

Web Development & Design Foundations with HTML5

Key Concepts

Learning Outcomes

- **In this chapter, you will learn how to . . .**

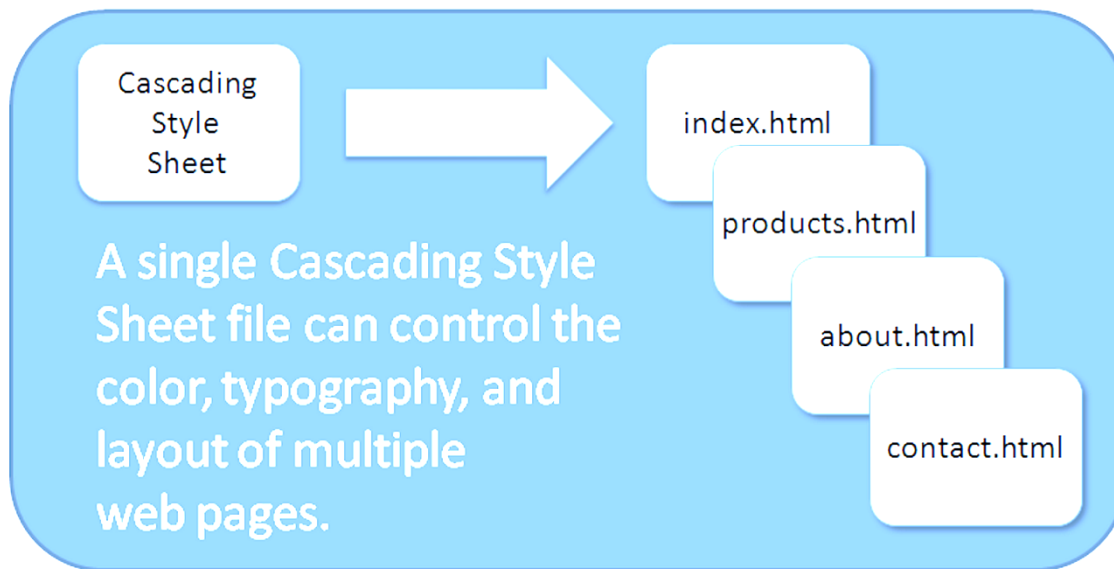
- Describe the evolution of style sheets from print media to the Web
- List advantages of using Cascading Style Sheets
- Use color on web pages
- Create style sheets that configure common color and text properties
- Apply inline styles
- Use embedded style sheets
- Use external style sheets
- Configure element, class, id, and contextual selectors
- Utilize the “cascade” in CSS
- Validate CSS

Overview of Cascading Style Sheets (CSS)

- See what is possible with CSS:
 - Visit <http://www.csszengarden.com>
- Style Sheets
 - used for years in Desktop Publishing
 - apply typographical styles and spacing to printed media
- CSS
 - provides the functionality of style sheets (*and much more*) for web developers
 - a flexible, cross-platform, standards-based language developed by the W3C.



CSS Advantages



- Greater typography and page layout control
- Style is separate from structure
- Styles can be stored in a separate document and associated with the web page
- Potentially smaller documents
- Easier site maintenance

Types of Cascading Style Sheets (1)

- Inline Styles
- Embedded Styles
- External Styles
- Imported Styles

- **Inline Styles**
 - body section
 - HTML style attribute
 - apply only to the specific element
- **Embedded Styles**
 - head section
 - HTML style element
 - apply to the entire web page document
- **External Styles**
 - Separate text file with .css file extension
 - Associate with a HTML link element in the head section of a web page
- **Imported Styles**
 - Similar to External Styles
 - We'll concentrate on the other three types of styles.

