

# HTML

## Chapter - 0

### Introduction

HTML → Hyper Text Markup Language

HTML is a language of web. It is used to create websites.

We use HTML tags to define look & feel of a website.

With understanding of these tags and how to put them together, we can create beautiful websites easily.

Then why CSS & Javascript

HTML is used for defining layout of a page - A barebone page structure.

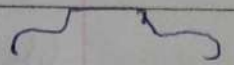
CSS is used to add styling to that barebone page created using HTML.

Javascript is used to perform logic for the page layout eg. What happens when a user hovers on a text, when to hide or show elements etc.

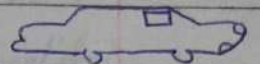


## A Beautiful analogy

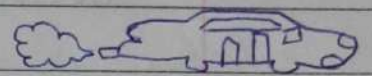
HTML = Car body (only metal)



CSS = Car paint, decoration etc.



Javascript = Car engine + interior logic

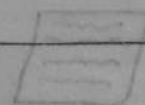
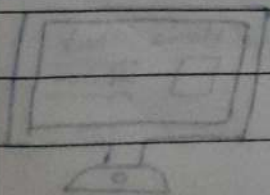


## Installing VS Code

We can use any text editor of our choice. Here I am using VS Code because it is light weight, open source and from Microsoft.

Go to google type VS code & install it.

Note : You can write HTML even in Notepad. But Text editors like VS code just makes these things easier.





# Chapter - 1

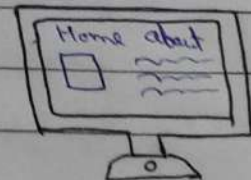
## Creating our first website

We start building a website by creating a file named `index.html`. `index.html` is a special filename which is presented when the website root address is typed.

### A Basic HTML Page

`<! Doc type HTML >` → Specifies this is an HTML 5 doc  
`< HTML >` → Root of an HTML Page  
`< Head >` → Contains Page meta data  
`< Title >` Browser's Website `</title >` → Contains title  
`</Head >` → Closing head tag  
`< Body >` → The main body of the Page (rendered by browser)  
`< H1 >` This is a heading `</h1 >` → Heading tag.  
`< P >` My Paragraph `</P >` → Paragraph tag  
`</Body >` → Closing body tag  
`</HTML >` → Closing HTML tag

A tag is like container for either content or other HTML tags.



HTML Document

Browser

Rendered Page

### Imp Notes

- Head & body tags are children of HTML tags
- HTML is a Parent and of Head & Body tags.



- Most of the HTML elements have opening & closing tag with content in between them.
- Some HTML tags have no content. These are called Empty elements eg. `<br>`, `<hr>` tags.
- We can either use .htm or .html extension.
- We can use "Inspect element" or "View Page Source" option from chrome to look into a website's HTML code.

HTML Element = Start tag + Content + End tag

### Comments in HTML

Comments in HTML are used to mark text which should not be parsed. They can help document the source code.

Syntax :- `<!-- HTML Comment -->`

### Case sensitivity

HTML is a case insensitive language. `<h2>` and `<h2>` tags are same.



## Chapter - 2

### Basic HTML tags

We can add elements inside the body tag to define the page layout.

#### HTML Element

Everything from starting to the ending tag.

`<body>` → opening tag

→ content ←

`</body>` → closing tag

#### HTML Attributes

Used to add more information corresponding to an HTML tag.

Example: `<a href="https://www.google.com">Google</a>`  
                    ↓                    ↓  
                    anchor tag      href attribute

We can either use single or double quotes in attributes.

#### The Heading tag

Heading tag is used to mark headings in HTML. From `h1` to `h6`, we have tags for the most important to the least - least important headings.



Syntax :-

<h1> Most important heading </h1>

<h2> Another heading H2 </h2>

<h3> Another heading H3 </h3>

<h4> Another heading H4 </h4>

<h5> Another heading H5 </h5>

<h6> Another heading H6 </h6>

Importance ↓  
↓  
↓  
↓  
↓  
↓

Note: We should not use HTML headings to make text bold or italic.

The paragraph tag

Paragraph tags are used to add paragraphs to an HTML Page.

Syntax :-

<P> This is a Paragraph </P>

The Anchor tag

The anchor tag is used to add links to an existing content inside an HTML page.

Syntax :-

<a href="https://google.com">Go to google </a>

The img tag

The img tag is used to add images in an HTML Page.

Syntax :-



↳ relative url of an image.

Bold, italic and underline tags.

We can use bold, italic and underline tags to highlight the text as follows:



Syntax :-

`<b>` This is bold `</b>`

`<i>` This is italic `</i>`

`<u>` This is underline `</u>`

br tag

The `<br>` tag is used to create line breaks in an HTML document.

big and small tags

We can make a text a bit larger and a bit smaller using `big` and `small` tags respectively.

hr tag

`<hr>` tag in HTML is used to create a horizontal ruler often used to separate the content.

Subscript & Superscript

We can add subscript & superscript in HTML as follows

`<sub>` this `</sub>` is subscript

`<sup>` this `</sup>` is superscript.

