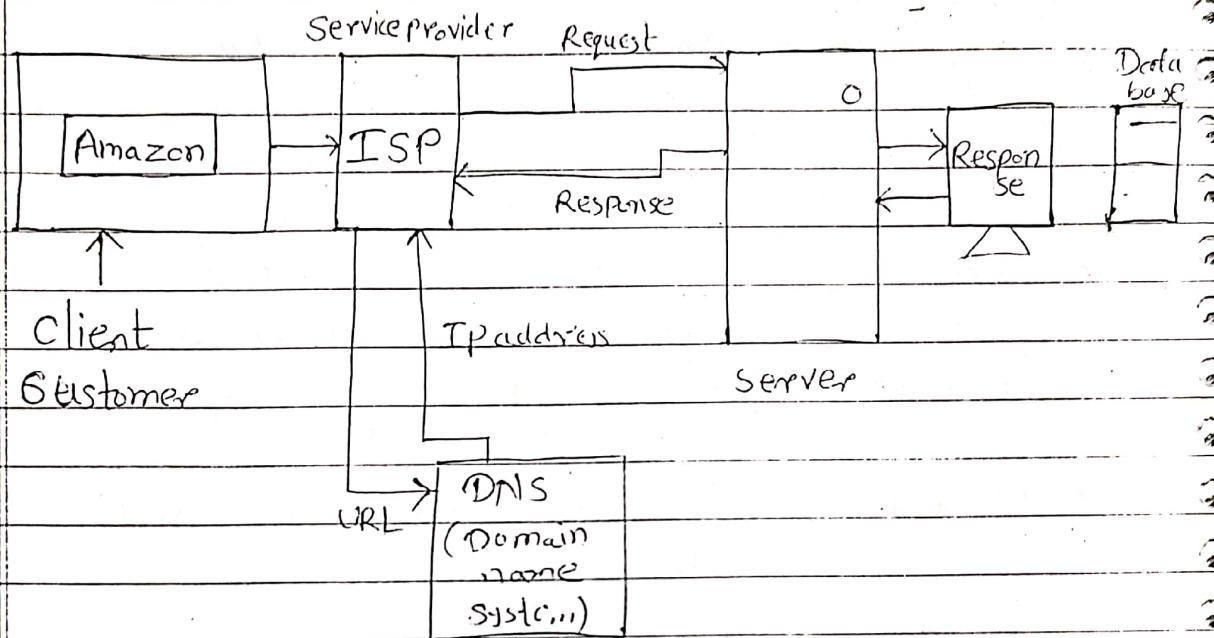


# Web Technology :

★



## \* MERN Stack / full stack

M - Mongo DB (Backend)

E - Express JS (middlewares)

R - React JS (Frontend)

N - Node JS (middlewares)

## \* ISP - (Internet Service Provider) :-

TSP is a organisation which provides you internet. e.g - jio, Airtel, BSNL etc.

## \* URL - (Uniform Resource Locator) :-

URI is a unique address given to a website or the resource of the internet

e.g (www.fc.com)

## \* IP - (Internet protocol) :-

IP address is also unique address that is provided to a device or network on the internet.

e.g - 192.168.1.1

\* DNS :- (Domain name system) :-

Domain name system decentralized or hierarchical  
System to identify computers service or other  
resource reachable to the internet

\* Server :-

A computer or system that provides data,  
services or programs to other computer.

\* Data base :- is a warehouse used to store  
the data

\* Web browser :- is a software or user  
interface use to access that internet or  
the website.

e.g. chrome, mozilla, uc Browser etc.

\* Hyper text markup language \*

(HTML)

\* What is HTML :-

Hyper text markup language is a  
markup language used to develop and design  
website or webpage.

\* History of HTML :-

Sir Tim Berner's lie invented in 1991  
The first version → HTML 1.0

Current Version → HTML 5.0

\* What are the feature of html file?

\* It is a combination of html + css + js

\* Audio or video

\* i/o location

\* canvas, svg (support vector graphics)

\* Drop and drag feature

\* microdata

\* Hyper text - linking from one page to another

\* Markup language - inserting element

\* What is tag in html?

