Hyper Text Markup Language

(HTML)

INDEX

Topics	Page No
1. What is HTML and why is it used?	3
2. Basic HTML Page Structure	3
3. HTML Head Section	
3.1. Meta	4
3.2. Doctype	5
3.3. Link	6
4. HTML Paragraph	7
5. HTML Hyperlinks	10
6. HTML Images	11
7. HTML Tables	15
7.1. Cellpadding	20
7.2. Cellspacing	21
8. Special Characters	22
9. Ordered and Unordered Lists	23
10. HTML Forms	24
11. HTML Input Fields	
11.1. Textbox	24
11.2. Radio Button	25
11.3. Checkboxes	25
11.4. Password	26
11.5. Combo Box	27
11.6. Textarea	28

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

BASIC HTML Page Structure

```
<html>
<head>
<title>Page Title</title>
</head>
<body>
<p>
            Page Content
</p>
</body>
</html>
```

HTML Head

The Head Element

The head element contains general information, also called meta-information, about a document. Meta means "information about".

You can say that meta-data means information about data, or meta-information means information about information.

Information Inside the Head Element

The elements inside the head element should not be displayed by a browser.

According to the HTML standard, only a few tags are legal inside the head section. These are: <base>, <link>, <meta>, <title>, <style>, and <script>.

Look at the following illegal construct:

```
<head>
<p>This is some text</p>
</head>
```

In this case the browser has two options:

- Display the text because it is inside a paragraph element
- Hide the text because it is inside a head element

If you put an HTML element like <h1> or <p> inside a head element like this, most browsers will display it, even if it is illegal.

Should browsers forgive you for errors like this? We don't think so. Others do.

Head Tags

Tag	Description
<head>	Defines information about the document
<title>	Defines the document title
s<link>	Defines a resource reference
<meta>	Defines meta information

Tag	Description
<!DOCTYPE>	Defines the document type. This tag goes before the <html> start tag.

HTML Meta

The head element contains general information (meta-information) about a document.

HTML also includes a meta element that goes inside the head element. The purpose of the meta element is to provide meta-information about the document.

Most often the meta element is used to provide information that is relevant to browsers or search engines like describing the content of your document.

Keywords for Search Engines

Some search engines on the WWW will use the name and content attributes of the meta tag to index your pages.

This meta element defines a description of your page:

<meta name="description" content="Free Web tutorials on HTML, CSS, XML, and XHTML" />
This meta element defines keywords for your page:

```
<meta name="keywords" content="HTML, DHTML, CSS, XML, XHTML, JavaScript"
/>
```

The intention of the name and content attributes is to describe the content of a page.

HTML <!DOCTYPE> Declaration

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
<head>
<title>Title of the document</title>
</head>
<body>
The content of the document......
</body>
</html>
```

Definition and Usage

The doctype declaration should be the very first thing in an HTML document, before the <html> tag.

The doctype declaration is not an HTML tag; it is an instruction to the web browser about what version of the markup language the page is written in.

The doctype declaration refers to a Document Type Definition (DTD). The DTD specifies the rules for the markup language, so that the browsers can render the content correctly.

Doctypes Available in the W3C Recommendations

HTML 4.01 Strict

This DTD contains all HTML elements and attributes, but does not include presentational or deprecated elements (like font). Framesets are not allowed.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN"
"http://www.w3.org/TR/html4/strict.dtd">
```

HTML 4.01 Transitional

This DTD contains all HTML elements and attributes, including presentational and deprecated elements (like font). Framesets are not allowed.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
```

HTML 4.01 Frameset

This DTD is equal to HTML 4.01 Transitional, but allows the use of frameset content.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
```

XHTML 1.0 Strict

This DTD contains all HTML elements and attributes, but does not include presentational or deprecated elements (like font). Framesets are not allowed. The markup must also be written as well-formed XML.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
```

XHTML 1.0 Transitional

This DTD contains all HTML elements and attributes, including presentational and deprecated elements (like font). Framesets are not allowed. The markup must also be written as well-formed XML.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

XHTML 1.0 Frameset

This DTD is equal to XHTML 1.0 Transitional, but allows the use of frameset content.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">
```

XHTML 1.1

This DTD is equal to XHTML 1.0 Strict, but allows you to add modules (for example to provide ruby support for East-Asian languages).

