

# HTML

## WHAT IS HTML?

HTML stands for HyperText Markup Language. HTML is used to create web pages and web applications.

- **Hypertext** refers to the way in which Web pages (HTML documents) are linked together. Thus, the link available on a webpage is called Hypertext.
- As its name suggests, HTML is a **Markup Language** which means you use HTML to simply "mark-up" a text document with tags that tell a Web browser how to structure it to display.

HTML consists of a series of elements, HTML elements tell the browser how to display the content.

## Basic HTML Document

In its simplest form, following is an example of an HTML document:

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

# HTML - TAGS

HTML is a markup language and makes use of various tags to format the content. These tags are enclosed within angle braces **<Tag Name>**. Except few tags, most of the tags have their corresponding closing tags. For example, **<html>** has its closing tag **</html>** and **<body>** tag has its closing tag **</body>** etc.

Syntax:

`<tag> content </tag>`

## Heading Tags

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>**, **<h6>**.

Eg:

**This is heading 1-----→<h1>**

**This is heading 2                   -----→<h2>**

**This is heading 3                   -----→<h3>**

**This is heading 4                   -----→<h4>**

**This is heading 5                   -----→<h5>**

**This is heading 6                   -----→<h6>**

## Paragraph Tag

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

Example:

**<p>Here is a first paragraph of text</p>**

## **Examples of HTML TAGS**

**Meta Tags:** DOCTYPE, title, link, meta and style.

**Text Tags:** <p>, <h1>, <h2>, <h3>, <h4>, <h5>, <h6>, <var>, <br> etc...

**Link Tags:** <a> and <base>

**Image and Object Tags:** <img>, <object>

**List Tags:** <ul>, <ol>, <li>, <dl>, <dt> and <dd>

**Table Tags:** <table>, <tr>, <td>, <th>, <caption>

**Form Tags:** <form>, <input>, <textarea>, <select>, <button>, <label>

**Special Tag:** <div>

## **HTML – ELEMENTS**

An HTML element is defined by a starting tag. If the element contains other content, it ends with a closing tag. <p> is an HTML element</p>

### **HTML Tag vs. Element**

For example, <p> is starting tag of a paragraph and </p> is closing tag of the same paragraph but <p>This is paragraph</p> is a paragraph element.

### **Empty HTML Elements**

HTML elements with no content are called empty elements.

Eg:

<br> tag defines a line break and

<hr> tag defines a horizontal line

## HTML – ATTRIBUTES

- An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag. It provide additional information about elements. It's are always specified in the start tag. All attributes are made up of two parts: a name and a value:
- The **name** is the property you want to set. For example, the paragraph <p> element in the example carries an attribute whose name is **align**, which you can use to indicate the alignment of paragraph on the page.
- The **value** is what you want the value of the property to be set and always put within quotations. The below example shows three possible values of align attribute: left, center and right.

Example:

- ❖ **href** Attribute: The <a> tag defines a hyperlink. The **href** attribute specifies the URL of the page the link goes to:

```
<a href="https://www.w3schools.com">Visit 3Schools</a>
```

- ❖ **src** Attribute:- The <img> tag is used to embed an image in an HTML page. The src attribute specifies the path to the image to be displayed.

```

```

- ❖ **width and height** Attributes:- The <img> tag should also contain the width and height attributes , which specify the width and height of the image (in pixels):



- ❖ **alt** Attribute:- The required alt attribute for the <img> tag specifies an alternate text for an image, if the image for some reason cannot be displayed.



- ❖ **style** Attribute:- The style attribute is used to add styles to an element, such as color, font, size, and more.

<p style="color:red;">This is a red paragraph.</p>

- ❖ **title** Attribute:- The title attribute defines some extra information about an element.

<p title="I'm a tooltip">This is a paragraph.</p>

## HTML – TEXT FORMATTING

If you use a word processor, you must be familiar with the ability to make text bold, italicized, or underlined; these are just three of the ten options available to indicate how text can appear in HTML and XHTML.

### **Example:**

- The HTML **<b>** element defines bold text.
- The HTML **<i>** element defines italic text.
- The HTML **<strong>** element is used to define text with strong importance. The content inside is typically displayed in bold.
- The HTML **<small>** element defines smaller text.

- The HTML **<sup>** element defines superscript text. Superscript text appears half a character above the normal line, and is sometimes rendered in a smaller font.
- The HTML **<sub>** element defines subscript text. Subscript text appears half a character below the normal line, and is sometimes rendered in a smaller font.
- The HTML **<ins>** element defines a text that has been inserted into a document. Browsers will usually underline inserted text.
- The HTML **<del>** element defines text that has been deleted from a document. Browsers will usually strike a line through deleted text.

## **HTML- IMAGES**

Images are very important to beautify as well as to depict many complex concepts in simple way on your web page. This tutorial will take you through simple steps to use images in your web pages.

