CSS Basics

Acknowledgements

- *Slides for this course are from:*
  - Fundamentals of Web Development by Connolly and Hoar
  - Murach's HTML5 and CSS3 by Zak Ruvalcaba and Anne Boehm. Fresno, CA: Mike Murach & Associates
  - Internet and the World Wide Web. How to Program. P. Deitel, H. Deitel and A. Deitel.
  - Principles of Web Design, Joel Sklar, Course Technology, Cengage Learning
  - JavaScript and jQuery the Missing Manual by David Sawyer McFarland, O'Reilly
  - Code.org
  - Other Textbooks / Online Resources
  - Rachel Adler (my own thoughts/code)

Cascading Style Sheets (CSS)

- Although HTML provides some capabilities for controlling a document's presentation, *it's better not to mix presentation with content*.

- Cascading Style Sheets (CSS) are used to specify the *presentation*, or styling, of elements on a web page (e.g., fonts, spacing, sizes, colors, positioning).

- By separating page styling from page content and structure, you can easily change the look and feel of the pages on an *entire* website, or a portion of a website, simply by swapping out one style sheet for another.

CSS

- Document that contains a set of rules on how to present another document

- A CSS document consists of one or more **style rules**

We will do this!

Three ways to provide styles

***Use an external style sheet**

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

Embed the styles in the head section

```
<style>
    body {
        font-family: Arial, Helvetica, sans-serif;
        font-size: 87.5%; }
    h1 { font-size: 250%; }
</style>
```

Use the style attribute to apply styles to a single element

```
<h1 style="font-size: 500%; color: red;">
    Valley Town Hall</h1>
```

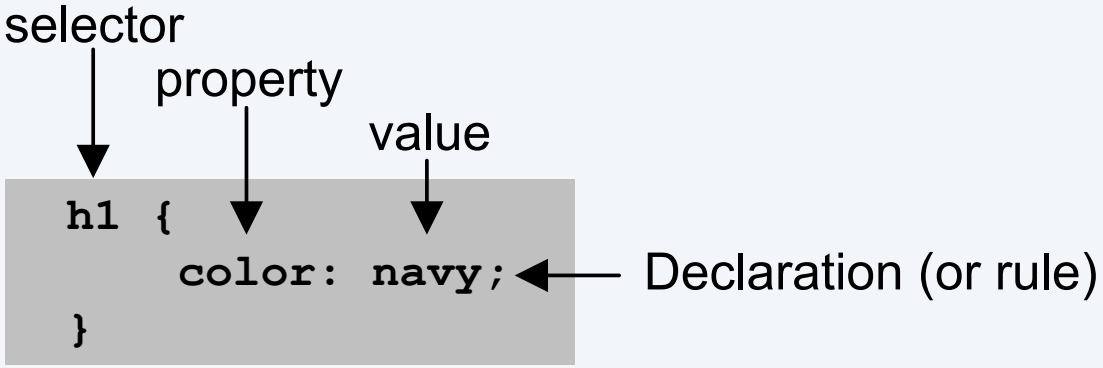
***We will be doing it the first way.**

The link element for a style sheet

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

Put in HTML page

The parts of a CSS rule set



Selector: identify an HTML element

Property: identify a display feature to specify

Value: the value of the display property

- can be more than one

e.g., border: 2px solid black;

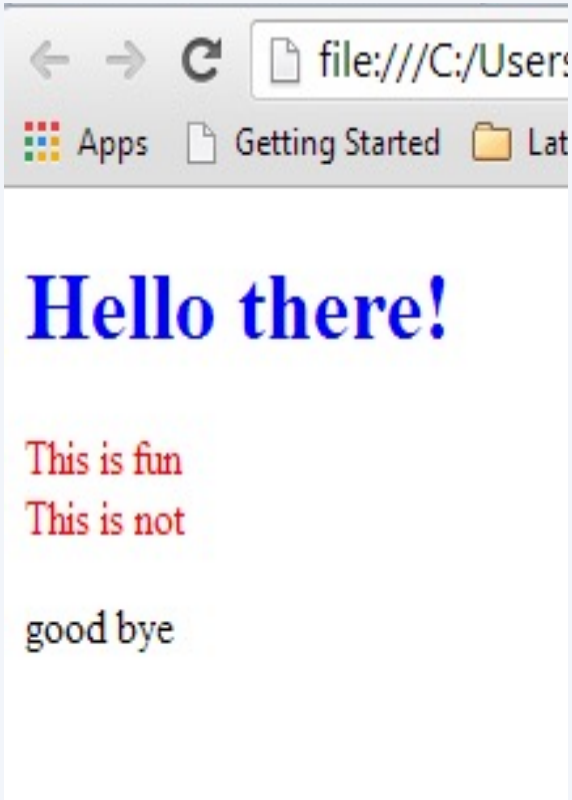
HTML File

```
<!DOCTYPE html>
<html>
  <!-- Example using tags, new lines, css, colors-->
  <head>
        <meta charset="utf-8">
        <title>Just a test</title>
        <link rel="stylesheet" href="source.css">
  </head>

  <body>
        <h1>Hello there!</h1>
        <p>
        This is fun
        <br>
        This is not
        </p>
        good bye
  </body>
</html>
```

