# HTML Notes

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## HTML Web Page Structure

```html
<html>
    <head>
        <title>"  "</title>
        <link rel="stylesheet" href="style.css">
    </head>

    <body>
        <header>            <!-- 1 -->
            <nav>…</nav>
        </header>

        <main>              <!-- 2 -->
            <article>
                <section>…</section>
                <section>…</section>
            </article>
            <aside>…</aside>
        </main>

        <footer>…</footer>          <!-- 3 -->
    </body>
</html>
```

# Level: 1

## Introduction:

| HTML<br>[Hyper Text Markup Language] | CSS<br>[Cascading Style Sheets] | JS<br>[java Script] |
| --- | --- | --- |
| Structure / Layout | Styles / Colors / Shapes /Sizes | Logics / Which switch is used for my fan or light. |
|  |  |  |

## VS Code Extensions:

1. **Prettier**- by Prettier
2. **Live Server**- by Ritwick Dey
3. **Material Icon Theme**- by Philipp Kief
4. **Material Theme**- by Equinusocio
5. **HTML CSS Support**- by ecmel
6. **Auto Rename Tag**- by Jun Han
7. **Community Material Theme**- by Equinusocio
8. **CSS Peek**- by Pranay Prakash

## HTML

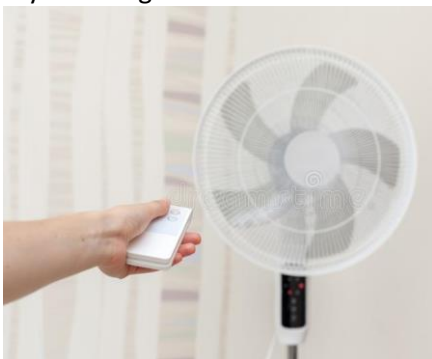Hyper  Text  Markup  Language

HTML is the code that is used to structure a web page and its content.

The component used to design the structure of websites are called HTML tags

First HTML File

## index.html

It is the default name for a website's Homepage.

It is used by live server to open in the browser.

## HTML Tag

A container for some content or other HTML tags

<P>This is a Paragraph</P>

Tag: <P> … </P>

Content: This is a Paragraph

**Html tag is parent** of head & body tag

Head- Document Name

Body- Header, Main, Footer & Others

Boilerplate code or Boiler Code or just boilerplate are **sections of code that are repeated in multiple places with little to no variation.**

**Example:** just enter "!" and head "Enter", the starting Boiler code will be there in your VS code.

All the needed basics are described below with basic webpage code:

```html
<!DOCTYPE html>
<!-- DOCTYPE tells browser you are using HTML5 and html is a format-->
<html lang="en">
<!--html-> Root of an html document[Kitchen], lang is a =n attribute-->
<head>
    <!-- Head-> container for metadata -->
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <!-- Viewpoint -> Makes website responsive to laptop, pc, iPod or
Samsung Phone screen. -->
    <title>Index [Home Page]</title> <!-- page title -->

</head> <!--This is body tag-->

<body> <!-- contains all data rendered by the browser  -->
    <p>This is a paragraph</p> <!-- paragraph tag -->
    <p></p>
</body>
</html>
```

## Comments in HTML

This is part of code that should not be parsed.

<!-- This is an HTML Comment -->          Make a line Comment-> [ CTRL + / ]

HTML is NOT case sensitive

             `<html> = <HTML>`
             `<head> = <HEAD>`
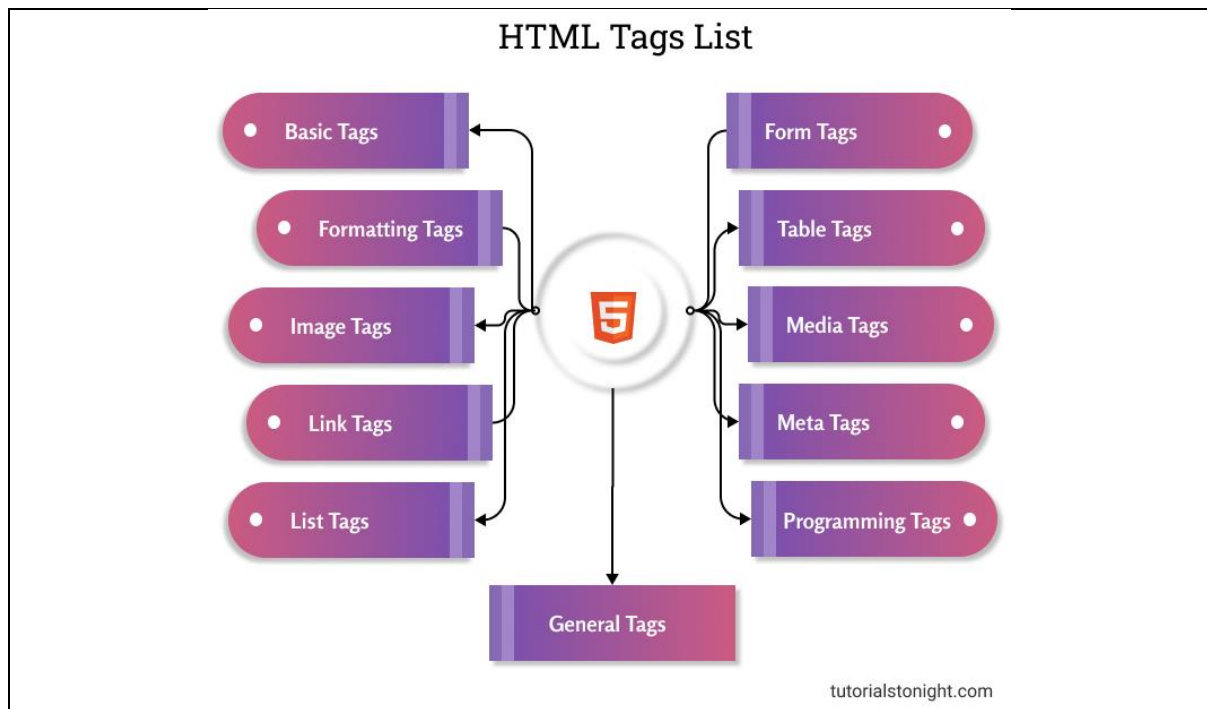             `<body> = <BODY>`

