CSS

07/01/23

* What is CSS ?

- CSS stands for Cascading Style Sheet.
- CSS describes how Html element are to be displayed on screen.
- It can control layout of multiple pages all at once
- External style sheets are stored in css files.

* Why Use CSS ?

It is used to define styles of your web pages, including the design, layout and variations in display for different devices and screen size.

* CSS Syntax

A CSS rule consists of a selector and a declaration block. Ex=>

```
h1 {
    color : blue;
}
```

* Selectors in CSS

A CSS selectors select the HTML elements based on the element name.

1) Simple Selector
   - a- Element selector
   - b- Class Selector
   - c- ID Selector
2) Psuedo-class Selector
3) Multiple Selector.

(a) Element Selector

CSS element selector selects HTML element based on the element name

Ex =>
```
P {
    text-align : center;
    color : red;
}
```

(b) class Selector

- The class selector selects HTML element with a specific class attribute.
- To select element with a specific class write a period (.) character, followed by the class name.

Ex =>
```
.center-class {
    color: blue;
}
```

(c) ID Selector

- The ID selector uses the id attribute of an HTML element to select a specific element.
- The id of an element is unique within a page, so the id selector is used to select one unique element.
- To select an element with a specific id, write a hash (#) character, followed by the id of the element.

Ex =>
```
#para-id-ola {
    color: red;
}
```

2- Psuedo-classes Selector

A psuedo-class is a keywoard added to a selector that specifies a special state of the selected element.

Ex ⇒ ① Style an element when a user hovers the cursor over it.
② Style visited and unvisided links differently

Syntax

```
Selector: psuedo-class {
        property : value;
}

button : hover {
        color : blue;
}
```

3- Multiple Selector / Grouping Selector

- A grouping selector selects all the HTML element with the same style definitions.
- It will be better the group the selectors, to minimize the code.
- To group selectors, seperate each selector with a (,) comma.

Ex ⇒

```
h1, h6, P {
        text-align : left;
        background-color : aqua;
}
```

* HW
  - Universal Selector
  - Nested Selector
  - Attribute Selector

* Universal Selector

The universal selector (*) selector selects all HTML element on the Page.

Ex =>
```
* {
    color : green;
}
```

* Nested Selector

Just like in HTML where you can have element nested inside other element, the same can be done in CSS.

Syntax :-
```
class1-sel  class2-sel  id-sel {
    property : value;
}
```

Ex =>
```
table tr th {
    background-color : green;
}
```

* Attribute Selector

The attribute selector is used to select element with a specified attribute.

Ex =>
```
a [target] {
    background-color : yellow;
}
```

* How to add Styling in HTML ?

ⓐ Inline CSS ⓑ Internal CSS ⓒ External CSS

* Inline CSS

- To style an HTML element, you can add the style attribute directly to the opening tag.
- To use inline styles, add the style attribute to the relevent element.
- Inline style should be avoid at all costs because it make it impossible to alter style from an external stylesheet.

Ex ⇒ `<h1 style="color: red;">HELLO</h1>`

* Internal CSS

An internal style sheet may be used if one single HTML page has a unique style.

HTML allows us to write CSS code inside the `<style>` element, inside the head section.

Ex ⇒

```
<head>
    <style>
        h6 {
            color: aqua;
        }
    </style>
</head>
```

* External CSS

When the HTML & CSS code are in seperate files, the must be linked.

- You can use the <link> element to link HTML and CSS files together. The <link> element must be placed within the head of the HTML file.

Ex ⇒ `<link rel="stylesheet" href="style.css">`

* Specificity

If there are two or more CSS rules that points to the same element, the selector with highest specificity value will "win" and its style declaration will be applied to that HTML element.

- Every CSS selector has its place in the specificity hierarchy.
  - Inline
  - ID
  - Class, pseudo-class, Attribute Selector
  - Elements and Pseudo-element.

