## HTML CODING.

## Introduction to HTML

HTML stands for Hypertext Markup Language and it is a widely used programming language used to develop web pages. It is used to design web pages using a markup language. HTML is the combination of Hypertext and Markup language.

- **HyperText** stands for Link between web pages.
- **Markup Language** means Text between tags that define the structure.

HTML is a markup language that is used to create web pages. It defines how the web page looks and how to display content with the help of elements. It forms or defines the structure of our Web Page; thus, it forms or defines the structure of our Web Page. We must remember to save your file with .html extension.


## Applications of HTML

HTML is used for various purposes.

1. **Web Pages Development**
   HTML is famously used for creating web pages on the world wide web. Every web page contains a set of HTML tags and hyperlinks which are used to connect other pages. Every page on the internet is written using HTML.

2. **Navigating the Internet**
   Navigating on the internet would have been quite a tedious task without HTML. The anchor tags of HTML allows us to link pages and navigate easily. Imagine our life without anchor tags, you would literally have to enter URL everytime. Using achor tags, you can also navigate within a webpage.

3. **Embedding Images and Videos**
   HTML allows us to embed images and videos with ease and gives us features to adjust height, position and even rendering type. You can adjust controls, thumbnails, timestamps and much more for videos. Earlier this was done using Flash and HTML has made it easier with the help of **<video>** tag.

4. **Client-side storage**
   HTML5 has made client-side storage possible using localStorage and IndexD due to which we no longer need to reply on Cookies. Both of these tactics have their own set of rules and characteristics. String-based hash-table storage is provided by localStorage. Its API is straightforward, with setItem, getItem, and removeItem functions available to developers. On the other hand, IndexDB is a larger and more capable client-side data store. With the user's permission, the IndexDB database can be enlarged.

5. **Data entry support**
   With the usage of new HTML5 standards in all the latest browsers, developers can

simply add the tags for required fields, text, data format, etc. and get the data. HTML5 now has several new attributes for data-entry and validation purposes.

6. **Interacting with Native APIs**
   With the help of HTML, you can interact with your Operating system. With this feature, you can easily drag files onto a web page to upload, full-screen a video, and much more.
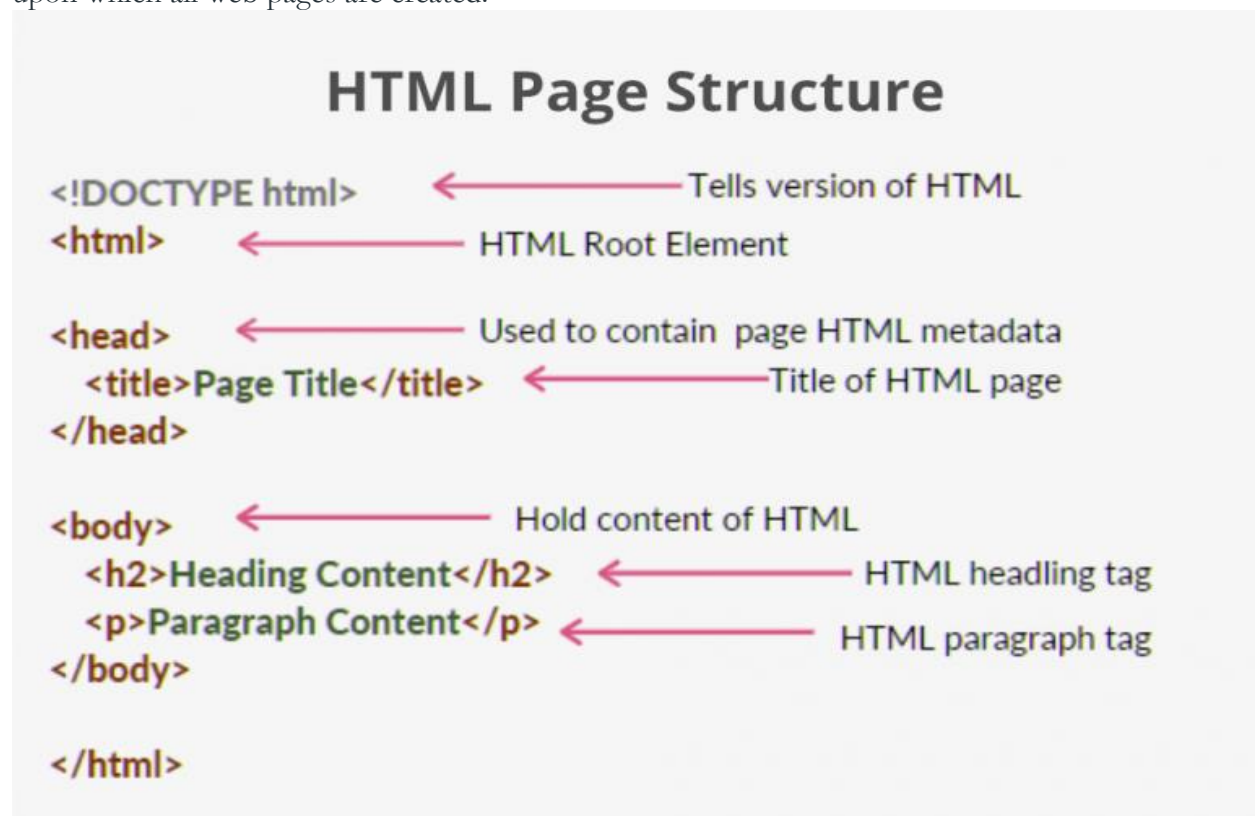
## HTML Editor

