HTML5 | Introduction

Introduction: HTML 5 is the fifth and current version of HTML. It has improved the markup available for documents and has introduced application programming interfaces (API) and Document Object Model (DOM). HTML5 is the newest version of HTML. The term refers to two things. One is the updated HTML language itself, which has new elements and attributes. The second is the larger set of technologies that work with this new version of HTML — like a new video format — and enable you to build more complex and powerful websites and apps.

Features:

- It has introduced new multimedia features which supports both audio and video controls by using <audio> and <video> tags.
- There are new graphics elements including vector graphics and tags.
- Enrich semantic content by including <header> <footer>, <article>, <section> and <figure> are added.
- Drag and Drop- The user can grab an object and drag it further dropping it to a new location.
- Geo-location services- It helps to locate the geographical location of a client.
- Web storage facility which provides web application methods to store data on the web browser.
- Uses SQL database to store data offline.
- Allows drawing various shapes like triangle, rectangle, circle, etc.
- Capable of handling incorrect syntax.
- Easy DOCTYPE declaration i.e., <!doctype html>
- Easy character encoding i.e., <meta charset="UTF-8″>

Need of HTML 5 :

HTML5 was designed with major objectives, including:

- Making code easier to read for users and screen readers
- Reducing the overlap between HTML, CSS, and JavaScript
- Promoting design responsiveness and consistency across browsers
- Supporting multimedia without the need for Flash or other plugins

Structure of HTML 5:

Header

<nav>

<article>

<aside>

<section>

Footer feedback

1) Header :

The header element or tag represent the header of the document or section. A header should contain title and heading information about the related contain

Basic Syntax of header:

<header>

|

| Content

|

</header>

The header does not contain attributes

For eg.

<html>

<head>

<title>Header</title>

</head>

<body>

<header>

<h1> tutorial demo</h1>

<nav>

<ahref=”home.html”>Click me

</nav>

</header>

</body>

</html>

2) <Footer> tag :

The <footer> tag represent footer of the document or action.

A footer contain information about author of the document, copy right information, link of the document, etc.

Basic Syntax of <footer> tag:

< footer >

|

| Content

|

</ footer >

For eg.

<html>

<head>

<title> Footer </title>

</head>

<body>

<header>

<h1> Web Programming </h1>

</header>

<footer>

<h1>Solapur</h1>

</footer>

</body>

</html>

3) <navigation>(<nav>):

The <nav> tag defines a section navigation links that links to other pages or parts within the page itself in document.

Basic syntax of <nav> tag

<nav>

.

. content

.

<nav>

For eg. The example shown in the above the <header> tag.

4) <article> tag

The <article> tag is represent the section of the document or content that forms an independent parts of document Such as a block, other self contained information, that may be linked to some other content.

Basic Syntax of <article> tag.

<article>

.

. Content

.

<article>

for eg :

<html>

<head>

<title> footer Ex. <title>

</head>

<body>

<header>

<h1> kleb technology </h1>

</header>

<footer>

<h1> Solapur </h1>

</footer>

<article>

<h1> define html</h1>

 HTML is a markup language it is used to create web page.

</article>

</body>

</html>

<aside> tag :

<aside> tag represent a section of the web page that contain of article, section, etc..

Basic syntax for <aside> tag -

<aside>

.

. content of aside page

.

</aside>

For ex.

<html>

<head>

<title> aside Ex </title>

<body>

<aside>

<h1> Define mobile </h1>

 Mobile is used to communicate, message Emails, information, etc..

</aside>

</body>

</html>

4) <section> tag :

The <section> tag defines the section of the document that is part of document such as header, footer, article, etc..

Syntax :

<section>

.

. content

.

</section>

Example :

<html>

<head>

<title> section </title>

</head>

<body>

<section>

<h1>Web page </h1>

 The section of the document that is part of document such as header, footer, article, etc.

