ADV3550
Instructor: Genevieve Hitchings

What is CSS?

- **CSS** stands for **C**ascading **S**tyle **S**heets
- Styles define **how to display** HTML elements
- Styles were added to HTML 4.0 **to solve a problem**
- **External Style Sheets** can save a lot of work
- External Style Sheets are stored in **CSS files**

Styles Solved a Big Problem
HTML was never intended to contain tags for formatting a document. HTML was intended to define the content of a document, like:

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

When tags like <font>, and color attributes were added to the HTML 3.2 specification, it started a nightmare for web developers. Development of large web sites, where fonts and color information were added to every single page, became a long and expensive process.

To solve this problem, the World Wide Web Consortium (W3C) created CSS. In HTML 4.0, all formatting could be removed from the HTML document, and stored in a separate CSS file. All browsers support CSS today.

CSS Saves a Lot of Work!
CSS defines HOW HTML elements are to be displayed.
Styles are normally saved in external .css files. External style sheets enable you to change the appearance and layout of all the pages in a Web site, just by editing one single file!

CSS Syntax
A CSS rule has two main parts: a selector, and one or more declarations:

selector {property:value;}
p {color:red;text-align:center;}

The id and class Selectors
In addition to setting a style for a HTML element, CSS allows you to specify your own selectors called "id" and "class".

The id Selector
The id selector is used to specify a style for a single, unique element. The id selector uses the id attribute of the HTML element, and is defined with a "#".
The style rule below will be applied to the element with id="para1":
#para1
{
text-align:center;
color:red;
}

The class Selector
The class selector is used to specify a style for a group of elements. Unlike the id selector, the class selector is most often used on several elements.

This allows you to set a particular style for any HTML elements with the same class. The class selector uses the HTML class attribute, and is defined with a "."In the example below, all HTML elements with class="center" will be center-aligned:

.center {text-align:center;}

Three Ways to Insert CSS
There are three ways of inserting a style sheet:

- External style sheet
- Internal style sheet
- Inline style

External
An external style sheet is ideal when the style is applied to many pages. With an external style sheet, you can change the look of an entire Web site by changing one file. Each page must link to the style sheet using the <link> tag. The <link> tag goes inside the head section:

ex:
<head>
<title>My first web page</title>
<link rel="stylesheet" type="text/css" href="web.css" />
</head>

Internal
An internal style sheet should be used when a single document has a unique style. You define internal styles in the head section of an HTML page, by using the <style> tag, like this:

ex:
<head>
<style type="text/css">
hr {color:sienna;}
p {margin-left:20px;}
body {background-image:url("images/back40.gif");}
</style>
</head>

Inline style
An inline style loses many of the advantages of style sheets by mixing content with presentation. Use this method sparingly! To use inline styles you use the style attribute in the relevant tag. The style attribute can contain any CSS property. The example shows how to change the color and the left margin of a paragraph:

<p style="color:sienna;margin-left:20px">This is a paragraph.</p>

Cascading order
What style will be used when there is more than one style specified for an HTML element?

Generally speaking we can say that all the styles will "cascade" into a new "virtual" style sheet by the following rules, where number four has the highest priority:

1. Browser default
2. External style sheet
3. Internal style sheet (in the head section)
4. Inline style (inside an HTML element)

So, an inline style (inside an HTML element) has the highest priority, which means that it will override a style defined inside the <head> tag, or in an external style sheet, or in a browser (a default value).

CSS background
CSS background properties are used to define the background effects of an element.
CSS properties used for background effects:

background-color
```
ex:     h1 {background-color:#6495ed;}
        p {background-color:#e0ffff;}
        div {background-color:#b0c4de;}
```

background-image
```
ex:     body {background-image:url('paper.gif');}
```

background-repeat
```
ex:     body
        {
        background-image:url('gradient2.png');
        background-repeat:repeat-x;
        }
```

background-position
```
ex:     body
        {
        background-image:url('img_tree.png');
        background-repeat:no-repeat;
        background-position:top right;
        }
```

To shorten the code, it is also possible to specify all the properties in one single property. This is called a shorthand property.

```
ex:     body {background:#ffffff url('img_tree.png') no-repeat top right;}
```

CSS Text
Text color
ex:
body {color:blue;}
h1 {color:#00ff00;}
h2 {color:rgb(255,0,0);}

Text allignment (centered, or aligned to the left or right, or justified.)
ex:
h1 {text-align:center;}
p.date {text-align:right;}
p.main {text-align:justify;}

Text decoration (mostly used to remove underlines from links for design purposes)
ex:
a {text-decoration:none;}
h1 {text-decoration:overline;}
h2 {text-decoration:line-through;}
h3 {text-decoration:underline;}
h4 {text-decoration:blink;}

