**CSS (Cascading Style Sheet)**

**Introduction:-** CSS describes how HTML elements are to be displayed on screen.CSS saves a lot of work. It can control the layout of multiple web pages at a time.

When different tags like <font> were introduced it became very hard for web developers to develop large web sites where font and color information were added to every single page. It became long and expensive process. To solve this problem W3C (World Wide Web Consortium) introduced CSS.

**CSS syntax:-**

Selector{property:value;property:value}

Selector indicates html element for which style is to be given. Declaration part includes css property and its value.

e.g. h1{color:red;font-size:16px}

This example displays heading given using <h1> in red color with 16px font size.

**Selectors:-**

**Element selector:-** e.g. p{color:blue}

Here all <p> elements will be displayed in blue color.

**Id selector:-** id selector is created as following:

#abc{align:center;color:red}

This id is used in html element as following

<p id=abc> This is example of id selector </p>

**Class selector:-** Class selector is created as following:

**.**abc{color:blue;text-align:center}

This class is used in html element as

<h1 class=abc> Example of Class selector </h1>

OR you can use class selector with directly html element as:

p.abc{color:red;text-align:center}

You can use more than one css for a html element as:

<p class=abc pqr>Paragraph</p>

**Universal selector:-** Universal selector selects all html elements on web page.

**e.**g. \*{text-align:center;color:red}

**Grouping Selector:-** If you want to give a particular style to more than one elements then grouping selector is used.

**e.g.** h1,p{text-align:center;color:red}

**Adding CSS in html pages:**-

CSS is added in html using following 3 methods:

1. Internal CSS
2. Inline CSS
3. External CSS
4. **Internal CSS:-** Internal CSS is included in head section using <style>.

e.g. <!DOCTYPE html>

<html>

<head>

<style>

p{background-color:cyan;color:red}

</style>

</head>

<body>

<p> This is a paragraph </p>

</body>

</html>

1. **Inline CSS:-** Inline CSS will give style to a single element using style attribute.

e.g. <!DOCTYPE html>

<html>

<head>

<title> Inline CSS</title>

</head>

<body>

<p style=” background-color:cyan;color:red “> This is a paragraph </p>

</body>

</html>

1. **External CSS:-** In this type a separate css file is created and that file is included in html using <link> inside head section.

**e.**g. <!DOCTYPE html>

<html>

<head>

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

</head>

<body>

<h1> External CSS </h1>

<p> This is an example of external CSS </p>

</body>

</html>

Style.css

h1{

text-align:center;

color:red

}

p{

color:green;

background-color:pink

}

**CSS comments:-** Comments in css are written as:

/\* comment \*/

**Color:-** You can use different colors to style text, background, border etc. You can use predefined color names or their RGB, HEX or HSL values. Some of the predefined color names are Tomato, orange, DodgerBlue, MediumSeaGreen, Gray, SlateBlue, Violet and LightGray.

Color can be specified using **RGB** values as rgb(red, green, blue).

Red, Green and Blue color values are given from 0 to 255.

e.g. rgb(255,0,0) – it will display red color.

RGBA can also be used to specify color. A means alpha specifies transparency of color by giving values from 0.0 to 1.0. 0.0 specifies fully transparent and 1.0 not transparent at all.

Color can be specified by using **hexadecimal** values in the form #rrggbb. rr, gg and bb are values from 00 to ff like 0 to 255. #000000 displays black color and #ffffff displays white color .

**HSL(hue, saturation, lightness)** is also used to specify color. Hue is a degree on the color wheel from 0 to 360. 0 is red, 120 is green, and 240 is blue. Saturation is a percentage value, 0% means a shade of gray, and 100% is the full color.

Lightness is also a percentage, 0% is black, 50% is neither light or dark, 100% is white.

**Background:-** Following background properties are used to provide background for an element.

* background-color: - specifies background color.
* background-image: - sets image as background.
* background-repeat:- background-image property repeats background image horizontally and vertically. Some images looks nice and looks strange. So by using background-repeat property we can decide whether to repeat background or not. It has values repeat-x, repeat-y and no-repeat. X value repeats image horizontally, y value repeats image vertically and no-repeat value will not repeat image.
* background-position:- it specifies the position of background image. E.g.background-position: right top;
* background-attachment:- it specifies whether background image should scroll or fixed. E.g. background-attachment:scroll;
* background-shorthand: instead of writing all background properties separately we can specify all background properties in single property. It is called as background shorthand property. E.g. body {  
    background-color: #ffffff;  
    background-image: url("img.jpg");  
    background-repeat: no-repeat;  
    background-position: right top;  
  }

**Borders:-** To specifystyle, width and color to border this property is used.

border-style property specifies type of border to be displayed. Following are the values of border-style property-

* dotted – Displays dotted border
* dashed – Displays dashed border
* solid - Displays solid border
* double - Displays double border
* groove - Displays 3D grooved border.
* ridge - Displays 3D ridged border.
* inset - Displays 3D inset border.
* outset - Displays 3D outset border.
* none - Does not display any border
* hidden - Displays hidden border

**Border-width:-** It specifies border-width for 4 sides (left, right, top and bottom). There are some predefined values such as thin, medium and thick or width can be specified using sizes in px, pt, cm and em.

e.g. p.abc {  
  border-style: solid;  
  border-width: 5px 20px; /\* 5px top and bottom, 20px on the sides \*/  
}  
p.pqr {  
  border-style: solid;  
  border-width: 25px 10px 4px 35px;

/\* 25px top, 10px right, 4px bottom and 35px left \*/  
}

**Border-color:-** specifies border color

**Border-sides:-** specifies style for border sides.

e.g. p {  
  border-top-style: dotted;  
  border-right-style: solid;  
  border-bottom-style: dotted;  
  border-left-style: solid;  
}

**Border-shorthand:-** we can write all border properties in single property.

**Rounded borders:-** To get the rounded border we have to specify border-radius.

e.g. p {  
  border: 2px solid red;  
  border-radius: 5px;  
}

**Margins:-** There are some properties in css which are used to set margins for html elements from left, right, top and bottom.

e.g. p {  
  margin-top: 100px;  
  margin-bottom: 100px;  
  margin-right: 150px;  
  margin-left: 80px;  
}

**Padding:-** properties in css allows you to generate space around element’s contents and it’s border. Space is set same like margins.

**Height, width and max-width:-** height and width properties sets height and width of an element and max-width property sets maximum width of an element. Height and width properties have following values:

* auto - This is default. The browser calculates the height and width
* length - Defines the height/width in px, cm etc.
* % - Defines the height/width in percent of the containing block
* initial - Sets the height/width to its default value
* inherit - The height/width will be inherited from its parent value

**Box model:-** It displays a box around an element which has actual contents, padding, border and margin.

e.g. div {  
  width: 320px;  
  padding: 10px;  
  border: 5px solid gray;  
  margin: 0;  
}

**Outline:-** It is a line drawn outside the border of an element. It has following properties:

* outline-style:- specifies style for the outline. It has following values:
* dotted - Defines a dotted outline
* dashed - Defines a dashed outline
* solid - Defines a solid outline
* double - Defines a double outline
* groove - Defines a 3D grooved outline
* ridge - Defines a 3D ridged outline
* inset - Defines a 3D inset outline
* outset - Defines a 3D outset outline
* none - Defines no outline
* hidden - Defines a hidden outline
* outline-color:- specifies outline color using all types of color values.
* outline-width:- specifies width of outline using values thin, thick, medium or by giving size in px,pt,cm or em.
* outline-offset:- adds space between outline and border of element.