# 4478 – INTRODUCTION TO INFORMATION TECHNOLOGY.
# 8936 – INTRODUCTION TO INFORMATION TECHNOLOGY G.

Dr Julio Romero

Faculty of Science and Technology.

# Learning Objectives (1 of 2)

- 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.

# Learning Objectives

- Use embedded style sheets

- Use external style sheets

- Configure element, class, id, and contextual selectors

- Utilize the "cascade" in 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

Inline Styles

Embedded Styles

External Styles

Imported Styles

# Cascading Style Sheets (1 of 2)

- 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

# Cascading Style Sheets <span>(2 of 2)</span>

- 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



body { color: blue }

# 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 1 (see slide 12,13,14 and 15) Common CSS Properties, including:
  - background-color
  - color
  - font-family
  - font-size
  - font-style
  - font-weight
  - line-height
  - margin
  - text-align
  - text-decoration
  - width

# Table 1 CSS Properties

| Property | Description | Values |
|---|---|---|
| `background-color` | Background color of an element | Any valid color |
| `color` | Foreground (text) color of an element | Any valid color |
| `font-family` | Name of a font or font family | Any valid font or a font family such as serif, sansserif, fantasy, monospace, or cursive |
| `font-size` | Size of the font | Varies; a numeric value with pt (standard font point sizes) or px (pixels) units or the unit em (which corresponds to the width of the uppercase M of the current font); a numeric percentage; and the text values xx-small, x-small, small, medium, large, x-large, and xx-large |
| `font-style` | Style of the font | normal, italic, or oblique |

# Table 1 CSS Properties

| Property | Description | Values |
|---|---|---|
| `font-weight` | The "boldness" or weight of the font | Varies; the text values normal, bold, bolder, and lighter and the numeric values 100, 200, 300, 400, 500, 600, 700, 800, and 900 |
| `letter-spacing` | The space between characters | A numeric value (px or em) or normal (default) |
| `line-height` | The spacing allowed for the line of text | It is most common to use a percentage for this value; for example, a value of 200% would correspond to double-spacing. |
| `margin` | Shorthand notation to configure the margin surrounding an element | A numeric value (px or em); for example, body {margin: 10px} will set the page margins in the document to 10 pixels. When eliminating the margin, do not use the px or em unit—for example, body {margin:0} |

# Table 1 CSS Properties

| Property | Description | Values |
|---|---|---|
| `margin-left` | Configures the space in the left margin of the element | A numeric value (px or em), auto, or 0 |
| `margin-right` | Configures the space in the right margin of the element | A numeric value (px or em), auto, or 0 |
| `text-align` | The alignment of text | center, justify, left, or right |
| `text-decoration` | Determines whether text is underlined; this style is most often applied to hyperlinks | The value "none" will cause a hyperlink not to be underlined in a browser that normally processes in this manner |
| `text-indent` | Configures the indentation of the first line of text | Numeric value (px or em) or percentage |

# Table 1 CSS Properties

| Property | Description | Values |
|---|---|---|
| `text-shadow` | Configures a drop shadow on the text displayed within an element. This CSS3 property is not supported in all browsers. | Two to four numerical values (px or em) to indicate horizontal offset, vertical offset, blur radius (optional), and spread distance (optional), and a valid color value. |
| `text-transform` | Configures the capitalization of text | none (default), capitalize, uppercase, or lowercase |
| `white-space` | Configures the display of whitespace | normal (default), nowrap, pre, pre-line, pre-wrap |
| `width` | The width of the content of an element | A numeric value (px or em), numeric percentage, or auto (default) |
| `word-spacing` | The space between words | A numeric value (px or em) or normal (default) |

# Using Color on Web Pages

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.

Red: #FF0000

Green: #00FF00

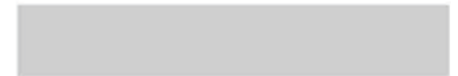Blue: #0000FF

Black: #000000

White: #FFFFFF

Grey: #CCCCCC

# Hexadecimal Color Values

- # indicates a hexadecimal value

- Hex value pairs range from 00 to FF

- Three hex value pairs describe an RGB color

| #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 |

#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

# 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
    - https://color.adobe.com/create/color-wheel
    - http://paletton.com

# Support Web Accessiblity 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

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: configure red color text in an &lt;h1&gt; 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 head 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 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 | Brush Script MT , Comic sans MS |
| fantasy | Jokeman, Curlz MT |

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

# More CSS Text Properties

- text-transform
  - Configures the capitalization of text

- letter-spacing
  - Configures space between text characters

- word-spacing
  - Configures space between words

- text-shadow
  - Configures a drop shadow on text

# CSS Selectors

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" with red italic text.

