
HTML Basics

What is HTML?

HTML is a language for describing web pages.

- ❑ HTML stands for **H**yper **T**ext **M**arkup **L**anguage
- ❑ HTML is not a programming language, it is a **markup language**
- ❑ A markup language is a set of **markup tags**
- ❑ HTML uses **markup tags** to describe web pages

HTML Tags

- ❑ HTML tags are keywords surrounded by **angle brackets** like `<html>`
- ❑ HTML tags normally **come in pairs** like `` and ``
- ❑ The first tag in a pair is the **start tag**, the second tag is the **end tag**
- ❑ Start and end tags are also called **opening tags** and **closing tags**.

HTML Documents = Web Pages

- HTML documents **describe web pages**
- HTML documents **contain HTML tags** and plain text
- HTML documents are also **called web pages**

The purpose of a web browser (like Internet Explorer or Firefox) is to read HTML documents and display them as web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page:

Example

```
<html>  
  <body>  
  
    <h1>First Heading</h1>  
  
    <p>first paragraph</p>  
  
  </body>  
</html>
```

Example Explained

- ❑ The text between `<html>` and `</html>` describes the web page
- ❑ The text between `<body>` and `</body>` is the visible page content
- ❑ The text between `<h1>` and `</h1>` is displayed as a heading
- ❑ The text between `<p>` and `</p>` is displayed as a paragraph

Editing HTML

- ❑ We may use plain text editor (like Notepad) to edit HTML. This is the best way to learn HTML.
- ❑ However, professional web developers often prefer HTML editors like FrontPage or Dreamweaver, instead of writing plain text.

HTM or HTML Extension?

- When you save an HTML file, you can use either the .htm or the .html extension. We use .htm in our examples. It is a habit from the past, when the software only allowed three letters in file extensions.**
- With new software it is perfectly safe to use .html.**

HTML Headings

- HTML headings are defined with the `<h1>` to `<h6>` tags.

`<h1>This is a heading</h1>`

`<h2>This is a heading</h2>`

`<h3>This is a heading</h3>`

HTML Paragraphs

- HTML paragraphs are defined with the `<p>` tag.

`<p>This is a paragraph</p>`

`<p>This is another paragraph</p>`

HTML Links

- HTML links are defined with the `<a>` tag.

```
<a href="http://www.du.ac.in">Delhi University</a>
```

HTML Images

- HTML images are defined with the `` tag.

```

```

Note: The name and the size of the image are provided as attributes.

HTML Elements

- An HTML element is everything from the start tag to the end tag:

Start tag

Element content

End tag

<p>

This is a paragraph

</p>

This is a link

</br>

*The start tag is often called the **opening tag**. The end tag is often called the **closing tag**.

HTML Element Syntax

- ❑ An HTML element starts with a **start tag / opening tag**
- ❑ An HTML element ends with an **end tag / closing tag**
- ❑ The **element content** is everything between the start and the end tag
- ❑ Some HTML elements have **empty content**
- ❑ Empty elements are **closed in the start tag**
- ❑ Most HTML elements can have **attributes**

Nested HTML Elements

- Most HTML elements can be nested (can contain other HTML elements).
- HTML documents consist of nested HTML elements.

HTML Document Example

```
<html>
```

```
<body>
```

```
<p>This is my first paragraph</p>
```

```
</body>
```

```
</html>
```


Example Explained

The `<p>` element:

`<p>This is my first paragraph</p>`

- ❑ The `<p>` element defines a paragraph in the HTML document
- ❑ The element has a start tag `<p>` and an end tag `</p>`
- ❑ The element content is: This is my first paragraph

The `<body>` element:

`<body>`

`<p>This is my first paragraph</p>`

`</body>`

- ❑ The `<body>` element defines the body of the HTML document
- ❑ The element has a start tag `<body>` and an end tag `</body>`
- ❑ The element content is another HTML element (a paragraph)

The `<html>` element:

```
<html>
```

```
<body>
```

```
<p>This is my first paragraph</p>
```

```
</body>
```

```
</html>
```

- ❑ The `<html>` element defines the whole HTML document
- ❑ The element has a start tag `<html>` and an end tag `</html>`
- ❑ The element content is another HTML element (the body)

Don't Forget the End Tag

Most browsers will display HTML correctly even if you forget the end tag:

```
<p>This is a paragraph
```

```
<p>This is a paragraph
```

The example above will work in most browsers, but don't rely on it. Forgetting the end tag can produce unexpected results or errors.

Empty HTML Elements

- ❑ HTML elements without content are called empty elements. Empty elements can be closed in the start tag.
- ❑ `
` is an empty element without a closing tag (it defines a line break).
- ❑ Adding a slash to the start tag, like `
`, is the proper way of closing empty elements, accepted by HTML
- ❑ Even if `
` works in all browsers, writing `
` instead is more future proof.

