Topic 3 - Stylesheet Language

Introduction to CSS
- CSS Syntax
- CSS Structure
- Selectors and CSS3

What is CSS?

Where did it come from?

What Is CSS?

Cascading Style Sheets (CSS)

- CSS is a W3C recommendation (standard) for describing the appearance of HTML elements

- With CSS, we can assign font properties, colors, sizes, borders, background images, and even position elements on the page

- CSS can be added directly to any HTML element (via the style attribute), within the <head> element, or, most commonly, in a separate text file that contains only CSS.
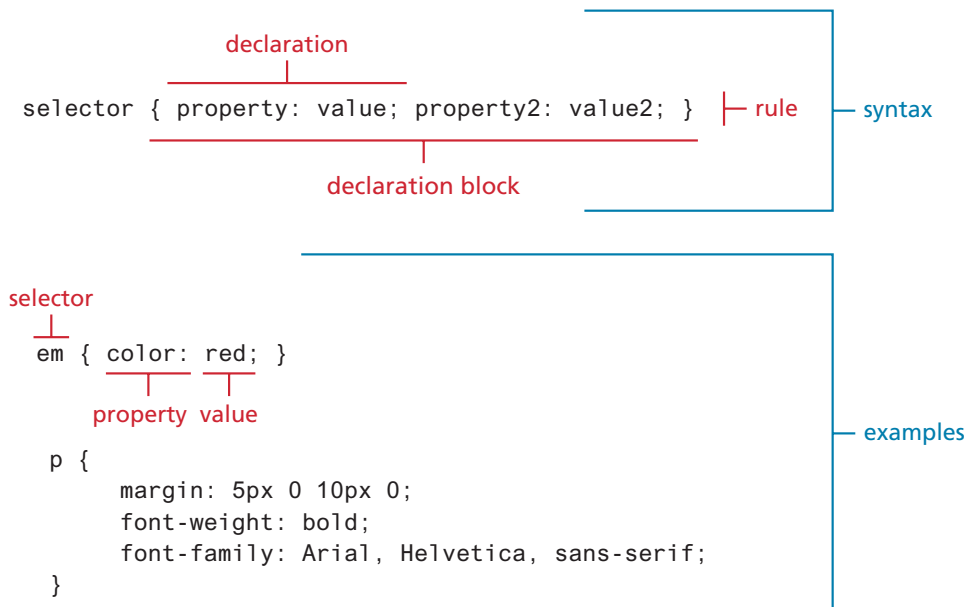
CSS Syntax

CSS Syntax
Overview

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

- A rule consists of a **selector** that identifies the HTML element or elements that will be affected, followed by a series of **property:value** pairs (each pair is also called a declaration)

- The series of declarations is also called the declaration block .

CSS Syntax
Overview

```
            declaration

selector { property: value; property2: value2; }  ├─ rule  ─ syntax

              declaration block


  selector

   em { color: red; }

      property value

   p {
       margin: 5px 0 10px 0;
       font-weight: bold;
       font-family: Arial, Helvetica, sans-serif;
   }
```

─ examples

CSS Syntax

Selectors

- Every CSS rule begins with a selector .

- The selector identifies which element or elements in the HTML document will be affected by the declarations in the rule

- Many ways to write selectors (stay tuned…)

CSS Syntax

Properties

Property Type	Property
Fonts	font font-family font-size font-style font-weight @font-face
Text	letter-spacing line-height text-align text-decoration text-indent
Color and Background	background background-color background-image background-position background-repeat box-shadow color opacity
Borders	border border-color border-width border-style border-top, border-left, … border-image border-radius

CSS Syntax

Properties

Property Type	Property
Spacing	padding padding-bottom, padding-left, ... margin margin-bottom, margin-left, ...
Sizing	height max-height max-width min-height min-width width
Layout	bottom, left, right, top clear display float overflow position visibility z-index
Lists	list-style list-style-image list-style-type
Effects	animation filter perspective transform transition

CSS Syntax

Values

- The unit of any given value is dependent upon the property.

- Some property values are from a predefined list of keywords. Others are values such as length measurements, percentages, numbers without units, color values, and URLs.