Apply the class:

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

**\<p class="new">This is text is red and in italics\</p>**

*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>
```

# Span Element

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.
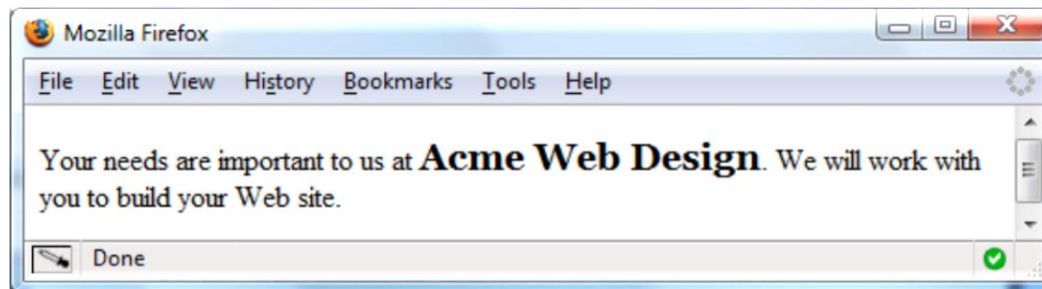
# Span Element Example

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

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

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…

# Link Element

A self-contained tag

Placed in the head 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">
```
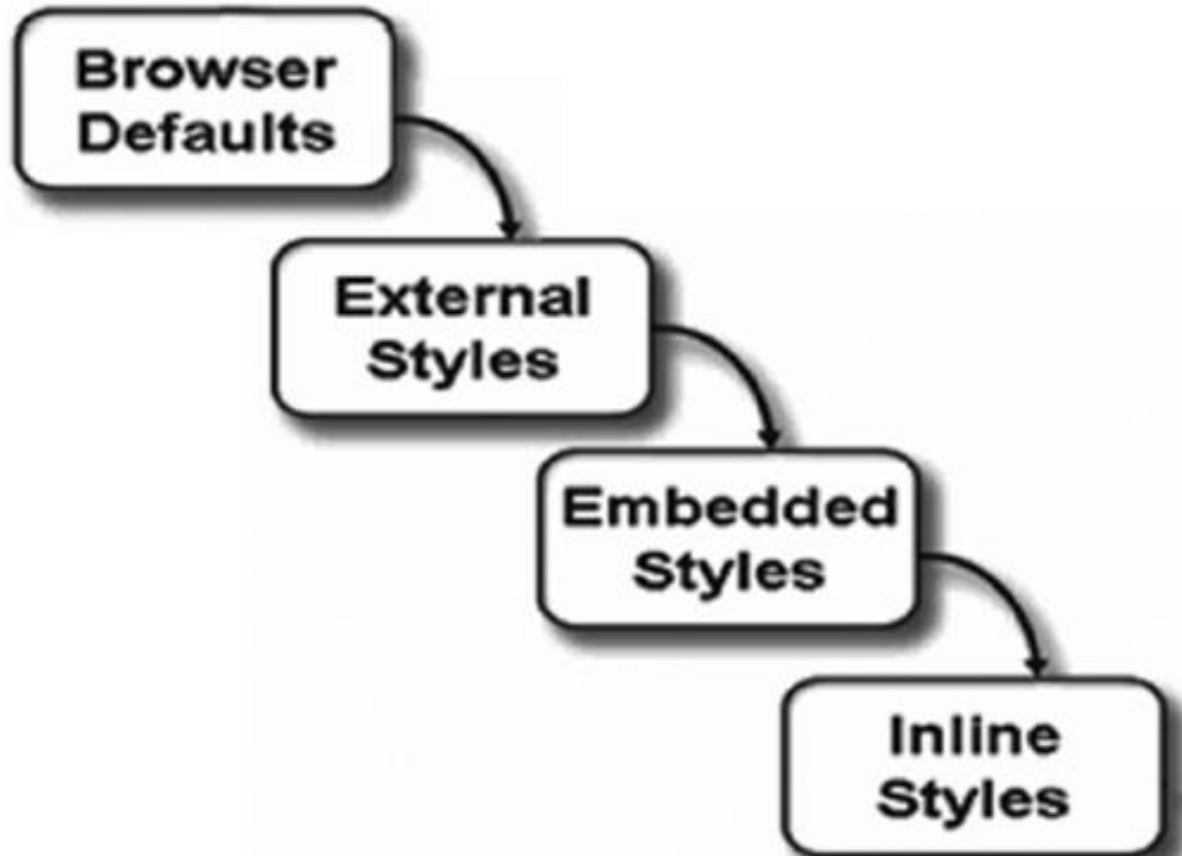
# Checkpoint 2