</section>

</body>

</html>

7) <Media> tag : Two types of tag

i) <video> tag

ii) <audio> tag

i) <video> tag: The video tag is used to display the video content in the html document. The <video> tag support all format browsers the format of videos that is supported for video element "MP4, webm (media), etc."

Syntax:

<video> tag

.

. Content

.

</video> tag

Attributes for <video> tag:

1) Autoplay The value for this attribute boolean values that is true or false.

This boolean attributes specifies that the video will automatic start playing as soon as it can do so without stoping to finish loding the data.

2) Control : The control attributes controls values. It is use to specify the browser will display Controls to allow the user to control video playback such as play or pause etc.

3) Height : The height attributes access values pixel or number. It set the height of the video play area.

4) Source (src): Accept the value URL. Its specify the allocation of the video file to be displayed you can use the attribute in <source> tag. It allow for multiple video.

5) Width: The width attributes except value, pixel or number. The width of video of the area.

6) loop: The loop attribute contain value loop. The loop attribute is specify that the video will automatically start over again.

7) Muted : Muted attribute except Boolean values that is true or false. The by default value is false. The Boolean attribute specify whether the video will be essentially silent.

8) Postal : Postal attributes accept the value URL it specify image to be shown while the video is playing.

ii) <audio> tag :

The <audio> tag used to display audio contain in an html document. The <audio> tag supports all browsers the audio format is MP3.

Syntax :

<audio> tag

.

. content

.

<audio> tag

Attribute for <audio> tag :

1) Autoplay

2) Control

3) Height

4) Source (src)

5) Loop

6) Muted

7)Width

8)Postal

For eg. Write a program of html code for display video and audio.

```
<!Doctype html>
<html>
<head>
<title> Display video and audio</title>
</head>
<body>
<video controls = “controls”>
<source src = “abc.mp4” type=”video/mp4”>
</video>
<audio controls = “controls” height = “300” width = “400”>
<source src = “PQR.cops” type = “audio/mp3”>
</audio>
</body>
</html>
```

iii) <dialogue> tag :

The <dialogue> tag used to display the dialogue message box. The message box contain generated by web server that is response from the web server.

Basic syntax for <dialogue> tag

<dialogue>

.

. content

.

<dialogue>

For eg.

<html>

<head>

<title>Dialouge Demo </title>

</head>

<body>

<dialogue>

Submitted Data

</dialogue>

</body>

</html>

iv) <figure> tag :

The <figure> tag is used for figures that is the <figure> tag used caption for figures.

Basic syntax :

<figure>

.

. content </figure>

For eg.

```
<html>
<head>
<title> figure</title>
</head>
 <body>
<figure>
<img src = “c:/image/image.jpg” width = “300” height = “400” />
<p> fig 1. Cycle</p>
</figure>
</body>
</html>
```

CSS

1) [css] cascading Style sheets is style sheet language used for describing the presentation of document written in markup language. The most obtained used to set the usually style of web page and user interfaces written in HTML language. HTML language can be apply to any XML language document.

2) HTML and Java script, CSS is a technology used by most website to create dynamic web pages User interface for many mobile application.

3) CSS was first proposed by or developed by Hakon wium Lie on October 10, 1994 to 1995 at the time Lie to was working with Tim Berners Lie at on Uropian research organization nuclear organization.

4) CSS was developed to provide style sheet of the web.

Define style sheet:

A style sheet consist of list of rules. Each rule or ruleset consist of 1 or more selectors (HTML tag or element), and declaration block.

Selector

1) In CSS selector declare which part of the markup style apply by HTML tag its attributes in the markup itself.

2) The selector nothing but html tag name.

i) class selector:

A class selector is an extension of simple selector. Any html element may have class selector.

for eg : dialogue.html {align="center”}

ii) Id selector :

The selector are used with <id> tag attribute for html element tag.

Syntax/Declaration block:

Syntax :

Selector_name {property : value }

E.g. :

div { color: red}

A rule or ruleset tells the browser how to render an element. This rules have two parts:

1) Selector

2) Declaration part

1) Selector:

The element to selector represents the html element to be affected by the rule.

