



# 1. ADVANCED WEB DESIGN

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# Web Components

- ❖ **Webpage** : A simple text file created using HTML.
- ❖ **Website** : A collection of interlinked web pages containing text, images, audio and videos. For Example, [www.ebalbharati.in](http://www.ebalbharati.in)
- ❖ **Web Browser** : A web browser is a software used to view web pages or websites available on the internet For Example Internet Explorer, Google chrome.
- ❖ **Web Server** : A Web server is an application or a computer that sends webpages over the internet using the HTTP protocol. For Example Apache, nginx, IIS, etc..
- ❖ **URL(Uniform Resource Locator)** : It is an address of a web page on the internet.
- ❖ **HTTP** : HTTP (HyperText Transfer Protocol) is a protocol used by WWW for client server communication.
- ❖ **HTML** : Hyper Text Markup language



# Introduction to HTML5

- HTML5 is the latest and most enhanced version of HTML
- It makes your website layout clearer to both website designers and users
- Browsers support 's features of HTML5 : Google Chrome, Mozilla Firefox, Microsoft Edge, Safari, Opera and Apple.



# Basic structure of HTML5

- **<html> and </html>** : indicates that the document is an html file.
- **<head> and </head>** : It includes <Title> within it, the text within <head> is not displayed on the webpage. This is used for search engine optimization.
- **<title> and </title>** : The content within this displayed on the title bar.
- **<body> and </body>** : This tag includes all content which is to be developed in the web browser. Most of the tags are included in this tag.



# Basic structure of HTML5

- **An attribute** : An attribute defines a property for an element, consists of an attribute/value, and appears within the element's start tag.

```
<!Doctype html>
```

```
<html>
```

```
<head>
```

```
<title> First Page </title>
```

```
</head>
```

```
<body bgcolor = green >
```

attribute value of attribute

This is my first web page

```
</body>
```

```
</html>
```

**Execute Here**



**<header>**

Defines a header for a document section.

**<nav>**

Defines a container for navigation links.

**<section>**

Defines a section in a document

**<article>**

Defines an independent self-contained article.

**<aside>**

Defines content apart from the content (like a sidebar).

**<footer>**

Defines a footer for a document or a section.



## FORMS IN HTML5

- Forms in HTML is used to accept user input.
- Form controls are used to collect different kinds of user inputs, such as contact details like name, address, single or multiple options from group of options, as well as clearing and submitting data etc.

### Attributes used with form element and Input element.

- **Name** : It specifies a name to a form.
- **Action** : The action attribute specifies the path where the form is to be submitted.
- **Method** : The method attribute specifies get or post method to be used when submitting the form data. Method of form are GET or POST.

i) **GET method** : GET method will pass the values via URL ,Passed values will be seen in Address bar.

ii) **POST Method** :POST method will pass the values via HTTP request.

Passed values not seen in Address bar. So it is a secure method to submit sensitive





## FORMS IN HTML5

Input type	Description
<code>&lt;input type="color"&gt;</code>	Defines a color picker
<code>&lt;input type="number"&gt;</code>	Defines a field for entering a number
<code>&lt;input type="url"&gt;</code>	Defines a field for entering a URL.
<code>&lt;input type="image"&gt;</code>	Defines an image as a submit button.
<code>&lt;input type="date"&gt;</code>	Defines a date picker with the year, month and day
<code>&lt;input type="email"&gt;</code>	Defines a field for an e-mail address

[Click to execute](#)





<form >

<h1>Some form elements</h1>

Select your favorite color <input type="color" >

<br>

Enter your phone Number <input type="Number" >

<br>

Add your Homepage<input type="url"> <br>

<input type="image" src="happy.jpg" alt="Submit" width="100"

height="100">

<br>

Birthday:

<input type="date" id="birthday" name="birthday">

<br>

<label for="email">Enter your email:</label>

<input type="email" id="email" name="email">

<br>

<input type="submit" value="submit">

</form>



Input type	Description
<input type="month">	Defines a month and year control in format is "YYYY-MM"
<input type="range">	Define a range control. Default range is 0 to 100.
<input type="datetime-local">	Defines a date picker that includes the year, month, day and time.
<input type="time">	Defines a control for entering a time.
<input type="week">	Defines a week and year control.
<input type="search">	Defines a text field for entering a search string like a site search or Google search.
<input type="file">	Defines a file-select field and a "Browse" button for file uploads.
<input type="tel">	Used to define input fields that should contain a telephone number.



## Input Restrictions

- A list of some common input restrictions is given below, few of which can be used for validation purpose.

Attribute	Description
disabled	Specifies that an input field should be disabled.
max	Specifies the maximum value for an input field.
min	Specifies the minimum value for an input field.
pattern	Specifies a regular expression to check the input values.
read only	Specifies that an input field is read only (cannot be changed).
placeholder	This acts as a temporary label showing the purpose of a text field without requiring a label tag.
required	Specifies that an input field is required (must be filled out).
autocomplete	Specifies whether a form or input field should have autocomplete On or Off.
autofocus	Specifies that the input field should automatically get focus when the page loads.
height and width	Specifies the height and width of an <input type="image">
multiple	Specifies that the user is allowed to enter more than one value in the <input> element. This works with input types like email and file.



- Some other useful attributes used with `<input>` are-
1. **id** : This is used to identify the html element uniquely through the document object model.
  2. **class**: It is used to apply CSS style to the individual input element.



## 1.3 <meta> tag

- The meta tag is a tag in html that **describes some aspects of contents of a webpage.**
- The HTML <meta> tag is used by search engines to search information that is provided with the webpage.
- This is empty tag (singular tag) which carries information within its attributes.
- The <meta> tag is placed between the <head> and </head> tags.
- Metadata will not be displayed on the webpage.



Attribute	Values	Description
Name	The value of the name attribute can be related to any of the following- i) Author ii) Description iii) Keywords iv) copyright e.g. <meta name = "author" >	Specifies the Name of the meta-data like the author, keywords or description.
Content	It can have any textual matter related to the name as in eg. i.<meta name = "author" content = "Balbharti"> ii.<meta name = "description" content = "Advance web designing"> iii.<meta name = "keywords" content = "html5, learn html5, list in html 5">	Here content of author is balbharati. Here the value for content attribute specifies name of the topic advance web designing. Here the values for content attribute are given as keywords like html5 , learn html5 etc.
Charset	UTF-8, Big5 e.g <meta charset="UTF-8"> <meta charset="Big5">	Specifies the character encoding used by the document, This is called a character encoding declaration. UTF-8 For Indian characters Big5 – for Chinese characters
http-equiv	refresh , set-cookie, content-type, expires, e.g. <meta http-equiv="refresh" content="5"> <meta http-equiv="set-cookies"> <meta http-equiv="content-type" content="text/html" charset="Big5"> <meta http-equiv="expires" content="userid=pqr; expires=Wednesday, 8-feb-2018 23:59:59 GMT;">	Used for http response message headers. Here the page will get refresh after every 5 seconds. The browser sends the cookies back to the server. Specifies the character encoding for the document Here page session will get expire at specified date and time.





```
<!DOCTYPE html>
<html>
<head>
<title>meta tag examples</title>
<meta name = "authors" content = "Balbharti">
<meta name = "description" content = "Advance web designing">
<meta name = "keywords" content = "html5, learn html5, list in html5">
<meta name="copyright" content= " copyright Balbharti All right Reserve">
</head>
<body>
    <p> Welcome to HTML5
    </p>
</body>
</html>
```



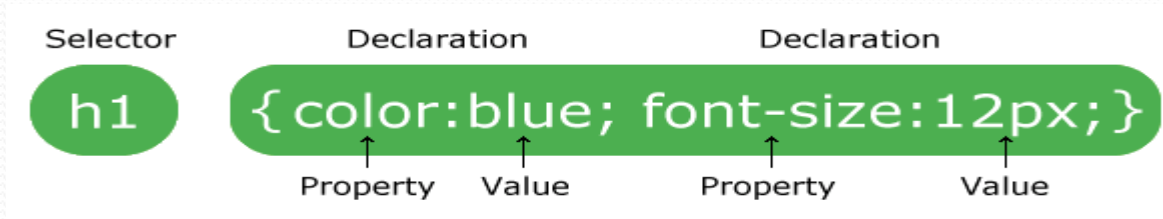


## 1.4 Cascading Style Sheets (CSS) in HTML5

- CSS stands for Cascading Style Sheets.
- CSS describes how HTML elements are to be displayed on screen, paper, or in other media.
- It can control the layout of multiple web pages all at once.
- CSS allows you to control the look and feel of several pages by changing a single source.
- A CSS rule set contains
  - a selector and
  - a declaration block.