CSS Syntax

- Style sheets are composed of "Rules" that describe the styling to be applied.
- Each Rule contains a Selector and a Declaration



CSS Syntax Sample

Configure a web page to display blue text and yellow background.

```
body { color: blue;  
        background-color: yellow; }
```

This could also be written using hexadecimal color values as shown below.

```
body { color: #0000FF;  
        background-color: #FFFF00; }
```



Common Formatting CSS Properties

- See Table 3.1 Common CSS Properties, including:
 - background-color
 - color
 - font-family
 - font-size
 - font-style
 - font-weight
 - line-height
 - margin
 - text-align
 - text-decoration
 - width

Using Color on Web Pages



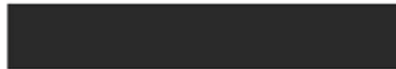
Red: #FF0000



Green: #00FF00



Blue: #0000FF



Black: #000000



White: #FFFFFF



Grey: #CCCCCC

- Computer monitors display color as intensities of red, green, and blue light
- RGB Color
- The values of red, green, and blue vary from 0 to 255.
- Hexadecimal numbers (base 16) represent these color values.

Hexadecimal Color Values

#FFFFFF	#FFFFCC	#FFFF99	#FFFF66	#FFFF33	#FFFF00
#FFCCFF	#FFCCCC	#FFCC99	#FFCC66	#FFCC33	#FFCC00
#FF99FF	#FF99CC	#FF9999	#FF9966	#FF9933	#FF9900
#FF66FF	#FF66CC	#FF6699	#FF6666	#FF6633	#FF6600
#FF33FF	#FF33CC	#FF3399	#FF3366	#FF3333	#FF3300
#FF00FF	#FF00CC	#FF0099	#FF0066	#FF0033	#FF0000

- # is used to indicate a hexadecimal value
- Hex value pairs range from 00 to FF
- Three hex value pairs describe an RGB color

```
#000000 black      #FFFFFF white  
#FF0000 red        #00FF00 green  
#0000FF blue      #CCCCCC grey
```

Web Color Palette

- A collection of 216 colors
- Display the most similar on the Mac and PC platforms
- Hex values: 00, 33, 66, 99, CC, FF
- Color Chart <http://webdevfoundations.net/color>

Web Safe Color Chart

#FFFFFF	#FFFFCC	#FFFF99	#FFFF66	#FFFF33	#FFFF00
#FFCCFF	#FFCCCC	#FFCC99	#FFCC66	#FFCC33	#FFCC00
#FF99FF	#FF99CC	#FF9999	#FF9966	#FF9933	#FF9900
#FF66FF	#FF66CC	#FF6699	#FF6666	#FF6633	#FF6600
#FF33FF	#FF33CC	#FF3399	#FF3366	#FF3333	#FF3300
#FF00FF	#FF00CC	#FF0099	#FF0066	#FF0033	#FF0000
#CCFFFF	#CCFFCC	#CCFF99	#CCFF66	#CCFF33	#CCFF00
#CCCCFF	#CCCCCC	#CCCC99	#CCCC66	#CCCC33	#CCCC00
#CC99FF	#CC99CC	#CC9999	#CC9966	#CC9933	#CC9900
#CC66FF	#CC66CC	#CC6699	#CC6666	#CC6633	#CC6600
#CC33FF	#CC33CC	#CC3399	#CC3366	#CC3333	#CC3300
#CC00FF	#CC00CC	#CC0099	#CC0066	#CC0033	#CC0000
#99FFFF	#99FFCC	#99FF99	#99FF66	#99FF33	#99FF00
#99CCFF	#99CCCC	#99CC99	#99CC66	#99CC33	#99CC00
#9999FF	#9999CC	#999999	#999966	#999933	#999900
#9966FF	#9966CC	#996699	#996666	#996633	#996600
#9933FF	#9933CC	#993399	#993366	#993333	#993300
#9900FF	#9900CC	#990099	#990066	#990033	#990000

Making Color Choices

- How to choose a color scheme?
 - Monochromatic
 - <http://meyerweb.com/eric/tools/color-blend>
 - Choose from a photograph or other image
 - <http://www.colr.org>
 - Begin with a favorite color
 - Use one of the sites below to choose other colors
 - <http://colorsontheweb.com/colorwizard.asp>
 - <http://kuler.Adobe.com>
 - <http://colorschemedesigner.com/>



