HTML – Hyper Text Markup Language
Html is the language of the web. It is used to create websites.
We use HTML tags to define the look and feel of a website.
With an understanding of these tags and How to put them together, we can create beautiful websites easily!

Then why CSS and JavaScript

- HTML is used for defining the layout of a page – A barebone page structure.
- CSS is used to add styling to that barebone page created using HTML.
- JavaScript (JS) is used to program logic for the page layout. E.g. what happens when a user hovers on a text when to hide or show elements etc?

A Beautiful analogy

HTML = Card body (only metal)
CSS = Car paint, design, etc.
JavaScript = Car engine + Interior logic

We will start learning how to build beautiful layouts in this course.

Installing VS Code

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

- Go to google, search for VS Code, download and install it.

NOTE: You can write HTML even in Notepad. Text editors like VS Code just makes things easier.

Chapter – 1 (Creating our first website)

We start to build a website by creating a file named **index.html, index.html** is a special filename that is presented when the website root address is typed.

A Basic HTML Page
<!Doctype html> - Specifies this is an html5 document
<html> - root of an HTML page
<head> - Contains page metadata
<title> Harry's Website </title> - Contains title

```
</head>
<body> - 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
```
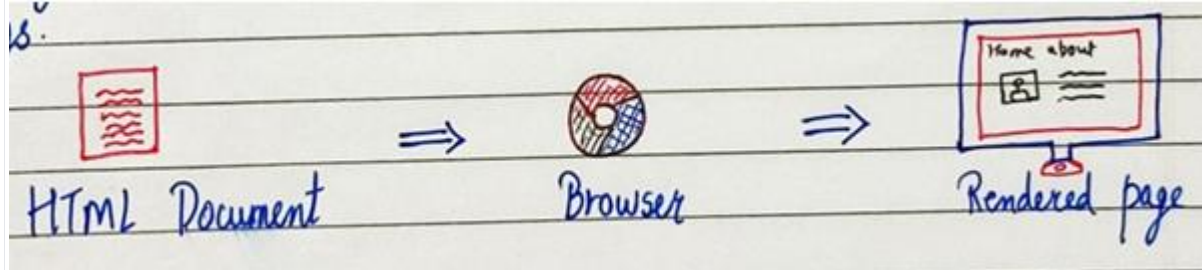 A tag is like a container for either content or other HTML tags.

HTML Document ⟹ Browser ⟹ Rendered page

Important Notes:

- Head & body tags are children of HTML tag.
- HTML is the parent of Head and Body tags.
- Most of the HTML elements have opening & closing tag with content in between opening and closing tags.
- Some HTML tags have no content. These are called **Empty elements.** For example, <br> tag
- We can either use **.htm** or **.html** extension to save our html code.
- You can use the **"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 during documentation of the source code.
`<!-- HTML Comment -->`

Case Sensitivity
HTML is a case insensitive language. <H1> and <h1> tags are the same.

Chapter – 1 Practice Set

1. Inspect your favorite website and change something on the page which is displayed.
2. Go to your favorite website and try to view the page source and write the exact lines of code. Does it clone the website? Why?
3. Write any HTML code inside a text file. Does it work if you write it using notepad?

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: Harry's Site
<a = anchor tag
href is the attribute of above element
We can either use single or double quotes in attributes.

The Heading Tag
Heading tag is used to mark heading in HTML. From h1 to h6, we have tags for the most important to the least important heading.
<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> Least important heading </h6>
Note: We should not use HTML headings to make text thick or bold.

The Paragraph Tag
Paragraph tags are used to add paragraphs to an HTML page.
<p> This is a paragraph </p>

The Anchor Tag
The Anchor tag is used to add links to existing content inside an HTML page.
 Click Me

The img Tag
img tag is used to add images in an HTML page.
<img src="image.jpeg">
Note: In src attribute, we have to specify the relative path of the image.

Bold, italic and underline Tags
We can use bold, italic and underline tags to highlight the text as follows:
 This is bold
<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 the 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 and Superscript
We can add subscript and superscripts in HTML as follows:
_{this} is subscript
^{this} 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
    Tag
</pre>
Note: Above text will get rendered as it is.

1. Create an HTML page with a heading (title heading), a primary heading, and a subheading.

Which tags did you use?

2. Create a page with 5 wallpaper images taken from the internet
3. Use br and hr tags to display a piece of text with line-breaks
4. Try to write the following chemical equation using HTML

$C + O_2 \rightarrow CO_2$

5. Try to write a Wikipedia article using HTML

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 tag to get the job done
<header> #It contains nav tag (Navigation bar)
<main>
<footer>
Above tags are used for website layout

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 (e.g. Ads etc.)
</main>   #the main closing tag

Creating a page like this is not necessary but it creates a readable and structured layout. Also, they are useful for SEO.

Link attributes
 Contact Us
#above tag will allow the contact page to open in same tab

 Contact Us <a>
#above tag will open contact page in new tab

We can put any content inside an anchor tag (images, headings, etc. are all allowed)

If the page is inside a directory, we need to make sure that we link to the correct page. [Same applies to img tag as well]

We can add links to images like this
<img src="a.jpg" width="120">
[Height of image 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 – 3 Practice Set

1. Create an SEO friendly website using HTML
2. Create an HTML page which opens google when clicked on an image
3. Create a website which has your 5 top used websites bookmarked. The links should open in a new tab.

Chapter – 4 (Lists, Tables & Forms)

Lists
Lists are used to display content which represents a list

Unordered list: Used to list unordered items

 Home
 About
.
.

```
</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 the 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"> Harry </th>` [Spans 3 columns]

HTML Forms
An HTML form is used to collect input from the user.
form tag is used for the same
```
<form>
-Element of the form-
</form>
```
There are different form elements for different kinds of user input.

- **input element:** Can be of type text, checkbox, radio, button and submit. We also have a 'file' type
- **textarea element:** Defines a multi-line text input. Cols and rows attributes can be used to size the textarea.
- **select element:** Defines a drop down list

Note: You don't have to remember all the tags, you will automatically memorize them with practice.

Embedding Videos

Video tag is used to play videos in HTML

<video src="harry.mp4"> Error </video>

Attributes for video

We can use:

- **Width:** To adjust width of a video (Height automatically adjusts)
- We can use autoplay/loop to autoplay or loop the video.

Chapter – 4 Practice Set

1. Create an HTML page with video embedded inside it.
2. Replace the video in question-1 with a YouTube video.
3. Create an HTML form for a travel website to book a vacation.
4. Create a table displaying score of cricket players in a match using HTML.

Chapter – 5 (SEO)

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 keyword tag
5. Set the meta author tag

`<meta name="author" content="Harry">`

6. Set a favicon
7. Compress images & other resources
8. Remove unused HTML/CSS & JS files + Compress them
9. Add alt text to images