HTML stands for **H**yper**t**ext **M**arkup **L**anguage, and it is the most widely used language to write Web Pages.

* **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.

Originally, HTML was developed with the intent of defining the structure of documents like headings, paragraphs, lists, and so forth to facilitate the sharing of scientific information between researchers.

Now, HTML is being widely used to format web pages with the help of different tags available in HTML language.

HTML Tags

|  |  |
| --- | --- |
| **Sr.No** | **Tag & Description** |
| 1 | **<!DOCTYPE...>**  This tag defines the document type and HTML version. |
| 2 | **<html>**  This tag encloses the complete HTML document and mainly comprises of document header which is represented by <head>...</head> and document body which is represented by <body>...</body> tags. |
| 3 | **<head>**  This tag represents the document's header which can keep other HTML tags like <title>, <link> etc. |
| 4 | **<title>**  The <title> tag is used inside the <head> tag to mention the document title. |
| 5 | **<body>**  This tag represents the document's body which keeps other HTML tags like <h1>, <div>, <p> etc. |
| 6 | **<h1>**  This tag represents the heading. |
| 7 | **<p>**  This tag represents a paragraph. |

## Heading Tags

You can use different sizes for your headings.

HTML also has six levels of headings, which use the elements **<h1>, <h2>, <h3>, <h4>, <h5>,** and **<h6>**.

## Paragraph Tag

An opening **<p>** and a closing **</p>**. To make different paragraphs.

## Line Break Tag

## <br /> element, anything following it starts from the next line. Empty element, where you do not need opening and closing tags.

## The <br /> tag has a space between the characters br and the forward slash. If you omit this space, older browsers will have trouble rendering the line break, *while if you miss the forward slash character and just use <br> it is not valid in XHTML*.

## Centering Content

## You can use <center> tag to put any content in the center of the page or any table cell.

## Horizontal Lines

## Horizontal lines are used to visually break-up sections of a document i.e. <hr> tag.

## <hr /> tag is an example of the empty element.

* Same description as <br /> tag.

## Preserve Formatting

Sometimes, you want your text to follow the exact format of how it is written in the HTML document. In these cases, you can use the preformatted tag **<pre>**.

## Nonbreaking Spaces

## Suppose you want to use the phrase "12 Angry Men." Here, you would not want a browser to split the "12, Angry" and "Men" across two lines

* Where you do not want the client browser to break text, you should use a nonbreaking space entity **&nbsp;** instead of a normal space.

Example:

<p>An example of this technique appears in the movie "12&nbsp;Angry&nbsp;Men."</p>

Result:

An example of this technique appears in the movie "12 Angry Men."

# **HTML - Elements**

An **HTML element** is defined by a starting tag. If the element contains other content, it ends with a closing tag.

|  |
| --- |
|  |
| **Start Tag** | **Content** | **End Tag** |
| <p> | This is paragraph content. | </p> |
| <h1> | This is heading content. | </h1> |
| <div> | This is division content. | </div> |
| <br /> |  |  |

There are some HTML elements which don't need to be closed, such as **<img.../>**, **<hr />** and **<br />** elements. These are known as **void elements**.

## HTML Tag vs. Element

* An HTML element is defined by a *starting tag*. If the element contains other content, it ends with a *closing tag*.
* 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.

## Nested HTML Elements

## One HTML element inside another HTML element.

# **HTML – Attributes**

## An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening 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**.

## Attribute names and attribute values are case-insensitive. However, the World Wide Web Consortium (W3C) recommends lowercase attributes/attribute values in their HTML 4 recommendation.

**Example:**

<p align = "left">This is left aligned</p>

<p align = "center">This is center aligned</p>

<p align = "right">This is right aligned</p>

**Result:**

This is left aligned

This is center aligned

This is right aligned

## Core Attributes

Used on the majority of HTML elements:

* **Id**

Id attribute as a unique identifier.

* **Title**

The title attribute gives a suggested title for the element.

Example:

<h3 title = "Hello HTML!">Titled Heading Tag Example</h3>

Result:

* Titled Heading Tag Example

Now try to bring your cursor over "Titled Heading Tag Example" and you will see that whatever title you used in your code is coming out as a tooltip of the cursor i.e. Hello HTML!

* **Class**

The class attribute is used to associate an element with a style sheet.

For example −

class = "className1 className2 className3"

* **Style**

The style attribute allows you to specify Cascading Style Sheet (CSS) rules within the element.

Example:

<p style = "font-family:arial; color:#FF0000;">Some text...</p>

Result:

Some text...