Pre tag

HTML always ignores extra spaces and newlines. In order to display a piece of text as it is, we use `pre` tag.

`<pre>`

This is written  
using `Pre`

$\Rightarrow$  Rendered as it is.  
text.

`</pre>`

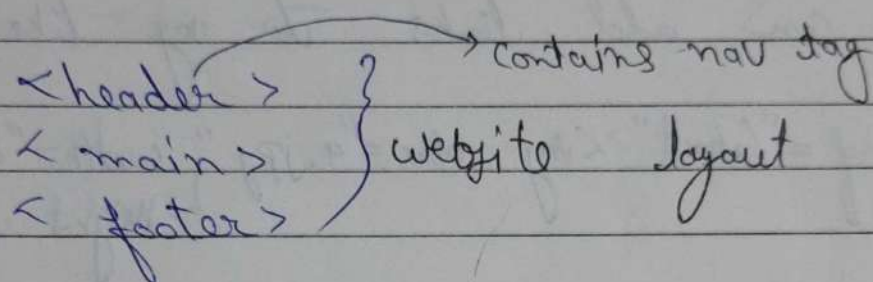


## Chapter - 3

### Creating a page layout

When we use the right tag in right place, it results in a better page layout, better indexing by search engines and better user experience.

We use the following tags to get the job done.



Inside the main tag we insert the following tags:-

- <main> → The main opening tag
- <section> → A Page section
- <article> → A self contained content
- <aside> → Content aside from the content (eg. Ads etc)
- </main> → The main closing tag.

Creating a page like this is not necessary but it creates a readable & structured layout.

Also they are useful for SEO.

### Link attributes

- <a href = "/contact" > Contact us </a> → opens in same tab
- <a href = "/contact" target = "\_blank" > Contact us </a> → opens in new tab



we can put any content inside an anchor tag (images, heading etc are all allowed)

If the page is inside a directory, we need to make sure that we link to the correct page.

↳ Same apply to img tag as well

we can add links to img like this.

`<a href="/about"></a>`

↳ Height will be set automatically

The Div tag

div tag is often used as a container for other elements. div is a block level element.

↳ Always takes full width.

The Span tag

span is an inline container

↳ takes as much width as necessary



## Chapter - 4

### lists, tables & forms

#### Lists

List are used to display content which represents a list.

Unordered list: Used to list unordered items

```
<ul>
```

```
<li> Home </li>
```

```
<li> About </li>
```

```
:
```

```
</ul>
```

Ordered list: Used to list ordered items

```
<ol>
```

```
<li> Phone </li>
```

```
<li> PC </li>
```

```
<li> laptop </li>
```

```
</ol>
```

#### Tables

The `<table>` tag is used to define tables in HTML. It is used to format & display tabular data.

`<tr>` tag: Used to display table row

`<td>` tag: Used to display table data

`<th>` tag: Used in place of table data for displaying table headers.

We can define as many table rows as we want.



To add a caption to the table, we use `<caption>` tag inside table.

thead tag: Used to wrap table head (caption & tr with th)  
tbody tag: Used to wrap the table body.

Colspan attribute

This attribute is used to create cells spanning multiple columns.

`<th colspan="3"> Roman </th>`  
↳ spans 3 columns

HTML Forms

An HTML form is used to collect input from the user. The `form` tag is used for the same.

`<form>`

-- Elements of the forms --

`</form>`

There are different form elements for different kinds of user input.

→ Input element: Can be of type text, checkbox, radio, buttons and submit and file.

→ Textarea element: Defines a multi-line text input. cols and rows attributes can be used to size it.

→ Select element: Defines a dropdown list.



Note: We don't have to learn / remember all the tags, we will automatically memorize them with practice.

## Embedding Videos

Video tag is used to play videos in HTML.

```
<video src="video.mp4">Torenav </video>
```

## Attributes for video

We can use :-

→ width: To adjust width of a video (Height automatically adjusts)

→ we can use autoplay and loop to autoplay or loop the video!



## Chapter - 5

### SEO (Search Engine Optimization)

We will focus only on HTML standpoint of SEO.  
We will not be looking into keyword building and content optimization aspect of SEO.

#### Types of SEO

- On Page SEO → Can be done by HTML developers
- Off Page SEO

#### HTML SEO

HTML developers can implement SEO using the following techniques:

- 1> Set the title very nice & to the point.
- 2> Set the meta description  
`<meta name="description" content="...">`
- 3> Set a nice URL slug.
- 4> Set the meta keywords tag.
- 5> Set the meta author tag.  
`<meta name="author" content="Branan">`
- 6> Set a favicon
- 7> Compress images & other resources
- 8> Remove unused HTML/CSS & JS files + Compress them
- 9> Add alt text to images.



## Cheatsheet :-

### Structure :-

This is the basic template or Barebone structure of HTML.

