Session 3

Introduction to CSS3

Session Overview

In this session, you will be able to:

- List the CSS modules
- Explain CSS syntax
- Explain various CSS length measurement units
- Explain and apply different types of style sheets and selectors
- Apply styles to hyperlinks

Introduction

CSS is a style sheet language that handles how the document has to be presented in the browser.

- It uses a markup language for describing the presentation semantics of a document.

- In other words, an HTML document defines the content of the file, whereas the CSS file defines how these HTML elements are to be displayed.

Cascading Style Sheet

Some of the important aspects of CSS are as follows:

- It is a mechanism used for adding styles such as fonts, colors, and spacing to Web documents.

- It has multiple levels and profiles. Each level of CSS is updated from its earlier version by adding new features. CSS versions are denoted as CSS1, CSS2, CSS3, and CSS4, where the numbers differ with each version or level.

- CSS3 is divided into multiple documents called 'modules'. Each module has new capabilities, or it extends the features present in CSS2.

CSS3 Logo

Modules

CSS3 is available as modules and have different stability and status. Out of the fifty modules published by the CSS working group, only three modules are released. They are as follows:

- CSS Color Level 3
- CSS Namespaces
- Selectors Level 3

The following modules are stable and in the recommendation stage:

- Media Queries
- CSS style Attributes

Modules

The following modules are in the testing phase and in the recommendation stage:

- CSS Backgrounds and Borders Level 3
- CSS Image Values and Replaced Content Level 3
- CSS Marquee
- CSS Multi-column Layout
- CSS Speech
- CSS Mobile Profile 2.0
- CSS TV Profile 1.0

Modules

The following modules are in refining phase and in the working draft stage:

- CSS Transforms
- CSS Transitions
- CSS Values and Units Level 3
- CSS Print Profile

Modules

The following modules are in revising phase and in the working draft and recommendation stage:

- CSS Animations
- CSS Flexible Box Layout
- CSS Fonts Level 3
- CSS Paged Media Level 3
- CSS Text Level 3
- CSS Basic User Interface Level 3
- CSS Writing Modes Level 3
- CSSOM View

Modules

The following modules are in the exploring phase and in the working draft stage:

- CSS Cascading and Inheritance Level 3
- CSS Conditional Rules Level 3
- CSS Grid Layout
- CSS Grid Template Layout
- CSS Line Grid
- CSS Lists Level 3
- CSS Tables Level 3
- Selectors Level 4
- CSS Object Model

Modules

The following modules are in rewriting phase and in the working draft stage:

- CSS Line Layout Level 3
- CSS Ruby
- CSS Syntax Level 3

The following modules are in abandoned phase and in the working draft stage:

- Behavioral Extensions to CSS
- CSS Hyperlink Presentation

CSS Syntax

A general syntax of CSS consists of three parts, namely:

- Selector – It is the HTML element for which the style or the formatting instruction is specified.

- Property - A property of a selected element specifies the type of the style that has to be applied to the selector.

- Value - A value refers to the value of the CSS property. A CSS property can have multiple values. For example, the values of the color property can include red, green, yellow, and so on.

Declaration Block

Selector {Property: Value}

CSS Syntax

Length Measurement Units

CSS uses various units of measurements for specifying the size of the font, width and height of margins. They are as follows:

- Relative length: It specifies the length units related to another length property that are calculated in comparison to the current value. Style sheets using relative units can be easily scaled from one output device to another, ensuring maximum compatibility.

- Absolute length: Absolute lengths are specified when the Web page designer is aware of the physical properties of the output device. These are specific and fixed values.

Length Measurement Units

Example of Relative Length Units

Example of Absolute Length Units

The various types of style sheets are as follows:

- Internal/Embedded Styles: They are useful when styles are to be applied to a specific Web page. They are placed inside the <head> section of a particular Web page's source code. They can be re-used in the same Web page in which they are placed.

```
<head>
    <meta charset="utf-8">
    <title>Sample HTML5 Structure</title>
    <style>
    h1,h2{
    margin:0px;
    font-size:1.5em;
    }
    footer{
    background-color:#999;
    text-align:center;
    }
    </style>
</head>
```

Internal Style Sheet

Types of Style Sheets

- Inline Styles: Inline style sheets are placed directly inside an HTML element. A Web designer cannot use the style builder to create an inline style.