→ Tag is a predefined keyword in html enclosed with in angular brackets. To write a tag we used opening as well as closing angular brackets

e.g. <h1>

\* Structure of html :-

<!DOCTYPE HTML> → Document type

<html> → Root element

<head> → opening tag }

<title>

</title>

</head> → closing tag }

<body>

</body>

</html>

} Inserting links

} Inserting elements

\* What are the feature of html file?

- \* Is a combination of html + CSS + JS

- \* Audio or video

- \* img location

- \* canvas, SVG (support vector graphics)

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- \* microdata

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\* Structure of html

<!DOCTYPE HTML> → Document type

<html> → Root element

<head> → opening tag } Inserting links

<title>

</title>

</head> → closing tag }

<body>

</body>

</html> } Inserting elements

\* What are the two types of tags?

- 1) Paired tag
- 2) Unpaired tag / Selfclosing / empty / Void tag

1) Paired tag = paired tag is a tag which is having both opening and closing tags.  
e.g. `<title> </title>`

2) Unpaired tag = Unpaired tag are tags having only self closing tag  
e.g. `<hr/>` → horizontal line  
`<br/>` → line break  
`<link/>` → Insert link  
`<img/>` → Insert Image

\* Creating a webpage :

- 1) To create a webpage we must first create a notepad file.
- 2) In the notepad we have to write the structure of html and our html code.
- 3) Then go to file click on save as
- 4) Then save it to the name of the file with dot(.) html extension.

\* What are heading tags?

→ Heading tags are tags used to provide an heading to the html document. there are six heading tags.

- 1) `<h1> </h1>` → Highest font-size
- 2) `<h2> </h2>`
- 3) `<h3> </h3>`
- 4) `<h4> </h4>`
- 5) `<h5> </h5>`
- 6) `<h6> </h6>` → lowest font-size

(font size decrease)

\* My first html program :-

```
<!DOCTYPE html>
<html>
<head>
<title>
    My first web page
</title>
</head>
<body>
<h1> Times of India </h1>
<h2> Times of India </h2>

<h3> Times of India </h3>
</body>
</html>
```

Output - Times of India

Times of India

Times of India

\* What is an element ?

→ Element is a combination of opening tag as well as closing tag with in which content is placed.  
e.g -

The diagram illustrates an HTML element. At the top, there is an opening tag `<h1>` followed by the text "Times of India" and a closing tag `</h1>`. A curved arrow labeled "Content" points from the text "Times of India" down to the word "element" at the bottom, which is enclosed in a large bracket.

## \* Text-formatting tags :

→ Text-formatting tags in HTML can be used to style a given text.

There are several text-formatting tags.

`<strong>` = `<b>` → A

(Emphasis tag) `<em>` = `<i>` → Abc

(Strike-through) `<del>` → Abc

(Underline) `<ins>` → Abc

`<small>` → abc

`<big>` → Abc

(Super script) `<sup>` →  $l o^{th}$

(Sub script) `<sub>` →  $H_2 S O_4$

(Highlighted text) `<mark>` → Abc

All the tags are paired tags.