# Level: 2

## HTML Attributes

Attributes are used to add more information to the tag

`<html lang="en">`

## Tags:



## Br Tag- New Line

Used to add next line (line breaks) to your page

Used to display headings in HTML [Use headings for showing importance not for font size]

# h1 (most important)

# h2

# h3

# h4

## h5

### h6 (least important)

## Paragraph Tag

Used to add paragraphs in HTML

p> This is a sample paragraph </p>

## Anchor Tag

Used to add links to your page

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

For New Tab

`<a href="https://google.com" target="_main"> Google </a>`
**target="_main"** means the link will open in another Tab.

For Clickable Image

`<a href="https://google.com"> <img src="link"> </a>`

## Image Tag

- Use the HTML <img> element to define an image
- Use the HTML src attribute to define the URL of the image
- Use the HTML alt attribute to define an alternate text for an image, if it cannot be displayed
- Use the HTML width and height attributes or the CSS width and height properties to define the size of the image
- Use the CSS float property to let the image float to the left or to the right
- Use Height or Width attribute but Do NOT use both.

***Example:*** *Float attribute*

```
<img src="url" alt="alternatetext">
<img src="img_girl.jpg" alt="Girl in a jacket">
<img src="img_girl.jpg" alt="Girl in a jacket" style="width: 48px;">
<img src="img_girl.jpg" alt="Girl in a jacket" style="float: right; height: 48px;">
```

Used to add images to your page

img src="/image.png" alt="Random Image">

*Here, alt creates **an alternative name** for users to understand what was about the image whenever there is an issue related to the links and Wi-Fi connection.*

***Extra****:*

| Tag | Description |
|---|---|
| <img> | Defines an image |
| <map> | Defines an image map |
| <area> | Defines a clickable area inside an image map |
| <picture> | Defines a container for multiple image resources |

***<Map> and <area>:***        *Defines clickable area into an image.*

***<Picture>:***        *Shows different images for different screen sizes*

***Background Image:***

```
<p style="background-image: url(Paste the URL here);"> Write Text </p>
```

## Bold, Italic & Underline Tags

Used to highlight text in your page

<b> Bold </b>
<i> Italic </i>
<u> Underline </u>

## Big & Small Tags

Used to display big & small text on your page

<big> Big </big>
<small> Small </small>

## Hr Tag- Horizontal Line

Used to display a horizontal ruler, used to separate content

**&lt;hr&gt;**          Horizontal Line

---

## Subscript & Superscript Tag

Used to display a horizontal ruler, used to separate content

&lt;sub&gt; subscript &lt;/sub&gt;

$H_2$ O

&lt;sup&gt; superscript &lt;/sup&gt;

$A^n$ +B

## Pre -Tag (Preformatted Text)

Used to display  text  as  it  is  (without  ignoring  spaces  &  next  line)

&lt;pre&gt;This

       is a Sample Text

&lt;/pre&gt;

# Label: 3

## Semantic Tags- Page Layout Techniques

Semantic Tags: These tags can be **recognized by their names**. Ex: Header= Header Tag