Verify Sufficient Contrast

- When you choose colors for text and background, sufficient contrast is needed so that the text is easy to read.
- Use one of the following online tools to verify contrast:
 - <http://webaim.org/resources/contrastchecker/>
 - http://snook.ca/technical/colour_contrast/colour.html
 - <http://juicystudio.com/services/luminositycontrastratio.php>

Configuring Color with Inline CSS

- Inline CSS
 - Configured in the body of the web page
 - Use the style attribute of an HTML tag
 - Apply only to the specific element
- The Style Attribute
 - Value: one or more style declaration property and value pairs



Example: color: #ff0000; applied to the <h1> element:

<h1 style="color:#ff0000">Heading text is red</h1>

Heading text is red

Configuring Color with Inline CSS

Example 2: configure the red text in the heading
configure a gray background in the heading

Separate style rule declarations with ;

```
<h1 style="color:#FF0000;background-color:#cccccc">This is  
displayed as a red heading with gray background</h1>
```

This is displayed as a red heading with gray background

CSS Embedded (Internal) Styles

- Configured in the header section of a web page.
- Use the HTML <style> element
- Apply to the entire web page document
- Style declarations are contained between the opening and closing <style> tags
- Example: Configure a web page with white text on a black background

```
<style>  
body { background-color: #000000;  
        color: #FFFFFF;  
}  
</style>
```

CSS Embedded Styles



- The body selector sets the global style rules for the entire page.
- These global rules are overridden for <h1> and <h2> elements by the h1 and h2 style rules.

```
<style>
body { background-color: #E6E6FA;
        color: #191970;}
h1 { background-color: #191970;
      color: #E6E6FA;}
h2 { background-color: #AEAED4;
      color: #191970;}
</style>
```

Checkpoint 3.1

1. *List three reasons to use CSS on a web page.*
2. *When designing a page that uses colors other than the default colors for text and background, explain why it is a good reason to configure style rules for both text color and background color.*
3. *Describe one advantage to using embedded styles instead of inline styles.*

Configuring Text with CSS

- CSS properties for configuring text:
 - font-weight
 - Configures the boldness of text
 - font-style
 - Configures text to an italic style
 - font-size
 - Configures the size of the text
 - font-family
 - Configures the font typeface of the text

The font-size Property

Accessibility Recommendation: Use em or percentage font sizes – these can be easily enlarged in all browsers by users

Text Values	Em Units	Px Units	Pt Units	Percentage
xx-small	.5 em	8 px	6 pt	50%
x-small	.60 em	11 px	8 pt	60%
small	.75 em	13 px	10 pt	75%
medium	1 em	16 px	12 pt	100%
large	1.15 em	18 px	13.5 pt	110%
x-large	1.5 em	24 px	18 pt	150%
xx-large	2 em	30 px	24 pt	200%

The font-family Property

Font-family Category	Font Typeface
serif	Times New Roman, Georgia, Times
sans-serif	Arial, Verdana, Geneva
monospace	Courier New, Lucida Console
cursive	<i>Brush Script MT, Comic Sans MS</i>
fantasy	<i>Jokerman, Curlz MT</i>

- Not everyone has the same fonts installed in their computer
- Configure a list of fonts and include a generic family name

p { font-family: Arial, Verdana, sans-serif; }



Embedded Styles Example

```
<style>
body { background-color: #E6E6FA;
      color: #191970;
      font-family: Arial, Verdana, sans-serif; }
h1 { background-color: #191970;
      color: #E6E6FA;
      line-height: 200%;
      font-family: Georgia, "Times New Roman", serif; }
h2 { background-color: #AEAED4;
      color: #191970; text-align: center;
      font-family: Georgia, "Times New Roman", serif; }
p {font-size: .90em; text-indent: 3em; }
ul {font-weight: bold; }
</style>
```

