

HTML

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Hyper text markup language

means annotations / tags will be used to describe content.

Not a programming language, but markup language

Hyper text (meaning ~~set of~~ ^{one} web pages ~~is connected to another page~~ is linked to another page)

wikipedia

→ Badhaa class

Document

hypertext : click here

linked to another document

Is a markup language

i.e., annotations / tags will be used to describe content

Is hyper text i.e., one web page will be linked to another webpage via hyper links.

HTML : Basic building block.



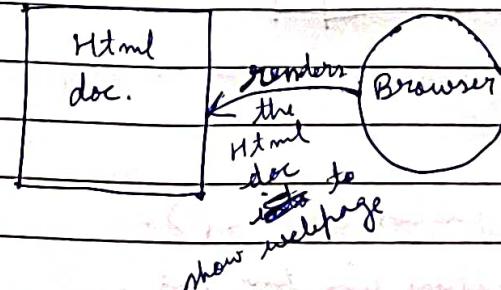
→ skeleton

→ description of web page

CSS : formatting / appearance.

JS : functionality

HTML + CSS + JS.



full stack application

Tags → <P> <h1> <a>
 ↓ ↓ ↓ ↓
 paragraph heading image link

[tag] (100+ tags)

→ opening tag element
 → closing tag [h1> Name </h1>]
 → content opening tag content closing tag

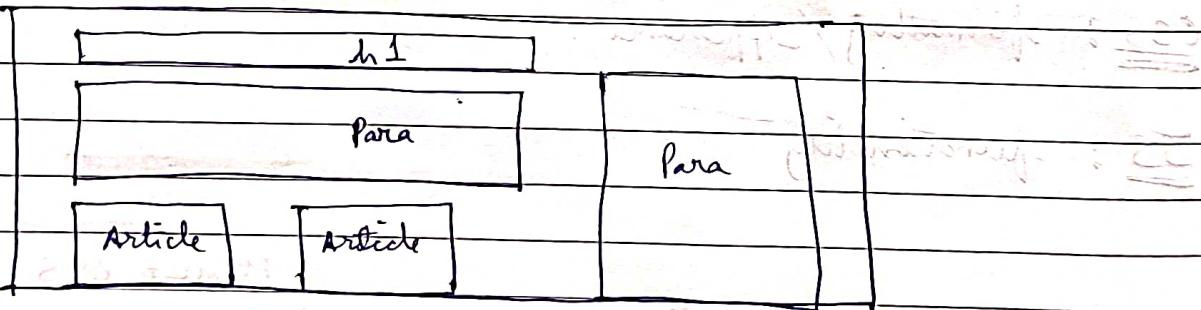
HTML → not case sensitive.

Comment : <!-- -->

Q.) HTML doc can be opened in 2 ways:

→ Text editor
 → Browser

→ Text Elements: used to define and describe the content of the page.
 → Block elements: used to differentiate different parts of the page.
 → Inline elements: used to specific part of the text.
 <p>
 <h1> → <h6>
 →
 <article>
 <section>
 → emphasize
 → bold
 <a> → link / anchor tag



All these blocks (h1, Para, Article) are created using block elements.

→ Div tag might appear to function like <p>. But we can do customization using div tag.

Homework

mdn → HTML → Read & Explore.

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↳ empty tags (Self-closing tags)

where there is no need of opening tags & closing tags.

Eg:- `
`
``
`<input/>`

↳ list

3 types :

- ↳ ordered list
- ↳ Unordered list
- ↳ Description list - H/W.

`<!DOCTYPE html>`

`<html>`
`<body>`
`<h1></h1>`
`<h2></h2>`

`<h3></h3>`,

`<p></p>`

`
`

`<div></div>`

`</body>`

`</html>`.

① ↳ provide additional info

about any element.

↳ always placed inside opening tag.

Eg:- src is an attribute for element img

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

② id is an attribute that can be applied to all elements.

class → all element

src → img tag

href → a tag. ``

H/W → What happens when
we put closing tag for
empty tags.

(! + Enter) → To get generate html code at once
in VS Code.

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<!DOCTYPE html> → tells your browser that it is a HTML v5 doc.

<html lang="en"> → tells content of web page is in English

<head> </head> → contains metadata of HTML doc.
→ also contains 'title' of web page.