CSS File

```
h1 {
        color:blue;
}
p {
        color:red;
}
```



HTML Block Elements vs. Inline Elements

Block level elements normally start (and end) with a new line when displayed in a browser.
Examples: <h1>, <p>, <ul>, <table>

Inline elements are normally displayed without starting a new line.
Examples: <b>, <a>, <img>

The HTML and Elements

The HTML element is a block level element that can be used as a container for grouping other HTML elements.

The HTML element is an inline element that can be used as a container for text.

The and elements have no special meaning. Use when the HTML5 semantic elements don't apply.

When used with CSS, the element can set style attributes to large blocks of content and the element can set style attributes to parts of the text.

Try it.

Common units of measure

Symbol	Name	Type	Description
px	pixel	absolute	A single dot on a monitor. The number of dots per inch depends on the resolution of the monitor.
pt	point	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.

```
font-size: 12pt;        /* in points */
font-size: 150%;        /* as a percent of the parent element */
font-size: 1.5em;       /* same as 150% */
```

How to specify a font family

Font family

If the browser does not support the first font it tries the next font.

font-family: Arial, Helvetica, sans-serif;
font-family: "Times New Roman", Times, serif;
font-family: "Courier New", Courier, monospace;

Selectors

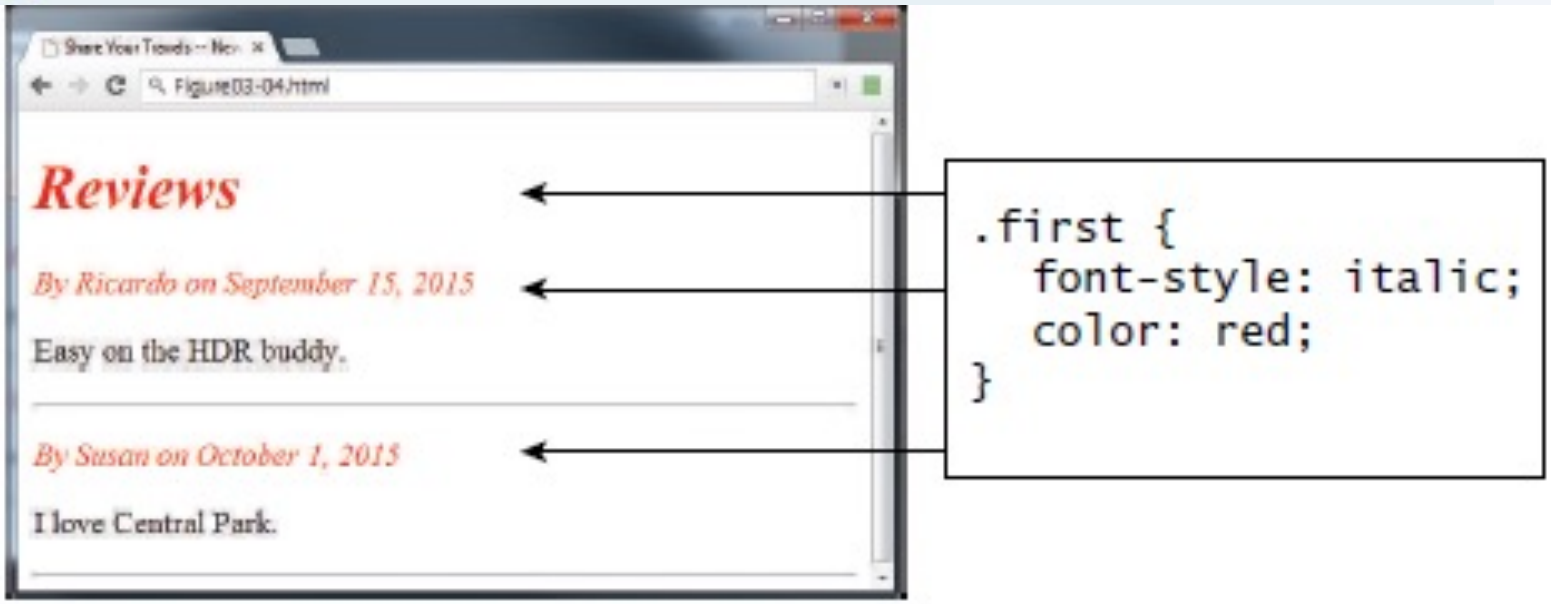
- What if you don't want all h1 tags to be displayed the same?
- Three ways to select elements:
  - **element Selectors**: e.g., <p>
    - applies to **all** elements of that type
  - **Id Selectors**: **unique** label assigned to an element
    - prefix CSS rule with **#**
  - **Class Selectors**: label assigned to multiple elements
    - prefix CSS rule with **.** (a period)

