Web Technologies (CSC336)

Muhammad Ibrahim

Web Technologies (Muhammad ibrahim), CUI
Wah Campus.

Week 2: Cascading Style Sheets (CSS)

Muhammad Ibrahim

About W3Schools

- A web developers site, with tutorials & references on web development languages such as HTML, CSS, JavaScript, PHP, SQL, Python, jQuery, Java, W3.CSS, and Bootstrap

- The site derives its name from the World Wide Web Consortium (W3C), but is not affiliated with the W3C

- Created in 1998 by Refsnes Data, a Norwegian software development and consulting company

- Link to online CSS resource: https://www.w3schools.com/css/default.asp

- Online Exercises can be performed at:
- https://www.w3schools.com/css/exercise.asp
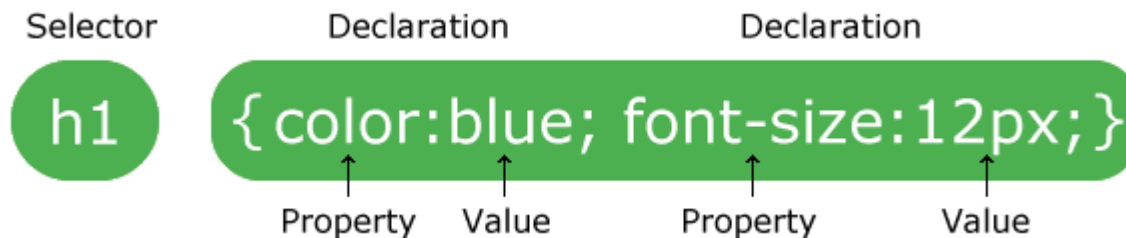
What is a CSS?

- According to W3Schools
  - CSS is a language that describes the style of an HTML document
  - CSS describes **how HTML elements are to be displayed on screen, paper, or in other media**
  - CSS **saves a lot of work**. It can control the layout of multiple web pages all at once
  - External stylesheets are stored in **CSS files**

Why use CSS?

- HTML only **describes the content** of a web page, like:
  - <h1>This is a heading</h1>
  - <p>This is a paragraph.</p>
- When tags like <font>, and color attributes were added to the HTML 3.2 specification, it started a nightmare for web developers. Development of large websites, where fonts and color information were added to every single page, became a long and expensive process.
- To solve this problem, the World Wide Web Consortium (W3C) created CSS.
- CSS removed the style formatting from the HTML page
- CSS Saves a Lot of Work. Just one change in style, can change style of the whole website.

CSS Syntax

- A CSS rule-set consists of a selector and a declaration block:

- The selector points to the HTML element you want to style.
- The declaration block contains one or more declarations separated by <u>semicolons</u>.
- Each declaration includes a CSS property name and a value, separated by a <u>colon</u>.
- A CSS declaration always ends with a <u>semicolon</u>, and declaration blocks are surrounded by <u>curly braces</u>.

HTML style Tag

- The <style> tag is used to define style information for an HTML document

- Inside the <style> element you specify how HTML elements should render in a browser

- Each HTML document can contain multiple <style> tags

CSS Syntax Example

- Example

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  color: red;
  text-align: center;
}
</style>
</head>
<body>

