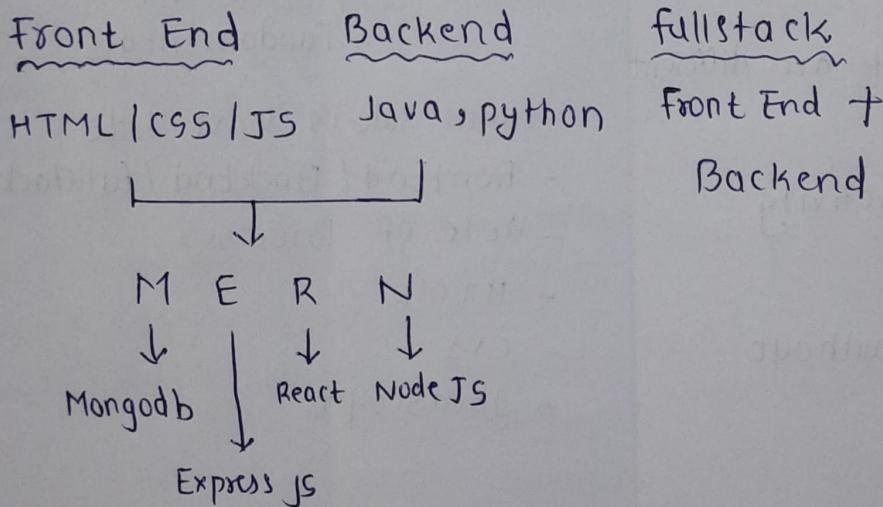


Client Side Vs Server Side

Parameters	client side	Server side
Execution Location	Executes on user's device	Executes on a remote machine
Languages	JS, HTML, CSS	PHP, Python, Java and Node JS
Main Job	Makes clicks and scrolls work	Manages saved information
Access Level	Can't access server data directly	Can view files, interact with databases
Speed	Quicker for UI changes	Slower due to network latency



Role of Browser

- (1) Displays web page
- (2) User clicks
- (3) Updates content
- (4) Load files

HTML

(Hyper text Markup language)

(1) Structure :-

Sets up the layout

(2) Content :-

Adds text, images, links

(3) Tags :-

Uses elements like <p>, <a>

(4) Hierarchy :-

Organizes elements in a tree

CSS

(cascading style sheets)

(1) Style :-

sets the look & feel

(2) Colors and fonts :-

customizes text and background

(3) Layout :-

controls position and size

(4) Selectors :-

Targets specific HTML elements

JS

(Javascript)

1. Java & Javascript are different

(2) Actions :-

Enables interactivity

(3) Updates :-

Alters page without reloading

(4) Events :-

Responds to user actions

(5) Data :-

Fetches and sends info to server

Summary

Website components and Fundamentals

- client side Vs server side
- FrontEnd / BackEnd / fullstack
- Role of Browser
- HTML
- CSS
- JavaScript

First file using Text Editor

- (1) Create a folder
- (2) Open Notepad
- (3) Create a file and save it as index.html
- (4) Copy sample code
- (5) Open Browser and check

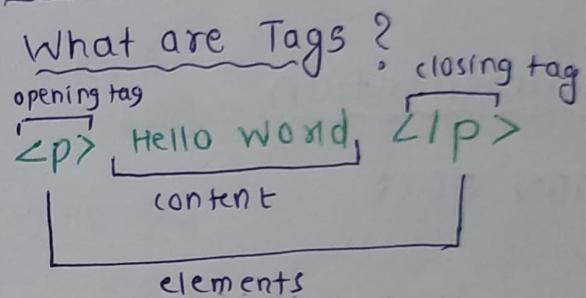
index.html

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

File Extension

HTML

- Most commonly used
- Works across all Browsers
- Widely recognized and supported
- Typically saved as .html



HTM

- Less commonly used
- Originated for compatibility with older systems.
- Works same as .htm
- Typically saved as .htm

- 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

Emmet!