## CSS Syntax



- **selector** points to the HTML element you want to style.
- **declaration block** contains one or more declarations separated by semicolons. Declaration blocks are surrounded by curly braces.
- **Declaration** includes a CSS property name and a value, separated by a colon.

**Property** : is a type of **attribute of HTML element**. It could be color, border etc.

**Value** : **Values are assigned to CSS properties**. In the above example, value "blue" is assigned to color property.

**Selector{Property1: value1; Property2: value2}**



## CSS Syntax



```
body {  
    background-color: lightblue;  
}  
  
h1 {  
    color: white;  
    text-align: center;  
}  
  
p {  
    font-family: verdana;  
    font-size: 20px;  
}
```



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**Science and Commerce, Ravet**



Property	Use	Value	Example
Color	Changes the color of the text	Color name	h1 {color: maroon}
Background-color	To set the background color in your webpage	Color name	body {background-color: yellow}
Font-weight	Used to bold text	bold or 100, 200...900	p {font-weight: 300}
Font-style	Used to italicize text	Italic, oblique or normal	p {font-style: italic}
Text-decoration	This property is used to add 1. strike-through marks 2. underline 3. overstrike 4. to remove underlines from links	1. line-through 2. underline 3. overline 4. none	p {text-decoration: underline} a {text-decoration: none}
Text-align	This property is used to control the horizontal alignment of any block-level text that are paragraphs, tables and other elements	left, right, center or justify	h1 {text-align: center}
Font-family	This is used to control the fonts	Font name	p {font-family: arial}



Property	Use	Value	Example
Font-size	This property allows you to control the size of the font	px, in, mm, cm, pt	p {font-size:10px}
Letter-spacing	This helps in controlling the horizontal spacing between characters of text	px, in, mm, cm, pt	h1 {letter-spacing: 5pt}
Padding	This property is used when you want to add padding (blank spaces) around the content of an element.	Pixel	h1 {padding:30px}
Border	This property adds a border to a webpage element	Solid, double, groove, ridge, inset, outset, dotted or dashed	h1 {border:green}
Background-image	To set an image as the background of your webpage	url("X") where X is the path of image file	body {background-image: url('background.jpg')}
Margin-Left	Sets margin area on the left side of the element.	px,pt,cm etc.	h1 {margin-left:10px}



## Types of CSS

There are three methods of implementing styling

**1. Inline CSS :-** It uses the style attribute in the HTML start tag. Inline CSS is used to apply CSS on a single line or element.

**For example :** `<p style="color:blue">Hello CSS</p>`

**2.Embedded stylesheet or internal CSS :** This is used to apply CSS on a single document or page. It can affect all the elements of the page. It is written inside the style tag within head section of html.**For example :** `<style> h1 {color: Red;}</style>`

**3. External CSS:** The external style sheet is generally used when you want to make changes on multiple pages. **It uses the <link> tag on every page and the <link> tag should be put inside the head section.** The **external css file** should not contain any HTML tags ,open with any text editor it **saved with .css extension.**

**For example :** **Style.css**

```
h1{color:navy;margin-left:20px}
```

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





**1. Inline CSS :-** It uses the style attribute in the HTML start tag. Inline CSS is used to apply CSS on a single line or element.

**For example :** `<p style="color: blue">Hello CSS</p>`

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h1 style="color:blue;  
border: 2px solid black;  
text-align:center;">
```

A Blue Heading

```
</h1>
```

```
<p style="color:red;">A red paragraph.</p>
```

```
</body>
```

```
</html>
```

OUTPUT

A Blue Heading

A red paragraph.





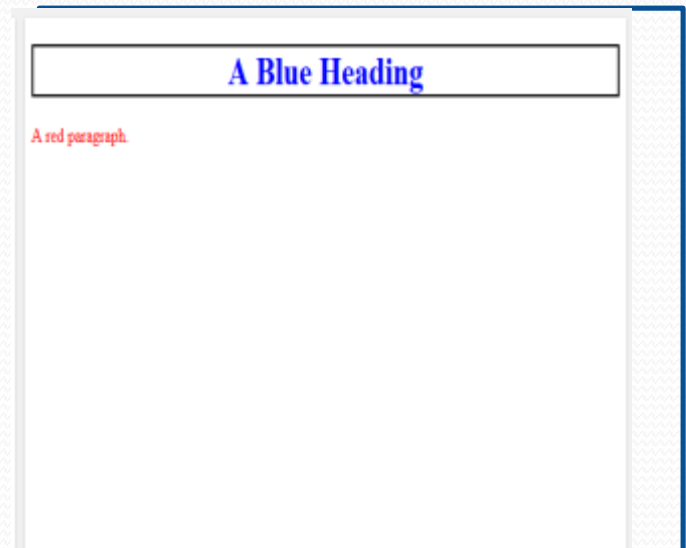
## Internal CSS

It is written inside the style tag within head section of html.

**For example :** `<style> h1 {color: Red;}</style>`

```
<!DOCTYPE html>
<html>
<Head>
<style> h1{color:blue;
        border: 2px solid black;
        text-align:center;}
        p{ color:red; }
</style>
</head>
<body>
<h1> A Blue Heading </h1>
<p> A red paragraph.</p>
</body>
</html>
```

## OUTPUT





# External Style Sheet

## Example:

Create a html file save as, External.html

```
<!DOCTYPE html>
<html>
  <head>
    <link rel="stylesheet" type="text/css"
      href="external.css">
  </head>
  <body>
    <h1> LCCT </h1>
    <h2 > Hello..!!</h2>
    <p> Welcome to IEI..</p>
    <p> Lampang, Thailand..</p>
  </body>
</html>
```

Create a CSS file save as, external.css

```
h1 {color:sienna;}
h2 {color:blue;}
p {color:red;}
```

## OUTPUT:

**LCCT**

**Hello..!!**

Welcome to IEI..

Lampang, Thailand..



## CSS Id Selector

- 1] The ID selector selects the id attribute of an HTML element to select a specific element.
- 2] ID selector is always unique within the page so it unique element.
- 2] ID gives identification to a particular element.
- 3] An ID selector definition start with (#) symbol , followed by name , and then the style definition

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<style>
```

```
#para1{text-align: center; color: blue}
```

```
</style>
```

```
</head>
```

```
<body>
```