HTML Attributes

- ❑ HTML elements can have **attributes**
- ❑ Attributes provide **additional information** about the element
- ❑ Attributes are always specified in **the start tag**
- ❑ Attributes come in name/value pairs like: **name="value"**

Attribute Example

- HTML links are defined with the `<a>` tag. The link address is provided as an attribute:

```
<a href="http://www.du.ac.in">Delhi University</a>
```

Always Quote Attribute Values

- ❑ Attribute values should always be enclosed in quotes.
- ❑ Double style quotes are the most common, but single style quotes are also allowed.

HTML Rules (Lines)

- The `<hr />` tag is used to create an horizontal rule (line).

Example

```
<p>This is a paragraph</p>  
<hr />  
<p>This is a paragraph</p>  
<hr />  
<p>This is a paragraph</p>
```

HTML Comments

- ❑ **Comments can be inserted in the HTML code to make it more readable and understandable. Comments are ignored by the browser and are not displayed.**
- ❑ **Comments are written like this:**

<!-- This is a comment -->

Note: There is an exclamation point after the opening bracket, but not before the closing bracket.

How to View HTML Source

To find out, click the VIEW option in your browser's menu bar and select SOURCE or PAGE SOURCE. This will open a window that shows you the HTML code of the page.

HTML Formatting Tags

- HTML uses tags like `` and `<i>` for formatting output, like **bold** or *italic* text.
- These HTML tags are called formatting tags.

Formatting Text

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

```
<p><b>This text is bold</b></p>  
<p><strong>This text is strong</strong></p>  
<p><big>This text is big</big></p>  
<p><em>This text is emphasized</em></p>  
<p><i>This text is italic</i></p>  
<p><small>This text is small</small></p>  
<p>This is<sub> subscript</sub> and  
    <sup>superscript</sup></p>
```

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

Address Formatting

```
<html>
```

```
<body>
```

```
<address>
```

```
Donald Duck<br>
```

```
BOX 555<br>
```

```
Disneyland<br>
```

```
USA
```

```
</address>
```

```
</body>
```

```
</html>
```

Deleted and Inserted Text

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

```
<p>
a dozen is
<del>twenty</del>
<ins>twelve</ins>
pieces
</p>
```

```
<p>
Most browsers will overstrike deleted text and underline inserted text.
</p>
```

```
<p>
Some older browsers will display deleted or inserted text as plain text.
</p>
```

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

Text Formatting Tags

Tag	Description
<u></u>	Defines bold text
<u><big></u>	Defines big text
<u></u>	Defines emphasized text
<u><i></u>	Defines italic text
<u><small></u>	Defines small text
<u></u>	Defines strong text
<u><sub></u>	Defines subscripted text
<u><sup></u>	Defines superscripted text
<u><ins></u>	Defines inserted text
<u></u>	Defines deleted text
<u><s></u>	Deprecated. Use <u></u> instead
<u><strike></u>	Deprecated. Use <u></u> instead
<u><u></u>	Deprecated. Use styles instead

Hyperlinks, Anchors, and Links

- ❑ In web terms, a hyperlink is a reference (an address) to a resource on the web.
- ❑ Hyperlinks can point to any resource on the web: an HTML page, an image, a sound file, a movie, etc.
- ❑ An anchor is a term used to define a hyperlink destination inside a document.
- ❑ **The HTML anchor element `<a>`, is used to define both hyperlinks and anchors.**
- ❑ We will use the term HTML link when the `<a>` element points to a resource, and the term HTML anchor when the `<a>` elements defines an address inside a document..

An HTML Link

- Link syntax:

```
<a href="url">Link text</a>
```

- The start tag contains attributes about the link.
- The element content (Link text) defines the part to be displayed.

Note: The element content doesn't have to be text. You can link from an image or any other HTML element.

The href Attribute

- ❑ The **href attribute** defines the link "address".
- ❑ This `<a>` element defines a link to Delhi University Website:
- ❑ `Visit Delhi University`
- ❑ The code above will display like this in a browser:

[Visit Delhi University](http://www.du.ac.in)

The target Attribute

- ❑ The **target attribute** defines **where** the linked document will be opened.
- ❑ The code below will open the document in a new browser window:

```
<a href=http://www.du.ac.in target="_blank">Visit Delhi University</a>
```

The Alt Attribute

- The alt attribute is used to define an "alternate text" for an image. The value of the alt attribute is an author-defined text:

```

```

- The "alt" attribute tells the reader what he or she is missing on a page if the browser can't load images. The browser will then display the alternate text instead of the image. It is a good practice to include the "alt" attribute for each image on a page, to improve the display and usefulness of your document for people who have text-only browsers.

Basic Notes - Useful Tips

- If an HTML file contains ten images - eleven files are required to display the page right. Loading images take time, so my best advice is: Use images carefully.

Tables

- Tables are defined with the `<table>` tag. A table is divided into rows (with the `<tr>` tag), and each row is divided into data cells (with the `<td>` tag). The letters `td` stands for "table data," which is the content of a data cell. A data cell can contain text, images, lists, paragraphs, forms, horizontal rules, tables, etc.

