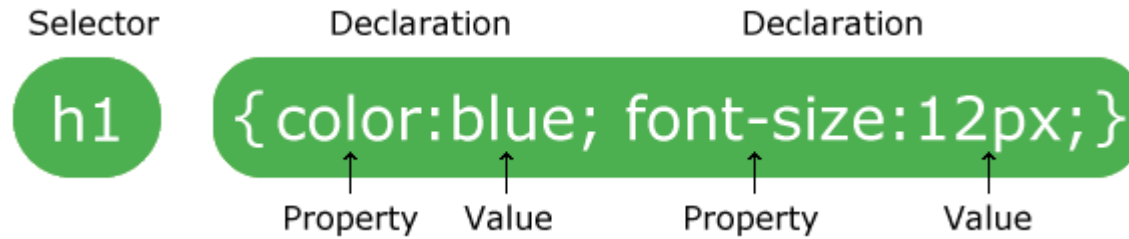


Cascading Style Sheet (CSS)

Introduction

- ▶ **CSS** stands for **Cascading Style Sheets**
- ▶ **CSS** describes how **HTML** elements are to be displayed on screen, paper, or in other media
- ▶ **CSS** saves a lot of work. It can control the layout of multiple web pages all at once
- ▶ External stylesheets are stored in **CSS files**.
- ▶ **CSS** simplifies the task of maintaining a web document by separating its style info. Such as Font Size, Font Colour, Line width and Background Colour.
- ▶ This separation allows you to apply a style multiple times in a single web page.
- ▶ Reduces the Complexity & redundancy and code in the Web page and save time because we need not to write the same code again and again.

CSS Syntax



A CSS rule-set consists of a selector and a declaration block:

Selector: Defines an HTML element to which CSS style is applied.

Declaration: Declaration block contains one or more declarations separated by semicolons. Each declaration includes a CSS property name and a value, separated by a colon.

A CSS declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces.

Syntax of CSS Document

Selector

```
{  
  1st property : value;  
  2nd property : value;  
  .  
  .  
  nth property : value;  
}
```

Example

Span

```
{  
  Background : #fff;  
  Padding : 0 3px 0 0 ;  
  float left;  
  position : absolute;  
  text-decoration : none;  
}
```

Sample CSS program

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
    background-color: lightblue;
}

h1 {
    color: white;
    text-align: center;
}
```

```
p {  
  font-family: verdana;  
  font-size: 20px;  
}  
</style>  
</head>  
<body>  
  
<h1>My First CSS Example</h1>  
<p>This is a paragraph.</p>  
  
</body>  
</html>
```

Selector and its Types

- ▶ Selector can be used as a condition or a CSS rule to determine the element that match with it.

Different types of selectors are :

- Universal selector
- The type selector
- The Class selector
- The Id selector
- The child selector
- The descendant selector
- The adjacent selector
- The attribute selector

How to Apply CSS on Web Pages ?

There are three ways of inserting a style sheet:

External style sheet :

- ▶ With an external style sheet, you can change the look of an entire website by changing just one file!
- ▶ syntax is same as that of internal style sheet but it is not placed inside the HTML document like that of internal CSS.
- ▶ It is written outside and the reference of CSS file is placed inside the HTML document.
- ▶ The file should not contain any html tags. The style sheet file must be saved with a .CSS extension.

We can link External css with web page in 2 ways:

1. **linking** : refers to HTML link element using the following three attributes (rel, type, href)
2. **Importing** : @import keyword is used, followed by URI(uniform resource identifier).
Example :

```
< Style type = "text/css">  
@import url("mystylesheet.css")  
h1{ color:blue}  
</style>
```

Advantages and Disadvantages of external style sheet

▶ ADVANTAGES

- Allow you to control the look and feel of the several documents in one go, & need not to define specific style for each document.
- Allows you to easily group your styles in the more efficient way.

▶ DISADVANTAGES

- Increases the download time as the entire css file has to be downloaded to apply the style to the html document.
- Displays the web page only after the entire style sheet is loaded.

Internal style sheet :

- ▶ An internal style sheet may be used if one single page has a unique style.
- ▶ Internal styles are defined within the <style> element, inside the <head> section of an HTML page.
- ▶ It can't be referenced by any other web document & applied to only those documents in which it is defined.

SYNTAX :