## Internationalization Attributes

There are three internationalization attributes, which are available for most (although not all) XHTML elements.

* dir
* lang
* xml:lang

### **The dir Attribute**

The **dir** attribute allows you to indicate to the browser about the direction in which the text should flow. The dir attribute can take one of two values, as you can see in the table that follows −

|  |  |
| --- | --- |
| **Value** | **Meaning** |
| ltr | Left to right (the default value) |
| rtl | Right to left (for languages such as Hebrew or Arabic that are read right to left) |

Example:

<!DOCTYPE html>

<html dir = "rtl">

<head>

<title>Display Directions</title>

</head>

<body>

This is how IE 5 renders right-to-left directed text.

</body>

</html>

Result –

.This is how IE 5 renders right-to-left directed text

When *dir* attribute is used within the <html> tag, it determines how text will be presented within the entire document. When used within another tag, it controls the text's direction for just the content of that tag.

### **The lang Attribute**

The **lang** attribute allows you to indicate the main language used in a document, but this attribute was kept in HTML only for backwards compatibility with earlier versions of HTML. This attribute has been replaced by the **xml:lang** attribute in new XHTML documents.

<html lang = "en">

**en** means that the page is using English Language.

## The xml:lang Attribute

The *xml:lang* attribute is the XHTML replacement for the *lang* attribute.

### **Generic Attributes**

Here's a table of some other attributes that are readily usable with many of the HTML tags.

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Options** | **Function** |
| align | right, left, center | Horizontally aligns tags |
| valign | top, middle, bottom | Vertically aligns tags within an HTML element. |
| bgcolor | numeric, hexidecimal, RGB values | Places a background color behind an element |
| background | URL | Places a background image behind an element |
| id | User Defined | Names an element for use with Cascading Style Sheets. |
| class | User Defined | Classifies an element for use with Cascading Style Sheets. |
| width | Numeric Value | Specifies the width of tables, images, or table cells. |
| height | Numeric Value | Specifies the height of tables, images, or table cells. |
| title | User Defined | "Pop-up" title of the elements. |

# **HTML - Formatting**

## Bold Text

Anything that appears within **<b>...</b>** element. Eg: **bold**

## Italic Text

Anything that appears within **<i>...</i>** element. Eg: *italicized*

## Underlined Text

Anything that appears within **<u>...</u>** element. Eg: underlined

## Strike Text

Anything that appears within **<strike>...</strike>** element.

Eg: ~~strikethrough~~

## Monospaced Font

The content of a **<tt>...</tt>** element is written in monospaced font. Most of the fonts are known as variable-width fonts because different letters are of different widths (for example, the letter 'm' is wider than the letter 'i'). In a monospaced font, however, each letter has the same width.

Eg: monospaced

## Superscript Text

The content of a **<sup>...</sup>** element is written in superscript; the font size used is the same size as the characters surrounding it but is displayed half a character's height above the other characters.

Eg: Uses a superscript typeface.

## Subscript Text

The content of a **<sub>...</sub>** element is written in subscript; the font size used is the same as the characters surrounding it, but is displayed half a character's height beneath the other characters.

Eg: Uses a subscript typeface.

## Inserted Text

Anything that appears within **<ins>...</ins>** element

Eg: <p>I want to drink <del>cola</del> <ins>wine</ins></p>

Result :

I want to drink  wine

## Deleted Text

Anything that appears within **<del>...</del>** element.

Eg: <p>I want to drink <del>cola</del> <ins>wine</ins></p>

Result :

I want to drink  wine

## Larger Text

The content of the **<big>...</big>** element is displayed one font size larger than the rest of the text surrounding.

<p>The following word uses a <big>big</big> typeface.</p>

Result:

The following word uses a big typeface.

## Smaller Text

The content of the **<small>...</small>** element is displayed one font size smaller than the rest of the text surrounding.

<p>The following word uses a <small>small</small> typeface.</p>

Result:

The following word uses a small typeface.

## Grouping Content

* The **<div>** and **<span>** elements allow you to group together several elements to create sections or subsections of a page.
* The <span> element, on the other hand, can be used to group inline elements only. So, if you have a part of a sentence or paragraph which you want to group together, you could use the <span> element as follows.

# **HTML - Phrase Tags**

## Emphasized Text

Anything that appears within **<em>...</em>** element is displayed as emphasized text.

<p>The following word uses an <em>emphasized</em> typeface.</p>

Result :

The following word uses an emphasized typeface.

## Marked Text

Anything that appears with-in **<mark>...</mark>** element, is displayed as marked with yellow ink.

