# What is CSS?

- CSS stands for Cascading Style Sheets

- by using CSS we can change/enhance the tag format/presentation. CSS3 is the current version of CSS
- Styles define how to display HTML elements
- External Style Sheets can save a lot of work
- External Style Sheets are stored in CSS files
- CSS is the language we use to style an HTML document, CSS describes how HTML elements should be displayed.
- in CSS we have only 2 Things - attribute:value;
        color:navy; - now text color set as navy
        background-color:lightyellow; - back color set as lightyellow

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Importance of CSS

- CSS defines HOW HTML elements are to be displayed.
- Styles are normally saved in external .css files. External style sheets enable you to change the appearance and layout of all the pages in a Web site, just by editing one single file.

CSS Syntax

- A CSS rule has two main parts: a selector, and one or more declarations:
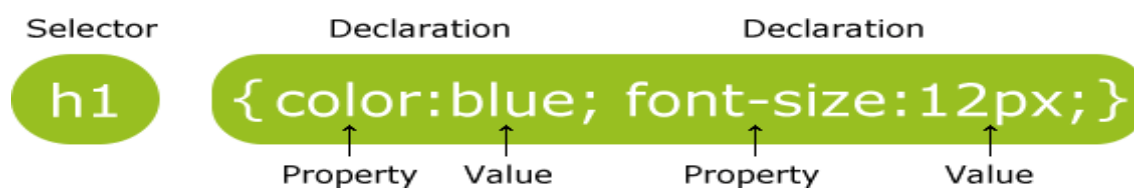
- The selector is normally the HTML element you want to style.
- Each declaration consists of a property and a value.
- The property is the style attribute you want to change. Each property has a value.

CSS Selectors - CSS selectors are used to select the content you want to style. Selectors are the part of CSS rule set. CSS selectors select HTML elements according to its id, class, type, attribute etc.

There are several different types of selectors in CSS.
   1. **Tag / Element Selector -** css design for a tag, means page ke inside kahi bhi
      hum iss tag ko jaha use karenge uska format ye hoga
            - for that selector me tag use karenge
   b { color:navy; font-family:'Comic Sans MS'; font-size:15px; } - now this is the
format of b tag. jaha bhi in whole page aap b tag use karoge uska format ye hoga.

   2. **Class Selector -** The class selector selects HTML elements with a specific
      class attribute. It is used with a period character . (full stop symbol)
      followed by the class name.
      css design for a class ,
            syn -   .ClassName { css define karo; }
            calling - <b class=ClassName />

   Adv of class jab aap iss class ko use karoge ye tabhi apply hoga.

   3. **Id Selector** - The id selector selects the id attribute of an HTML element to
      select a specific element. An id is always unique within the page so it is
      chosen to select a single, unique element.
      It is written with the hash character (#), followed by the id of the element.

      css design for a Id ,
            syn -   #IdName { css define karo; }
            calling - <b id=IdName />

   Adv of id - jab aap iss Id ko use karoge ye tabhi apply hoga

 ** in whole designing we have only class & id concept, means saare designing me
     class & id pe hi khelna hai.

  Adv of Id - we can get/use Id in Java Script also -
   means java script ke inside id ko easily get kar sakte hai
            with - getElementById(IdName) method

   4. **Group Selectors** - The grouping selector is used to select all the elements
      with the same style definitions.
      Grouping selector is used to minimize the code. Commas are used to separate
      each selector in grouping.

      class design for a group -

     i,b,li,lh,strong,p { color:navy; font-family:'Comic Sans MS'; font-size:15px; }
       - means inme se koi bhi tag use karoge uska format ye hoga.

   5. **Nested selector / CSS Class Selector for specific element** - If you want to
      specify that only one specific HTML element should be affected then you should
      use the element name with class selector.
            ul.menu { css design karo; }
      - means ul tag ke inside class=menu use karoge to uska format ye hoga.

   6. **Universal selector -** The universal selector is used as a wildcard character.
      It selects all the elements on the pages. for all tags –
            * { class design karo; } - universal means for all tags.

What is the difference between class and id?