## \* Text-formatting program in HTML

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>
```

```
</title>
```

```
</head>
```

```
<body>
```

```
<h1> Text-formatting tags </h1>
```

```
<b> Bolder text </b>
```

```
<br>
```

```
<ins> Underlined text </ins>
```

```
<br>
```

```
<mark> Highlighted text </mark>
```

```
<br>
```

```
10 <sup>th</sup>
```

```
<br>
```

H <sub> 2 </sub> SO <sub> 4 </sub>  
</body>  
</html>

Output - Bolder text

Underlined text

Highlighted text  
Ic<sup>th</sup>

H<sub>2</sub>SO<sub>4</sub>

\* Attributes => Attributes in html provide an extra meaning or information to the tag or element

② Attributes is always specified in opening tags

③ It is specified in the form of -

name = "Value" pair

e.g. < h1 attr> </h1>

< h1 title = "heading.one" > content </h1>

\* Core attributes =

1) style

2) title

3) class

4) ID

1) style - Style attribute can be used to provide a CSS style in the html document.

e.g. - < h1 style = "background-color: red" > Times of India </h1>

2) title - title attributes can be used to provide the tooltip for the html element.

e.g. `<h2 title="Times of India"> TOI </h2>`

3) class - class attributes can be used to provide a class name to the html element. class name can be same for multiple elements.

4) ID - used to provide a unique name to the html element.

\* Commenting in html -

- commenting in html can be used for reference purpose. the syntax for html commenting is -

4 -

`<!-- Comment -->`

e.g. `<!-- Heading with background color -->`

`<h1 style="background-color: red"> Times of India </h1>`

\* We are going to use visual studio code for web development. \*

Extension - live server and prettier in visual studio code.

comment - `ctrl + '/'`.

\* Paragraph - paragraph can be used to contain a multiline text. The tag are used for paragraph are `<p>`. Paragraph tag is a paired tag.

`<p> </p>`

\* lorem is used for dummy text.

\* ! is used to get html structure.

### \* Image tags :-

→ Image tags in html is used to insert an image in the html document.

The tag used for Images are `<img>`

Syntax of Image tag -

`<img src = " " alt = " " />`

↓  
Source/path

↓  
alternative

text

Image tag is unpaired tag.

e.g - `<img src = "https://images.pexels.com/photos/842711  
alt = "Nature Image" />`

### \* Linking the Image from the local folder :-

e.g - `<img src = "./image/air_baloan.jpg" alt = "Nature Image" />`

\* Src attributes :- It is used to provide a link of the Image in html.

\* alt attributes :- alt attributes is used to provide alternative text in case the Image does not display then alternative text display.

\* Anchor tags :- Anchor tag is used to link another element or page from the current line.

The tag used for Anchor tag is `<a> </a>`

Syntax for Anchor tag.

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

e.g - `<a href = "./textformat.html" > Text formatting </a>`

\* local folder - `./`

\* for previous text/folder - `../`

\* Table in html : In html we add the data in form of rows

Country	Capital
India	New Delhi
USA	Washington DC
UK	London
Ukraine	Kiev

<table> - table heading

<tr> - table row

<td> - table data.