Class Selectors

A **class selector** allows you to simultaneously target different HTML elements.

```
<h1 class="first">Reviews</h1>
<div>
   <p class="first">By Ricardo on <time>September 15, 2015</time></p>
   <p>Easy on the HDR buddy.</p>
</div>
<hr/>

<div>
   <p class="first">By Susan on <time>October 1, 2015</time></p>
   <p>I love Central Park.</p>
</div>
```



Id Selectors

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

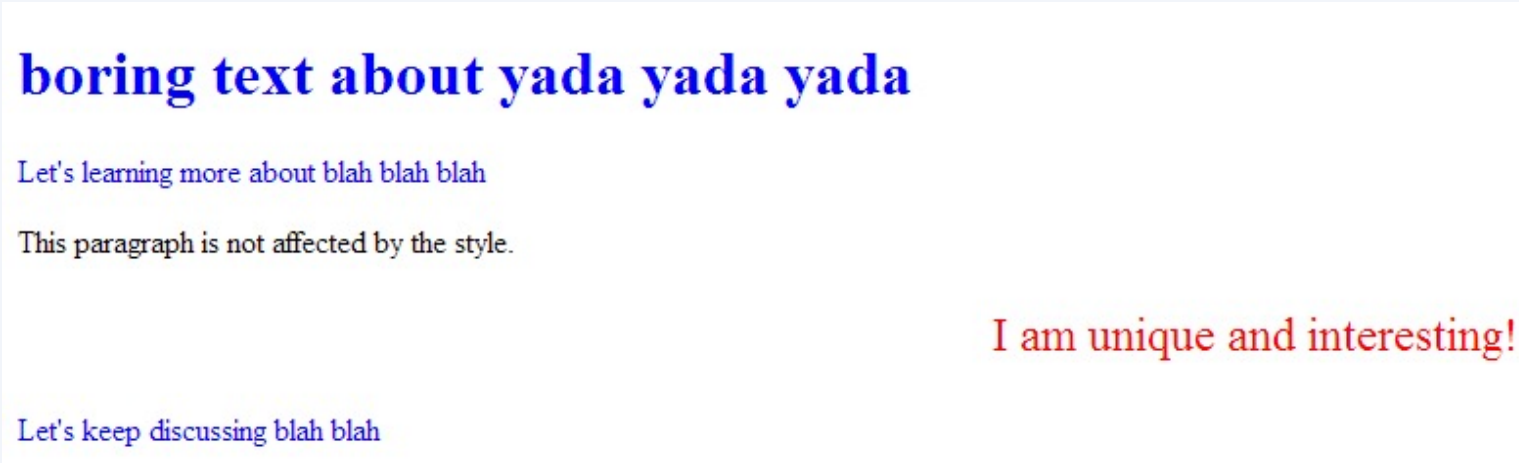
```
<body>
   <h1>Reviews</h1>
   <div id="latestComment">
      <p>By Ricardo on <time>September 15, 2015</time></p>
      <p>Easy on the HDR buddy.</p>
   </div>
   <hr/>
   <div>
      <p>By Susan on <time>October 1, 2015</time></p>
      <p>I love Central Park.</p>
   </div>
```

```
#latestComment {
   font-style: italic;
   color: red;
}
```

