GUIDE TO HTML

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What is HTML and Why HTML?

HTML stand for Hypertext Markup Language. HTML is the most basic building blocks of webpages. It describes the structure of a web page, it has series of elements distributed by tags and labels like "heading", "paragraph", "table", and so on.

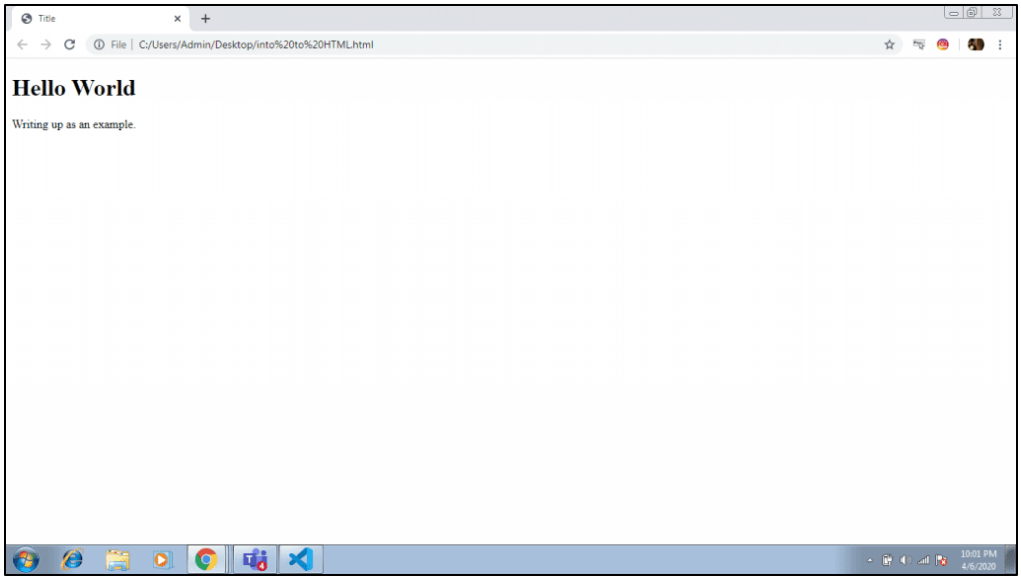
HTML uses "markup" to annotate text, images, and other content for display in a Web browser. HTML markup includes special "elements" such as <head>, <title>, <body>, <header>, <footer>, <article>, <section>, <p>, , , <img>, <aside>, <audio>, <canvas>, <datalist>, <details>, <embed>, <nav>, <output>, <progress>, <video> and many others.

The browser does not show the HTML tags it just shows the contents present in it.

Start with basic html tags and html codes which will be very useful for the journey of web-development.

Example:

```
<!DOCTYPE html>
<html>
<head>
<title>Title</title>
</head>
<body>
<h1>Hello World</h1>
<p>Writing up as an example.</p>
</body>
</html>
```



Setting up HTML environment

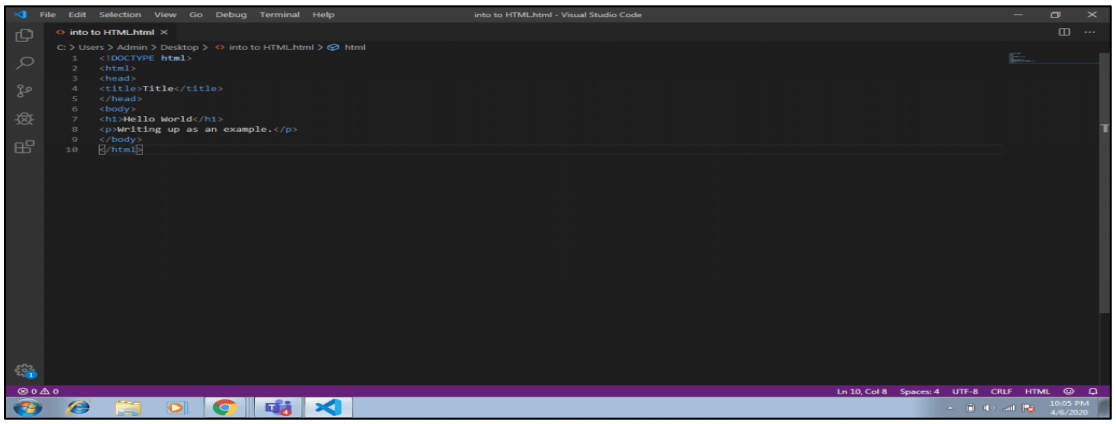
Web pages can be created and modified by using professional HTML editors and putting html code.

In this book VS CODE is used as IDE(Integrated development environment), there are many IDEs such as Atom, NetBeans, Eclipse and many more.

Open up your suitable IDE.

Create a file with an extension *.html* (It is the extension for writing HTML files)

Write down basic codes of HTML in that file, stating the below example.



Use of HTML Tags

HTML tags are the hidden keywords within a web page that define how your web browser must format and display the content.

Most tags must have two parts, an opening, and a closing part.

For example, *<html>*is the opening tag and *</html>*is the closing tag.

Note: The closing tag has the same text as the opening tag, but has an additional forward-slash (/) character.

There are some tags that are an exception to this rule, and where a closing tag is not required. E.g.: - *<img src="link" alt="text">*

Each HTML file must have the essential tags for it to be valid, so that web browsers can understand it and display it correctly.

HTML Attributes

For customizing a tag, attributes are used. They are defined inside the opening tag or single tag elements.

