Cascading Style Sheets(CSS)

Treemiti Informatics

What is CSS?

- CSS stands for Cascading Style Sheets
- CSS introduced in 1996 by the W3C
- CSS Styles define how to display HTML elements in browser
- CSS Styles were added to **HTML 4.0** to solve presentation issues

Advantages of using CSS

- Same style rules on multiple elements
- Control presentation of multiple pages with single stylesheet
- Can style dynamic states of elements (hover, focus, etc.)
- Changing position of elements
- Transform elements (scale, rotate, etc.)
- Animation and transition effects
- Pages load faster
- Easy maintenance
- Save lots of time

Implementation of CSS

Three ways to include CSS in HTML

1. **Inline Styles**
   - Using style attribute in HTML elements start tag
   - Use Property and value pairs separated by ;
   - **Example :** <p style="color:#ff0000; font-size:16px ">Text Content</p>

2. **Embedded / Internal Styles**
   - Only effect in same document
   - Defined in **<style>** element of documents **<head>** section
   - Defined using CSS rules / selectors
   - **Example :** <style>
                 body { background-color:#ff9900; }
                 p {color:#ff9900; }
   </style>

Implementation of CSS

3. **External Style Sheets**

- Can be applied to many pages
- Multiple style rules / selectors in separate document
- Two ways to attach **Linking, Importing**
- **Example :** External style sheet file using **<link>** tag in <head>
  - <head>
    <link href="styles.css" rel="stylesheet">
    </head>
- **Example :** Using **@import** rule inside <style> tag inside<head> tag
  - <head>
    <style>
    @import("styles.css")
    <style>
    </head>

CSS Syntax

A CSS rule has two main parts : **a selector**, and **one or more style declarations**
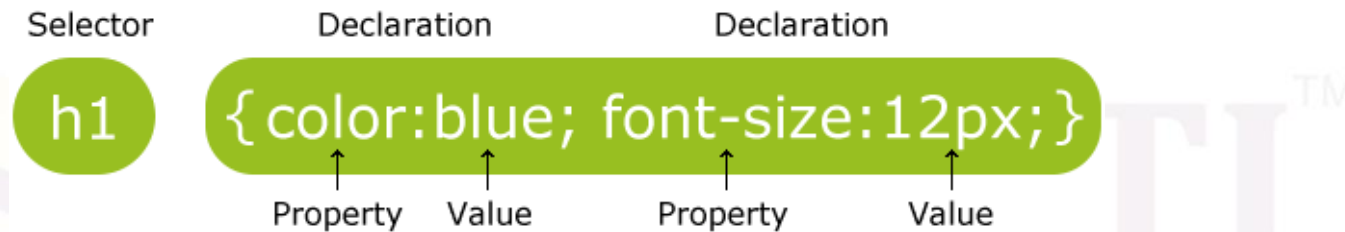
- The selector is normally the HTML element you want to style.
- Each declaration consists of a property and a value.
- The property is the style attribute you want to change. Each property has a value.
- Use /* -comment - */ to write comments in css file
  - **Example :** P { text-align:center; /*This is another comment*/ color:black; font-family:arial; }

CSS Rules / Selectors

- **CSS Rules / Selectors** are used to select specific element in HTML document.
- As CSS is continuously evolving its rules are also increasing rapidly.
- The CSS 3.0 has following main set of selectors
  - Universal
  - Type
  - Grouping
  - Class
  - ID
  - Descendants
  - Child
  - Adjacent Siblings
  - General Siblings
  - Attributes

CSS Rules / Selectors : Main

Type	Description	Example
Universal	Any element	* { font: 10px Arial; }
Type	Any element of that type	h1 { text-decoration:underline; }
Grouping	Multiple elements of different types	h1, h2, h3 { font-family:Verdana; }
Class	Multiple elements of different types when you don't want to affect all instances of that type	.sampleClass { text-decoration:underline; }
Id	A single element type when you don't want to affect all instances of that type	#sampleID {text-decoration: underline; }
Descendant	An element that is below (in the document tree) another element - no matter how many levels below	#gallery h1 { text-decoration: underline; }
Child	An element that is directly below (in the document tree) another element	#title > p { font-weight:bold; }
Adjacent Sibling	All elements that share the same parent and elements are in the same immediate sequence	h1 + p { font-style: italic; }
General Sibling	All elements that share the same parent and elements are in the same sequence (not necessarily immediate)	h1 ~ p { font-style: italic; }

CSS Rules / Selectors : Main

Type	Description	Example
Attribute	An element that matches the attribute listed	E[selected] - att whatever the value
		E[att = "val"] - att with a specific value
		E[rel ~= "next"] - att with a value is a whitespace separated list
		E[att |= "val"] - att value either being exactly "val" or beginning with "val" immediately followed by "-"
		E[att ^= "val"] – att value that begins with the prefix "val"
		E[att $= "val"] – att value that ends with the suffix "val"
		E[rel *= "val"] - att with a "val" available anywhere in a value word

