Introduction To Web Programming I

(CSC 211)

Lecture Note 3

Introduction to CSS

16th January, 2020

Introduction to CSS

- Before you code the CSS for a web page, you need to know how to provide the CSS for a web page. You also need to know how to make the HTML5 semantic elements work in older browsers and how to make sure that the elements of a page are rendered the same in every browser.
- **How to provide CSS styles for a web page**
- There are three (3) ways to provide for CCS styles in web page
  - external style sheet
  - embedded style sheet
  - inline style sheet
- When you use external style sheets, you separate content (HTML) from formatting (CSS). That makes it easy to use the same styles for two or more documents.
- If you use embedded styles, you have to copy the styles to other documents before you can use them a second time.

- If you use inline styles to apply styles, the formatting is likely to get out of control.
- If more than one rule for the same property is applied to the same element, the last rule overrides the earlier rules.
- When you specify a relative URL for an external CSS file, the URL is relative to the current file.
- **The sequence in which styles are applied**
  - Styles form an external style sheet
  - Embedded styles
  - Inline styles

- **Examples to provide for style sheets**
- Use an external style sheet by coding a link element in the head section

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

- Embed the styles in the head section

```
<style>
    h1 { color: blue; }
</style>
```

- Use the style attribute to apply styles to a single element
  - `<h1 style="font-size: 15px; color: blue;">CSS is nice</h1>`

How to specify measurements and colors

- For many of the properties of a rule set, you will need to know how to specify measurements and colors.
- **Measurements**
- Common units of measure

Symbol	Name	Type	Description
px	pixels	absolute	A pixel represents a single dot on a monitor. The number of dots per inch depends on the resolution of the monitor.
pt	points	absolute	A point is 1/72 of an inch.
em	ems	relative	One em is equal to the font size for the current font.
%	percent	relative	A percent specifies a value relative to the current value.

- The HTML for a web page

```
<body>
    <head>
        <h1>Faculty of Computing</h1>
    </header>
    <main>
        <p>Welcome to the Faculty of Computing, Federal University Dutse</p>
    </main>
</body>
```

- The CSS for the web page

```
body {
    font-size: 100%;
    margin-left: 2em;
    margin-right: 2em;}
header {
    padding-bottom: .75em;
    border-bottom: 3px solid black;
    margin-bottom: 0; }
h1 {
    font-size: 200%;
    margin-bottom: 0; }
```

How to specify measurements

- You use the units of measure to specify a variety of CSS properties, including font-size, line-height, width, height, margin, and padding.
- There are two types of measurement: **absolute** and **relative** measurement.
- To specify an absolute measurement, you can use ***pixels*** or ***points***.
- To specify a relative measurement, you can use ***ems*** or ***percent***. This type of measurement is relative to the size of another element.

How to specify colors

- There are three ways to specify colors. By using:
  - Color names
  - RGB and
  - Hexadecimal values
- How to use color names
- There 16 descriptive color names that can be used to specify colors in a web page. The following table shows the list of the color names.

black	silver	white	aqua	gray	fuchsia
red	lime	green	maroon	blue	navy
yellow	olive	purple	teal		

- color name syntax
  - color: color-name; e.g.
  - color: silver;
- How to use RGB
- using percentage
  - RGB(red%, green%, blue%)
  - color: rgb(100%, 40%, 20%)
- using range of values from 0 - to 255
  - color: rgb(255, 102, 51);
- With an RGB values that uses hexadecimal numbers
  - color: #FFFFFF;
  - color: #000000;
  - color: #FF0000;

- CSS that uses hexadecimal values to specify colors

```
body {
  font-size: 100%;
  margin-left: 2em;
  background-color: #FFFFCC; } /* color: #FFC*/
h1 {
   font-size: 200%;
   color: #00F; } /* color: #0000FF */
```

- All browsers support the 16 color names shown above, and most browsers support many more not list in the above table.
- Graphics designers mostly use the hexadecimal, or hex values to specify an RGB value. You can check the Internet to get the color names and their corresponding hex values.
- Some IDE such as Dreamweaver allows you to select a color from a pallete of colors then the ID insert the right color codes into your ruleset in either RGB or hex format.

CSS3 Color Specification

- CSS3 also provides for additional three (3) color specifications as follows
- RGBA - this enhances the RGP specification by providing a fourth value for opacity.
- HSL - Allows you to specify the number of hue degrees for a color. Then you can enhance the hue by providing for both saturation and lightness percentages. HSLA also offers for a fourth value for opacity.
- CSS3 also provides 147 more keywords for colors that are generally supported by modern browsers.
- **Three ways to code CSS3 colors**
- The syntax for RGBA colors

  rgb(red%, green%, blue%, opacity-value)
- The syntax for HSL and HSLA colors

  hsl(hue-degrees, saturation%, lightness%)

  hsla(hue-degrees, saturation%, lightness%, opacity-value)

- **opacity-value** - A number from 0 to 1 with 0 being fully transparent and 1 being fully opaque.
- **hue-degrees** - A number of degrees ranging from 0 to 359 that represents the color.
- **saturation%** - A percentage from 0 to 100 with 0 causing the hue to be ignored and 100 being full hue.
- **lightness%** - A percentage from 0 to 100 with 50 being normal lightness, 0 being black, and 100 being white.