2) Declaration part:

The declaration block represents the effect to be applied to the element (s), and it contains one or more property value pairs.

Ex.:

```
<html>
<head>
<title> This is my first HTML page with CSS </title>
</head>
<body>
<div style = "color : Pink; ">
This is my first html page with CSS
</div>
</body>
</html>
```

E.g. CSS format.html

```
<html>
<head>
<title> This is my CSS Format </title>
<style type= "text/css" >
    P{ color : Blue}
body { background-color: Pink}
</style>
<head>
<body>
<p> The text is in blue color </p>
```

 The background is Pink

</body>

</html>

Types of CSS :

There are three different of Style sheet or CSS :

i)Inline

ii) External

iii)Embedded

iv)Internal

i) Inline:

- If you do not work to for use style sheet for whole document then you can added Style information for a single document element.
- To use Inline Style Add the style attribute to the relevant element (Related element).
- By using We created smaller parts or Selection can use division or division of document then we can use Style rules for particular section or division part of the document using Style attribute.

E.g. Inline css.html

<html>

<head>

<title> Inline Css </title>

</head>

<body>

<h1 style = "color : Orange;" >

This is Inline </h1>

```
</body>

</html>
```

External :

- An external style sheet is a separate file where you can declare all the styles that you want to use throughout your website.
- You then link it external -style Sheet from all your html pages.
- This means you only need to set the Styles for each element once. If you want to update the style of your website, you only need to do it in one place.
- You do this by placing the link of the external style sheet in the <head> </head> of the html file.

e-g

Page 1- externalcss.css

```
p{ color:"red"}

body { background-color: yellow}
```

Page 2- external css.html

```
<html>

<head>

<title> External CSS </title>

<link rel="stylesheet"  href = "externalcss.css”  type="text/css">

</head>

<body>

<p> This is External css </p>

</body>

</html>
```

iii) Embedded :

- When you embedded style sheet you have to write the style rules directly within the html document.
- Document uses style is very easy way to being using style sheets. It involves using Style tag font within the heading tag of html document.
- You can enclosed style rules within the <style> tag and close </style> tag pair and place this pair tag within the head section of the html document.
- When we write style sheet within an html document is that not all browser. understand style information to avoid a problem it not understand the style comment of the style information by using an html comment Such as <!... !> so that, the comment as not displayed on a screen.

E.g. embeddedcss.html

```
<html>
<head>
<title> Embedded CSS </title>
<style type = " text/css ">
p{color : "Yellow";}
body{background-color : "black"}
</style>
</head>
<body>
<p> This is Embedded CSS. </p>
</body>
</html>
```

iv) Internal :

Internal style sheet are used to apply Style rules or whole document

The internal style sheet is not Separate document We can specify the Style in html document using <style> tag.

The <html> tag are used inside of the <style> tag shown in the example.

E.g.

```
<html>
<head>
<title> Internal CSS </title>
</head>
<body>
<style>
<font color : "Red" size="30" font-family = “Arial">
<p> This is webpage </p>
</font>
</style>
</body>
</html>
```

CSS Properties :

1) font :

i) A font properties in css provide a Set of font family, style, Size and various font used within a webpage.

ii) We can also use rules for Color, background color, image, margin and spacing to create a variation or effect. There are more types of font:

a) font-family : This property is used to set font of text to render the value may be Arial, Arial - Black, times new roman etc. The font family property is used to change the face of a font.

Syntax :

```
p{ font-family: Arial;}
```

b) font size: The font style property is used to increase or decrease the size of a font.

Syntax:

```
p{ font-size :30;}
```

c) font-style: The font style property is used to make a font italic or oblique.

Syntax:

```
p{font-style: italic;}
```

d) fond Variant : The font variant property is used to create a small caps effect.

Syntax :

```
P{font-variant : small-caps;}
```

e) font-weight : The font weight property is used to increase or decrease how gold or light a font appears.

