HTML [Beginner]

Chapter - 0 : Introduction.

HTML is the language of the web. It is used to create websites.
We Use HTML Tags to define look & feel of a website

HTML is used for defining Layout of a page - A bareboane page structure.

	Client Side	Server side
Execution location	Executes On User side	Executes On a Remote device
Languages	Primarily HTML, CSS, JS	PHP, Python, Java etc
Main Job	Makes clicks & Scroll works	Manages saved information
Access Level.	Can't access server data directly	Can read/write files interact with dbs.
Speed	Quicker for UI changes	Slower due to network

Chapter - 1 : Creating Our first website.

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

Importance of HTML (index.html)

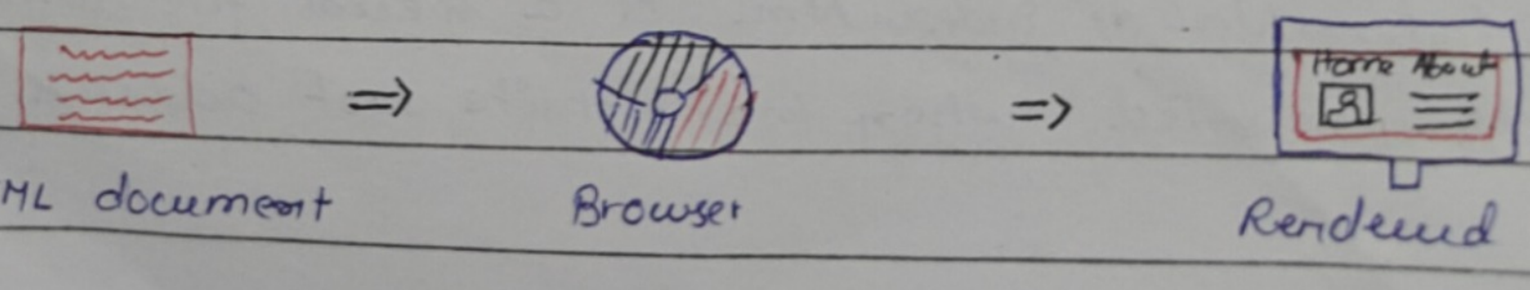
1) Default name of a website's homepage
2) First page users see when visiting a website
3) Important for SEO
4) Provides uniform starting point across servers.
5) Serves as fallback when no file is specified in URL.

Tags : Elements that are used to create a website are called HTML Tags.

Tags can contain content or other HTML Tags.
Define elements like text, images, links.

<! Doctype HTML>	Defines the HTML Version
<html>	root of an HTML Tag
<head>	Contains page metadata
<title> Shayan's Website </title>	Title
</head>	
<body>	The main body of the page
<h1> Heading </h1>	heading tag
My Paragraph	Paragraph tag
</body>	Closing body tag.
</html>	

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



Imp Notes:

- Head & body tags are children of HTML Tag.
- Most of the HTML elements have opening & closing tag with content in between opening & closing tags.
- Some HTML Tags have no content. These are called empty elements. Eg
- HTML Element = start tag + Content + End tag.
- Extension → .html or .htm.

Comments in HTML.

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

<!-- HTML Comment -->

Case Sensitivity.

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

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

<tag attribute = "value"> Text Content </tag>
used to add more information corresponding to an HTML tag.

E.g.: <a href = "https://shayverse.com/"> Shayan </a>
anchor tag href attribute (href, src, alt)

⇒ placed within Opening tags.

We can either use single or double quotes in attributes

The Heading Tag.

Heading tag is used to mark headings on HTML. from h1 to h6, we have tags for the most imp to the least important heading.

<h1> Most Imp Heading </h1>
<h2> Another Heading </h2>
<h3> Another Heading </h3>
<h4> Another Heading </h4>
<h5> Another Heading. </h5>
<h6> Another 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

 This is a paragraph

The Anchor Tag

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

```
<a href = "https://google.com"> Click me </a>
```

The Image Tag

Image Tage is used to add images on an HTML Page

```
<img src = "img.jpeg">
```

↳ relative ured of an image

Bold, Italic & Underline Tags.

We can use bold, italic, and underline tags to high-light the text as follows :

 bold => **Bold**

 Italic => *Italic*

<u> Underline </u> => Underline

<s> Strikethrough </s> => ~~Strikethrough~~

br tag

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

big & small tags

We can make the text a bit Larger and a bit smaller using big & 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:

< sup> this </sup> is subscript => a² → a^2
< sub> this </sub> is superscript => H₂O
→ H_2O

Pre tag

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

```
< pre>
        This is written
        using pre
        tag
</pre>
```

=> Rendered as-is.

Id Property

```
<body>
    <div id="header"> This is the header </div>
</body>
```

Unique Identifier : Each id should be unique within a page.