<p>Hello World!</p>
<p>These paragraphs are styled with CSS.</p>

</body>
</html>
```
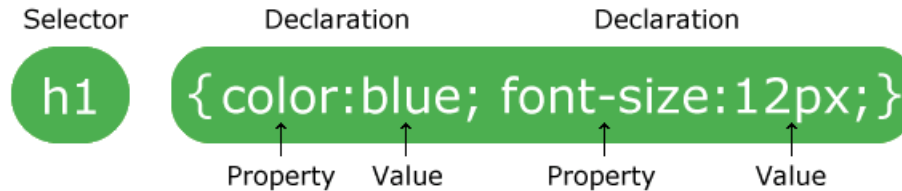
Hello World!

These paragraphs are styled with CSS.

CSS Syntax - Selector

- CSS selectors are used to "find" (or select) the HTML elements you want to style (e.g. <p> in the previous example)
- Selectors are of 5 types:
  - i.   Simple selectors (selects elements based on **name**, **id**, **class**)
  - ii. Combinator selectors (select elements based-on a specific relationship between them)
  - iii. Pseudo-class selectors (select elements based-on a certain state)
  - iv. Pseudo-elements selectors (select and style a part of an element)
  - v.   Attribute selectors (select elements based on an attribute or attribute value)

CSS Syntax – CSS <u>element</u> Selector

- The element selector selects HTML elements based on the element name.
  - Example
    - For the following code, all <p> elements on the page will be center-aligned, with a red text color
    - p {
      text-align: center;
      color: red;
      }

CSS Syntax – CSS <u>element</u> Selector

```html
<!DOCTYPE html>
<html>
<head>
<style>
p {
  text-align: center;
  color: red;
}
</style>
</head>
<body>

<p>Every paragraph will be affected by the style.</p>
<p id="para1">Me too!</p>
<p>And me!</p>

</body>
</html>
```

Every paragraph will be affected by the style.

Me too!

And me!

CSS Syntax – CSS <u>id</u> Selector

- The **id** selector uses the id attribute of an HTML element to select a specific element
- If **id** of an element is unique within a page, the id selector is used **to select one unique element**!

- To select an element with a specific **id**, write a hash (#) character, followed by the id of the element
  - Example
    - The CSS rule below will be applied to the HTML element having id="para1":
    - #para1 {
      text-align: center;
      color: red;
      }
    - <u>id name cannot start with a number (#1para is incorrect)</u>

CSS Syntax – CSS <u>id</u> Selector

```html
<!DOCTYPE html>
<html>
<head>
<style>
#para1 {
  text-align: center;
  color: red;
}
</style>
</head>
<body>

<p id="para1">Hello World!</p>
<p>This paragraph is not affected by the style.</p>

</body>
</html>
```

<p style="text-align:center;color:red;">Hello World!</p>

This paragraph is not affected by the style.

CSS Syntax – CSS <u>class</u> Selector

- The **class** selector selects HTML elements with a specific class attribute.

- To select elements with a specific class, write a **period (.) character**, followed by the class name.

  – Example 1
    - All HTML elements with **class="center"** will be red and center-aligned:
    - .center {
      text-align: center;
      color: red;
      }

CSS Syntax – CSS class Selector – Single Class

```
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
  text-align: center;
  color: red;
}
</style>
</head>
<body>

<h1 class="center">This heading will not be affected</h1>
<p class="center">This paragraph will be red and center-aligned.</p>

</body>
</html>
```

This heading will not be affected

This paragraph will be red and center-aligned.

CSS Syntax – CSS class Selector – Multiple Class

```html
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
  text-align: center;
  color: red;
}

p.large {
  font-size: 300%;
}
</style>
</head>
<body>

<h1 class="center">This heading will not be affected</h1>
<p class="center">This paragraph will be red and center-aligned.</p>
<p class="center large">This paragraph will be red, center-aligned, and
in a large font-size.</p>

</body>
</html>
```

This heading will not be affected

This paragraph will be red and center-aligned.

This paragraph will be red, center-aligned, and in a large font-size.

16

CSS Syntax – CSS Universal Selector (*)

```
<!DOCTYPE html>
<html>
<head>
<style>
* {
  text-align: center;
  color: blue;
}
</style>
</head>
<body>

<h1>Hello world!</h1>

<p>Every element on the page will be affected by the style.</p>
<p id="para1">Me too!</p>
<p>And me!</p>

</body>
</html>
```

Hello world!

Every element on the page will be affected by the style.

Me too!

And me!

CSS Syntax – CSS Grouping Selector

```
<!DOCTYPE html>
<html>
<head>
<style>
h1, h2, p {
  text-align: center;
  color: red;
}
</style>
</head>
<body>