For example:
<img src="image1.jpg"> or ...

Attributes are often assigned a value using the equals sign, such as border="2px" or width="50%".

These provide extra bit of information about the tags, about how it will be displayed in the webpage.
Most attributes are optional for most tags and are only used when you want to change something about the default way a tag is displayed by the browser.

However, some tags such as the <img> tag has required attributes such as src and alt which are needed in order for the browser to display the web page properly.
More will be discussed later.

Tags of HTML Document

Basic important tags for every HTML documents:

- In the first line there should be a declaration of <!DOCTYPE> tag once.

  <!DOCTYPE>(DOCTYPE Declaration)

  The <!DOCTYPE> declaration must be the very first thing in your HTML document, before the <html> tag. It is not an HTML tag; it is an instruction to the web browser about what version of HTML the page is written in.

  Tip: Always add the <!DOCTYPE> declaration to your HTML documents, so that the browser knows what type of document to expect.
  Here <!DOCTYPE html> declaration defines this document to be HTML5

- All HTML document should start and end with <html> and </html> respectively.

- The <head></head> tag.

  It has all the things you want to put which will create some effect on the webpage. It doesn't show up in the webpage. This is basically a container which contains things like CSS, linking CDNs, linking other pages and files, linking fonts and many more.
  All these things create effect on our displayable elements.

- <meta charset="utf-8"> Tag

  This set up characters for your document to UTF-8 which includes most vast character sets form the majority of human written characters.
  It is stated between <head></head> tag.

- <title></title> Tag

This tag helps to set the name of the browser tab according to our will.
This also is declared between <head></head> tag.
This helps for bookmarking the page later on after publishing the page online.

- The visible part of the webpage is coded under the <body></body> tags.

HTML Basic Tags

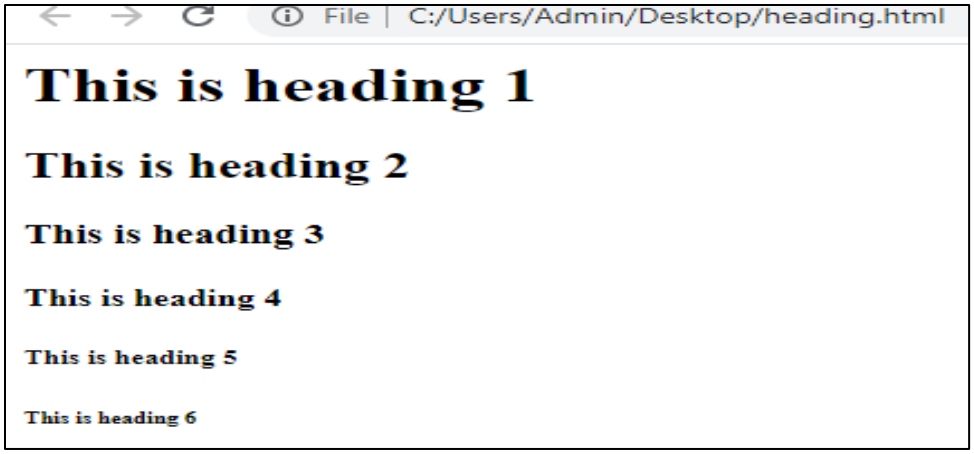
Heading tag

HTML headings are titles or subtitles that you want to display on a webpage.

Any document starts with a heading. You can use different sizes for your headings. HTML also has six levels of headings, which use the elements <h1>, <h2>, <h3>, <h4>, <h5>, and <h6>.

Example:

```
<body>
    <h1>This is heading 1</h1>
    <h2>This is heading 2</h2>
    <h3>This is heading 3</h3>
    <h4>This is heading 4</h4>
    <h5>This is heading 5</h5>
    <h6>This is heading 6</h6>
  </body>
```



Paragraph Tag

The ** ** tag offers a way to structure your text into different paragraphs. Each paragraph of text should go in between an opening and a closing tag.

Example:

```
<body>
    <p>Here is a first paragraph of text.</p>
    <p>Here is a second paragraph of text.</p>
    <p>Here is a third paragraph of text.</p>
</body>
```

Here is a first paragraph of text.

Here is a second paragraph of text.

Here is a third paragraph of text.

Line Break Tag

Whenever you use the **
** element, anything following it starts from the next line. This tag is an example of an **empty** element, where you do not need opening and closing tags, as there is nothing to go in between them.

Example:

```
<body>
    <p>Hello<br />
      How are you?<br />
      Thanks<br />
      XYZ</p>
  </body>
```

Hello
How are you?
Thanks
XYZ

Horizontal Line Tag

Horizontal lines are used to visually break-up sections of a document.
The **<hr>** tag creates a line from the current position in the document to the right margin and breaks the line accordingly.

Example:

```
<body>
    <p>This is statement one </p>
    <hr />
    <p>This is statement two </p>
 </body>
```

This is statement one

This is statement two

Hyperlink HTML Tag

These are used to link pages, documents, images and many other things to our HTML page.

The general format for HTML link is

link text

The *url* sets the destination and the *link text* is the clickable area to direct us to the mentioned link.

Some default appearance of the links:

- An unvisited link is underlined and blue
- A visited link is underlined and purple
- An active link is underlined and red

The link tag can be set to a target with *target* attribute, which means it will get specified where the link will open. By default, it opens in the same tab.

To change its default attribute, add values in *target* attribute.

