Introduction to HTML:

- HTML stands for HyperText Markup Language.
- HTML is used to create web pages and web applications.
- HTML is widely used language on the web.
- We can create a static website by HTML only.
- Technically, HTML is a Markup language rather than a programming language.

Basic structure of an HTML document

1. <!DOCTYPE>
2. **<html>**
3. **<head>**
4. **<title>**Web page title**</title>**
5. **</head>**
6. **<body>**
7. **<h1>**Write Your First Heading**</h1>**
8. **<p>**Write Your First Paragraph.**</p>**
9. **</body>**
10. **</html>**

What is HTML

HTML is an acronym which stands for **Hyper Text Markup Language** which is used for creating web pages and web applications. Let's see what is meant by Hypertext Markup Language, and Web page.

Web Page: **A web page is a document which is commonly written in HTML and translated by a web browser. A web page can be identified by entering an URL. A Web page can be of the static or dynamic type.** With the help of HTML only, we can create static web pages**. Description of HTML Example

<!DOCTYPE>: It defines the document type or it instruct the browser about the version of HTML.

<html > :This tag informs the browser that it is an HTML document. Text between html tag describes the web document. It is a container for all other elements of HTML except <!DOCTYPE>

<head>: It should be the first element inside the <html> element, which contains the metadata(information about the document). It must be closed before the body tag opens.

<title>: As its name suggested, it is used to add title of that HTML page which appears at the top of the browser window. It must be placed inside the head tag and should close immediately. (Optional)

<body> : Text between body tag describes the body content of the page that is visible to the end user. This tag contains the main content of the HTML document.

<h1> : Text between <h1> tag describes the first level heading of the webpage.

<p> : Text between <p> tag describes the paragraph of the webpage.

<mark>Html VERSION:</mark>

HTML 1.0: The first version of HTML was 1.0, which was the barebones version of HTML language, and it was released in1991.

HTML 2.0: This was the next version which was released in 1995, and it was standard language version for website design. HTML 2.0 was able to support extra features such as form-based file upload, form elements such as text box, option button, etc.

HTML 3.2: HTML 3.2 version was published by W3C in early 1997. This version was capable of creating tables and providing support for extra options for form elements. It can also support a web page with complex mathematical equations. It became an official standard for any browser till January 1997. Today it is practically supported by most of the browsers.

HTML 4.01: HTML 4.01 version was released on December 1999, and it is a very stable version of HTML language. This version is the current official standard, and it provides added support for stylesheets (CSS) and scripting ability for various multimedia elements.

HTML5 : HTML5 is the newest version of HyperText Markup language. The first draft of this version was announced in January 2008. There are two major organizations one is W3C (World Wide Web Consortium), and another one is WHATWG(Web Hypertext
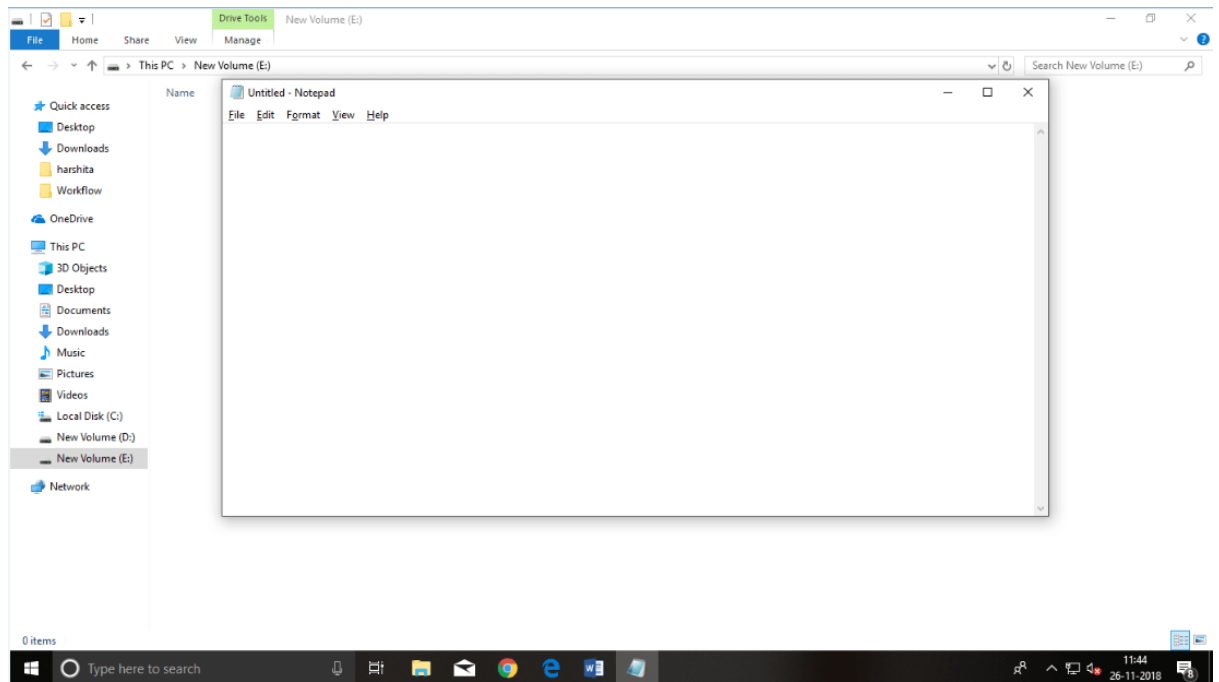
Application Technology Working Group) which are involved in the development of HTML 5 version, and still, it is under development.

Features of HTML

1) It is a very **easy and simple language**. It can be easily understood and modified.

2) It is very easy to make an **effective presentation** with HTML because it has a lot of formatting tags.

3) It is a **markup language**, so it provides a flexible way to design web pages along with the text.

4) It facilitates programmers to add a **link** on the web pages (by html anchor tag), so it enhances the interest of browsing of the user.

5) It is **platform-independent** because it can be displayed on any platform like Windows, Linux, and Macintosh, etc.

6) It facilitates the programmer to add **Graphics, Videos, and Sound** to the web pages which makes it more attractive and interactive.

7) HTML is a case-insensitive language, which means we can use tags either in lower-case or upper-case.
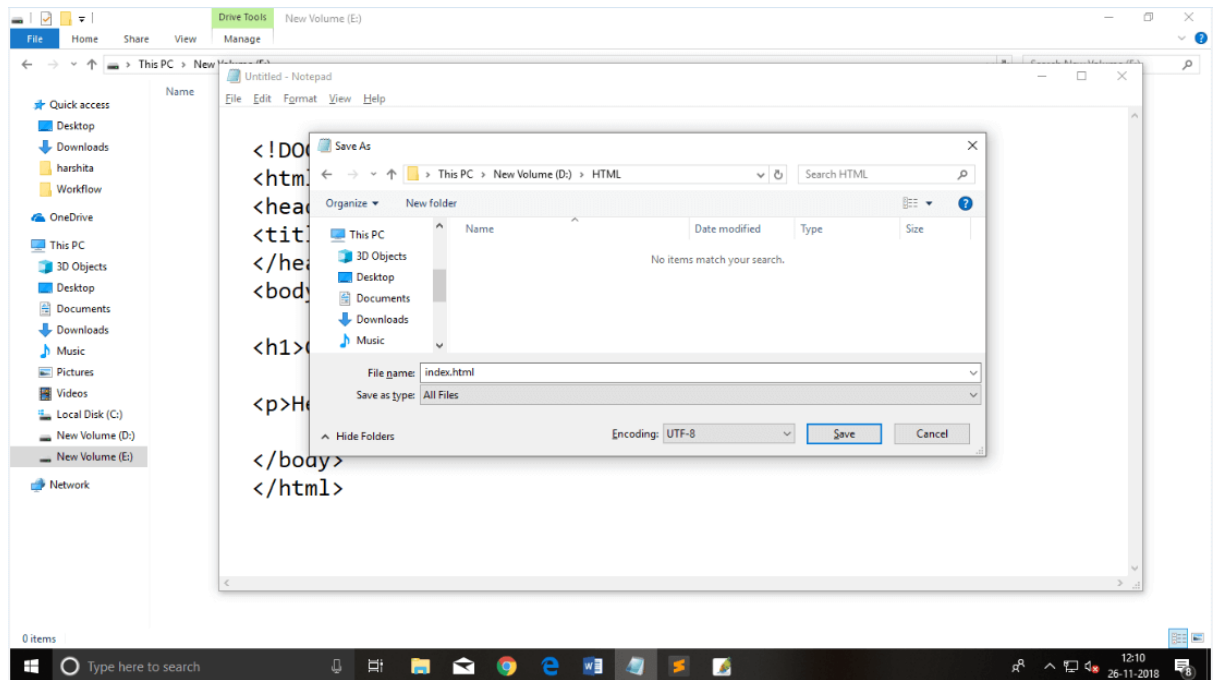
HTML text Editors