<h1>Hello World!</h1>
<h2>Smaller heading!</h2>
<p>This is a paragraph.</p>

</body>
</html>
```

Hello World!

Smaller heading!

This is a paragraph.

18

Online Examples

- Do all examples given at the url:
  https://www.w3schools.com/css/css_selectors.asp

How to add CSS?

- There are three ways of inserting a style sheet:
  1. Inline CSS
  2. Internal CSS
  3. External CSS

1. How to add <u>Inline</u> CSS?

- To apply a unique style for a single element

- To use inline styles, add the <u>style attribute</u> **to the relevant element** along with any CSS property.

This is a heading

This is a paragraph.

```
<!DOCTYPE html>
<html>
<body>

<h1 style="color:blue;text-align:center;">This is a heading</h1>
<p style="color:red;">This is a paragraph.</p>

</body>
</html>
```

2. How to add <u>Internal</u> CSS?

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-color: linen;
}

h1 {
  color: maroon;
  margin-left: 40px;
}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

- Used if one single HTML page has a unique style
- Internal style is defined inside the <style> element, **inside the head section.**

This is a heading

This is a paragraph.

3. How to add <u>External</u> CSS?

- Used to change the look of an entire website by changing just one file.

- An HTML page must include a reference to the external style sheet file inside the <link> element, **inside the head section**.

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

This is a heading

This is a paragraph.

3. How to add <u>External</u> CSS? – writing eternal CSS files

- Can be written in any text editor, must be saved with a **.css** extension.

- The external **.css file** should not contain any HTML tags.

- Example: "**mystyle.css**"

- Do not add a space between the property value and the unit e.g. **20px is correct**, but **20 px** is incorrect.

```
"mystyle.css"

body {
    background-color: lightblue;
}


h1 {
    color: navy;
    margin-left: 20px;
}
```

24

Cascading Order

Q. If more than one styles exist for an HTML element, what style will be used?

– All the styles in a page will "cascade" into a new "virtual" style sheet by the following rules, where number one has the highest priority:

1. Inline style (inside an HTML element)
2. External and internal style sheets (**in the head section)**
3. Browser default

– So, **an inline style has the highest priority**, and will override external and internal styles and browser defaults.

Lecture 3 - Ends

Lecture 4

Recap – CSS

- CSS is a style sheet language
- CSS describes the style of an HTML document and that how HTML elements be displayed
- CSS code is written inside <style> </style> tags of HTML and is placed inside the <head> </head> tag
- External style sheets are stored in **.css** file (recommended)
- CSS can be used inline, by placing inside an HTML tag, but it is not recommended

Recap – CSS Selectors

- A selector can be based on element name, id, class, attribute or others. Few examples:
  - Element selector ➡ p {colour:blue; text-align:center; line-height:1.5em}
  - ID selector ➡ #box{background:black;}, or div#box{background:black;}
  - Class selector ➡ .center-text{text-align:center;}, or p.center-text{text-align:center;}
  - Group selector ➡ h1, p, div {color:red;}

Recap – CSS Comments

- h1 {
    color:blue;
    /*this is single line comment*/
    text-align:center;
}
- /* this is a
    multi-line comment
    on three lines. */

HTML 5 <article> Tag

- The <article> tag specifies independent, self-contained content.
- An article should make sense on its own and it should be possible to distribute it independently from the rest of the site.
- Properties:
  - Column-count: 3
  - Column-gap: 40px
  - Column-rule-style: solid
  - Column-rule-color: green
  - Column-rule-width:1px
  - Column-rule: 1px green solid (instead of above 3)
  - Column-span: all

Example – <article> tag


```
<!DOCTYPE html>
<html>
<body>

<article>
  <h1>Google Chrome</h1>
  <p>Google Chrome is a free, open-source web browser developed by
Google, released in 2008.</p>
</article>

<p><strong>Note:</strong> The article tag is not supported in Internet
Explorer 8 and earlier versions.</p>

</body>
</html>
```

Google Chrome

Google Chrome is a free, open-source web browser developed by Google, released in 2008.

Note: The article tag is not supported in Internet Explorer 8 and earlier versions.

HTML <div> Tag

- It defines a division or a section in an HTML document.

- The <div> element is often used as a container for other HTML elements to style them with CSS or to perform certain tasks with JavaScript.

Example – <div> tag

A div element is displayed like this:

> This is some text in a div element.

Change the default CSS settings to see the effect.

