Cascading Style Sheet(CSS)

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Introduction to CSS

- CSS means “Cascading Style Sheet”
- Handles the look and feel part of a web page.
- Change the text color, font style, the paragraph spacing
- Can be combined with the markup languages HTML or XHTML
- Easy to learn and understand
- Provides powerful control over the presentation of a HTML document

Advantages of CSS

Content and Style Separation

- Separates HTML content from the style and layout of that document

Saves time

- write CSS once and reuse the same code to group of HTML elements or across multiple HTML pages.

Easy maintenance

- By making changes in the css file, the elements in all the web pages get updated automatically. Also helps to maintain consistency across multiple documents

Superior style to html

- has more presentation capabilities than HTML. **e.g.,** Adding opacity, gradients, rounded corners, animation

Multi device Compatibility

- Allow the HTML document to be optimized and rendered in more than one type of device or media such as desktops, laptops, mobiles etc.

Style and structure

- Has style rules that are interpreted by the browser.

Selector : is a HTML element for which style will be applied. **e.g., <h1>, <p>**

Property: Is a type of attribute of HTML tag like color, font etc

Value : the value assigned to a property

```
<style type="text/css">
    selector { property :value; }
</style>
```

```
<style type="text/css">
    h1 {
    color: blue;
    font-style: italic;
    }
</style>
```

Types of CSS

- Internal CSS
- External CSS
- Inline CSS

Internal Stylesheet

- is used in the same html page
- Is defined in head section and inside the <style> tags.

```
<style type="text/css">
body {
    background-color: pink
 }
p {
    color: yellow;
    background-color: red;
    text-transform: uppercase;
}
h1 {
    color: blue;
}
</style>
```

External Stylesheet

- Is written in a separate file and saved in ***anyname.css***
- is ideal when same style has to be applied to many pages.
- Can change the look of an entire web site by changing a single css file

```
<!DOCTYPE html>
<html>
 <head>
  <title>Insert title here</title>
  <link rel="stylesheet" href="styles/extstyle.css">
 </head>
<body>
  <p >hello world</p>
</body>
</html>
```

```
p{
    color:red;
    text-transform: capitalize;
}
```

Inline Stylesheet

- Is used inside any tag using **style** attribute
- **style** attribute can contain any CSS property.

```
<h1 style="color:red;background-color:aqua">Heading </h1>
```

CSS Property

- Background
- Text
- Fonts
- Links
- Lists
- Display
- Floating
- Position

CSS - Background

background-color: to set the background color of an element.

- background-color : pink;

background-image: to set the background image of an element.

- background-image : url (“butterfly.gif");

background-position: to control the position of an image in the background.

- background-position : top left;

background-attachment property is used to control the scrolling of an image

- background-attachment : scroll;

background-repeat is used to control the repetition of an image.

- background-repeat : repeat;

background is shorthand to specify a number of other background property

- background: #FFCC66 url("butterfly.gif") repeat scroll ;

Example

```
body{

background-color:blue;
background-image:url("butterfly.jpg");
background-attachment:scroll;
background-position:top left;
background-repeat:repeat;
}
 h1{

    background: blue url("butterfly.jpg") scroll top left
         repeat;
 }
```

CSS - Fonts

font-family is used to change the face of a font.

- font-family: sans-serif;

font-style used to make a font italic or oblique.

- font-style: italic;

font-variant used to create a small-caps effect.

- font-variant : small – caps ;

font-weight used to increase or decrease the boldness for a font .

- font-weight: bold;

font-size used to increase or decrease the size of a font.

- font-size: 20px;

font is a shorthand to specify a number of other font properties.

- font: 15px bold sans-serif;

Example

```
h1{
    font-family:  sans-serif;
    font-style: italic;
    font-variant: small-caps;
    font-size: 20px;
    font-weight: bolder;

    }
p{
    font: sans-serif italic small-caps 20px bolder ;
}
```

CSS - Text

color is used to set the color of a text.

- color: red;

Direction is used to set the text direction.

- direction : rlt;

letter-spacing is used to add or subtract space between the letters in a word.

- letter-spacing: 5px;

word-spacing is used to add/subtract space between the words of a sentence.

- word-spacing : 5px;

text-indent is used to indent the text of a paragraph.

- text-indent: 1cm;

CSS - Text

text-align is used to align the text of a document.

- text-align : right;

text-decoration is used to underline, overline, or strikethrough text.

- text-decoration : underline;

text-transform is used to capitalize text or convert text to uppercase or lowercase letters.

- text-transform: uppercase;

white-space is used to control the flow and formatting of text.

- white-space : pre;

text-shadow is used to set the text shadow around a text.

