

CSS Selectors

1. What is mean by selectors?

- a. CSS selectors are used to find or select the HTML elements you want to style.

2. Types of Selectors:

- a. We can divide CSS selectors into 5 categories:
 - i. Simple Selectors
 - ii. Combinator Selectors
 - iii. Attribute Selectors
 - iv. Pseudo Class Selectors
 - v. Pseudo Element Selectors

3. Simple Selector (4)

- a. Simple Selectors are classified into 4 types :
 - i. Id Selector (#)
 - ii. Class Selector (.)
 - iii. Element Selector (tagname)
 - iv. Universal Selector (*)

1. Id Selector (#):

- a. The id selector uses the id attribute of an HTML element to select a specific element.
- b. The id of an element is unique within a page, so the id selector is used to select one unique element.
- c. To select an element with a specific id, write a hash (#) character, followed by the id name of the element that you have provided.

d. Syntax:

```
#id_name {  
    /* style definations */  
    key : value;  
}
```

2. Class Selector (.):

- a. The class selector selects HTML elements with specific class attributes.
- b. To select elements with a specific class, write a dot (.) character, followed by the class name.

c. Syntax:

```
.class_name {  
    /* style definations */  
    key : value;  
}
```

3. Element Selector (tagName or elementName):

- a. The element selector selects the HTML elements based on the element name of tagname.
- b. Example → h1, p, div, span, etc.
- c. Syntax:

```
element_name {  
    /* style definations */  
    key : value;  
}
```

4. Universal Selector (*):

- a. The universal selector (*) in CSS is used to select all the elements in an HTML document.
- b. It also includes other elements which are inside under another element.
- c. **Syntax:**

```
* {  
    /* style definitions */  
    key : value;  
}
```

- **Note** ⇒

- The first priority always goes to Id Selector.
- Priority Basis :
 - Id Selector
 - Class Selector
 - Element Selector
 - Universal Selector
 - But we can set the priority with the help of *!important* keyword.

5. Grouping Selector:

- a. The Group selector is used to style all comma-separated elements with the same style.
- b. **Note** ⇒ Suppose you want to apply common styles to different selectors, instead of writing rules separately you can write them in groups.

c. Example:

```
<style>
  /* Grouping Selector */
  h1, p {
    background-color: aqua;
    color: red;
  }
</style>
```

4. Combinator Selector (4)

- a. A CSS selector can contain more than one selector.
- b. It defines the relationship between two selectors.
- c. There are 4 different combinators in CSS:
 - i. Descendent Selector (space)
 - ii. Child Selector (>)
 - iii. Adjacent Sibling Selector (+)
 - iv. General Sibling Selector (~)

1. Descendent Selector (space)

- a. The descendent selector matches all the elements that are descendants of specified element.
- b. It uses the space as the separator between the elements.
- c. The word descendent indicates anywhere in the DOM tree.
- d. It can be a direct child or deeper than five levels, but it will still referred as descendent.
- e. First Selector → Ancestor Parent, Parent's parent, etc.)
Second Selector → Descendent or Successor.

f. Syntax:

```
element element {  
    /* Style definitions */  
}
```

2. Child Selector (>)

- a. The child selector, selects all the elements that are the children of a specified element.
- b. It uses the *greater than (>)* sign as the separator between the elements.
- c. It only selects those elements that are the direct child of the specified element.

d. Syntax:

```
element > element {  
    /* Style definitions */  
}
```

3. Adjacent Sibling Selector (+)

- a. The adjacent sibling selector is used to select an element that is directly after another specified element.
- b. It uses *plus (+)* sign as the separator between the elements.
- c. Sibling means must have the same parent element and "adjacent" means "immediately following".
- d. The sibling selector, selects the adjacent element or we can say that the element which is next to the specified tag.

e. It only selects the element which is next to the specified first element.

f. **Syntax:**

```
element + element {  
    /* Style definitions */
```

4. General Sibling Selector (~)

a. The general sibling selector, selects all the elements that are next siblings of a specified element even though they are adjacent or not.

b. It uses the *tilde (~)* sign as the separator between the elements.

c. It can be used for selecting the group of elements that share common parent element.

d. It is useful when we have to select of an element even if they are not adjacent directly.

e. **Syntax:**

```
element ~ element {  
    /* Style definitions */  
}
```

5. Attribute Selector (7)

- a. Attribute means it provides the extra information about the tag.
- b. CSS Attribute Selectors is used to select HTML elements with specific attribute or value for attribute.
- c. Attribute selectors are enclosed in square brackets []
- d. Types of a attribute selector are as follows :
 - i. [attribute]
 - ii. [attribute="value"]
 - iii. [attribute~="value"]
 - iv. [attribute|"value"]
 - v. [attribute^="value"]
 - vi. [attribute\$"value"]
 - vii. [attribute*="value"]

1. [attribute]:

- a. The [attribute] selector is used to select elements with a specified attribute.
- b. **Syntax:**

```
[attribute]{  
    property: value;  
}
```

2. [attribute="value"]:

- a. The [attribute = "value"] selector is used to select elements with a specified attribute and value.