Text transformation
(mostly used to specify uppercase and lowercase letters in a text)
ex:
p.uppercase {text-transform:uppercase;}
p.lowercase {text-transform:lowercase;}
p.capitalize {text-transform:capitalize;}

Text indentation
ex:
p {text-indent:50px;}

CSS Fonts
In CSS, there are two types of font family names:
1. <u>generic family</u> - a group of font families with a similar look (like "Serif" or "Monospace")
2. <u>font family</u> - a specific font family (like "Times New Roman" or "Arial")

Font Family
The font family of a text is set with the font-family property. The font-family property should hold several font names as a "fallback" system. If the browser does not support the first font, it tries the next font. Start with the font you want, and end with a generic family, to let the browser pick a similar font in the generic family, if no other fonts are available. Note: If the name of a font family is more than one word, it must be in quotation marks, like font-family: "Times New Roman". More than one font family is specified in a comma-separated list:

ex:
p{font-family:"Times New Roman", Times, serif;}

Font Style
The font-style property is mostly used to specify italic text.
This property has three values:

- normal - The text is shown normally
- italic - The text is shown in italics
- oblique - The text is "leaning" (oblique is very similar to italic, but less supported)

ex:
p.normal {font-style:normal;}
p.italic {font-style:italic;}
p.oblique {font-style:oblique;}

Font Size
The font-size property sets the size of the text.

Being able to manage the text size is important in web design. However, you should not use font size adjustments to make paragraphs look like headings, or headings look like paragraphs. Always use the proper HTML tags, like <h1> - <h6> for headings and <p> for paragraphs.

ex:
h1 {font-size:40px;}
h2 {font-size:30px;}
p {font-size:14px;}

(Internet Explorer has trouble with pixels.)

Set Font Size With Em
To avoid the resizing problem with Internet Explorer, many developers use em instead of pixels. The em size unit is recommended by the W3C. 1em is equal to the current font size. The default text size in browsers is 16px. So, the default size of 1em is 16px. The size can be calculated from pixels to em using this formula: *pixels*/16=*em*

ex:
h1 {font-size:2.5em;} /* 40px/16=2.5em */
h2 {font-size:1.875em;} /* 30px/16=1.875em */
p {font-size:0.875em;} /* 14px/16=0.875em */

Use a Combination of Percent and Em
The solution that works in all browsers, is to set a default font-size in percent for the body element. It shows the same text size in all browsers, and allows all browsers to zoom or resize the text!

ex:
body {font-size:100%;}
h1 {font-size:2.5em;}
h2 {font-size:1.875em;}
p {font-size:0.875em;}

<u>Styling Links</u>
Links can be styled with any CSS property (e.g. color, font-family, background-color).
Special for links are that they can be styled differently depending on what state they are in.

The four links states are:

- a:link - a normal, unvisited link
- a:visited - a link the user has visited
- a:hover - a link when the user mouses over it
- a:active - a link the moment it is clicked

ex:
a:link {color:#FF0000;}   /* unvisited link */
a:visited {color:#00FF00;} /* visited link */
a:hover {color:#FF00FF;} /* mouse over link */
a:active {color:#0000FF;} /* selected link */

text-decoration property is mostly used to remove underlines from links:
a:link {text-decoration:none;}
a:visited {text-decoration:none;}
a:hover {text-decoration:underline;}
a:active {text-decoration:underline;}

background-color property specifies the background color for links: a:link {background-color:#B2FF99;}
a:visited {background-color:#FFFF85;}
a:hover {background-color:#FF704D;}
a:active {background-color:#FF704D;}

<u>CSS list</u> properties allow you to:

- Set different list item markers for ordered lists
- Set different list item markers for unordered lists
- Set an image as the list item marker

In HTML, there are two types of lists:

- unordered lists - the list items are marked with bullets
- ordered lists - the list items are marked with numbers or letters

With CSS, lists can be styled further, and images can be used as the list item marker.

ex:
ul.a {list-style-type: circle;}
ul.b {list-style-type: square;}

ol.c {list-style-type: upper-roman;}
ol.d {list-style-type: lower-alpha;}

CSS Tables
The look of an HTML table can be greatly improved with CSS:

table borders:
```
table, th, td
{
border: 1px solid black;
}
```

Table Width and Height:
```
table
{
width:100%;
}
th
{
height:50px;
}
```

Table Text Allignment
```
td
{
text-align:right;
}
```

```
td
{
height:50px;
vertical-align:bottom;
}
```

Table Padding
To control the space between the border and content in a table, use the padding property on td and th elements:
```
td
{
padding:15px;
}
```

Table Color
The example below specifies the color of the borders, and the text and background color of th elements:
```
table, td, th
{
border:1px solid green;
}
th
{
background-color:green;
color:white;
}
```