Subject Code:	CS3	Computer Science 3
Module Code:	5.0	Introduction to Cascading Style Sheets
Lesson Code:	5.1, 5.3	Selectors and Basic Syntax
Time Frame:		30 minutes

TARGET

Time Allocation: 1 min

After completing this module, you are expected to:

- Understand the basic syntax of CSS
- Identify the different types of CSS selectors

HOOK

Time Allocation: 1 min

In the previous module, you have learned about best practices for web design and layout. The design and layout of the webpage is possible with the help of CSS. In this module, you will be able to learn about CSS – its syntax and selectors.

CSS stands for Cascading Style Sheets. It is a design language that is used to define how an HTML element should be displayed on the screen or in any media (*CSS Introduction*, n.d.). The CSS works by associating rules with HTML elements. Using these rules, you can add style on the content of a specified element of the page. Styling an entire webpage might be a complex process but defining a simple CSS rule can be easily understood. Below is an example of a simple CSS rule.

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

Figure 1. Sample CSS Code.

IGNITE

Time Allocation: 18 mins.

What is CSS?

CSS allows you to control the layout and design of an HTML document. It can change the color of the text, font style and other design and layout. Applying CSS would require a styling rule which will be interpreted by the browser (*CSS - Syntax - Tutorialspoint*, n.d.).

CSS Structure

A CSS rule consists of selector and a declaration block. The **selector** specifies which html element should be styled. After the selector is an open and close curly braces. Inside it is the CSS declaration. The CSS declaration block may contain one or more CSS declarations and has two parts – the property and the value. The **property** name is a keyword that is already predefined by the CSS specification. In each property, there is a set of predefined **values**. Property and value are separated by a colon and terminated by a semicolon. Semicolon is used to separate two declarations (*CSS Syntax*, n.d.).

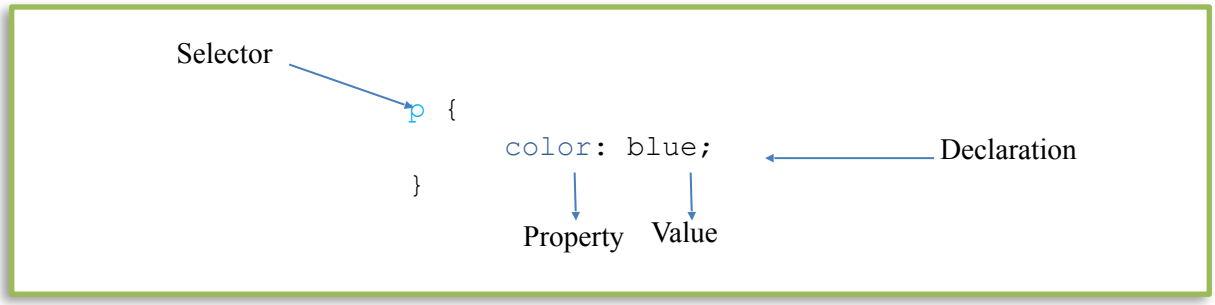

Figure 2. CSS basic syntax.

In the example above (Figure 2), the **p** is a selector. It points to the paragraph tag of your HTML. The property and property value is **color** and **blue**, respectively. This rule simply means that all of the paragraph tags in your HTML document will have a text colored with blue.

Selectors

HTML elements are styled in CSS with the help of selectors.

Element Selector – It is similar to the example above. It selects elements based on its name. For example, **p** of the paragraph tag.

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

Universal Selector – Instead of selecting a specific type of element, it selects all the elements of your HTML page. The universal selector is denoted using the symbol '*****'. In the example, all elements in your HTML page will have a text color of blue.

```
* {
        color: blue;
}
```

Id Selector – It will use the id attribute of an HTML element to select a specific element. A page has a unique id for an element, thus, it will only select one unique element. In order to implement this, the hash (**#**) character is used, followed by the id of the element. In the example, the element with an **id="blue"** will apply the given rule.

```
#blue {
        color: blue;
}
```

Class Selector – It selects the HTML element with a specific class attribute. The class selector is implemented with the help of the symbol period (**.**), followed by the class name. In the example, all the elements with **class="center"** will apply the given rule.