Anchoring : Allows for direct links to sections using the #id syntax in URLs.

Chapter 3 - Creating a Page layout.

When we use the right tag on right place, it results in a better page layout, better indexing by search Engines. and better User Experience.

<header>
<main>
<footer>
} Website Layout

1) Semantic Tags.
   1. Semantic / Non-semantic

2) Body Tags
   1. Header Tag
   2. Main Tag.
      1. section Tag
      2. Article Tag.
      3. Aside Tag
   3. Footer Tag

3) Folder Structure
   1. Recommended Folder Structure

4) More Tags.
   1) Nav Tags
   2) Block / Inline Elements.
   3) Div Tags
   4) span Tags.

Semantic Tags	Non-Semantic Tags
• Meaningful : describe Content	• Generic : No Specific Meaning
• SEO : Good for Search Eng	• For Styling : Used for Layout.
• Accessibility : Useful for screen readers.	• No SEO friendly
• Eg: <header>, <footer>, <article>	• Eg: , , <i>, <

Heres an Example Code for above tags :-

```
<! DOCTYPE html>
<html>
  <head>
    <title> HTML Structure Example </title>
  </head>
  <body>
  <!-- header: Top part of the page, usually contains logo /title -->
  <header>
    <h1> Website </h1>
  </header>

  <!-- nav: Navigation links to other pages or section -->
  <nav>
    <a href = "#"> Home </a>
    <a href = "#"> About </a>
    <a href = "#"> Contact </a>
  </nav>

  <!-- main: Main Content Area, unique to the page -->
  <main>

  <!-- section: A thematic group of content -->
    <section>
      <h2> News Section </h2>
  <!-- article : Independent that makes sense on its own -->
      <article>
        <h3> Article Title </h3>
  <!-- Span : Inline Container, used to style part of text -->
  <p> Sample article with some <span> inline </span> text. </p>
      </article>
    </section>.
```

```
<!-- aside : Extra info related to the main content, like
            a side bar -->.
  <aside>
    <p> This is a sidebar with extra info. </p>
  </aside>
</main>
```

→ takes always full width

```
<!-- div : Generic block Container used to group elements -->
  <div style = "border : 1px solid black ; padding : 10px;">
        I'm a block element (div).
  </div>
```

→ takes as much width as necessary

```
<!-- span: Generic inline ~~character~~ Container used inside text -->
  <p> This is a pargraph with a <span style = "Color: red;">
        red work </span>. </p>.
```

```
<!-- footer : Bottom section of the page with ending Content -->
  <footer>
    <p> © 2025 My Website </p>
  </footer>
</body>
</html>
```

Chapter 4: Lists, Tables & forms.

Lists : It is 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.

Types		Attribute Type	<ol>
• Numeric	: (1,2,3,—)	1	<li> Phone </li>
• UpperCase	: (A,B,C,—)	A	<li> PC </li>
• LowerCase	: (a,b,c,—)	a	<li> Laptop </li>
• U.C Roman	: (I,II,III,—)	I	</ol>
• L.C Roman	: (i,ii,iii,—)	i	

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.

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

thead tag: used to wrap table head
tbody tag: used to wrap table body.

Colspan attribute

This attribute is used to create cells spanning multiple columns.

<th colspan = "3"> Shayan </th>

↳ takes 3 columns space

HTML Forms

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

<form>
--- Element of the form --
</form>

There are different form elements for the 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 multiline text input, cols and rows attributes can be used to size the textarea

Select element: Defines a drop down list.

Embedding Videos

Video tag is used to play videos in HTML.

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

- HTML (Level 1) – Part 4.

=> HTML: HyperText MarkUp Language
↓
Structure & formatting

HTML Tags → A Container for some content or other tags.

Element
 This is a paragraph
Content

- HTML element represents a paragraph

- <h1> Represents heading (from 1–6); <h1> is the highest section level and <h6> is the lowest.

HTML Boiler Plate: standard format or skeleton of writing HTML code.

```
<! DOCTYPE HTML>
    <html>
        <head>
            <title> My First Page </title>
        </head>
        <body>
            <p>hello world </p>
        </body>
    </html>.
```

Lists in HTML.

Unordered List

```
<ul>
    <li> Bread </li>
    <li> Butter </li>
    <li> Jam </li>
</ul>
```

Ordered List

```
<ol>  → <ol type="A/a/I/i">
    <li> Bread </li>
    <li> Butter </li>
    <li> Jam </li>
</ol>
```

Attributes in HTML.

Attributes are used to add more information to the tag.

