CSS:-
- CSS stands for Cascading Style Sheet.
- It is a stylesheet language used for describing the presentation of document in markup language like HTML.
- CSS is a cornerstone technology for world wide web alongside HTML and Javascript.
- CSS is designed to enable separation of presentation and contents.
- All styles are stored in CSS files.
- CSS files must have extension as '.css' only

Types of CSS
- inline CSS   Highest priority
        - can be applied only to that particular tag
- internal CSS   Medium priority
        - can be applied to only that document
- external CSS   Lowest priority
        - can be applied globally
        - for external css the stylesheet should be linked
                        using link tag, rel = stylesheet href = css file path

1 pixel can support 2^24 colours ?

Colours
- Colours are specified using predefined colour names or colour values

Colour values

RGB   - Red Green Blue
RGBA   - Red Green Blue Alpha
HSL   - Hue Saturation Lightness
HSLA   - Hue Saturation Lightness Alpha
Hex   - Hexadecimal Values

Alpha - Opacity
                - 0   -> Transparent
                - 1   -> Opaque

```
<body>
    <h1 style="color: #00ff00;">Observe my colour</h1>
    <div>
        <h1 style="color: rgb(255,0,0);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,1);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.8);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.6);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.4);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.2);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0);">Observe My Color</h1>
    </div>
    <div style="background-color: black;">
        <h1 style="color: rgb(255,0,0);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,1);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.8);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.6);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.4);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.2);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0);">Observe My Color</h1>
    </div>
```

```html
    <div style="background-color: yellow;">
        <h1 style="color: rgb(255,0,0);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,1);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.8);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.6);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.4);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0.2);">Observe My Color</h1>
        <h1 style="color: rgba(255,0,0,0);">Observe My Color</h1>
    </div>
</body>
```

Text formatting
text alignment
 - 'text-align' property is used to set horizontal alignment of text
 - values are left, right, center, justify
Eg   text-align : center
        text-align : left   / start
                   : right   / end
                   : justify

direction:-
 - it is used to change direction of text
                i.e   left to right   (ltr)
                                OR
                         right to left   (rtl)
 - unicode-bidi : bidi-override used to handle bidirections of text
```html
<h1>Microsoft</h1>
    <h1 style="direction: rtl; unicode-bidi: bidi-override;">Which is my
direction</h1>
    <h1 style="direction: rtl; unicode-bidi: bidi-override;">Ambulance</h1>
```

vertical text
        - writing-mode : vertical-lr
                       : vertical-rl

Text decoration
 - 'text-decoration' is used to set or remove text decoration
        Eg   underline, overline, line-through, none
                        text-decoration : underline
                                        : overline
                                        : line-through
                                        : none

```html
    <p style="color:blue;text-decoration:underline">Guess me</p>
    <p style="color:red;text-decoration:overline">I am overlined text</p>
    <p style="color:gray; text-decoration:line-through">I am deprecated</p>
    <a href="#" style="text-decoration: none; color:black">Guess Me</a>
```

Text shadow
 - text-shadow property adds shadow effects to text
                shadow   -> xoffset yoffset blur/height color
                text-shadow : shadow;

text-shadow : shadow1, shadow2, shadow3,...

```
<h1 style="text-shadow: 0px 0px 5px red;
    font-family: 'Lucida Calligraphy';
    color: rgba(0,0,0,0);">Pranit Thakur</h1>
```

CSS fonts:-
 - font-family property selects fonts
 - fonts are arranged as priorities
 - only one font can be used
Eg   font-family : 'Century Gothic','Kunstler Script';

font-style   : normal
                        : italic
                        : oblique

font-weight : normal
            : bold
            : number(1-900)

```
<p style="font-weight: normal;">I am normal Paragraph</p>
    <h4 style="font-weight: normal;">I am normal Heading</h4>
    <p style="font-weight: bold;">I am bold paragraph</p>
    <h4 style="font-weight: bold;">I am bold heading</h4>
    <hr>
    <h4 style="font-weight: 900;">I am 900w heading</h4>
    <p style="font-weight: 900;">I am 900w paragraph</p>
    <span style="font-weight: 900;">I am 900w span</span>

    <h4 style="font-weight: 600;">I am 600w heading</h4>
    <p style="font-weight: 600;">I am 600w paragraph</p>
    <span style="font-weight: 600;">I am 600w span</span>

    <h4 style="font-weight: 500;">I am 500w heading</h4>
    <p style="font-weight: 500;">I am 500w paragraph</p>
    <span style="font-weight: 500;">I am 500w span</span>

    <h4 style="font-weight: 1;">I am 1w eading</h4>
    <p style="font-weight: 1;">I am 1w paragraph</p>
    <span style="font-weight: 1;">I am 1w span</span>
```

font-varient : normal
            : small-caps   -> small to capital (font size will be reduced)

```
<p style="font-variant:normal;">Pranit Thakur, Freelance corporate trainer</p>
    <p style="font-variant:small-caps;">Pranit Thakur, Freelance corporate
trainer</p>
```

font-size : px or em (1em = 16px)
                : 10 vw
height, width
        px / %

