DHTML

DHTML

- DHTML stands for **D**ynamic **HTML**.
- DHTML is NOT a language but it is a web standard.
- DHTML is a TERM used to describe the technologies used to make web pages dynamic and interactive.
- According to the World Wide Web Consortium (W3C): *"Dynamic HTML is a term used by some vendors to describe the combination of HTML, style sheets and scripts that allows documents to be animated.“*
- The dynamic web pages separate the content from the logic (interactive functions , look and feel etc.) .
- The web-page has the ability to modify itself on some functions when activated by the users.
- Change can be either content or the layout on the fly .

Features of DHTML

- DHTML makes documents dynamic. It allows the designer to control how the HTML displays web page's contents.
- Web page reacts and change with actions of the visitor.
- DHTML helps to exactly position any element in the window and change that position after the document has loaded.
- It can hide and show content as needed.
- DHTML allows any HTML element(any object on the screen that can be controlled independently using JavaScript) in IE(Chrome etc.) to be manipulated at any time, turning plain HTML into dynamic HTML.
- With DHTML, changes occur entirely on the client-side (on the user's browser).

CSS

- **CSS** stands for **C**ascading **S**tyle **S**heet.
- Cascading Style Sheets (CSS) is a style sheet language used to describe the presentation semantics (that is, the look and formatting) of a document written in a markup language.
- A Cascading Style Sheet is a file with a list of formatting instructions.
- Adding Styles (i.e. fonts, colors, spacing etc.) to web documents.
- CSS style sheets are the modern way to control the appearance and layout of our web pages.
- CSS saves a lot of work. It can control the layout of multiple web pages all at once by saving Styles in external .css files.

CSS Syntax

- The **Style** assignment process is accomplished with the **<style>...</style>** tags are used within the **<head>....</head>** tags.

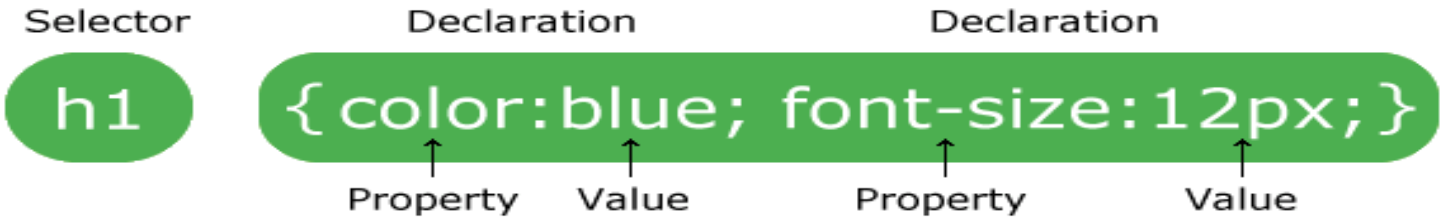
  Syntax:

  <style type="text/css">

  Selector {property:value; property:value…}

  </style>

- A CSS rule-set consists of a **selector** and a **declaration** block:



- The **selector** points to the HTML element 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.
- A CSS declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces.

CSS Selectors

- CSS selectors are used to "find" or “select” HTML elements based on their element name, id, class, attribute, and more.
- Different types of selectors are:
  - **Element Selector**
  - **Universal Selector**
  - **Descendant Selector**
  - **ID Selector**
  - **Class Selector**
  - **Child Selector**
  - **Attribute Selector**

The element Selector

- The element selector selects elements based on the element name.
- *Example:-*

```
<!DOCTYPE html>
<html>
<head>
<style>  p {   color: red;
                text-align: center; }
</style>
</head>
<body>
      <p>Hello World!</p>
       <p>These paragraphs are styled with CSS.</p>
</body>
</html>
```

The Universal Selectors

- Rather than selecting elements of a specific type, the universal selector quite simply matches the name of any element type.

- ***Example:-***

```
<head>
<style>
        * {
           color: #000000;
           }
</style>
</head>
```

- This rule renders the content of every element in our document in black.

The Descendant Selectors

- Suppose we want to apply a style rule to a particular element only when it lies inside a particular element.

- ***Example:-***

```
<head>
<style>
        p b {    color: blue;
            }
</style>
</head>
```

- This style rule will apply to <b> element only when it lies inside the <p> tag.

The id Selector

- The id selector selects the id attribute of an HTML element to select a specific element.
- An id is always unique within the page so it is chosen to select a single, unique element.
- The id name can't start with number.
- It is written with the hash character (#), followed by the id of the element.
- The style rule below will be applied to the HTML element with id="para1".
- ***Example:-***

```
<html>
<head> <style> #para1 {  text-align: center;  color: blue;  }
        </style>
</head>
<body>
        <p id="para1">Hello Javatpoint.com</p>
        <p>This paragraph will not be affected.</p>
</body>
</html>
```

The class Selector

- The class selector selects elements with a specific class attribute.
- To select elements with a specific class, write a period (.) character, followed by the name of the class.
- In the example below, all HTML elements with class="center" will be red and center-aligned:
- ***Example:-***

```
<html>
<head>
<style> .center {  text-align: center;
                   color: red;  } </style>
</head>
<body>
      <h1 class = "center">Red and center-aligned heading</h1>
      <p class = "center">Red and center-aligned paragraph.</p>
</body>
</html>
```

- You can also specify that only specific HTML elements should be affected by a class.
- In the example below, only elements with class="center" will be center-aligned:
- p.center
- {
- text-align: center;
- color: red;
- }
- HTML elements can also refer to more than one class.
- In the example below, the element will be styled according to class="center" and to class="large":
- p.center {
- text-align: center;
- color: red;
- }
- p.large {
- font-size: 300%;
- }
- This paragraph refers to two classes.