The id Selector
- The id selector is used to specify a style for a single, unique element.
- The id selector uses the id attribute of the HTML element, and is defined with a "#".
- The style rule below will be applied to the element with id="fld":

    #fld { text-align:center; color:red; }

The class Selector
- The class selector is used to specify a style for a group of elements. Unlike the id selector, the class selector is most often used on several elements.
- This allows you to set a particular style for many HTML elements with the same class.
- The class selector uses the HTML class attribute, and is defined with a "."
- In the example below, all HTML elements with class="center" will be center-aligned:

    .center {text-align:center;}

- We can use more than one class in a single element

    <a class="Center bold italic">

Explain different ways to write the CSS. / Explain CSS with all types. / Enlist and explain methods of using CSS in web page.

- **There are three ways of inserting a style sheet:**
    o External style sheet
    o Internal/Embedded style sheet
    o Inline style

1. **External Style Sheet**
    o When using CSS it is preferable to keep the CSS separate from your HTML.
    o Placing CSS in a separate file allows the web designer to completely differentiate between content (HTML) and design (CSS).
    o External CSS is a file that contains only CSS code and is saved with a ".css" file extension.
    o This CSS file is then referenced in your HTML using the <link> instead of <style>.

    ### File Creation
    o Open up notepad, or any other plain text editor and type the following CSS code.

```css
            tr  {       height:40px;  }
            .fld  {
                background-color:lightyellow;
                color:navy;
                border:1px solid navy;
                border-radius:5px;
                font-family:'verdana';
                font-size:12px;
                width:190px; height:30px;
            }
            .btn {
                background-color:navy;
                color:white;
                border:1px solid navy;
                border-radius:10px;
                font-family:'Comic Sans MS';
                font-size:15px;
                width:100px;  height:35px;
            }
            .btn:hover  {
                background-color: white;
                color:navy;
                border:2px solid navy;
            }
```

Save the file as a CSS (.css) file. - Design.css

Now create a new HTML file and fill it with the following code.

```html
<html><head>
    <link rel="stylesheet" href="Design.css" />
  </head>
  <body>
     <form action="Register">
         <table border=0 width=300>
          <tr>
            <td>User Id </td><td><input class=fld type=text name=uid></td>
          </tr>
          <tr>
            <td>Password</td><td><input class=fld type=password name=ps></td>
          </tr>
          <tr>
            <th colspan=2><input type=submit value="SignIn" class=btn >
                        <input type=reset value="Clear" class=btn >
            </th>
          </tr>
          </table>
        </form>
      </body></html>
```

Why Use External CSS?

- o It keeps your website design and content separate.

- o It's much easier to reuse your CSS code if you have it in a separate file. Instead of typing the same CSS code on every web page you have, simply have many pages refer to a single CSS file with the "link" tag.
- o You can make drastic changes to your web pages with just a few changes in a single CSS file.

2. Internal/Embedded CSS

- o This type of CSS is only for Single Page.
- o When using internal CSS, we must add a new tag, <style>, inside the <head> tag. The HTML code below contains an example of <style>'s usage.

```html
<html>
  <head>
    <title>This is my Internal stylesheet</title>
    <style>
      tr  {       height:40px;  }
      .fld  {
          background-color:lightyellow;
          color:navy;
          border:1px solid navy;
          border-radius:5px;
          font-family:'verdana';
          font-size:12px;
          width:190px; height:30px;
      }
      .btn  {
          background-color:navy;
          color:white;
          border:1px solid navy;
          border-radius:10px;
          font-family:'Comic Sans MS';
          font-size:15px;
          width:100px;  height:35px;
      }
    </style>
  </head>
  <body bgcolor=lightyellow>
   <form action="Register">
    <table border=0 width=300>
     <tr>
       <td>User Id </td><td><input class=fld type=text name=uid></td>
     </tr>
     <tr>
       <td>Password</td><td><input class=fld type=password name=ps></td>
     </tr>
     <tr>
       <th colspan=2><input type=submit value="SignIn" class=btn >
                 <input type=reset value="Clear" class=btn >
       </th>
     </tr>
    </table>
   </form>
  </body>
</html>
```

3. **Inline CSS**
   - It is possible to place CSS right in your HTML code, and this method of CSS usage is referred to as inline css.
   - Inline CSS has the highest priority out of external, internal, and inline CSS.
   - This means that you can override styles that are defined in external or internal by using inline CSS.
   - If you want to add a style inside an HTML element all you have to do is specify the desired CSS properties with the style HTML attribute.