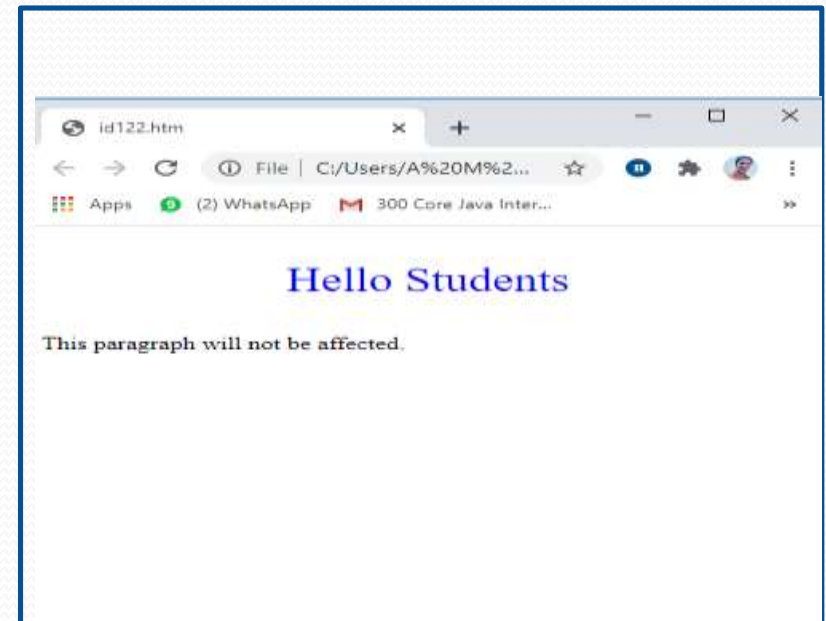
```
<p id="para1">Hello Students</p>
```

```
<p>This paragraph will not be  
affected.</p>
```

```
</body>
```

```
</html>
```

OUTPUT





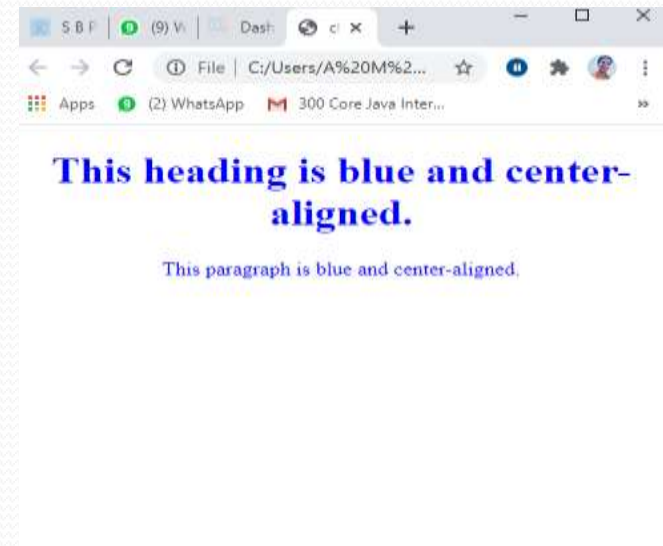
## CSS Class Selector

- The class selector selects HTML elements with a specific class attribute.
  - 1] The class selector is used for formatting variation of different instances of a single element.
  - 2] The class selector is used when you want to change a group of elements within your html page.
  - 3] class selector can be used to share the same formatting to the elements.
  - 4] Class selector definition start with period (.) symbol ,followed by a name and then the style definition.
  - 5] The class name should not start with number
  
- **The Class selector is used when you want to change a group of elements within your HTML page.** The class name should not start with number.



```
<!DOCTYPE html>
<html>
<head>
<style>
.intro{text-align:center;color:blue}
</style></head>
<body>
<h1 class="intro">This heading is blue
and center-aligned.</h1>
<p class="intro">This      paragraph
      is blue and center-aligned.</p>
</body>
</html>
```

## OUTPUT





## Class Selector for specific element

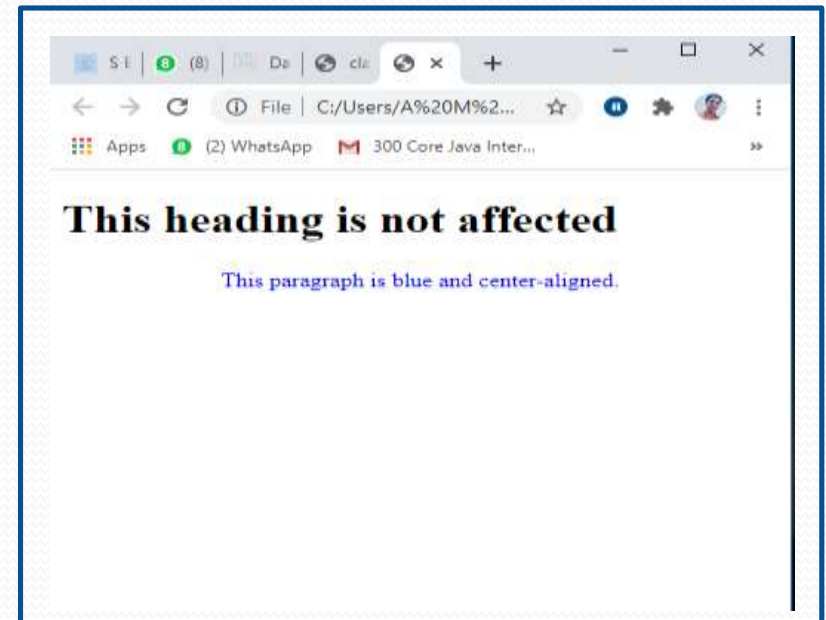
To specify only one specific HTML element should be affected then you should use the element name with class selector.

```
<!DOCTYPE html>
<html>
<head> <style>
p.intro {text-align: center;color: blue}
</style> </head>
<body>
<b

# 


```

## OUTPUT





## **Universal Selector**

The universal selector is an asterisk (\*) and it acts like a wildcard and matches all element types in an HTML page.

It select all the element on the webpage.

When user want to apply a rule to all elements in an HTML page then universal selector is used.





```
<!DOCTYPE html>
```

```
<html>
```

```
<head> <style>
```

```
* { color: green; font-size: 20px;}
```

```
</style> </head>
```

```
<body>
```

This css style will be applied on  
Entire Page

```
<h2>This css is applied to Heading  
2</h2>
```

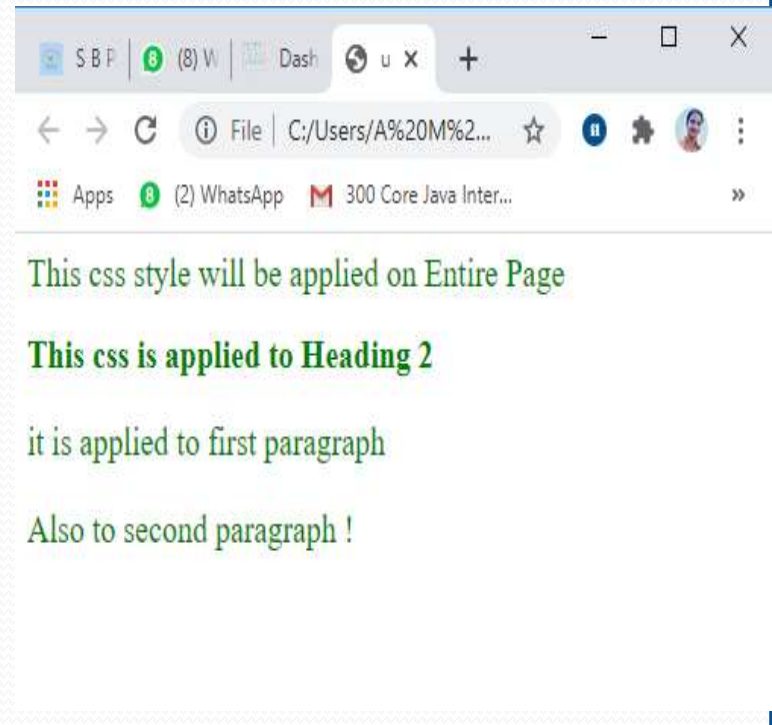
```
<p id="para1">it is applied to first  
paragraph</p>
```

```
<p>Also to second paragraph !</p>
```

```
</body>
```

```
</html>
```

## OUTPUT





## Group Selector

- 1] This property can be used when same style has to be applied to different tags.
- 2] The grouping selector is used to select all the elements with the same style definitions.
- 3] It is used to minimize the code.
- 4] commas are used to separate each selector in grouping.