Meta tag. (not displayed on the webpage, but is used by browsers)

→ (On Google, the description written below each search result, is written using meta tag, for SEO)

→ Always inside head tag

→ used to specify

- ↳ character set <meta charset="UTF-8"/>
- ↳ page description <meta name="description" content="..."/>
- ↳ Keywords <meta name="keywords" content="..."/>
- ↳ author <meta name="author" content="..."/>
- ↳ viewport <meta name="viewport" content="..."/>

① <meta charset="utf-8">

utf-8

② viewport

↳ character Encoding

90% webpages use utf-8 encoding.

↳ charset is like 'ASCII' code:

To see the effect of initial-scale, click on mobile view icon from "View page source".

http-equiv

↳ for compatibility, not of much use.

<head>

<meta charset="UTF-8"/> // character encoding

<link rel="icon" href="https://www.codehelp.in/favicon.ico"/>

<meta name="viewport" content="width=device-width, initial-scale=1.0"/>

<title> Hello </title>

</head>

for first icon
is the
first
one
in the
list.

link
↳ <link> tag is used to mostly link to external style sheets or to add a favicon to your website.
↳ empty tag.

VSCode Shortcut

~~Press Tab~~ Type the element, and press Tab. Eg:- type 'p' and press ~~Tab~~ It will show <p></p>.

`<hr>` → empty tag, adds a ~~one~~ horizontal line.

(em) → italic element that italicizes text

 → inline tag that boldens text.

 → stand entity to add white space.

& It; → less than

& copy ; → Copyright symbol

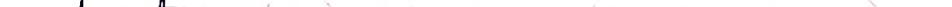
$>$ → greater than

`<abbr title=" " content="...>` → Abbreviation can be mentioned in content, and the full form in title.

$\langle \text{address} \rangle \rightarrow \text{address tag}$

`<!-- -->` → comment

Ctrl + ' → Comment shortcut in VSCode after selecting the part of text you want to comment.

Note: A list element should ~~not~~ ^{outside} be ~~in~~ a ~~loop~~ paragraph element : 

Note: $\langle li \rangle \dots \langle /li \rangle$, vs. $\langle li \rangle \langle p \rangle \dots \langle /p \rangle \langle /li \rangle$

2nd one adds entire ~~where~~ ^{where} as if there is one gap after the

~~the next~~ it will ^{as if} add a blank around the ~~base~~ ^{content} ensuring extra space.

$\langle dl \rangle \rightarrow$ description bit

$\langle dt \rangle, \dots \langle /dt \rangle \rightarrow$ description term detail

$\langle dt \rangle$... $\boxed{\langle dt \rangle}$, as
 $\langle ad \rangle$... $\boxed{\langle ad \rangle}$ descriptive

</dl>

Note: # is always used to refer to an id attribute.

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Semantic elements

→ provide readability and ~~searchability~~ accessibility to screen readers, ~~and~~ developers and search engines. As such you won't see visible changes due to semantic elements on the webpage.

Examples:

① <nav>...</nav> → Contains list of anchor links, may be to the same web page, or different web page. Generally used under Table of contents in a website.

② <section id="..."> <h2> → Just like div

it will create a container, ~~but more descriptive~~ ~~startling and for web~~. This "id" attribute can be even used in "href" attribute to link to an internal part of the same web page.

Note: # in href attribute takes you to the top of a webpage.

① Image

↳ Downloads a picture on clicking link in webpage

② mail

↳ Open mail id

③ Phone

↳ Direct number

④ Google

↳ Opens link in new tab.

⑤ Back to top

↳ takes you to top of webpage

⑥ Index.html

↳ takes you to root of webpage ie index.html.

Note: <title> is a tag in the webpage title you declare in <head>.

But title as an attribute is something which appears when you hover the cursor over the element ~~that is associated with "title" attribute~~.

~~Cumulative layout shift~~

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→ In webpages, you might experience sometimes that the content shifts unexpectedly after it is rendered.

→ To avoid this, we mention ~~image~~ size (width, height) in `img` tag, so that browser can allocate correct space while the page is loading. If it does not know, initially it will render ~~the~~ the page, and then shift content once it figures out the size via CSS, causing CLS.

→ So it is recommended that though ~~img~~ can be mentioned via CSS, but while rendering ~~the~~ the page, the browser will first try to get idea from HTML and not CSS.

~~Image below the fold~~

So the part of webpage that you cannot see unless you scroll down using mouse cursor, is called 'below the fold'.