- An HTML file is a text file, so to create an HTML file we can use any text editors.

- Text editors are the programs which allow editing in a written text, hence to create a web page we need to write our code in some text editor.

- There are various types of text editors available which you can directly download, but for a beginner, the best text editor is Notepad (Windows) or TextEdit (Mac).

- After learning the basics, you can easily use other professional text editors which are, **Notepad++, Sublime Text, Vim, etc**.

- A. HTML code with Notepad. (Recommended for Beginners)

- Notepad is a simple text editor and suitable for beginners to learn HTML. It is available in all versions of Windows, from where you easily access it.

- **Step 1: Open Notepad (Windows)**

- Step 2: Write code in HTML


```
<!DOCTYPE html>
<html>
<head>
<title>webpage</title>
</head>
<body>

<h1>Create your First Web page</h1>

<p>Hello World!!</p>

</body>
</html>
```

- Step 3: Save the HTML file with .htm or .html extension.

- o **Step 4: Open the HTML page in your web browser.**
- o To run the HTML page, you need to open the file location, where you have saved the file and then either double-click on file or click on open with option

○
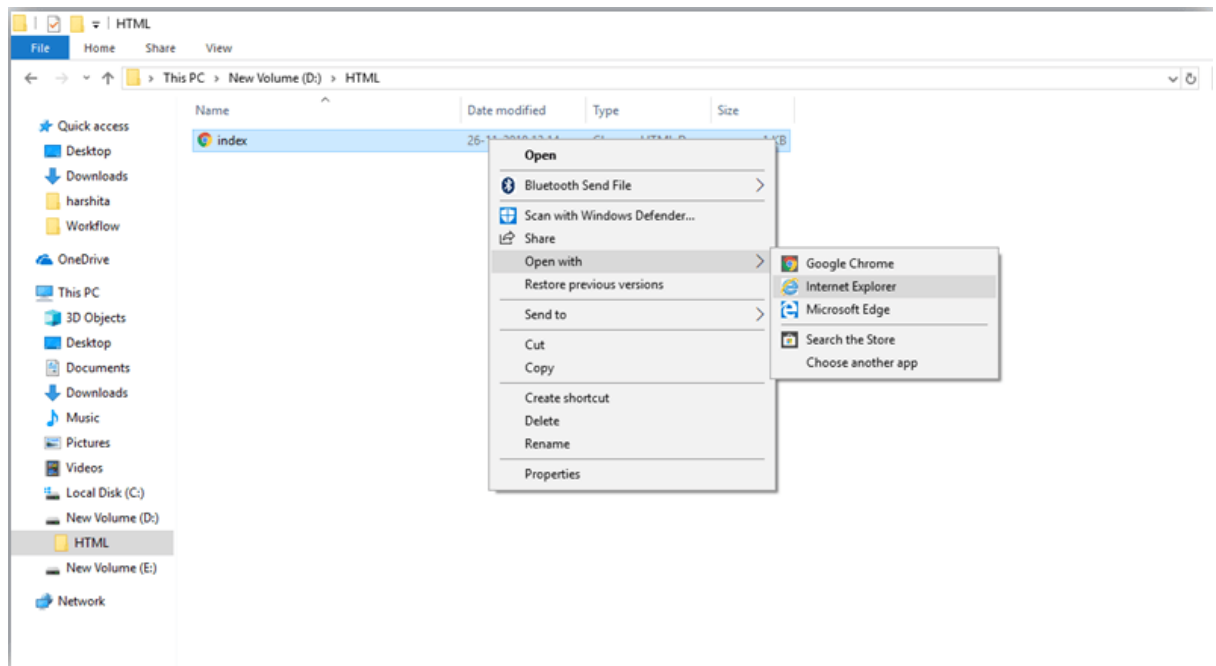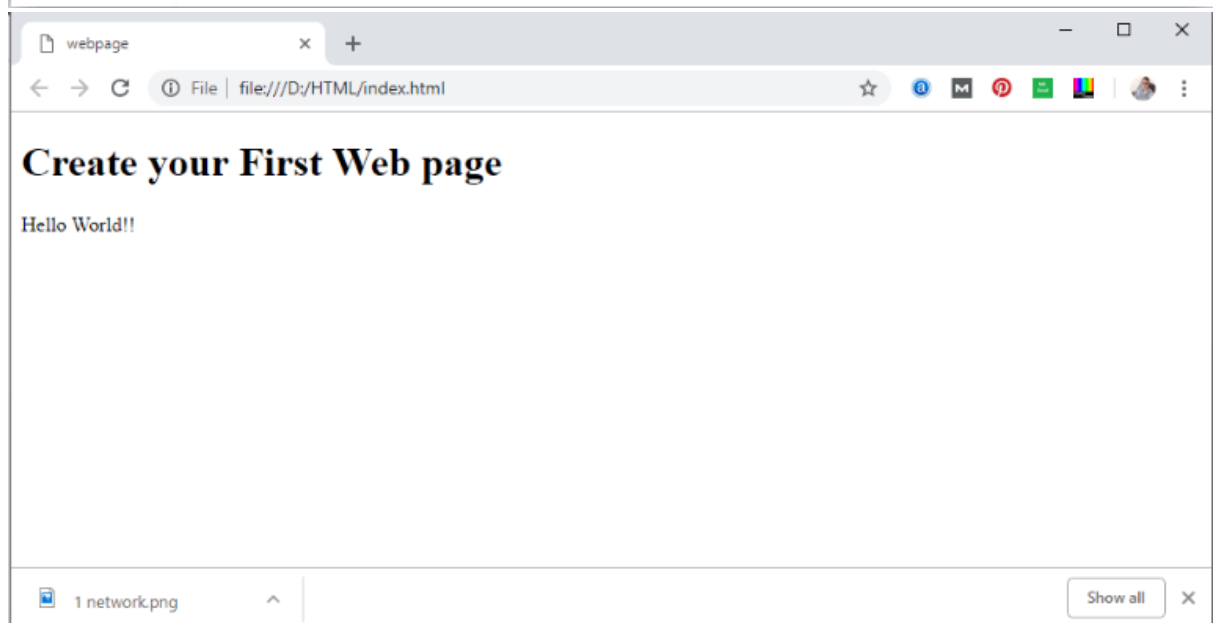
Building blocks of HTML

An HTML document consist of its basic building blocks which are:

- ○ **Tags:** An HTML tag surrounds the content and apply meaning to it. It is written between < and > brackets.
- ○ **Attribute:** An attribute in HTML provides extra information about the element, and it is applied within the start tag. An HTML attribute contains two fields: name & value.

