HTML BASICS

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Introduction

HTML stands for Hyper-Text Mark-up Language. It was originally released in 1993 by Tim Berners-Lee. Learning HTML is not that hard as one might think. It only takes about 2 to 3 weeks to learn HTML and about a month to master it. It's mostly used to display information or attach links which redirects the user to another page. This is done by a series of tags (<tag>) used while coding HTML. Most of the tags have a starting tag (<tag>) and an ending tag </tag>. But it is not capable of processing information given by the user unlike JavaScript and other programming languages. This was one of the major reasons that made HTML very unpopular which led to its downfall in the upcoming years. And yet, today it is widely used for web designing in some very popular websites such as blogger. One reason it is still widely in use today is that it is assisted with CSS (Cascading Style Sheets) which can come in handy when you want to create a very decorative website.

Setting up your device to code HTML

Unlike other programming languages such as Python, Java etc.., HTML cannot be installed. To code in HTML, we need to install an app through which you can run codes of multiple programming languages that is, an IDE. It stands for Integrated Development Environment (Example: Visual Studio Code). Once you've installed it, open a folder where you want to save this, type any HTML code in this document and press the run button on the taskbar. Then, click "Run without debugging" and choose your browser in the dropdown. This now opens the output of your HTML code through a temporary account in your browser. Now you can start coding HTML.

Tag relationships in HTML

All HTML codes start with a document type tag (<!DOCTYPE>) which tells the browser what type of information it stores. In HTML we use <!DOCTYPE HTML> as the type of document. It is immediately followed by an <html> tag which denotes the start of the code. It is necessary to close this tag by using an ending tag that is to add a forward slash to the beginning of the code (</html>). Most of these tags have a starting and an ending tag while some don't. The 2 other most commonly used tags are the <head> tag and the <body> tag. In HTML we have sub – tags which fall under parent tags which denotes where this information should go to. Now we have to write these sub-tags such that the second letter in the parent tag should have the "<" symbol below it to denote that they are sub-tags of a parent tag. In this case, <head> tag & <body> tag are the sub-tags of <html> tag. There are even sibling tags which have a common parent tag.
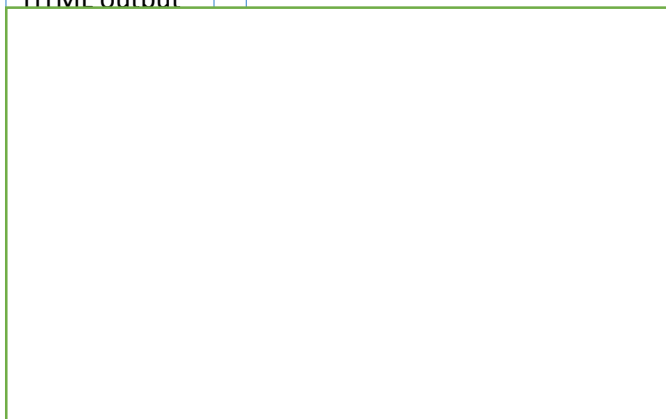
Text features in HTML

Head tag: The head tag is mostly used to display the title of the output ie.., the name displayed on the top of your browser tab when you run it. To create a tab title, we need to use a sub-tag called the <title> tag of which the <head> tag is the parent of.

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>HTML output</title>
  </head>
</html>
```

Output: HTML output   +

There is also a tag called "meta tag" which helps you to choose the encoding of your document but it is optional. The general encoding is "UTF – 8" so, we can write <meta charset = UTF – 8>
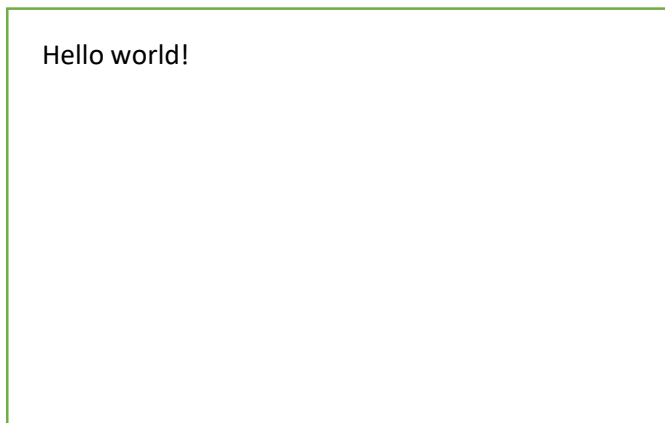
Body tag:

      The body tag is the most important tag in HTML because it controls the content of the output screen.

The <p> tag prints the text in the output screen.

Code:

```
<!DOCTYPE HTML>
<html>
   <body>
     <p>Hello world!</p>
   </body>
 </html>
```
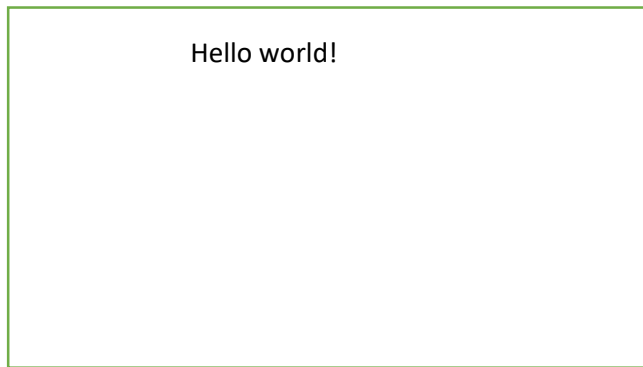
Output:

Hello world!

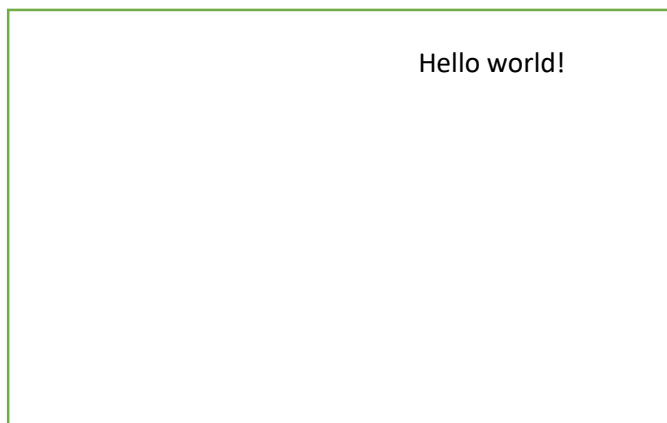The <center> tag aligns the text to be printed to the center.

Code:

```
<!DOCTYPE HTML>
<html>
   <body>
     <p><center>Hello world!</center></p>
   </body>
</html>
```

Output:

```
                    Hello world!
```

The <pre> tag prints out the text as it is in the code

Code:

```html
<!DOCTYPE HTML>
<html>
  <body>
    <p><pre>                        Hello world!</pre></p>
  </body>
</html>
```

Output:

```
                    Hello world!
```

The <b> tag darkens the text in the output

Code:

```html
<!DOCTYPE HTML>
<html>
  <body>
    <p><b>Hello world!</b></p>
  </body>
</html>
```

Output:

Hello world!

The <i> tag adds italics to the text in the output

Code:

```html
<!DOCTYPE HTML>
<html>
  <body>
    <p><i>Hello world!</i></p>
  </body>
</html>
```

Output:

Hello world!

There are six tags: <h1>, <h2>, <h3>, <h4>, <h5>, <h6> which can be used to adjust the size of the text displayed in the output. They should be placed after the <p> tag. <h1> is the biggest a text in HTML can be and <h6> is the smallest. We can also use <big> and <small> tags to control the size of the text displayed in the output screen.

The <sub> tag introduces subscript to the text

Code:
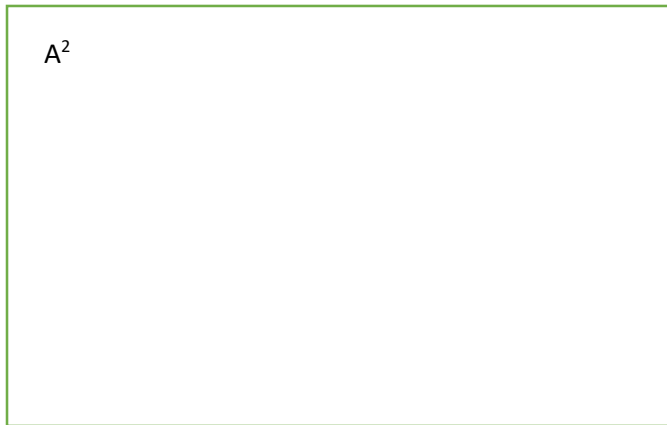
```
<!DOCTYPE HTML>
<html>
  <body>
    <p>H<sub>2</sub>O</p>
  </body>
</html>
```

Output:

H_2O

The <sup> tag introduces superscript to the text displayed in the output

Code:

```
<!DOCTYPE HTML>
<html>
  <body>
    <p>A<sup>2</sub></p>
  </body>
</html>
```

Output:

A^2

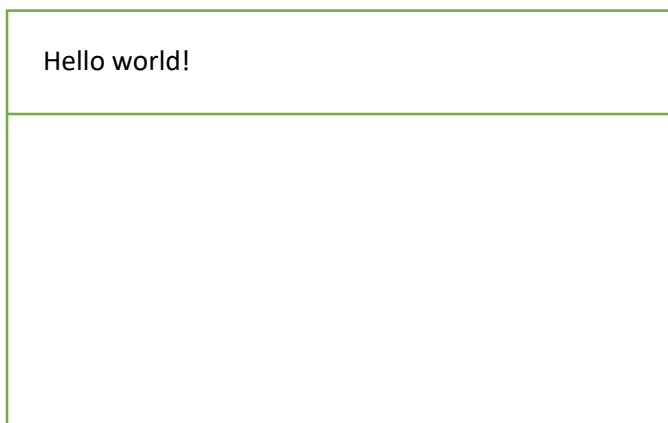The <hr> tag draws a margin separating the title area of the document with the rest of the page. It doesn't have an ending tag.

Code:

```html
<!DOCTYPE HTML>
<html>
  <body>
    <p>Hello world!</p>
    <hr/>
  </body>
</html>
```

Output:

Hello world!

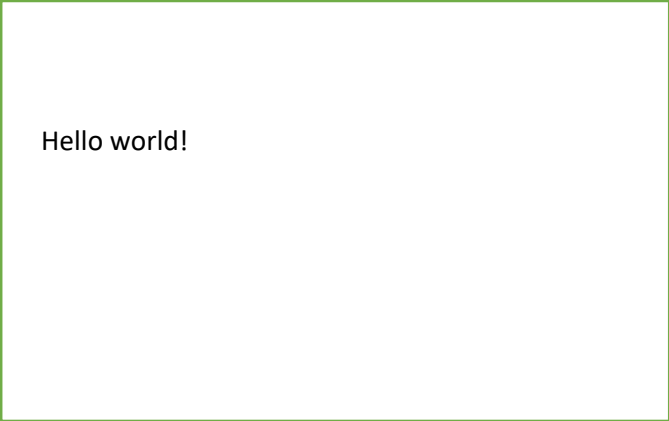The <br/> tag generates a space of 1 line. This tag also doesn't have an ending tag.

Code:

```
<!DOCTYPE HTML>
<html>
  <body>
    <br/>
    <p>Hello world!</p>
  </body>
</html>
```

Output:

Hello world!

The following code helps the user to change the colour of text in the output. Red is just an example.

Note the spelling of "color" in the code.

Code:

```
<!DOCTYPE HTML>
<html>
  <body>
    <p style="color:red">Hello World!
  </body>
</html>
```
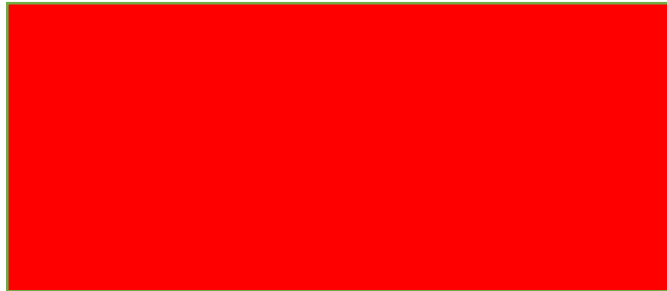
Output:

Hello world!

We can also control the background colour of the output screen

