



What is HTML?

Hyper Text Markup Language, or HTML, is the **basic code** that make up the foundation of every website on the *World Wide Web*. HTML is used for **marking up text and other page content**, and for defining how a web page is **structured**.

HTML Syntax is a collection of words and symbols that can be understood by computer programs.

One of the most important features of Web documents is that they contain **hyperlinks** which let readers navigate to other documents

HTML is not a programming language, but rather a **markup** language

The latest revision of HTML is HTML5.

Constructing Elements

HTML web pages are made up of a number of **elements**. Each element has particular purpose; it might contain Some **text, Heading, Image, Or some information to be used by the browser**

Every HTML code should has three main elements

- ⌘ <html> element
- ⌘ <head> element
- ⌘ <body> element

<html> element is the **root** of HTML document. This means that it should contain all your HTML code

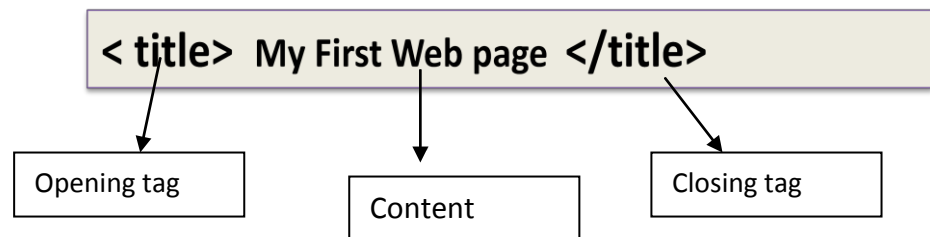
```
<html>
  <head>
    <title> My First web page </title>
  </head>
  <body>
    <p> Hello world </p>
  </body>
</html>
```



HTML Elements

Element consists of three essential pieces

- Opening tag
- Content
- Closing tag



HTML Tags

Element made up of **two tags**,

- start tag → < title>
- end tag → </title>

Note: Several elements do not have end tag, it calls **void elements**. Void element should not contain any content and therefore does not have end tag.

For example : line break tag

HTML Attributes

Start tags can also contain additional information by using attributes. These attributes **contain value (or set of values)** and are listed before the tag is closed with the > sign

```
< img src="image.jpg" width="300" height=" 100"
      alt = "A description of the image.">
```

The element is used to add image to your web page.

Note: that this is a **void element** so it has **no end tag**



Note: there are attributes you can use to change the color of the body page or add image

bgcolor attributes

```
<body bgcolor="#000000">
```

OR

```
<body bgcolor="black">
```

background attributes

```
<body background="clouds.gif">
```

HTML – Text

```
<html>
  <head>
    <title> My First web page ! </title>
  </head>
  <body>
    Hello world
  </body>
</html>
```

HTML text code



```
<html>
  <head>
    <title> My First web page ! </title>
  </head>

  <body>
    <p> Hello world...</p>
    <p> This is web programming course...</p>
  </body>
</html>
```

HTML paragraph
code

HTML Heading

HTML has heading tags which can be used as **headers** or **sub-headers**. By placing text inside of an `<h1>` heading tag

Heading tags are numbered 1 through 6, and they change size depending on which tag you choose, with **1 being the largest** font size at **24pt**, and **6 being the smallest** font size at **8pt**.

HTML heading code

```
<html>
  <head>
    <title> My First web page !
  </title>
  </head>

  <body>
    <h1>Headings</h1>
    <h2>are</h2>
    <h3>great</h3>
    <h4>for</h4>
    <h5>titles</h5>
    <h6>and subtitles</h6>
  </body>
</html>
```



HTML Output of
heading code

headings
are
great
for
titles
and subtitles

Notice: that each **heading** and **<p> tags** has a **line break (a blank line)** rendered before and after it. This is a built-in attribute associated with the heading tag and <p> tags.

Each time you place a heading tag, your web browser automatically **places a line break** in front of your beginning tag and after your ending tag.

HTML font

The tag provides no real functionality by itself, but with the help of a few attributes, this tag is used to change the style, size, and color of HTML text elements.

The **size**, **color**, and **face** attributes can be used all at once or individually.

HTML attributes	HTML code	HTML output
Font size The range of values { 1 -- the smallest, to 7 -- the largest} The default size of a font is 3.	 Here is a size 5 font 	Here is a size 5 font.
Font color	This text is hex color #990000 This text is red	This text is hex color #990000 This text is red
Font face	 This paragraph has had its font... 	This paragraph has had its font formatted by the font tag!