The syntax:

Link text



The *target* can be set to:

- _self - Default. Opens the document in the same window/tab as it was clicked
- _blank - Opens the document in a new window or tab
- _parent - Opens the document in the parent frame
- _top - Opens the document in the full body of the window

Comment Tag

With comments you can place notifications and reminders in your HTML code. Comments are also great for debugging HTML, because you can comment out HTML lines of code, one at a time, to search for errors.

Example:

```
<!-- This is a comment -->

<p>This is a statement.</p>

<!-- Remember to add more information here -->
```

NOTE: There is an exclamation point (!) in the start tag, but not in the end tag.

List Tag

there are 3 different types of lists:

- Unordered List
- Ordered List
- Description List

Unordered List

An unordered list starts with the <ul> tag. Each list item starts with the <li> tag.

Example:

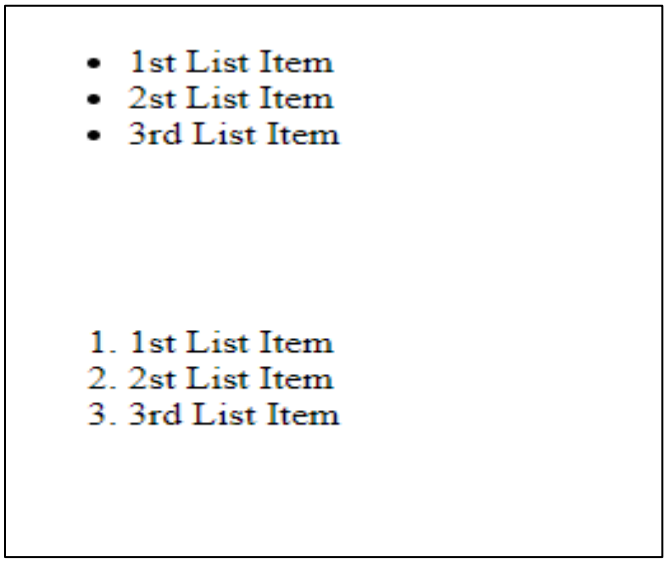
```
<ul>
  <li>1st List Item</li>
  <li>2st List Item </li>
  <li>3rd List Item </li>
</ul>
```

Ordered List

An ordered list starts with the <ol> tag. Each list item starts with the <li> tag.

Example:

```
<ol>
  <li>1st List Item</li>
  <li>2st List Item </li>
  <li>3rd List Item </li>
</ol>
```



Description List

A description list is a list of terms, with a description of each term.

The <dl> tag defines the description list, the <dt> tag defines the term (name), and the <dd> tag describes each term.

Example:

```
<dl>
  <dt>1</dt>
  <dd>- first description</dd>
  <dt>2</dt>
  <dd>- second description</dd>
</dl>
```

1

- first description

2

- second description

Table Tag

HTML tables allow web developers to arrange data into rows and columns.

The data in HTML page can be like text, images, links, other tables, etc.

The *<table>* tag defines an HTML table.

Each table row is defined with a *<tr>* tag.

Each table header is defined with a *<th>* tag. Each table data/cell is defined with a *<td>* tag.

NOTE: By default, the text in *<th>* elements are bold and centered and the text in *<td>* elements are regular and left-aligned.

Example:

```
<table border = "1"> // the border is set to 1 to give border to every cell.
 <tr>
  <th>Firstname</th>
  <th>Lastname</th>
  <th>Roll No.</th>
 </tr>
 <tr>
  <td>Shibam</td>
  <td>Dhar</td>
  <td>50</td>
 </tr>
```

```
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>94</td>
  </tr>
  <tr>
    <td>John</td>
    <td>Doe</td>
    <td>80</td>
  </tr>
</table>
```

Firstname	Lastname	Roll No.
Shibam	Dhar	50
Eve	Jackson	94
John	Doe	80

HTML Tags

Article Tag

It is an independent and self-contained content. This is mainly used in article posts, blog posts, forums and many more.

This tag has no such special rendering effect on the browser but one can edit the article tag with the help of CSS.

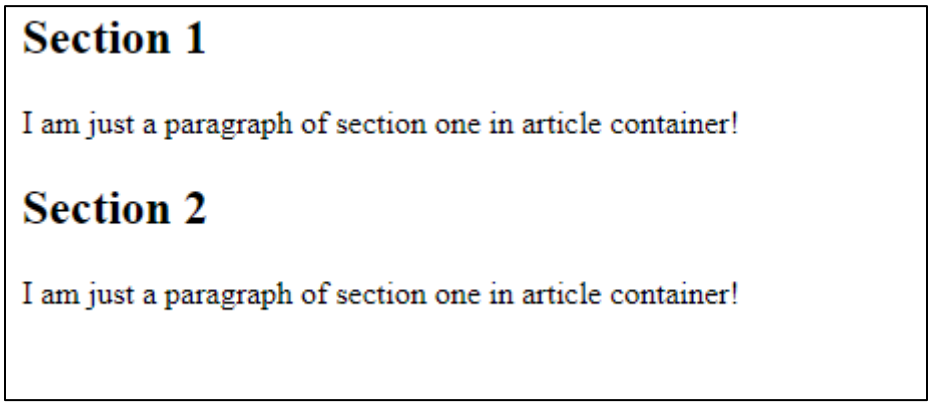
The tag has both opening and closing tags.

Example:

```
<article>
```

```
  <h2>Section 1</h2>
  <p>I am just a paragraph of section one in article container!</p>
</article>

<article>
  <h2>Section 2</h2>
  <p> I am just a paragraph of section one in article container!</</p>
</article>
```



Quote Tag

This tag is used to show the quotes or sayings in a pre-defined different manner from general texts.