3. [attribute~="value"]:

- a. The [attribute ~= "value"] selector is used to select elements with an attribute value containing a specified word.

4. [attribute|"value"]:

- a. The [attribute |= "value"] selector is used to select elements with the specified attribute, whose value can be exactly the specified value, or the specified value followed by a hyphen (-).
- b. **NOTE** ⇒ The value has to be a whole word, either alone, like class="top", or followed by a hyphen(-), like class="top-left".

5. [attribute^="value"]:

- a. The [attribute ^= "value"] selector is used to select elements with the specified attribute, whose value starts with the specified value.

6. [attribute\$="value"]:

- a. The [attribute \$= "value"] selector is used to select elements whose attribute value ends with a specified value.

7. [attribute*="value"]:

- a. The [attribute *= "value"] selector is used to select elements whose attribute value contains a specified value.

6. Pseudo Class Selector (3)

- a. A pseudo-class is a selector that selects elements that are in a specific state.
- b. e.g. they are the first element of their type, or they are being hovered over by the mouse pointer.
- c. Pseudo-classes are keywords that start with a *colon (:)*.
- d. For example, *:hover* is a pseudo-class.
- e. **Syntax:**

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

- f. Types of Pseudo-class selectors:
 - i. Dynamic Pseudo Class Selector (5)
 - ii. Structural Pseudo Class Selector (5)
 - iii. UI Element Pseudo Class Selector (3)

1. Dynamic Pseudo Class Selector (5)

- a. Dynamic pseudo classes are divided mainly in 5 types are as follows :
 - i. *:link* → It is used to provide special effect for unvisited link.
 - ii. *:visited* → The *:visited* selector is used to select visited links.
 - iii. *:active* → Applies styles when an element is activated by the user, such as clicking a button. The *:active*

pseudo-class is used to select and style an element that is being activated by the user.

- **Note** => **:active** MUST come after **:hover** (if present) in the CSS definition in order to be effective!

- iv. **:focus** → Applies styles when the mouse pointer is over an element. The **:hover** selector is used to select elements when you mouse over them.
- v. **:hover** → When an element receives focus, such as when an input field is selected, the styling property **:focus** is applied.

2. Structural Pseudo Class Selector (5)

- a. Structural pseudo-classes are a subset of CSS pseudo-classes that allow you to select and style elements based on their position in the document tree.
- b. Based on this some of most used structural pseudo class selectors are as below mentioned :
- c. **Types of Structural Pseudo Class Selectors:**
 - i. **:first-child** → Selects the first child element of its parent. The **:first-child** pseudo matches a specified element that is the first child of another element.
 - ii. **:last-child** → Selects the last child element of its parent. The **:last-child** pseudo matches a specified element that is the last child of another element.

- iii. `:nth-child()` → The `:nth-child()` selector matches of every element that is nth child of its parent . n can be number, keyword (even or odd), etc.
- iv. `:first-of-type` → The `:first-of-type` selector matches every element that is the first child of a particular type of its parent.
- v. `:last-of-type` → The `:last-of-type` selector matches every element that is the last child of a particular type of its parent.

3. UI Element Pseudo Class Selector (3)

- a. There are mainly 3 types of UI element pseudo class selector are there in CSS:
 - 1. `:enabled` → The `:enabled` pseudo-class represents user interface elements that are in an enabled state. Such elements have a corresponding disabled state.
 - 2. `:disabled` → The `:disabled` pseudo-class represents user interface elements that are in a disabled state. Such elements have a corresponding enabled state.
 - 3. `:checked` → Radio and checkbox elements can be toggled by the user. Some menu items are "checked" when the user selects them. When such elements are toggled "on" the applies. While the `:checked` pseudo-class `:checked` pseudo-class is dynamic in nature, and can altered by user

action, since it can also be based on the presence of semantic attributes in the document, it applies to all media.

7. Pseudo Element Selector (6)

a. A CSS pseudo-element selector is used to style specified parts of an element.

b. **Syntax:**

```
selector :: pseudo-element {  
    property : value;  
}
```

c. There are many pseudo elements in CSS but the ones which are most commonly used are as follows:

- i. `::first-line` → The `::first-line` pseudo-element is used to add a special style to the first line of a text. Note
=> The `::first-line` pseudo-element can only be applied to block level elements.
- ii. `::first-letter` → The `::first-letter` pseudo-element is used to add a special style to the first letter of a text.
- iii. `::before` → The `::before` pseudo-element can be used to insert some content before the content of an element.
- iv. `::after` → The `::after` pseudo-element can be used to insert some content after the content of an element.

- v. `::marker` → The `::marker` pseudo-element selects the markers of list items.
- vi. `::selection` → The `::selection` pseudo-element matches the portion of an element that is selected by a user.