using Semantic tags for layout

**<header>**

**<main>**

*Inside Main Tag*

*Section Tag*

**<section>**

*Article Tag*

**<article>**

*Aside Tag- Used for Ads | Developers keep <aside> for any Google advertisements. **This place is for Google Ads**.*
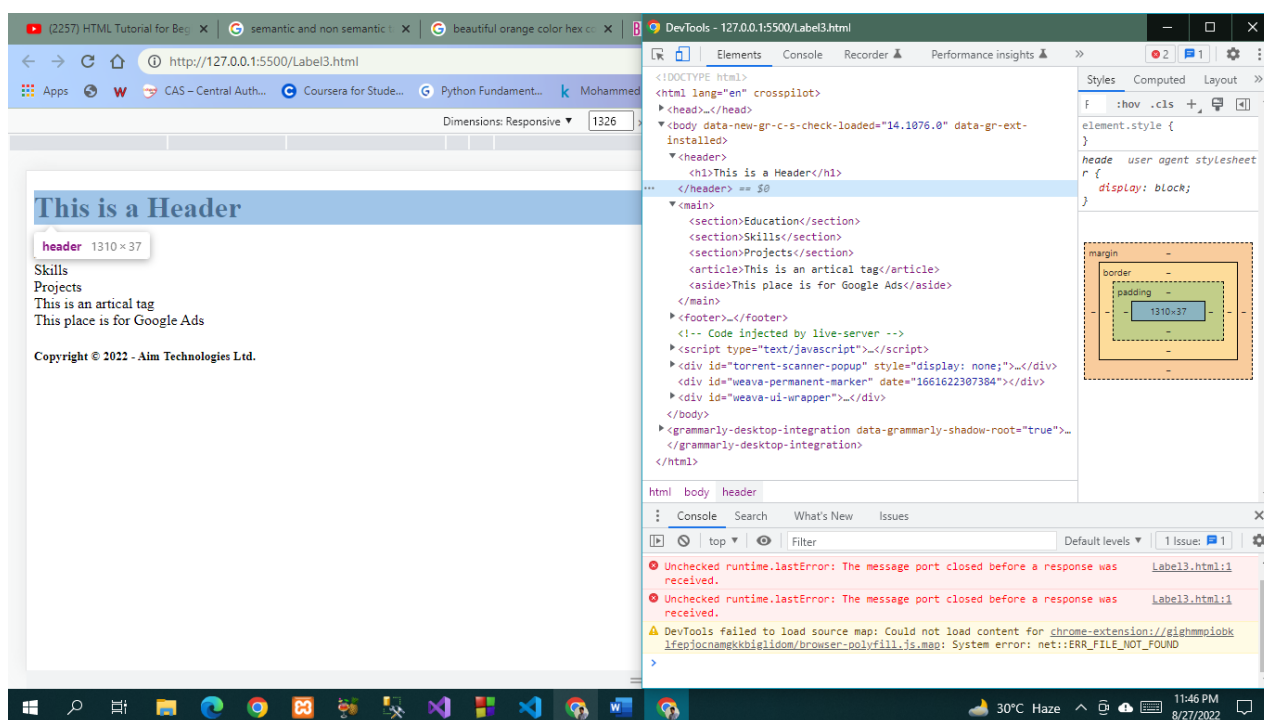
**<aside>**

**<footer**



*Figure: An example of Header, Main, Footer tag using Inspect*

**Nate:** Maintaining Semantic tags is very important for **optimizing Search Engine Optimization (SEO)**
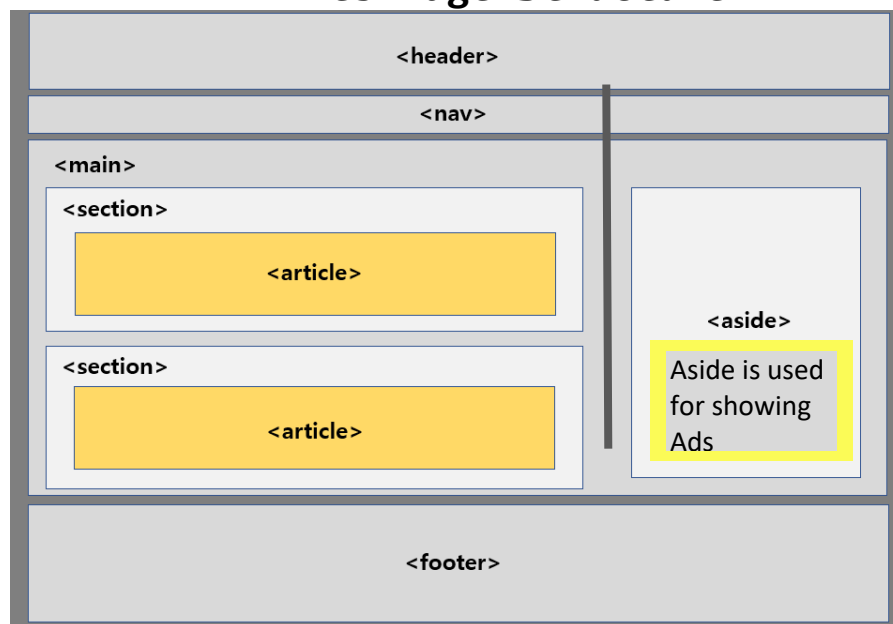
# HTML Web Page Structure



| **<header>** | | |
|---|---|---|
| **<nav>** | | |
| **<main>** | | |
| **<section>** | | **<aside>** |
| **<article>** | | Aside is used for showing Ads |
| **<section>** | | |
| **<article>** | | |
| **<footer>** | | |

*Fig.01: Inside Main Tag*

## 1. Headers

## 2. Main contents

SEMANTIC HTML II. Main content

### &lt;main&gt;

&lt;main&gt;&lt;/main&gt;

The main content of a webpage. There should be only one &lt;main&gt; tag on the page - it's usually a container between a header/navigation and a footer.