Syntax

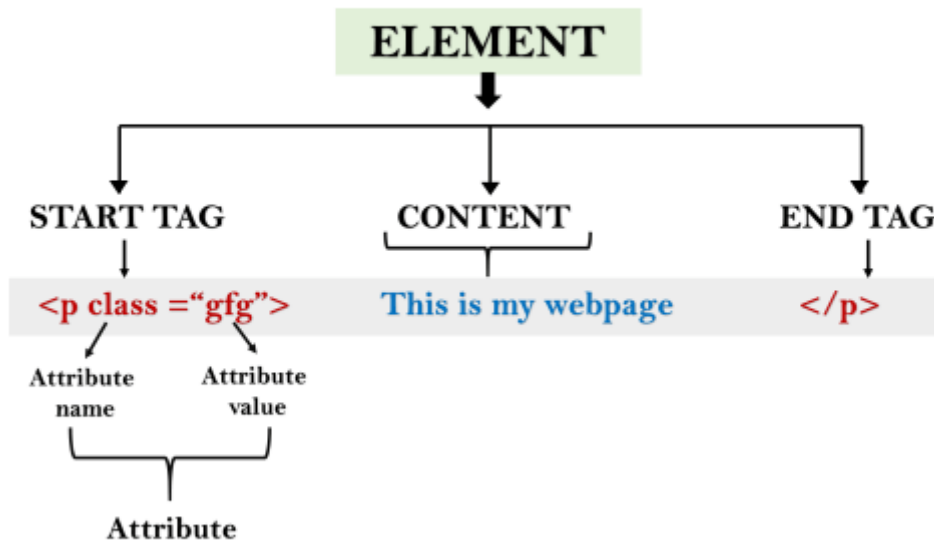1. **<tag** name attribute_name= " attr_value"**>** content **</ tag** name**>**

o **Elements:** An HTML element is an individual component of an HTML file. In an HTML file, everything written within tags are termed as HTML elements.

Example:

1. <!DOCTYPE html**>**
2. **<html>**
3.   **<head>**
4.   **<title>**The basic building blocks of HTML**</title>**
5.   **</head>**
6.   **<body>**
7.   **<h2>**The building blocks**</h2>**
8.   **<p>**This is a paragraph tag**</p>**
9.   **<p** style="color: red"**>**The style is attribute of paragraph tag**</p>**
10. **</body>**
11. **</html>**

Output:

The building blocks

This is a paragraph tag

The style is attribute of paragraph tag

The element contains tag, attribute and content

HTML Tags

HTML tags are like keywords which defines that how web browser will format and display the content. With the help of tags, a web browser can distinguish between an HTML content and a simple content. HTML tags contain three main parts: opening tag, content and closing tag. But some HTML tags are unclosed tags.

- o All HTML tags must enclosed within < > these brackets.
- o Every tag in HTML perform different tasks.
- o If you have used an open tag <tag>, then you must use a close tag </tag> (except some tags)

Syntax

<tag> content </tag>

<p> Paragraph Tag </p>

<h2> Heading Tag </h2>

 Bold Tag

<i> *Italic Tag* </i>

<u> Underline Tag</u>

Unclosed HTML Tags

Some HTML tags are not closed, for example br and hr.

**
 Tag**: br stands for break line, it breaks the line of the code.

<hr> Tag: hr stands for Horizontal Rule. This tag is used to -put a line across the webpage.

Tags in HTML

There are many tags in HTML which facilitate the process of describing web page to the server. These tags are arranged in a specific manner to get the desired output. Some of the important tags of HTML are discussed below -

1. **<!Doctype> -** It describes the type of document
2. **<html> -** describes that the document is an html document
3. **<title> -** describes title of the document
4. **<body> -** describes the body of the document
5. **<h1> to <h6> -** describes the headings in html
6. **<p> -** describes a paragraph
7. **
 -** produces a line break of single line
8. **<hr> -** describes a thematic content change
9. **<!--?--> -** Describes a comment

Tags in html are useful entities that allow a developer to manipulate the look and functionalities of a web page. Additionally, some of the tags have closing tags that include a forward slash, indicating a closing tag. Examples of the closing tags are body, title, and html. However, some tags do not have closing tags; examples of such tags are <br> and <img>. Such elements are often known as empty or void elements in HTML.

Other useful tags in html are -

1. **<b> -** It is used to bold the written text.
2. **<i> -** It is used to make the written text italic.
3. **<u> -** It is used to underline the content written in the tag.
4. ** -** It is used to form a list in the content.
5. ** -** It is used to form an ordered list in the content.
6. ** -** It is used to form an unordered list in the content.
7. **<marquee> -** Adds scrolling effect to the text or image in the content.

DOCTYPE, title, link, meta and style

<p>, <h1>, <h2>, <h3>, <h4>, <h5>, <h6>, <strong>, <em>, <address>, <ins>, <del> and

HTML Formatting Elements

Formatting elements were designed to display special types of text:

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

Text Abbreviation tag
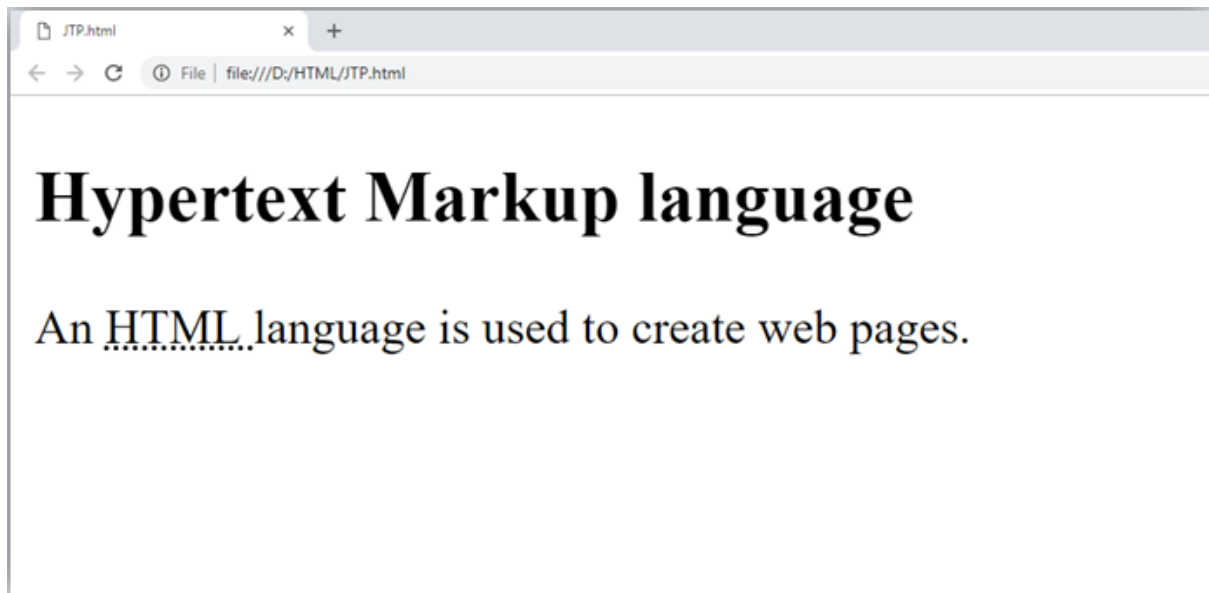
This tag is used to abbreviate a text. To abbreviate a text, write text between <abbr> and </abbr> tag.

Example

<p>An **<abbr** title = "Hypertext Markup language">HTML **</abbr>**language is used to create web pages. **</p>**

Output:

An HTML language is used to create web pages.

HTML Link Tags

`<a>`

==HTML Anchor== TAG:

The **HTML anchor tag** defines *a hyperlink that links one page to another page*. It can create hyperlink to other web page as well as files, location, or any URL. The "href" attribute is the most important attribute of the HTML a tag. and which links to destination page or URL.

href attribute of HTML anchor tag

The href attribute is used to define the address of the file to be linked. In other words, it points out the destination page.