Syntax :

```
p{ font-weight : bolder;}
```

f) font : This short hand property allow due to specify one or more font properties at once in the following order. {style, variant, weight, size, font Name}

for e.g.

```
p{ font: italic 16 px/18px Arial}
```

e.g.

```
<html>
<head>
<title> Css font </title>
<style type="text/css")
p{ font-family : Arial;
    font-size : 18 px ;
    font-style : italic;
    font variant : Small caps;
     font-weight : light;
     }
body { background – color: pink; color: Blue;}
</style>
</head>
<body>
<p> This text is shown with us of shorthand font properties. </p>
</body>
<html>
```

Text Property :

Text property are used to affect the Specifying layout of the text inline in namely the text within block elements such as paragraphs. The basic properties unable the page designer to set word Spacing, letter spacing, Spacing between line and horizontal & vertical alignment indentation text indent.

1) Color :

The color property is used to set the color of a text.

2) direction:

The direction property is used to set the text direction.

3) Letter – Spacing :

The letter spacing property is used to add or subtract space between the letters that make up a word.

4) Word spacing :

The word spacing property is used to add or subtract space between the words of sentence.

5) Text-indent:

The Text indent property is used to indent the text of a paragraph

6) Text – align :

The text align property is used to align the text of a document.

7) Text decoration:

The text decoration property is used to underline, overline, & strike through text.

8) Text transform :

The text transform property is used to capitalize or convert text to uppercase or lower case letters.

9) White- Space:

The white space property is used to control the flow of formatting text.

10) Text-shadow :

The text shadow property is used to Set the text shadow around a text.

E.g.

<html>

<head>

<title> Css Text </title>

```
<style type="text/css">
p{color : red; word-spacing: 40mm;
    Text-align: center;
    letter-spacing : 30 pt;
    text-indent : 44px;
   line-height: 10%;
}
body { body background-color-pink; Color: Blue,}
</style>
</head>
<body>
<p> This text is shown with us of Shorthand text properties. </p>
</body>
</html>
```

Link Properties

- The : link signifies unvisited hyperlinks.
- The : Visited signifies visited hyperlinks.
- The : hover signifies element that currently has the user's mouse pointer hovering over it.
- The : active signifies an element on which the user is currently clicking.

```
<!DOCTYPE html>
<html>
<head>
<style>
/* unvisited link */
```

```
a:link {color: red;

}

/* visited link */

a : visited {color: green;

}

/* mouse over link */

a : hover { color : hotpink;

}

/* Selected link */

a : active { color : blue;

}

</style>

</head>

<body>

<p><b><a href="default.asp" target="_black"> This is a link. </a></b></p>

<p> <b> Note : </b> a : hover MUST come after a : link and a : visited. in the css definition in order to be effective </p>.

<p><b> Note  : </b> a : active MUST come after a hover in the css definition in order to be effective. </p>.

</body>

</html>
```

List Properties

- The list-style-type allows you to control the shape appearance of the marker.
- The list-style-position specifies whether a long point that wraps to a second line. Should align with the first line or start underneath the start of the marker.

- The list-style-image specifies an image for the marker rather than a bullet point or number.
- The list-style Serves as shorthand for the preceding properties.
- The maker-offset specifies the distance between a marker and the text in the list.
- Now, we will see how to use these properties with examples.

a) The list-style type Property

The list-style-type property allows to control the shape or style of bullet point (also known as a marker) in the case of unordered lists and the style of numbering characters in Ordered lists.

Here are the values which can be used for an unordered list -

Sr. No.	Value & Description
1	none NA
2	disc (default) A filled-in circle
3	Circle An empty circle
4	Square A filled-in square

Here are the values, which can used for an ordered list-

value	Description	Example
decimal	Number	1,2,3,4,9
decimal- leading zero	0 before the number	01,02,03, 04,05
Lower-alpha	Lowercase alphanumeric characters	a,b,c,d,e.
Upper-alpha	Uppercase alphanumeric characters	A,B,C,D,E.
Lower-roman	Lowercase roman numerals	i, ii,iii,iv,v.