### &lt;section&gt;

&lt;section&gt;&lt;/section&gt;

A part of the site for a specific purpose. Designates an area of a page with a consistent content.

### &lt;article&gt;

&lt;article&gt;&lt;/article&gt;

A complete, independent, and consistent part of the page, such as an article.

### &lt;aside&gt;

&lt;aside&gt;&lt;/aside&gt;

Sidebar or call-out box with a content indirectly related to the website's main content.

### &lt;footer&gt;

&lt;footer&gt;&lt;/footer&gt;

A footer usually contains info about the author, copyright data or links.

## 3. Others

SEMANTIC HTML III. Other

### &lt;time&gt;

&lt;time datetime="2020-06-24"&gt;&lt;/time&gt;

Typically nested in &lt;time&gt; tag, provides a date (or date and time) of an article. It gets a [datetime] attribute with date in ISO-8601 format.

### &lt;figure&gt;

&lt;figure&gt;
&lt;img src="" alt=""&gt;
&lt;figcaption&gt;A very cool image.
&lt;/figcaption&gt; &lt;/figure&gt;

A tag for img, video or audio content. Can also contain a description.

### &lt;figcaption&gt;

&lt;figcaption&gt;&lt;/figcaption&gt;

An accurate description of the provided object.

### &lt;address&gt;

&lt;address&gt;&lt;/address&gt;

Provides a contact info: mailing address, phone numbers etc. Typically included in a &lt;footer&gt; tag.

## Non-Semantic Tags

These tags are not recognized by their names such as **<P> or <div> or <a>**

## Block Elements- Takes FULL width

| <address> | <fieldset> | **<nav>**- Navigation Section |
|---|---|---|
| **<article>** | <figcaption> | <noscript> |
| **<aside>** | <figure> | **<ol>**- Ordered List |
| <blockquote> | **<footer>** | **<p>**- Paragraph |
| <canvas> | **<form>** | **<pre>**- Preformatted Text |
| <dd> | **<h1>-<h6>** | <section> |
| **<div>** | **<header>** | **<table>** |
| <dl> | **<hr>** | <tfoot> |
| <dt> | **<li>**- List | **<ul>**- Unordered List |
| <main> | | |

## Div Tag

The <div> tag is a **container** and is a **Block Element (takes full width) -** which is then styled with CSS or manipulated with Java Script.

The <div> tag defines a division or a section in an HTML document.

The <div> tag is easily **styled** by using the **class or id** attribute.

Any sort of content can be put inside the <div> tag!

**Note:** By default, browsers always place a line break before and after the <div> element.

## Inline Element- Takes width as per size

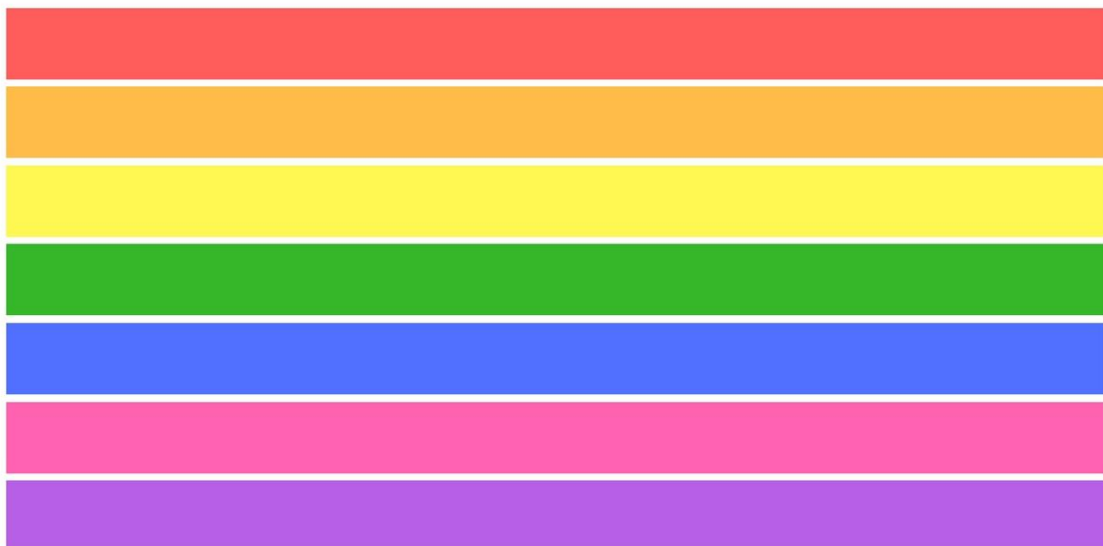| <span> | <img> | <sub>- Subscript |
|---|---|---|
| <a>- Anchor Tag- Put Links | <b> | <sup>- Superscript |
| <strong>- Works like Bold, but put Emphasis | <br>- Break Line (New Line) | <script> |

## Span Tag

Span is also a container and is an Inline Element (takes width as per size)

The <span> tag is an inline container used to mark up a part of a text, or a part of a document.