The syntax of HTML anchor tag is given below.

```
<a href = "..........."> Link Text </a>
```

Let's see an example of HTML anchor tag.

1. **`<a`** href=`"second.html">`Click for Second Page**`</a>`
Test it Now

Specify a location for Link using target attribute

If we want to open that link to another page then we can use target attribute of <a> tag. With the help of this link will be open in next page.

Example:

1. <!DOCTYPE html>
2. **<html>**
3. **<head>**
4.   **<title></title>**
5. **</head>**
6. **<body>**
7. **<p>**Click on **<a** href="https://www.javatpoint.com/" target="_blank"> this-link ****to go on home page of JavaTpoint.**</p>**
8. **</body>**
9. **</html>**

Note:

o The **target** attribute can only use with href attribute in anchor tag.

o If we will not use target attribute then link will open in same page.

Appearance of HTML anchor tag

An **unvisited link** is displayed underlined and blue.

A **visited link** displayed underlined and purple.

An **active link** is underlined and red.

HTML Image Tag

<img>,

HTML List Tags

, <ol>, <li>, <dl>, <dt> and <dd>

HTML Table Tags

table, tr, td, th, tbody, thead, tfoot, col, colgroup and caption

HTML Form Tags

form, input, textarea, select, option, optgroup, button, label, fieldset and legend

HTML Scripting Tags

script and noscript

HTML Image TAG:

HTML img tag is used to display image on the web page. HTML img tag is an empty tag that contains attributes only, closing tags are not used in HTML image element.

Let's see an example of HTML image.

Attributes of HTML img tag

1) src

It is a necessary attribute that describes the source or path of the image. It instructs the browser where to look for the image on the server.

The location of image may be on the same directory or another server.

2) alt

The alt attribute defines an alternate text for the image, if it can't be displayed. The value of the alt attribute describe the image in words. The alt attribute is considered good for SEO prospective.

3) width

It is an optional attribute which is used to specify the width to display the image. It is not recommended now. You should apply CSS in place of width attribute.

4) height

It h3 the height of the image. The HTML height attribute also supports iframe, image and object elements. It is not recommended now. You should apply CSS in place of height attribute.

Example:

1. **<img** src="animal.jpg" height="180" width="300" alt="animal image"**>**

How to get image from another directory/folder?

To insert an image in your web, that image must be present in your same folder where you have put the HTML file. But if in some case image is available in some other directory then you can access the image like this:

1. **<img** src="E:/images/animal.png" height="180" width="300" alt="animal image"**>**

Use <img> tag as a link

We can also link an image with other page or we can use an image as a link. To do this, put <img> tag inside the <a> tag.

Example:

1. **<a** href="https://www.javatpoint.com/what-is-robotics"**><img** src="robot.jpg" height="100" width="100"**>**

HTML Lists Tag:

HTML Lists are used to specify lists of information. All lists may contain one or more list elements. There are three different types of HTML lists:

1. Ordered List or Numbered List (ol)
2. Unordered List or Bulleted List (ul)
3. Description List or Definition List (dl)

HTML Ordered List or Numbered List

In the ordered HTML lists, all the list items are marked with numbers by default. It is known as numbered list also. The ordered list starts with <ol> tag and the list items start with <li> tag.

1. **<ol>**
2. **
sql
**
3. **
MongoDB
**
4. **
IBMdb2
**
5. **
Oracle
**
6. **
**

HTML Ordered List or Numbered List displays elements in numbered format. The HTML ol tag is used for ordered list. We can use ordered list to represent items either in numerical order format or alphabetical order format, or any format where an order is emphasized. There can be different types of numbered list:

o Numeric Number (1, 2, 3)

o Capital Roman Number (I II III)

o Small Romal Number (i ii iii)

o Capital Alphabet (A B C)

o Small Alphabet (a b c)

ol type="I"

Let's see the example to display list in roman number uppercase.

```
1. <ol type="I">
2. <li>HTML</li>
3. <li>Java</li>
4. <li>JavaScript</li>
5. <li>SQL</li>
6. </ol>
```
Test it Now

Output:

    I.   HTML

   II.   Java

  III.   JavaScript

  IV.   SQL

---

ol type="i"

Let's see the example to display list in roman number lowercase.

```
1. <ol type="i">
2. <li>HTML</li>
3. <li>Java</li>
4. <li>JavaScript</li>
5. <li>SQL</li>
6. </ol>
```
Test it Now

Output:

   i.   HTML

   ii.   Java

  iii.   JavaScript

  iv.   SQL

---

ol type="A"

Let's see the example to display list in alphabet uppercase.

1. **<ol** type="A"**>**
2. **
HTML
**
3. **
Java
**
4. **
JavaScript
**
5. **
SQL
**
6. **
**

Test it Now

Output:

A. HTML
B. Java
C. JavaScript
D. SQL

ol type="a"

Let's see the example to display list in alphabet lowercase.

1. **<ol** type="a"**>**
2. **
HTML
**
3. **
Java
**
4. **
JavaScript
**
5. **
SQL
**
6. **
**

Test it Now

Output:

a. HTML
b. Java
c. JavaScript
d. SQL

start attribute

The start attribute is used with ol tag to specify from where to start the list items.

<ol type="1" start="5"> : It will show numeric values starting with "5".

<ol type="A" start="5"> : It will show capital alphabets starting with "E".

<ol type="a" start="5"> : It will show lower case alphabets starting with "e".

<ol type="I" start="5"> : It will show Roman upper case value starting with "V".

<ol type="i" start="5"> : It will show Roman lower case value starting with "v".

1. **<ol** type="i" start="5">
2. **
HTML
**
3. **
Java
**
4. **
JavaScript
**
5. **
SQL
**
6. **
**

Test it Now

Output:

v.   HTML

vi.   Java

vii. JavaScript

viii. SQL

reversed Attribute:

This is a Boolean attribute of HTML <ol> tag, and it is new in HTML5 version. If you use the reversed attribute with

tag then it will numbered the list in descending order (7, 6, 5, 4......1).
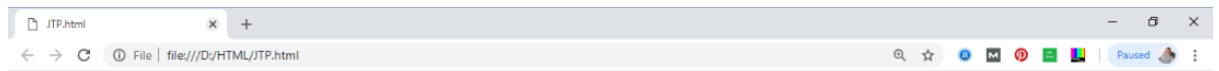
Example:

1. **<ol** reversed**>**
2. **
HTML
**
3. **
Java
**

4. **
JavaScript
**
5. **
SQL
**
6. **
**

Output:

HTML Unordered List | HTML Bulleted List

HTML Unordered List or Bulleted List displays elements in bulleted format . We can use unordered list where we do not need to display items in any particular order. The HTML ul tag is used for the unordered list. There can be 4 types of bulleted list:

o disc

o circle

o square

o none

To represent different ordered lists, there are 4 types of attributes in <ul> tag.

Type	Description

Type "disc"	This is the default style. In this style, the list items are marked with bullets.
Type "circle"	In this style, the list items are marked with circles.
Type "square"	In this style, the list items are marked with squares.
Type "none"	In this style, the list items are not marked .