**h1,h2,p{ text-align:center;color:blue}**

- Let's see the CSS code without group selector.
- `H1 {text-align:center;color:blue}`
- `H2 {text-align:center;color:blue}`
- `H3 {text-align:center;color:blue}`
- Now let's see the code after applying group selector
- `H1,H2,H3 {text-align:center;color:blue}`



```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<style>
```

```
h1,h2,p{text-align: center; color: blue}
```

```
</style>
```

```
</head>
```

```
<body>
```

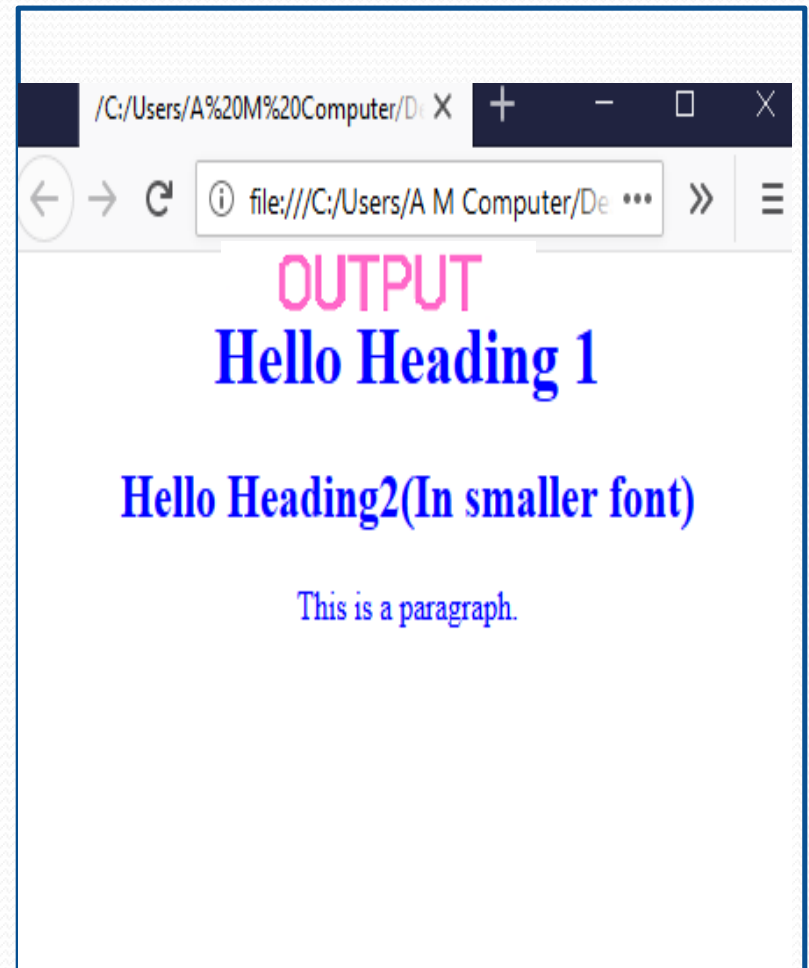
```
<h1> Hello Heading 1</h1>
```

```
<h2> Hello Heading2(In smaller font)</h2>
```

```
<p> This is a paragraph.</p>
```

```
</body>
```

```
</html>
```





## Positioning in CSS

- CSS helps to position the HTML elements.
- The **position property** is used to **set position** for an element.
- The element can be **positioned** using the **top, bottom, left and right** properties.

### Syntax :

***Selector**{ **position:value**; **top:value**; **left:value**; **bottom:value**; **right:value** }*

Where **values** in positions **are static, fixed, absolute, relative** and values of top, bottom, left, right are in pixels

### There are four types of positioning in CSS:-

1. Static Positioning
2. Fixed Positioning
3. Relative Positioning
4. Absolute Positioning

# Static POSITIONING

- This is a by- default position for HTML elements
- Static position element are not affected by the top, bottom , left , and right property
- An element with **position:static** is not positioned in any special way, it is always position according to the normal flow of the HTML page.

# Fixed POSITIONING

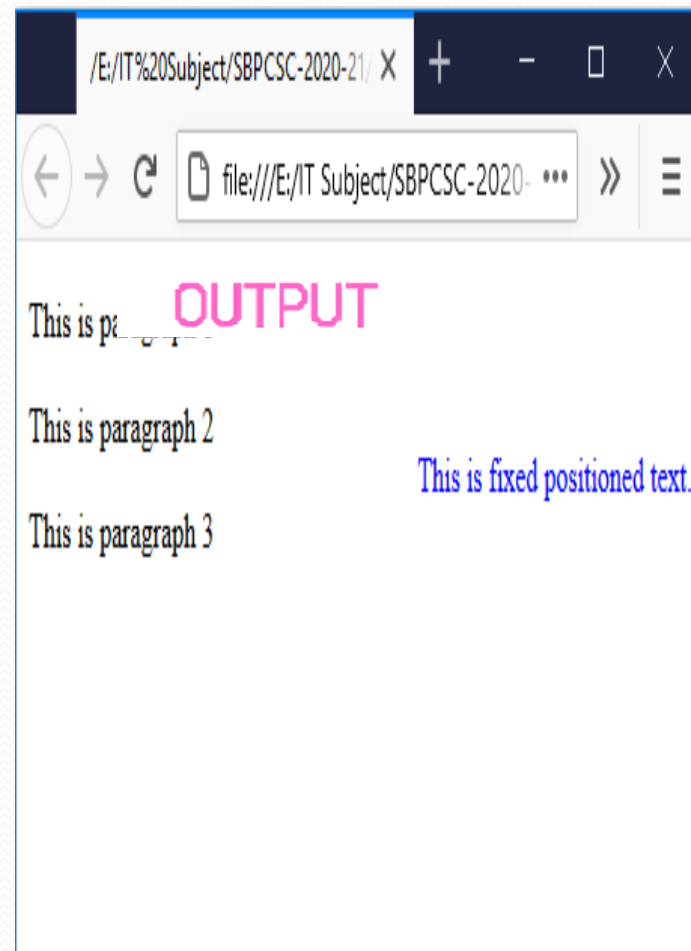
- This property helps to put the text fixed on the browser
- The fixed property forces an element into a fixed position relative to the browser window.
- The fixed element will not move, even when the page is scrolled.
- Class or id selector is required