CSS Rules / Selectors : Psuedo

TYPE	Description	TYPE	Description
:active	an activated element	**:nth-child(n)**	an element that is the n-th sibling
:focus	an element while the element has focus	**:nth-last-child(n)**	an element that is the n-th sibling counting from the last sibling
:hover	an element when you mouse over it	**:first-child**	an element that is the first sibling
:link	an unvisited link	**:last-child**	an element that is the last sibling
:disabled	an element while the element is disabled	**:only-child**	an element that is the only child
:enabled	an element while the element is enabled	**:nth-of-type(n)**	an element that is the n-th sibling of its type
:checked	an element that is checked	**:nth-last-of-type(n)**	an element that is the n-th sibling of its type counting from the last sibling
:selection	an element that is currently selected or highlighted by the user	**:last-of-type**	an element that is the last sibling of its type
:empty	an element that has no children	**:first-of-type**	an element that is the first sibling of its type
:root	root element within the document	**:only-of-type**	an element that is the only child of its type

CSS Rules / Selectors : Psuedo

TYPE	Description	TYPE	Description
:not(x)	an element not represented by the argument 'x'	**::first-letter**	Adds special style to the first letter of a text
:target	a target element as specified by a target in a UR	**::first-line**	Adds special style to the first line of a text
:lang	allows the author to specify a language to use in a specified element	**::before**	Inserts some content before the content of an element
		::after	Inserts some content after the content of an element

Measurements

Absolute Measurements		Relative Measurements	
%	percentage	**ch**	width of the "0" glyph found in the font for the font size used to render
cm	centimeter	**em**	1em = current font size of current element
in	inch	**ex**	x-height of the element's font
mm	millimetre	**gd**	the grid defined by 'layout-grid'
pc	pica (1p = 12 points)	**rem**	the font size of the root element
pt	point (1pt = 1/72 inch)	**vh**	the viewport's height
px	pixel (1px = 1/96 inch)	**vw**	the viewport's width
		vm	viewport's height or width, whichever is smaller of the two

Units / Values

Units		Color Values	
Angle Units			
deg	degrees	**color name**	red, blue, green, dark green
grad	grads	**rgb(x,y,z)**	red = rgb(255,0,0)
rad	radians	**rgb(x%,y%,z%)**	red = rgb(100%,0,0)
turn	turns	**rgba(x,y,z,alpha)**	red = rgba(255,0,0,0)
Time Units		**#rrggbb**	red = #ff0000 (or shorthand - #f00)
ms	mili-seconds	**hsl(hue, saturation, lightness)**	red = hsl (0, 100%, 50%)
s	seconds	**flavor**	An accent color (typically chosen by the user) to customize the user interface of the user agent itself.
Sound Units		**currentColor**	computer value of the 'currentColor' keyword is the computed value of the 'color' property
Hz	hertz		
kHz	kilo-hertz		

CSS Style Groups

CSS styles are mainly grouped into following categories

- Font
- Text
- Column
- Table
- List & Markers
- Colors
- Box Model
- Backgrounds
- Border
- Outline

- Animations
- Transitions
- Positioning
- 3D / 2D Transform
- UI
- Speech
- Generated Content
- Line Box
- Hyperlink
- Paged Media
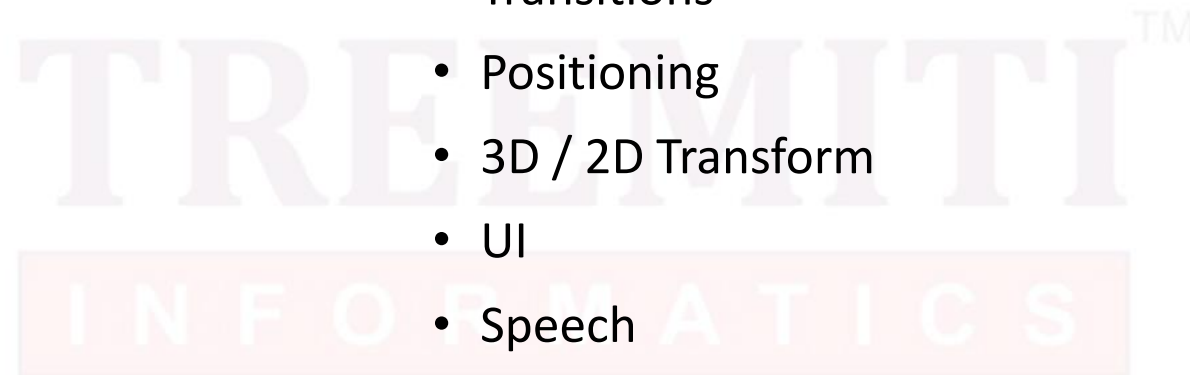
CSS Functions

CSS Variables and @rules

CSS Media Queries

Thank you

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