```

<table>
<tr>
<th> country </th>
<th> capital </th>
</tr>
<tr>
<td> India </td>
<td> New delhi </td>
</tr>
<tr>
<td> USA </td>
<td> washington Dc </td>
</tr>
<tr>
<td> UK </td>
<td> london </td>
</tr>
<tr>
<td> Ukraine </td>
<td> Kiev </td>

```

</tr>

</table>

Table tags are used to create a combination of rows and columns in tables.

A few table tags are

- 1) table tag <table> </table> - This tag is used to enclose all the table elements.
- 2) th - table heading <th> </th> - This tag is used to provide a heading of the table data.
- 3) tr - table row <tr> </tr> - This tag is used to create a new row in the table.
- 4) td - table data <td> </td> - This tag is used to create a normal table data cell.

### \* Inserting lists :

Three types of lists in html

- 1) Ordered lists
- 2) Unordered lists
- 3) Description / Definition lists

1) Ordered lists - Ordered lists is used to list the items in html using numbers, alphabets and Roman letters or Roman numerals.

### \* Type attributes in ordered lists -

It is used to change the type of ordering in the lists. To change it to Alphabet ordering we used type = "A". If we not give a type, then its number.

Ex - ordered list / li → list items.

e.g. <ol type="A"> | output  
 - <li> Grains </li> | A. Grains  
 <li> Rice </li> | B. Rice  
 <li> Veggies </li> | C. Veggies  
 <li> Soya </li> | d. Soya  
 </ol> |

\* Start attribute - Start attribute from where the ordering must start.

e.g. <ol type="I" start="10">  
 - <li> Grains </li> | output  
 <li> Rice </li> | X. Grains  
 <li> Veggies </li> | XI. Rice  
 <li> Soya </li> | XII. Veggies  
 </ol> | XIII. Soya

\* Unordered lists - In html is used to lists the item using b:circle, Square and disc

ul - Unordered lists

li - list items.

e.g. <ul> | output -  
 - <li> Qspider </li> | • Qspider  
 <li> JSpider </li> | • JSpider  
 <li> Pyspider </li> | • Pyspider  
 </ul> |

Disc is default type.

In Unordered list we also use a type="circle"

## \* Description / Definition list -

It is used to define a term and provide a description for it

dl - description list

dt - description term

dd - description data

e.g. <dl>

<dt> Qspiders </dt>

<dd> It's a Software training institute </dd>

</dl>

Output :

Qspider

It's a Software training institute.

## \* Block And Inline elements

Block level element - Block level elements takes the entire width of the screen.

Hi

bye.

e.g. <div> hi </div>

<h1>, <h2> ... <h6>

Table tags, form tags etc.

e.g. <!-- Block level element -->

<hi style = "background-color: brown;">

Hi

</hi>

Bye.

Output = Hi

bye.

e) Inline elements - Are elements which occupy only the width required for the content.

e.g. Text formating

Anchor tag

Image tag

Span tag

e.g. `<span> Style = "background-color: aquamarine;">`  
Hello </span>

`<span style = "background-color: chocolate;">`  
How are you </span>

Output : Hello How are you

\* Quotation tag :- is used to provide Quotation for a Syntax sentence. the tag used for Quotation in html are `<q> </q>`

e.g. `<q>`

Patience is the key for success.

`</q>`

Output :

"Patience is the key for success".

\* Blockquote tag :- is used to Represent an information from another source of website.

e.g - `<blockquote cite = "https://covid19.who.int/">`

Globally, as of 7.33pm CET, 18 March 2022,

`</blockquote>`

Cite attribute - Source of website.

\* Abbreviation tag = To Represent an abbreviation  
we use <abbr> tag.

e.g. <abbr title="World health organization">WHO</abbr>  
Output: WHO

World health organization

\* Cite tag = cite tag is used to provide a specification of a work related to any article, publication or any other content.

e.g. <p> This is a para from <cite> power of subconscious mind </cite> by Joseph Murphy </p>  
Output - This is a para from power of subconscious mind by Joseph Murphy

\* Address tag = To represent an address we are going to use address tag.

e.g. <address>

Qspiders, next to chroma,  
Hadapsar, pune,  
Maharashtra

</address>

olp = is in italic format.

Qspiders, next to chroma, Hadapsar, pune, Maharashtra

\* Target attribute = Target attribute is used to redirect the link in new tab.

e.g. The Value for the new tab is "blank"

Eg. <a target="blank" href=". /index.html">Index</a>

\* Forms :- Forms in html are used to receive the user input electronically.

There are two attributes in forms mainly

1) Action - Action is an attribute in form use to specify what action must take place after the user submit the data.

2) Method - Method is an attribute in form use to determine how the user data must be stored.

There are two main method 1) get 2) post

\* Difference between get and post method

get

1) This is a default method

post

1) This is not a default method.

2) This is not a secure method

2) post is a secure method.

3) get store the user input as a history and in bookmarks

3) post method does not store the user ip as a history or in bookmarks

4) get does not require more than one server

4) post require more than one server

5) get display the user credential on the address bar.

5) post not display the user credential on the address bar.

\* Input tag : To get the user input we use input tag but according the input box we use type attribute to change the type of input we need.

Examples of Input box are -

text, email, password, number, date, datetimelocal, file, color, url, submit, Reset, check box, Radio etc. range etc.

\*

```
<Form target = "blank" action = "g/gallery.html" method = "post">
<label style = "color: blueviolet;"> Name </label>
<input type = "text">
<br>
<label> st password </label>
<input type = "password" name = "passcode" id = "">
<br>
<label> Email </label>
<input type = "email" name = "" id = "">
<br>
<label> Upload photo </label>
<input type = "file" name = "" id = "">
<br>
<label> Age </label>
<input type = "number" name = "" id = "">
or <input type = "number" step = "5" min = "5" max = "40" name = ""
id = "">
<br>
<label> DOB </label>
<input type = "date">
<br>
```

```
<input type = "datetime-local">  
<br>  
<label> course </label>  
<input type = "checkbox" id = "Javascript"> Javascript  
<input type = "checkbox"> Java  
<input type = "checkbox"> python.  
<input type = "checkbox"> PythonTesting  
<br>
```

```
<label> Gender </label>  
<input type = "radio" name = "gender" id = "male">  
<input type = "radio" name = "gender" id = "female">  
<br>
```

DET  

```
<label> Address </label>  
<textarea cols = "10" rows = "5">  
</textarea> → is used to accept multiline user input  
and textarea is tag in html.
```

```
<br>  
<input type = "range" name = " " id = " " >  
<br>  
<input type = "button" value = "login" name = " " id = " " >  
<br>
```

```
<input type = "color" name = " " id = " " >
```

```
<label> website </label>
```

```
<input type = "url" name = " " id = " " >
```

```
<br>
```

```
<button type = "button"> Register </button>
```

\* button tag is used to create a new button in both button closing and opening tag we provide the name for button.