```
<head>
```

```
<style type="text/css">
```

```
Selector {property:value;}
```

```
</style>
```

```
</head>
```

Advantages and Disadvantages of Internal style sheet

▶ ADVANTAGES

- Affect only the page in which they are placed. If you are working on large site, it will allow you to test the styles on single page
- Allows you to you to change the style of the same html document on which you are working.

▶ DISADVANTAGES

- Affect only the page to which they are working. If we want to use the same styles in several documents, we need to repeat them for the every page.
- Increases the page load time because the entire css file needs to be implemented first to apply css .

Inline style :

- An inline style may be used to apply a unique style for a single element.
- To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.
- The inline style properties are written in a single line separated by semicolons.
- these properties are placed inside the style attribute of html element on which you want to apply style.

Example:

```
<p style = "background:#ccc; color:#fff; border: solid black 1px;">  
  (here p element is styled)
```

Advantages and Disadvantages of Inline style sheet

▶ ADVANTAGES

- Provides highest precedence over internal and external style sheets.
- Provides an easy and quick approach to add a style sheet in a web page. We need not to create whole document or edit new element in head of your doc to add inline style.

▶ DISADVANTAGES

- Makes a document a difficult to maintain and increases download time.
- Doesn't allow style pseudo element(which are used to add special effects to the selectors).
- For e.g. we provide special colors to active, visited and unvisited links.

Advantages of External CSS over internal style sheets

- ❑ The same style sheet can be used by all of the Web pages in your site, which means you can reuse the same style sheet with many different XHTML documents. This saves you from including the stylistic markup in each individual document.
- ❑ Because the style rules are written only once, rather than appearing on every element or in every document, the source documents are smaller. This means that, once the CSS style sheet has been downloaded with the first document that uses it, subsequent documents will be quicker to download (because the browser retains a copy of the CSS style sheet and the rules do not have to be downloaded for every page). This also puts less strain on the server (the computer that sends the Web pages to the people viewing the site) because the pages it sends out are smaller.

- ❑ You can change the appearance of several pages by just altering the style sheet rather than each individual page; this is particularly helpful if you want to change your company's colors, for example, or the font used for a certain type of element wherever that element appears across the whole site.
- ❑ The style sheet can act as a style template to help different authors achieve the same style of document without learning all of the individual style settings.
- ❑ Because the source document does not contain the style rules, different style sheets can be attached to the same document. So you can use the same XHTML document with one style sheet when the viewer is on a desktop computer, another style sheet when the user has a handheld device, another style sheet when the page is being printed, another style sheet when the page is being viewed on a TV, and so on. You reuse the same document with different style sheets for different visitors' needs.
- ❑ A style sheet can import and use styles from other style sheets, making for modular development and good reuse .
- ❑ If you remove the style sheet, the site should be a lot more accessible for those with visual impairments because it does not have restrictions of fonts

CSS properties like

► Changing font colors

Here You can set the color of:

► TEXT

```
<h1 style="color:Tomato;">Hello World</h1>  
<p style="color:DodgerBlue;">Lorem ipsum...</p>  
<p style="color:MediumSeaGreen;">Ut wisi enim...</p>
```

► BORDER

```
<h1 style="border:2px solid Tomato;">Hello World</h1>  
<h1 style="border:2px solid DodgerBlue;">Hello World</h1>  
<h1 style="border:2px solid Violet;">Hello World</h1>
```

CSS Background

- ▶ The CSS background properties are used to define the background effects for elements.

CSS background properties:

- ▶ background-colour
- ▶ background-image (setting fixed & scrolling or multiple images)
- ▶ background-repeat
- ▶ background-attachment
- ▶ background-position

Other CSS background properties:

- ✓ background-Clip
- ✓ background-Origin
- ✓ background- Size
- ✓ background- Quantity
- ✓ background- Spacing

background-colour

This property can take any of the following values:

- (a) Color name
- (b) Hexadecimal equivalence of the color
- (c) RGB color value

Example:

```
h1
{
Background-color:#FFFFFF;
}
```

background-image

- ▶ This property is specified using 2 values :
 - (A) URL to specify the image
 - (B) None when no image is used

background-repeat

It allows tile on the BG image along X-axis & Y-axis of an element. It can take either of the following values:

- ▶ (A) Repeat-X : tiles an image Horizontally
- ▶ (B) Repeat-Y :tiles an image vertically
- ▶ (C) Repeat : tiles an image both Horizontally and Vertically
- ▶ (D) No Repeat : Doesn't Tile an Image.

Example:

```
<Body style =“Background: URL('pic_2.gif); background-repeat: repeat-y;”>
```

background-attachment

- ▶ Used to fix or Scroll the BG image along with the text & other content displayed on it.

It takes either of the 2 values:

- a) Fixed: BG image doesn't move at all with the text
- b) Scroll: BG image scroll along with the text written over it.

```
{
```

```
Background-img: url('my image.gif'); background-attachment: scroll;
```

```
}
```

background-position

Sets the position of a BG image on a webpage this property is used along with the background-image property. We can set position in image using any of the following tasks:

1. Representing position in pixels:

```
body { background-image: url('pic.jpg');background-position: 200px 200px;}
```

2. Representing position in percentage:

```
body { background-image: url('pic.jpg');background-position: 50% 50%;}
```

3. Representing position by words:

```
body { background-image: url('pic.jpg');background-position: left bottom;}
```


Controlling Fonts-Font Properties

Properties to perform different tasks related to fonts & text :

1. Font-family : specify the name of the font family
2. Font-size : specified using absolute, relative & % value
3. Font-size-adjust : used to change aspect value of a text on a web page
4. Font-stretch : to change width of text. e.g.: extra-condensed or extra-expanded
5. Font-style : to specify the style of the font. e.g. `P{ font-style: italic;}`
6. Font-variant : font normal or in small caps
7. Font-weight : weight of the font e.g. boldness or thickness.

CSS Text Properties

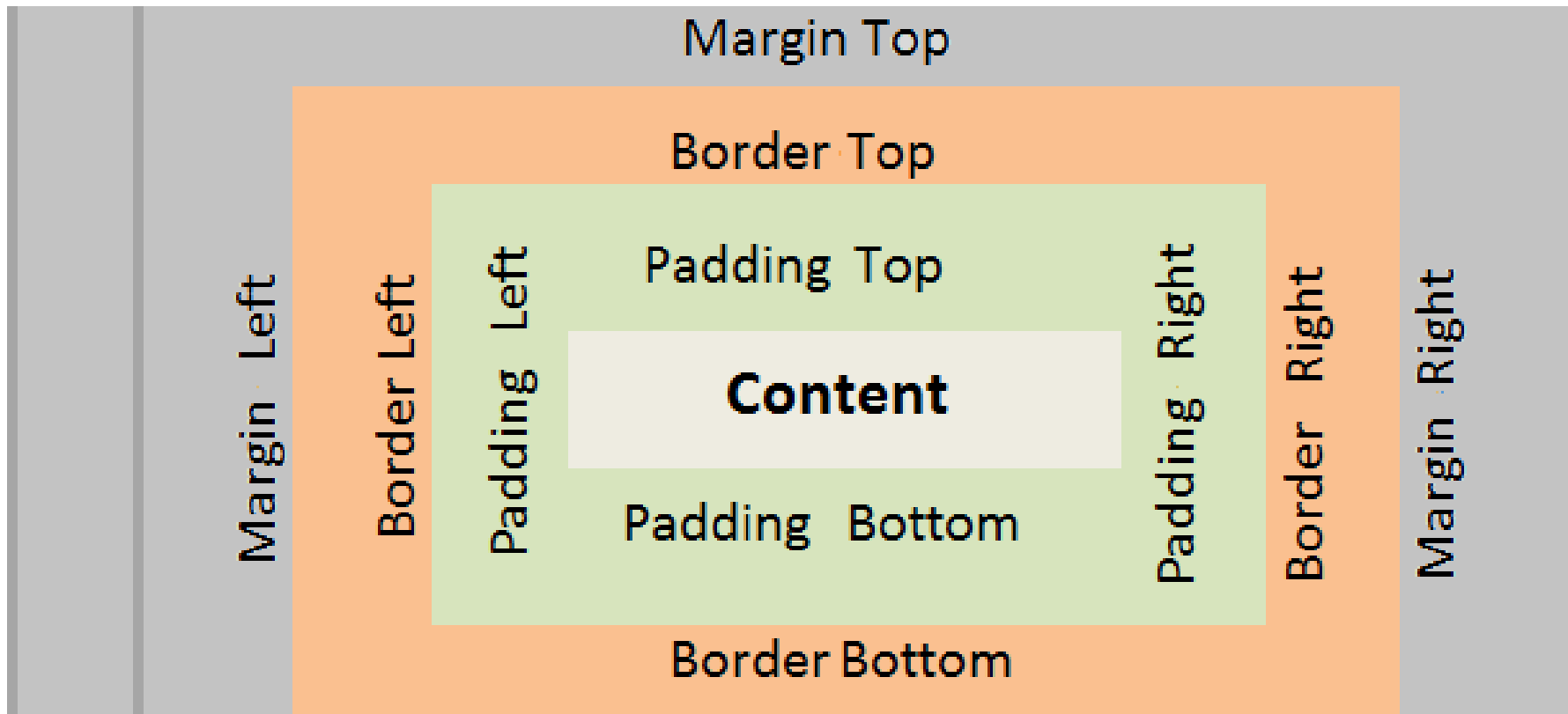
CSS allows you to apply as well as modify the styles already applied on the text of a web page. Such as changing direction, underline, over line, or strike out the text, as per the requirement and many more

1. Color
2. Hanging- punctuation
3. Letter-Spacing
4. Punctuation-trim
5. Text-autospace
6. Text-decoration
7. Text-align-last. Etc.

CSS Box model

- ▶ CSS treats HTML as a hierarchical structure of elements, where each element can have zero or more child elements arranged in an ordered way.
- ▶ Top most element : root/ parent
- ▶ These elements displays their content at a specific position, which is defined using CSS properties.
- ▶ CSS converts the data of HTML elements in the form of rectangular boxes, by using a layout model, called the **BOX MODEL** to set the design & layout of HTML documents.

this means that the box model determines how HTML elements are displayed as boxes. The box model allows placing a border around the elements and also provides space between elements.



Displaying areas of box model

Areas of the box Model

- ▶ **Content area:** Displays the content of the document, such as text and images. This is bounded by a rectangle called as the content edge.
- ▶ **Padding area:** specifies the area around the content area. This is bounded by the padding edge.
- ▶ **Border area:** specifies the area around the padding area.
- ▶ **Margin area:** specifies the area around the border area.
- ▶ **Block level box:** represents a box to show paragraph.
- ▶ **Line-box:** represents a box to show line of text.
- ▶ **Inline box:** represents a box to show words of lines.

Padding Properties

- ▶ Padding (space) in the box model specifies the distance between the border of an element and the content within.
- ▶ Padding is affected by the BG color of an element.
- ▶ The value of padding cannot be negative.
- ▶ The short hand padding property in padding is used to change all the padding properties such as padding top, bottom ,right , left all at once.
- ▶ **Syntax:** padding: value;
- ▶ Padding can be set according to the following values:
 1. Length -specifies fixed padding in the pt and em units
 2. Percentage - specifies padding in % w.r.t width of a parent block
 3. Auto - specifies default padding from top, bottom, left, or right direction.

► Code snippet:

```
#container
```

```
{
```

```
Padding-top: 70px;
```

```
Padding-left: 25%;
```

```
Padding-right: auto;
```

```
Padding-bottom: 45px;
```

```
Border: 2px solid 000000;
```

```
}
```

Here we have used four properties:

1. Padding-top
2. Padding-left
3. Padding-right
4. Padding-bottom

Margin Properties

- ▶ Blank area around the border of an element is called margin. It is used create an extra space around the element.

- ▶ Syntax:

```
p  
{  
Margin: value;  
}
```

There are possible values of margin properties:

- ▶ Auto
- ▶ Length
- ▶ %
- ▶ Inherit

▶ Margin box is divided into 4 properties:

1. margin-top
2. margin-left
3. margin-right
4. margin-bottom

▶ Code snippet:

```
#container  
{  
Margin-top: 70px;  
Margin-left: 25%;  
Margin-right: auto;  
Margin-bottom: 45px;  
Margin: 2px solid 000000;  
}
```

Border Properties

- ▶ The border specifies a space between the padding and content in the box model. The border properties in CSS define the width, color and style of border area of the box in one declaration.
 - ▶ Syntax : border 1px double value;
- ▶ Some of the border properties are:
 1. Border-bottom-left-radius : specifies the shape of the border of the bottom-left-corner
 2. Border-bottom-right-radius : specifies the shape of the border of the bottom-right-corner
 3. Border-image-outset : specifies the amount by which the border image area extends beyond the border box.
 4. Border-image-slice : specifies the inward offsets of the image-border. Etc.

Other border properties

► Other properties are:

1. **Border-width.** Syntax: `Border-width: value;`

Here value can be defined using- thin, thick, medium, length, inherit.

1. **Border-color.** Syntax: `Border-color: value;`

Here value can be defined using- Inherit, transparent, color.

2. **Border-style** indicates the format of the border such as: dashed, double, solid, groove, ridge etc.

3. **Border-shorthand** property is used to specify all the border related properties into one properties.

4. **Border-radius** property is used to give round corners to a box like shape. To use this property we need specify the position of the corner of a box from top left and right, bottom left and right.

Syntax: `border-top-left-radius: 15px 5px;`

2. **Border-image** enables you to insert images in the border edges and border corners.

it further includes image properties like: source, slice, width, outset, repeat, shorthand etc.

2. **Border-shadow** used to attach one or more shadows to a box.

syntax: `box-shadow: none | [<length>< length>< length>? ||<color>] [, <length><length><length>?||<color>] +;`

Span and Div tag based Templates

▶ Difference between Div and Span tag

The difference between span and div is that a span element is in-line and usually used for a small chunk of HTML inside a line (such as inside a paragraph) whereas a div (division) element is block-line (which is basically equivalent to having a line-break before and after it) and used to group larger chunks of code.

▶ Using the <div> Element

The div element defines logical divisions on your web page. It is basically a box in which you can place other HTML elements that logically go together. A division can have multiple other elements in it, like paragraphs, headings, lists, links, images, etc. It can even have other divisions inside of it to provide additional structure and organization to your HTML document.

- ▶ To use the div element, place an open `<div>` tag before the area of your page that you want as a separate division, and a close `</div>` tag after it.

syntax : `<div>`

contents of div

`</div>`

- ▶ NOTE: If the area of your page needs some additional information that you will use to style with CSS later, you can add an id selector.

e.g. `id="myDiv">`

Difference between Div & Span tags in HTML5

The div element is different from the [HTML5 section](#) element because it does not give the enclosed content any semantic meaning. If you aren't sure whether the block of content should be a div or a section, think about what the purpose of the element and the content are to help you decide which to use:

- ▶ If you need the element simply to add styles to that area of the page, you should use the div element.
- ▶ If the content to be contained has a distinct focus and could stand on its own, you may want to use the section element instead.

Using the `` Element

- ▶ The span element is an inline element by default. This sets it apart from the div and section elements. The span element is often used to wrap a specific piece of content, normally text, to give it an additional "hook" that can be styled later. Used with CSS, it can change the style of the text it encloses; however, without any style attributes, the span element alone has no effect on text at all.
- ▶ As mentioned above, the div element includes a paragraph break, whereas the span element only tells the browser to apply associated CSS style rules to what is enclosed by the `` tags:

```
<div id="mydiv">
```

```
<p> <span>Highlighted text </span> and non-highlighted text.</p>
```

```
</div>
```