CSS Syntax

Colors

- Name

- RGB

- Hexadecimal

- RGBa

- HSL

CSS Syntax

Relative and absolute Units

- Relative
  - px
  - em
  - %
  - vw, vh
- Absolute
  - In
  - cm
  - Pt

Location of Styles

Location of Styles

Inline Styles

Inline styles are style rules placed within an HTML element via the style attribute

```
<h1>Share Your Travels</h1>

<h2 style="font-size: 24pt">Description</h2>

...

<h2 style="font-size: 24pt; font-weight:bold;">
Reviews</h2>
```

Using inline styles is generally discouraged

Handy for quickly testing out a style change

Location of Styles

Embedded Style Sheet

Embedded style sheets (also called internal styles) are style rules placed within the **<style>** element (inside the <head> element of an HTML document).

```
<head>
    <meta charset="utf-8">
    <title>Share Your Travels -- New York - Central
Park</title>
    <style>
            h1 { font-size: 24pt; }
            h2 {
                    font-size: 18pt;
                    font-weight: bold;
            }
    </style>
</head>
<body>
...
```

Location of Styles

External Style Sheet

External style sheets are style rules placed within a external text file with the .css extension.

```
<head>
    <meta charset="utf-8">
    <title>Share Your Travels -- New York - Central
                Park</title>
    <link rel="stylesheet" href="styles.css" />
</head>
```
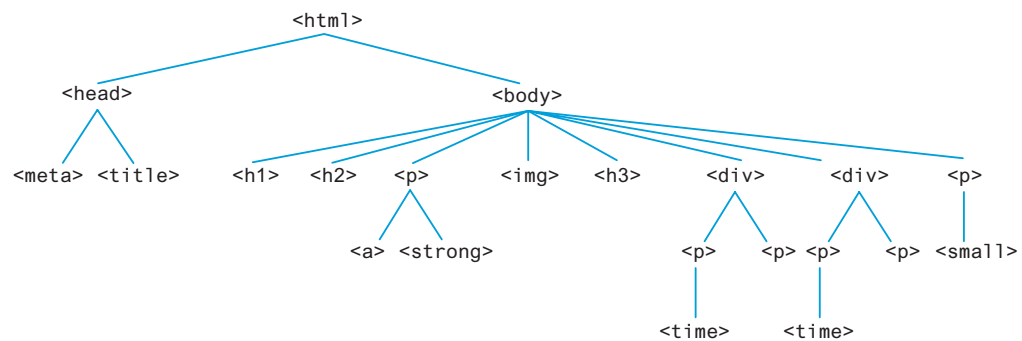
Selectors

Selectors

Remember the DOM tree from HTML

```
                              <html>
                 ┌──────────────┴──────────────────┐
             <head>                              <body>
             ┌──┴──┐          ┌────┬────┬────┬────┬────┬────┬────────┐
          <meta> <title>    <h1>  <h2>  <p>   <img>  <h3>  <div>  <div>   <p>
                                        ┌─┴──┐              ┌─┴─┐  ┌─┴─┐   │
                                      <a> <strong>        <p> <p> <p> <p> <small>
                                                           │       │
                                                        <time>  <time>
```

Selectors

Element Selectors

Element selectors select all instances of a given HTML element.

```
selector
  ┴
  em { color: red; }
            ┬     ┬
        property value

  p {
      margin: 5px 0 10px 0;
      font-weight: bold;
      font-family: Arial, Helvetica, sans-serif;
  }
```
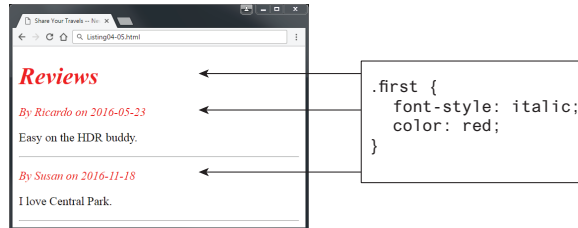
Selectors

Class Selectors

A **class selector** allows you to simultaneously target different HTML elements regardless of their position in the document tree using the same class attribute value.