- text-shadow : 4px 4px blue;

Example

```
h1{

    color: red;
    direction: ltr;
    letter-spacing: 2px;
    word-spacing: 2px;
    text-indent: 2cm;
    text-decoration: underline;
    text-transform: lowercase;
    text-align: right;
    text-shadow: 4px 2px blue;
}
```

Using class

- To give same formatting to different tags.
- It is referred by **.**

```
<p class="check" >Hello in p tag</p>
<div class="check">Hello inside a div</div>
<h1 class="check">I am in H1</h1>
<h2 class="check">Hi! I am in H2</h2>
```

```
p {
    color: green;
    font-variant: small-caps;
    font-family: sans-serif;
    font-style: italic;
    font-size: 30px;
}
.check {
    background-color: blue;
    color: yellow;
}
h1,h2{
    text-decoration: underline;
}
 h2.check{
    letter-spacing: 5px;
}
```

Using id

- To give unique formatting for an individual tag.
- It is referred by #

```
<p id="myid"> This is  paragraph - 1 with myid</p>
<p> This is a paragraph - 2. welcome</p>
<h1 > This is a header</h1>
<h1 id = "header"> This is a header with id</h1>
```

```
p{
 background-color: pink;
 border:solid 1px;
 font-weight:bold;
 color: maroon;
}
h1{
background-color: green;
color:fuchsia;
 }
p#myid{
color:yellow;
text-transform: uppercase;
}
#header{
    letter-spacing: 10px;
    color: red;
}
```

CSS - Links

:link

for unvisited hyperlinks.

a : link {color: orange}

:visited

for visited hyperlinks.

a : visited { color: black}

:active

Is when the user is currently clicking the link.

a : active {color: green}

:hover

happens when the user's mouse pointer hover over the element.

a : hover { color: yellow}

```
a:link{
    color:green;
    }
a:visited{
    color:red;
    }
a:active{
    color:navy;
    font-weight: bold;
    }
a:hover {
    text-transform: uppercase;
    letter-spacing: 5px;
    color: orange;
}
```

CSS - Floating

- Elements are floated horizontally, either left or right only.
- Floating an image to the right/left of text.
- Do not float up or down in CSS.
- Elements before the floating element will not be affected.
  - float: right; float: left;
- Turning off float – using clear
  - clear: both;

Example

```
<!DOCTYPE html>
<html>
<head>
    <title>Insert title here</title>

    <style type="text/css">
    img{
        float: right;
    }
    h1{
        clear: right;
    }
</style>
</head>
<body>
    Welcome to CSS. Have a good day.
    <img src="panda1.jpg" width="200px" height="200px">
    <h1>welcome to css</h1>
    <h1>Hello world</h1>
</body>
</html>
```

CSS - List

list-style-type control the shape or appearance of the marker.

- **list- style- type: circle;**

list-style-image an image for the marker rather than a bullet point or number.

- **list- style-image: url (butterfly.gif);**

```
<ul style="list-style-type: square;">
    <li>Mango</li>
    <li>Apple</li>
    <li>Orange</li>
</ul>
```

CSS - Display

- Hiding an element can be done by setting the property
  - **display :none, visibility :hidden**

visibility: hidden

- Hides an element but it takes up the same space as before the element will be hidden

display :none

- Hides an element, and it will not use up any space

Group and Child Selectors

```
<style>
    p,div,h1{
        color: blue;
    }
    #header{
        text-decoration: underline;
        background-color: grey;
        color: green;
    }
    .myclass{
        font-weight: bold;
    }
    h2.myclass{
        letter-spacing: 3px;
        color: brown;
    }
    div p{
        text-transform: capitalize
    }
    div>p{
        font-style: italic;
        background-color: aqua;
    }
    body p:first-of-type{
        color: green;
    }
</style>
```

Example – Visiblity and Display

```
Display does not take space
<p style="background-color: red;">hello world</p>
<p style="display: none">Not displayed</p>
<p style="background-color: red;">hello world</p>
<br/>
<hr/>
Visibility takes space
<p style="background-color: green;">hello world</p>
<p style="visibility: hidden;">Not displayed</p>
<p style="background-color: green;">hello world</p>
```

Output in Browser

CSS - Positioning

- This specifies how an element is positioned in a document.
- The elements are then positioned using top, bottom, left and right properties
- The position values are
  - static
  - fixed
  - relative
  - absolute

Positioning - static

- Static positioning is the default positioning model for elements.
- They are positioned according to the normal flow of the page
- The top, left, right and bottom properties have no value

Positioning - relative

- Relative positioning allows to specify an offset (top, right, bottom, left) which is relative to the element's normal position in HTML flow.

```
#div2{
    position:relative ;
    top: 150px;
    left: 50px;
}
```

```
<div id="div2">
    <h1>This is  heading2</h1>
</div>
```

Positioning - absolute

- An element that is absolutely positioned is taken out of the flow. The other elements are positioned as if it did not exist.
- The element is positioned relative to the nearest positioned ancestor.
- They are bound by the viewport and will cause scrolling

```css
#div3{
    position: absolute;
    top: 100px;
    left: 50px;
}
```

```html
<div id="div3">
    <h1>This is heading3</h1>
</div>
```

- If there are no ancestors, then positioned relative to the entire document body.