So for images below the fold, you can increase the website performance by using the "loading" attribute and set its' value to "lazy". It means that the images will load only when somebody is about to scroll to that part of website, not before. This increases performance. By default "loading" value is not to "eager" meaning it will load all images at once.

``

[Can be visualized by Chrome Developer Tools. In Dev Tools → Network → Disable Cache → Img → ~~Reload~~ Reload the webpage → You'll see only the images above the fold are loaded, and then as you scroll down, the other images start appearing]

Note:

Use "Copy image address" to put link of image in src attribute of image tag when giving image address directly from web.

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Poet problem.

<pre> used to print lines as it is written in html.

HW 1: How to change color of hr to red?

HW 2: Background color to light blue till last

HW 3: Quotation and Citation tags

- ↳ blockquote
- ↳ q...
- ↳ cite
- ↳ address
- ↳ abbr.

HW 4: How to add a favicon?

HW 5: Create a website <codehelp-linus-towards-tribute.notifyapp>
(In discord)

HW 6: Create table (In discord).

Table.

<table>

row <caption> my first table </caption>

column <td> Month </td>

<td> Saving </td>

<tr>

<td> Jan </td>

<td> 200 </td>

<tr>

</table>

| Month | Saving | Table headig |
|---------|--------|--------------|
| Jan | 200 | |
| Feb | 300 | |
| March | 400 | |
| Total | 900 | |
| Summary | | |

Note: As best practice, use ~~<td>~~ instead of ~~<td>~~ in first row contents to hold it

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<table>

<tr>

<th> 1st col </th>

<th> 2nd col </th>

</tr>

</table>

Exercise.

Welcome to Codetutor.

Username

Password

Button

Hint:

Can use table

- OR -

use form

forms

text field

radio

checkbox

dropdown

Using Form

<form action="some url">

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

<input type="text" id="username">

<label for="password"> Password </label>

<input type="password" id="password">

<input type="submit" value="click here">

Using table

<h1> Welcome to Codetutor </h1>

<table>

<tr>

<td> <label for="username"> Username </label> </td>

<td> <input type="text" id="username"> </td>

</tr>

<tr>

<td> <label for="password"> Password </label> </td>

<td> <input type="password" id="password"> </td>

</tr>

</table>

<button> Submit </button>

(I) Blockquote & Cite

Blockquote is used for quotation. Virtually it just indents the piece of text that you put inside blockquote.

Cite ~~is~~ can be an attribute and a tag. As an attribute with blockquote, it is not visible effect. But `<cite>` as a tag will add citation text in italics below blockquote.

Note: Cite tag should be enclosed within blockquote tag.

| | |
|---|-----------------------|
| <code><blockquote cite = "url"></code> | Tent ----- |
| <code><p> Tent ----- </p></code> | -- Said by Google CEO |
| <code><cite>--Said by Google CEO </cite></code> | |
| <code></blockquote></code> | |

(II) q tag

'q' tag is used for inline quotation. It will enclose the text within double quotes.

`<p> He is an <q> oligarch. </q>. <p>`
Output: He is an "oligarch".

(III) How to add caption to an image?

Step 1: Enclose the entire `` within `<figure>` semantic tag.

Step 2: With the `<figure>` tag, use `<figcaption>` to write the caption.

Syntax: `<figure>`

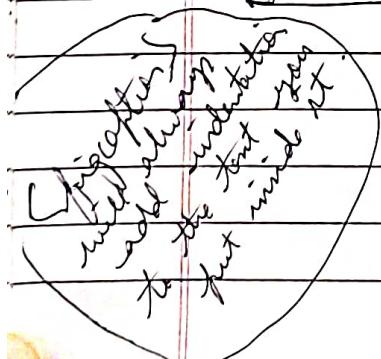
``

`<figcaption>`

This is an image

`<figcaption>`

`</figure>`



(IV) Rowspan & Colspan

Rowspan is used to span over multiple rows.

Colspan is used to span over multiple columns.

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Note: Both rowspan & colspan are used as attributes with the <td> tag.

Eg:- <tr>

<td colspan="2" rowspan="2">Data

(V) <code> tag

Used for writing code. It will just use a different font family for the code to differentiate it from the rest of webpage content.

(VI) Inline element

(VII) Semantic Elements (in details)

(i) <header></header>

The header element represents introductory content, typically a group of introductory or navigational aids. It may contain some heading elements, but also a logo, a search form, navigation links and other elements.

(ii) <main></main>

You can enclose the main section of the webpage inside a main tag.