The <span> tag is easily styled by CSS or manipulated with JavaScript using the class or id attribute.

The <span> tag is much like the <div> element, but <div> is a block-level element and <span> is an inline element.

## BLOCK-LEVEL ELEMENTS:

## INLINE ELEMENTS:

*Figure: Differences between Block & Inline Elements*

## HTML Global Attributes

The global attributes are attributes that can be used with all HTML elements

| Attribute | Description |
|---|---|
| accesskey | Specifies a shortcut key to activate/focus an element |
| class | Specifies one or more class names for an element (refers to a class in a style sheet) |
| contenteditable | Specifies whether the content of an element is editable or not |
| data-* | Used to store custom data private to the page or application |
| dir | Specifies the text direction for the content in an element |
| draggable | Specifies whether an element is draggable or not |
| hidden | Specifies that an element is not yet, or is no longer, relevant |
| id | Specifies a unique id for an element |
| lang | Specifies the language of the element's content |
| spellcheck | Specifies whether the element is to have its spelling and grammar checked or not |
| style | Specifies an inline CSS style for an element |
| tabindex | Specifies the tabbing order of an element |
| title | Specifies extra information about an element |
| translate | Specifies whether the content of an element should be translated or not |

# Level: Pro

Lists In HTML

1. Ordered List
2. Unordered List- Used most often.
3. Definition List

| Codes | Output |
|---|---|
| ```html
<ul>
    <li>Apple</li>
    <ul>
        <li>Red Apple</li>
        <li>Green Apple</li>
    </ul>
    <li>Mango</li>
        <ul>
            <li>Red Mango</li>
            <li>Green Mango</li>
        </ul>
    <li>Lichi</li>
    <ul>
        <li>Ripe lichi</li>
        <li>Green Lichi</li>
    </ul>
</ul>
``` | • Apple<br>   ○ Red Apple<br>   ○ Green Apple<br>• Mango<br>   ○ Red Mango<br>   ○ Green Mango<br>• Lichi<br>   ○ Ripe lichi<br>   ○ Green Lichi |
| *Figure: Unordered List* | |
| ```html
<ol>
    <li>Apple</li>
    <ol>
        <li>Red Apple</li>
        <li>Green Apple</li>
    </ol>
    <li>Mango</li>
        <ol>
            <li>Red Mango</li>
            <li>Green Mango</li>
        </ol>
    <li>Lichi</li>
    <ol>
        <li>Ripe lichi</li>
        <li>Green Lichi</li>
    </ol>
</ol>
``` | 1. Apple<br>   1. Red Apple<br>   2. Green Apple<br>2. Mango<br>   1. Red Mango<br>   2. Green Mango<br>3. Lichi<br>   1. Ripe lichi<br>   2. Green Lichi |
| *Figure: Ordered List* | |

## Description List

Here,

dl = Description list,
dt = Description Term element,
dd = Description Details element

```html
<dl>
    <dt>Introduction</dt>
    <dd>Here, I used Descriptive List. Here, dl = Description list, dt =
Description Term element, dd = Description Details element </dd>
</dl>
```

Introduction

Here, I used Descriptive List. Here, dl = Description list, dt = Description Term element, dd = Description Details element

## Tables in HTML

```html
<table>
    <caption>HTML TAGS</caption>
    <th>Semantic Tags</th>
    <th>Non-Semantic Tags</th>
    <tr>
        <td>Header tag</td>
        <td>img tag</td>
    </tr>
    <tr>
        <td>Main tag</td>
        <td>Paragraph tag</td>
    </tr>
    <tr>
        <td>Footer tag</td>
        <td>H1 tag</td>
    </tr>
</table>
```

*Figure: Code for Table-> Caption, Table Head, Table Row & Table Data.*
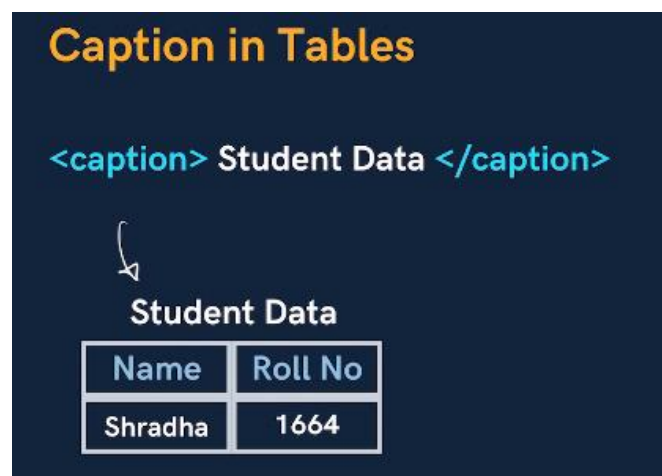
*Figure: Inspect of the above code*