Tag: <blockquote>

This specifies a section having texts whose sources are different.

Example:

<blockquote cite="url">

The text from the given URL.

</blockquote>

NOTE: For shorter quotes and quick reference: <q> can be used.

Button Tag

This forms a clickable button. It takes the value/name of the button between the tags.

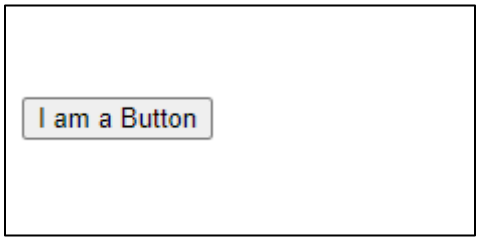
This tag has its own predefined styling which can be changed.

Inside the button tag many elements can be put, like <i>, , <br>, <img>, etc.

NOTE: Button tag can also tag attributed such as autofocus, disabled, form, etc., which all have their own definite functionality. For instance, a button with disabled attribute will not be useful or clickable.

Example:

<button>I am a Button</button>



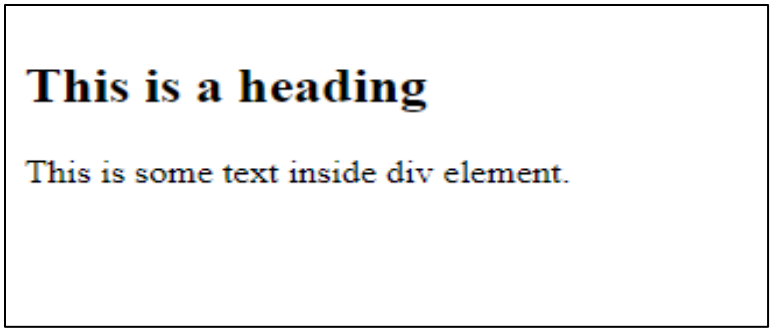
Division Tag

It basically defines a section or a division in a webpage. It is generally used for creating containers of codes in a HTML file. This also makes it easy to style with the CSS.

The tag is

Example:

```
<div class="division">
  <h2>This is a heading </h2>
  <p>This is some text inside div element.</p>
</div>
```



NOTE: The tag created a line break every time by default.

Word Break Tag

This tag used when there is a long word and there is a chance that the work will break at wrong position. To prevent this <wbr> tag is used.

Example:

This is a veryveryveryveryveryveryveryveryveryveryveryveryveryveryveryveryveryveryveryvery<wbr>longwordthatwillbreakatspecific<wbr>placeswhenthebrowser<wbr>windowisresized.

Text Area Tag

This tag is used to define an area to have multi line input from the user. This area does not exceed irrespective of the length of the text.

This tag is very useful in forms. One can set the area by defining rows and columns.

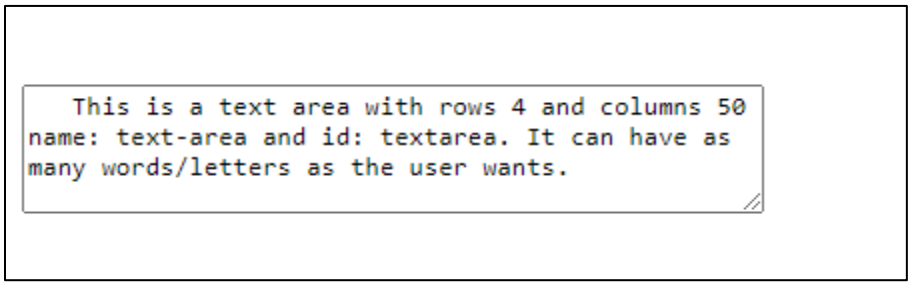
While using <textarea> in a form it is required to give it an attribute of *name*. This will make possible to send the texts in the text area section after submitting. It basically refers the data from the text area.

To give it some label, the text area also requires an attribute of *id*.

The <textarea> tag gives us access to many types of attributes, such as: disabled, name, row, form and many more.

Example:

<textarea id="textarea" name="text-area" rows="4" cols="50">



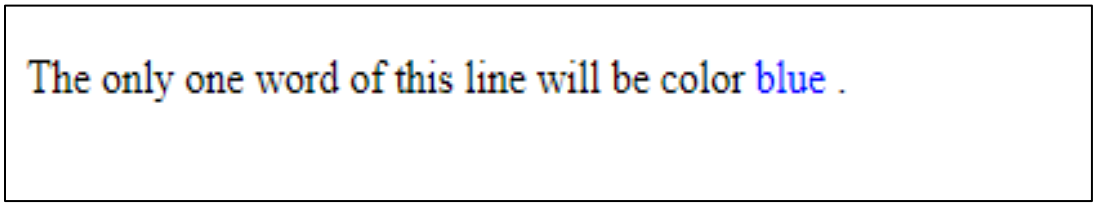
This is a text area with rows 4 and columns 50 name: text-area and id: textarea. It can have as many words/letters as the user wants. </textarea>

Span Tag

The tag is used to select or mark an area or portion of the document. This makes styling easy for that selected area. This is mainly used for making the part easily altered with the help of CSS and JavaScript.

Example:

The only one word of this line will be
color blue .