Example

```
<h1 class="boringtext">boring text about yada yada yada</h1>
<p class="boringtext">Let's learning more about blah blah blah</p>
<p>This paragraph is not affected by the style.</p>
<p id="unique">I am unique and interesting!</p>
<p class="boringtext">Let's keep discussing blah blah</p>
```

```
#unique{
        text-align:center;
        color:red;
        font-size: 150%;
}
.boringtext{
        color:blue;
}
```

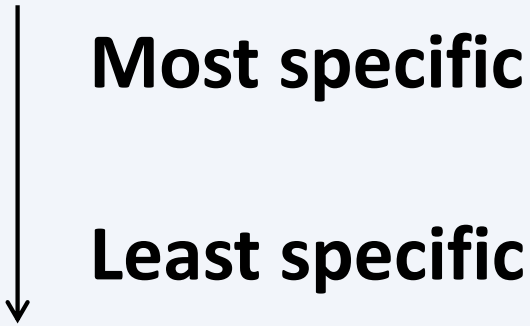


When rules collide…

- What happens if one element has more than one applicable CSS rule?

- Apply **most specific** rule
  - **Id** is most specific
  - **Class** is less specific
  - **Element** is least specific

- Use the rule set with the highest specificity.
- If the specificity is the same for two or more rule sets in a group, use the rule set that's specified last.



When rules collide…example:

```
body {
     font-family: Arial, Helvetica, sans-serif;
     font-size: 87.5%; }
```

A rule that overrides the inherited font family

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

```
body {
  font-weight: bold;
  color: red;
}

div {
  font-weight: normal;
  color: magenta;
}

p {
  color: green;
}

.last {
  color: blue;
}

#verylast {
  color: orange;
  font-size: 16pt;
}
```

```
<body>
  This text is not within a p element.
  <p>Reviews</p>
  <div>
    <p>By Ricardo on <time>September 15, 2015</time></p>
    <p>Easy on the HDR buddy.</p>
    This text is not within a p element.
  </div>
  <hr/>

  <div>
    <p>By Susan on <time>October 1, 2015</time></p>
    <p>I love Central Park.</p>
  </div>
  <hr/>

  <div>
    <p class="last">By Dave on <time>October 15, 2015</time></p>
    <p class="last" id="verylast">Thanks for posting.</p>
  </div>
  <hr/>
</body>
```

Location

- When rules have the same specificity, then the latest are given more weight.
- For instance, an inline style will override one defined in an external author style sheet or an embedded style sheet.

A head element that includes two style sheets

```
<head>
    <title>San Joaquin Valley Town Hall</title>
    <link rel="stylesheet" href="../styles/main.css">
    <link rel="stylesheet" href="../styles/speaker.css">
</head>
```

The sequence in which styles are applied

- From the first external style sheet to the last

Combinations of selectors

A selector for a class within an element

```
ul.speakers { list-style-type: square; }
```

Multiple selectors

```
h1, h2, h3 { color: blue; }
p, ul.speakers li {
    font-family: "Times New Roman", serif; }
```

Relational Selector

- How to express: “Make all links in unordered lists have the color green”?

- **ul a { color: green; }**

Universal Selector

You can select all elements by
using the **universal element selector**, which is
the * (asterisk) character

HTML that can be selected by element type, id, or class

```
<main>
   <h1>This Season's Speaker Lineup</h1>
   <p class="blue">October: Jeffrey Toobin</p>
   <p class="blue">November: Andrew Ross
Sorkin</p>
</main>
<footer>
   <p id="copyright" class="blue right">Copyright
    2018</p>
</footer>
```

All elements

```
* { margin: .5em 1em; }
```

Elements by type

```
main {
   border: 2px solid black;
   padding: 1em; }
h1 { font-family: Arial, sans-serif; }
p { margin-left: 3em; }
```

One element by ID

```
#copyright { font-size: 80%; }
```

Elements by class

```
.blue { color: blue; }
.right { text-align: right; }
```

CSS rule sets by **type, id, and class**

Type

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

ID

```
#main {
    width: 300px;
    padding: 1em;
}
#copyright {
    font-size: 75%;
    text-align: right;
}
```

Class

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

CSS rule sets with **relational selectors**

Descendant

```
#main li { font-size: 14pt; }
ul a { color: green; }
```

Adjacent sibling

```
h2+p { margin-top: .5em; }
```

Child

```
#main>p { font-size: 11pt; }
li>a { color: green; }
```

General sibling

```
h2~p { margin-left: 2em; }
```

How to use the W3C CSS Validation Service

- Go to the URL that follows, identify the file to be validated, and click the Check button:

  `http://jigsaw.w3.org/css-validator/`