Difference between CLASS & ID Attribute

- Many Elements can have the same “Class” but they cannot have the same “ID”.
- An “ID” is a unique identifier, used for targeting certain elements or tagging parent elements.
- “Class” is used when we want to consistently style multiple elements throughout the page/site. Classes are useful when we have more than one element that shares the same style.
- A good way to remember this is a class is a type of item and the id is the unique name of an item on the page.
- **ID's are unique**
  - Each element can have only one ID
  - Each page can have only one element with that ID
- **Classes are not unique**
  - We can use the same class on multiple elements.
  - We can use multiple classes on the same element.

The Child Selectors

- Similar to descendants but have different functionality.
- ***Example:-***

```
<html>
<head> <style>
        body > p{ color : #ff0000; }
</style> </head>
<body>
        <p> Text color is Red here</p>
        <div> <p> Text color is Black here </p></div>
</body>
</html>
```

- This rule will render all the paragraphs in RED if they are a direct child of the <body> element. Other paragraphs put inside other elements like or <td> would not have any effect of this rule.

The Attribute Selector

- We can also apply styles to HTML elements with particular attributes.
- The style rule below will match all the input elements having a type attribute with a value of text.

- ***Example:-***

```
<style>
    input [ type = "text " ]  {    color: #000000;
                                }
</style>
```

- The advantage to this method is that the < input type = "submit" > element is unaffected, and the color applied only to the desired text fields.

Multiple Style Rules

- We may need to define multiple style rules for a single element. We can define these rules to combine multiple properties and corresponding values into a single block.
- ***Example:-***

```
<style> h1 {
            color: red;
            font-weight: normal;
            text-align: center;
            text-transform: lowercase; }
</style>
```

- Here all the property and value pairs are separated by a semicolon (;). We can keep them in a single line or multiple lines. For better readability, we keep them in separate lines.

Grouping Selectors

- We can apply a style to many selectors if we have elements with the same style definitions.

- ***Example:-***

```
<head>
<style> h1, h2, p {
                    text-align: center;
                    color: red; }
</style>
</head>
```

- It will be better to group the selectors, to minimize the code.
- To group selectors, separate each selector with a comma.

CSS Comments

- Comments are used to explain the code, and may help when we edit the source code at a later date.
- Comments are ignored by browsers.
- A CSS comment starts with /* and ends with */. Comments can also span multiple lines:

- ***Example:-***

```
<style>
        p {
            color: red;
            /* This is a single-line comment */
            text-align: center;
          }
    /* This is
    a multi-line
    comment */
</style>
```

How to add CSS?

- There are three ways of inserting a style sheet:-

- **Inline CSS**
- **Internal CSS**
- **External CSS**

Inline Styles

- An inline style may be used to apply a unique style for a single element.
- To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.
- The example below shows how to change the color and the left margin of a <h1> element:
- ***Example:-***

```
<!DOCTYPE html>
<html>
<body>
   <h1 style = "color : blue;  margin-left : 30px; ">  This is a heading </h1>
   <p> This is a paragraph. </p>
</body>
</html>
```

Internal Style Sheet

- An internal style sheet may be used if one single page has a unique style.
- Internal styles are defined within the <style> element, inside the <head> section of an HTML page.
- ***Example:-***

```
<html>
<head>
<style> body{
            background-color : linen ; }
      h1 {   color : maroon ;
            margin-left : 40px ; }  </style>
</head>
<body>
     <h1>This is a heading</h1>
     <p>This is a paragraph.</p>
</body>
</html>
```

External CSS

- With an external style sheet, we can change the look of an entire website by changing just one file!
- Each page must include a reference to the external style sheet file inside the <link> element. The <link> element goes inside the <head> section.
- ***Example:-***

```
<head>
    < link rel = "stylesheet " type = "text/css "  href = "mystyle.css " >
</head>
```

- An external style sheet can be written in any text editor.
- The file should not contain any html tags.
- The style sheet file must be saved with a .css extension.

External CSS

- ***Example :-***

```
<!DOCTYPE html>
<html>
<head>
    <link rel = "stylesheet "  type = "text/css "  href = "mystyle.css " >
</head>
<body>
    <h1>This is a heading</h1>
    <p>This is a paragraph.</p>
</body>
</html>
```

- ***Here is how the "mystyle.css" looks:-***

```
body {background-color : lightblue ; }

h1 {color: navy;
    margin-left: 20px;  }
```

Multiple Style Sheets

- If some properties have been defined for the same selector (element) in different style sheets, the value from the last read style sheet will be used.
- ***Example:-***

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
<style> h1 {
                color: orange; }
</style>
</head>
<body>
        <h1>This is a heading</h1>
         <p>The style of this document is a combination of an  external
          stylesheet, and internal style. The  text color of  h1 is Orange.</p>
</body>
</html>
```

CSS Rules Overriding

- We have discussed four ways to include style sheet rules in an HTML document.
- Here is the rule to override any Style Sheet Rule.

  - Any **Inline Style Sheet** takes the highest priority. So, it will override any rule defined in <style>...</style> tags or the rules defined in any external style sheet file.

  - Any rule defined as **Internal Style Sheet** in <style>...</style> tags will override the rules defined in any external style sheet file.

  - Any rule defined in the **External Style Sheet** file takes the lowest priority, and the rules defined in this file will be applied only when the above two rules are not applicable.