Progress Tag

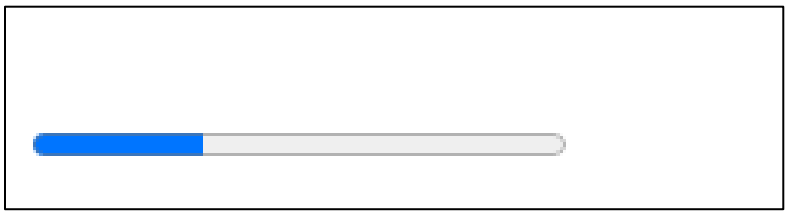
The completion of a work can be visually represented in the webpage with help of <progress> tag.

--*Do check meter tag and analyze the difference.*

Example:

<progress id="file" value="32" max="100"> 32% </progress>

In the above code the *value* defines the amount to be filled and *max* defines the max value to be represented from.



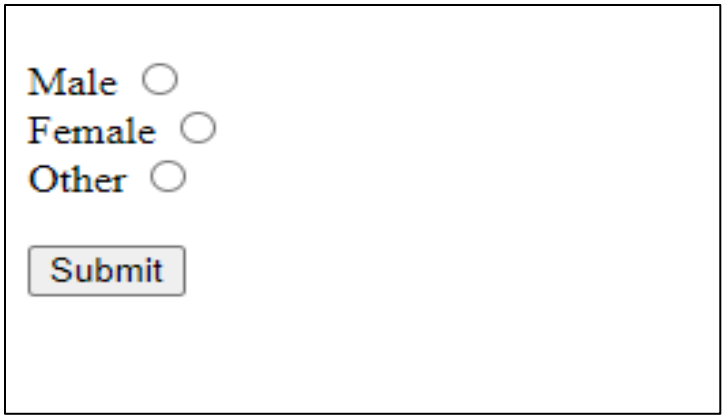
Label Tag

The <label> tag defines a text label for the <input> tag. The label is a normal text, by clicking which, the user can select the form element. Screen-reader will read out the label when the user is focused on the form input, making it easier for user to understand about what data should be entered.

The <label> tag defines label for different elements such as checkbox, email, file, radio, password and many more.

Example:

```
<form action="action">
  <label for="male">Male</label>
  <input type="radio" name="gender" id="male" value="male"><br>
  <label for="female">Female</label>
  <input type="radio" name="gender" id="female" value="female"><br>
  <label for="other">Other</label>
  <input type="radio" name="gender" id="other" value="other"><br><br>
  <input type="submit" value="Submit">
</form>
```



NOTE: The for attribute of <label> must be equal to the id attribute of the related element to bind them together.

Input Tag

This is tag which is widely used in most of the sections. It acquires a place for the user to get input in many forms, such as checkbox, password, email and mail more.

This is one of the most important elements in the document. It depends on the attributes to take in the inputs.

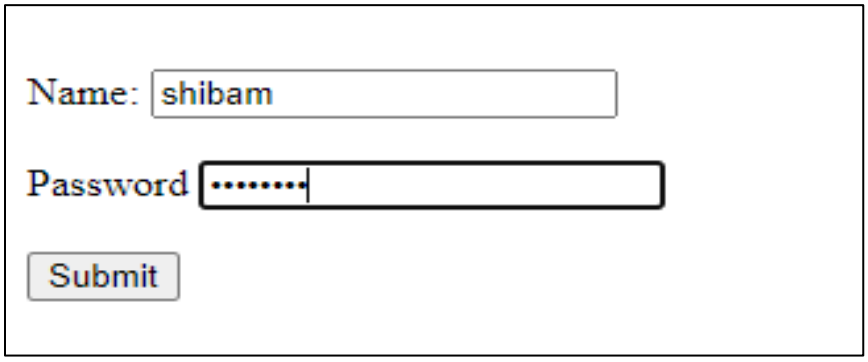
The different types of input method are:

- <input type="checkbox">
- <input type="date">
- <input type="email">
- <input type="file">
- <input type="image">
- <input type="number">
- <input type="password">
- <input type="radio">
- <input type="search">
- <input type="submit">
- <input type="tel">
- <input type="text"> (default value)

And many more.

Example:

```
<form>
  <label for="name">Name:</label>
  <input type="text"  name="fname"><br><br>
  <label for="pass">Password</label>
  <input type="password"  name="pass"><br><br>
  <input type="submit" value="Submit">
</form>
```



NOTE: Always use label tag to define an input element.

Formatting Elements

- <b> - Bold text
- - Important text
- <i> - Italic text
- - Emphasized text
- <mark> - Marked text
- <small> - Smaller text
- <del> - Deleted text
- <ins> - Inserted text
- <sub> - Subscript text

- <sup> - Superscript text

These all tags are generally used to edit the text in the HTML page. They are widely used with addition of classes which make them easy to style.

HTML Styling

HTML provides us various methods to style our page. It includes giving fonts, colors, borders and many more.

Although these all can be done with the help of CSS file but still for instant quick styling, we can use methods of HTML Styling for our webpage.

There are many properties for the style attribute which are same as to perform in CSS file. In general, there are three ways to style a webpage (External, Internal and Inline) out of which two are done in the HTML file which are

1. Internal Styling
2. Inline Styling

Internal Styling

In internal styling, one provides a set of <style></style> tag in the head section of the HTML file.

Between this tag, we can declare sets of properties of styling which are to be implemented in the HTML file.