Example: Customize your fonts to achieve any desired look

```
<p><font size="7" face="Georgia, Arial" color="maroon">C</font>ustomize your font to achieve a  
desired look.</p>
```

Customize your font to achieve a desired look.

HTML Formatting

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

HTML Output of Formatting code

```
<html>  
  <head>  
    <title> My First web page ! </title>  
  </head>  
  
  <body>  
    <p>An example of <b> BoldText </b> </p>  
    <p>An example of <em> Emphasized Text </em> </p>  
    <p>An example of <strong> Strong Text</strong> </p>  
    <p>An example of <i> Italic Text</i> </p>  
    <p>An example of <sup> superscripted Text </sup> </p>  
    <p>An example of <sub> subscripted Text </sub> </p>  
    <p>An example of <del> struckthrough Text</del> </p>  
    <p>An example of <code>Computer Code Text</code> </p>  
  </body>  
</html>
```

HTML Output of Formatting code

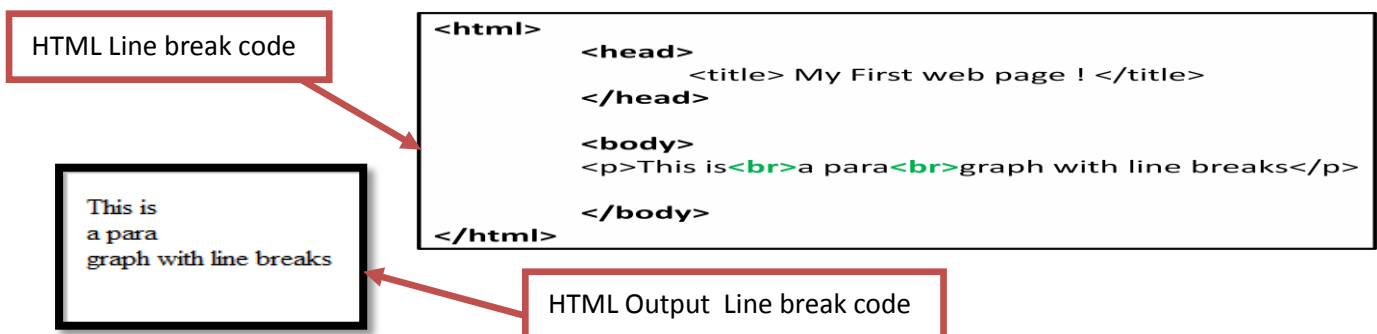
An example of **Bold Text**
An example of *Emphasized Text*
An example of **Strong Text**
An example of *Italic Text*
An example of ^{superscripted Text}
An example of _{subscripted Text}
An example of ~~struckthrough Text~~
An example of `Computer Code Text`



Tag	Description
	Defines bold text
	Defines emphasized text
<i>	Defines a part of text in an alternate voice or mood
<small>	Defines smaller text
	Defines important text
<sub>	Defines subscripted text
<sup>	Defines superscripted text
<ins>	Defines inserted text
	Defines deleted text
<mark>	Defines marked /highlighted text

HTML- Line break

Use the **
** tag if you want a line break (a new line) without starting a new paragraph. The **
** element is an **void** HTML element. **It has no end tag** .



Note: With HTML, you cannot change the output by adding extra spaces or extra lines in your HTML code. white space, tabs, and newlines are ignored by the browser. **Actually they are not ignored**, but multiple white spaces are replaced by a single space, while newlines and tabs are treated as spaces .

Escape sequences (ready-formatted text)

Sometimes you will want to include **ready-formatted text** on a Web page. When HTML finds a character such as **<** in the text of a page, it treats it as an **instruction**. **You cannot display such a character simply by using it in your page** , So, you can use the following structure ..



Escape sequences	Symbol
<code>&amp;</code>	<code>&</code>
<code>&lt;</code>	<code><</code>
<code>&gt;</code>	<code>></code>
<code>&quot;</code>	<code>"</code>
<code>&nbsp;</code>	
<code>&copy;</code>	<code>©</code>

Note: All of these replacement sequences start with, **&**, and are terminated with a **semicolon (;)**

HTML- `<pre>` performing

Use the `<pre>` tag for any special circumstances where you **wish to have the text appear exactly as it is typed**. Spaces, tabs, and line breaks that exist in your actual code will be preserved with the `<pre>` tag.