- Extension to generate code.
- Auto suggestions

Basic HTML Page

```
<!DOCTYPE HTML> → Defines the html version  
<html lang="en"> → Parent of all html tags / root  
  <head>  
    <title> My Page </title>  
    <head> ← Meta data tags  
    <body>  
      <h1> Hello </h1>  
      <body> ← Parent of content tags  
    </body>  
</html>
```

Documentation

→ MDN DOCS

Comments in HTML

<!-- -->

<!--
 -->

-->

Case-Sensitivity
HTML is case-insensitive for tag names

Summary

- file
- file extensions
- Index.html

Basics of HTML

- What are tags
- Using Emmet!
- Basic HTML page
- MDN DOCS
- comments
- case sensitivity

What are HTML Attributes?

attribute
 $\frac{1}{\text{attribute}}$
`<tag attr = "value"> Text </tag>`

- provides additional information
- can be single or multiple per element.

Id property

- Unique identifier
- Anchoring : Allows for direct links to sections using the #id syntax in URLs.
- Used in CSS & JS

HTML Tags

(1) Heading Tags

`<h1> — </h1>`

`<h6> — </h6>`

- Defines headings in a document
- Ranges from h1 to h6
- Important for SEO
- h1 most important h6 least important

(2) Paragraph Tag

`<p> — </p>`

- Used for defining paragraphs
- Adds automatic spacing before and after
- Text wraps to next line inside tag

(3) BR Tag

`
`

- br adds a line break within text
- `
` is empty, no closing tag needed
- `

` both are valid

(4) HR Tag

- creates a horizontal rule or line.

- `<hr>` also empty, acts as a divider

(5) Image Tag

`` relative path
→ absolute path

``

Other attributes

alt - alternate text

height

width

(6) Video Tag

- Embeds video files on a page.
- Uses src attribute for video URL
- Supports multiple formats
- controls - play/pause, loop, autoplay, muted

<video src="path">

<video src="path" height="300px" controls autoplay muted>

(7) Anchor Tag

 —

- Used for creating hyperlinks
- Requires href attribute for URL
- can link to external or internal pages
- target attribute
target = "blank"

(8) Bold, Italic, underline, strikethrough

<i></i>

<u></u>

<s></s>

primarily used for text styling and emphasis

(9) Pre Tag

- preserves text formatting

<pre>

H
E
L
L
O

</pre>

- Maintains whitespace and line breaks

- useful for displaying code

- <pre> — </pre>

(10) Big / small Tag

<big> — </big>

<small> — </small>

(11) Superscript / subscript Tag

<sup> - superscript

<sub> - subscript

- used for formulating

- does not change font-size

character Entity Ref.

- Used to display reserved or special characters

e.g &

©

start ← ; end

Summary

HTML Attributes

HTML Tags

character Entity Reference

Browser Tools

→ view page source

ctrl + U

→ Inspect Element

Allows real-time editing of
HTML/CSS

useful for debugging and
testing

shows element hierarchy
and layout

Includes console for JS.

Highlights selected element
from page.

→ Responsive Design

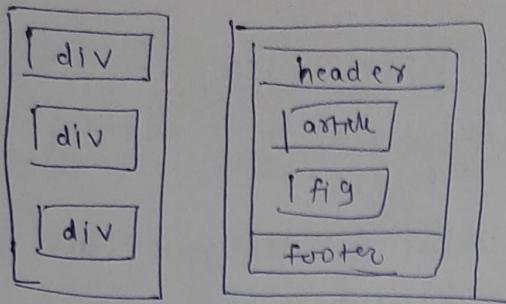
- Adapts layout for different screen sizes
- flexible layouts
- optimizes images & assets
- Enhances user experience on mobile and desktop

→ Validating Webpages

validator.w3.org

HTML and Project Structure

1. Semantic Tags



Semantic Tags	Non-Semantic Tags
Meaningful : Describe content	Generic : NO specific meaning
SEO : Good for search engines	For Styling : Used for layout
Accessibility : Useful for screen readers	NO SEO : NOT SEO friendly
<u>Example</u> <code><header>, <footer>, <article>, <section>, <Nav></code>	<u>Example</u> <code><div>, <i>, </code>

`<header>`

\equiv

`</header>`

- Used to contain introductory content or navigation links.
- It's a semantic tag, providing meaning to the enclosed content
- commonly found at the top of web-pages.