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
"http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
```

HTML <link> tag

The <link> tag defines the relationship between a document and an external resource.

The <link> tag is most used to link to style sheets.

HTML <title> tag

Definition and Usage

The <title> tag defines the title of the document.

The title element is required in all HTML/XHTML documents.

The title element:

- 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

HTML Tags

HTML markup tags are usually called 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**.

HTM or HTML Extension?

When you save an HTML file, you can use either the .htm or the .html extension.

HTML Headings

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

Example:

```
<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.

Example:

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

HTML Links

HTML links are defined with the <a> tag.

Example:

```
<a href="http://www.infinitech.in">This is a link</a>
```

HTML Images

HTML images are defined with the <img> tag.

Example:

```
<img src="test.jpg" width="104" height="142" />
```

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:

Example:- **<!-- This is a comment -->**
Note: There is an exclamation point after the opening bracket, but not before the closing bracket.

HTML Tip - How to View HTML Source

Have you ever seen a Web page and wondered "Hey! How did they do that?"

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

HTML Line Breaks

Use the <br /> tag if you want a line break (a new line) without starting a new paragraph:

Example:-

```
<p>This is<br />a para<br />graph with line breaks</p>
```

The <br /> element is an empty HTML element. It has no end tag.

**
 or
**

In XHTML, XML, and future versions of HTML, HTML elements with no end tag (closing tag) are not allowed.

Even if <br> works in all browsers, writing <br /> instead is more **future proof**.

HTML Text Formatting

This text is bold
This text is big
This text is italic
This is computer output
This is subscript and superscript

HTML Formatting Tags

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

These HTML tags are called formatting tags.

Text Formatting Tags

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

HTML Links

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:

Link text
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 Infinitech:

Visit Infinitech Web Site!

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:

Example

```
<a href="http://www.infinitech.in/"
target="_blank">Visit Infinitech Website!</a>
```

The name Attribute

When the **name attribute** is used, the <a> element defines a named anchor inside a HTML document.

Named anchor are not displayed in any special way. They are invisible to the reader.

Named anchor syntax:

```
<a name="label">Any content</a>
```
The link syntax to a named anchor:

```
<a href="#label">Any content</a>
```
The # in the href attribute defines a link to a named anchor.

Example:

A named anchor inside an HTML document:

```
<a name="tips">Useful Tips Section</a>
```
A link to the Useful Tips Section from the same document:

```
<a href="#tips">
Jump to the Useful Tips Section</a>
```
A link to the Useful Tips Section from another document:

```
<a href="http://www.infinitech.in/html_tutorial.htm#tips">
Jump to the Useful Tips Section</a>
```

HTML IMAGES :

Inserting Images:

```
<html>
<body>

<p>
An image:
<img src="constr4.gif"
```

```
width="144" height="50">
</p>

<p>
A moving image:
<img src="hackanm.gif"
width="48" height="48">
</p>

<p>
Note that the syntax of inserting a moving image is no different from
that of a non-moving image.
</p>

</body>
</html>
```

Insert Images From Different Locations:

```
<html>
<body>

<p>An image from SMGSM:</p>
<img src="http://smgsm.com/images/logo.jpg">

</body>
</html>
```

The Image Tag and the Src Attribute

In HTML, images are defined with the <img> tag.

The <img> tag is empty, which means that it contains attributes only and it has no closing 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 on your page.

The syntax of defining an image:

The URL points to the location where the image is stored.
An image named "boat.gif" located in the directory "images" on "www.infinitech.in" has the URL:
http://www.infinitech.in/images/boat.gif.

The browser puts the image where the image tag occurs in the document. If you put an image tag between two paragraphs, the browser shows the first paragraph, then the image, and then the second paragraph.

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:

```
<img src="boat.gif" alt="Big Boat" />
```

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.

Background Images:

```
<html>
<body background="background.jpg">
<h3>Look: A background image!</h3>
<p>If the image is smaller than the page, the image will repeat
itself.</p>
</body>
</html>
```

Alignment of Image:

```
<html>
<body>

<p>
An image
<img src="hackanm.gif"
align="bottom" width="48" height="48">
in the text
</p>
```

```
<p>
An image
<img src ="hackanm.gif"
align="middle" width="48" height="48">
in the text
</p>

<p>
An image
<img src ="hackanm.gif"
align="top" width="48" height="48">
in the text
</p>

<p>Note that bottom alignment is the default alignment</p>

<p>
An image
<img src ="hackanm.gif"
width="48" height="48">
in the text
</p>

<p>
<img src ="hackanm.gif"
width="48" height="48">
An image before the text
</p>

<p>
An image after the text
<img src ="hackanm.gif"
width="48" height="48">
</p>

</body>
</html>
```

