HTML

HTML stands for Hyper Text Mark-up Language. It is the language used for creating webpages. To write the HTML codes we can use any text editor program. E.g. Notepad

Programs used for webpage designing

FrontPage: Microsoft product to design webpage
Flash: Program used for creating animation effects on webpage
Dreamweaver: Web page designing program with more advanced options

Basic HTML Tags

HTML tags are the signals to web browser to display text on screen and to control the structure webpage. Basic HTML tags needed for creating webpage are:

- <HTML> : surrounds entire HTML document
- <HEAD>: contains the information about webpage
- <TITLE>: displays the title of webpage in title bar
- <BODY>: contains all the text to display on page

Types of tags

There are two types of tags used:

- Paired Tag (Container Tag)

The tag which include both beginning and ending tags. E.g. <B> *text* </B> (to make text bold)

- Singular Tag (Empty Tag)

The tag which do not have ending tag. E.g.
 (to start new line), <HR> (to insert horizontal line), <IMG> (to insert inline image)

Basic Structure of HTML

```
<HTML>
<HEAD>
        <TITLE> Title for the webpage </TITLE>
</HEAD>
        <BODY>
        text and other tags
        </BODY>
</HTML>
```

[basic structure of HTML is known as **skeleton** of HTML and different elements inside the html <body> tags are known as **flesh** of HTML]

Starting First WebPage

- Open *Notepad*
- Type the code:

```
<HTML>
<HEAD>
        <TITLE> Title for the webpage </TITLE>
</HEAD>
        <BODY>
        text and other tags
        </BODY>
</HTML>
```

- Save it with the extension '.HTML' OR '.HTM'

Attributes

Attributes are extra properties of tags, which provides additional information of tags to browser

Attributes of <BODY> tag

BGCOLOR: To give color on background
BACKGROUND: to use picture on background
TEXT: to give text color on page
LEFTMARGIN: to set the left margin on page
RIGHTMARGIN: to set the right margin on page

- Example:

```
<BODY bgcolor="green" text="white">
        text
</BODY>
```

- **Note**:

Colors in HTML page can be specified using color name or color code.
Code for some colors:

White: FFFFFF	Black: 000000
Red: FF0000	Green: 00FF00
Blue: 0000FF	

Sample HTML document

```
<HTML>
<HEAD>
        <TITLE> Nepal </TITLE>
</HEAD>
        <BODY bgcolor="green" text="red">
        Nepal is a beautiful country. It is rich in natural resource. I love my country Nepal.
        </BODY>
</HTML>
```

<P> tag

Used for creating paragraph

Attributes of <P> tag

Align = "left" / "right"/ "center" / "justify"

[aligns the paragraph to left, right and center respectively]

Sample HTML document

```
<HTML>
<HEAD>
        <TITLE> text for title </TITLE>
</HEAD>
        <BODY bgcolor="green" text="red">
<P align="center">
```

paragraph to display on page
</P>
</BODY>
</HTML>

Character Formatting tags

<B> tag: used for making text bold
<B> *text* </B>
<I> tag: used for making text italic
<I> *text* </I>
<U> tag: used for underlining text
<U> *text* </U>
<Sup> tag: used to give superscript (power) effect on text
a² + b²
<Sub> tag: used to give subscript (base) effect on text
H₂ O

Example

```
<B> This text is bold </B> <br>
<I> This is italic </I> <br>
<U> It has underline </U> <br>
<sup> this text is in <sup> superscript </sup>
<sub> this text is in <sub> subscript </sub>
```

<FONT> Tag

e.g.

```
<FONT face="verdana" size=5 color="red"> text
</FONT>
```

[default font size is 3]

Heading

Headings are defined with the <h1> to <h6> tags. <h1> defines the largest heading. <h6> defines the smallest heading.

```
<h1>This is a heading</h1>
<h2>This is a heading</h2>
<h3>This is a heading</h3>
<h4>This is a heading</h4>
<h5>This is a heading</h5>
<h6>This is a heading</h6>
```

Line Breaks

The <br> tag is used when you want to end a line, but don't want to start a new paragraph. The <br> tag forces a line break wherever you place it.

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

Comments in HTML

The comment tag is used to insert a comment in the HTML source code. A comment will be ignored by the browser. You can use comments to explain your code, which can help you when you edit the source code at a later date.

```
<!-- This is a comment -->
```

List in HTML

Ordered List

Syntax: <OL TYPE="1"/"A"/"a"/"I"/"i">
<LI> Item 1 </LI>
<LI> Item 2 </LI>
<LI> Item 3 </LI>
</OL>

Example:

```
<ol type="1">
<li> Basic Computer </li>
<ol type="a">

    <li> Fundamental </li>
    <li> Windows </li>
    <li> MS Office </li>
</ol>
<li> Graphic Designing </li>
<ol type="a">
    <li> Photoshop </li>
    <li> pagemaker </li>
    <li> Indesign </li>
</ol>
</ol>
```

Unordered List

Syntax: <UR TYPE="Circle"/"Square"/"Disc">
<LI> Item 1 </LI>
<LI> Item 2 </LI>
<LI> Item 3 </LI>
</UL>

Example:

```
<UL  type="Disc">
    <li> Super Computer </li>
    <li> Mainframe Computer </li>
    <li> Mini Computer </li>
    <li> Micro Computer </li>
</UL>
```

HTML Character Entities

Some characters like the < character, have a special meaning in HTML, and therefore cannot be used in the text.
To display a less than sign (<) in HTML, we have to use a character entity.