### Bareplate

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title> Document </title>
</head>
<body>

</body>
</html>
```

### Heading :-

There are six headings available in HTML.  $H_1$  is largest and  $H_6$  is smallest.

$<h1>$  tag

$<h1>$  Heading 1  $</h1>$

$<h2>$  tag

$<h2>$  Heading 2  $</h2>$

$<h3>$  tag

$<h3>$  Heading 3  $</h3>$



`<h4>` tag

`<h4>` heading 4 `</h4>`

`<h5>` tag

`<h5>` heading 5 `</h5>`

`<h6>` tag

`<h6>` heading 6 `</h6>`

Container :—

Container tags are the tags that contain some data such as text, image etc.

There are several container tags in HTML.

`div` tag

`div` tag or division tag is used to make blocks or divisions in the document.

`<div>` This is div block `</div>`

`span` tag

`span` is a container for inline content

`<span>` This is span block `</span>`

`P` tag

Paragraph

`<P>` This is a Paragraph `</P>`



Pre tag  
Pre tag represents pre-formatted text

<Pre> Hello World </Pre>

Code tag  
Code tag is used to represent source codes

<code>  
import Python  
</code>

Text formatting : —

Text formatting tags are used to format text or data of HTML documents. You can do certain things like creating italic, bold, strong text etc to make your document look more attractive and understandable.

<b> tag  
<b> I'm bold text </b>

<strong> tag  
<strong> I'm important text </strong>

<i> tag  
<i> I'm italic text </i>

<em> tag  
<em> Emphasized text </em>



`<sub>` tag  
`<sub>` Subscript `</sub>`

`<sup>` tag  
`<sup>` Superscript `</sup>`

Lists :-

Lists can be either numerical, alphabetic, ~~bullet~~ bullet, or other symbols. You can specify list type and list items in HTML for the clean document.

`<ol>` tag

Ordered list start with `<ol>` tag and each list item start with `<li>` tag.

`<ol>`

`<li>` Data 1 `</li>`

`<li>` Data 2 `</li>`

`<li>` Data 3 `</li>`

`</ol>`

`<ul>` tag

Unordered list

`<ul>`

`<li>` Your Data `</li>`

`<li>` Father's Data `</li>`

`<li>` Mother's Data `</li>`

`</ul>`



Media : —

Media is anything that is present in digital form such as image, video, audio etc.

<audio> tag

It is used to embed sound content in the document.

<audio controls>

<source src = "1.mp3" type = "audio/mpeg">

Your browser does not support the audio element.

</audio>

<img> tag

It is used to embed or import image in a webpage.

<img src = "me.Png" alt = "Parasur" >

<video> tag

It is used to embed video in webpage.

<video width = "480" height = "320" controls>

<source src = "demo.mp4" type = "video/mp4">

Your browser does not support the video tag.

</video>



Table :-

A table is a collection of rows and columns. It is used to represent data in tabular form.

## Table Structure

< table >

<caption> Demo table </caption>

<thead>

2 ter 7

$$\langle \text{th} \rangle \text{ Column } j \langle / \text{th} \rangle$$
$$\text{Lth Colspan} = "2" > \text{Column 2} < \text{Jth} >$$
 $\langle 1/a \rangle$ 

< / thread >

<tbody>

Adm

<td> data + </td>

<td> data 2 </td>

 $\angle A B C$ 

< / header >

$\angle$  subtended

< 2nd

[illegible]

<td> Data </td>

 $\langle \tau \rangle$ 

$\langle 1 \text{ atom} \rangle$

< table >



Links :—

Links are clickable text that can redirect you to some other page.

<a> tag

<a> or anchor tag defines a hyperlink.

<a href = "https://www.google.com">Visit google </a>

Form :—

Sample Form

Form is used to collect user's input, generally user's data is sent to server for further processing.

<form action = "/action.php" method = "Post">

Name : <input name = "name" type = "text" /> <br />

Age : <input max = "90" min = "1" name = "age" step = "1" type = "number" value = "18" />

<select name = "gender">

<option selected = "selected" value = "male"> Male </option>

<option value = "female"> Female </option>

</select> <br />

<input checked = "checked" name = "newsletter" type = "radio" value = "daily" /> Daily

type = "radio" value = "weekly" /> Weekly <br />

<textarea cols = "20" name = "comments" rows = "5">

Comment </textarea> <br />



```

<table> <input name = "terms" type = "checkbox"
        value = "standc" /> Accept terms </table>
<input type = "submit" value = "submit" />
</form>

```

## Characters & symbols

Some symbols are not directly presented on the keyboard, but there are some ways to use them in HTML documents. We can display them either by entity name, decimal, or hexadecimal value.

### Copyright symbol (©)

&copy;

### Less than (<)

&lt;

### Greater than (>)

&gt;

### Ampersand (&)

&amp;

Random Text

Lorem text

lorem 46

Semantic text (Elements)

Semantic elements are those elements that are self-describable, i.e., from their name itself, you can understand their meaning.

<section> tag

It defines a section in the document

<section> This is a section </section>

<article> tag

It represents self-contained content

<article> Enter your data here </article>

<aside> tag

It is used to place content in the sidebar

<aside> your data </aside>