Image Float , Size, Hyperlink of Image and ALT tag:

```
<html>
<body>

<p>
<img src ="hackanm.gif"
align ="left" width="48" height="48" alt=”An Image”>
A paragraph with an image. The align attribute of the image is set to
"left". The image will float to the left of this text.
</p>

<p>
<img src ="hackanm.gif"
```

```
align ="right" width="58" height="58" alt=”An Image”>
A paragraph with an image. The align attribute of the image is set to
"right". The image will float to the right of this text.
</p>

<p>
You can also use an image as a link:
<a href="lastpage.htm">
<img border="0" src="buttonnext.gif" width="65" height="38">
</a>
</p>

</body>
</html>
```

Note: You can make a picture larger or smaller changing the values in the "height" and "width" attributes of the img tag.

ALT Tag: The "alt" attribute tells the reader what he or she is missing on a page if the browser can't load images. It is a good practice to include the "alt" attribute for each image on a page.

HTML TABLES

Table and Border:

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.

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:

```
<html>
<body>

<p>
Each table starts with a table tag.
Each table row starts with a tr tag.
Each table data starts with a td tag.
</p>

<h4>One column:</h4>
<table border="1">
<tr>
```

```
  <td>100</td>
</tr>
</table>

<h4>One row and three columns:</h4>
<table border="4">
<tr>
  <td>100</td>
  <td>200</td>
  <td>300</td>
</tr>
</table>

<h4>Two rows and three columns:</h4>
<table border="8">
<tr>
  <td>100</td>
  <td>200</td>
  <td>300</td>
</tr>
<tr>
  <td>400</td>
  <td>500</td>
  <td>600</td>
</tr>
</table>

</body>
</html>
```

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>
```

How it looks in a browser:

Heading	Another Heading
row 1, cell 1	row 1, cell 2
row 2, cell 1	row 2, cell 2

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>
```

How it looks in a browser:

row 1, cell 1	row 1, cell 2
row 2, cell 1	

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

To avoid this, add a non-breaking space ( ) to empty data cells, to make the borders visible:

```
<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>
```

How it looks in a browser:

row 1, cell 1	row 1, cell 2
row 2, cell 1	

Basic Notes - Useful Tips

The <thead>,<tbody> and <tfoot> elements are seldom used, because of bad browser support. Expect this to change in future versions of XHTML.

Table with no border

Make border = "0"

Headings in a table

```
<html>
<body>

<h4>Table headers:</h4>
<table border="1">
<tr>
  <th>Name</th>
</tr>
<tr>
  <td>Bill Gates</td>
</tr>
</table>

</body>
</html>
```

Empty cells

To avoid empty cells insert   in a cell

Table with a caption

```
<html>
<body>
<table border="6">
<caption>My Caption</caption>
<tr>
  <td>100</td>
  <td>200</td>
  <td>300</td>
</tr>
<tr>
  <td>400</td>
  <td>500</td>
  <td>600</td>
</tr>
</table>
</body>
</html>
```

Output:

My Caption

100	200	300
400	500	600

Table cells that span more than one row/column

```
<table border="1">
<tr>
  <th>Name</th>
  <th colspan="2">Telephone</th>
</tr>
<tr>
  <td>Bill Gates</td>
  <td>555 77 854</td>
  <td>555 77 855</td>
</tr>
</table>
```

Output:

Name	Telephone	
Bill Gates	555 77 854	555 77 855

```
<table border="1">
<tr>
  <th>First Name:</th>
  <td>Bill Gates</td>
</tr>
<tr>
  <th rowspan="2">Telephone:</th>
  <td>555 77 854</td>
</tr>
<tr>
  <td>555 77 855</td>
</tr>
</table>
```

First Name:	Bill Gates
Telephone:	555 77 854
	555 77 855

Tags inside a table

```
<table border="1">
<tr>
  <td>
   <p>This is a paragraph</p>
   <p>This is another paragraph</p>
```

```
  </td>
  <td>This cell contains a table:
   <table border="1">
   <tr>
     <td>A</td>
     <td>B</td>
   </tr>
   <tr>
     <td>C</td>
     <td>D</td>
   </tr>
   </table>
  </td>
</tr>
<tr>
  <td>This cell contains a list
   <ul>
    <li>apples</li>
    <li>bananas</li>
    <li>pineapples</li>
   </ul>
  </td>
  <td>HELLO</td>
</tr>
</table>
```