- Simple editor: Notepad
- Notepad++
- Atom
- Macromedia Dreamweaver.
- Sublime Text

An HTML document can be created using any text editor. Save the text file using **.html** or **.htm**.

Once saved as an HTML document, the file can be opened as a webpage in the browser.

## HTML structure

**HTML page structure:** The basic structure of an HTML page is laid out below. It contains the essential building-block elements (i.e. doctype declaration, HTML, head, title, and body elements) upon which all web pages are created.



# HTML Page Structure

```
<!DOCTYPE html>              ←———————— Tells version of HTML
<html>           ←——————— HTML Root Element

<head>     ←——————— Used to contain  page HTML metadata
  <title>Page Title</title>   ←——————Title of HTML page
</head>

<body>      ←———————— Hold content of HTML
  <h2>Heading Content</h2>   ←————————— HTML headling tag
  <p>Paragraph Content</p>  ←——————— HTML paragraph tag
</body>

</html>
```

```
<!DOCTYPE html>

<html>

<head>

<title></title>

</head>

<body>

<h2>Zetech University</h2>
<p>Bsc. Computer Science.</p>

</body>

</html>
```

**Where:**

- The <!DOCTYPE html> declaration defines that this document is an HTML5 document
- The <html> element is the root element of an HTML page
- The <head> element contains meta information about the HTML page
- The <title> element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)
- The <body> element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.
- The <h2> element defines a large heading
- The <p> element defines a paragraph

**HTML Tags**

**<!DOCTYPE html>**
Instruction to the browser about the HTML version.
**<html>**

- Root element which acts as a container to hold all the code

- The browser should know that this is an HTML document

- Permitted content: One head tag followed by one body tag

**\<head>**

- Everything written here will never be displayed in the browser
- It contains general information about the document
- Title, definitions of CSS and script sheets
- Metadata(information about the document)

HTML elements used inside the \<head> element include:

- <u>\<style></u>-This html tag allows us to insert styling into our webpages and make them appealing to look at with the help of CSS.
- <u>\<title></u>-The title is what is displayed on the top of your browser when you visit a website and contains title of the webpage that you are viewing.
- <u>\<base></u>-It specifies the base URL for all relative URLs in a document.
- <u>\<noscript></u>– Defines a section of HTML that is inserted when the scripting has been turned off in the user's browser.
- <u>\<script></u>-This tag is used to add functionality in the website with the help of JavaScript.
- <u>\<meta></u>-This tag encloses the meta data of the website that must be loaded every time the website is visited. For eg:- the metadata charset allows you to use the standard UTF-8 encoding in your website. This in turn allows the users to view your webpage in the language of their choice. It is a self-closing tag.
- <u>\<link></u>– The 'link' tag is used to tie together HTML, CSS and JavaScript. It is self-closing.

**\<body>**

- Everything written here will be displayed in the browser
- Contains text, images, links that can be achieved through tags
- Examples:
- ○ \<p> This is our first paragraph. \</p>

**HTML Comment**

- Comments don't render on the browser
- Helps to understand our code better and makes it readable.
- Helps to debug our code
- Three ways to comment:

1. Single line
2. Multiple lines
3. Comment tag //Supported by IE

HTML comments start with < !-- tag and end with -- > tag.

<!--  Sample HTML comment -->
Comments are not displayed in the web browsers. Any HTML elements that are encapsulated inside of the comment tags will be ignored by the web browsers. Comments will help the author or visitor to describe and explain the HTML code, who visited the HTML source code.



**HTML Source Code:**
```
<html>
 <body>
   Single line comment
   <!--  This is single line comment -->
   <br>
   Multi line comment
   <!--  Multi line
    comment -->
 </body>
</html>
```

HTML multiple line comments are also the same syntax. HTML don't allow nested comments, that is, a comment inside another comment.