<p>The following word has been <mark>marked</mark> with yellow</p>

Result:

The following word has been marked with yellow

## Strong Text

Anything that appears within **<strong>...</strong>** element is displayed as important text.

<p>The following word uses a <strong>strong</strong> typeface.</p>

Result:

The following word uses a **strong** typeface.

## Text Abbreviation

You can abbreviate a text by putting it inside opening <abbr> and closing </abbr> tags. If present, the title attribute must contain this full description and nothing else.

<p>My best friend's name is <abbr title = "Abhishek">Abhy</abbr>.</p>

Result:

My best friend's name is Abhy. (It shows Abhishek when you point the mouse)

## Acronym Element

The **<acronym>** element allows you to indicate that the text between <acronym> and </acronym> tags is an acronym.

<p>This chapter covers marking up text in <acronym>XHTML</acronym>.</p>

Result:

This chapter covers marking up text in XHTML. (It shows full form of XHTML when you keep the mouse on that)

## Text Direction

The **<bdo>...</bdo>** element stands for Bi-Directional Override and it is used to override the current text direction.

<p><bdo dir = "rtl">This text will go right to left.</bdo></p>

Result:

.tfel ot …

## Special Terms

The **<dfn>...</dfn>** element (or HTML Definition Element) allows you to specify that you are introducing a special term. It's usage is similar to italic words in the midst of a paragraph.

<p>The following word is a <dfn>special</dfn> term.</p>

Result:

The following word is a special term.

## Quoting Text

When you want to quote a passage from another source, you should put it in between **<blockquote>...</blockquote>** tags.

<p>The following description of XHTML is taken from the W3C Web site:</p>

<blockquote>XHTML 1.0 is the W3C's first Recommendation for XHTML,following on

from earlier work on HTML 4.01, HTML 4.0, HTML 3.2 and HTML 2.0.</blockquote>

Result:

The following description of XHTML is taken from the W3C Web site:

XHTML 1.0 is the W3C's first Recommendation for XHTML, following on from earlier work on HTML 4.01, HTML 4.0, HTML 3.2 and HTML 2.0.

## Short Quotations

The **<q>...</q>** element is used when you want to add a double quote within a sentence.

<p>Amit is in Spain, <q>I think I am wrong</q>.</p>

Result:

Amit is in Spain,”I think I am wrong”.

## Computer Code

Any programming code to appear on a Web page should be placed inside **<code>...</code>** tags.

<p>Regular text. <code>This is code.</code> Regular text.</p>

Result:

Regular text. This is code. Regular text.

## Programming Variables

This element is usually used in conjunction with the **<pre>** and **<code>**elements to indicate that the content of that element is a variable.

<p><code>document.write("<var>user-name</var>")</code></p>

Result:

document.write("user-name")

## Program Output

The **<samp>...</samp>** element indicates sample output from a program, and script etc. Again, it is mainly used when documenting programming or coding concepts.

<p>Result produced by the program is <samp>Hello World!</samp></p>

Result:

Result produced by the program is Hello World!

## Address Text

The **<address>...</address>** element is used to contain any address.

<address>388A, Road No 22, Jubilee Hills - Hyderabad</address>

Result:

*388A, Road No 22, Jubilee Hills – Hyderabad*

# **HTML - Meta Tags**

The **<meta>** tag is used to provide such additional important information about a document in a variety of ways.

Does not have a closing tag but it carries information within its attributes.

The META elements can be used to include name/value pairs describing properties of the HTML document, such as author, expiry date, a list of keywords, document author etc.

## Adding Meta Tags to Your Documents

You can add metadata to your web pages by placing <meta> tags inside the header of the document which is represented by **<head>** and **</head>** tags.

A meta tag can have following attributes in addition to core attributes −

|  |  |
| --- | --- |
| **Sr.No** | **Attribute & Description** |
| 1 | **Name**  Name for the property. Can be anything. Examples include, keywords, description, author, revised, generator etc. |
| 2 | **content**  Specifies the property's value. |
| 3 | **scheme**  Specifies a scheme to interpret the property's value (as declared in the content attribute). |
| 4 | **http-equiv**  Used for http response message headers. For example, http-equiv can be used to refresh the page or to set a cookie. Values include content-type, expires, refresh and set-cookie. |

## Specifying Keywords

You can use <meta> tag to specify important keywords related to the document and later these keywords are used by the search engines while indexing your webpage for searching purpose.

## Document Description

You can use <meta> tag to give a short description about the document.

## Document Revision Date

You can use <meta> tag to give information about when last time the document was updated. This information can be used by various web browsers while refreshing your webpage.