Positioning - fixed

- This restricts an element to a specific position in the viewport, which always stays in the same place even if the page is scrolled.

```
#four {
    width: 50px;
    height: 50px;
    position: fixed;
    top: 20px;
    left: 20px;
    background: blue;
}
.outer{
    overflow: scroll;
    height: 100px;
    width: 100px;
    padding-left: 100px;
}
```

```
<div class = "outer">
    <p>Lorem ipsum dolor sit amet, consectetur
    adipisicing elit. Commodi ipsa, blanditiis
    totam expedita magnam, minima a accusantium
    eius, assumenda ut, eaque excepturi quaerat
    doloribus rerum dolorum architecto
    quas eligendi praesentium.</p>
    <div class="box" id="four">Four</div>
</div>
```

CSS Box Model

- CSS box model is a box that wraps around every HTML element.
- It has margins, borders, padding, and the actual content.

Content - The content of the box, where text and images appear

Padding - Clears an area around the content. It is transparent

Border - A border that goes around the padding and content

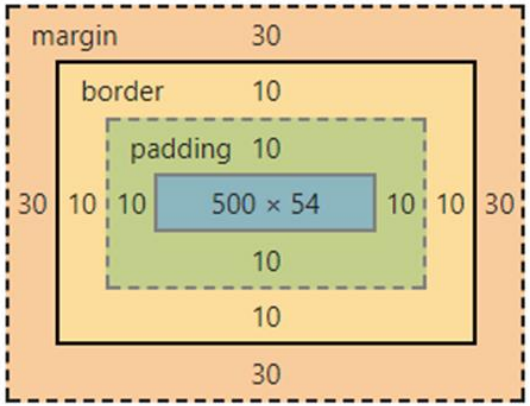
Margin - Clears an area outside the border and is transparent

Total element width = width + left padding + right padding + left border + right border + left margin + right margin

Total element height = height + top padding + bottom padding + top border + bottom border + top margin + bottom margin

```
<p>
  Hello
</p>
```

```
p{
    width: 500px;
    padding: 10px;
    border: 10px solid red;
    margin: 30px ;
}
```



CSS Transitions

- Transitions allows you to change property values smoothly (from one value to another), over a given duration.
- The transition effect will start when the specified CSS property changes value.
- To create a transition effect, specify
  - the CSS property to add an effect to
  - the duration of the effect

```
<div>Hello</div>
```

```
<style>
div {
    width: 100px;
    height: 100px;
    background: red;
    transition-property: width;
    transition-duration: 2s;
    transition-timing-function: ease;
    transition-delay: 1s;
    /* transition: width 2s; */
}
div:hover{
    width: 300px;
}
</style>
```

Cross browser Compatibility Issues

- Cross-browser refers to the capacity for a website, web application, HTML or client-side script to support all the browsers.

- The differences in Browser Display may be due to different
  - *browsers, versions, computer types, screen sizes, font sizes, html errors, browser bugs*

Solve Cross browser Compatibility Issues

A set of principles can be followed to make the website look consistent across all the browsers

- Using proper Doctype
- Understanding CSS Box Model
- Using Floating and clearing
- Image Resizing using CSS
- CSS Reset
- Conditional Comments in IE
- Vendor Specific CSS Style(-webkit-, -moz-, or -o-)

CSS Reset

- Create a CSS file that removes and neutralizes the inconsistent default styling of HTML elements, creating a levelled baseline across all major browsers.

```
body,div,dl,dt,dd,
ul,ol,li,h1,h2,h3,h4,h5,h6,
pre,form,fieldset,
input,textarea,p,blockquote,th,td {
    margin:0;
    padding:0;
}
```

Conditional Comments in IE

- IE conditional comments are a modified proprietary HTML comment syntax, which can be used to selectively apply HTML code to different versions of IE.
- Used for fixing cross browser bugs

```
<!--[if lte IE 8]>
  <script src="ie-fix.js"></script>
  <link href="ie-fix.css" rel="stylesheet" />
<![endif]-->
```

Vendor Specific CSS Styling

- To make the code work in all browsers, add the unprefixed version alongside all prefixed one .

```
div{
    width: 100px;
    height: 100px;
    background: red;
    -webkit-transition: width 2s; /* Safari,Chrome */
    -moz-transition: width 2s; /* Mozilla*/
    -o-transition: width 2s; /* Opera*/
    transition: width 2s;
}
```

Summary

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- Style and structure
- Types of CSS
- Handling Backgrounds
- Using Fonts and Styling text
- Using class and Id
- Styling Links
- Working with Lists
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- CSS Box Model and transitions
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Thank You