**HTML Elements**

HTML element is the collection of start tag, its attributes, an end tag and everything in between. On the other hand, an HTML tag (either opening or closing) is used to mark the start or end of an element. In HTML, tag and attribute names are not case-sensitive (but most attribute values are case-sensitive). It means the tag <P>, and the tag <p> defines the same thing in HTML which is a paragraph.

**Example:**

<p color="red"> Zetech University </p>
Explanation:

- Start tag: <p>
- Attributes: color =" red"
- End tag : </p> // optional
- Content: Zetech University

An HTML attribute is a piece of markup language used to adjust the behavior or display of an HTML element. For example, attributes can be used to change the color, size, or functionality of HTML elements. Attributes are used by including them in an opening HTML tag: <tag_name attribute_name="value">Content</tag_name>

**Example:**

<hr color="red">

color is used to set the color of the horizontal line drawn on the webpage.

**Types of Elements**
There are different types of elements in HTML. Before moving ahead in the HTML Tutorial, let us understand the types of elements.

- **Block Level**
○ Takes up full block or width and adds structure in the web page

○ Always starts from the new line

○ Always end before the new line

○ Example:

■ <p >

■ <div>

■ <h1>…<h6>

■ <ol>

■ <ul>

- **Inline Level**
○ Takes up what is requires and adds meaning to the web page

○ Always starts from where the previous element ended
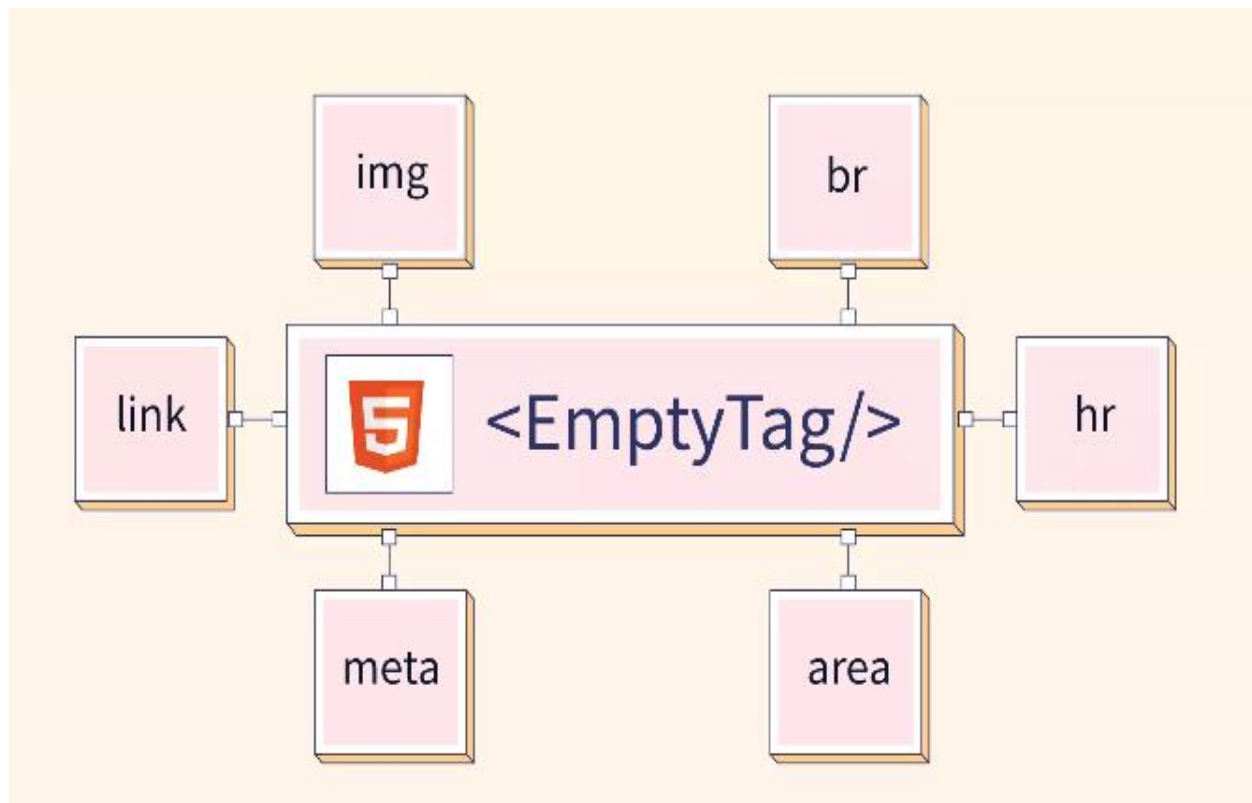
○ Example :

■ <span>

■ <strong>

■ <em>

■ <img>

■ <a>

## Empty Tags in HTML / Non Container Tags.

An empty element is a component that doesn't have any embedded elements or text elements. Empty elements do not have successor nodes. In other words, the tags that do not contain any closing tags are empty tags. Empty tags contain only the opening tag but they perform some action in the webpage. There is no need to specify the closing tag and the opening tag should end with /> instead of >.