(iii) <footer></footer>

To enclose ending section of webpage.

If you're using more than one nav elements, you need to label them for ease of understanding for screen readers.

The attribute for label is aria-label.

Syntax:

<nav aria-label="any descriptive">

</nav>

(V). You may use articles instead of sections to be more specific.

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(vi). <aside> </aside>

Used to enclose a content which is not main but acts as complimentary section to the main section.

(vii). <details> - </details>

shows the contents <summary> abcd </summary>
not in details </details> → shows the contents
visible on screen → when expanded Output: abcd visible with arrow symbol
in expanded If you click here,

abcd
efgh

Details button

(viii). -

→ strikes off a piece of text text
→ inline element text

(ix). <mark> - </mark>

→ highlights piece of text in yellow

(x) <time datetime="2018-07-07"> July 7 </time>
<time datetime="20:00"> 20:00 </time>
<time datetime="PT2H30M"> 2h 30m </time>

↳ visually no results

↳ but adds meaning for screen readers & search engines.



Note: Never ignore semantic elements. From a visual point of view they might not make much sense, but it is very important to write good quality code.

Note's As a good practice for semantic elements, include:

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(1) `<header>` → here maybe you can include the `<h1>` and some nav links.

(2) if there's a para describing something, you can include it inside `<article>` block. Within the `<article>` block, you can ~~also~~ have ^{some} `<section>` blocks. If some part of section is not that important, use `<aside>`.

(3). `<main>` → here include the main content of the web page excluding `<footer>` & `<head>`.

(4). `<footer>` → ending section of webpage

(5). Similarly for `<table>` use,
`<caption>`, `<thead>`, `<tbody>`, `<tfoot>`, "scope" attribute.

(6) Maybe you can include `<fieldset>` and `<legend>` tags inside `<form>`

Note: To add empty cell,

`<td> </td>`

Note: In table, each row heading ^{it} should have attribute `scope = "row"`

Similarly, each column heading ^{it} should have attribute `scope = "col"`

Ex:- `<table>`

`<caption="my daily schedule">`

`<thead>`

`<tr> th </td>`
`<td> scope = "row" </td>`

`<th> scope = "col" </th>`

`<th> scope = "col" </th>`

`</tr>`

`<thead>`

`<tbody>`

`<tr> th`

`<td> scope = "row" </td>`

`<td> time start = "08:00" </td>` - `<td> 8 am </td>`

`<td> time end = "11:00" </td>` - `<td> 11 am </td>`

`</td>`

`<td> activity </td>`

`</table> </tbody> </tr>`

| my Daily Schedule | | |
|-------------------|--------------|------------|
| | Time | Activity |
| | 8 am - 11 am | Write code |

FORMS

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General syntax:

(form action = "...")

<label for = "..."><--> </label>

<input type = "... name = ..." id = "... placeholder = ..." >

<label ... >

<input ... >

:

</form>

B. Content inside Form:

① To display text box:

<input type = "text" name = "... id = ..." placeholder = "..."/>

→ ~~name attribute~~ is very important. It is used as a reference when the ~~form~~ data is submitted. In case of radio buttons, the 'name' attribute is even used to group together a bunch of radio buttons.

→ 'id' attribute is the one that ~~refers~~ links the input type to the label ~~attribute~~ tag. Remember: label's 'for' attribute should have same value as input's 'id' attribute.

→ 'placeholder' attribute is used to display some text.

② To display password box:

<input type = "password" name = "... id = ..." placeholder = "..."/>

→ ~~the~~ Benefit of using 'password' instead of text box here, is as you type in the password, the letters are ~~hidden~~ ~~so~~ not ~~data~~ revealed.

③ To display - phone number:

<input type = "tel" name = "... id = ..." placeholder = "..."/>

pattern = "[6-9] {13} [0-9] {93}" required

→ ~~the~~ Using 'tel' helps assistive technology like screen readers, and also in mobiles might pull out a numeric keypad instead of alphanumeric.

→ 'pattern' attribute is used to put regular expression.

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④ ~~denoted~~

'required' attribute can be used with any input type.
It means that information is mandatory to be entered into the form by the user.

⑤ To display a number:

```
<input type = "number" name = "... " id = "... " placeholder = "... " min = "... " max = "... "  
step = "... ">
```

- "min" is used to mention minimum value that can be entered by user
- "max" → maximum value to be entered by user
- "step" → the step by which values will be increased/decreased.