```html
<!DOCTYPE html>
<html>
<html>
<head>
<style>
div {
  display: block; border: 1px solid; padding: 10px;
  margin: 20px; outline:solid green; outline-offset:10px;
}
</style>
</head>
<body>

A div element is displayed like this:

<div>This is some text in a div element.</div>

Change the default CSS settings to see the effect.

</body>
</html>
```

CSS Pseudo-classes

- A pseudo-class defines a special state of an element.
  - For example, it can be used to:
    - Style an element when a user hovers mouse over it
    - Style visited and unvisited links differently
    - Style an element when it gets focus

- Syntax
  - selector:pseudo-class { property: value; }

Example: CSS Pseudo-classes

```html
<!DOCTYPE html>
<html>
<head>
<style>
div {
  background-color: green;
  color: white;
  padding: 25px;
  text-align: center;
  width: 200px;
}

div:hover {
  background-color: blue;
}
</style>
</head>
<body>

<p>Mouse over the div element below to change its background color:</p>
<div>Mouse Over Me</div>

</body>
</html>
```

Mouse over the div element below to change its background color:

Mouse Over Me

Mouse over the div element below to change its background color:

Mouse Over Me

CSS Table Example

```
<head>
<style>
#customers {
    font-family: Arial;
    border-collapse: collapse;
    width: 100%;
}

#customers th {
    padding-top: 12px;
    padding-bottom: 12px;
    text-align: left;
    background-color: #4CAF50;
    color: white;
}

#customers td, #customers th {
    border: 1px solid #ddd;
    padding: 8px;
}

#customers tr:nth-child(even){background-color: #f2f2f2;}
#customers tr:hover {background-color: #ddd;}

</style>
</head>
```

Company	Contact	Country
Alfreds Futterkiste	Maria Anders	Germany
Berglunds snabbköp	Christina Berglund	Sweden
Centro comercial Moctezuma	Francisco Chang	Mexico
Ernst Handel	Roland Mendel	Austria
Island Trading	Helen Bennett	UK
Königlich Essen	Philip Cramer	Germany
Laughing Bacchus Winecellars	Yoshi Tannamuri	Canada
Magazzini Alimentari Riuniti	Giovanni Rovelli	Italy
North/South	Simon Crowther	UK
Paris spécialités	Marie Bertrand	France

HTML List into CSS Menu

```html
<style>
ul {
  list-style-type: none;
  margin: 0;
  padding: 0;
  width: 200px;
  background-color: #f1f1f1;
  height: 100%; /* Full height */
  position: fixed; /* Make it stick, even on scroll */
  overflow: auto; /* Enable scrolling if the sidenav
has too much content */
}

li a {
  display: block;
  color: #000;
  padding: 8px 16px;
  text-decoration: none;
}

/* Change the link color on hover */
li a:hover {
  background-color: #555;
  color: white;
}
</style>
```

```html
<body>
<h2>Vertical Navigation Bar</h2>
<hr>
<ul>
  <li><a href="#home">Home</a></li>
  <li><a href="#news">News</a></li>
  <li><a href="#contact">Contact</a></li>
  <li><a href="#about">About</a></li>
  <li><a href="#item 5">item 5</a></li>
  <li><a href="#item 6">...</a></li>
</ul>
<div style="margin-
left:30%;height:2000px;">
Any content inside this div are will be
displayed on the right side potion of menu
</div>
</body>
```

Vertical Navigation Bar

Home

News

Contact

About

item 5

...

Any content inside this div are will be displayed on the right side potion of menu