

23/01/24

MEAN STACK

database

M	-	MongoDB	J	<u>List of Technologies</u>
E	-	Express.js	→	HTML
A	-	Angular	→	CSS
N	-	Node.js	→	JavaScript

framework

- BootStrap
- MEAN

Additional Tools

- Firebase
- GitHub ✓

Website: is a collection of different web pages with a common name.

Webpage: is an electronic document which has dynamic, multimedia, hypertext content accessed over the internet.

Types of Website: are Static Websites, Dynamic website, and Web Application.

Static Website:- is a website which ~~has~~ content same throughout a day. Until updated by developer.

Eg:- College websites, News Blogs, etc.

Dynamic Website: is a website which changes its content in regular intervals of time/actions.

Eg:- Cricbuzz, Weather forecast, YouTube, etc.

Web Application: is a type of a dynamic website where the content is exchanged between user and System/Server.

Eg:- Amazon, Flipkart, etc.

Note:- Web applications are dynamic but a dynamic website is not a Web Application.

Requirements to Publish a Website:

1. Code ✓
2. Browser ✓
3. Domain ✓
4. Storage Server. ✓

✓ 255.255.255.255.255.05

✗ 255.255.155.256

I.P. address: is a unique address of a device which is connected through internet. IP address has four digit numbers.

The digits range between 0 to 255 (0-255).

Domain Name: is an alternative for an IP address of a website.

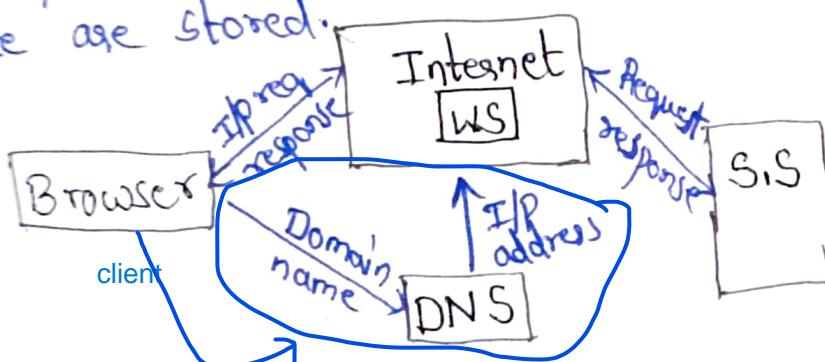
D.N I.P.
Eg:- Facebook.com - 1.417.0.0..

Domain Name Server: is a software which maintains both Domain Name and IP address as a Telephone-directory on internet.

Web Server:
Web server is a software in internet which accepts request from a client and it fulfills the request by using storage server and display response on Client-Side.

Storage Server:-

It is a place where all the information, files of a website are stored.



Connection between User and Server

W3C - World Wide Web Consortium

→ International community that develops standards of Worldwide Web.

→ It governs the websites usage.

→ HTML, CSS, JavaScript, Web services, XML & security Standards.

Website / Domain Purchase

- GoDaddy → .in(1M), .co(2.5M), .com(1.3M), .cn(649), .org(157)
- Name Cheap → .com(4M), .NET(495), .Org(759-999), .IN(300)
- Google Domains → .com(9.1K), .Org(460), .Cloudflare(2400) and 4601

Free domain:

FreeNom is a free domain with extensions (.tk, .ml, .ga)

e.g. Netflix hosts the website with free domain.
URI : stands for Uniform Resource Locator which is the combination of 3 parts.

1. Protocol

HTTPS

2. Host address

hypertext transfer
protocol secure

3. Domain NAME

Protocol is a set of rules or guidelines to secure data while transferring from client to server and vice-versa.

Eg: HTTP // HTTPS → HyperText Transfer Protocol Secure

Host Address is a place where all the networks in the world gets connected. World Wide Web (WWW)
is an Host.

URI : Http:// www.facebook.com .

Protocol

Domain name

Markup Language: is a language which has different tags and its properties.

- Tim Berners Lee invented internet in late 1980's and internet is first used at European Council of Nuclear Research (CERN)
- He also created World Wide Web, HTML, HTTP, URL's and web browsers.
- **SGML** is the origin of HTML (Standard Generalised Markup language)
html&css

HTML:

- HTML is officially released in 1995 by Tim Berners Lee as HTML 2.0.
- The previous version of HTML 2.0 was SGML.
- HTML5 is the present Version we use which is released in 2014.

Basic Elements of HTML:

- HTML has two basic elements i.e., Tags and Attributes

TAGS: are special keyword enclosed within angular brackets.

- HTML has opening and Closing Tags.