### **Insert Image**

You can insert any image in your web page by using **<img>** tag. Following is the simple syntax to use this tag.

```

```

**Example :** To try following example, let's keep our HTML file test.htm and image file test.png in the same directory:

```
<!DOCTYPE html>
<html>
<head>
<title>Using Image in Webpage</title>
</head>
<body>
<p>Simple Image Insert</p>

</body></html>
```

## Set Image Width/Height

You can set image width and height based on your requirement using **width** and **height** attributes. You can specify width and height of the image in terms of either pixels or percentage of its actual size.

Example:

```
<!DOCTYPE html>
<html>
<head>
<title>Set Image Width and Height</title>
</head>
<body>
<p>Setting image width and height</p>

</body>
</html>
```

## Set Image Border

By default, image will have a border around it, you can specify border thickness in terms of pixels using **border** attribute. A thickness of 0 means, no border around the picture.

Example:

```
<!DOCTYPE html>
<html>
<head>
<title>Set Image Border</title>
</head>
<body>
<p>Setting image Border</p>

```

```
</body>
</html>
```

## **Set Image Alignment**

By default, image will align at the left side of the page, but you can use **align** attribute to set it in the center or right.

Example:

```
<!DOCTYPE html>
<html>
<head>
<title>Set Image Alignment</title>
</head>
<body>
<p>Setting image Alignment</p>

</body>
</html>
```

## **HTML-LINKS**

A webpage can contain various links that take you directly to other pages and even specific parts of a given page. These links are known as hyperlinks.

Hyperlinks allow visitors to navigate between Web sites by clicking on words, phrases, and images. Thus you can create hyperlinks using text or images available on a webpage.

### **Linking Documents**

A link is specified using HTML tag <a>. This tag is called anchor tag and anything between the opening <a> tag and the closing </a> tag



becomes part of the link and a user can click that part to reach to the linked document. Following is the simple syntax to use <a> tag.

```
<a href = "Document URL" ... attributes-list>Link Text</a>
```

Example:

```
<!DOCTYPE html>
<html>

  <head>
    <title>Hyperlink Example</title>
  </head>

  <body>
    <p>Click following link</p>
    <a href = "https://www.tutorialspoint.com" target = "_self">Tutorials Point</a>
  </body>

</html>
```

## The target Attribute

We have used **target** attribute in our previous example. This attribute is used to specify the location where linked document is opened. Following are the possible options –

Sr.No	Option & Description
1	<b>_blank</b>  Opens the linked document in a new window or tab.
2	<b>_self</b>  Opens the linked document in the same frame.

3	<b>_parent</b>  Opens the linked document in the parent frame.
4	<b>_top</b>  Opens the linked document in the full body of the window.
5	<b>targetframe</b>  Opens the linked document in a named <i>targetframe</i> .

## Use of Base Path

When you link HTML documents related to the same website, it is not required to give a complete URL for every link. You can get rid of it if you use **<base>** tag in your HTML document header. This tag is used to give a base path for all the links. So your browser will concatenate given relative path to this base path and will make a complete URL.

Example:

Following example makes use of **<base>** tag to specify base URL and later we can use relative path to all the links instead of giving complete URL for every link.

```
<!DOCTYPE html>
<html>

  <head>
    <title>Hyperlink Example</title>
    <base href = "https://www.tutorialspoint.com/">
  </head>
```

```
<body>
  <p>Click following link</p>
  <a href = "/html/index.htm" target = "_blank">HTML Tutorial</a>
</body>

</html>
```

## **Image as hyperlink**

We just need to use an image inside hyperlink at the place of text as shown below –

```
<!DOCTYPE html>
<html>

  <head>
    <title>Image Hyperlink Example</title>
  </head>

  <body>
    <p>Click following link</p>
    <a href = "https://www.tutorialspoint.com" target = "_self">
      <img src = "/images/logo.png" alt = "Tutorials Point" border = "0"/>
    </a>
  </body>

</html>
```

## **Button as a Link**

Example

```
<button onclick="url ">HTML</button>
```

# HTML-LISTS

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)

## Ordered 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.

```
<!DOCTYPE html>
<html>

  <head>
    <title>HTML Ordered List</title>
  </head>

  <body>
    <ol>
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ol>
  </body>

</html>
```

## Unordered List

In HTML Unordered list, all the list items are marked with bullets. It is also known as bulleted list also. The Unordered list starts with <ul> tag and list items start with the <li> tag.

```
<!DOCTYPE html>
<html>

  <head>
    <title>HTML Unordered List</title>
  </head>

  <body>
    <ul>
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ul>
  </body>

</html>
```

## Description List

HTML and XHTML supports a list style which is called **definition lists** where entries are listed like in a dictionary or encyclopedia. The definition list is the ideal way to present a glossary, list of terms, or other name/value list.