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

Grouping Selector – Elements that apply the same style rule can be grouped together. For example, **h1**, **h2** and **p** should be aligned in the center and the text color is blue.

```
h1 {
      text-align: center;
      color: blue;}

h2 {
      text-align: center;
      color: blue;}

p {
      text-align: center;
      color: blue;}
```

Instead of having separate rules for the three elements (**h1**, **h2** and **p**), grouping them together will minimize the code. In order to do it, each selector should be separated by a comma.

```
h1, h2, p {
      text-align: center;
      color: blue;
}
```

Descendant Selectors – It applies style rules to a particular element only if it lies inside a particular element. As given in the example, the rule is applied to a **<p>** element only if it lies inside a **div** element with a **class="center"**.

```
div.center p {
      text-align: center;
      color: blue;
}
```

If you have observed in the example above, 'div' comes before the '.center'. It is possible that other than ** **, there are other elements with **class='center'**. Therefore, we can specify that the rule is applied to the **p** element which lies inside a div element with **class='center'**.

Child Selectors – Unlike the descendant selectors, the child selector is applied only to a direct child of an element. For example, the **<p>** element that is a direct child of the body will apply the style rule below. However, other **<p>** element which is inside a ** ** or other elements will not apply the rule. The character '**>**' is used to apply the rule in a child selector.

```
body > p {
      text-align: center;
      color: blue;
}
```

To show how these selectors work with our html, you can try Listing 5.1.1. An output of this code is shown in Figure 3.

Listing 5.1.1 index.html

```
<!DOCTYPE html>
<html>
<head>
      <title>Module 5.1</title>
      <style>
            /*Set the background color of body to blue*/
            body {
                  background-color: pink;
            }

            /*Set the font color of h1, h2 and p to white*/
            h1, h2, p{
                  color:white;
            }

            /*Set the background color of h1 and div to gray*/
            .grayBG {
                  background-color:gray;
            }

            /*Set the text color of p with id='blue' to blue*/
            p#blue {
                  color:blue;

            /*Set the text color of p with class='yellow' to yellow*/
            p.yellow {
```

```
                color:yellow;
            }

            /*Set the text color of p that is a direct child of body to red
*/
            body > p {
                color:red;
            }
      </style>
</head>


<body>
      <h1 class='grayBG'>Basic Syntax</h1>
      <h2>Module 5.1</h2>
      <div class='grayBG'>
            <p>This paragraph is inside a div element</p>
            <p id='blue'>This paragraph is inside a div element but has an
id='blue'</p>
            <p class='yellow'>This paragraph is inside a div element but
with class='yellow'</p>
      </div>
      <p>This paragraph a direct child of body</p>

</body>
</html>
```