***Captions in Tables***



*Figure: Caption in Table*

***Thead & tbody in Tables***

<thead>to wrap table head

<tbody>to wrap table body

## Colspan Attrinbute- Cells/Column Merging technique

colspan="n"          *Span= Merge in excel*

used to create cells/columns  which spans/merge  over  multiple columns
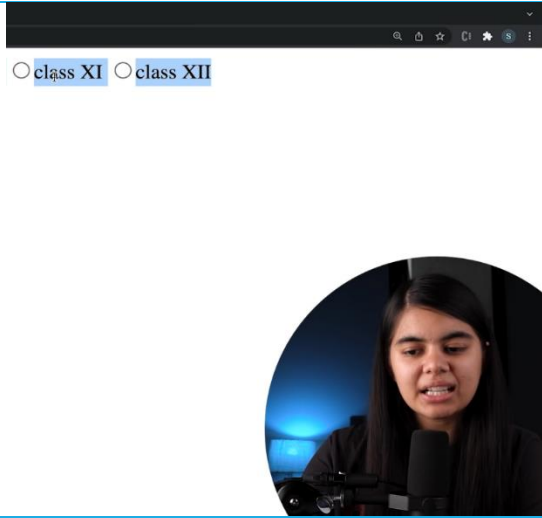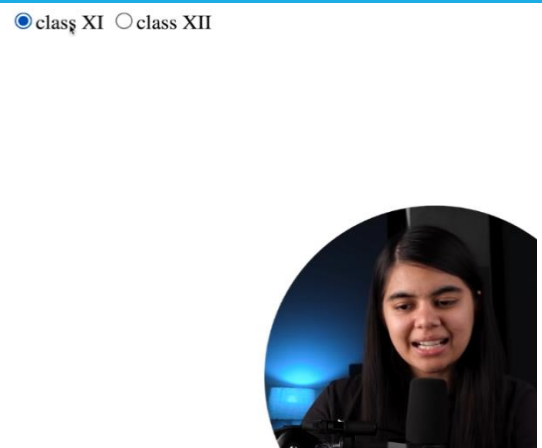
## Form in HTML

1. Use **<label>** for Text
2. Use **<input>** for getting input like **Name (Text), Password, Email, Telephone no (tel), Date, Radio, Check box, File, Range, Submit, URL,** etc. Mentioned are the input types.

| Code | Output |
|---|---|
| <pre>&lt;form action=""&gt;<br><br>    &lt;p&gt;Name: &lt;/p&gt;<br>    &lt;input type="text" name="name" placeholder="Enter<br>your Name"&gt;<br><br>    &lt;P&gt;Password&lt;/p&gt;<br>    &lt;input type="password" name="pass"<br>placeholder="Enter Password"&gt;<br><br>    &lt;p&gt;What is the capital of Bangladesh? &lt;/p&gt;<br>    &lt;label for="101"&gt;&lt;input type="radio"<br>name="capital" class="country" id="101"<br>value="Dhaka"&gt;Dhaka&lt;/label&gt;<br><br>    &lt;label for="102"&gt;&lt;input type="radio"<br>name="capital" clas="country" id="102"<br>value="Chittagong"&gt;Chittagong&lt;/label&gt;<br><br>    &lt;input type="radio" name="capital"<br>class="country" value="Khulna"&gt;Khulna<br><br>    &lt;input type="radio" name="capital" clas="country"<br>value="Noakhali"&gt;Noakhali<br><br>    &lt;br&gt;&lt;br&gt;&lt;br&gt;&lt;br&gt;&lt;br&gt;    &lt;!-- br * 5 --&gt;<br><br><br>    &lt;label for="tac"&gt;<br>        &lt;input id="tac" type="checkbox" name="terms-<br>and-conditions"&gt;<br>        I agree to the Terms and Conditions<br>    &lt;/label&gt;<br><br>    &lt;p&gt;<br>        &lt;a href="Portfolio/Education.html"&gt;Read our<br>Terms and Conditions&lt;/a&gt;<br>    &lt;/p&gt;<br>&lt;/form&gt;</pre> | Name:<br><br>Enter your Name<br><br>Password<br><br>Enter Password<br><br>What is the capital of Bangladesh?<br><br>● Dhaka ○ Chittagong ○ Khulna ○ Noakhali<br><br><br>☑ I agree to the Terms and Conditions<br><br>Read our Terms and Conditions<br><br>Look at the radio buttons:<br><br>For **Dhaka and Chittagong**, the texts are **clickable** (because we used Label for both of these) and when you click on the text the radio button is selected.<br><br>On the other hand, for the **Khulna and Noakhali**, the texts **are not clickable** and only when you click on the round shape radio button the button is selected. |

*Uses of Label in Radio button within Label:*

| Code | Output |
|---|---|
| ```html<br><form action="/action.php"><br>  <input type="text" placeholder="username"><br>  <input type="password" placeholder="password"><br><br>  <input type="radio" value="class XI" name="class">class XI<br>  <input type="radio" value="class XII" name="class">class XII<br></form><br>```<br><br>*Look at the output of the code:*<br>The radio buttons(text) are not clickable on text because there is not used Label. | ○ class XI  ○ class XII |
| ```html<br><label for="101"><br>    <input type="radio" value="class XI" name="class" id="101">class XI<br></label><br><label for="102"><br><input type="radio" value="class XII" name="class" id="102">clas<br></label><br></form><br>```<br><br>*Look at the output of the code:*<br>The radio buttons(text) are **clickable** on text because of the usage of **Label**. | ◉ class XI  ○ class XII |