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%; }
```
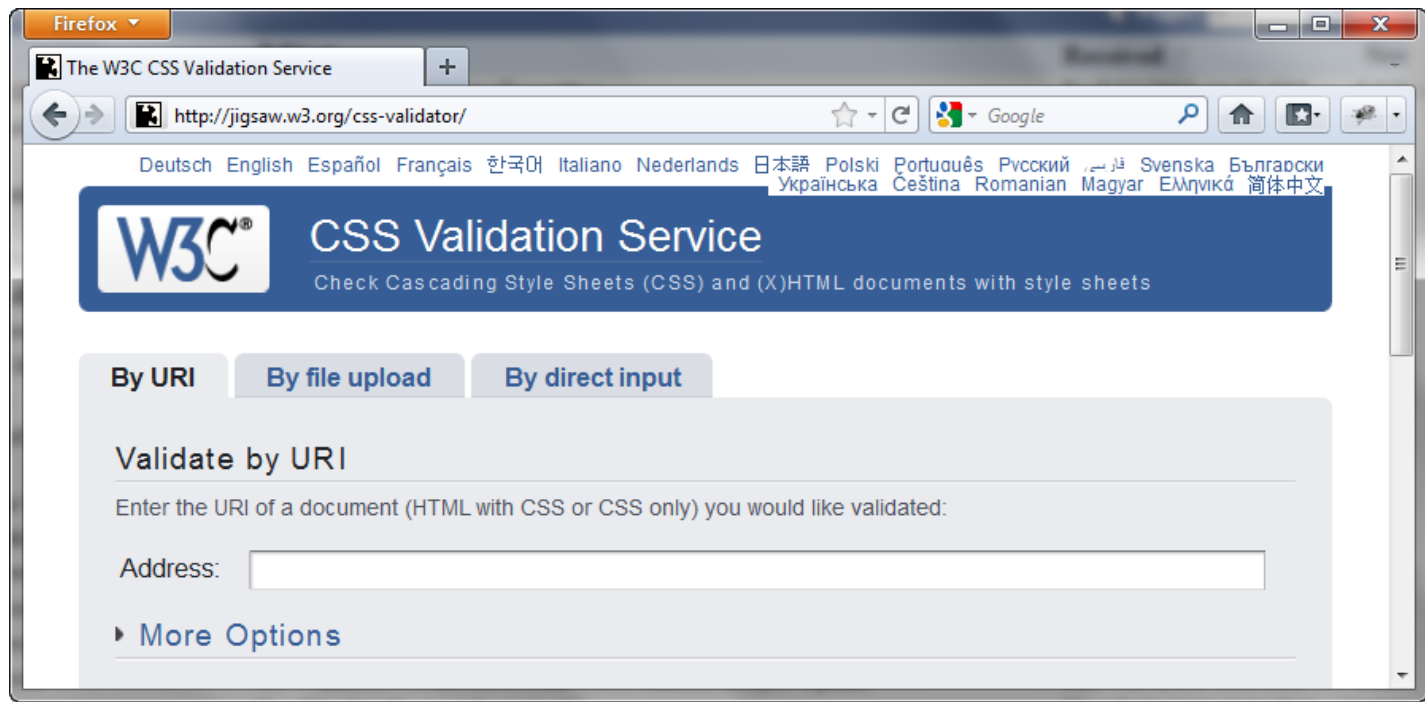
# The "Cascade"

# W3C CSS Validation

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

# Summary

- This lecture 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 rues to HTML, class, id, and descendent selectors.

- You are able to submit your CSS to the W3C CSS Validation test.