

CSS Selectors

CSS selectors are used to select and style specific HTML elements on a webpage. They are a core part of CSS (Cascading Style Sheets) and are used to "select" HTML elements according to their attributes, id, class, or even their hierarchical position in the document.

Types of CSS Selectors:

1. **Universal Selector (*)**: Selects all elements in the document.

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

2. **Type Selector (Element Selector)**: Selects elements by their type (e.g., p for paragraphs, h1 for headings).

```
p {  
  font-size: 16px;  
}
```

3. **Class Selector (.classname)**: Selects elements by their class attribute. Classes can be reused across multiple elements.

```
.highlight {  
  background-color: yellow;  
}
```

4. **ID Selector (#idname)**: Selects an element by its unique ID attribute. IDs should be unique per page.

```
#header {  
  background-color: blue;  
}
```

5. **Attribute Selector**: Selects elements based on an attribute or its value.
 - a. Selects elements with a specific attribute:

```
[type] {  
  border: 1px solid red;  
}
```

- b. Selects elements with a specific attribute value:

```
input[type="text"] {  
  background-color: lightgray;  
}
```

6. **Descendant Selector (element1 element2):** Selects all elements inside another element (not necessarily direct children).

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

7. **Child Selector (element1 > element2):** Selects only direct children of an element.

```
div > p {  
  color: green;  
}
```

8. **Adjacent Sibling Selector (element1 + element2):** Selects the element immediately following another element.

```
h1 + p {  
  margin-top: 0;  
}
```

9. **General Sibling Selector (element1 ~ element2):** Selects all siblings of an element that follow it.

```
h1 ~ p {  
  color: red;  
}
```

10. **Pseudo-Class Selector:** Used to style elements based on their state or position (e.g., :hover, :nth-child()).

```
a:hover {  
  color: red;  
}
```

11. Pseudo-Element Selector: Used to style a specific part of an element (e.g., ::before, ::after).

```
p::first-letter {  
  font-size: 2em;  
  color: red;  
}
```