## Class & Id

| | | |
|---|---|---|
| Id: 01 Student-01 | Id: 02 Student-02 | Id: 03 Student-03 |
| Id: 04 Student-04 | Id: 05 Student-05 | Id: 06 Student-06 |

*Class: 7 & this class has 6 students. For each student there is assigned an ID.*

*Class is general item used for 2+ elements but the Id is a unique item here.*

## Check box

| Code | Output |
|------|--------|
| ```html<br><h4>Select an optional Subject</h4><br><label for="Math"><br>    <input type="checkbox" name="Math"<br>id="S101">Math(S101)<br></label><br><br><label for="Physics"><br>    <input type="checkbox" name="Physics"<br>id="S102">Physics(S102)<br></label><br><br><label for="Chemistry"><br>    <input type="checkbox" name="Chemistry"<br>id="S103">Chemistry(S103)<br></label><br><br><label for="Biology"><br>    <input type="checkbox" name="Biology"<br>id="S104">Biology(S104)<br></label><br>``` | **Select an optional Subject**<br><br>☐Math(S101) ☐Physics(S102) ☐Chemistry(S103) ☐Biology(S104) |

## Text area
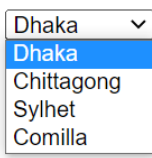
Generally, used for Feedback like a big text box.

```html
<textarea name="Feedback" id="Feedback_01" rows="10" placeholder="Please give
your feedback">
</textarea>
```

## Select

| Code | Output |
|------|--------|
| ```html<br><h4>Where do you live?</h4><br><select name="City" id="City"><br>    <option value="Dhaka">Dhaka</option><br>    <option value="Chittagong">Chittagong</option><br>    <option value="Sylhet">Sylhet</option><br>    <option value="Comilla">Comilla</option><br></select><br>``` | **Where do you live?**<br><br>Dhaka ⌄<br>Dhaka<br>Chittagong<br>Sylhet<br>Comilla |

## iframe Tag

1. First go to YouTube Video Link: https://www.youtube.com/watch?v=HcOc7P5BMi4&t=6557s
2. Then go to share option
3. Click on Embed and you will find the iframe (Embed Link) generated by YouTube/google.

### Code:

```
<iframe width="560" height="315"
src="https://www.youtube.com/embed/HcOc7P5BMi4" title="YouTube video player"
frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-
media; gyroscope; picture-in-picture" allowfullscreen></iframe>
```



*From YouTube (Allowed by video owner)*

### Code for Google.com

```
<iframe src="https://www.google.com/" frameborder="0"></iframe>
```
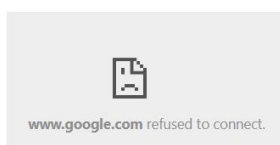


*Google.com is not allowed anywhere*

## Video Tag

*Attributes:*

- **Controls**: *Gives the user to control the Play/Pause, Full Screen & Download.*
- **loop**: *If the video is played once then play again automatically.*
- **Autoplay**: *Whenever the website is open Autoplay happens (Do not use this or in case you have to use this, mute the sound.*
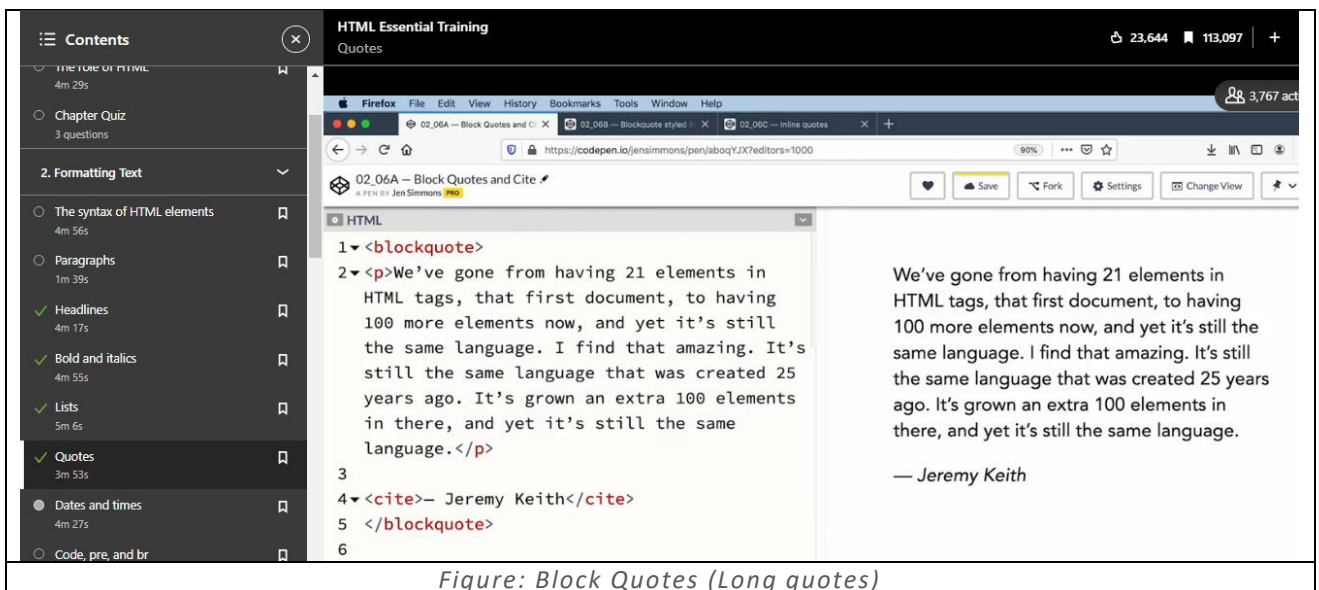- height
- width