Upper-roman	Uppercase roman numerals	I,II,III,IV,V.
Lower-greek	The marker is lower-greek	Alpha,beta,gamma
Lower-latin	The marker is lower-latin	a,b,c,d.e.
Upper-latin	The marker is upper-latin	A,B,C,D,E.
hebrew	The marker is traditional Hebrew numbering	
Armenian	The marker is traditional armenion numbering.	
georgian	The marker is traditional georgian numbering.	
Cjk-ideographic	The marker is plain ideographic numbers.	
hiragana	The marker is hiragana.	a, i, e,o,u,ka, ki
Katakana	The marker is Katakana.	A, I, E,O,U,KA, KI
Hiragana-iroha	The marker is Katakana Hiragana-iroha.	i, ro,ha,ni,ho,he,to.
Katakana-iroha	The marker is Katakana-iroha.	I, RO,HA,NI,HO,HE,TO.

```
<html>
<head>
</head>
<body>
<ulstyle="list-style-type: circle;”>
<li> Maths </li>
<li> Social Science </li>
<li> Physics </li>
</ul>
```

```
<ulstyle = "list-style type: square;">
<li> Maths </li>
<li> Social science </li>
<li> Physics </li>
</ul>
<olstyle="list-style-type: decimal;">
<li> Maths</li>
<li> Social Science </li>
<li> Physics </li>
</ol>
<ol style="list-style-type: lower alpha; ">
<li> Maths </li>
<li> Social Science </li>
<li> Physics </li>
</ol>
<olstyle = “list-style-type : lower-roman;”>
<li> Maths </li>
<li> Social Science </li>
<li> Physics </li>
</ol>
</body>
</html>
```

The list-style position Property :

The list style position property indicates whether the marker should appear inside of outside of the box containing the bullet points. It can have one the two values.

Sr. No.	Value & Description
1	none NA
2	inside If the text goes onto a Second line, the text will wrap under Neath the marker. It will also appear indented to where the text would have started if the list had a value of outside.
3	Outside If the text goes onto a second line, the text will be aligned with the start of the first line (to the right of the bullet).

b) The list-style-image Property

The list style image allows you to specify an image so that you can use your own bullet style. The syntax is similar to the background - image property with the letters URL starting the value of the property followed by the URL in brackets. If it does not find the given image then default bullets are used.

c) The list-style Property

The list-style allows you to specify all the List properties into a Single expression. These properties can appear in any order.

d) The marker offset Property

The marker offset property allows you to specify the distance between the marker and the text relating to that maker

Table Properties

The border-collapse specifies whether the browser should control the appearance of the adjacent borders that touch each other or whether each cell should maintain its style.

The border-spacing specifies the width that should appear between table cells.

The caption-side captions are presented in the<caption> element. By default, these are rendered above the table in the document. You use the caption-side property to control the placement of the table caption.

The empty-cells specifies whether the border should be shown if a cell is empty.

The table-layout allows browsers to speed up layout of a table by using the first width properties it comes across for the rest of a column rather than having to load the whole table before rendering it.

E.g.

```
<html>
<head>
<style type="text/css">
   table. one {border-collapse: collapse;}
   table. two {border-collapse : separate;}
td.a{
        border-style : dotted;
        border-width: 3px;
        border-color: #000000
         padding: 10px;
}
td.b {
        border-style: solid;
        border-width: 3px;
        border-color :  #333333;
```

```
        padding:10px;
}
</style>
</head>
<body>
<table class "one">
<caption> Collapse Border Example</caption>
<tr><td class="a"> cell A Collapse Example </td></tr>
<tr><td class="b"> Cell B Collapse Example </td></tr>
</table> <br/>
<table class="two">
<caption> Separate Border Example </caption>
<tr><td class="a"> Cell A Separate Example </td> </tr>
<tr><td class="b"> Cell B Separate Example </td></tr>
<table>
</body>
</html>
```