```
<label for = "abcd"> upload photo </label>
```

```
<input type = "file" id = "abcd" >
```

This two elements are link to each other (for and id elem)

<label> location </label>

<select>

<option> pune </option>

<option> mumbai </option>

<option> Delhi </option>

</select>

Select tag is used to create a drop down.  
option tag is used to create a option in drop down.

<input type="dd">

<datalist id="dd">

<option value="Bengaluru"> </option>

<option value="chennai"> </option>

<option value="Hyderabad"> </option>

</datalist>

input list - is used to create a editable drop down in input list & data list option

Datalist tag has a value attribute where you will provide the option

<Meter max="100" min="0" high="85" low="40" optimum="60" value="86">  
 higher      lower      Avg  
 Value      Value      Value

Meter tag is used to display a measurable quantity

<progress min="0" max="100" value="75">

</progress>

Progress tag is used to determine a progress of an event.

<input type="Submit">

<input type="Reset">

</form>

## \* Input type attributes -

1) min length :- An attribute used to specify minimum number of characters.

e.g.

```
<input type="password" minlength="8">
```

2) max length :- is used to specify maximum number of characters.

e.g.

```
<input type="password" maxlength="10" minlength="5">
```

3) Required :- Required is an attribute which is used to make a text box mandatory to be entered.

e.g. <input type="text" name="fname" Required>

4) readonly :- is an attribute used to make the input type only be able to read but not edit or write.

e.g.

```
<input type="text" value="abcd" readonly>
```

5) disabled :- is an attribute used to remove the input type from the normal functionality of the form functionality of the form and also make it disabled.

e.g.

```
<input type="email" disabled>
```

6) placeholder = It is an attribute used to give a tooltip to the input type.  
e.g.

<input type="text" placeholder="Enter your name">

7) Hidden = is used to hide the input type.  
e.g.

<input type="email" hidden>

8) pattern = It is a regular expression which is used to match a specified format of characters in input type.  
e.g.

<input type="text" pattern="[\a-zA-Z]{8}">

[\a-zA-Z] - character allowed or [\a-zA-Z 0-9]  
{8} - Number of characters - User must enter required no. of characters

9) Value = Value attribute is used to provide a predefined value to the input type.  
e.g.

<input type="text" value="abcd">

Output:

Name abcd.

10) autofocus = It is used to focus on an input type, write after the user opens the web pages.

12) Novalidate :- is to specify not to validate a form. mention in form opening tag.  
e.g.

<form method="post" novalidate action=".index.html">

13) autocomplete :- autocomplete in forms is used to provide a suggestion for input boxes such as name, email or phone no. etc  
e.g. by default auto complete is ON  
e.g.

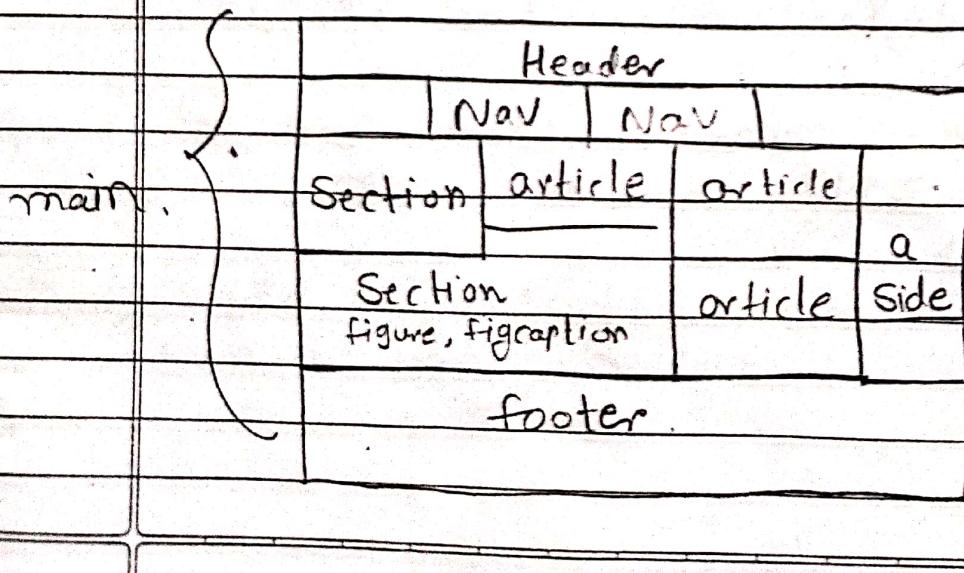
<form method="post" autocomplete="ON">

### \* Semantic tags :-

Are used to group element as well as they give a clear understanding to the browser as well as the developer.

- 1) Header    2) Section    3) <sup>Navigation</sup>Nav    4) Article    5) details
- 6) Summary    7) Mark    8) footer    9) Aside    10) main
- 11) figure    12) figcaption.

### Layout of Semantic tags :-