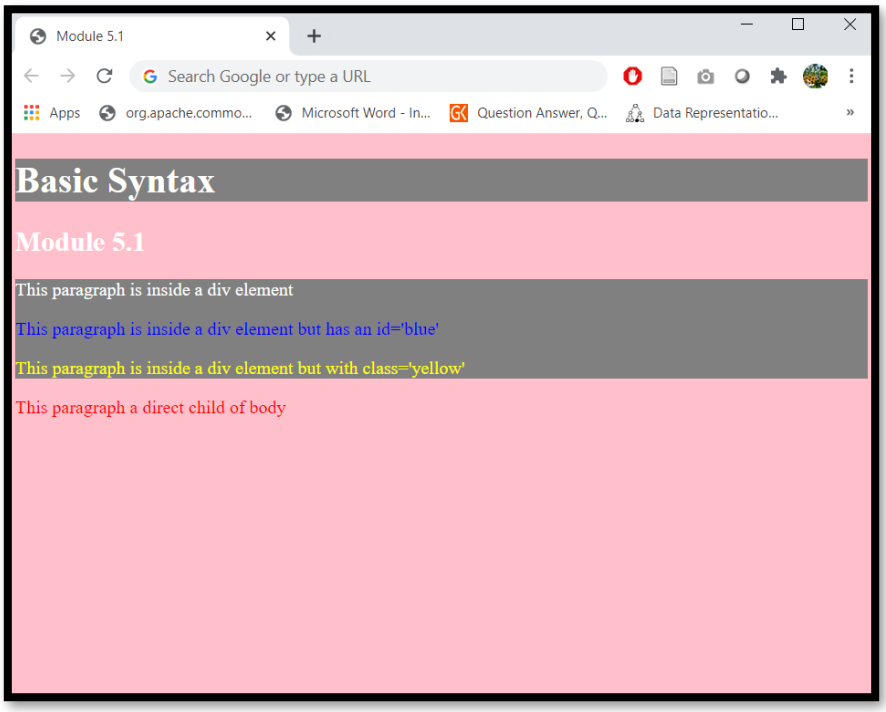

Figure 3. Output of Listing 5.1.1

NAVIGATE

Time Allocation: 8 mins

Given the HTML document below, edit the CSS style rule by changing xxx with the right selector to achieve the desired layout and design of the page.

```
<!DOCTYPE html>
<html>
<head>
	<title>Simple Selectors</title>
	<style>

	/* all h2 elements */
	xxx {
		color: red;
		text-align: center;
	}


	/* all with class="highlight" */
	xxx {
		font-size: 20px;
		font-weight: bold;
		font-style: italic;
		background-color: green;
		opacity: .6;
	}

	/* element with id="mainPoint" */
	xxx {
		font-size: 24px;
		font-weight: bold;
		background-color: red;
		opacity: .7;
	}

	/* all p AND h1 elements */
	xxx {
		color: blue;
		text-align: center;
	}

	</style>
</head>
<body>

	<h1>Simple Selectors (h1)</h1>

	<h2>Subheading 1 (h2)</h2>

	<p class="highlight">Lorem ipsum dolor sit amet, consectetur adipisicing elit. Possimus amet alias est? Nobis cum quasi at soluta odit, maiores quaerat dolores expedita ex nemo ea repellendus dolorem sed maxime quos?</p>

	<p class="highlight">Paragraph with attribute class="highlight". Lorem ipsum dolor sit amet, consectetur adipisicing elit.</p>

	<h2>Subheading 2 (h2)</h2>

	<p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Eligendi nemo ipsum dolores vel modi magnam veniam alias at nam. Voluptatem officiis dolor dolorem aspernatur dolorum modi ipsa, nobis animi aut!</p>
```

```
      <div>This is the main point of the entire article. So, attribute
<span id="mainPoint">id="mainPoint".</span> </div>

</body>
</html>
```

Note: This is a non-graded assessment.

KNOT

Time Allocation: 2 mins

In summary, the CSS basic syntax consists of a selector and a declaration block. The selector is used to choose the tag or any html element which you want to style. The selector is followed by an open and curly braces. The curly braces contain the declaration block where you specify the CSS rule to be applied. This block may contain one or more declarations. Each declaration is separated by semicolon. A declaration has property and its value. The property and value is separated by a colon.

There are different types of selectors. An element selector is used by just specifying the name of the element. The class selector is specified by using a dot and the name of the class. The id selector is specified by using hash and the id of the element you want to select. Universal selector is used when all the elements should apply the expected style rule. To specify a universal selector, an asterisk (*****) is used. Selectors can also be combined. Two or more selectors with the same style rule can be merged into one by specifying them separated by a comma. A descendant selector will select an element that lies within a particular element. The child selector is like a descendant selector but it only selects elements that are a direct child of the parent element. The character (**>**) is used to specify a child selector.

REFERENCES

CSS - Syntax—Tutorialspoint. (n.d.). Retrieved July 15, 2020, from https://www.tutorialspoint.com/

css/css_syntax.htm

CSS Introduction. (n.d.). Retrieved July 15, 2020, from https://www.w3schools.com/css/css_intro.asp

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Prepared by:

JIMMY E. UNILONGO JR.
SST-II
PSHS-SRC

Reviewed by:

ALINE TERESA MENDOZA
SST V
PSHS- Main