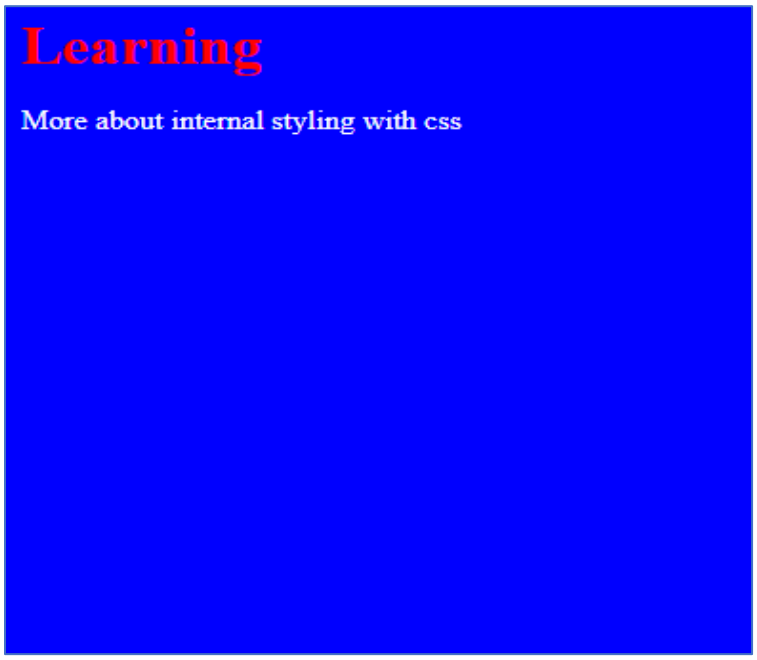
This becomes less convenient to use when there are many HTML files and common style is applied, then writing the same style in every file is not reliable. Writing and adding the code of style makes the document slow in loading time due to increase of its size.

Example:

```
<!DOCTYPE html>
<html>
```

```
<head>
 <style>
  body {
   background-color: blue;
  }
  h1 {
   color: red;
   padding: 60px;
   padding: 0;
   margin: 0;
  }

  p {
   color: white;
  }
 </style>
</head>
<body>
 <h1>Learning</h1>
 <p>More about internal styling with css</p>
</body>
</html>
```



Inline CSS

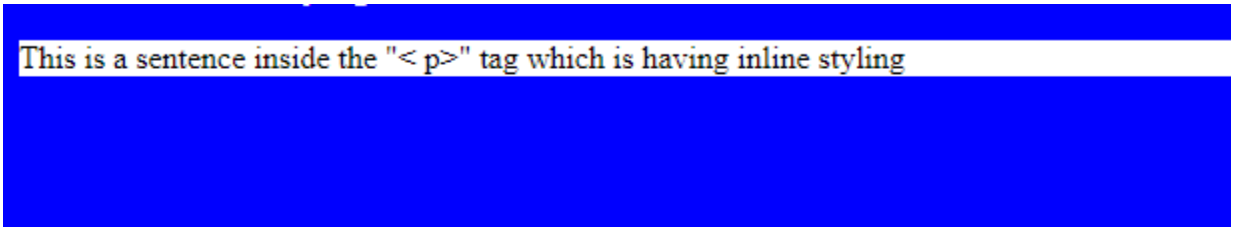
In inline styling the properties are mentioned with in the element tags such as <p> <a> and many more, with style attribute all in the HTML file.

This method of styling gives us an advantage of not selecting the selectors for the styling, it can be done directly. This is much useful when someone needs to style the document for that particular line and doesn't have any CSS file.

Though this type of styling is not preferred as managing many style attributes inside the document can get messy and inconvenient for the user to read.

Example:

```
 <p style="background-
color: white; color: black;">This is a sentence inside the "< p>" tag which is having inline styling  </p>
```



HTML with Media

The HTML provides us various methods, tags and elements to put media in out document. It can be image, video, audio, YouTube links and many more. Along with this it provides us controls and modification accessibility for the media.

HTML Images

By putting images in the document, it enhances the visual of the document. For putting images, the tag <img> is used. This tag doesn't

insert the image technically yet. It requires two attributes, without them it is just an empty tag with no functionality.

1. src- This specifies the source of the image from where the image is to be drawn.
2. alt- This specifies the alternate text for the image. (This helps to give the gist about the image when there is some loading error of the image and also increases the SEO of the webpage.)

Syntax:

<img src="url" alt="alternatetext">

In the above code *url* is used to locate the image which can be path of the image from a directory or a link of the image and the *alternatetext* is for the description/proper-name for the image to be inserted.

Along with this, it is possible to set the height, width and many other properties/style for the image.

This can be done in two ways:

By inline styling:

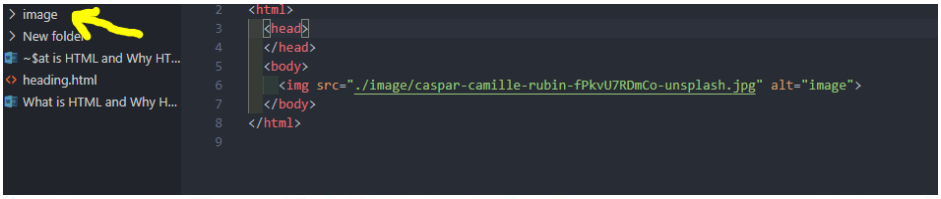
Example:

<img src="url" alt="alternatetext" style="width:500px; height:600px;">

By adding attributes:

Example:

<img src="url" alt="alternatetext" width=”500’ height=”600p">





The image is above

NOTE: To access images from different folder use "/" to move between the folders and the folders should be there in the main folder of the project.

HTML Video

To insert a video on a webpage the <video> tag is used. This is an empty tag again if there are no attributes and other elements inside it.

The texts inside <video></video> tag are not visible. The <video> tag requires some height and width attributes for the area for video to be viewed.

