-decoration: none}
a:visited {color: #a4a5a3; text-decoration: none}
a:hover {color: #8ca571; text-decoration: underline}


/* This area designates the ids for <divs>. Notice the "#" to
designate ids. */
#header {
width: 100%;
}

#nav {
position: relative;
height: 24px;
border-bottom: 1px solid #8ca571;
width: 98%;
margin: auto;
}

/* You can use special styles for tags within certain elements */
#nav a {color: #000000; font-weight: bold; text-decoration: none;
margin-right: 10px;}
#nav a:visited {color: #000000; }
#nav a:hover {color: #8ca571; }

#nav p {
margin-left: 0px;
}

#section {
position: relative;
width: 75%;
float: left;
}

/* We are using this style for a sidebar */
#aside {
position: relative;
width: 25%;
float: left;
}
```

```css
/* You can use as many divs as you want. If you want to include a
footer, establish a div with this id. */
#footer {
position: relative;
margin-left: auto;
margin-right: auto;
height: 42px;
}

/* This main div is used to put a border, with rounded corners,
around the entire page */
#main {
border: 1px solid #8ca571;
clear: both;
overflow: auto;
border-radius: 15px;
}

/* This demonstrates a special class. It begins with a ".” You
can use this whenever you want to turn something red. Could be
used with a <span>. */
.red {
color: red;


/* This area controls the look of certain styles on the page on a
mobile device, like an iPhone */
@media screen and (max-width: 480px) {

#section {
float: none;
width: 100%;
}

#aside {
float: none;
width: 100%;
}
}
```

The image demonstrates what the file looks like in the browser when you apply the CSS.

Media Queries
The last section of the stylesheet includes an area we created for media queries. This is a feature that allows you to create separate styles for different sized screens.

The code above only applies to screens less than or equal to 480px, like an iPhone. Used in conjunction with percentage widths for <divs> and <img>, this forms the basis of responsive design.

```
@media screen and (max-width: 480px) {

#section {
float: none;
width: 100%;
}

#aside {
float: none;
width: 100%;
}
}
```

There will be more information to come about responsive design in future sessions.

CSS Properties Reference
W3C CSS Recommendation - www.w3.org/TR/css3-selectors
Full description of these properties can be found at
www.htmlhelp.com/reference/css/properties.html.
Another good description of properties - www.blooberry.com/indexdot/css/propindex/all.htm

Font properties
font-family: Arial, Verdana, Helvetica etc.
font-size – use em or px
font-weight - bold
font-style – italic

Color and Background properties
color – color of text
background-color – color of background
background-image –(background-image:
url("name.gif");
background-repeat – use 'no-repeat' to show once

Text properties
text-decoration – underline
vertical-align- vertical positioning of the element
text-align – alignment within element
text-indent – first line indent

Box properties
margin-top, margin-right, margin-bottom, margin-left –
shorthand example - margin: 1px 1px 1px 1pxm;
padding-top, padding-right, padding-bottom, padding-left
shorthand example: padding: 1px 1px 1px 1pxm;

Border properties
border-top-width, etc. or
shorthand example border-width: 1px 1px 1px 1px
border-color
border-style – dotted, dashed, solid, none
shorthand example: border: solid red

List properties
list-style-type- disc, bullet, none
list-style
display: inline (to make lists present horizontally)

Other properties
width
height
float – used for positioning and wrapping
around an element
display: inline or block to change default
position – absolute or relative
top – use with absolute positioning
left- use with absolute positioning

Positioning
Use divs as containers for layout
can use absolute or relative positioning
can size containers with px or %
#header
{
width: 950px;
height: 100px;
padding-top: 0px;
padding-left: 0px;
}

New ways to do positioning with HTML 5
no need to use divs for main/common
sections of the page.
• <header></header>
• <nav></nav>
• <section></section>
• <footer></footer>
Add CSS properties as you would for divs in
stylesheet, i.e:

header
{
width: 950px;
height: 100px;
padding-top: 0px;
padding-left: 0px;
}