

## cis3.5 spring2009 lecture 1.4

### topics:

- today we will cover in detail the concepts that you explored in the lab on Monday
- introduction to the HyperText Markup Language (HTML)
  - pages, links
  - lists, tables, images
  - image maps
- introduction to Cascading Style Sheets (CSS)

## review of tags from Monday's lab

- page tags
  - opening *tag*: `<html>` and closing *tag*: `</html>`
  - header: `<head>... </head>`
  - body: `<body>... </body>`
- header tags (tags that go inside the header)
  - title: `<title>My first HTML document</title>`  
this text appears as the title of the *browser window*
  - link: `<link type="text/css" rel="stylesheet" href="style.css">`  
this is used to link in a style file, in this case called "style.css"

## page content tags

- "heading" text:
  - `<h1>An important heading</h1>`
  - `<h2>A slightly less important heading</h2>`there are other sizes, from `<h1>` (largest) to `<h7>` (smallest)
- note the difference between **header** and **heading**: header appears at the top of the page, between `<head>... </head>` tags; whereas headings appear in the content of a page
- paragraphs: `<p>` starts a new paragraph
- line breaks: `<br>` breaks a line

## character tags

- emphasis: `<em>...</em>` surround text that you want to emphasize
- italics: `<i>...</i>` surround text that you want to appear in italics
- bold: `<b>...</b>` surround text that you want to appear in bold face
- preformatted text: `<pre>...</pre>` surround text that you do not want to format

## font tags

- font size:  
<big>this text is very big</big>  
<small>this text is very small</small>
- another way to set font size:  
<font face="size=1">this text is in font size 1 (smallest)</font>  
<font face="size=7">this text is in font size 7 (largest)</font>
- font face:  
<font face="courier">this text is in courier font face</font>
- font color:  
<font color="red">this text is red</font>

## colors

- there are 16 pre-defined *color names*:

black = #000000	green = #008000	maroon = #800000	navy = #000080
silver = #C0C0C0	lime = #00ff00	red = #FF0000	blue = #0000ff
gray = #808080	olive = #808000	purple = #800080	teal = #008080
white = #FFFFFF	yellow = #FFFF00	fuchsia = #FF00FF	aqua = #00FFFF

- color is defined using the "RGB" methodology
- "Red", "Green", "Blue"
- each is a value between 00 and FF (in base 16) or 0 and 255 (in base 10), where 0 means no color and FF or 255 means maximum color
- so white is: red=FF green=FF blue=FF or the 6-digit hexadecimal value #FFFFFF
- and black is: red=0 green=0 blue=0
- and red is: red=FF green=0 blue=0
- and green is: red=0 green=FF blue=0
- and blue is: red=0 green=0 blue=FF

## web safe colors

- sets of colors are defined in "color tables"
- one such color table is called "web safe" colors, which are colors that are supposed to look the same on every computer
- for each color component (red, green, blue), only the following discrete values can be set: 00, 33, 66, 99, AA, CC, FF
- even though many other values exist in between... (but they won't necessarily look quite the same on every machine)
- but there are still many web safe colors
- or you can throw caution to the wind and not use web safe colors...

## hyperlinks

- a *hyperlink* is a tag that directs your browser to another page if the user clicks on the hyperlink: <a href="..."> ... </a>
- the content of the hyperlink tag consists of:
  1. the URL where you want the browser to go if the user clicks on the hyperlink, and
  2. the text that you want the user to see (i.e., the text that the user will click on to activate the hyperlink)

## lists

- lists contain one or more “items”
- un-ordered lists:
  - list starts with `<ul>` and ends with `<\ul>`
  - list items start with `<li>` and end with `<\li>`
  - each item starts on a new line
  - list items appear with bullets to the left of each item
  - type of bullet can be set using “list-style-type” in a style sheet; valid list style types include: disc, circle, square
- ordered lists:
  - similar to un-ordered lists, except that list starts with `<ol>` and ends with `<\ol>`
  - items are numbered (instead of bulleted)
  - valid list style types include: decimal, lower-roman, upper-roman, lower-greek, lower-alpha, upper-alpha