Ex:- `<html lang="en">` , `<ol type="A">`

Anchor Element: used to add links to our Page

Ex:- `<a href="https://google.com">Google</a>`

hypertext reference

absolute → Internet

Relative → file

Image Element: Used to add image to your page

Ex:- `<img src="image.png" alt="Random Image">`

relative url

- HTML (Level 2).

InLine v/s Block

Block Elements : Takes up the full-width available (full-block).
Start from new Line

InLine elements: Takes up only necessary width.
Don't start from new Line

Heading Element → block
Paragraph Element → block
Anchor Tag → InLine
Image Element → InLine

Div Element: Div is a container used to hold other HTML Elements or group elements together.
It is a block Element

Ex:-
```
<div>
    <a href="www.google.com">Google</a>
    <a href="youtube.com">Youtube</a>
</div>
```

Span Element : Span is also a generic container used to hold other HTML elements or group elements together.
It is an inline Element.

Semantic Markup.

It is the markup that relates to the meaning of content.

Semantic
- <h1>
- <p>
- <img>

Non-Semantic
-
-

① meaningful / Layout → structured.

② SEO friendly
↓
Search Engine Frndly. Optimisation

③ readable + Screen readers
↓
ux improve.

Ex :- <header>, <main>, <footer>, <nav>

```
<body>
    <header> Apna College
        <nav>
            <ul>
                <li><a href="/about.html">About Us</a></li>
                <li><a href="/contact.html">Contact Us</a></li>
            </ul>
        This is my main content</nav>
    </header>
    <main> This is my main Content. </main>
    <footer> Made with &hearts; </footer>
</body>
```

OUTPUT

Apna College.
- About Us
- Contact Us.

This is my main content
Made with ♥

Some Other Tags are article, section & aside
↓
relative links.

HTML Entities.

- An HTML entity is a piece of text ("string") that begins with an ampersand (&) and ends with a semicolon (;).

- Used to display reserved characters (which would be otherwise interpreted as HTML code), and invisible characters (like non-breaking spaces).

- Can also use in place of characters that are difficult to type with a standard keyboard.

- browser interprets them & renders correct character.

Ex:-

character	entity
&	&
<	<
>	>
"	"

⇒ Tables on HTML.

Tables are used to represent real life table data.

```
<table>
  <caption> Table Caption <caption>
    <tr>
      <th> header 1 </th>
      <th> header 2 </th>
    </tr>
    <tr>
      <td> data 1 </td>
      <td> data 2 </td>
    </tr>
</table>
```

<tr> → used to display table row
<td> → used to display table data
<th> → used to display table header.

<thead> → to wrap table header
<tbody> → to wrap table body
<tfoot> → to wrap table footer

Colspan & Rows Attributes

used to create cells which spans over multiple rows or columns.

Ex :- <th Colspan="2"> Price </th>
<th Rowspan="2"> Item </th>

Forms & Action in HTML

<form> --form Content </form>

Action attribute is used to define what action needs to be performed when a form is submitted an where the form data should be sent.

<form action = "/action" > </form>

Form Elements

Input.

- used to create multiple form controls.
- there are multiple types of inputs that can be created using type attribute.

type attribute

```
<input type="text">
<input type="password">
<input type="number">
<input type="time">
<input type="color">
```

placeholder attribute

```
<input type="text" placeholder="Enter Name">
```

~~Form Elements~~ Label

Label elements represents a caption for an item in a user interface

```
<Label>
    Enter Your Username:
    <input type="text" placeholder="Username">
</label>
```

Button Using Input

```
<input type="Submit">
<input type="Submit" Value="clickme">
```

Button Element

```
<button> Submit
</button>
```

Name Attribute.

```
<body>
    <form action="/server">
    <div>
        <label for="Username">UserName: </Label>
```

```
<input type="text" placeholder="Enter Username"
       id = "Username" name = "user" />.
</div>
<button > submit </button>
</form>

<form action = "https://www.youtube.com/results >
    <input type="text" placeholder = "Search Enyt"
           name = "search-query">.
    <button > Search < button>.
</form>
```

Checkbox:-

```
<input type = "checkbox" name="age" id = "age " checked/>
  <label for ="age" > I am 18+ < /label>
```

Radio Button:-

```
<input type = "radio" name = "fruit" id= "apple" value="apple"/>
<label for = "apple "> Apple </label>
```

Select Element: (Drop Down)

```
< select name = "profession" id= "profession ">

    <option value = "student"> student </option>
    <option value = "dev" > Developer </option>
</select>
```

Range :-

```
<Label for = "volume"> Volume </Label>

<input type = "range" min ="0" max = "100" name="vol"/>
```

Text Area :-

```
<label for = "feedback"> Please your Feedback needed: </label>
<textarea id= "feedback" name ="feedback rows ="5" Cols ="100">
    </ textarea>
<button> submit </button>
```