Selectors

Class Selectors

```html
<head>
        <title>Share Your Travels </title>
        <style>
                .first {
                font-style: italic;
                color: red;
                }
        </style>
</head>
<body>
        <h1 class="first">Reviews</h1>
        <div>
                <p class="first">By Ricardo on <time>2016-05-23</time></p>
                <p>Easy on the HDR buddy.</p>
        </div>
        <hr/>
        <div>
                <p class="first">By Susan on <time>2016-11-18</time></p>
                <p>I love Central Park.</p>
        </div>
        <hr/>
</body>
```

```css
.first {
   font-style: italic;
   color: red;
}
```

Selectors

Id Selectors

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

Selectors

Id Selectors

```
<head>
        <title>Share Your Travels </title>
        <style>
                #latestComment {
                font-style: italic;
                color: red;
                }
        </style>
</head>
<body>
        <h1 class="first">Reviews</h1>
        <div id="latestComment">
                <p class="first">By Ricardo on <time>2016-05-23</time></p>
                <p>Easy on the HDR buddy.</p>
        </div>
        <hr/>
        <div>
                <p class="first">By Susan on <time>2016-11-18</time></p>
                <p>I love Central Park.</p>
        </div>
        <hr/>
</body>
```
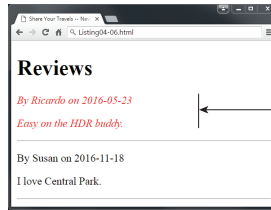


```
#latestComment {
    font-style: italic;
    color: red;
}
```

Selectors

Attribute Selectors

An **attribute selector** provides a way to select HTML elements either by the presence of an element attribute or by the value of an attribute

```
[title] { … }
```

Selectors

Attribute Selectors

```css
[title] {
    cursor: help;
    padding-bottom: 3px;
    border-bottom: 2px dotted blue;
    text-decoration: none;
}
```



```html
<head>
        <meta charset="utf-8">
        <title>Share Your Travels</title>
        <style>
                [title] {
                cursor: help;
                padding-bottom: 3px;
                border-bottom: 2px dotted blue;
                text-decoration: none;
                }
        </style>
</head>
<body>
        <div>
                <img src="images/flags/CA.png" title="Canada Flag" />
                <h2><a href="countries.php?id=CA" title="see posts from Canada"> Canada</a></h2>
                <p>Canada is a North American country consisting of ... </p>
                <div>
                        <img src="images/square/6114907897.jpg" title="At top of Sulphur Mountain" />
                        <img src="images/square/6592317633.jpg" title="Grace Presbyterian Church" />
                        <img src="images/square/6592914823.jpg" title="Calgary Downtown" />
                </div>
        </div>
</body>
```
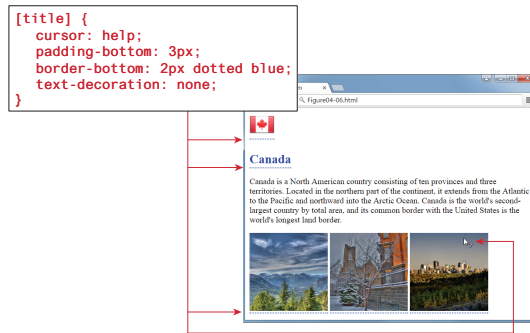
Selectors

Attribute Selectors

Selector	Matches
[]	A specific attribute.
[=]	A specific attribute with a specific value.
[~=]	A specific attribute whose value matches at least one of the words in a space delimited list of words.
[^=]	A specific attribute whose value **begins** with a specified value.
[*=]	A specific attribute whose value **contains** a substring.
[$=]	A specific attribute whose value ends with a specified value.

Selectors

Pseudo-Element and Pseudo-Class Selectors

A **pseudo-element selector** is a way to select something that does not exist explicitly as an element in the HTML document tree but which is still a recognizable selectable object.

A **pseudo-class selector** does apply to an HTML element, but targets either a particular state or, in CSS3, a variety of family relationships.

Selectors

Pseudo-Class Selectors

- Elements

Pseudo-Class	Matches
:root	The top element in the document hierarchy (the html element)
:empty	An element with no content
:only-child	An element with no siblings
:first-child	The first child of the parent element
:last-child	The last child of the parent element
:first-of-type	The first descendant of the parent that matches the specified type
:last-of-type	The last descendant of the parent that matches the specified type
:nth-of-type(n)	The nth element of the parent of the specified type
:nth-last-of-type(n)	The nth from the last element of the parent of the specified type
:only-of-type	An element that has no siblings of the same type
:lang(code)	The element that has the specified language indicated by code
:not(selector)	An element not matching the specified selector

- Links

:link	The link has not yet been visited by the user.
:visited	The link has been visited by the user.
:active	The element is in the process of being activated or clicked by the user.
:hover	The mouse pointer is hovering over the element.
:focus	The element is receiving the focus of the keyboard or mouse pointer.