HTML of `<pre>`tag

```
<html>
  <head>
    <title> My First web page ! </title>
  </head>

  <body>
    <pre > Computer Science department,
      Course web programming </pre>

  </body>
</html>
```

```
Computer Science department,
  Course web programming
```

HTML Output of `<pre>` tag



HTML- comment

Programming languages include a mechanism called the **comment** that lets developers **write plain text** inside their code files. This plain text is used to describe what the program does and, sometimes, how it works

Comment tags start **<!** and end with **>**

- **<!** Content of comment **>** → for one line
- **<!--** Content of comment **-->** → multiple line

HTML – horizontal line

`<hr>` tag is horizontal line across the screen . These lines are used to break up the page and give it a little structure .



```
<hr align="left" width="50%" size="3">
```

HTML Output of `<hr>` tag

Attributes	value	Description
align	left center right	Specifies the alignment of a <code><hr></code> element
size	pixels	Specifies the height of a <code><hr></code> element
width	Pixels %	Specifies the width of a <code><hr></code> element



HTML- font

The tag provides no real functionality by itself, but with the help of a few attributes, this tag is **used to change the style, size, and color of HTML text elements**. The size, color, and face attributes can be used all at once or individually, providing users with the ability to create dynamic font styles for any HTML element.

? HTML font size Attribute

- Set the size of your font with size. The range of accepted values goes from 1 -- the smallest, to 7 -- the largest. The default size of a font is 3.

? HTML font color Attribute

? HTML font face Attribute (Font face is synonymous with font type)

HTML of tag

```
<html>
  <head>
    <title> My First web page ! </title>
  </head>

  <body>
    <p><font size="3" color="red">This is some text!</font></p>
    <p><font size="2" color="blue">This is some text!</font></p>
    <p><font face="verdana" color="green">This is some text!</font></p>
  </body>
</html>
```

HTML Output of
 tag

This is some text!

This is some text!

This is some text!

HTML Links

The HTML <a> tag defines a hyperlink. A **hyperlink** (or link) is a word, group of words, or image that you can click on to jump to another document. When you move the cursor over a link in a Web page, the arrow will turn into a little hand.

The most important attribute of the <a> element is the **href** attribute, which indicates the link's destination.



HTML of <a> tag

```
<html>
  <head>
    <title> My First web page ! </title>
  </head>

  <body>
    <a href="http://www.w3schools.com/"> Visit W3Schools</a>
  </body>
</html>
```

HTML Output of <a> tag

[Visit W3Schools](http://www.w3schools.com/)

- **HTML links – the target attribute (target="_blank")**
 - The target attribute specifies where to open the linked document. The example below will open the linked document in a **new browser window** or a **new tab**

Example of how to use **target** attribute of <a> tag.

```
<html>
  <head>
    <title> My First web page ! </title>
  </head>

  <body>
    <a href="http://www.w3schools.com/" target="_blank"> Visit W3Schools</a>
  </body>
</html>
```

HTML Images

In HTML, images are defined with the tag.

The tag is **void** tag, which means that it contains attributes only, and has no end tag.

To display an image on a page, you need to use the src attribute. Src stands for "source". The value of the src attribute is the URL of the image you want to display.

Syntax for defining image : .



HTML Images attributes

- src Attribute
- alt Attribute
 - to specifies an alternate text for an image, if the image cannot be displayed
- height and width Attributes
 - to specify the height and width of an image

Note: you can use tag and <a> tag to make image links. Try the following example

HTML of <a> and
 tag

```
<html>
  <head>
    <title> My First web page ! </title>
  </head>

  <body>
    <a href="http://www.w3schools.com/" target="_blank">
    </a>
  </body>
</html>
```



HTML Output of <a> and tag

HTML <title> Element

The <title> element is required in all HTML documents.

- defines a title in the browser toolbar
 - provides a title for the page when it is added to favorites
 - displays a title for the page in search-engine results
- **The HTML <script> Element**
The <script> tag is used to define a client-side script, such as a JavaScript. And it writes inside the <title> tag. The <script> element will be explained in JavaScript Lecture.



HTML table

Tables are defined with the `<table>` tag.

- A table is divided into rows with the `<tr>` tag. (tr stands for table row)
- A row is divided into data cells with the `<td>` tag. (td stands for table data)
- A row can also be divided into headings with the `<th>` tag. (th stands for table heading)

The `<td>` elements are the data containers in the table. The `<td>` elements can contain all sorts of HTML elements like text, images, lists, other tables, etc.