HTML Unordered List Example

1. **\<ul\>**
2. **\<li\>**HTML**\</li\>**
3. **\<li\>**Java**\</li\>**
4. **\<li\>**JavaScript**\</li\>**
5. **\<li\>**SQL**\</li\>**
6. **\</ul\>**

Test it Now

Output:

o   HTML

o   Java

o   JavaScript

o   SQL

ul type="circle"

1. **\<ul** type="circle"**\>**
2. **\<li\>**HTML**\</li\>**
3. **\<li\>**Java**\</li\>**
4. **\<li\>**JavaScript**\</li\>**
5. **\<li\>**SQL**\</li\>**
6. **\</ul\>**

Output:

- HTML
- Java
- JavaScript
- SQL

---

ul type="square"

1. **<ul** type="square"**>**
2. **
HTML
**
3. **
Java
**
4. **
JavaScript
**
5. **
SQL
**
6. **
**

Test it Now

Output:

- HTML
- Java
- JavaScript
- SQL

---

ul type="none"

1. **<ul** type="none"**>**
2. **
HTML
**
3. **
Java
**
4. **
JavaScript
**
5. **
SQL
**
6. **
**

Test it Now

Output:

- o HTML
- o Java
- o JavaScript
- o SQL

HTML Description List | HTML Definition List

HTML Description List or Definition List displays elements in definition form like in dictionary. The <dl>, <dt> and <dd> tags are used to define description list.

The 3 HTML description list tags are given below:

1. **<dl> tag** defines the description list.
2. **<dt> tag** defines data term.
3. **<dd> tag** defines data definition (description).

1. **<dl>**
2. **<dt>**HTML**</dt>**
3. **<dd>**is a markup language**</dd>**
4. **<dt>**Java**</dt>**
5. **<dd>**is a programming language and platform**</dd>**
6. **<dt>**JavaScript**</dt>**
7. **<dd>**is a scripting language**</dd>**
8. **<dt>**SQL**</dt>**
9. **<dd>**is a query language**</dd>**
10. **</dl>**

Test it Now

Output:

HTML

   is a markup language

Java

   is a programming language and platform

JavaScript

is a scripting language

SQL

is a query language

HTML Table

HTML table tag is used to display data in tabular form (row * column). There can be many columns in a row.

We can create a table to display data in tabular form, using <table> element, with the help of <tr> , <td>, and <th> elements.

In Each table, table row is defined by <tr> tag, table header is defined by <th>, and table data is defined by <td> tags.

HTML tables are used to manage the layout of the page e.g. header section, navigation bar, body content, footer section etc. But it is recommended to use div tag over table to manage the layout of the page .

<table>	It defines a table.
<tr>	It defines a row in a table.
<th>	It defines a header cell in a table.
<td>	It defines a cell in a table.
<caption>	It defines the table caption.

HTML Table Example

Let's see the example of HTML table tag. It output is shown above.

1. **<table>**
2. **<tr><th>**First_Name**</th><th>**Last_Name**</th><th>**Marks**</th></tr>**
3. **<tr><td>**Sonoo**</td><td>**Jaiswal**</td><td>**60**</td></tr>**
4. **<tr><td>**James**</td><td>**William**</td><td>**80**</td></tr>**
5. **<tr><td>**Swati**</td><td>**Sironi**</td><td>**82**</td></tr>**
6. **<tr><td>**Chetna**</td><td>**Singh**</td><td>**72**</td></tr>**

7. **</table>**

HTML Table with Border

There are two ways to specify border for HTML tables.

1. By border attribute of table in HTML
2. By border property in CSS

1) HTML Border attribute

You can use border attribute of table tag in HTML to specify border. But it is not recommended now.

1. **<table** border="1"**>**
2. **<tr><th>**First_Name**</th><th>**Last_Name**</th><th>**Marks**</th></tr>**
3. **<tr><td>**Sonoo**</td><td>**Jaiswal**</td><td>**60**</td></tr>**
4. **<tr><td>**James**</td><td>**William**</td><td>**80**</td></tr>**
5. **<tr><td>**Swati**</td><td>**Sironi**</td><td>**82**</td></tr>**
6. **<tr><td>**Chetna**</td><td>**Singh**</td><td>**72**</td></tr>**
7. **</table>**

HTML Table with cell padding

You can specify padding for table header and table data by two ways:

1. By cellpadding attribute of table in HTML
2. By padding property in CSS

The cellpadding attribute of HTML table tag is obselete now. It is recommended to use CSS. So let's see the code of CSS.

HTML Table width:

We can specify the HTML table width using the **CSS width** property. It can be specify in pixels or percentage.

HTML Table with colspan

If you want to make a cell span more than one column, you can use the colspan attribute.

It will divide one cell/row into multiple columns, and the number of columns depend on the value of colspan attribute.

Let's see the example that span two columns.

1. **<table** style="width:100%"**>**
2. **<tr>**
3. **<th>**Name**</th>**
4. **<th** colspan="2"**>**Mobile No.**</th>**
5. **</tr>**
6. **<tr>**
7. **<td>**Ajeet Maurya**</td>**
8. **<td>**7503520801**</td>**
9. **<td>**9555879135**</td>**
10. **</tr>**
11. **</table>**

HTML Table with rowspan

If you want to make a cell span more than one row, you can use the rowspan attribute.

It will divide a cell into multiple rows. The number of divided rows will depend on rowspan values.

Let's see the example that span two rows.

1. **<table>**
2. **<tr><th>**Name**</th><td>**Ajeet Maurya**</td></tr>**
3. **<tr><th** rowspan="2"**>**Mobile No.**</th><td>**7503520801**</td></tr>**
4. **<tr><td>**9555879135**</td></tr>**
5. **</table>**

HTML table with caption

HTML caption is diplayed above the table. It must be used after table tag only.

1. **<table>**

2. **<caption>**Student Records**</caption>**
3. **<tr><th>**First_Name**</th><th>**Last_Name**</th><th>**Marks**</th></tr>**
4. **<tr><td>**Vimal**</td><td>**Jaiswal**</td><td>**70**</td></tr>**
5. **<tr><td>**Mike**</td><td>**Warn**</td><td>**60**</td></tr>**
6. **<tr><td>**Shane**</td><td>**Warn**</td><td>**42**</td></tr>**
7. **<tr><td>**Jai**</td><td>**Malhotra**</td><td>**62**</td></tr>**
8. **</table>**

HTML Form

An **HTML form** is *a section of a document* which contains controls such as text fields, password fields, checkboxes, radio buttons, submit button, menus etc.

An HTML form facilitates the user to enter data that is to be sent to the server for processing such as name, email address, password, phone number, etc. .

Why use HTML Form

HTML forms are required if you want to collect some data from of the site visitor.

For example: If a user want to purchase some items on internet, he/she must fill the form such as shipping address and credit/debit card details so that item can be sent to the given address.

HTML Form Tags

Let's see the list of HTML 5 form tags.

Tag	Description
<form>	It defines an HTML form to enter inputs by the used side.
<input>	It defines an input control.
<textarea>	It defines a multi-line input control.
<label>	It defines a label for an input element.
<fieldset>	It groups the related element in a form.

<legend>	It defines a caption for a <fieldset> element.
<select>	It defines a drop-down list.
<optgroup>	It defines a group of related options in a drop-down list.
<option>	It defines an option in a drop-down list.
<button>	It defines a clickable button.

HTML <form> element

The HTML <form> element provide a document section to take input from user. It provides various interactive controls for submitting information to web server such as text field, text area, password field, etc.

Note: The <form> element does not itself create a form but it is container to contain all required form elements, such as <input>, <label>, etc.

Syntax:

1. **<form>**
2. //Form elements
3. **</form>**

HTML <input> element

The HTML <input> element is fundamental form element. It is used to create form fields, to take input from user. We can apply different input filed to gather different information form user. Following is the example to show the simple text input.