Selectors

Pseudo-Element Selectors

Pseudo-Element	Description
::first-letter	The first letter of the element text
::first-line	The first line of the element text
::before	Content inserted directly before the element
::after	Content inserted directly after the element

Selectors

Pseudo-Element and Pseudo-Class Selectors

```
<style>
    a:link {
        text-decoration: underline;
        color: blue;
    }
    a:visited {
        text-decoration: underline;
        color: purple;
    }
    a:hover {
        text-decoration: none;
        font-weight: bold;
    }
    a:active {
        background-color: yellow;
    }
</style>
```
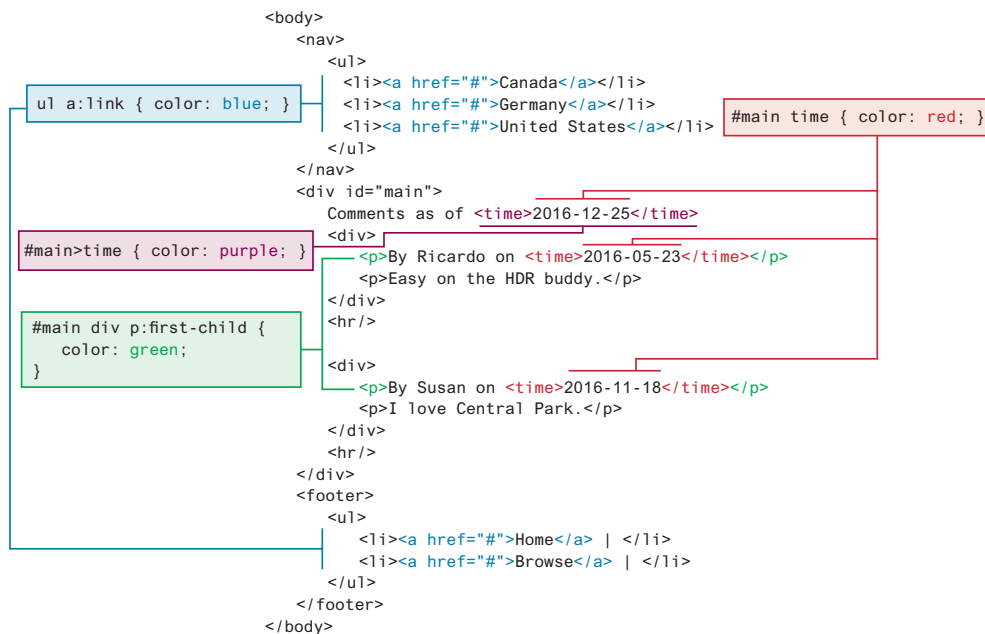
Selectors

Contextual Selectors

Selector	Matches	Example
Descendant	A specified element that is contained somewhere within another specified element.	**div p** Selects a \<p> element that is contained somewhere within a \<div> element.
Child	A specified element that is a direct child of the specified element.	**div>h2** Selects an \<h2> element that is a child of a \<div> element.
Adjacent Sibling	A specified element that is the next sibling (i.e., comes directly after) of the specified element	**h3+p** Selects the first \<p> after any \<h3>.
General Sibling	A specified element that shares the same parent as the specified element.	**h3~p** Selects all the \<p> elements that share the same parent as the \<h3>.

Selectors

Contextual Selectors

```
<body>
    <nav>
        <ul>
            <li><a href="#">Canada</a></li>
            <li><a href="#">Germany</a></li>
            <li><a href="#">United States</a></li>
        </ul>
    </nav>
    <div id="main">
        Comments as of <time>2016-12-25</time>
        <div>
            <p>By Ricardo on <time>2016-05-23</time></p>
            <p>Easy on the HDR buddy.</p>
        </div>
        <hr/>

        <div>
            <p>By Susan on <time>2016-11-18</time></p>
            <p>I love Central Park.</p>
        </div>
        <hr/>
    </div>
    <footer>
        <ul>
            <li><a href="#">Home</a> | </li>
            <li><a href="#">Browse</a> | </li>
        </ul>
    </footer>
</body>
```

`ul a:link { color: blue; }`

`#main time { color: red; }`

`#main>time { color: purple; }`

```
#main div p:first-child {
    color: green;
}
```