Example

```
<table border="1">  
  <tr>  
    <td>row 1, cell 1</td>  
    <td>row 1, cell 2</td>  
  </tr>  
  <tr>  
    <td>row 2, cell 1</td>  
    <td>row 2, cell 2</td>  
  </tr>  
</table>
```


Tables and the Border Attribute

- ❑ If you do not specify a border attribute the table will be displayed without any borders. Sometimes this can be useful, but most of the time, you want the borders to show.
- ❑ To display a table with borders, you will have to use the border attribute:

```
<table border="1">  
  <tr>  
    <td>Row 1, cell 1</td>  
    <td>Row 1, cell 2</td>  
  </tr>  
</table>
```

Headings in a Table

- Headings in a table are defined with the `<th>` tag.

```
<table border="1">
<tr>
<th>Heading</th>
<th>Another Heading</th>
</tr>
<tr>
<td>row 1, cell 1</td>
<td>row 1, cell 2</td>
</tr>
<tr>
<td>row 2, cell 1</td>
<td>row 2, cell 2</td>
</tr>
</table>
```

Empty Cells in a Table

- Table cells with no content are not displayed very well in most browsers.

```
<table border="1">  
  <tr>  
    <td>row 1, cell 1</td>  
    <td>row 1, cell 2</td>  
  </tr>  
  <tr>  
    <td>row 2, cell 1</td>  
    <td></td>  
  </tr>  
</table>
```

Note that the borders around the empty table cell are missing (NB! Mozilla Firefox displays the border).

Empty Cells in a Table

- To enforce border display by the browser the following code should be used.

```
<table border="1">  
  <tr>  
    <td>row 1, cell 1</td>  
    <td>row 1, cell 2</td>  
  </tr>  
  <tr>  
    <td>row 2, cell 1</td>  
    <td>&nbsp;</td>  
  </tr>  
</table>
```

Unordered Lists

- An unordered list is a list of items. The list items are marked with bullets (typically small black circles).
- An unordered list starts with the `` tag. Each list item starts with the `` tag.

```
<ul>  
  <li>Coffee</li>  
  <li>Milk</li>  
</ul>
```

Ordered Lists

- An ordered list is also a list of items. The list items are marked with numbers.
- An ordered list starts with the `` tag. Each list item starts with the `` tag.

```
<ol>  
  <li>Coffee</li>  
  <li>Milk</li>  
</ol>
```

Forms

- ❑ A form is an area that can contain form elements.
- ❑ Form elements are elements that allow the user to enter information (like text fields, textarea fields, drop-down menus, radio buttons, checkboxes, etc.) in a form.
- ❑ A form is defined with the `<form>` tag.

`<form>`

·
input elements

·
`</form>`

Input

- The most used form tag is the `<input>` tag. The type of input is specified with the `type` attribute. The most commonly used input types are being explained one by one.

Text Fields

- Text fields are used when you want the user to type letters, numbers, etc. in a form.

```
<form>  
  First name:  
  <input type="text" name="firstname" />  
  <br />  
  Last name:  
  <input type="text" name="lastname" />  
</form>
```

Note that the form itself is not visible. Also note that in most browsers, the width of the text field is 20 characters by default.

Radio Buttons

- Radio Buttons are used when you want the user to select one of a limited number of choices.

```
<form>  
  <input type="radio" name="sex" value="male" /> Male  
  <br />  
  <input type="radio" name="sex" value="female" />  
  Female  
</form>
```

Note that only one option can be chosen.

Checkboxes

- ❑ Checkboxes are used when you want the user to select one or more options of a limited number of choices.

```
<form>
```

```
  I have a bike:
```

```
  <input type="checkbox" name="vehicle" value="Bike" />
```

```
  <br />
```

```
  I have a car:
```

```
  <input type="checkbox" name="vehicle" value="Car" />
```

```
  <br />
```

```
  I have an airplane:
```

```
  <input type="checkbox" name="vehicle" value="Airplane" />
```

```
</form>
```

The Form's Action Attribute and the Submit Button

- When the user clicks on the "Submit" button, the content of the form is sent to the server. The form's action attribute defines the name of the file to send the content to. The file defined in the action attribute usually does something with the received input.

```
<form name="input" action="html_form_submit.asp"
  method="get">
  Username:
  <input type="text" name="user" />
  <input type="submit" value="Submit" />
</form>
```

If you type some characters in the text field above, and click the "Submit" button, the browser will send your input to a page called "html_form_submit.asp". The page will show you the received input.

Complete Form Code

```
<form action="test.asp" method="get">
  <input type="text" name="lastname" value="Nixon" size="30"
  maxlength="50">
  <input type="password">
  <input type="checkbox" checked="checked">
  <input type="radio" checked="checked">
  <input type="submit">
  <input type="reset">
  <input type="hidden">

  <select>
  <option>Apples
  <option selected>Bananas
  <option>Cherries
  </select>
  <textarea name="Comment" rows="6" cols="20"></textarea>
</form>
```

Thank You