⑥ To display options:

```
<label for = "... " > ... </label>  
<select name = "... " id = "... " >  
<optgroup label = "... " >  
<option value = "... " > ... </option>  
<option value = "... " > ... </option>  
</optgroup>  
</select>.
```

- optgroup is used to group options according to type -
- "value" attribute is for the server, it is not displayed.

⑦ To display date:

```
<input type = "date" name = "... " id = "... " placeholder = "dd/mm/yyyy">
```

- Here also you can use, min, max, step attributes.

⑧ To display radio buttons and ensure only one can be selected:

```
<input type = "radio" name = "xyz" id = "... " value = "... " >
```

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

```
<input type = "radio" name = "xyz" id = "... " value = "... " >
```

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

Note: To ensure only one radio button can be selected, group them together using the same value of the "name" attribute.

- (8) For locations in form, you can use:
- `<button type="submit"> Submit </button>`
 - `<button type="reset"> Reset </button>`
- Note: Each element in form can also be enclosed in a `'p'` tag instead of putting `(br)` after every element.

(9) Fieldset and legend tags in form.

To add semantics and also ~~add~~ label to a form ~~you can~~ sections of a form use `<fieldset>` and `<legend>` tags. (`<fieldset>` will add the border, `<legend>` will add the heading).

Eg:-

`<form>`

`<fieldset>`

~~label~~

`<legend> Reward Info </legend>`

`</fieldset>`

`
`

`<fieldset>`

`<legend> Food choice </legend>`

`</fieldset>`

`</form>`

Output:

| Personal Info | |
|---------------------------------------|----------------------|
| Name: | <input type="text"/> |
| password: | <input type="text"/> |
| Email: | <input type="text"/> |
| Rating: | 01 02 03 04 |
| <input type="button" value="Submit"/> | |

| Food choice | |
|---------------------------------------|----------------------|
| Place: | <input type="text"/> |
| Cuisine: | <input type="text"/> |
| Food option: | <input type="text"/> |
| <input type="button" value="Submit"/> | |

⑩ checkbox in form

→ Only difference from "radio" is here you can select multiple checkboxes.

→ "name" attribute should be same for all checkboxes to group them together.

```
<input type = "checkbox" name = "xyz" id = " " value = " " >
```

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

```
<input type = "checkbox" name = "xyz" id = " " value = " " >
```

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

⑪

Textarea - for multi-line text box

Syntax:

```
<textarea name = "...." id = "...." cols = "30" rows = "10" >  
</textarea>
```

⑫

To have email in the form:

```
<input type = "email" id = " " name = " " placeholder = " " >
```



Note: For buttons in a form, use `<button>` instead of

```
<input type = "submit" value = " " >
```



Note: To submit a form, use `method = "post"` as a best

practice instead of "get" since get method displays

sensitive info entered in the form in the URL.

⑬

How to add a slider profile in a form?

```
<input type = "range" id = " " name = " " min = " " max = " " step = " " >
```

→ This will display a slider rather than a text entry box.

→ This widget is imprecise, so use the input type as "number" whenever possible.

Output:

marks:

[You can increase/decrease this slider]

Iframe

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The `<iframe>` tag lets you embed a webpage inside a webpage.

Eg:- You can embed a youtube video in your webpage
Note: You can also use the <video> tag in this case but for that the video needs to be stored in your server and also the speed might be slower.

So we <iframe> to use the video directly from YouTube's server

`<iframe src="...-..." frameborder="0"></iframe>`

Here we will have the YouTube vdo url:

Note :

The youtube VR will look like :

<https://www.youtube.com/watch?v=KUMi21FH4cHE&t=12330s>

~~But THIS URL WILL NOT WORK.~~

So we this one:

<https://youtu.be/1KUMe1FH4cE>

Steps :

1. You can either click on "share" below a youtube video → <> EMBED → Copy the whole <iframe> code and paste in your html file -

2. Of, if you want to write your own iframe tag, then just replace "watch?v=" with "embed/" and remove the part ~~for~~ "t=123305".

Note: If from ~~student~~ some ^{xyz.html} page, you're linking back to index.html page using anchor tag, use href = "/" to refer to index.html.

Similarly, if you're linking to some internal section present inside index.html (say for example "#content", where "content" is the ID of some (section) or (article)) then you should use href = "/#content" ,

then you should use `href = "#content"`.

~~Access, search for, sell papers, download papers, search~~

[Signature] *[Signature]*