Web Application Development

CSS

1

1

What is CSS?

- CSS is a W3C standard for describing the presentation (or appearance) of HTML elements.
- With CSS, we can assign
  - font properties, colors, sizes, borders, background images
  - even the position of elements
- CSS is a language in that it has its own syntax rules.
- CSS has a reputation for being a somewhat frustrating language
- https://www.w3schools.com/css/default.asp

Example: P2-CSS/index.html

2

Style Locations

- CSS style rules can be located in three different locations.
  1. Inline
  2. Embedded: internal
  3. External: separate file
- You can combine all 3!

3

1. Inline Styles

```
<h1>Share Your Travels</h1>
<h2 style="font-size:24pt">Description<h2>
<h2 style="font-size:24pt;font-weight:bold;">Reviews</h2>
```

- An inline style only affects the element it is defined within and will **override** any other style definitions for the properties used in the inline style.
  - h2 default size: 150% (1.5em) than normal
- Using inline styles is generally **discouraged** since they increase bandwidth and decrease maintainability.

4

2. Embedded Style Sheet

```
<head>
  <meta charset="utf-8" >
  <title>New York - Central Park</title>
  <style>
      h1 { font-size: 24pt; }
  </style>
</head>
<body>
  <!-- This is a comment -->
  <h1> Share your Travels</h1>
</body>
```

- Since each HTML document has its own `<style>` element, it is more **difficult to consistently style multiple documents** when using embedded styles.

5

3. External Style Sheet

- This is by far the most common place to locate style rules because it provides the best maintainability.
- When you make a change to an external style sheet, all HTML documents that reference that style sheet will automatically use the updated version.
- The browser is able to cache the external style sheet which can improve the performance of the site

```
<head>
     <link rel="stylesheet" href="css/main.css">
</head>
```

`href` stands for Hypertext Reference

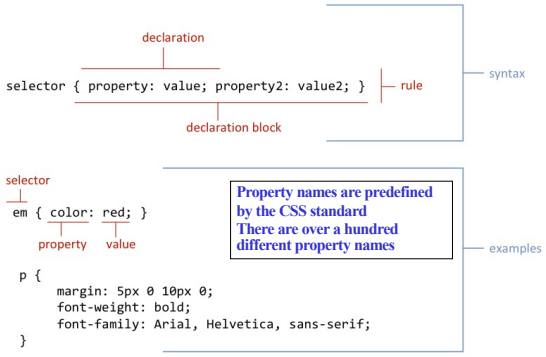
6

CSS Syntax

- Selectors
  - In CSS, selectors are patterns used to select the element(s) you want to style.
- Element Selectors
- Class Selectors
- ID Selectors

7

1. Element Selectors



https://www.w3schools.com/cssref/default.asp

8

Grouped Selectors

```
/* commas allow you to group selectors */
p, div, aside {
   margin: 0;
   padding: 0;
}
/* the above single grouped selector is equivalent to the
   following: */
p {
   margin: 0;
   padding: 0;
}
div {
   margin: 0;
   padding: 0;
}
aside {
   margin: 0;
   padding: 0;
}
```

9

2. Class Selectors

```
<head>
  <meta charset="utf-8">
  <title>CSS Class Selectors</title>
  <style>
  .first{
      font-style:italic;
      color:brown;
  }
  </style>
</head>
<body>
  <h1 class="first">Review</h1>
  <div>
    <p class="first">By Richardo on September 15, 2012</p>
    <p>Easy on the HDR (High Dynamic Range) buddy.</p>
  </div>
</body>
```

A class selector allows you to simultaneously target different HTML elements regardless of their position in the document tree

10

3. ID Selectors

```
<head>
  <meta charset="utf-8">
  <title>CSS Class Selectors</title>
  <style>
  #first{
      font-style:italic;
      color:brown;
  }
  </style>
</head>
<body>
  <h1 id="first">Review</h1>
  <div>
    <p id="first">By Ricardo on September 15, 2012</p>
    <p>Easy on the HDR (High Dynamic Range) buddy.</p>
  </div>
</body>
```

An id selector allows you to target a specific element by its id attribute regardless of its type or position

only be using an id once per page (used to recommended this way) It used to produce an error

P2-CSS/selectors.html

11

Id vs. Class Selectors

- Id selectors should only be used when referencing a single HTML element since an id attribute can only be assigned to a single HTML element.
- Class selectors should be used when (potentially) referencing several related elements.

12

Cascade

- CSS has a system to help the browser determine how to display elements when different style rules conflict.
- The "Cascade" in CSS refers to how conflicting rules are handled.
- CSS uses the following cascade principles to help it deal with conflicts:
  1. inheritance
  2. specificity
  3. location

13

1. Inheritance

- Many (but not all) CSS properties affect not only themselves but their descendants as well.
  - The `inherit` keyword specifies that a property should inherit its value from its parent element.

```
<style>
  div{
    font-weight: bold;
    margin:50px;
    border: 1pt solid green;
  }
  p{
    border:inherit;
    margin:inherit;
  }
 </style>
```

P2-CSS/inheritance.html

14

2. Specificity

- Specificity is how the browser determines which style rule takes precedence when more than one style rule could be applied to the same element.
- The more *specific* the selector, the more it takes precedence (i.e., overrides the previous definition).

Element Selectors < Class Selectors < Id Selectors

P2-CSS/specificity.html

15

```
body{
  font-weight: bold;
  color: red;
}
div{
  font-weight: normal;
  color: magenta;
}
p {
  color: green;
}
.last{
  color: blue;
}
#verylast{
  color: orange;
  font-size: 16pt;
  font-weight: bold;
}
```

```
<body>
  This text is not within a p element

  <div>
    <p>By Richardo on <time>..</time></p>
    <p>Easy on the HDR....</p>
    This text is not within a <strong> p
</strong> element
  </div>

  <div>
    <p class="last"> By Susan on ...</p>
    <p id="verylast">I love Central..</p>
  </div>

</body>
```

This text is not within a p element

By Ricardo on September 15, 2012

Easy on the HDR (High Dynamic Range) buddy.

This text is not within a p element

By Susan on October 1, 2012

I love Central Park.

P2-CSS/specificity.html

16

3. Location

- When inheritance and specificity cannot determine style precedence, the principle of location will be used.
- The principle of location is that when rules have the same specificity, then the latest are given more weight.
- There is one exception to the principle of location.
  - If a property is marked with **!important** in an author-created style rule, then it will override any other author-created style regardless of its location.

17

location.html

```
<head>
  <link rel="stylesheet" href="css/styleA.css">
  <link rel="stylesheet" href="css/styleB.css">
  <style>
  #example{
    color: orange; /* color: orange !important*/
    color: magenta;
  }
  </style>
</head>
<body>
<!--  <p class="example">-->
  <p id="example" style="color:red;">
    sample test </p>
</body>
```

```
.example{
  color:green !important;
}
```

stylesA.css

```
.example{
  color:blue;
}
```

stylesB.css

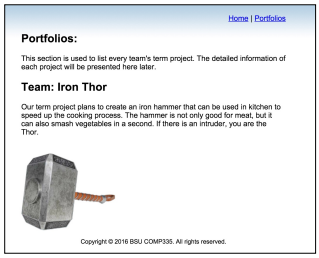
18

Exercise

- Download **P2-CSS.zip** from BB
- Make changes (files under `/css-ex1` folder) to have your page similar to the expected result

Hint:

```
background-image
url(background.png)
background-repeat
<img src="hammer.png”>
```



19