CSS Gradient backgrounds

i) Linear Gradient
ii)Radial Gradient
iii)Conical Gradient
Note:- minimum two color stops required.

i) Linear gradient
      background : linear-gradient(direction, color_stop1, color_stop2, color_stop3, ...)

direction	-> to right
	-> to left
	-> to bottom
	-> to top
	-> to right bottom
	-> ...
	-> angles (x 90)

```css
.bg1 {
        /*background: linear-gradient(to right,white, red);
        background: linear-gradient(to right, white, pink, red);
        background: linear-gradient(to bottom,white,pink, red,brown,
black);*/
        background: linear-gradient(to right,orange 70%, blue 80%,
yellow);
      }
```
ii)Radial Gradient
      background : radial-gradient(shape, color_stop1, color_stop2, color_stop3,....)
      shape -> circle, ellipse

```css
.bg2{
        background: radial-gradient(circle,black, white);
     }
```

Conical gradient
      background : conic-gradient([start angle]color-stop1[to angle], color-stop2,...)

```css
.bg3 {
        /*
        background: conic-gradient(white, red, white);
        background: conic-gradient(white, red 60%, yellow);
        */
        background: repeating-conic-gradient(blue 30deg, yellow 60deg);
      }
```
Nesting CSS selectors
Descendent selector
 - ' ' (space) selects all second elements inside first element
 - Eg div p -> selects all <p> elements inside <div> elements

Child selector
 - '>' selects all second elements inside first level of first(parent) element
 - div > p -> Selects all <p> elements where the parent is a <div> element

Adjacent Sibling selector

- '+' selects only one second element immedeately placed after first element at same level
- div + p -> Selects the first \<p\> element that are placed immediately after \<div\> element

General Sibling selector
- '~' selects all second elements placed after first element at same level
- div ~ p Selects every \<p\> element that are preceded by a \<div\> element

```html
<!DOCTYPE html>
<html>

<head>
    <style>
        div~p {

            background-color: red;
            color: white;

        }
    </style>
</head>

<body>
    <div>
        I am parent division 1
        <p>I am paragraph 1 from div 1
        <p>Paragraph inside division</p>
        </p>
        <p>I am paragraph 2 from div 1</p>
        <p>I am paragraph 3 from div 1</p>
    </div>
    <p>I am paragraph after div</p>
    <p>I am 2nd paragraph after div</p>
    <span>I am second div
        <p>I am another paragraph</p>
    </span>

</html>
```

CSS variables
- define variables by '--'
- access variables by var() method.

```html
<head>
    <style>
        body {
            --fcolor: green;
            --bcolor: blue;
            --font: sans-serif;
            --fsize: 150px;
        }
```

```css
        p {
            background-color: var(--bcolor);
            color: var(--fcolor);
            font-family: var(--font);
            font-size: var(--fsize);
        }

        div {
            background-color: var(--bcolor);
            color: var(--fcolor);
            font-family: var(--font);
            width: var(--fsize);
        }
    </style>
</head>

<body>
    <p>I am paragraph</p>
    <div>I am Division</div>
</body>
```

Transition:-
transition-property:any target css property
transition-duration: duration of the transition
transition-delay: delay before starting transition

```css
<style>
        .box{
            border: 2px double gray;
            height: 200px;
            width: 200px;
            background-color: orange;
            position: relative;
            top: 0px;
            left: 0px;
            transition-duration: 1s;
            transition-delay: 1s;
            transition: height 2s, width 1s left 1s;
        }
        .box:hover{
            width: 400px;
            height: 100px;
            font-size: 120%;
        }
        .item{
            list-style-type: none;
            height: 20px;
            width: 100px;
            background: linear-gradient(blue,yellow);
            color: white;
            padding: 5px;
            transition-duration: .1s;
        }
        .item:hover{
            font-size: larger;
```

```css
            padding: 10px;
            background: linear-gradient(brown, navy);
            border-radius: 5px;
            margin-left: 10px;
            color: beige;
        }
    </style>
```

```html
<body>
    <ol>
        <li class="item">CPU</li>
        <li class="item">Monitor</li>
        <li class="item">Keyboard</li>
        <li class="item">Mouse</li>
        <li class="item">Projector</li>
        <li class="item">Speakers</li>
        <li class="item">Camera</li>
        <li class="item">Printer</li>
        <li class="item">Scanner</li>
        <li class="item">Mic</li>
    </ol>
    <div class="box">
        hi
    </div>
</body>
```