More CSS TEXT Properties

- **line-height**
 - Configures the height of the line of text (use the value 200% to appear double-spaced)
- **text-align**
 - Configures alignment of text within a block display element
- **text-indent**
 - Configures the indentation of the first line of text
- **text-decoration**
 - Modifies the appearance of text with an underline, overline, or line-through
- **text-transform**
 - Configures the capitalization of text
- **text-shadow**
 - Configures a drop shadow on text

CSS style rules can be configured for an:

- HTML element selector
- class selector
- id selector
- descendant selector

Using CSS with “class”

- class Selector

- Apply a CSS rule to a certain "class" of elements on a web page
- Does not associate the style to a specific HTML element

- Configure with .classname

- code CSS to create a class called “new”

- Apply the class:

<p class=“new”>This is text is red and in italics</p>

```
<style>
.new { color: #FF0000;
      font-style: italic;
    }
</style>
```

This is text is red and in italics

Using CSS with “id”

- id Selector
 - Apply a CSS rule to ONE element on a web page.
- Configure with #idname
 - Code CSS to create an id called “new” with red, large, italic text.
- Apply the id:

```
<style>  
#new { color: #FF0000;  
        font-size:2em;  
        font-style: italic;  
      }  
</style>
```

<p id=“new”>This is text is red, large, and in italics</p>

This is text is red, large, and in italics

CSS Descendant Selector

- Specify an element within the context of its container (parent) element.
- AKA contextual selector
- The example configures a green text color only for p tags located *within* an element assigned to the id named content
- Advantage of contextual selectors:
Reduces the number of classes and ids you need to apply in the HTML

```
<style>  
#content p {  
  color: #00ff00; }  
</style>
```

- **Purpose:**
 - configure a specially formatted area displayed in-line with other elements, such as within a paragraph.
- There is no additional empty space above or below a span – it is inline display.

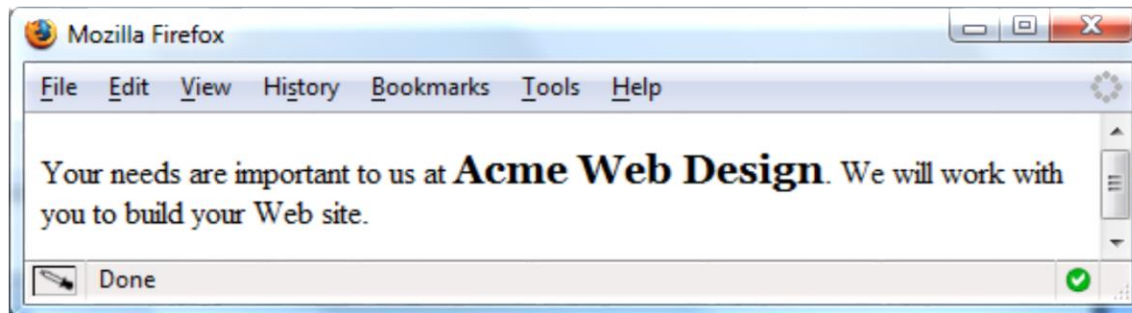
span Element Example

- Embedded CSS:

```
<style>
.companyname { font-weight: bold;
font-family: Georgia, "Times New Roman", serif;
font-size: 1.25em;
}
</style>
```

- HTML:

```
<p>Your needs are important to us at <span
class="companyname">Acme Web Design</span>.
We will work with you to build your Web site.</p>
```



External Style Sheets - 1

- CSS style rules are contained in a text file separate from the HTML documents.
- The External Style Sheet text file:
 - extension ".css"
 - contains only style rules
 - does not contain any HTML tags

External Style Sheets - 2

- Multiple web pages can associate with the same external style sheet file.

site.css

```
body {background-color:#E6E6FA;  
      color:#000000;  
      font-family:Arial, sans-serif;  
      font-size:90%; }  
h2 { color: #003366; }  
.nav { font-size: 16px;  
      font-weight: bold; }
```

index.html

clients.html

about.html

Etc...