Example:

1. **<body>**
2. **<form>**
3. Enter your name **
**
4. **<input** type="text" name="username">
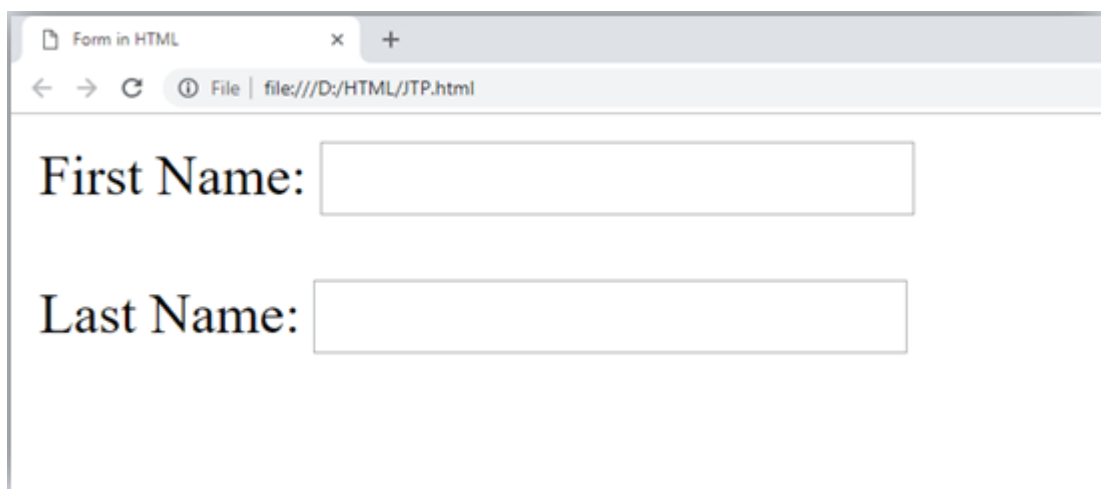5. **</form>**
6. **</body>**

Output:

Enter your name

HTML TextField Control

The type="text" attribute of input tag creates textfield control also known as single line textfield control. The name attribute is optional, but it is required for the server side component such as JSP, ASP, PHP etc.

1. **<form>**
2. First Name: **<input** type="text" name="firstname"**/>
**
3. Last Name: **<input** type="text" name="lastname"**/>
**
4. **</form>**

Output:

Note: If you will omit 'name' attribute then the text filed input will not be submitted to server.

HTML \<textarea> tag in form
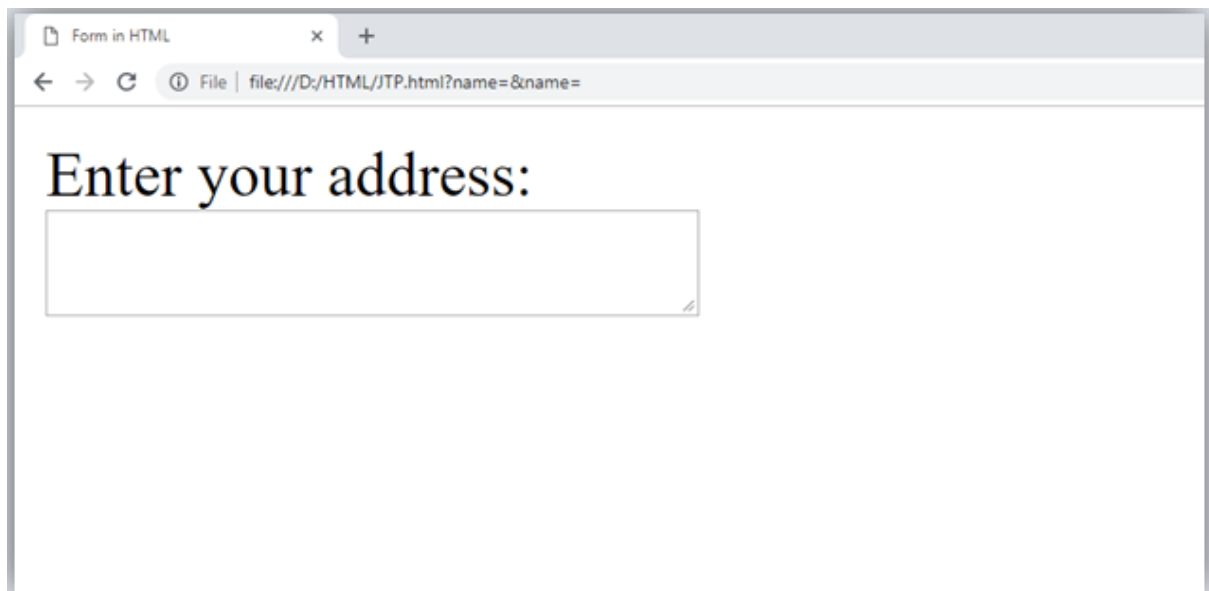
The \<textarea> tag in HTML is used to insert multiple-line text in a form. The size of \<textarea> can be specify either using "rows" or "cols" attribute or by CSS.

Example:

1. <!DOCTYPE html>
2. **\<html>**
3. **\<head>**
4.   **\<title>**Form in HTML**\</title>**
5. **\</head>**
6. **\<body>**
7.   **\<form>**
8.   Enter your address:**\
**
9.   **\<textarea** rows="2" cols="20"**>\</textarea>**
10. **\</form>**
11. **\</body>**
12. **\</html>**

Output:

HTML Password Field Control

The password is not visible to the user in password field control.

1. **<form>**
2.   **<label** for="password"**>**Password: **</label>**
3.   **<input** type="password" id="password" name="password"**/>
**

4. **</form>**

Output:

Password: [   ]

HTML 5 Email Field Control

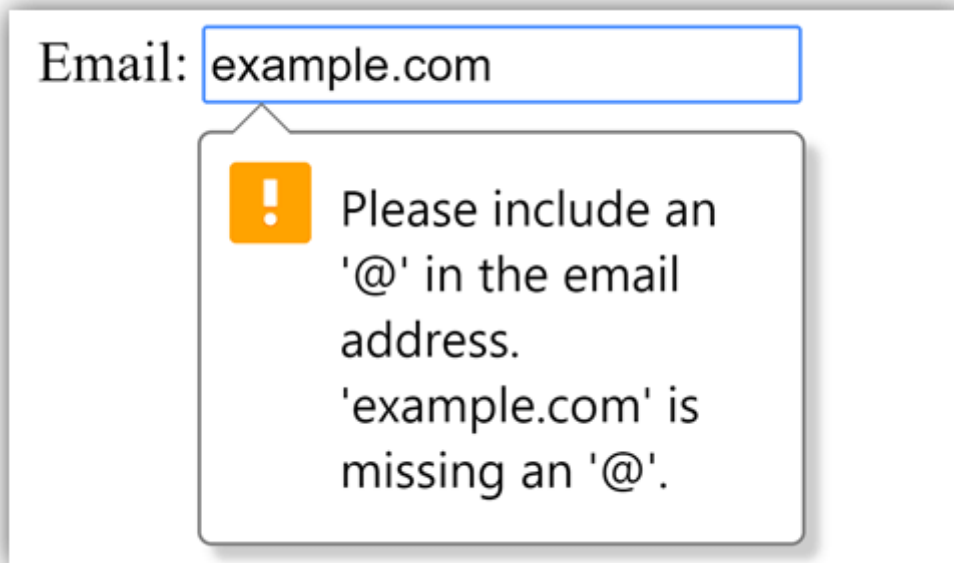The email field in new in HTML 5. It validates the text for correct email address. You must use @ and . in this field.

1. **<form>**
2.   **<label** for="email"**>**Email: **</label>**
3.   **<input** type="email" id="email" name="email"**/>
**
4. **</form>**

It will display in browser like below:

Email: [   ]

Radio Button Control

The radio button is used to select one option from multiple options. It is used for selection of gender, quiz questions etc.

If you use one name for all the radio buttons, only one radio button can be selected at a time.

Using radio buttons for multiple options, you can only choose a single option at a time.

1. **<form>**
2.   **<label** for="gender"**>**Gender: **</label>**
3.   **<input** type="radio" id="gender" name="gender" value="male"**/>**Male
4.   **<input** type="radio" id="gender" name="gender" value="female"**/>**Female **
**
5. **</form>**

Checkbox Control

The checkbox control is used to check multiple options from given checkboxes.