Definition List makes use of following three tags.

- <dl> – Defines the start of the list
- <dt> – A term
- <dd> – Term definition

## Example

```
<!DOCTYPE html>
<html>

  <head>
    <title>HTML Definition List</title>
  </head>

  <body>
    <dl>
      <dt><b>HTML</b></dt>
      <dd>This stands for Hyper Text Markup Language</dd>
      <dt><b>HTTP</b></dt>
      <dd>This stands for Hyper Text Transfer Protocol</dd>
    </dl>
  </body>

</html>
```

## 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.

Example:

```
<!DOCTYPE html>
<html>

  <head>
    <title>HTML Table </title>
  </head>

  <body>
    <table border = "1">
      <tr>
        <th>Name</th>
        <th>Salary</th>
      </tr>
      <tr>
        <td>Ramesh Raman</td>
        <td>5000</td>
      </tr>

      <tr>
        <td>Shabbir Hussein</td>
        <td>7000</td>
      </tr>
    </table>
  </body>
</html>
```

## **HTML Table with rowspan and colspan**

The rowspan and colspan are the attributes of <td> tag. These are used to specify the number of rows or columns a cell should merge. The rowspan attribute is for merging rows and the colspan attribute is for merging columns of the table in HTML.

Example:

```
<!DOCTYPE html>
<html>
<head></head>
<body>
<table>
<tr>
<td colspan="add_numberof_cols"></td>
</tr>
<tr>
<td rowspan="add_numberof_rows"></td>
</tr>
</table>
</body>
</html>
```

## Margin and Padding

Margin and Padding are the two most commonly used properties for spacing-out elements. A margin is the space **outside** something, whereas padding is the space **inside** something.

**margin** is a shorthand property. Margins can be set on sides independently with **margin-top**, **margin-right**, **margin-bottom**, and **margin-left**.

**margin: 10px 20px 30px 40px;** is the same as **margin-top: 10px; margin-right: 20px; margin-bottom: 30px; margin-left: 40px;**

**padding** is a shorthand property. Padding can be set on sides independently with **padding-top**, **padding-right**, **padding-bottom**, and **padding-left**.

**padding: 10px 20px 30px 40px;** is the same as **padding-top: 10px; padding-right: 20px; padding-bottom: 30px; padding-left: 40px;**



# 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.

The HTML **<form>** tag is used to create an HTML form and it has following syntax –

```
<form action = "Script URL" method = "GET|POST">  
    form elements like input, textarea etc.  
</form>
```

## HTML Form Controls

There are different types of form controls that you can use to collect data using HTML form –

- Text Input Controls
- Checkboxes Controls
- Radio Box Controls
- Select Box Controls
- File Select boxes
- Hidden Controls
- Clickable Buttons
- Submit and Reset Button

Example:

```
<!DOCTYPE html>
<html>
<head>
  <title>Form in HTML</title>
</head>
<body>
  <h2>Registration form</h2>
  <form>
    <fieldset>
      <legend>User personal information</legend>
      <label>Enter your full name</label> <br>
      <input type="text" name="name"> <br>
      <label>Enter your email</label> <br>
      <input type="email" name="email"> <br>
      <label>Enter your password</label> <br>
      <input type="password" name="pass"> <br>
      <label>confirm your password</label> <br>
      <input type="password" name="pass"> <br>
      <br> <label>Enter your gender</label> <br>
      <input type="radio" id="gender" name="gender" value="male"/>Male <br>
      <input type="radio" id="gender" name="gender" value="female"/>Female <br>
      <input type="radio" id="gender" name="gender" value="others"/>others <br>
      <br>Enter your Address:<br>
      <textarea> <br>
      <input type="submit" value="sign-up">
    </fieldset>
  </form>
</body>
</html>
```

## **HTML iframes**

HTML Iframe is used to display a nested webpage (a webpage within a webpage). The HTML <iframe> tag defines an inline frame, hence it is also called as an Inline frame.

An HTML iframe embeds another document within the current HTML document in the rectangular region.

The webpage content and iframe contents can interact with each other using JavaScript.

### **Iframe Syntax**

An HTML iframe is defined with the <iframe> tag:

```
<iframe src="URL"></iframe>
```

## **HTML-MEDIA**

### **VIDEO**

To show a video in HTML, use the <video> element:

```
<!DOCTYPE html>
<html>
<body>
<video width="320" height="240" controls>
  <source src="movie.mp4" type="video/mp4">
</video>
</body>
</html>
```

## **AUDIO**

To play an audio file in HTML, use the <audio> element:

```
<!DOCTYPE html>
<html>
<body>
<audio controls>
<source src="song.mp3" type="audio/mpeg">
</audio>
</body>
</html>
```