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Cascading Style Sheets

Exploring CSS Selectors

A selector is a pattern that is used to select an element to apply the CSS style rules. Selectors can be used as a condition or a CSS rule to determine the elements that match with the selector. The CSS rule is divided into two parts: Selectors and: declaration. The declaration is a part that appears within the braces of the CSS rule followed by the selector. The rules defined in the declaration part are applied to the elements specified by the selector. The different types of selectors are as follows:

- The universal selector
- The type selector
- The class selector
- The id selector
- The child selector
- The descendant selector
- The adjacent sibling selector
- The attribute selector
- The query selector

✓ **The Universal Selector**

The universal selector selects all the elements that are present in an HTML document. You can use this selector to apply the same rule to all the elements of an HTML or XHTML document. The universal selector is represented by an asterisk symbol, as shown in the following code snippet:

*{}

The following code snippet shows the use of the universal selector:

*** {margin: 0; padding: 0 ;}**

In the preceding code snippet, the margin and padding properties are set to 0 for all the elements in the HTML or XHTML document on which the CSS rule is applied.

✓ **The type selector**

The type selector matches all the elements specified in a list with the given value to determine the elements to which the CSS rules are to be applied. The rules applied to several elements of an HTML or XHTML document are similar to the ones applied to a CSS file.

The following code snippet shows how to use the type selector:

H1 , H2, H3, P {font-family: sans-serif ;}

In the preceding code snippet, we have specified the font-family property for the different heading elements (h1, h2, and h3) and for the paragraph element (p).

✓ **The Class Selector**

The class selector allows you to apply CSS rules to the elements that carry a class attribute whose value matches with the class attribute specified in the class selector. Let's consider that you have an element, H1, with a class attribute whose value is **intro**, as shown in the following code snippet:

<H1 class="intro">Header 1</Hl>

You can use a class selector in either of the two ways:

1. **Applying the CSS rule to all the elements that have the class attribute of the same value**. The following code snippet shows how to apply the CSS rule:
   .intro { font-family: sans-serif }
   In the preceding code snippet, a period is followed by a value. The value is followed by braces, which embeds the CSS rule within it. The CSS rule is applied to all the elements having the dass attribute with intro as its value.
2. **Applying the CSS rule to the H1 elements, whose class attribute contains intro as its value.** The following code snippet shows how to apply the CSS style on H1 elements:
   H1.intro { font-family: sans-serif }
   In the preceding example, an element name is followed by a value. The value is followed by braces, which embeds the CSS rule within it. The CSS rule is applied to all the H1 elements having the class attribute with intro as its value.

✓ **The ID Selector**

The value of the id attribute is unique within a document; therefore, the selector is applied only to the content of one element. The following code snippet shows the h1 element having **myHeaderas** the value of the id attribute:
<H1 id= "myHeader" >Hello World!</Hl>
The following code snippet shows the id selector, which is represented by a hash symbol (#) and followed by the value of the id attribute:
#myHeader{ font-family: sans-serif }
In the preceding code snippet, myHeader is the value of the id attribute. The CSS rule is applied to the value of the id attribute.

✓ **The Child Selector**

The child selector matches the element that is an immediate child of another element. In the child selector, greater than symbol (>) is used as the combinator, as shown in the following code snippet:
TD>b{ font-family: sans-serif }
A combinator is a symbol, such as **>, <,** and **+,** which shows the relationship between two elements.
In the preceding code snippet, the B element is the immediate child of the TD element. The CSS rule is applied to all the B elements that are immediate children of TD elements.

✓ **The Descendant Selector**

The descendant selector matches an element that is a descendant of another element. A descendant element is an element that is nested inside another element. In case of the descendant selector, white space is used as the combinator, as shown in the following code snippet:
table b { font-family: sans-serif }
In the preceding code snippet, CSS is applied to all the b elements that are nested within the table element.

✓ **The Adjacent Sibling Selector**

The adjacent sibling selector selects all the elements that are adjacent siblings of a specified element. Sibling elements must have the same parent element. The word adjacent means side-by-side, so no other element could exist between the adjacent sibling elements. To use an adjacent sibling, selector, the plus symbol (+) as used as its combinator, as shown in the following code snippet of a CSS file:
H2+P { font-family: sans-serif }

Let's apply the preceding code,snippet of a CSS file to the following HTML code snippet:

```
<H2>Heading</H2>
<p>The selector above match this paragraph. </P>
<p>The selector above does not match this paragraph. </P>
```

In the preceding code snippet, the first paragraph matches the adjacent sibling selector, H2+P, because the P element is an adjacent sibling to the H2 element. The second paragraph does not match with the selector. Although it is a sibling of the H2 element, it is not adjacent to the element.

✓ The Attribute Selectors

The CSS attribute selector selects elements on The basis of some specific attributes or attribute values. Following table list the most common types of attribute selectors:

Types of Attribute Selectors

Name	Syntax	Match	Example
Hyphen selector	p.[attribute | =value]	Matches if the element has an attribute with a value followed by a hyphen	[lang |=fr]{ background-color: red; }
Existence selector	[attribute]	Matches if the element has a specific attribute	a[title]{ color: green; }
Equality selector	[attribute=value]	Matches if the element has an attribute with a specific value	a[href=http: / / webdesign.about.com/] { font-weight: bold; }
Space selector	[attribute ~=value]	Matches if the element has an attribute with space separated items that match with the value	a[title~=Web]{ background-color : red;}

✓ The Query Selector

The **querySelector()** and **querySelectorAll ()** methods accept CSS selectors as parameters and return the matching element node in the document tree. The querySelector() method helps in querying the entire document or a specific element of the document. You can use all the CSS selectors with this method as parameters. If multiple elements are available, CSS selectors return the first matching element; or returns null, if no element is available. The querySelectorAll () method returns all the available elements as a single static collection of elements known as **staticNodeList**. This collection of elements is not affected by any change made in the document tree, for instance removing or inserting a node does not affect **staticNodeList**.

Exercise:

1: What is CSS Selectors?

2: Write a short note on following with example.

- The universal selector
- The type selector
- The class selector
- The id selector
- The child selector
- The descendant selector
- The adjacent sibling selector
- The attribute selector
- The query selector