* !important Rule

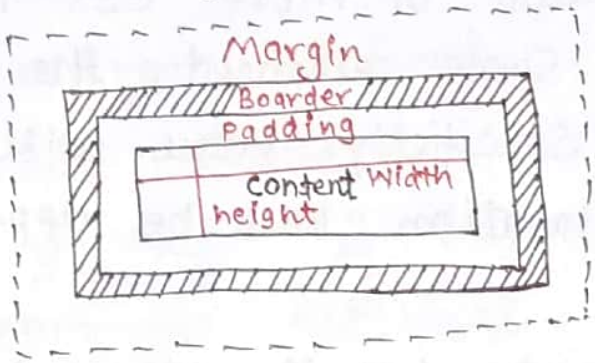
- The !important rule in CSS is used to add more importance to a property/value than normal.
- If you use the !important rule, it will override all previous styling rules.
- However, do not use it unless you absolutely have to.

Ex ⇒

```
p {
    color : red : important;
}
```

* Box Model in CSS

- The box model is the basic building block of CSS.
- According to the box model concept every element on a page is a RECTANGULAR box and may have width, height, padding, boarder and margin.



box-sizing: boarder-box;

* Colors in CSS

Colors in css can be specified by the following methods.

* Hexadecimal colors
* RGB colors
* Predefined / cross-browser color
* RGBA colors.
* HSL colors
* HSLA colors

} used

(1) Hexadecimal colors

A Hexadecimal colors is specified with #RRGGBB where RR (Red), GG (Green), BB (Blue)
All values must be b/w 00 and FF, where 00 means lowest value and FF means highest.

Black = #000000 White = #ffffff

② RGB color

`rgb(red, green, blue)`

Each parameters defines the intensity of the color and can be an integer b/w 0 and 255 or a percentage value from 0% to 100%.

Ex⇒ rgb(255, 99, 71)

③ Predefined color

140 color names are predefined in the HTML and CSS color specification. Ex⇒ red, green, black etc

④ RGBA color

`rgba(red, green, blue, alpha)`

It is extension of rgb color with alpa chanel- which specifies the opacity for a color.

Alpha value b/w 0.0 (fully transparent) and 1.0 (not transparent) at all.

⑤ HSL colors

`hsl(hue, saturation, lightness)`

- Hue is a degree on color wheel from 0 to 360.
- Saturation is the percentage value 0% means a shade of gray and 100% is full color.
- Lightness is also a % . 0% is black, 50% is neither light or dark, 100% is white.

⑥ HSLA color

`hsla(0, 100%, 50%, 1)`

Extension of HSL with alpha channel - which specifies opacity for a color. alpha b/w (0.0 to 1.0)

* Font

* Font - family
* Font - weight
* Font - Style
* Emphasis & Important
* How to add external fonts?

① Font ⇒ text characters in a specific style and size.

② Font - family ⇒ A set of fonts that have a common design.

③ Font - weight ⇒ Overall thickness of a typeface's stoke in any given font.

④ Font - Style ⇒ Is used to specify italic text

⑤ External Font ⇒

```
@font-face {
    font-family : "my-font",
    src : url ( light.woff),
}
```

* Unit in CSS

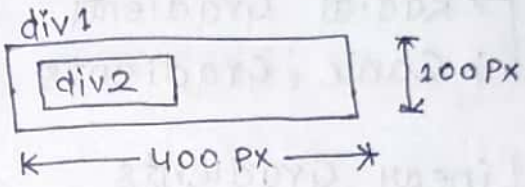
(1) Absolute Unit
(2) Percentage Unit
(3) Relative unit
  - (a) Relative of font size
  - (b) Related to document

(1) Absolute Unit

* mm
* cm
* in
* px } Fixed (1/96 inch)

(2) Percentage Unit

*
```
div {
    width : 40% ;
}
```

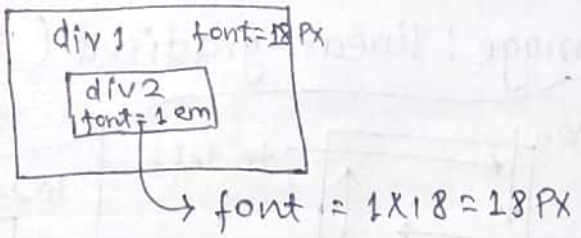


40% of parent element

$\frac{40}{100} \times 400 \Rightarrow \underline{\underline{160\ PX}}$ width

(3) (a) Relative Unit to font Size

* em ⇒ Related to parent element.
* rem ⇒ Related to Root element.



(b) Relative Unit to View Port

* Vw ⇒ $\frac{1}{100}$ x width of View port.
* Vh ⇒ $\frac{1}{100}$ x height of View Port.