## Page Redirection

You can use <meta> tag to redirect your page to any other webpage. You can also specify a duration if you want to redirect the page after a certain number of seconds.

## Setting Cookies

Cookies are data, stored in small text files on your computer and it is exchanged between web browser and web server to keep track of various information based on your web application need.

You can use <meta> tag to store cookies on client side and later this information can be used by the Web Server to track a site visitor.

**Note** : If you do not include the expiration date and time, the cookie is considered a session cookie and will be deleted when the user exits the browser.

## Setting Author Name

You can set an author name in a web page using meta tag.

## Specify Character Set

You can use <meta> tag to specify character set used within the webpage.

To serve the static page with traditional Chinese characters, the webpage must contain a <meta> tag to set Big5 encoding.

<!DOCTYPE html>

<html>

<head>

<title>Meta Tags Example</title>

<meta name = "keywords" content = "HTML, Meta Tags, Metadata" />

<meta name = "description" content = "Learning about Meta Tags." />

<meta name = "revised" content = "Tutorialspoint, 3/7/2014" />

<meta http-equiv = "refresh" content = "5; url = http://www.tutorialspoint.com" />

<meta http-equiv = "cookie" content = "userid = xyz;

expires = Wednesday, 08-Aug-15 23:59:59 GMT;" />

<meta name = "author" content = "Mahnaz Mohtashim" />

<meta http-equiv = "Content-Type" content = "text/html; charset = UTF-8" />

<meta http-equiv = "Content-Type" content = "text/html; charset = Big5" />

</head>

<body>

<p>Hello HTML5!</p>

</body>

</html>

Result:

Hello HTML5!

# **HTML - Images**

## Insert Image

You can insert any image in your web page by using **<img>** tag.

The **alt** attribute is a mandatory attribute which specifies an alternate text for an image, if the image cannot be displayed.

The <img> tag is an empty tag, which means that, it can contain only list of attributes and it has no closing tag.

<img src = "/html/images/test.png" alt = "Test Image" width = "150" height = "100" border = "3" align = "right"/>

Result :

**It will show the test.png image**

# **HTML - Tables**

The HTML tables are created using the **<table>** tag in which the **<tr>** tag is used to create table rows and **<td>** tag is used to create data cells. The elements under <td> are regular and left aligned by default

## Table Heading

Table heading can be defined using **<th>** tag.

## Cellpadding and Cellspacing Attributes

There are two attributes called *cellpadding* and *cellspacing* which you will use to adjust the white space in your table cells. The cellspacing attribute defines space between table cells, while cellpadding represents the distance between cell borders and the content within a cell.

body>

<table border = "1" cellpadding = "5" cellspacing = "5" >

<tr>

<th>Name</th>

<th>Salary</th>

</tr>

<tr>

<td>Row 1, Column 1</td>

<td>Row 1, Column 2</td>

</tr>

<tr>

<td>Row 2, Column 1</td>

<td>Row 2, Column 2</td>

</tr>

</table>

</body>

Result:

|  |  |
| --- | --- |
| Row 1, Column 1 | Row 1, Column 2 |
| Row 2, Column 1 | Row 2, Column 2 |

If you do not need a border, then you can use border = "0".

## Colspan and Rowspan Attributes

You will use **colspan** attribute if you want to merge two or more columns into a single column. Similar way you will use **rowspan** if you want to merge two or more rows.

<body>

<table border = "1" width = "400" height = "150">

<caption>This is the caption</caption>

<tr>

<th>Column 1</th>

<th>Column 2</th>

<th>Column 3</th>

</tr>

<tr>

<td rowspan = "2">Row 1 Cell 1</td>

<td>Row 1 Cell 2</td>

<td>Row 1 Cell 3</td>

</tr>

<tr>

<td>Row 2 Cell 2</td>

<td>Row 2 Cell 3</td>

</tr>

<tr>

<td colspan = "3">Row 3 Cell 1</td>

</tr>

</table>

</body>

Result:

|  |  |  |
| --- | --- | --- |
| **Column 1** | **Column 2** | **Column 3** |
| Row 1 Cell 1 | Row 1 Cell 2 | Row 1 Cell 3 |
| Row 2 Cell 2 | Row 2 Cell 3 |
| Row 3 Cell 1 | | |

The three elements for separating the head, body, and foot of a table are −

* **<thead>** − to create a separate table header.
* **<tbody>** − to indicate the main body of the table.
* **<tfoot>** − to create a separate table footer.

## Nested Tables

You can use one table inside another table. Not only tables you can use almost all the tags inside table data tag <td>.