Eg: of Opening tags: <html>, <h1>, <body>

Eg of Closing tags: </html>, </h1>, </body>

Tags are classified into two types:

1. Paired Tags / Dependent Tags / Container Tags

2. Unpaired Tags / Independent Tags / Empty Tags.

Paired Tags: has both Opening and Closing Tags.

Eg:- `<h1></h1>, <p></p>, <div></div>, ...`

Unpaired Tags: is that having only Opening Tag.

Eg:- `
, , <input>, ...`

ATTRIBUTES: are the properties of html Tags. They are written within opening part/ tag.

Syntax: `<Keyword Key="Value"> </Keyword>`

Eg:- `<h1 align="center"> Hello World </h1>`

HTML Program Structure:

✓ `<!doctype HTML> // declaration Tag`

`<html>`

`<head>`

// raw content of webpage : styles, scripts, title, favicon, meta

`</head>`

`<body>`

// main content of Webpage

`</body>`

`</html>`

time=2.25sec

dec=>2sec

Hello World:

```
<!doctype HTML>
<html>
<head>
<title> First Program </title>
</head>
<body> Hello World , Welcome to DRF </body>
</html>
```

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Heading Tags: are used to create headings for a webpage.

→ we have 6 types of heading tags (h1-h6).

→ All headings ^{Tags} are paired tags while h1 is biggest and h6 is smallest.

Syntax:- <h_n> </h_n> [n = 1,2,3,4,5,6]

Headings Program:

```
<html>
<head> Heading Tags </head>
<body>
<h1> Hello World </h1>
<h2> Hello World </h2>
<h3> Hello World </h3>
<h4> Hello World </h4>
<h5> Hello World </h5>
<h6> Hello World </h6>
</body>
</html>
```

HELLO WORLD
Hello World
Hello World
Hello World
Hello World
Hello World

→ 1. Lorem Ipsum: is a website used for generation of fake content.

Paragraph Tags: <P></P>

Mainly used for perfect spacing between paragraphs as HTML does not allow empty /white spaces between the content.

Eg:-

```
<html>
<head></head>
<body> Hi I am Jayanth.
I am a music lover.
I love singing </body>
</html>
```

Hi I am Jayanth. I am music lover. I love singing.

* On using <P></P> tags we get output as follows:

```
<html>
<head></head>
<body><p> Hi I am Jayanth.</p>
<p> I am music lover.</p>
<p> I love singing </p></body>
</html>
```

Hi I am Jayanth.
I am music lover.
I love singing.

* align = "left/center/right".

(key) (value)

* Break Tag;
 - to break a content and it makes the content to move to next line.

* Horizontal Ruler Tag; <hr> - used to make or draw a Horizontal line between the content.

Program:-

```
<body><h1> HI <br> how are you </h1>
<h2 align="right"> Doctor </h2>
</body>
```

HI
how are you
Doctor

List Tags: There are 3 types of list tags

Ordered list, Unordered list, Description list.

Ordered List: is also known as Sequence list where we can print different items in a specific position of sequence.

⇒ Syntax: ` `

`` - list item

`` - ordered list

* Attributes of OL tag are as follows

`type = "1"` → used to mention sequence type i.e, 1/a/A/i/I.

`start = "1"` → used to set starting point of list [1, 2, 3, ..., n]

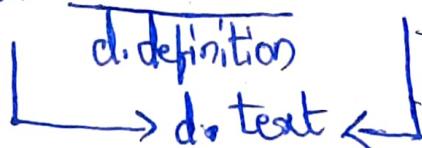
UnOrdered List: is a non-sequential list.

⇒ Syntax: ` ` `` - Unordered list.

* Attribute of Unordered List is `type = "none"` → [*, □, ○, ➔]

Descriptive List: is combination of description text and description definition.

⇒ Syntax: `<dl> <dt> <dd> </dd> </dt> </dl>`



Generic program on lists: if 'x' = ol

`<html> <head> </head>`

if 'x' = ul

`<body> <x>`

• RAM

` RAM `

• Krishna

` Krishna `

• Shiva

` Shiva `

• Shiva

`</x>`

`</body>`

`</html>`

Description List Program:

```

<html><head></head>
<body><dl>
<dt> SRI RAM </dt>
<dd> AYODHYA </dd>
<dt> SRI KRISHNA </dt>
<dd> MADHURA </dd>
<dt> SHIV BABA </dt>
<dd> KASHI </dd>
</dl></body>
</html>

```

OUTPUT

SRI RAM	AYODHYA
SRI KRISHNA	MADHURA
SHIV BABA	KASHI

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Images

HyperLinks

Text formatting with HTML

1. Images: we can display Images in two different ways.

Online Images

Offline Images

→ img : is Unpaired Tag

→ mandatory attributes of Image Tag:

src ⇒ Source of image (location of image).

alt ⇒ alternative text (alternative for image).

title ⇒ tool tip for image displaying.

height ⇒ to increase/decrease height of image.

width ⇒ to increase/decrease width of image.