- lists can be *nested*, which means you can put one list inside another list:

```
this is my shopping list:
<ul>
<li>bread</li>
<li>apples</li>
<li>ice cream</li>
  <ul>
    <li>vanilla</li>
    <li>chocolate</li>
    <li>mango</li>
  </ul>
<li>peanut butter</li>
</ul>
```

## images

- the *image* tag allows you to display an image within a web page
- example:

```

```
- you can specify properties of the image:
  - width, height
  - border
  - alignment

```

This text will flow around the right side of the graphic.
<p>

This text will flow around the left side of the graphic.
```
- you can include images in tables (see next topic)

## tables

- begin a table with `<table>`
- end a table with `</table>`
- begin each row with `<tr>` and end each row with `</tr>`
- begin each column with `<td>` and end each column with `</td>`
- options:
  - borders
  - *cellpadding* (padding within a cell)
  - *cellspacing* (spacing between cells)
  - width and height (in pixels)
- tricks:
  - empty cells — use `&nbsp;`;
  - *spanning* multiple rows or columns
- coloring cells:

```
<td bgcolor="red">ASDF</td>
```

- aligning cell content:

- horizontally: left, center, right
- vertically: top, middle, bottom

- advanced formatting:

- cell padding (extra space inside the cells)
- cell spacing (space between the cells)
- width of table, of cells
- alignment of cell content
- empty cells (&nbsp;)
- multi-row and multi-column cells
- borders
- coloring cells
- headings

## image maps

- example:

```

<map name="mymap">
  <area shape="rect" coords="0, 0,100,100" href="blue.html">
  <area shape="rect" coords="100,0,200,100" href="purple.html">
  <area shape="rect" coords="200,0,300,100" href="grey.html">
</map>
```

- origin is upper left corner (pixel)
- for **rect**, coords are: left-x, top-y, right-x, bottom-y
- for **circle**, coords are: center-x, center-y, radius
- for **poly**, coords are: x1,y1, x2,y2, ... xn,yn

## style sheets

- linking to a separate style sheet (in another file):

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

and the "style file" looks like this:

```
/* style.css - a simple style sheet */
body {
  color: black; background: white;
}
```

- margins, left and right indents:

```
body { margin-left: 10%; margin-right: 10%; }
h1 { margin-left: -8%;}
h2,h3,h4,h5,h6 { margin-left: -4%; }
p { text-indent: 2em; margin-top: 0; margin-bottom: 0; }
```

- white space above and below:

```
h2 { margin-top: 8em; margin-bottom: 3em; }
```

- fonts:

- styles:

```
em { font-style: italic; font-weight: bold; }
strong { text-transform: uppercase; font-weight: bold; }
```

- text-transform can be: uppercase, lowercase

- font families: Verdana, Garamond, "Times New Roman", sans-serif, e.g.

```
body { font-family: Verdana, sans-serif; }
```

- link colors:

```
:link { color: rgb(0, 0, 153) } /* for unvisited links */
:visited { color: rgb(153, 0, 153) } /* for visited links */
a:active { color: rgb(255, 0, 102) } /* when link is clicked */
a:hover { color: rgb(0, 96, 255) } /* when mouse is over link */
```

- divisions:

- name the divisions using “class” or “id”
  - “class” can be used for multiple elements;
  - “id” can only be used for one element

- class example:

*in the style file:*

```
div.box { border: solid; border-width: thin; width: 100% }
```

*in the html file:*

```
<div class="box">
```

The content within this DIV element will be enclosed in a box.

```
</div>
```

- id example:

*in the style file:*

```
#box2 { border: solid; border-width: thick; width: 100% }
```

*in the html file:*

```
<div id="box2">
```

The content within this DIV element will be enclosed in another box.

```
</div>
```