The <source> element allows you to specify alternative video files which the browser may choose from. The browser will use the first recognized format.

Syntax:

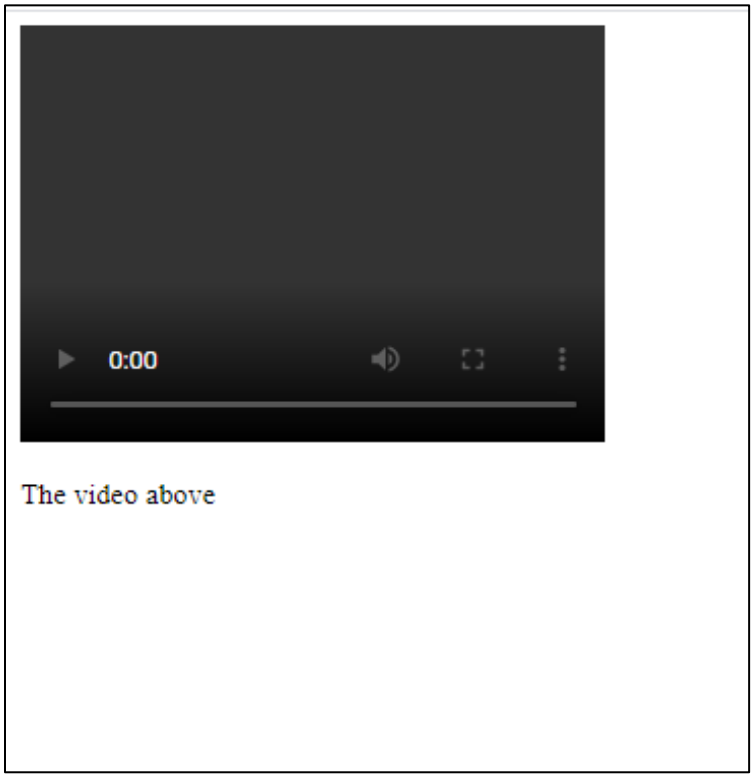
```
<video width="320" height="240" controls>
  <source src="video.mp4" type="video/mp4">
  <source src="video.ogg" type="video/ogg">
</video>
```



- To start the video automatically use the *autoplay* attribute

Exampel :

```
<video width="320" height="240" controls autoplay>
```



HTML Audio

The <audio> tag acts same as the video tag.

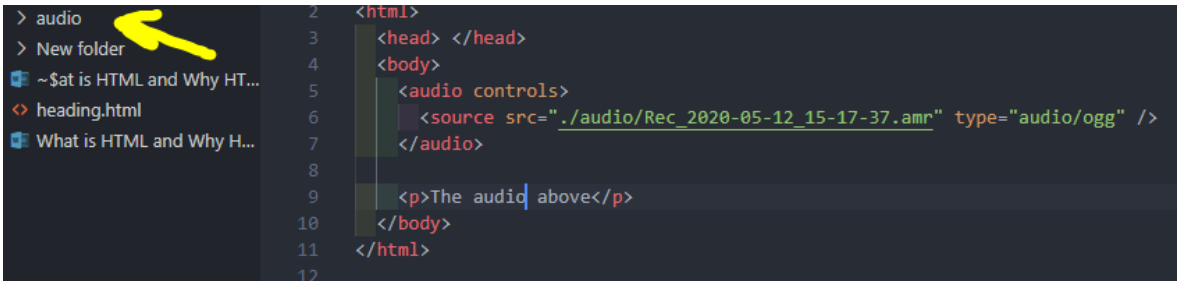
The texts inside <audio></auidio> tag are not visible. The <audio>

The <source> element allows you to specify alternative audio files which the browser may choose from. The browser will use the first recognized format.

- The *control* attribute gives the user a control dialog for the audio file on the webpage.

Syntax:

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





HTML Forms

The HTML forms are very crucial to almost every webpage over the internet. This is very much used to collect data from other users for many purposes like filling registration form, or sign in sign up and many other things.

The <form> tag takes in input and passes on to the backend in the form of other codes like CGI, Script, ASP, PHP, and many others.

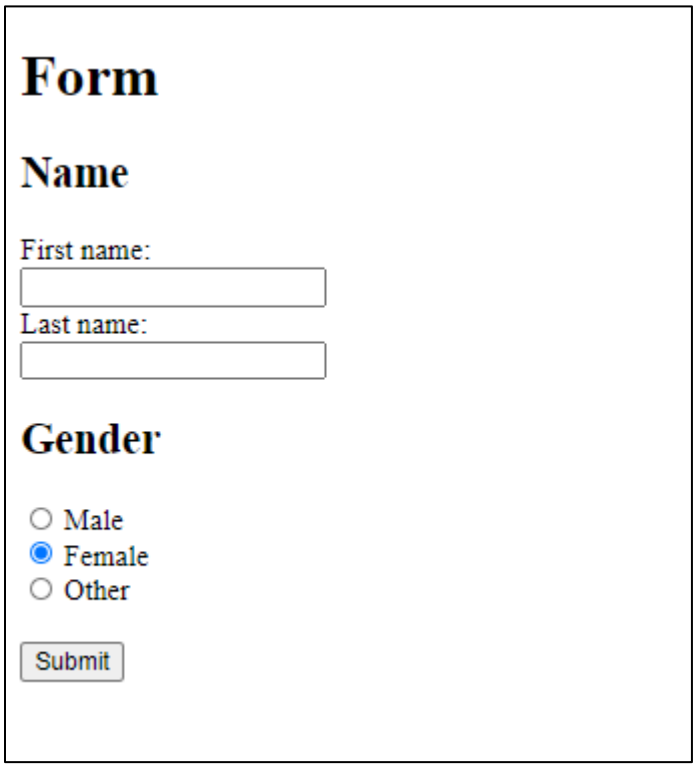
The form section can have many elements, attributes, and input values such as buttons, text areas, input fields with different types, drop down menus, radio buttons and many more. The input element is used the most among all.