# Positioning in CSS

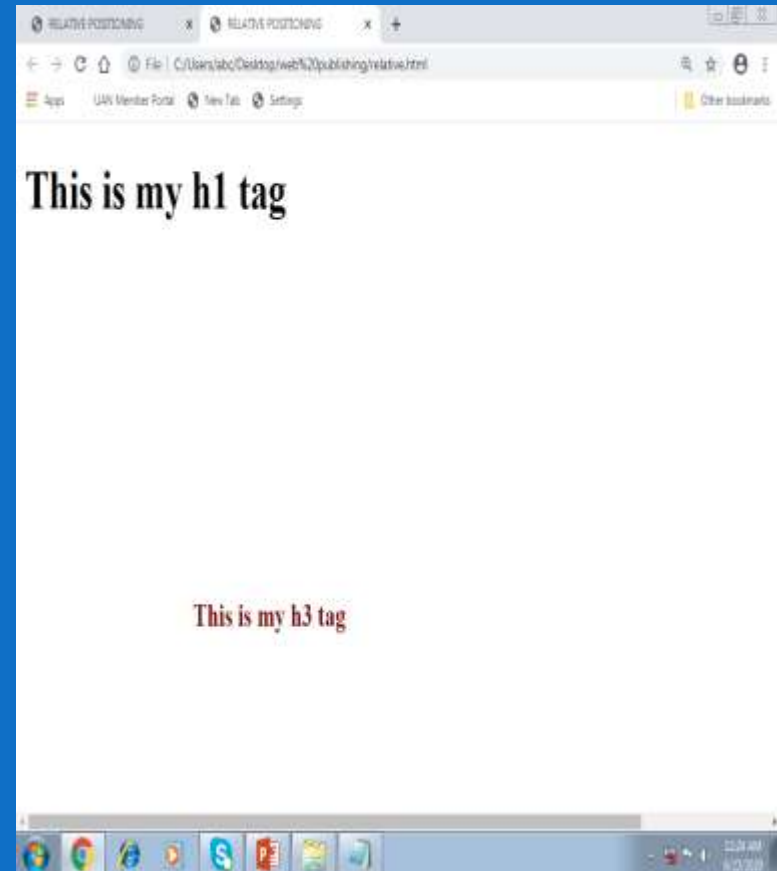
```
<!DOCTYPE html>
<html>
<head><style> p.fixed{position: fixed; top: 50px;
right: 5px; color: blue}
</style></head>
<body>
<p>This is paragraph 1</p>
<p>This is paragraph 2</p>
<p>This is paragraph 3</p>
<p class="fixed">This is fixed positioned text.</p>
</body></html>
```



# Relative positioning

- In this position the distance is calculate from previous element of the web page or offset the box from other element on the web page.
- To position an element relatively , the property position is set as relative.
- The position for an element which is relatively positioned is calculated from the original position in the document.

```
<!DOCTYPE html>
<html>
<head>
<title> RELATIVE POSITIONING
</title>
<style>
h3{position:relative;top:200px;left:150p
x;right:20px;color:maroon}
</style>
</head>
<body>
<h1> This is my h1 tag</h1>
<h3> This is my h3 tag </p>
</body>
</html>
```



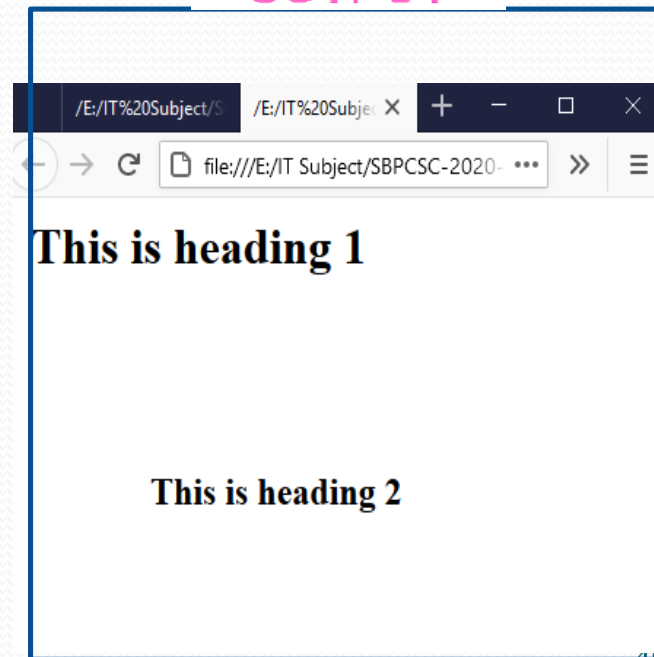


# Positioning in CSS

- **Absolute Positioning :** The absolute positioning defines the exact pixel value where the specified HTML element will appear
- This property sets an element a specific location and it is not affected by the flow of the page.
- To position an element absolute , the position property is set as absolute.
- The properties left, right, top, bottom can be used to place text.

```
<!DOCTYPE html>
<html>
<head>
<style>
    .first{position: relative;top:10px; right:10px;}
    h2{position: absolute; left:100px;top:150px}
</style>
<body>
<b1 class="first">This is heading 1</h1>
<h2>This is heading 2</h2>
</body>
</html>
```

## OUTPUT



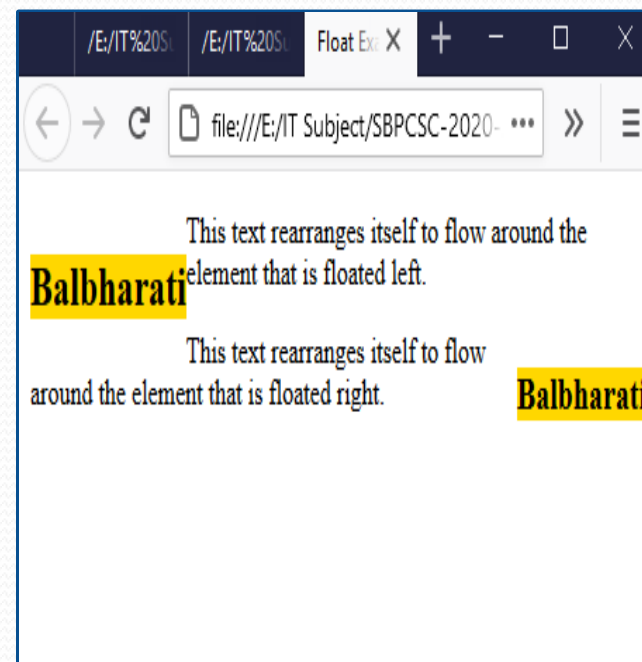


# Float Property in CSS

- Float is a CSS property **written in CSS file or directly in the style of an element. The float property defines the flow of content.**
- Following are the types of floating properties :
  - float : left :** This keeps the element float on left side of the container
  - float : right :** This keeps the element float on right side of container
  - float : none :** This is default property i.e. this shows the element as it is.

```
<!DOCTYPE html>
<html><head>
<title>Float Example</title>
<style>
    .float-left{float:left;font-size:20px;background-color:gold}
    .float-right{float: right;
                font-size:20px;background-color:gold}
</style></head><body>
<h2 class="float-left">Balbharati</h2>
<p>This text rearranges itself to flow around the element that is floated
left.</p>
<h2 class="float-right">Balbharati</h2>
<p>This text rearranges itself to flow around the element that is floated
right. </p>
</body>
</html>
```

## OUTPUT





## Display property

- The Display property in CSS defines **how the components (div, hyperlink, heading, etc) are going to be placed on the web page.**
- It **specifies how the element is displayed.** this property is used to define the display of different parts of a web page.