   ```
   <html>
   <body>
   <p style="background: blue; color: white;">A new background and
   font color with inline CSS</p></body>
   </html>
   ```

Explain CSS Background with all its attributes

- CSS background properties are used to define the background effects of an element.

1. **CSS Background Color**
   - The background-color property specifies the background color of an element.
   - The background color of a page is defined in the body selector:
   - Below is example of CSS backgrounds

     body {background-color:#b0c4de;}

2. **CSS Background Image**
   - The background-image property specifies an image to use as the background of an element.

     body {background-image:url('paper.gif');}

3. **Background Image Repeat**
   - You can have a background image repeat vertically (y-axis), horizontally (x-axis), in both directions, or in neither direction.

     p {background-image: url(smallPic.jpg); background-repeat: repeat; }

     h4 {background-image: url(smallPic.jpg); background-repeat: repeat-y; }

     ol {background-image: url(smallPic.jpg); background-repeat: repeat-x; }

     ul {background-image:url(smallPic.jpg);background-repeat: no-repeat;   }

4. **CSS Fixed Background Image**
   - The background-attachment property sets whether a background image is fixed or scrolls with the rest of the page.

     textarea.noScroll{background-image: url(smallPic.jpg); background-attachment: fixed;}

     textarea {

     background-image:url(smallPic.jpg);

     background-attachment: scroll;   }

5. **CSS Background Image Positioning**
   - The background-position property sets the starting position of a background image.

     p {background-image: url(smallPic.jpg); background-position: 20px 10px;}

     h4 {background-image: url(smallPic.jpg); background-position: 30% 30%;}

     ol {background-image: url(smallPic.jpg); background-position: top center;}

Explain CSS Font with all its attributes

- CSS font properties define the font family, boldness, size, and the style of a text.

1. **CSS Font Color**
   - Set the text-color for different elements:

     h4 { color: red; }
     h5 { color: #9000A1; }
     h6 { color: rgb(0, 220, 98); }

2. **CSS Font Family**
   - The font family of a text is set with the font-family property.

     h4 { font-family: sans-serif; }h5 { font-family: serif; }
     h6 { font-family: arial; }

3. **CSS Font Size**
   - The font-size property sets the size of the text.

     p { font-size: 120%; } ol{ font-size: 10px; } ul{ font-size: x-large; }

4. **CSS Font Style**
   - The font-style property is mostly used to specify italic text.
   - This property has three values:
     - normal - The text is shown normally
     - italic - The text is shown in italics
     - oblique - The text is "leaning" (oblique is very similar to italic, but less supported)

     p { font-style: italic; }h4{ font-style: oblique; }

5. **CSS Font Weight**
   - The font-weight property sets how thick or thin characters in text should be displayed.

     p { font-weight: 100; } ul{ font-weight: bolder; }

6. **CSS Font Variant**
   - The font-variant property specifies whether or not a text should be displayed in a small-caps font.

     p { font-variant: small-caps; }

Explain CSS Text with all its attributes.

- While CSS Font covers most of the traditional ways to format your text, CSS Text allows you to control the spacing, decoration, and alignment of your text.

1. **Text Decoration**
   - The text-decoration property is used to set or remove decorations from text.
   - The text-decoration property is mostly used to remove underlines from links for design purposes.

     h4{ text-decoration: line-through; }
     h5{ text-decoration: overline; }
     h6{ text-decoration: underline; }
     a{ text-decoration: none; }

2. Text Indent

- o The text-indentation property is used to specify the indentation of the first line of a text.

  p { text-indent: 20px; } h5 { text-indent: 30%; }

3. Text Align

- o The text-align property is used to set the horizontal alignment of a text.

  p{ text-align: right; }

  h5{ text-align: justify; }

4. Text Transform

- o The text-transform property is used to specify uppercase and lowercase letters in a text.

  p { text-transform: capitalize; } h5{ text-transform: uppercase; }

5. CSS White Space

- o The white-space attribute allows you to prevent text from wrapping until you place a break <br /> into your text.

  p { white-space: nowrap; }

6. CSS Word Spacing

- o With the CSS attribute word-spacing you are able to specify the exact value of the spacing between your words. Word-spacing should be defined with exact values.

  p { word-spacing: 10px; }

7. CSS Letter Spacing

- o With the CSS attribute letter-spacing you are able to specify the exact value of the spacing between your letters. Letter-spacing should be defined with exact values.

  p { letter-spacing: 3px; }

Explain BOX MODEL.