Cell padding

```
<table border="1">
<tr>
  <td>First</td>
  <td>Row</td>
</tr>
<tr>
  <td>Second</td>
  <td>Row</td>
</tr>
</table>

<h4>With cellpadding:</h4>
<table border="1"
cellpadding="10">
<tr>
  <td>First</td>
  <td>Row</td>
</tr>
<tr>
  <td>Second</td>
  <td>Row</td>
</tr>
</table>
```

Without cellpadding:

First	Row
Second	Row

With cellpadding:

First	Row
Second	Row

Cell spacing

```
<h4>Without cellspacing:</h4>
<table border="1">
<tr>
  <td>First</td>
  <td>Row</td>
</tr>
<tr>
  <td>Second</td>
  <td>Row</td>
</tr>
</table>

<h4>With cellspacing:</h4>
<table border="1"
cellspacing="10">
<tr>
  <td>First</td>
  <td>Row</td>
</tr>
<tr>
  <td>Second</td>
  <td>Row</td>
</tr>
</table>
```

Without cellspacing:

First	Row
Second	Row

With cellspacing:

First	Row
Second	Row

Add a background color or a background image to a table

```
<h4>A background color:</h4>
<table border="1"
bgcolor="red">
<tr>
  <td>First</td>
  <td>Row</td>
</tr>
<tr>
  <td>Second</td>
  <td>Row</td>
</tr>
</table>
<h4>A background image:</h4>
<table border="1"
background="bgdesert.jpg">
<tr>
  <td>First</td>
  <td>Row</td>
</tr>
<tr>
  <td>Second</td>
  <td>Row</td>
</tr>
</table>
```

A background color:

First	Row
Second	Row

Add a background color or a background image to a table cell

```
<table border="1">
<tr>
  <td bgcolor="red">First</td>
  <td>Row</td>
</tr>
<tr>
  <td
  background="bgdesert.jpg">
  Second</td>
  <td>Row</td>
</tr>
</table>
```

Cell backgrounds:

First	Row
Second	Row

Special Characters

Code	Symbol	Description
™	™	Trademark
&amp;	&	Ampersand
®	®	Registered trademark
©	©	Copyright
†	†	Dagger
»	»	Right pointing double angle quotation mark
«	«	Left pointing double angle quotation mark
—	—	Em-dash
°	30°	Degree
¼	¼	Quarter
½	½	Half
¾	¾	Three quarters
·	·	Middle dot
¡	¡	Inverted exclamation mark

Ordered and Unordered List in HTML

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 <ul> tag. Each list item starts with the <li> tag.

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

Here is how it looks in a browser:

- Coffee

- Milk

Inside a list item you can put paragraphs, line breaks, images, links, other lists, etc.

Ordered Lists

An ordered list is also a list of items. The list items are marked with numbers.

An ordered list starts with the <ol> tag. Each list item starts with the <li> tag.

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

Here is how it looks in a browser:

1. Coffee
2. Milk

Inside a list item you can put paragraphs, line breaks, images, links, other lists, etc.

HTML Code for Forms and Input Fields

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 explained below.

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>
```

How it looks in a browser:

First name:

Last name:

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>
```

How it looks in a browser:

Male

Female

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>
```

How it looks in a browser:

I have a bike:

I have a car:

I have an airplane:

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>
```

Input Type Password in HTML

Note that when you type characters in a password field, the browser displays asterisks or bullets instead of the characters.

Example:

```
<html>

<body>

<form action="">

Username:

<input type="text" name="user">

<br>

Password:

<input type="password" name="password">

</form>

</body>

</html>
```

Output:

Simple Dropdown List in HTML

Example:

```
<select name="cars">
```

```
<option value="volvo">Volvo</option>

<option value="saab">Saab</option>

<option value="fiat">Fiat</option>

<option value="audi">Audi</option>

</select>

</form>

</body>

</html>
```

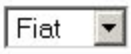
Output:

Note : If in option tag selected =”selected” is specified then specific value will be selected by default.

Example:

```
<option value="fiat" selected="selected">Fiat</option>
```

Output:



Textarea in HTML

Example:

```
<textarea rows=”10” cols=”5”>

Welcome to our Website

</textarea>
```

Output:


Welcome to
our
website!!!