1. **<form>**
2. Hobby:**
**
3.   **<input** type="checkbox" id="cricket" name="cricket" value="cricket" **/>**
4.   **<label** for="cricket">Cricket**</label>
**
5.   **<input** type="checkbox" id="football" name="football" value="football"**/>**
6.   **<label** for="football">Football**</label>
**
7.   **<input** type="checkbox" id="hockey" name="hockey" value="hockey"**/>**
8.   **<label** for="hockey">Hockey**</label>**
9. **</form>**

Output:

Submit button control

HTML **<input type="submit">** are used to add a submit button on web page. When user clicks on submit button, then form get submit to the server.

Syntax:

1. **<input** type="submit" value="submit"**>**

The type = submit , specifying that it is a submit button

The value attribute can be anything which we write on button on web page.

The name attribute can be omit here.

Example:

1. **<form>**
2.   **<label** for="name"**>**Enter name**</label>
**
3.   **<input** type="text" id="name" name="name"**>
**
4.   **<label** for="pass"**>**Enter Password**</label>
**
5.   **<input** type="Password" id="pass" name="pass"**>
**
6.   **<input** type="submit" value="submit"**>**
7. **</form>**

Output:

HTML Form Example

Following is the example for a simple form of registration.

1. <!DOCTYPE html>
2. **<html>**
3. **<head>**
4. **<title>**Form in HTML**</title>**
5. **</head>**
6. **<body>**
7. **<h2>**Registration form**</h2>**
8. **<form>**
9. **<fieldset>**
10. **<legend>**User personal information**</legend>**
11. **<label>**Enter your full name**</label>
**
12. **<input** type="text" name="name"**>
**
13. **<label>**Enter your email**</label>
**
14. **<input** type="email" name="email"**>
**
15. **<label>**Enter your password**</label>
**
16. **<input** type="password" name="pass"**>
**

17.   **<label>**confirm your password**</label>
**

18.   **<input** type="password" name="pass"**>
**

19.   **
<label>**Enter your gender**</label>
**

20.   **<input** type="radio" id="gender" name="gender" value="male"**/>**Male **
**

21.   **<input** type="radio" id="gender" name="gender" value="female"**/>**Female **
**

22.   **<input** type="radio" id="gender" name="gender" value="others"**/>**others **
**

23.   **
Enter your Address:
**

24.   **<textarea></textarea>
**

25.   **<input** type="submit" value="sign-up"**>**

26.   **</fieldset>**

27. **</form>**

28. **</body>**

29. **</html>**

==Test it Now==

Output:

Static and Dynamic Web Pages

Website is a collection of related web pages that may contain text, images, audio and video. The first page of a website is called home page. Each website has specific internet address (URL) that you need to enter in your browser to access a website.

Website is hosted on one or more servers and can be accessed by visiting its homepage using a computer network. A website is managed by its owner that can be an individual, company or an organization.

A website can be of two types:

- o Static Website
- o Dynamic Website

Static website

Static website is the basic type of website that is easy to create. You don't need the knowledge of web programming and database design to create a static website. Its web pages are coded in HTML.

The codes are fixed for each page so the information contained in the page does not change and it looks like a printed page.
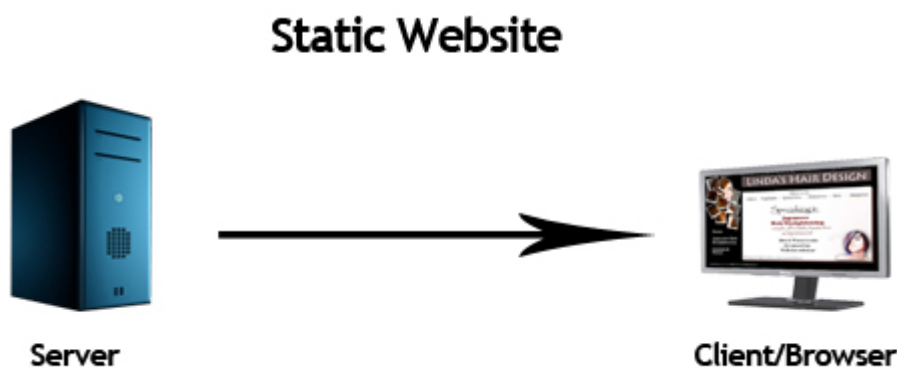
Dynamic website

Dynamic website is a collection of dynamic web pages whose content changes dynamically. It accesses content from a database or Content Management System (CMS). Therefore, when you alter or update the content of the database, the content of the website is also altered or updated.

Dynamic website uses client-side scripting or server-side scripting, or both to generate dynamic content.

Client side scripting generates content at the client computer on the basis of user input. The web browser downloads the web page from the server and processes the code within the page to render information to the user.

In server side scripting, the software runs on the server and processing is completed in the server then plain pages are sent to the user.

Static Website	Dynamic Website
Prebuilt content is same every time the page is loaded.	Content is generated quickly and changes regularly.
It uses the **HTML** code for developing a website.	It uses the server side languages such as **PHP,SERVLET, JSP, and ASP.NET** etc. for developing a website.
It sends exactly the same response for every request.	It may generate different HTML for each of the request.
The content is only changed when someone publishes and updates the file (sends it to the web server).	The page contains "server-side" code which allows the server to generate the unique content when the page is loaded.
Flexibility is the main advantage of static website.	Content Management System (CMS) is the main advantage of dynamic website.

Dynamic Website

Server → Database(s) → Client/Browser

---
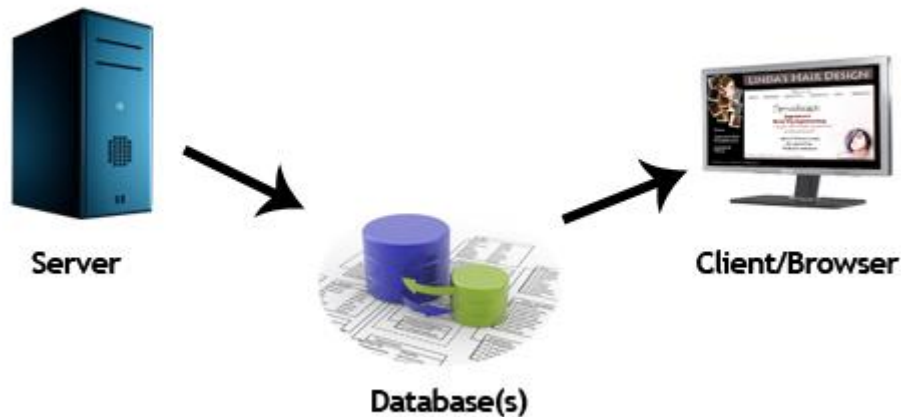
special characters are typically those that can't be easily typed into a keyboard or may cause display issues if typed or pasted into a web page.

If you plan to use any of the special characters on this page, you should use either the HTML entity name or the HTML entity number. This will ensure that it displays correctly in most/all browsers.

For example, if you want to display a copyright symbol "©", you should use either `©` or `©` in your code.

HTML Reserved Characters

The following special characters are reserved in HTML. That is because these are the characters that make up the HTML language. If you use one of these characters in an article, the browser will try to interpret it as HTML. Therefore, you should use the entity name or entity number when you want to output any of these reserved characters.

Character	Entity Number	Entity Name	Description

"	"	"	quotation mark
'	'	'	apostrophe
&	&	&	ampersand
<	<	<	less-than
>	>	>	greater-than

SGML

SGML stands for **Standard Generalized Markup Language**. It can be defined as the standard for defining generalized markup language for documents.