**List of Empty Tags in HTML.**

| Element | Description |
| --- | --- |
| **img** | It accepts a source link of the image and some other attributes like height, width, etc, and is used to embed the image in the HTML Document. |
| **br** | The term br is an abbreviation for break, It introduces a line break in the document. |
| **hr** | The horizontal rule is used to introduce a graphical line in the HTML document. It is also called a thematic break. Follow this . |
| **area** | The area element is used inside image map. It defines some particular clickable areas for the image which further may lead user to a different link. |
| **embed** | The embed element is used as a container to display any external resource like image, video, plugin etc. |
| **input** | This element is used to receive input from user. |
| **meta** | We write this element in the head tag of document, it is used to specify some meta data(information) about the page. |
| **source** | The source element specifies media element for picture, video, or audio element. |
| **col** | It is used inside the colgroup element of tables in html, and specifies the common properties of columns, ex- style. |
| **link** | It establishes a link or association between some external resource and html document. It is generally used inside the head tag. |

**List of Self-closing tags**

- <hr> tag

  ○ Stands for horizontal rule

  ○ Dividing the web page

  ○ Syntax: <hr>

- <br> tag

  ○ Stands for break line

  ○ Moving to next line

  ○ Syntax: <br>

- <img> tag

○ To add images in the web page

○ Syntax: <img src="path">

## <h1>–<h6>: The HTML Heading elements

The **<h1>** to **<h6>** HTML elements represent six levels of section headings. <h1> is the highest section level and <h6> is the lowest.

<!DOCTYPE html>

<html>

<head>

   <title>span tag</title>

</head>

<body bgcolor="magenta">

```html
  <h1>Zetech</h1>

 <h2>University</h2>

   <h3>ICT</h3>

     <h4>Department</h4>

   <h5>Bsc.</h5>

      <h6>Information Technology</h6>

</body>

</html>
```

**OUTPUT:**

## HTML - <marquee> Tag

The HTML <marquee> tag is used for scrolling piece of text or image displayed either horizontally across or vertically down your web site page depending on the settings.

The different attributes of <marquee> tag are:

| Attribute | Description |
|---|---|
| width | provides the width or breadth of a marquee. For example width="10" or width="20%" |
| height | provides the height or length of a marquee. For example height="20" or height="30%" |
| direction | provides the direction or way in which your marquee will allow you to scroll. The value of this attribute can be: left, right, up or down |
| scrolldelay | provides a feature whose value will be used for delaying among each jump. |
| scrollamount | provides value for speeding the marquee feature |
| behavior | provides the scrolling type in a marquee. That scrolling can be like sliding, scrolling or alternate |
| loop | provides how many times the marquee will loop |
| bgcolor | provides a background color where the value will be either the name of the color or the hexadecimal color-code. |
| vspace | provides a vertical space and its value can be like: vspace="20" or vspace="30%" |
| hspace | provides a horizontal space and its value can be like: vspace="20" or vspace="30%" |

```
<html>
<head></head>
<body>
<marquee behavior="scroll" direction="up" scrollamount="1">Slow Scrolling</marquee>
<marquee behavior="scroll" direction="right" scrollamount="12">Little Fast Scrolling</marquee>
<marquee behavior="scroll" direction="left" scrollamount="20">Fast Scrolling</marquee>
<marquee behavior="scroll" direction="right" scrollamount="50">Very Fast Scrolling</marquee>
</div>
</body>
</html>
```

<div align="center">**HTML - &lt;hr&gt; Tag**</div>

Description

The HTML &lt;hr&gt; tag is used for creating a horizontal line. This is also called Horizontal Rule in HTML.

Attributes:

&lt;hr width="50%" color="green" size="50px" align="right" /&gt;

<div align="center">**HTML | &lt;p&gt; align Attribute**</div>

The **HTML &lt;p&gt; align Attribute** is used to *specify the alignment of paragraph text content*.

**Syntax:**

&lt;p align="left | right | center | justify"&gt;

**Attribute Values:**

- **left:** It sets the text left-align. It is a default value.
- **right:** It sets the text right-align.
- **center:** It sets the text center-align.
- **justify:** It stretch the text of paragraph to set the width of all lines equal.

**Example:**

```
<!DOCTYPE html>
<html>

  <head>
    <title>HTML marquee Tag</title>
  </head>
  <body bgcolor="cyan">
      <p align="center"> ZETECH UNIVERSITY </p>
      <hr size=5 color="red">
    <marquee>Bachelor of Science</marquee>
    <marquee direction = "up">Information Technology</marquee>
  </body>
</html>
```