Animation
animation-name : used to specify name of the animation.
@keyframes used to define animations
animation-duration used to define duration of one complete cycle.
animation-delay : delay before starting animation
animation-iteration-count: usually infinite (total cycle count)
animation-fill-mode : styles before and after animation
                              : forwards, backwords, both
animation-direction : normal / alternate

```html
<!DOCTYPE html>
<html>
    <head>
        <style>
            .btn{
                background: none;
                border: 1px solid orange;
                color: orange;
                border-radius: 2px;

                animation-name: blink;
                animation-duration: 1s;
                animation-iteration-count: infinite;
            }
            @keyframes blink{
                0%,100%{
                    background-color: orange;
                    color: blue;
                }
```

```css
            50%{
                background-color: white;
                color: red;
            }
        }
        .box{
            height: 100px;
            width: 100px;
            border: 3px inset red;
            position: relative;
            top:0px;
            left:0px;

            animation: obj 1s infinite;
        }
        @keyframes obj{
            0%{
                top:0px;
                left: 0px;
                border-radius: 0px;
            }
            50%{
                left:200px;
                top:0px;
                border-radius: 50%;
            }
        }
        .banner{
            height: 200px;
            width: 100%;
            background: radial-gradient(maroon,black);
        }
        .ttl{
            font-family: 'Gill Sans', 'Gill Sans MT', Calibri, 'Trebuchet
MS', sans-serif;
            color:white;
            position: absolute;
            top:50px;
            left:25%;
            animation: myttl 1s 1;
        }
        @keyframes myttl{
            0%{
                top:350px;
            }
            100%{
                top: 50px;
            }
        }
        </style>
    </head>
    <body>
        <!--<button class="btn">Click Me</button>
        <div class="box"></div>-->
        <div class="banner"></div>
        <h1 class="ttl">Pranit</h1>
    </body>
```

```
</html>
```

- create 5 divs inside a div
- create item class
    - apply height = 100px
    - apply margin padding 5px
    - apply linear-gradient(to left top, orange, green);
    - apply color white
- apply item class to all inner 5 divs
- create class box
    - background-color yellow
    - padding 5px
    - at last apply display : flex
- Now create different classes for each item as item-1, item-2,...
    - Note :- it is mandatory to have property flex and order in each class
    - flex property is the ratio as widths.

```html
<style>
    .item {
        height: 100px;
        background: linear-gradient(to left top, orange, green);
        color: white;
        margin: 5px;
        padding: 5px;
    }

    .box {
        background-color: yellow;
        padding: 5px;
        display: flex;
    }

    .item-1 {
        flex: 4;
    }

    .item-2 {
        flex: 4;
    }

    .item-3 {
        flex: 2;
    }

    .item-4 {
        flex: 2;
    }

    .item-5 {
        flex: 2;
    }
</style>
```

```html
<body>
    <div class="box">
        <div class="item item-1">Div 1</div>
        <div class="item item-2">Div 2</div>
        <div class="item item-3">Div 3</div>
        <div class="item item-4">Div 4</div>
        <div class="item item-5">Div 5</div>
    </div>
</body>
```

flex-direction : row / column
flex-wrap : nowrap -> default
                  : warp

to combine these two properties use
flex-flow : direction and wrap

 - Now remove all 5 item classes
 - put variable length contents in all divs

media queries
    -   Media queries are useful when you want to modify your site or application
        depending on a device's specific characteristics and parameters such as
        screen resolution or browser viewport width.
    -   It uses the '@media' rule to include a block of CSS properties only if a certain
        condition is true.
    -   A media query consists of a media type and can contain one or more
        expressions, which resolve to either true or false.