`<main>`

\equiv

`</main>`

- encloses the primary content of web-page

`<Section>`

\equiv

`</Section>`

Groups related content in a distinct section.

`<Article>`

\equiv

`</Article>`

- blog post, articles

`<aside>`

\equiv

`</aside>`

- sidebar or supplementary content
- widgets, quotes, ads

`<footer>`

\equiv

`</footer>`

- for footer content like extra info or links
- Bottom of the web-page

Folder Structure

project
 assests

 project
 assests
 >css
 >Images
 >script
 index.html

Tags

<nav>
 —
</nav>

- Encloses navigation links or menus

Block vs Inline Elements

Block

start on a new line
Take up all horizontal space
can have margins and padding

e.g. <div>, <p>, <h1>

Inline

stay in line with text
just as wide as the content

No new line between elements

, ,

<DIV>

==

</DIV>

- Acts as a container for other HTML elements .
- Non-semantic
- commonly used for layout and styling via CSS .

==

- used for inline elements to style or manipulate a portion of text .

Summary

(1) semantic tags

(2) Body tags

- Header Tag

- Main Tag

- Section Tag

- Article Tag

- Aside Tag

- footer tag

(3) folder structure

(4) more tags

- Navigation tags

- Block / inline Elements

- Div tags

- Span tags

List Tags

(1) Ordered Lists

(2) Unordered Lists

(1) Ordered Lists

 —

 —

- can be nested
- Numbered automatically

Types of Ordered Lists

(1) Numeric

(2) Uppercase Letters

(3) Lowercase Letters

(4) Uppercase Roman

(5) Lowercase Roman

<ol type="A">

 —

(2) Unordered List

 —

 —

Table Tag

<tr>, <td>, <th>

<tr> Table Row: Used to define a row in an HTML table.

<th> Table Header: Used for header cells within a row text is bold and centered by default

<td> table data : This holds actual data

border="1"

<table>

<tr>

<td> — <td>

<td> — <td>

<td> — <td>

</tr>

</table>

<table border="1">

<tr>

<th> — </th>

<th> — </th>

</tr>

<tr>

<td> — </td>

<td> — </td>

</tr>

</table>

Captions

<caption> — </caption>

-beginning of the table.

colspan

Attribute : Uses the colspan attribute in <td> or <th> tags .

purpose : Allows a cell to span multiple columns horizontally .

<td colspan="3"> —
— </td>

Forms (IMP)

purpose : Used within a <form> element to collect user input .

Self closing : The <input> tag is self-closing ; doesn't require a closing tag

Attributes : Common attributes are name, value, placeholder and required .

<form>

Text : <input type="text" placeholder="Enter" />

</form>

<form>

|
=

</form>

<input type="password" />

Action attribute

```
<form action="/submit.php"  
method="POST">  
|  
|  
</form>
```

- Specifies the URL to which the form data should be sent when submitted.
- Default : If not specified, the form will be submitted to the current page's URL
- Server side : Usually points to a server-side script that processes the form data .

Name & Value property

'name' property :
ID for Data : Identifies form elements when submitting
Unique ; should be unique to each element for clarity .

'value' property :
Default Data : sets initial value for input elements .

Sent to Server : This is the data sent when form is submitted .

Label Tag

```
<label> — </label>
```

- Adds a text description.

```
<label for="username"></label>
```

Input Types

```
<input type="date">
<input type="file">
<input type="color">
<input type="range">
<input type="button">
```

Radio Buttons

```
<input type="radio" id="male"
       name="gender">
    _____
    _____
    _____
```

Check Boxes

```
<input type="checkbox"
       name="fruits">
    _____
    _____
    _____
```

Select

```
<select id="fruits" name="fruits">
  <option value="Apple"> _____
  _____
  _____
</select>
```

TextArea

```
<textarea>
  _____
  _____
</textarea>
```

```
<textarea rows="4" width="40">
  _____
  _____
```

</textarea>

iFrame Tag

Embedded Content

src attribute

Dimension width / height

<iframe width="1300">

src = " " >

</iframe>

Summary

- List tag
- table tag
- forms
- i frame tag