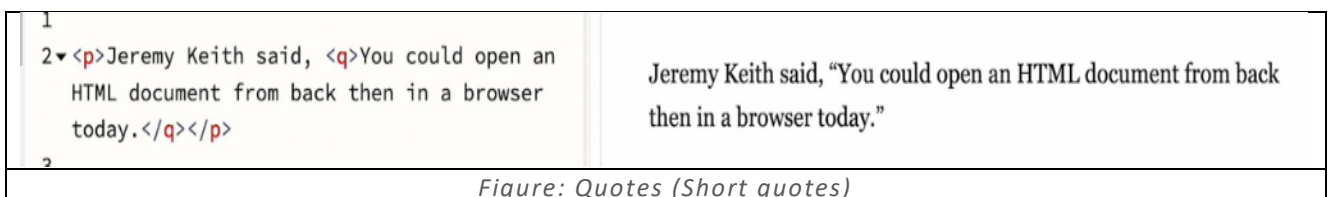## Quotes vs Block Quotes



*Figure: Block Quotes (Long quotes)*



*Figure: Quotes (Short quotes)*

## HTML Attribute- Language and Direction



| |
|---|
| *Here, lang= "en-GB" means Great Britain English Language* |
| *Lang= "fr" means French Language* |
| *dir= "ltr" means Left To Right Direction* |
| *dir= "rtl" means Right To Left Direction* |

## Weird Characters

```
<p>Hi, this is &lt; p &gt; tag </p>
```

Here,

&lt; is an HTML Entity which can be used within text. &lt means Less Then.

&gt means Greater Then.



*Figure: These are some of the HTML Entities*

Another Important HTML Entity is Non Breaking Space- **&nbsp**

&nbsp is used when 2 words or 2 parts of a person's name must always stick together.

Shortcuts:

- Open Command Palette:     **CTRL + SHIFT + P**

- A Line Comment out:     **CTRL + /**

- [Wrapping Text] Using a tag for selected text by Command Palette:

  **Select text + Open Command Palette [CTRL + SHIFT + P] + Type: Wrap with**

  **Abbreviation -> then type Bold/Italic/P etc.**

- Show big Paragraph in multiple lines:

  **Select text + Open Command Palette [CTRL + SHIFT + P] + Type: Toggle Word Wrap**

| Type these Keyword | See the Magic |
|---|---|
| input:text | `<input type="text" name="" id="">` |
| br*5 | `<br><br><br><br><br>` |
| h1.class_01 | `<h1 class="class_01"></h1>` |
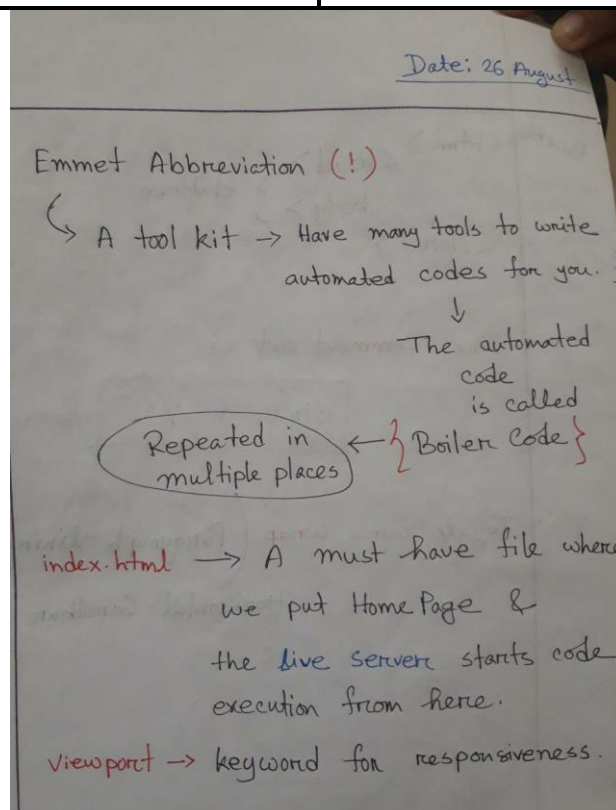


**HTTP**= Hyper Text Transfer Protocol

**HTTPS**= Hyper Text Transfer Protocol Secure