```
<main>
<header><h1> studyGrad </h1> </header>
<nav>
  <a href="#"> Gallery </a>
  <a href="#"> About us </a>
  <a href="#"> Contact us </a>
  <a href="#"> Testimonials </a>
</nav>
<Section style="background-color: rgba">
<p>
  lorem dummy text
</p>
<figure>
  
  <figcaption> Virat hits a century </figcaption>
</figure>
<aside>
<p>
  . . .
</p>
</aside>
<section>
  <article style="background-color: blue">
    <details>
      <summary><mark> lion image </mark></summary>
      
    </details>
    <p>
      . . .
    </p>
    </article>
  </section>
```

<footer>

@copyright study Grad 2022

</footer>

</main>

- 1) Header :- Header tag is used to enclosed an heading
- 2) Section :- Section comprises of independent content
- 3) Article :- is used to create an article element
- 4) Nav :- tag is used to create navigational links
- 5) details :- is used to contain view or unview the content.
- 6) Summary :- Summary is inside details tag  
Summary is the visible heading in the details tag
- 7) Mark :- Mark tag is used to highlighted text
- 8) footer :- footer consists of copyright specification, authorship, ownership of a copyright
- 9) aside :- aside tag enclosed content away from the main content.

- 10) Main :- Encloses all the main content in the document.
- 11) figure :- figure tag consists of image, graph or drawings.
- 12) figcaption :- It is caption given to the figure.

### \* Picture tag :-

Picture tag is used to create no of images make it responsive according to the screen size.

<picture>

<source media = "(Screen size)" srcset = "fpath">  
<source media = "(Screen size)" srcset = "fpath">  
<img src = "fpath">  
</picture>

e.g.

<picture>

<source media = "(max-width: 500px)" srcset = "./boat.jpg">  
<source media = "(min-width: 500px)" srcset = "./mountain.jpg">  
<img src = "./tiger.jpg" alt = "">  
</picture>

Max width

1) Specify that upto that screen size the given image or other content will be display  
(max width: 500px)

Min width

1) Min width specify that above the given width a particular image or content should be display  
(min width: 500px)

Here upto 500px the given image will be display.

Here above 500px the particular image would be display.

### \* Audio / Video tags :-

1) Audio tag :- IS used to insert or embed an audio file in the html document.

The Syntax used for audio tag is -

<audio controls>

<source src = "path" type = "audio/mp3">  
</audio>

e.g.

<audio controls>

<source src = "./file example mp3 song.mp3" type = "audio/">  
</audio>

Supported audio files is .mp3, .wav, .ogg in html.

2) Video tag :- Video tag is used to insert or embed a video file in the html document.

Syntax :- <video controls>

<source src = "path" type = "video/mp4">  
</video>

e.g.

<video controls height = "500px">

<source src = "./sample mp4 file.mp4" type = "video/mp4">  
</video>

Supported Video files are .mp4, .mpe4, .ogg in html.

\* Iframe tag is used to embed the content of another html page inside the current html page.

e.g

<iframe width="560" height="315" src="path.html">  
</iframe>