Syntax :

***Display : value;***

Where values are :

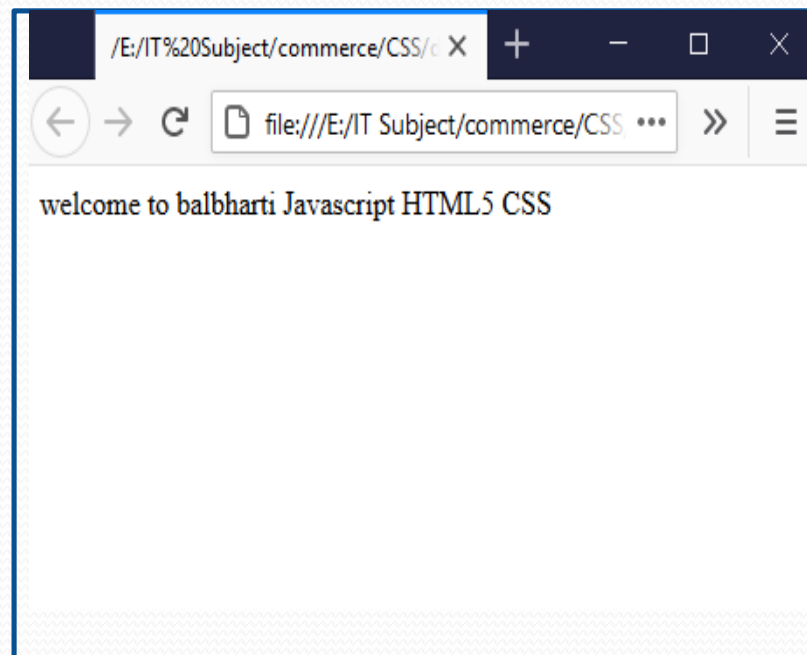
- **Inline :** It is used to display an element as an inline element.
- **Block :** It is used to display an element as an block element. It starts on a new line, and takes up the whole width of the browser window.
- **Block-inline :** This value is very similar to inline element but the difference is that you are able to set the width and height.
- **None :** The element is completely removed.



# Display property

```
<!DOCTYPE html>
<html>
<head>
<style>
  p {
    display: inline;
  }
</style>
</head>
<body>
<p>welcome to balbharti</p>
<p>Javascript</p>
<p>HTML5</p>
<p>CSS</p></body></html>
```

## OUTPUT



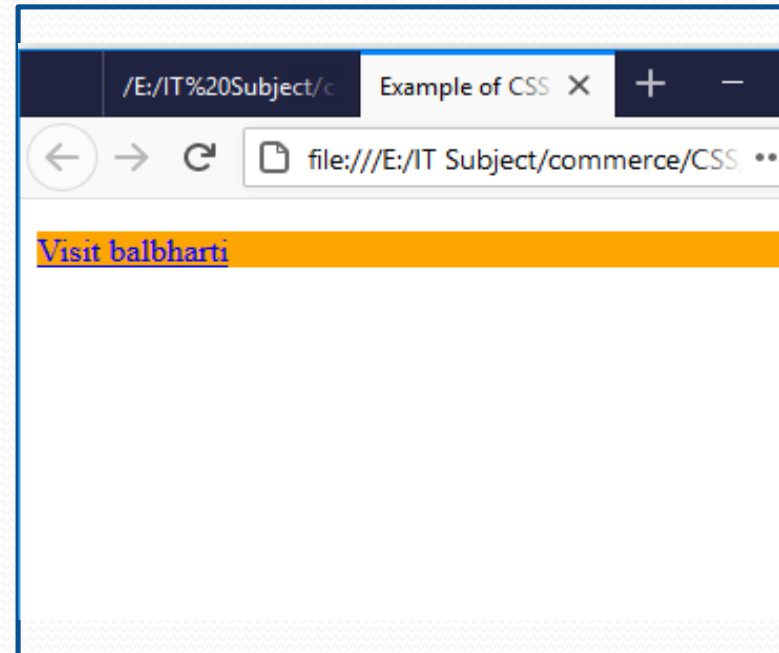




## Display property

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Example of CSS display</title>
<style type="text/css">
a {
display : block; background-color:orange;
}
</style>
</head>
<body>
<p>
<a href="https://www.ebalbharti.in" >
Visit balbharti</a>
<br>
</p></body>
</html>
```

### OUTPUT





## Ordered list or numbered list

- The `<ol>` tag defines an ordered list. An ordered list can be numerical or alphabetical.

Attribute	Values	Description
Type	"1" /"a"/"I"/"i"	1 is default value and other values specify the numbering type for the used items.
Reversed	Reversed	This attribute specifies that the items of the list are specified in the reverse order.
Start	Number	Specifies the starting number of the first item in an ordered list.



## Ordered list or numbered list

- The `<ol>` tag defines an ordered list. An ordered list can be numerical or alphabetical.

```
<!DOCTYPE html>
<html>
<body>
<h3>List of Topics in reverse sequence</h3>
<ol reversed>
<li> Basics of IT </li>
<li> HTML 5 </li>
<li> PostgreSQL</li>
</ol>
</body>
</html>
```

## OUTPUT

### List of Topics in reverse sequence

3. Basics of IT
2. HTML 5
1. PostgreSQL



## Ordered list or numbered list

- The `<ol>` tag defines an ordered list. An ordered list can be numerical or alphabetical.

```
<!DOCTYPE html>
<html><body>
<h3>List of Topics</h3>
<ol>
<li> Basics of IT</li>
<li> HTML 5 </li>
<li> PostgreSQL </li>
</ol>
<h3>List of Topics start with series 50</h3>
<ol start="50">
<li> Basics of IT</li>
<li> HTML 5 </li>
<li> PostgreSQL </li>
</ol></body></html>
```

## OUTPUT

### List of Topics

1. Basics of IT
2. HTML 5
3. PostgreSQL

### List of Topics start with series 50

50. Basics of IT
51. HTML 5
52. PostgreSQL



## 1.6 Unordered list or bulleted list

- An unordered list created using the
- `<ul>` tag, and each list item starts with the `<li>` tag. The list items in unordered lists are marked with bullets (small black circles), by default.

```
<!DOCTYPE html>
<html>
<head>
<title>Example of HTML Unordered List</title>
</head>
<body>
<h3>HTML Unordered List</h3>
<ul>
<li>Basics of IT</li>
<li>HTML 5</li>
<li>PostgreSQL</li>
</ul></body></html>
```

### OUTPUT

#### **HTML Unordered List**

- Basics of IT
- HTML 5
- PostgreSQL



## 1.6 Unordered list or bulleted list

Attribute	Values	Description
Type = disc/ circle/square (use style (css) instead of type attribute in HTML5. Type attribute is supported by previous versions of HTML)	style="list-style-type:disc" e.g <ul style="list-style-type:disc;"> style="list-style-type:circle" e.g <ul style="list-style-type:circle"> style="list-style-type:square" e.g <ul style="list-style-type:square"> style="list-style-type:none" e.g <ul style="list-style-type:none;">	Sets the list item marker to a bullet (default)  Sets the list item marker to a circle  Sets the list item marker to a square  The list items will not be marked

**Note :** HTML5 does not support bullets, circle and square value of type attribute instead you use CSS style.



## 1.6 Unordered list or bulleted list

- An unordered list created using the
- `<ul>` tag, and each list item starts with the `<li>` tag. The list items in unordered lists are marked with bullets (small black circles), by default.

```
<!DOCTYPE html>
<html>
<head>
<title>Example of HTML Unordered List</title>
</head>
<body>
<h3>HTML Unordered List</h3>
<ul>
<li>Basics of IT</li>
<li>HTML 5</li>
<li>PostgreSQL</li>
</ul></body></html>
```

### OUTPUT

#### **HTML Unordered List**

- Basics of IT
- HTML 5
- PostgreSQL





## 1.7 Definition list

- To define a definition list <dl> tag is used. You can create items in definition list with the <dt> and <dd> tags. The <dt> tag is used to define the term whereas the <dd> tag is used to define the term's definition.