- All HTML elements can be considered as boxes. In CSS, the term "box model" is used when talking about design and layout.
- The CSS box model is essentially a box that wraps around HTML elements, and it consists of: margins, borders, padding, and the actual content.
- The box model allows us to place a border around elements and space elements in relation to other elements.
- The image below illustrates the box model:
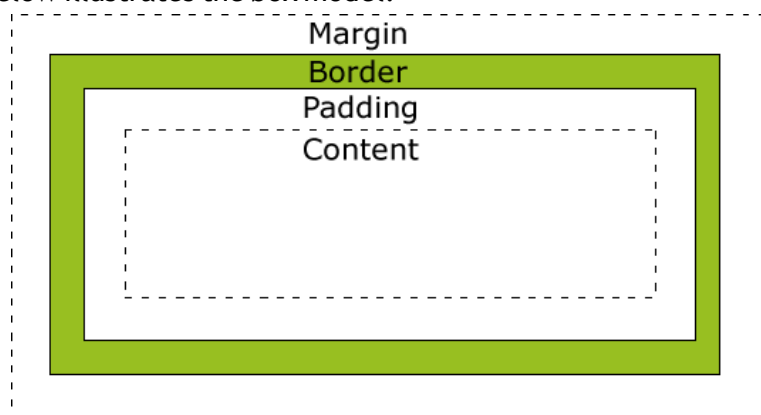
- Explanation of the different parts:
  - **Margin** - Clears an area around the border. The margin does not have a background color, it is completely transparent
  - **Border** - A border that goes around the padding and content. The border is affected by the background color of the box
  - **Padding** - Clears an area around the content. The padding is affected by the background color of the box
  - **Content** - The content of the box, where text and images appear

Explain CSS Padding.

- The CSS padding properties define the space between the element border and the element content.

  p {padding: 15px; border: 1px solid black;

- The top, right, bottom, and left padding can be changed independently using separate properties. A shorthand padding property can also be used, to change all puddings at once.

1. Possible Values

Value	Descriptions
Length	Defines a fixed padding (in pixels, pt, em, etc.)
%	Defines a padding in % of the containing element.

padding-top:25px;

padding-bottom:25px;

padding-right:50px;

padding-left:50px;

2. Padding - Shorthand property

- To shorten the code, it is possible to specify all the padding properties in one property. This is called a shorthand property.

  padding:25px 50px;

Explain CSS Margin.

- The CSS margin properties define the space around elements.
  p {margin: 5px; border: 1px solid black; }

- The top, right, bottom, and left margin can be changed independently using separate properties. A shorthand margin property can also be used, to change all margins at once.

Value	Descriptions
auto	The browser calculates a margin
length	Specifies a margin in px, pt, cm, etc. Default value is 0px
%	Specifies a margin in percent of the width of the containing element
inherit	Specifies that the margin should be inherited from the parent element

1. **Margin - Individual sides**
   - In CSS, it is possible to specify different margins for different sides:

     margin-top:100px;

     margin-bottom:100px;

     margin-right:50px;

     margin-left:50px;

2. **Margin - Shorthand property**
   - To shorten the code, it is possible to specify all the margin properties in one property. This is called a shorthand property.

     margin:100px 50px;

Explain CSS Border with all its attributes.

- The CSS border properties allow you to specify the style and color of an element's border.

1. **Border Style Types**
   - The border-style property specifies what kind of border to display.

     p.solid {border-style: solid; } p.double {border-style: double; } p.groove {border-style: groove; }

     p.dotted {border-style: dotted; } p.dashed {border-style: dashed; } p.inset {border-style: inset; }

     p.outset {border-style: outset; } p.ridge {border-style: ridge; } p.hidden {border-style: hidden; }

2. **Border Width**
   - The border-width property is used to set the width of the border.

     table { border-width: 7px; border-style: outset; }

     td { border-width: medium; border-style: outset; }

     p { border-width: thick; border-style: solid; }

3. **Border Color**
   - The border-color property is used to set the color of the border.
   - Border colors can be any color defined by RGB, hexadecimal, or key terms. Below is an example of each of these types.

     table { border-color: rgb(100, 100, 255); border-style: dashed; }

     td { border-color: #FFBD32; border-style: ridge; }

     p { border-color: blue; border-style: solid; }

4. **Border: border-(direction)**
   - If you would like to place a border on only one side of an HTML element, or maybe have a unique look for each side of the border, then use border-(direction).
   - The direction choices are of course: top, right, bottom, and left. CSS allows you to treat each side of a border separately from the other three sides.
   - Each side can have its own color, width, and style set, as shown below.

     p { border-bottom-style: dashed ; border-bottom-color: yellow; border-bottom-width: 5px; }

     h4 { border-top-style: double; border-top-color: purple; border-top-width: thick; }

Explain CSS Lists with all its attributes.

