

CSS Introduction

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CSS (Cascading Style Sheets) is a language designed to simplify the process of making web pages presentable. It allows you to apply styles to HTML documents, describing how a webpage should look by prescribing colors, fonts, spacing, and positioning. CSS provides developers and designers with powerful control over the presentation of HTML elements.

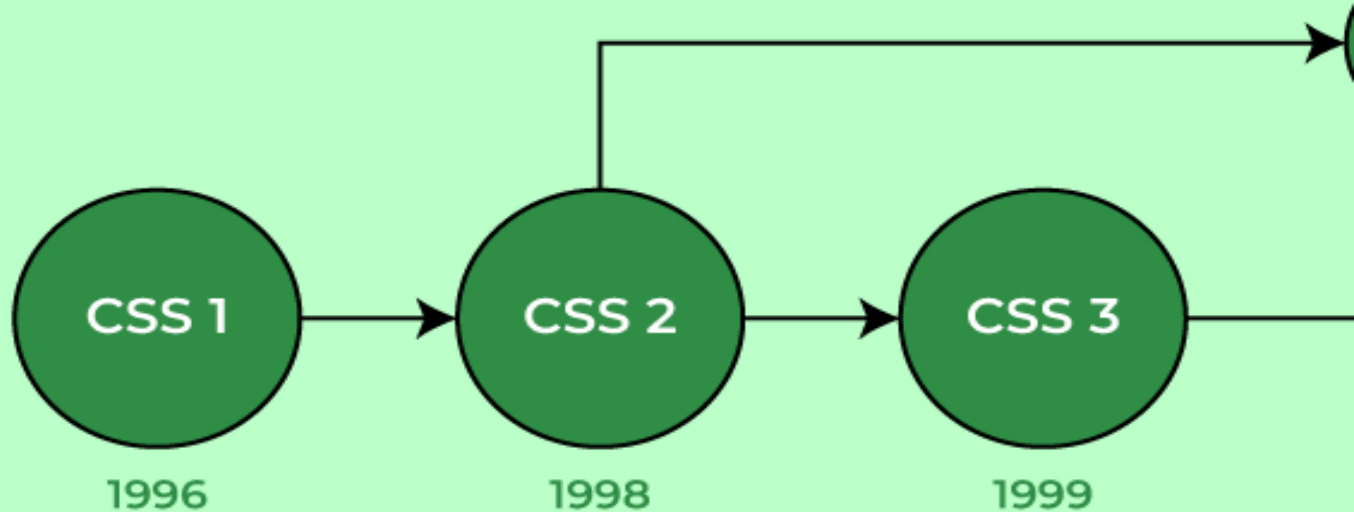
HTML uses tags and CSS uses rulesets. CSS styles are applied to the HTML element using selectors. CSS is easy to learn and understand, but it provides powerful control over the presentation of an HTML document.

Why CSS?

- **Saves Time:** Write CSS once and reuse it across multiple HTML pages.
- **Easy Maintenance:** Change the style globally with a single modification.
- **Search Engine Friendly:** Clean coding technique that improves readability for search engines.
- **Superior Styles:** Offers a wider array of attributes compared to HTML.
- **Offline Browsing:** CSS can store web applications locally using offline cache, allowing offline viewing.

CSS Versions Release Year

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CSS Versions Release Year

CSS Syntax

CSS consists of style rules that are interpreted by the browser and applied to the corresponding elements. A style rule set includes a selector and a declaration block.

- **Selector:** Targets specific HTML elements to apply styles.
- **Declaration:** Combination of a property and its corresponding value.

```
// HTML Element
<h1>GeeksforGeeks</h2>

// CSS Style
h1 { color: blue; font-size: 12px; }
```

Where -

Selector - h1

Declaration - { color: blue; font-size: 12px; }

- The selector points to the HTML element that you want to style.
- The declaration block contains one or more declarations separated by semicolons.
- Each declaration includes a CSS property name and a value, separated by a colon.

Example

CSS

```
p {  
  color: blue;  
  text-align: center;  
}
```

CSS declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces. In this example, all paragraph element (<p> tag) will be centre-aligned, with a blue text color.

Web Page with & without CSS

Without CSS: In this example, we have not added any CSS style.

html

```
<!DOCTYPE html>  
<html>  
  
  <head>  
    <title>Simple Web Page</title>  
  </head>  
  
  <body>  
    <main>  
      <h1>HTML Page</h1>  
      <p>This is a basic web page.</p>  
    </main>  
  </body>  
  
</html>
```

Output:

HTML Page

This is a basic web page.

Without CSS

Using CSS: In this example, we will add some CSS styles inside the HTML document to show how CSS makes a HTML page attractive and user-friendly.

html

```
<!DOCTYPE html>  
<html>
```

```
<head>
  <title>Simple web page</title>
  <style>
    main {
      width: 600px;
      height: 200px;
      padding: 10px;
      background: beige;
    }

    h1 {
      color: olivedrab;
      border-bottom: 1px dotted darkgreen;
    }

    p {
      font-family: sans-serif;
      color: orange;
    }
  </style>
</head>

<body>
  <main>
    <h1>My first Page</h1>
    <p>This is a basic web page.</p>
  </main>
</body>

</html>
```

CSS Selectors

Last Updated : 13 Jun, 2024

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CSS selectors target the HTML elements on your pages, allowing you to add styles based on their ID, class, type, attribute, and more. This guide will help you to understand the intricacies of CSS selectors and their important role in enhancing the user experience of your web pages. Understanding these selectors—such as the universal selector, attribute selector, pseudo-class selector, and combinator selectors—enables more efficient and dynamic web design.