- A self-contained tag
- Placed in the header section
- Purpose: associates the external style sheet file with the web page.
- Example:

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

Using an External Style Sheet

External Style Sheet color.css

```
body { background-color: #0000FF;  
        color: #FFFFFF;  
}
```

To associate the external style sheet called color.css, the HTML code placed in the head section is:

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

Checkpoint 3.2

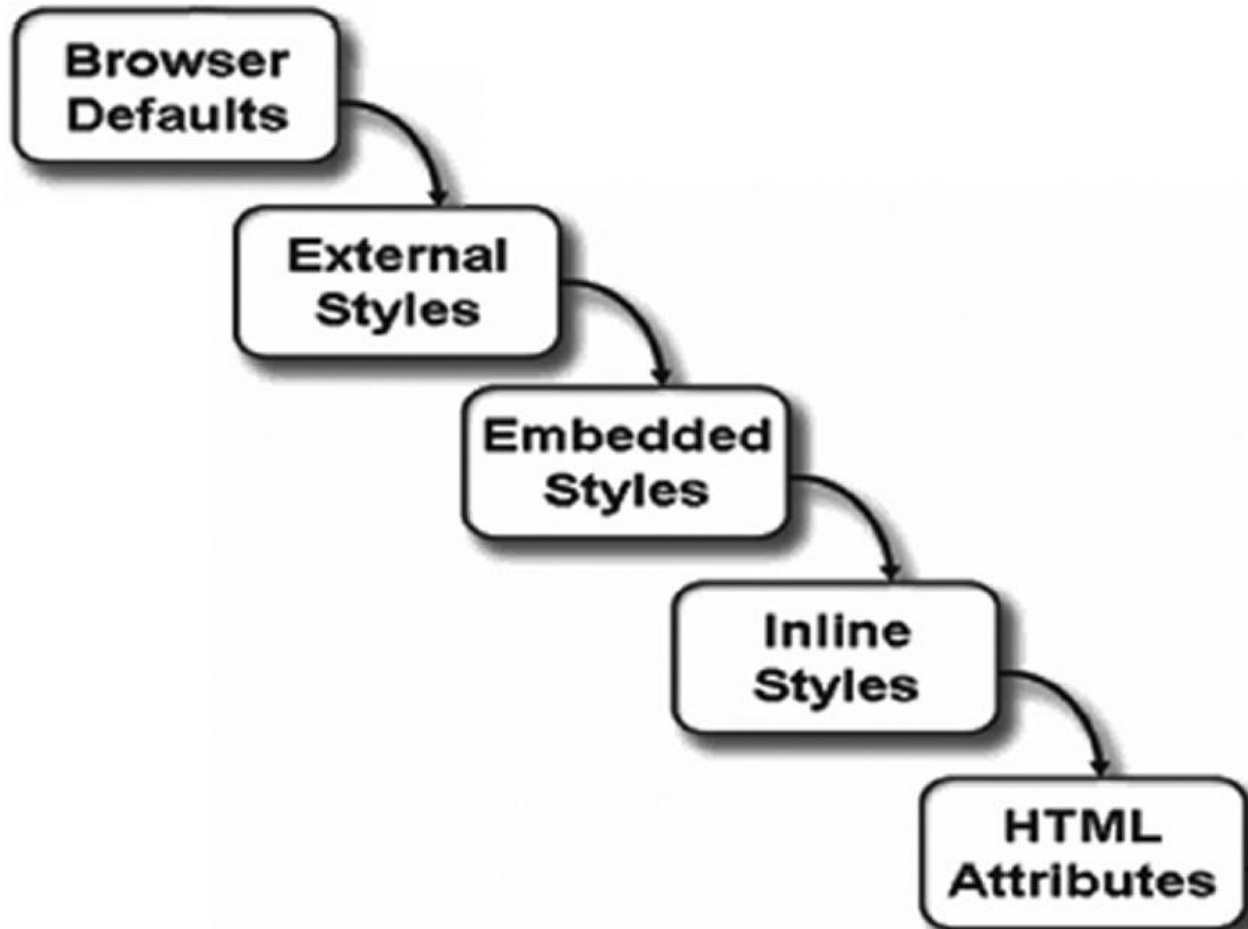
1. Describe a reason to use embedded styles. Explain where embedded styles are placed on a web page.
2. Describe a reason to use external styles. Explain where external styles are placed and how web pages indicate they are using external styles.
3. Write the code to configure a web page to use an external style sheet called “mystyles.css”.