@media not|only mediatype and (expressions) {
            CSS-Code;
        }

 - Eg If the browser window is 600px or smaller, the background color will be
lightblue:
        @media only screen and (max-width: 600px) {
          body {
                background-color: lightblue;
          }
        }

Case Study (News bulletin)
 - Consider 3 devices, mobile phone, tablet, mini laptop
 - these devices are different from each other in screen
   resolutions.
 - we will define resolutions as
        mobile   <600px
        tablet 601 < 800px
        laptop >800px

```
@media only screen and (max-width: 600px)
@media all and (min-width:801px)
@media all and (min-width:601px) and (max-width : 800px)
@media all and (max-width : 600px)
{
        .ad{
                background-color: pink;
                color : green;
            }
            .nw{
                background-color: orange;
                color: blue;
                font-size: 150%;
            }

}
```

```html
<!DOCTYPE html>
<html>
    <head>
        <style>
            @media only screen and (max-width: 600px) {
                body {
                    background-color: lightblue;
                }
            }
            div{
                    margin: 5px;
                    padding: 1%;
                    box-sizing: border-box;
            }
            @media all and (min-width:801px){
                .ad{
                    background-color: red;
                    color: white;
                    width: 31%;
                    float:left
                }
                .nw{
                    background-color: purple;
                    color: yellow;
                    width: 33%;
                    float: left;
                }
            }
            @media all and (min-width:601px) and (max-width : 800px){
                .ad{
                    background-color: brown;
                    color: white;
                    width: 23%;
                    float: left;
                }
                .nw{
                    background-color: navy;
```

```
                color: yellow;
                width: 49%;
                float:left;
                font-size: 120%;
            }
        }
        @media all and (max-width : 600px){
            .ad{
                background-color: pink;
                color : green;
            }
            .nw{
                background-color: orange;
                color: blue;
                font-size: 150%;
            }
        }
    </style>
  </head>
  <body>
    <div class="ad">
        <u>My Advertise</u><br>
        Et sit invidunt sed erat invidunt tempor labore sea diam. Takimata
vero et lorem et rebum. Labore eos et kasd.
    </div>
    <div class="nw">
        <u>My News</u><br>
        Justo ut nonumy voluptua sadipscing kasd ipsum erat no, lorem
invidunt sit sed dolor diam ipsum. Amet et kasd duo et gubergren lorem
sadipscing gubergren, magna ipsum duo eirmod sanctus accusam dolores sit diam
sea. Nonumy sanctus clita elitr erat stet. Nonumy et accusam no amet sit
eirmod sanctus, dolores labore et accusam elitr duo et takimata, accusam ut et
tempor diam duo est ut aliquyam. No ea kasd sadipscing et accusam sea sit.
Dolores rebum sed et rebum aliquyam eirmod dolor, amet et lorem diam duo sea
et. Et dolores sadipscing eos diam, amet duo dolor ut lorem voluptua.
    </div>
    <div class="ad">
        <u>My Advertise</u><br>
        Et sit invidunt sed erat invidunt tempor labore sea diam. Takimata
vero et lorem et rebum. Labore eos et kasd.
    </div>
  </body>
</html>
```

Bootstrap
- Bootstrap is open source framework of CSS.
- It helps in designing responsive and device friendly web pages.(RWD - responsive web design)
- Bootstrap includes css and optional scripting (javascript) templates.
- This framework helps in faster web development.

History
- Bootstrap was developed by Mark Otto and Jacob Thoranton at Twitter in Aug 2011.

- Bootstrap 2.x was released on 31st Jan 2012, with builtin support for Glyficons.
- V2.x onwords support for RWD.
- Bootstrap 3 was released on 19th Aug 2013.
- it focused on the mobile first approach.
- Bootstrap 4 was annouced on 29th october 2014, and stable release was on 18th Jan 2018.
- Stable versions of 4 were 4.5 and 4.6
- Bootstrap 5 -> alpha version   16th Jun 2020
-                                    -> beta 1   7th Dec 2020
-                                    -> beta 2   10th Feb 2021
-                                    -> 5   5th May 2021
-                                    -> 5.1.0   4th Aug 2021
-                                    -> 5.1.3   9th Oct 2021
-                                    -> 5.2   19th Jul 2022
-                                    -> 5.3   30th May 2023
- Official Website:- https://getbootstrap.com/
    - Focus on
        - Card layout
        - Grid System
        - Tables
        - Buttons
        - Colours
        - Navs
        - Navbars

Task 01
POC
Create informative website using HTML and CSS for
        Group of hotels
        Group of Institutions
        Group of Hospitals
         - Choose any one

Design minimum 10 + 1 home pages

Application should contain
        1. Basic information
        2. About, Contact, Portfolio pages
        3. various departments and subdepartments
        4. Back and home buttons
        5. Common Headers and footers

Use various images, attractive backgrounds
scrolling text and images

For hint may refer
https://www.apollohospitals.com/

https://www.tajhotels.com/
https://www.paruluniversity.ac.in/
https://www.oberoihotels.com/
https://sanjivani.org.in/
https://sahyadrihospital.com/