- The CSS list properties allow you to:
  - Set different list item markers for ordered lists
  - Set different list item markers for unordered lists
  - Set an image as the list item marker

1. ## CSS List Style Type
   - Specify all the list properties in one declaration.
     - Unordered list styles: square, circle, disc (default), and none
     - Ordered list styles: upper-alpha, lower-alpha, upper-roman, lower-roman, decimal (default), and none

     ol { list-style-type: upper-roman; }

     ul { list-style-type: circle; }

2. ## CSS Lists with Images
   - Specify an image as the list-item marker in a list:

     ul { list-style-image: url("listArrow.gif"); }

     ol { list-style-image: url("listArrow2.gif"); }

3. ## CSS List Position
   - With Specify that the the list-item markers should appear inside the content flow (results in an extra indentation)

     ul { list-style-position: inside; }

     ol { list-style-position: outside; }

- **Note**: "Outside" is actually the default setting for indentation.

Explain CSS Links

1. ## CSS Anchor/Link States
   - The four links states are:
     - a:link - a normal, unvisited link
     - a:visited - a link the user has visited
     - a:hover - a link when the user mouse over it
     - a:active - a link the moment it is clicked

     a:link{color:#FF0000;}   /*unvisited link*/

     a:visited{color:#00FF00;} /* visited link */

     a:hover{color:#FF00FF;} /* mouse over link */

     a:active{color:#0000FF;} /*selected link*/

2. ## Text Decoration
   - The text-decoration property is mostly used to remove underlines from links.

     a:link {text-decoration:none;}

     a:visited {text-decoration:none;}

     a:hover {text-decoration:underline;}

     a:active {text-decoration:underline;}

3. Background Color

o The background-color property specifies the background color for links.

a:link {background-color:#B2FF99;}

a:visited {background-color:#FFFF85;}

a:hover {background-color:#FF704D;}

a:active {background-color:#FF704D;}

Explain CSS Position with example.

- With the knowledge of CSS Positioning we will be able to manipulate the exact position of your HTML elements.

1. Position Relative

o Relative positioning changes the position of the HTML element relative to where it normally appears.

o If we had a header that appears at the top of our page, we could use relative positioning to move it a bit to the right and down a couple of pixels. Below is an example.

h3{position: relative; top: 15px;left: 150px;}

p {position: relative; left: -10px;}

2. Position Absolute

o With absolute positioning, you define the exact pixel value where the specified HTML element will appear.

o The point of origin is the top-left of the browser's viewable area, so be sure you are measuring from that point.

h3{position: absolute; top: 50px;left: 45px;}

p{position: absolute; top: 75px;left: 75px;}

Explain CSS Layers. / z-index property

- CSS allows you to control which item will appear on top with the use of layers.
- In CSS, each element is given a priority.
- If there are two overlapping CSS positioned elements, the element with the higher priority will appear on top of the other.
- To manually define a priority, set the z-index value. The larger the value, the higher the priority the element will have.

h4{position: relative; top: 30px;left: 50px; z-index: 2;}

p {position: relative; z-index: 1;background-color: #FFCCCC;}

- This paragraph has a z-index of 1, which is less than the header.
- If we had not defined the z-index, by default the paragraph would have been on top of the header because it appears later in our HTML code.

Explain CSS Float property.

- With CSS float, an element can be pushed to the left or right, allowing other elements to wrap around it.
- Wrapping text around an image is easy when using the CSS Float attribute.
- You have a choice to either float the picture to the left or to the right and the rest is done for you.

img.floatLeft{float: left;margin: 4px;}

img.floatRight {float: right; margin: 4px;}

```
<body>
<img src="sunset.gif" class="floatLeft"><p>The images are contained
with...</p>
<img src="sunset.gif" class="floatRight"><p>This second paragraph has
an...</p>
</body>
```