Types of image:

jpg ⇒ Joint Photographic group.

jpeg ⇒ Joint Photographic expert group.

png ⇒ Portable network graphics.

web p \Rightarrow webpage image.

gif \Rightarrow graphical interchange format.

psd \Rightarrow photoshop document.

svg \Rightarrow scalable vector graphics.

\Rightarrow png, webp, svg etc.
recommended.

Syntax:

`<h1> Images </h1>`

``

``

``

[RAM] [KRISHNA] [SHIV]

Hyperlinks: hyperlinks are used to navigate from one webpage to another webpage or one part of webpage to another part of webpage.

\Rightarrow we have two types of hyperlinks:

- Text Hyperlinks

- Image Hyperlinks

a - anchor Tag

`<a> `

\Rightarrow Attributes of anchor Tag :

'blank' (new tab) href \Rightarrow Hyperlink reference.

'self' (same tab) target \Rightarrow to open new webpage in same tab/new tab

'title' \Rightarrow to display tooltip.

Program:

```

<h2> FOLLOW US </h2>
<a href="https://www.facebook.com"> Facebook </a>
<a href="https://www.instagram.com"> Instagram </a>
<a href="https://www.Twitter.com"> Twitter </a>
<a href="resume.html" target = "_blank"> Resume </a>

```

Logos:

```

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

```

Text - Formatting: (4 colors)

color → ~~font~~ color
 size → size (+ve to increase/-ve to decrease)

style → face

⇒ tag has three attributes to change color, to change style, to increase/decrease size of text.

```

<font color=""></font>

```

[htmlcolorcodes.com]

```

<h2> <font color="red"> FOLLOW US </font> </h2>

```

⇒ Type of Text:

- Bold text: or
- Italic text: <i></i> or
- Deleted text:
- Underline text: <u></u>
- Highlighting: <mark></mark>

 Jayanth
<i> Jayanth </i>
 Jayanth
<u> Jayanth </u>
<mark> Jayanth </mark>

JAYANTH
Jayanth
Jayanth
Jayanth
Jayanth

Super script:

<p> BOth </p>

Sub script:

<p> drink H₂ O </p>

Bi-directional: <bdo></bdo>

<bdo dir="rtl"> Jayanth </bdo>

Marquee: <marquee></marquee>

Used for Scrollable Content.

<marquee dir="right" > Jayanth </marquee>
direction

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Table Tags: The List of tags are as follows :

1. table tag: <table></table>

2. table row: <tr></tr>

3. table headings: <th></th>

4. table data: <td></td>

Table: is a collection of rows and columns to form a cell. we can use table to display tabular content and for alignment of data.

Syntax:

```

<table>
<tr>
<th> MOBILE </th>
<th> Company </th>
<th> Price </th>
</tr>
<tr>
<td> QRT </td>
<td> ONEPLUS </td>
<td> 42000 </td>
</tr>
<tr>
<td> Pixel 8 </td>
<td> GOOGLE </td>
<td> 72000 </td>
</tr>
<tr>
<td> S24 Ultra </td>
<td> Samsung </td>
<td> 120000 </td>
</tr>
</table>

```

List of attributes:

border \Rightarrow cell borders
 cell padding \Rightarrow space b/w border & content
 cell spacing \Rightarrow space b/w cells
 rowspan \Rightarrow merging row to one
 colspan \Rightarrow merging col to one

\Rightarrow Border: to display border for cells of table

Eg: `<table border="2">`

\Rightarrow Cell Padding: the space between content and border

Eg: `<table border="2" cellpadding="15">`

⇒ Cell Spacing: is the space between the cells of a table.

Eg: `<table border="2" cellpadding="15" cellspacing="2">`

⇒ RowSpan: used in merging two or more rows together into one.

Eg:- `<td rowspan="2" style="width: 40%;>`

⇒ ColSpan: used in merging two or more columns together in one.

~~<td>~~ Amount: `</td>`

Eg: `<td colspan="2" style="text-align: center;">₹124400 (including GST)</td>`

05/02/24

Multimedia content in HTML:-

- Video
- Audio
- Iframe

Videos: → offline videos
→ Online Videos.

Tags used for offline videos:

→ To display offline videos we need to use `<video>` tag which is paired tag.