```
<!DOCTYPE html>
<html>
<head>
<title>definition List</title>
</head>
<body>
<h3>Example of HTML definition List</h3>
<dl>
<dt><b>Web</b></dt>
<dd>The part of the Internet that contains websites and
web pages</dd>
<dt><b>HTML</b></dt>
<dd>A markup language for creating web pages</dd>
<dt><b>CSS</b></dt>
<dd>A technology to make HTML look better</dd>
</dl>
</body>
</html>
```

### OUTPUT

#### Example of HTML definition List

##### Web

The part of the Internet that contains websites and web pages

##### HTML

A markup language for creating web pages

##### CSS

A technology to make HTML look better



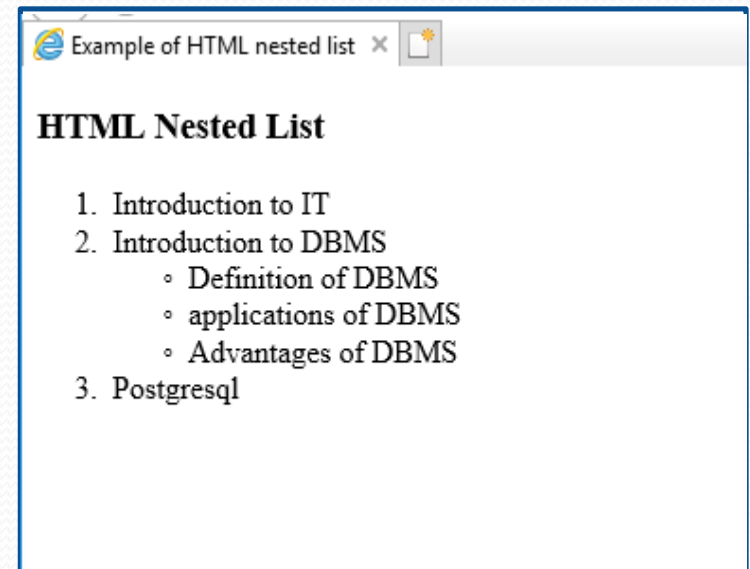
## 1.7 Nested list

List within another list either order list or unordered list is called nested list.

### Examples : Single level nested list

```
<!DOCTYPE html>
<html >
<head>
<title>Example of HTML nested list</ title>
</head>
<body>
<h3>HTML Nested List</h3>
<ol>
<li>Introduction to IT</li>
<li>Introduction to DBMS</li>
<ul style="list-style-type:circle">
<li>Definition of DBMS</li>
<li>applications of DBMS</li>
<li>Advantages of DBMS</li>
</ul>
<li>Postgresql</li>
</ol>
</body>
</html>
```

### OUTPUT





## 1.8 Inserting audio and video in HTML 5

HTML5 features include native audio and video support without the need for Flash. HTML5 includes special elements (tags) allowing to include video and audio and to define controls.

### Common Audio Formats :

- mp3** : An audio format from MPEG(Moving / Motion Pictures Experts Group).
- aac** : Advanced Audio Coding, standard format on Iphone, youtube etc.
- ogg** : An Open container and free audio format.



## < Audio> tag

The <audio> element enables you to embed(or add) audio files on Webpages.

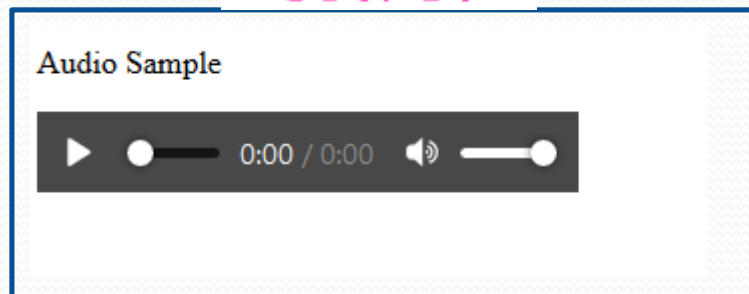
### Syntax :

**<audio src="sample.mp3" type="audio/ mpeg" controls> </audio>**

### Example :

```
<!DOCTYPE html>
<html>
<body>
<p>Audio Sample</p>
<audio controls>
<source src="test.mp3" type="audio/mp3">
</audio>
</body>
</html>
```

### OUTPUT



to add audio controls such as play, pause, and volume.

to specify the audio files which the browser may use



## Attributes of < audio > tag.

Attribute	Values	Description
Autoplay	-	The audio will start playing as soon as it is ready
Controls	-	The audio controls should be displayed (i.e. play/pause button etc.)
loop	Value	The audio will start over again, every time it is finished
muted	-	This Specifies that the audio output should be muted
src	URL	Specifies the URL of the audio file



## Adding audio with multiple sources :

Multiple sources of audios are specified so that if the browser is unable to play the first source then it will automatically jump to the second source.

### <SOURCE> TAG

The <source> tag is used to specify multiple media resources for media elements.

```
<!DOCTYPE html>
<html>
<body>
<p>Audio Sample</p>
<audio controls autoplay>
<source src="test.mp3" type="audio/mp3">
<source src="test.ogg" type="audio/ogg">
<source src="test.opus" type="audio/ogg">
</audio>
</body>
</html>
```

### OUTPUT







## <video>Tag

The HTML <video> tag is used to embed video into your web page, it has several video sources.

There are three different formats that are commonly supported by web browsers:- .mp4, .Ogg and .WebM.

**Syntax :** <video src="URL" controls></video>

OUTPUT

**Example :**

```
<!DOCTYPE html>
<html>
<body>
  <video width="320" height="240" controls>
    <source src="movie.mp4" type="video/mp4">
    <source src="movie.ogg" type="video/ogg">
    Your browser does not support the video tag.
  </video>
</body>
</html>
```







## Attributes of <video> tag :

Attribute	Values	Description
Src	URL	Defines link to video file
autoplay	-	Specifies that the video will start playing as soon as it is ready
controls	-	Specifies that video controls should be displayed (such as a play/pause button etc).
height	Pixels	Sets the height of the video player
loop	Value	Specifies that the video will start over again, every time it is finished
muted	-	Specifies that the audio output of the video should be muted

Attribute	Values	Description
poster	URL	Specifies an image to be shown while the video is downloading, or until the user hits the play button
preload	1. auto 2. metadata 3. none	Specifies if and how the author thinks the video should be loaded when the webpage loads
width	Pixels	Sets the width of the video player

The **<source>** tag is used to specify multiple media resources for video as well as audio media elements.



## 1.9 Image map in HTML 5

**An image with multiple hyperlinks is called an image map.**

Image map is used to connect links to different regions on the webpage. An Image map is created by marking certain regions on an image clickable. These clickable regions are called as **hotspots**.

Image Maps are of two types; Client Side and Server Side.

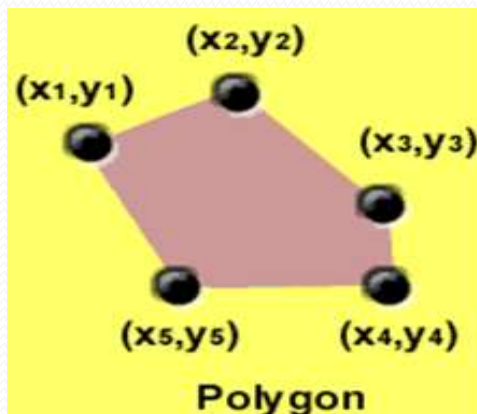
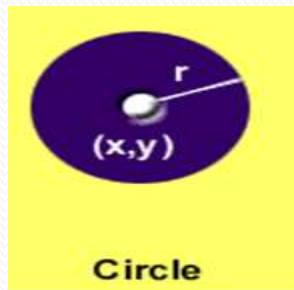
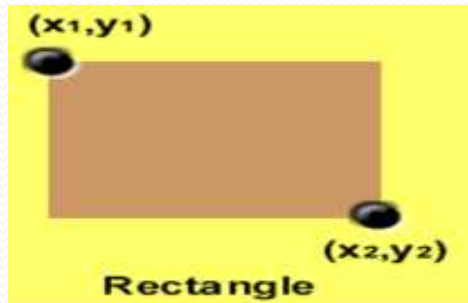
The tags used to define client side image map are :-

**1. <img>** : It is used to insert an image on a web page. To create a client side image map usemap attribute of <img> is used with value which is preceded with a # symbol. The usemap attribute acts as a pointer which indicates that the image is a client side image map.

**2. <map>** : specifies name of the image used for client side image map. The value of the name attribute is the value specified in usemap attribute of <img>.

is used to create the map of clickable areas.

**3) <area>** - It defines specific clickable regions. A given <map> element can contain multiple <area> element within it. <area> is singular tag and <map> is paired.



Attribute	Description
Href	Defines the URL to which the clickable region within the image-map navigates.
Shape	It can value rect, circle or poly.
coords	Specifies co-ordinates of the clickable regions on the image-map. Rect- specifies rectangular area with four co-ordinates. <u>Circle</u> -Defines a circular region. It requires three co-ordinates. <u>Poly</u> -Defines a polygon region with co-ordinates specifying each point on the polygon. It requires four co-ordinates. Default-Region covers the entire image. No co-ordinates are required
alt	Specifies extra information about clickable area. It is the alternative text to the clickable region.



## Example of Image Mapping