It was developed and designed by the **International Organization for Standards** i.e **ISO**.
HTML was theoretically an example of an SGML-based language until HTML 5, which browsers cannot parse as SGML for compatibility reasons. The SGML is extended from GML and later on it is extended to HTML and XML.
The extension of SGML files is:

```
.sgml
```

Characteristics

- The SGML Declarations.
- The Prologue, containing a DOCTYPE declaration with the various markup declarations that together make a DTD i.e Document Type Definition.
- The instance itself, containing one top-most element and its contents

Components of an SGML Document :
There are mainly three components of SGML document. They are –

1. SGML Declaration

2. Prolog
3. Document instance.

Advantages

- It has the capability to encode the full structure of the document and can support any media type.
- It is of much more use than HTML which provides capabilities to code visual representation and not to structure the real piece of information.
- Separates content from appearance.
- SGML files encoding is allowed for more complex formatting as compared to HTML.
- The Stylesheets present in SGML make the content to use for different purposes.
- Extremely flexible.
- Well supported with many tools available because of ISO standard.

Disadvantages

- It may be typical to code software in SGML.
- Tools that are used in SGML are expensive.
- It may not be used widely.
- Special software is required to run or to allow the document to display.
- Creating DTD's requires exacting software engineering.

Example 1: In this example, we will write code in SGML

- SGML

```
<EMAIL>
    <SENDER>
        <PERSON>
            <FIRSTNAME>GEEKS FOR GEEKS</FIRSTNAME>
        </PERSON>
    </SENDER>
    <BODY>
        <p>A Computer Science Portal For Geeks</p>
    </BODY>
</EMAIL>
```

Output:

GEEKS FOR GEEKS

A Computer Science Portal For Geeks

simple Paragraph

Example 2: In this example, we will see how to write code in SGML and its element.

- SGML

```
<EMAIL>
    <RECEIVER>
        <PERSON>
            <FIRSTNAME>Krishna</FIRSTNAME>
        </PERSON>
    </RECEIVER>
    <BODY>
        <p>It is a name of the person.</p>

    </BODY>
</EMAIL>
```
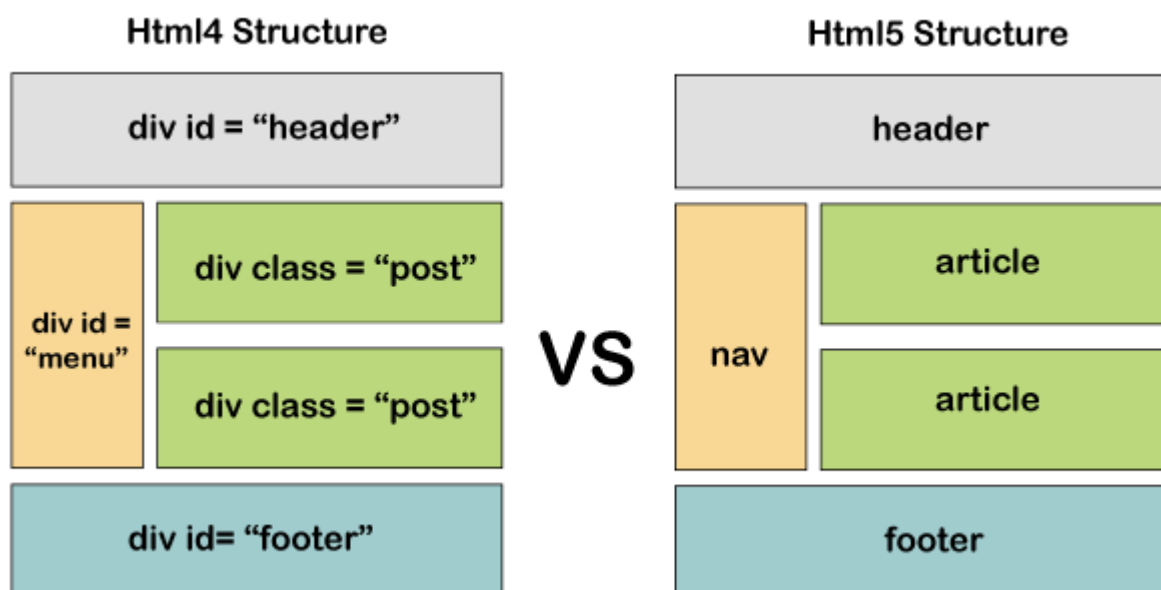
Output:

Krishna

It is a name of the person.

Difference between HTML and HTML5

HTML5 is more complete and easier than **HTML4**, it has lots of new tags like **<header>**, **<footer>**, **<navy>**, **<Audio>**, **<video>**, **<main>** etc. It also supports graphics. In the following image, we have described all the essential terms related to HTML and HTML5.

HTML is referred to as the **primary** language of the **World Wide Web.** **HTML** has many updates over time, and the latest **HTML** version is **HTML5**. There are some differences between the two versions:

- o HTML5 supports both **audio** and **video** while none of them were part of
- o HTML cannot allow JavaScript to run within the web browser, while **HTML5** provides full support for running JavaScript.
- o In **HTML5**, inline **mathML** and **SVG** can be used in a text, while in HTML it is not possible.
- o HTML5 supports new types of form controls, such as **date** and **time, email, number, category, title, Url, search, etc.**
- o Many elements have been introduced in HTML5. Some of the most important are **time, audio, description, embed, fig, shape, footer, article, canvas, navy, output, section, source, track, video**, etc.

Difference between Html and Html5

Features	Html	Html5
definition	A hypertext markup language (HTML) is the primary language for developing web pages.	HTML5 is a new version of HTML with new functionalities with markup language with Internet technologies.
Multimedia support	Language in **HTML** does not have support for video and audio.	**HTML5** supports both video and audio.
Storage	The HTML browser uses cache memory as temporary storage.	HTML5 has the storage options like:**application cache, SQL database,** and **web storage**.
Browser compatibility	HTML is compatible with almost all browsers because it has been present for a long time, and the browser made modifications to support all the features.	In HTML5, we have many new tags, elements, and some tags that have been **removed/modified**, so only some browsers are fully compatible with **HTML5**.
Graphics support	In HTML, vector graphics are possible with tools Like**Silver light, Adobe Flash, VML,** etc.	In HTML5, vector graphics are supported by default.
Threading	In HTML, the browser interface and JavaScript running in the same thread.	The HTML5 has the JavaScript Web Worker API, which allows the browser interface to run in multiple threads.
Storage	Uses cookies to store data.	Uses local storage instead of cookies
Vector and Graphics	Vector graphics are possible with the help of technologies like **VML, Silverlight, Flash,etc**.	Vector graphics is an integral part of **HTML5, SVG** and **canvas**.
Shapes	It is not possible to create shapes like **circles, rectangles, triangles**.	We can draw shapes like **circles, rectangles, triangles**.

Doc type	Doctype declaration in html is too long <! DOCTYPE HTML PUBLIC "- // W3C // DTD HTML 4.01 // EN" "http://www.w3.org/TR/html4/strict.dtd">	The DOCTYPE declaration in html5 is very simple "<! DOCTYPE html>
Character Encoding	Character encoding in HTML is too long. <! DOCTYPE HTML PUBLIC "- // W3C // DTD HTML 4.0 Transitional // EN">	Character encoding declaration is simple <meta charset = "UTF-8">
Multimedia support	Audio and video are not the part of HTML4.	Audio and video are essential parts of HTML5,like: **<Audio>, <Video>**.
Vector Graphics	In HTML4, vector graphics are possible with the help of techniques like VML, Silver light and Flash.	Vector graphics are an integral part of **HTML5, SVG**, and **canvas**.
	Html5 uses cookies.	It supplies local storage in place of cookies.
Shapes	It is not possible to draw shapes like circles, rectangles, triangles.	Using html5, you can draw shapes like **circles, rectangles, triangles**.
Browser Support	Works with all older browsers	A new browser supports this.