Example:

```
<!DOCTYPE html>
<html>
 <body>
  <h1>Form</h1>
  <form action="/action_page.php" method="get">
   <h2>Name</h2>
   <label for="fname">First name:</label><br />
   <input type="text" id="fname" name="fname" /><br />
   <label for="lname">Last name:</label><br />
   <input type="text" id="lname" name="lname" />
   <h2>Gender</h2>
   <input type="radio" id="male" name="gender" value="male" />
   <label for="male">Male</label><br />
   <input
    type="radio"
    id="female"
    name="gender"
    value="female"
    checked="checked"
   />
   <label for="female">Female</label><br />
   <input type="radio" id="other" name="gender" value="other" />
   <label for="other">Other</label><br /><br />
```

```
    <h2>Hobbies</h2>
    <input type="checkbox" name="vehicle1" value="Bike" />
    <label for="hobbie1"> I like to paint</label><br />
    <input type="checkbox" name="vehicle2" value="Car" />
    <label for="hobbie2"> I like to read</label><br />
    <input type="checkbox" name="vehicle3" value="Boat" checked />
    <label for="hobbie3"> I like to dance</label><br /><br />

    <input type="submit" value="Submit" />
   </form>
  </body>
</html>
```



More about HTML

Marquees

The <marquees> tag enables us to put a scrollable image or text on the webpage which can be controllable. This can move on its own too, in the left to right and vice vera or top to bottom and vice versa.

Syntax:

<marquee attribute = "attribute-value"....more attributes>
Texts or images
</marquee>

The marquees tag has access to many attributes such as width, direction, height, scrolldelay, loop and many more. Each attribute has its own way of functionality for the images and texts inside the <marquees></marquees> tags.

Example:

```
<!DOCTYPE html>
<html>
  <body>
    <marquee>This is basic example of marquee which can have a text or image</marquee>
  </body>
</html>
```

Applying some attributes:

Example:

```
<body>
```

```
    <marquee direction = “right">This text will scroll from left to right</marquee>
  </body>
```

JavaScript

The HTML file also enables us to write some code of JavaScript for the webpage. This can make our page more interactive and efficient.

The <script> tag is used to write the JavaScript codes. This *script* can add interactivity to our webpage. Various small functions can be written in it using the HTML attributes.

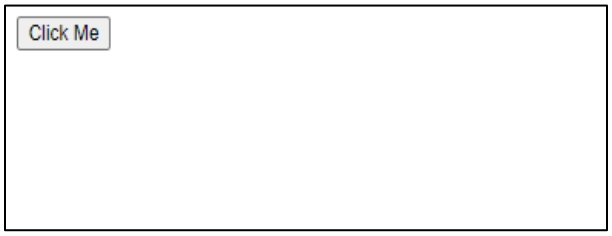
Along with this HTML also provides us to call out external JavaScript files and functions by calling it in the elements and tags of HTML.

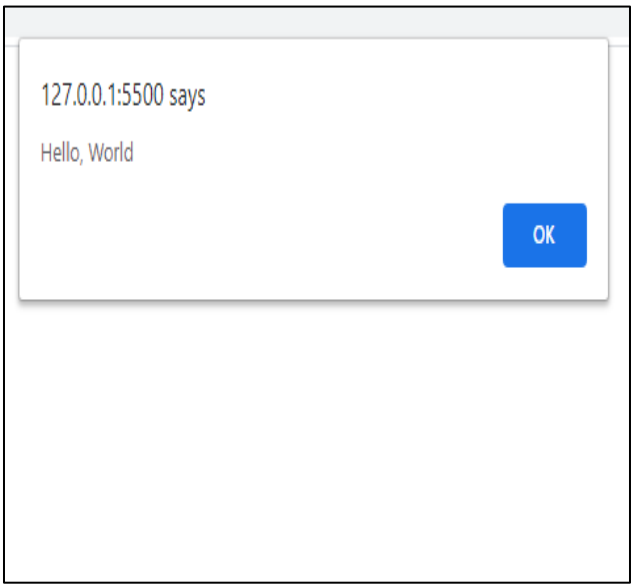
While the internal JavaScript is written (preferably at the bottom just above the ending tag of *body*) in the HTML file itself.

These methods provide us no less features than a *.js* file. Everything, from functions to event handlers can be codes in the HTML file between the *script* tags.

Example:

```
<!DOCTYPE html>
<html>
  <body>
    <input type="button" onclick="Hello();" name="ok" value="Click Me" />
    <script type="text/JavaScript">
      function Hello() {
        alert("Hello, World");
      }
    </script>
  </body>
</html>
```





Emoji & Symbols

As the HTML document is generally with a character set of UTF 8, it has codes and numbers for each character, similarly there are some special codes for generating emoji icons and symbols in the HTML file.

Many mathematical, technical, and currency symbols, are not present on a normal keyboard. They can be generated by HTML codes.

NOTE: The emojis are character so they can be copied, resized and displayed just like other characters.

Example:

😀 😄 😍 💗

This is ♣ - Club sign