```
<!DOCTYPE HTML>
<html>
<head><title>image map</title></head>
<body> <h1>An example of Image Map</h1>

<map name="imagemap">
<area href="http://www.google.com" shape="rect" coords="0,0,233,156" alt="google site"/>
<area href="welcome.html" shape="circle" coords="518,182,82" alt=" Welcome page"/>
<area href="http://www.facebook.com." shape="poly" coords="825,319,931,246,1030,319,864,436,993,436"
alt="Facebook site"/>
</map></body></html>
```

(In this program `welcome.html` is a local file created on the machine.)

## An example of Image Map

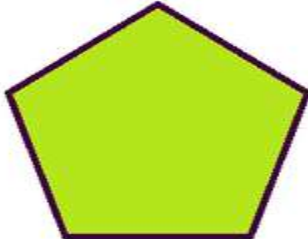
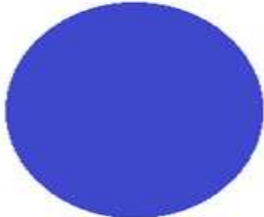



Image Mapping

```

<map name=" ap">
<area shape="rect" coords="x1,y1,x2,y2" alt="1" href="1.html">
<area shape="circle" coords="x1,y1,r" alt="2" href="2.html">
<area shape="poly" coords="x1,y1,x2,y2,... " href="3.html"
</map>
```

**Map :** It is used to create a map of the image with clickable areas.  
**Image :** It is used for the image source on which mapping is done.  
**Area :** It is used within the map for defining clickable areas.





## 1.10 INLINE FRAME IN HTML5

The `<iframe>` element creates an inline frame. Inline frames are often used in online advertising, where the contents of the `<iframe>` is an advertisement from an external party. HTML5 allows the incorporation to be seamless (no scrollbars, borders, margins etc).

Attribute	Values	Description
Src	URL	Specifies the address of the document to embed in the <code>&lt;iframe&gt;</code>
Height	Pixel	Specifies the height of an <code>&lt;iframe&gt;</code>
Width	Pixels	Specifies the width of an <code>&lt;iframe&gt;</code>
Name	Text	Specifies name of an <code>&lt;iframe&gt;</code>
srcdoc	HTML_ code	Specifies the HTML content of the page to show in the <code>&lt;iframe&gt;</code>



## <Iframe> tag Example

```
<!DOCTYPE html>
<html>
<body>
<h2>HTML Iframes</h2>
<p>This is the example of iframes.</p>
<iframe src="welcome.html"
height="200" width="300"></iframe>
</body>
</html>
```

### HTML Iframes

This is the example of iframes.





## 1.11 Website Hosting

### What is web hosting?

Web hosting is the service of providing storage space. The website is made available on the Internet with the help of web hosting.

### What is Web Host?

The companies that provides web hosting services are called web hosts. Web hosts own and manage web servers. These web servers offer uninterrupted Internet connectivity.

### Types of Web hosting :

Types of web hosting are

- 1.Shared hosting** : It is cost effective. It gives domain name to your website.
- 2.Free hosting** : There are some hosting websites which provide you free hosting of the website for limited period of time.
- 3.Dedicated hosting** : These are paid hosting servers for large websites.





## Prerequisites for Free Web Hosting

1. Three to Four pages website having first or Home Page named as index. html.
  2. Computer with internet connection.
  3. Gmail id with password.
  4. Need to toggle between two websites <https://www.000webhost.com/> and <http://my.freenom.com>
  5. Have to acquire free web space from web server named 000webhost.com.
  6. Have to acquire domain name for your website from my.freenom.com.
  7. Park the website domain address with free server website i.e. with 000web- host.com.
- Redirect the domain free server name to the domain website i.e. with my.freenom.com.



## Steps to Acquire free webspace :

1. Open the website [https:// www.000webhost.com/](https://www.000webhost.com/)
  2. Click on free signup Login with your email id and password
  3. verification email will be send to your email
  4. open your email and click on "verify email"
  5. Click on "Get Started"
  6. From My Website page click on "+Create New site" button
  7. Type your website name and any password
  8. e.g. website name as :- it-xi-textbook
- From File Manager box select "Up- load" option to upload your web pag- es. Home page of the website must be named as "index.html" (Select all webpages including image, audio files etc) and click on "Logout"
10. Your website is ready with the sub domain as 000webhostapp.com e.g. it-xi-textbook.000webhostapp. com



## Steps to Acquire free webspace :

1. Open the website [https:// www.000webhost.com/](https://www.000webhost.com/)
  2. Click on free signup Login with your email id and password
  3. verification email will be send to your email
  4. open your email and click on "verify email"
  5. Click on "Get Started"
  6. From My Website page click on "+Create New site" button
  7. Type your website name and any password
  8. e.g. website name as :- it-xi-textbook
- From File Manager box select "Up- load" option to upload your web pag- es. Home page of the website must be named as "index.html" (Select all webpages including image, audio files etc) and click on "Logout"
10. Your website is ready with the sub domain as 000webhostapp.com e.g. it-xi-textbook.000webhostapp. com



## Acquire Domain Name

1. Open the website <https://my.freenom.com>
2. From Use social sign in Click on "sign in" Login with your gmail id and give password
3. Click on "Services" --> Register a New Domain
4. Type your website name and click on "check availability" button
5. Choose any domain(e.g. .tk,.ml.cg etc) and click on "Get it now" if available click on "CheckOut" button
6. Set the free period to host the website, click on "Continue" button
7. From Review & Checkout page if the Total Due is \$0.00 then only select terms and conditions
8. Click on "Complete Order" button e.g. it-xi-textbook.tk
9. From Order Confirmation Screen click on "Click here to go to Client Area" button



## Summary

- Html5 has introduced new types in <Input> like number, date, Tel, email, search, URL, range, month, week, color.
- Few attributes of <Input> can be used for validation purpose.
- <meta> is used by search engines to search information that is provided with the webpage. It is inserted in the <head>
- CSS- Cascading Style Sheet describes how HTML elements are to be displayed on screen, paper, or in other media.
- CSS syntax Selector{Property1: value1; Property2: value2}
- The <ol> tag defines an ordered list. An ordered list can be numerical or alphabetical.
- An unordered list created using the <ul> tag, and each list item starts with the <li> tag. The list items in unordered lists are marked with bullets (small black circles), by default.
- To insert Audio and Video in a web page, <audio> and <video> are used which specifies the source with the file location.
- An image with multiple hyperlinks is called an image map. The usemap attribute acts as a pointer which indicates that the image is a client side image map.
- The <iframe> element creates an inline frame.