CSS Selectors

Types of Selectors: Element Selector, Class Selector, ID Selector, Attribute Selector, Pseudo-class Selector and the Universal Selector (\*)

Element Selector (Tag Name)

Selects HTML elements by their tag name. Targets specific HTML tags.

Example: p { color: blue; }

Class Selector (.)

Selects elements by their class attribute. Targets elements with a specific class attribute. Use . followed by the class name.

Example:

Applying a class: <p class="classname">This is a paragraph.</p>

.classname { color: red; }

ID Selector (#)

Selects an element by its ID attribute. Targets a unique element with an ID attribute. Use # followed by the ID name.

Example:

Applying an ID: <p id="idname">This is a paragraph.</p>

#idname { color: green; }

Note: IDs must be unique — only one element per page should have a specific ID.

Attribute Selector

Selects elements based on an attribute or attribute value.

Example: a[href] { color: orange; },

input[type="text"] {

width: 150px;

margin-bottom: 10px;

Background-color: aqua;

}

input[type="button"] {

width: 120px;

margin-left: 35px;

}

Pseudo-class Selector

Selects elements based on their state or position.

Example: a:hover { color: purple; } input:focus { border-color: green; }

Group Selector

Apply styles to multiple elements at once by separating selectors with commas.

Example: h1, h2, p { font-family: Arial, san-serif; }

Descendant Selector (Nested elements)

Targets an element inside another element.

Example: article p { font-family: Arial, san-serif; }

This styles all <p> inside an <article> only.

Child Selector (>)

Targets an element inside another element.

Example: ul > li { font-family: Arial, san-serif; }

This applies styles to li items that are direct children of ul.

Practical Exercise

Using different CSS selectors to style a web page.

Instructions:

Open your text editor and create a new HTML file named selectors\_example.html.

Write the following HTML code:

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>CSS Selectors</title>

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

</head>

<body>

<h1>This is a Heading</h1>

<p class="note">This is a CSS practice page.</p>

<div class="box">

<p>This is a paragraph inside a box.</p>

<p class="text">This is a paragraph with a class selector.</p>

</div>

<p id="unique">This is a paragraph with an ID selector.</p>

<ul>

<li>Apple</li>

<li>Banana</li>

<li>Grapes</li>

</ul>

<a href="#">Hover over me!</a>

<a href="#" class="link">This is another link.</a>

</body>

Create an external CSS file named style.css with the following content:

/\* Element Selector \*/

p {

font-size: 18px;

}

/\* ID Selector \*/

#unique {

color: red;

}

#page-title {

color: purple;

}

/\* Class Selector \*/

.text {

color: blue;

}

.note {

font-size: 18px;

color: teal;

}

.box p {

background-color: lightyellow;

}

ul > li {

list-style-type: square;

color: brown;

}

/\* Pseudo-class Selector \*/

a:hover {

color: red;

}

/\* Attribute Selector \*/

a[href] {

text-decoration: none;

color: green;

}

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>CSS Selector Practice</title>

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

</head>

<body>

// header

<h1 id="page-title">Welcome to Our Page</h1>

<p class="intro">This website is for learning CSS selectors.</p>

// main

<div class="box">

<p>This paragraph is inside a box class.</p>

<p class="highlight">This paragraph has both box and highlight styling.</p>

</div>

<section>

<h2>Our Services</h2>

<ul>

<li>Web Design</li>

<li>Frontend Development</li>

<li>UI/UX</li>

</ul>

</section>

<section>

<h2>Our Products</h2>

<ul>

<li class="featured">HTML Templates</li>

<li>CSS Themes</li>

<li>JavaScript Widgets</li>

</ul>

</section>

<div class="cta">

<button>Learn More</button>

<button class="danger">Delete</button>

</div>

// footer

<p>Visit our <a href="#">About Us</a> page for more.</p>

</body>

</html>

Create an external CSS file named style.css with the following content:

/\* ID selector \*/

#page-title {

color: navy;

font-size: 32px;

text-align: center;

}

/\* Class selector \*/

.intro {

font-size: 18px;

color: darkslategray;

font-style: italic;

}

/\* Element selector \*/

h2 {

color: darkgreen;

text-decoration: underline;

}

/\* Descendant selector \*/

.box p {

background-color: lightyellow;

padding: 10px;

}

/\* Multiple class selector \*/

.highlight, .classname {

color: darkred;

font-weight: bold;

}

/\* Group selector \*/

ul, p {

font-family: Arial, sans-serif;

}

ul li {

list-style-type: square;

}

/\* Class selector \*/

.featured {

background-color: #e6ffe6;

border-left: 5px solid green;

padding-left: 10px;

}

/\* Child selector \*/

.cta > button {

padding: 10px 15px;

margin-right: 10px;

border: none;

border-radius: 4px;

background-color: dodgerblue;

color: white;

}

/\* Class variation \*/

button.danger {

background-color: crimson;

}

/\* Pseudo-class \*/

a:hover {

color: orange;

text-decoration: underline;

}

CSS Colors

CSS colors allow you to control the text, backgrounds, borders, and other visual parts of a webpage by changing their color.

Different Ways to Define Colors in CSS

CSS allows you to define colors in 5 main ways:

1. Color Names

Use predefined color names like:

red, blue, green, orange, purple, black, white

Examples of Applying Colors

h1 {

color: red;

}

Easy to remember, but limited in variety.