Centering Page Content with CSS

```
#container { margin-left: auto;  
             margin-right: auto;  
             width:80%; }
```

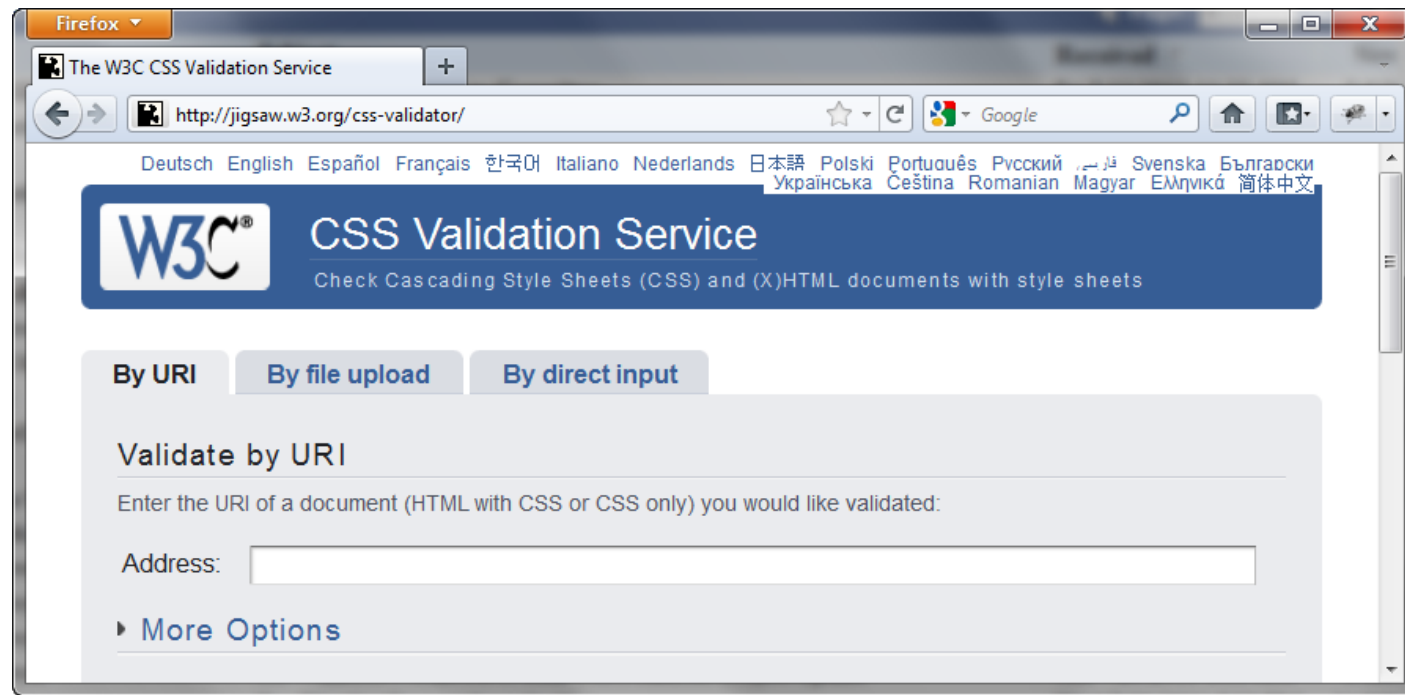


The “Cascade”



W3C CSS Validation

- <http://jigsaw.w3.org/css-validator/>



Summary

- This chapter introduced you to Cascading Style Sheet Rules associated with color and text on web pages.
- You configured inline styles, embedded styles, and external styles.
- You applied CSS style rules to HTML, class, and id selectors.
- You are able to submit your CSS to the W3C CSS Validation test.