```html
<!DOCTYPE html>
<html>
  <body style="background-color: red;" >
  </body>
</html>
```

Output:

Comments:

The purpose of comments in any programming language is to explain a third person what this code is really about. Comments are not run by the computer, they will be skipped. Comments can be useful if we want to find out the purpose of any line in a code. We just mark it as a comment and then run it again. Now, by comparing the new output and the previous one, we can see the difference and find out what each line in the code does. Suppose you want to write a comment "abcd" in HTML, we can write it like this <!--abcd-->. The following image shows a HTML code with comments.

Code:

```html
<!DOCTYPE html> <!--Tells the browser what type of document it is-->
<html> <!--Denotes the start of code-->
  <body> <!--Tag which controls the content of the output-->
    <p>Hello world</p> <!--Prints Hello world-->
  </body> <!--Closing tag-->
</html> <!--Denotes the end of code-->
```
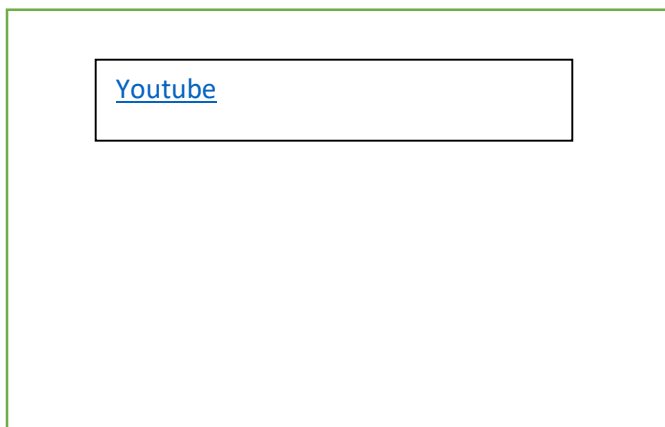
Inserting links & importing images

In HTML it is possible to attach links in the output page which redirects the user to another page and also embed links into a word. The following program shows how we can use the <a href = "link"> tag

to insert a link or even embed it inside a word.

Code:

```
<!DOCTYPE html>
<html>
  <body>
    <a href=www.youtube.com>Youtube
  </body>
</html>
```
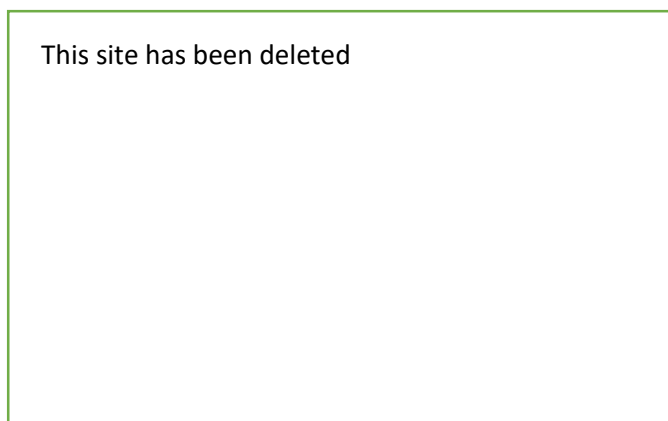
Output:

Youtube

There is a tag in HTML called the alt tag which can be used when importing images from the web.

It can be used to display a text when the image in the web is deleted.

```
<!DOCTYPE html>
<html>
  <body>
    <a href="www.youtube.com" alt = "This site has been deleted">
  </body>
</html>
```

Output if the site has been deleted:

This site has been deleted

Now, we will see how to use the <img src = "imgname.PNG"> tag to open images in the folder chosen earlier while setting up Visual studio code and also how to control their height & width.

Code:

```html
<!DOCTYPE html>
<html>
  <body>
    <img src = "Srinivasa ramanujan.PNG">
  </body>
</html>
```

Output:

Adjusting the height and width of the Image

Code:

```html
<!DOCTYPE html>
<html>
  <body>
    <img width = "500" height = "500" src = "Srinivasa ramanujan.PNG">
  </body>
</html>
```

Output:

Importing videos

To import videos from YouTube, we need to click the share button, click embed and then take the code it gives out. If we take that and just paste it in the <body> tag, we can see the video and even play it.

Code for an example video:

```html
<!DOCTYPE html>
<html>
  <body>
    <iframe width="560" height="315"
src="https://www.youtube.com/embed/jNQXAC9IVRw" title="YouTube video player"
frameborder="0" allow="accelerometer; autoplay; clipboard-write; encrypted-
media; gyroscope; picture-in-picture" allowfullscreen></iframe>
  </body>
</html>
```

Output:

```
Video playing with controls like pause,
play, stop, volume.
```
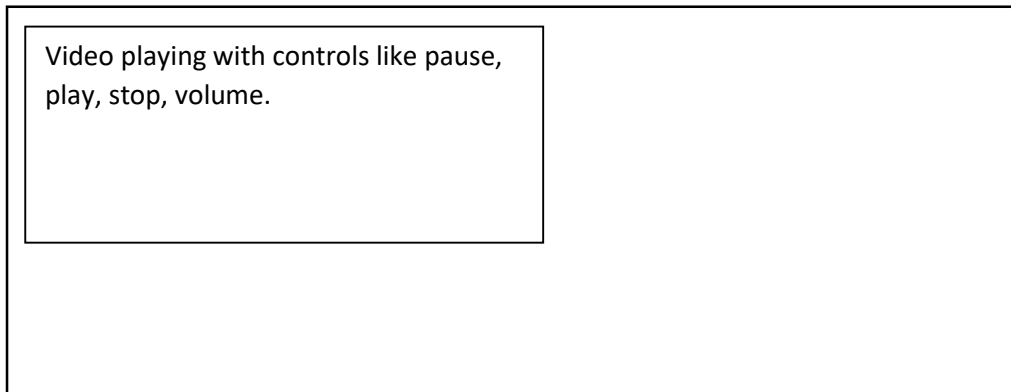
Types of inputs in HTML

HTML is not capable of processing inputs given by the user. But it has a wide range of input types which don't work like checkboxes or radio buttons which you can select but one can't do anything with them. We can use this code <input type="input type"/>

Some of the types of inputs in HTML are:

Password   - Any input will be hidden ie.., in the form of dots.

Text box   - Can type in them & change its area using <textarea rows = "n" cols = "n"></textarea>

Radio Button - Can select & unselect buttons.

Checkboxes   - Can select & unselect buttons.

File   - Allows to choose a file.

Date   - Shows mm/dd/yyyy when empty

Range   - Provides a sliding bar, similar to the thing you get when opening volume controls in

                   your system.
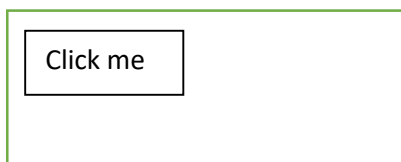
Reset   - A dead button with the word reset written in it.

Submit   - Once again, a dead button with the word submit written in it.

To write inside buttons we need to use the following code:

```
<input type="button" value="Click Me">
```

Output:

```
Click me
```

Creating with HTML

Creating a user login

Now first for this, we need to have the elements needed for the output and their types i.e.., their form which they need to be display in like buttons, checkboxes etc.., So, let's list them down.

Input detail	Type in code
Username	Text-box
Password	Password
Gender	Checkbox
Age	Range
Submit button	Submit
Reset button	Reset

Now, we need to notice that we need use the <center> tag to align it.

And in the code I've added a few other things like background color, but they're not necessary.

Code:

```html
    <!DOCTYPE html>
<html>
    <body style="background-color:tomato;">
        <center><p><h1>Login</h1></p></center>
        <hr/>
        <br/>
        <br/>
        <center><p><b>Username</b></p></center>
        <center><input type="text"></center>
        <center><p><b>Password</b></p></center>
        <center><input type="password"></center>
        <center><p><b>Gender</b></p></center>
        <center><input type="checkbox">M</center>
        <center><input type="checkbox">F</center>
        <center><p><b>Age</b></p></center>
        <center><p>10 20 30 40 50 60</p></center>
        <center><input type="range"></center>
        <center><input type="submit"></center>
        <br/>
        <center><input type="reset"></center>
    </body>
</html>
```

Output:

THE END