**CSS Styling and Specificity**

CSS (Cascading Style Sheets) is used to style webpages and define the layout. There are three types of CSS styling:

**1. Inline CSS**

* Applied directly to an HTML element using the style attribute.
* Has the highest specificity among styling types.

**Example:**

<h1 style="color:red;">Heading</h1>

This will always display the heading in red, and external or internal styles won’t override it unless !important is used.

**2. Internal CSS**

* Defined within a <style> tag inside the <head> section of an HTML document.
* Used to style elements within the same HTML file.

**Example:**

<head>

<style>

h1 {

color: blue;

}

</style>

</head>

**3. External CSS**

* Written in a separate file (e.g., style.css).
* Linked to the HTML file using the <link> tag.

**Example:**

**style.css**

h1 {

color: green;

}

**index.html**

<head>

<link rel="stylesheet" href="style.css">

</head>

**CSS Selectors**

CSS provides various selectors to target elements efficiently.

**1. Element Selector**

Targets all occurrences of a specific HTML element.

p {

color: blue;

}

**2. ID Selector (#)**

Targets a specific element with a unique ID.

#idpara {

color: rgb(139, 2, 2);

}

**3. Class Selector (.)**

Targets all elements with a specific class.

.paragraph {

color: yellow;

}

**4. Grouping Selector (,)**

Targets multiple elements and applies the same style.

h1, h2 {

font-size: 24px;

}

**5. Descendant Selector (ancestor descendant)**

Selects all specified descendant elements inside a parent.

.parent p {

color: orange;

}

**6. Child Selector (>)**

Selects only direct child elements.

.parent > .child {

color: hsl(58, 87%, 24%);

}

**7. Adjacent Sibling Selector (+)**

Selects the immediate sibling element after a specific element.

h1 + p {

color: hsl(19, 86%, 22%);

}

**8. General Sibling Selector (~)**

Selects all siblings of a specified element.

h1 ~ p {

color: hsl(263, 46%, 25%);

}

**9. Universal Selector (\*)**

Applies styles to all elements.

\* {

color: green;

}

**10. Attribute Selector**

Targets elements based on attributes.

input[type="text"] {

color: black;

}

**CSS Specificity**

Specificity determines which CSS rule is applied when multiple rules target the same element.

**Hierarchy of Specificity**

1. **Inline styles** – 1000 (highest priority)
2. **ID selectors (#id)** – 100
3. **Class, attribute, and pseudo-class selectors (.class, [attr], :hover)** – 10
4. **Element and pseudo-element selectors (h1, p, ::before)** – 1
5. **Universal selector (\*)** – 0 (lowest priority)

**Specificity Calculation**

Each selector gets a numerical value based on its type.

**Example**

/\* Specificity: 0, 0, 0, 1 \*/

p {

color: blue;

}

/\* Specificity: 0, 0, 1, 0 \*/

.paragraph {

color: yellow;

}

/\* Specificity: 0, 1, 0, 0 \*/

#idpara {

color: rgb(139, 2, 2);

}

/\* Specificity: 1, 0, 0, 0 (highest priority) \*/

<h1 style="color:red;">Heading</h1>

* The inline style (style="color:red;") has the highest specificity.
* The ID selector (#idpara) takes precedence over class and element selectors.
* Class selectors (.paragraph) override element selectors (p).
* The universal selector (\*) has the lowest specificity.

**Visual Representation of Specificity in VS Code**

In VS Code, specificity is often represented as:

* **ID Selector (#id)** → 1, 0, 0
* **Class Selector (.class)** → 0, 1, 0
* **Element Selector (h1)** → 0, 0, 1

EXAMPLES:

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <title>selectors</title>

    <style>

        /\* id selector id is selected by # \*/

        #idpara {

            color: rgb(139, 2, 2);

        }

        /\* class selector class is selected by dot\*/

        .paragraph {

            color: yellow;

        }

        /\* element selector or single element \*/

        p {

            color: blue;

        }

        /\* multiple element selector \*/

        div,

        p {

            color: red;

        }

        /\* universal selector or all elements selector \*/

        \* {

            color: green;

        }

        /\* descendant selector useing this selector selecting all child elements of parent \*/

        .parent p {

            /\* color: orange; \*/

        }

        body h2 {

            color: rgb(151, 146, 6);

        }

        /\*this child selector select used to select the only direct child elements child selector has high specificity comapre to decendent\*/

        .parent > .child {

            color: hsl(58, 87%, 24%);

        }

        body > h2 {

            color: black;

        }

        /\* sibling selector of adjecent \*/

        h1 + p {

            color: hsl(19, 86%, 22%);

        }

        /\* general all  sibling selector \*/

        h1 ~ p {

            color: hsl(263, 46%, 25%);

        }

        /\* combine selector \*/

        /\* decendent selector and child selector adjecent selector and all sibling selector \*/

        /\* specificity \*/

        /\* 1 id selector

        2 class selector

        3 element selector

        \*/

/\*  attribute selector \*/

        input[type="text"] {

            color: hsl(0, 0%, 0%);

        }

    </style>

</head>

<body>

    <p class="paragraph" id="idpara">i am paragraph</p>

    <div>this div</div>

    <!-- <span>hi</span>

    <a href="">link</a>

    <li>list item</li>

    <ul>unordered list</ul> -->

    <div class="parent">

        <p>child

        <p>

        <p>grand child</p>

        </p>

        </p>

        <p>child</p>

        <p>child</p>

        <p>child</p>

        <div>

            <p>not a direct child</p>

        </div>

    </div>

    <p>child</p>

    <p>child</p>

    <p>child</p>

    <p>child</p>

    <h2> i am heading parent

        <h2> i am heading child</h2>

    </h2>

    <div>

        <h2> i am another heading</h2>

    </div>

    <h1> i am a heading</h1>

    <p> i am first sibling of h1

        <p> child </p>

    </p>

    <div> i am another</div>

    <div> hi second one</div>

    <p>i am second sibling of h1</p>

    <p> i am third </p>

    <input type="text" name="" id="">

</body>

</html>