Table syntax

```
<table [align="center" | "left" | "right"] [border="n"]  
[cellpadding="n"] [width="nn%"] [cellspacing="n"] > . . . </table>
```

HTML of `<table>` tag

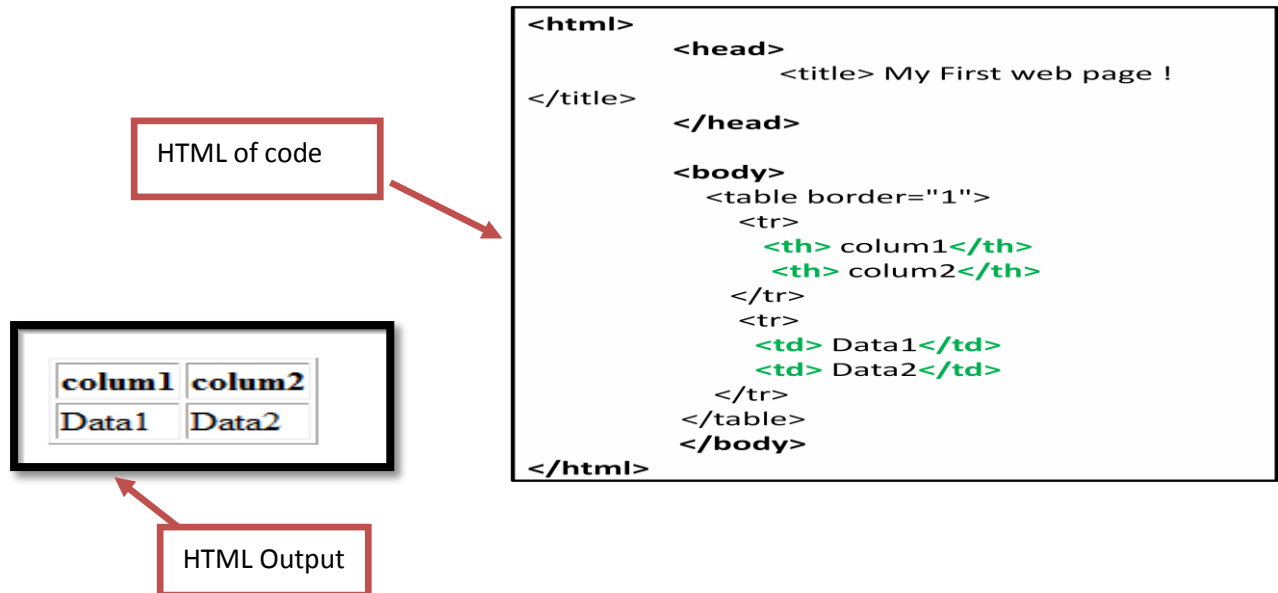
```
<html>  
  <head>  
    <title> My First web page !  
  </title>  
  </head>  
  <body>  
    <table >  
      <tr>  
        <td>Jill</td>  
        <td>Smith</td>  
        <td>50</td>  
      </tr>  
      <tr>  
        <td>Eve</td>  
        <td>Jackson</td>  
        <td>94</td>  
      </tr>  
    </table>  
  </body>  
</html>
```

Jill	Smith	50
Eve	Jackson	94

HTML Output of `<table>` tag



Note: <th> can be used instead of <td>. The difference between the two is that <th> is bolded and centered, whereas <td> is left aligned and unbolded .



HTML Table with a Border Attribute

If you do not specify a border style, the table will be displayed without borders. You can use border attribute to add border for table.