2. Hexadecimal Colors (#)

A 6-digit code that starts with a # symbol.

Format: #RRGGBB

RR = Red

GG = Green

BB = Blue

Example:

p {

color: #ff0000; /\* red \*/ #f00

}

Some useful hex codes:

#000000 – black

#ffffff – white

#ff0000 – red

#00ff00 – green

#0000ff – blue

#ffff00 – yellow

3. RGB (Red, Green, Blue)

Uses numeric values from 0 to 255 for each color.

div {

background-color: rgb(0, 128, 255); /\* blueish \*/

}

Format: rgb(red, green, blue)

Example:

rgb(255, 0, 0) = red

rgb(0, 255, 0) = green

rgb(0, 0, 255) = blue

4. RGBA (RGB + Alpha)

Same as rgb() but includes an alpha value for transparency.

Format: rgba(red, green, blue, alpha)

Alpha ranges from 0 (transparent) to 1 (solid)

.box {

background-color: rgba(0, 0, 0, 0.5); /\* semi-transparent black \*/

}

5. HSL (Hue, Saturation, Lightness)

Describes colors in terms humans understand better.

Format: hsl(hue, saturation%, lightness%)

body {

background-color: hsl(240, 100%, 50%); /\* bright blue \*/

}

/\* Text color \*/

h1 {

color: darkgreen;

}

/\* Background color \*/

body {

background-color: #f5f5f5;

}

/\* Border color \*/

.box {

border: 2px solid blue;

}

/\* Transparent background \*/

.alert {

background-color: rgba(255, 0, 0, 0.3);

}

Hue = color angle on a 360° color wheel (0 = red, 120 = green, 240 = blue)

Saturation = intensity of the color (0% = gray, 100% = full color)

Lightness = brightness (0% = black, 100% = white)

Extra:

Best Practice Tips:

Use named colors for quick prototyping.

Use hex or RGB for precision.

Use RGBA for transparency effects.

Use HSL when working with color schemes and adjusting brightness/saturation.

CSS Properties and Styling Techniques

Objective:

By the end of this class, students will understand various CSS properties used for styling, including text, background, and box model properties. They will also learn about CSS units, colors, and how to create a basic layout.

Property

What it does

Example

color

Text color

color: red;

font-size

Size of the text

font-size: 18px;

font-family

Font type

font-family: Arial, sans-serif;

font-weight

Boldness

font-weight: bold;

text-align

Text alignment

text-align: center;

text-decoration

Underline/line-through etc.

text-decoration: underline;

line-height

Space between lines

line-height: 1.5;

1. Text Properties

Text Color & Font Family: Specifies the font of the text. We can also use google fonts.

Example:

p {

color: tomato;

font-family: Arial, sans-serif;

}

Font Size: Specifies the size of the text.

Example:

p {

font-size: 16px;

}

Font Weight: Specifies the weight (or boldness) of the text.

Example:

p {

font-weight: bold;

}

Text Align: Specifies the horizontal alignment of text.

Example:

p {

text-align: center;

}

Text Decoration: Specifies the decoration added to text, such as underline.

Example:

a {

text-decoration: none;

}

Text Transform: Controls the capitalization of text.

Example:

p {

text-transform: uppercase;

}

2. Background Properties

Property

What it does

Example

background-color

Sets background color

background-color: #f0f0f0;

background-image

Sets background image

background-image: url('image.jpg');

background-size

How image fits

background-size: cover;

background-position

Image position

background-position: center;

background-repeat

Repeats or not

background-repeat: no-repeat;

Background Color: Specifies the background color of an element.

Example:

div {

background-color: lightblue;

}

Background Image: Specifies an image to be used as the background.

Example:

div {

background-image: url('background.jpg');

}

Background Repeat: Specifies if/how a background image will be repeated.

Example:

div {

background-repeat: no-repeat;

}

Background Position: Specifies the starting position of a background image.

Example:

div {

background-position: center;

}

Background Size: Specifies the size of the background image.

Example:

div {

background-size: cover;

}

Box and Spacing Properties

Property

What it does

Example

width

Width of the element

width: 200px;

height

Height of the element

height: 100px;

padding

Space inside the box

padding: 10px;

margin

Space outside the box

margin: 20px;

border

Adds border

border: 2px solid black;

box-sizing

Includes border/padding in size

box-sizing: border-box;

Practical Exercise: Styling Text and Backgrounds

Use various CSS properties to style text and backgrounds in an HTML document.

Instructions:

Open your text editor and create a new HTML file named text\_background.html.

Write the following HTML code:

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>Text and Background Styling</title>

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

</head>

<body>

<div class="container">

<h1>Welcome to My Website</h1>

<p>This is a sample paragraph to demonstrate text styling.</p>

<a href="#">This is a link</a>

</div>

</body>

</html>

Create an external CSS file named styles.css with the following content:

body {

background-color: #f0f0f0;

}

.container {

background-image: url('background.jpg');

background-size: cover;

padding: 20px;

text-align: center;

}

h1 {

font-family: 'Arial', sans-serif;

font-size: 24px;

font-weight: bold;

color: darkblue;

text-transform: uppercase;

}

p {

font-family: 'Verdana', sans-serif;

font-size: 16px;

color: #333;

}

a {

text-decoration: none;

color: #ff0000;

}