→ To set the url of the video we need to use `<source>` tag which is an unpaired tag in the following format.

- <Video>
- > source src = " " type = "video/mp4" >
- </Video>
- Video tag has few important attributes like:
- controls - to set controls for video in webpage.
- autoplay - to play video automatically when webpage is loaded.
- muted - to mute the video.
- height & width - to manage size of the video.
- Modern Browsers play video automatically when its muted

Syntax:

```

<Video controls autoplay muted height="200" width="200">
<source src="MyVideo.mp4" type="video/mp4">
</Video>

```

- ### Online Videos:
- Open a youtube video, click on the share button then click on embedded button, copy the given iframe tag and copy the link and paste in html code/file.
 - To display online video no need to use video tag.

Audio:

→ To play audios in webpage we need to use audio tag, within audio tag we need to use source tag similarly as in video tag.

```
<audio controls>
<source src="a.mp3" type="audio/mp3">
</audio>
```

Iframe:

- To create different frames in webpage by loading different content in each frame which is also used/introduced in HTML.
- Previous versions ^{has} usage of framset tag took place to create frames.
- Iframe src ⇒ source of content.
height, width ⇒ to adjust size.

Syntax:

```
<iframe src="url" height="100" width="100"></iframe>
```

Eg: <iframe src="https://dreddysfoundation.org/" height="350" width="500"></iframe>

Forms in HTML: These tags are used for data validation.

```
<form>
  // data validation
</form>
```

Attributes

- Forms in html created by two important tags called form, input to collect different types of data from user.
- Here form tag is used to create a form with data validation.
- Input tag is used to create different input fields in the form.
- Input tag has type variable which is used to read specific types of data.

Different values of Type attribute in input tag:

<input: type="text/number/email>Password/checkbox/radio/file/date/time/date-time-local/range/color/submit/reset".

Attributes of Input tag:

placeholder → to display watermark for input.

required → to create mandatory fields.

Pattern → check data in specific format (or) not [e.g. Regular Expression]

Syntax of form:

<form>

<label> Enter UserName </label>

<input type="text" placeholder="username" required pattern="^([a-zA-Z]+[a-zA-Z0-9]{4,})\$">

title="Must be 5 characters">

<label> Enter Password </label>

<input type="password" placeholder="password">

<label> Enter Phone Number </label>

<input type="number" placeholder="phone" required>

<label> DOB </label>

<input type="date">

 <label> Gender </label>

<input type="radio" name="gen"> male

<input type="radio" name="gen"> Female

<input type="radio" name="gen"> Others

<label> Select FavColor </label>

<input type="color">

<input type="range" min="0" max="10">

<input type="Submit" value="Register">

<input type="reset" value="Cancel">

</form>

Character class: [a-zA-Z] [a-zA-Z0-9]
[a-zA-Z0-9]

Counted class:

{ } {5} {5,} {5,15}

Dropdowns: i) Select tags
ii) Data list

Syntax for Data list:

```
<label> University </label>
<input list="college" type="list">
<datalist id="College">
    <option> SV university </option>
    <option> INTUH </option>
    <option> OU </option>
</datalist>
```

Syntax for Select Tag:

```
<label> Select your city </label>
<select> <option> Select City </option>
        <option> Hyd </option>
        <option> KMR </option>
        <option> Chennai </option>
</select>
```

Dynamic forms in html:

Forms.google.com ↳ Using google forms, By giving embedded code
 * Forms.zoho.com ↳ Extract plain HTML

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Block level and Inline Elements:

Block Level Elements:

- Block Level element always starts from new line.
 - Block level element occupy entire width.
 - Block level elements have default padding.
- ex: heading tags (h1-h6), Paragraph tags (P)

Semantic Tags: is a tag which defines its purpose clearly to user and browser.

Eg: <table>, <form>, <figure>, <header>, <footer>,
<fieldset>, ---

<header>: to create header of the website by writing multiple heading tags, images in header.

<footer>: to create footer of webpage, we can include quick links, social media links, credits of website etc..

<figure>: figure is a block level element where we can design image along with caption. Supports 'align'.

<div>: it creates a block of separator in a section with no styles.

<section>: one part of webpage, one section can have multiple blocks.

<fieldset>: it will create a separate block with border for the entire block.

<legend>: to create heading for fieldset.

<nav>: to create navigation bar in webpage.

<figcaption>: to title the figure within figure tag.

Inline elements:

- Inline elements always starts from same line.
- It occupies only required width.
- It has no padding, no width.

Examples:

label, input, img, i, b, strong, em, del, bdo...
button, etc.