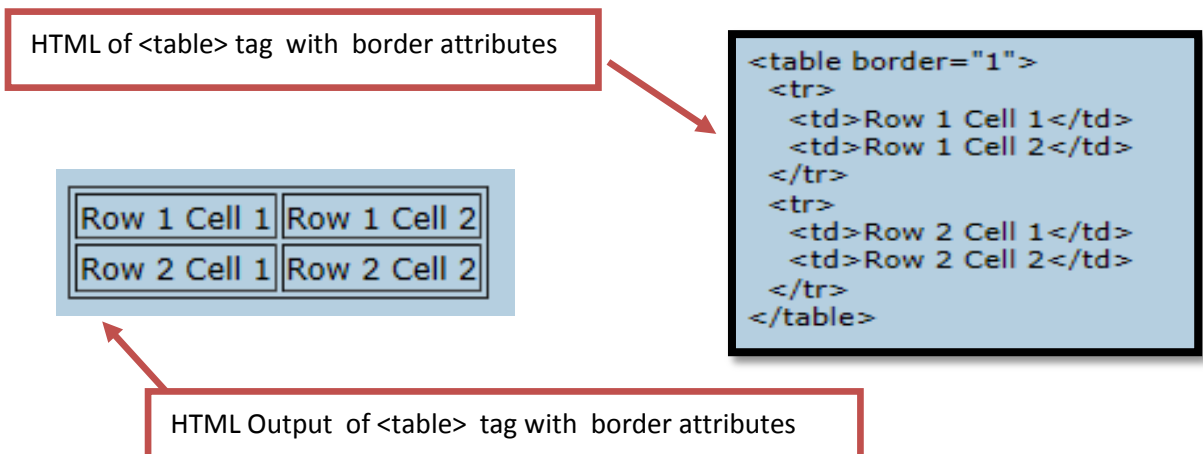




Table tag attributes

- **Cellpadding**, in pixels, determines how much space there is between the contents of a cell and its border.
- **cellspacing** sets the amount of white space between cells.
- **width** attribute sets the amount of the screen that the table will use
- **align** , aligns table left, right , center

Note: you can use **bgcolor** attribute to give table background color

The **colspan** and **rowspan** attributes allow individual cells to be larger than a one by one grid.

It is often useful to have a heading which spans more than one column, if you are nesting headings, in which case you should use colspan.

Similarly some data cells may need to be more than one cell deep and rowspan should be used

Align attribute with <tr> or <td>, aligns data left, right, center

HTML Lists

There are three type of lists

- Ordered lists
 - starts with the tag. Each list item starts with the tagThe list items are marked with numbers.
- Unordered lists
 - starts with the tag. Each list item starts with the tag. The list items are marked with bullets (typically small black circles).)
- Description lists
 - description list is a list of terms/names, with a description of each term/name



Type List	HTML code	HTML output
Ordered List	<pre> < li>Coffee < li>Milk < /ol></pre>	1. Coffee 2. Milk
Unordered List	<pre> < li>Coffee < li>Milk < /ul></pre>	• Coffee • Milk
Description lists	<pre><dl> < dt>Coffee</dt> < dd>- black hot drink</dd> < dt>Milk</dt> < dd>- white cold drink</dd> < /dl></pre>	Coffee - black hot drink Milk - white cold drink

Styling HTML with CSS

CSS can be added to HTML in the following ways

- Inline - using the style attribute in HTML elements
- Internal - using the `<style>` element in the `<head>` section
- External - using an external CSS file (it will explain in CSS lecture)[Inline Styles](#)

An inline style can be used if a unique style has to be applied to one single occurrence of an element.

Style Attributes

- background-color (defines the background color for an element)
- font-family (defines the font text in an element)
- color (defines the color text in an element)
- font-size (defines the size of the text in an element)
- text-align (defines the horizontal alignment of text in an element)



```
<html>
  <head>
    <title> My First web page !</title>
  </head>
  <body style="background-color:yellow;">
    <h2 style="background-color:red; font-
      family:verdana; text-align:center">This is a heading</h2>
  </body>
</html>
```

HTML using style



HTML Output
using style
attribute



This is a heading

Note: the values passed to the style attribute are actually CSS code. You should separate each CSS attribute with a semicolon (;). And add (:) colon before the value of each style attribute.

HTML <div>

The HTML <div> element is a block level element that can be used as a container for grouping other HTML elements. The browser will display a line break before and after it.

Another common use of the <div> element, is **for document layout**. It replaces the "old way" of defining layout using tables. Using <table> elements for layout is not the correct use of <table>. The purpose of the <table> element is to display tabular data.

HTML Layouts - Using <div> Elements

The following example uses five div elements to create a multiple column layout, creating the same result as in the previous example:



```
<html>
  <head>
    <title> My First web page !</title>
  </head>
  <body>
<div style="width:500px">
<div style="background-color:#FFA500;">
<h1 style="margin-bottom:0;">Main Title of Web Page</h1></div>
<div style="background-color:#FFD700;height:200px;width:100px;float:left;">
<b>Menu</b><br>HTML<br>CSS<br>JavaScript</div>
<div style="background-color:#EEEEEE;height:200px;width:400px;float:left;">Content goes here</div>
<div style="background-color:#FFA500;clear:both;text-align:center;">Copyright
W3Schools.com</div>
</div>
  </body>
</html>
```



Reference

<http://www.w3schools.com/html/default.asp>

<http://www.tizag.com/>