Types of Style Sheets

- External Style Sheets: An external style sheet is defined in a separate file and is saved with the .css extension. It provides the benefit of reusability by implementing common style rules for multiple HTML pages.

```
BODY
{
        background-color: gray;
        font-family: arial;
        font-style: italic;

}
```

External CSS Code

Selectors

A Selectors define that part of the HTML document that has to be styled. The different types of CSS selectors are as follows:
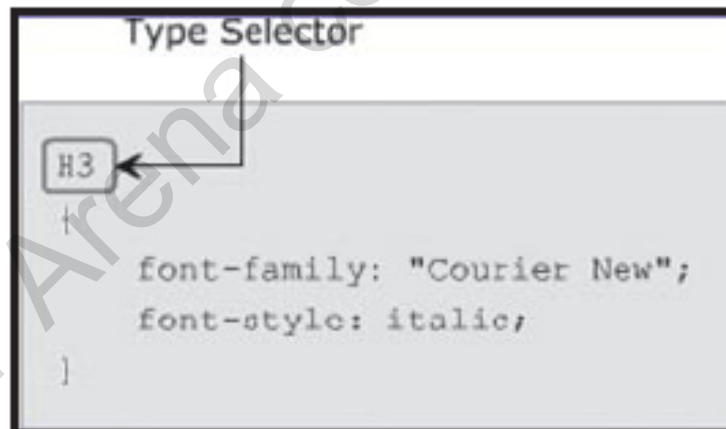
- Type selector
- Class selector
- ID selector
- Universal selector

Type Selector

- A type selector simply specifies the element's name along with the styles to be applied to that element.
- This results in applying the specified styles to all the occurrences of that element in a Web page.
- The styles are specified only once for an HTML element and are applied to all the occurrences of that element.

```
Type Selector

H3 ◄
{

    font-family: "Courier New";
    font-style: italic;

}
```

Type Selector

Class Selector

- A class selector matches elements whose class attribute is set in an HTML page and applies styles to the content of all those elements.

- For example, if there are span and div elements in a Web page with their class attributes set, the style specified for the class selector will be applied to both the elements.

- A class selector starts with a full stop followed by the value of the class attribute.

Class Selector

ID Selector

- An ID selector matches an element whose id attribute is set in an HTML page and applies styles to the content of that element.
- The ID selector specifies styles for an element whose id attribute is set to a unique value.
- An ID selector starts with the hash symbol (#) followed by the id attribute's value and the declaration block.

Hash + Value of the id Attribute

#E001
{
    font-size: 2em;
}

Applies the Font Size to the Contents of an Element if its id Attribute's Value equals to E001

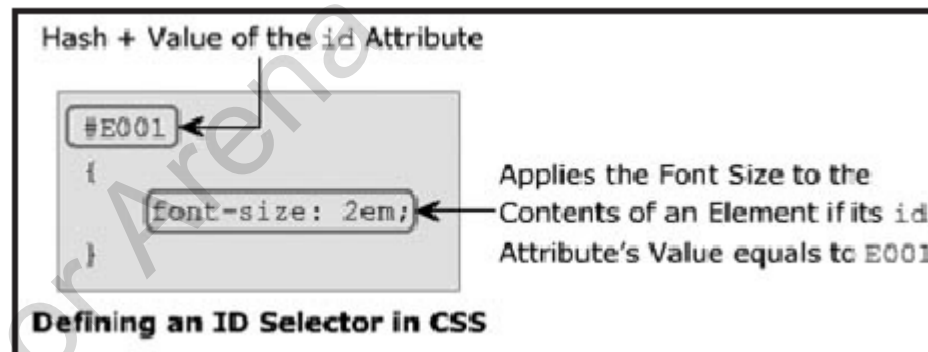**Defining an ID Selector in CSS**

ID Selector

Universal Selector

- The universal selector can be applied to all the elements in the document.
- This means that it applies the specified styles to the content of all the elements.
- It is represented by an asterisk (*) sign.
- For example, universal selector is used to define the font family for all the elements as shown in Code snippet 3.

Code snippet 3:

```
* {

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

}
```

Styles to Hyperlink

There are two other ways to assign hyperlink styles. They are as follows:

- Div specific: Hyperlink styles can be created and assigned to a specific div. This will have all the hyperlinks present within the div to follow the specified rules. It is irrelevant if the div is an (#) id or (.) class.

- Link specific: Specific styling can be assigned to a specific type of hyperlink. This is achieved by creating style rules in the CSS. For this type of hyperlink styling, usually a class is used.

Summary

- CSS3 is available as modules and all these modules have different stability and status. Out of the fifty modules published by the CSS working group, only three modules are released as recommendations. They are as follows:
  - CSS Color Level 3
  - CSS Namespaces
  - Selectors Level 3

- A general syntax of CSS consists of three parts, namely, selector, property, and value. Selector refers to the HTML element, property refers to the type of the style, and value refers to the value of the CSS property.

- CSS uses various units of measurements. It supports two types of length measurement units, namely, relative and absolute.

Summary

- There are three types of style sheets, namely, internal or embedded, inline, and external style sheets.

  - Internal style sheets are useful when styles are to be applied to a specific Web page.

  - Inline style sheets are placed directly inside an HTML element.

  - An External style sheet is defined in a separate file and is saved with the .css extension.

Summary

- Selectors define that part of the HTML document that has to be styled. The different types of CSS selectors are as follows:

  - Type selector: It simply specifies the element's name along with the styles to be applied to that element.

  - Class selector: It matches elements whose class attribute is set in an HTML page.

  - ID selector: It matches an element whose id attribute is set in an HTML page and applies styles to the content of that element.

  - Universal selector: It can be applied to all the elements in a document.

- CSS can be used to change the appearance and behavior of hyperlinks using selectors/pseudo classes.