Types of CSS Selectors

CSS selectors come in various types, each with its unique way of selecting HTML elements. Let's explore them:

CSS Selectors	Description
Simple Selectors	It is used to select the HTML elements based on their element name, id, attributes, etc
<u>Universal Selector</u>	Selects all elements on the page.
<u>Attribute Selector</u>	Targets elements based on their attribute values.
<u>Pseudo-Class Selector</u>	Selects elements based on their state or position, such as <code>:hover</code> for hover effects.
<u>Combinator Selectors</u>	Combine selectors to specify relationships between elements, such as descendants (<code> </code>) or child (<code>></code>).
<u>Pseudo-Element Selector</u>	Selects specific parts of an element, such as <code>::before</code> or <code>::after</code> .

Table of Content

- [Simple Selectors](#)
- [Element Selector](#)
- [Id Selector](#)
- [Class Selector](#)
- [Universal Selector](#)
- [Group Selector](#)
- [Attribute Selector](#)
- [Pseudo-Class Selector](#)
- [Pseudo-Element Selector](#)

Simple Selectors

Simple selectors contains the below classes.

Simple Selector	Description
<u>Element Selector</u>	Selects HTML elements based on their tag names.

Simple Selector	Description
<u>Id Selector</u>	Targets an HTML element with a specific id attribute.
<u>Class Selector</u>	Selects elements with a particular class attribute.

Example: In this example, we will write the code to understand selectors and their uses in a better way.

HTML

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>CSS Selectors</title>
    <link rel="stylesheet" href="style.css" />
  </head>

  <body>
    <h1>Sample Heading</h1>
    <p>This is Content inside first paragraph</p>
    <div id="div-container">
      This is a div with id div-container
    </div>
    <p class="paragraph-class">
      This is a paragraph with class paragraph-class
    </p>
  </body>
</html>
```

Note: We will apply CSS rules to the above Example.

Element Selector

The [element selector](#) selects HTML elements based on the element name (or tag) for example p, h1, div, span, etc.

NOTE : The following code is used in the above Example. You can see the CSS rules applied to all [<p>](#) tags and [<h1>](#) tags.

CSS:

```
h1 {
  color: red;
  font-size: 3rem;
}
p {
  color: white;
```

```
background-color: gray;
}
```

Output:

Sample Heading

This is Content inside first paragraph

This is a div with id div-container

This is a paragraph with class paragraph-class

CSS Element Selector output

Id Selector

The [id selector](#) uses the [id attribute](#) of an HTML element to select a specific element. An **id** of the element is unique on a page to use **the id** selector.

Note: The following code is used in the above Example using the id selector.

CSS:

```
#div-container{
    color: blue;
    background-color: gray;
}
```

Output:

Sample Heading

This is Content inside first paragraph

[This is a div with id div-container](#)

This is a paragraph with class paragraph-class

CSS ID Selectors example output

Class Selector

The [class selector](#) selects HTML elements with a specific class attribute.

Note: The following code is used in the above Example using the class selector. To use a class selector you must use (.) followed by class name in CSS. This rule will be applied to the HTML element with the class attribute “*paragraph-class*”

CSS:

```
.paragraph-class {  
    color:white;  
    font-family: monospace;  
    background-color: purple;  
}
```

Output:

Sample Heading

This is Content inside first paragraph

This is a div with id div-container

This is a paragraph with class paragraph-class

CSS Class Selector Example Output

Universal Selector

The [Universal selector](#) (*) in CSS is used to select all the elements in an HTML document. It also includes other elements which are inside under another element.

Note: The following code is used in the above Example using the universal selector. This CSS rule will be applied to each and every HTML element on the page:

CSS:

```
* {  
    color: white;  
    background-color: black;  
}
```

Output:

Sample Heading

This is Content inside first paragraph

This is a div with id div-container

This is a paragraph with class paragraph-class

CSS Universal Selector Example Output

Group Selector

The **Group selector** is used to style all comma-separated elements with the same style.

Note: Suppose you want to apply common styles to different selectors, instead of writing rules separately you can write them in groups as shown below.

CSS:

```
#div-container, .paragraph-class, h1{
    color: white;
    background-color: purple;
    font-family: monospace;
}
```

Output:

Sample Heading

This is Content inside first paragraph

This is a div with id div-container

This is a paragraph with class paragraph-class

CSS Group Selector Example Output

Attribute Selector

The [attribute selector](#) [attribute] is used to select the elements with a specified attribute or attribute value.

Note: The following code is used in the above Example using the attribute selector. This CSS rule will be applied to each and every HTML element on the page:

CSS:

```
[href] {
    background-color: lightgreen;
    color: black;
    font-family: monospace;
    font-size: 1rem;
}
```

Output:

Sample Heading

This is Content inside first paragraph

This is a div with id div-container

This is a paragraph with class paragraph-class

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CSS Attribute Selectors Example Output

Pseudo-Class Selector

It is used to style a special type of state of any element. For example- It is used to style an element when a mouse cursor hovers over it.

Note: We use a single colon(:) in the case of a [Pseudo-Class Selector](#).

Syntax:

```
Selector:Pseudo-Class {  
    Property: Value;  
}
```

CSS:

```
h1:hover{  
    background-color: aqua;  
}
```

Output:

Sample Heading

This is Content inside first paragraph

This is a div with id div-container

This is a paragraph with class paragraph-class

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CSS Pseudo Selector Example Output

Pseudo-Element Selector

It is used to style any specific part of the element. For Example- It is used to style the first letter or the first line of any element.

Note: We use a double colon(::) in the case of a [Pseudo-Element Selector](#).

Syntax:

```
Selector:Pseudo-Element{  
    Property:Value;  
}
```

CSS:

```
p::first-line{  
    background-color: goldenrod;  
}
```

Output:

Sample Heading

This is Content inside first paragraph

This is a div with id div-container

This is a paragraph with class paragraph-class

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