The Most Common Character Entities:

Result	Description	Entity Name	Entity Number
	non-breaking space		
<	less than	&lt;	&#60;
>	greater than	&gt;	&#62;
&	Ampersand	&amp;	&#38;
"	quotation mark	&quot;	&#34;
'	apostrophe	' (does not work in IE)	&#39;

Some Other Commonly Used Character Entities:

Result	Description	Entity Name	Entity Number
¢	Cent	&cent;	&#162;
£	Pound	&pound;	&#163;
¥	Yen	&yen;	&#165;
€	Euro	&euro;	&#8364;
§	Section	&sect;	&#167;
©	Copyright	&copy;	&#169;
®	registered trademark	&reg;	&#174;
×	multiplication	&times;	&#215;
÷	Division	&divide;	&#247;

HTML Links

HTML uses a hyperlink to link to another document on the Web.

The Anchor Tag and the Href Attribute

HTML uses the <a> (anchor) tag to create a link to another document.

An anchor can point to any resource on the Web: an HTML page, an image, a sound file, a movie, etc.
The syntax of creating an anchor:

```
<a href="url">Text to be displayed</a>
```

The <a> tag is used to create an anchor to link from, the href attribute is used to address the document to link to, and the words between the open and close of the anchor tag will be displayed as a hyperlink.
This anchor defines a link to facebook:

```
<a href="http://www.facebook.com.com/">Visit facebook!</a>
```

The line above will look like this in a browser:

The Target Attribute

With the target attribute, you can define **where** the linked document will be opened.
The line below will open the document in a new browser window:

```
<a href="http://www.facebook.com/" target="_blank">Visit facebook!</a>
```

The Anchor Tag and the Name Attribute

The name attribute is used to create a named anchor.
When using named anchors we can create links that can jump directly into a specific section on a page, instead of letting the user scroll around to find what he/she is looking for.
Below is the syntax of a named anchor:

```
<a name="label">Text to be displayed</a>
```

The name attribute is used to create a named anchor.
The name of the anchor can be any text you care to use.
The line below defines a named anchor:

```
<a name="tips">Useful Tips Section</a>
```

You should notice that a named anchor is not displayed in a special way.
To link directly to the "tips" section, add a # sign and the name of the anchor to the end of a URL, like this:

```
<a href="http://www.google.com/html_links.asp#tips">Jump to the Useful Tips Section</a>
```

A hyperlink to the Useful Tips Section from WITHIN the file "html_links.asp" will look like this:

```
<a href="#tips">Jump to the Useful Tips Section</a>
```

HTML Images

With HTML you can display images in a document.

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:

```
<img src="url">
```

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

HTML Tables

With HTML you can create tables.

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.

```
<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>
```

How it looks in a browser:

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

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>
```

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	

COLSPAN and ROWSPAN

Table cells can span across more than one column or row. The attributes COLSPAN ("how many across") and ROWSPAN ("how many down") indicate how many columns or rows a cell should take up.

```
<TABLE BORDER=2 CELLPADDING=4>
<TR> <TH COLSPAN=2>Computer </TH> </TR>
<TR> <TD>Basic</TD>     <TD>2000</TD> </TR>
<TR> <TD>Advance</TD>    <TD>2500</TD> </TR>
<TR> <TD>Tally</TD>     <TD>2200</TD> </TR>
</TABLE>
```

which gives us:

Computer	
Basic	2000
Advance	2500
Tally	2200

ROWSPAN sets how many rows a cell spans. ROWSPAN can get a little confusing because it requires you to think through how the cell affects the rows after the row it starts in. It's particularly useful in this situation to add borders to the table during the design process, even if the table won't ultimately use borders.
This table code creates two header cells which span three rows each:

```
<TABLE BORDER=2 CELLPADDING=4>
<TR>
   <TH ROWSPAN=3 >Computer</TH>
   <TD>Basic </TD> <TD>2000</TD>    </TR>
<TR>
   <TD>Advance</TD> <TD>2500/TD>    </TR>
<TR>
   <TD>Tally</TD> <TD>2200</TD>    </TR>
</TABLE>
```

which creates

Computer	Basic	2000
	Advance	2500
	Tally	2200

More on Table

Cellpadding: distance of text from cell margin

```
<html>
<head>
<title>
Table with cellpadding
</title>
</head>
<h1> <font face="Brush Script MT" size="6" style="text-indent: 150.0pt"><b> USE OF CELLPADDING<b></font> </h1>
<body bgcolor="#AE0AEA">
<body>
<table  border=5 cellspacing=10 cellpadding=50 bordercolor="blue" bgcolor="pink">
<tr>
<td> <font size="7"> Item 1 </font></td>
<td rowspan=3> <font size="7"> item 2 </font></td>
<td> <font size="7"> item 3</td>
</tr>
</tr>
<td> <font size="7"> item 4 </font></td>
<td> <font size="7"> item 5 </font></td>
</tr>
</table>
</body>
</html>
```

Cellspacing: space between two cells

```
<html>
<head>
<title>
Table with cell spacing
</title>
</head>
```

```
<h1> <font face="Brush Script MT" size="6"><b>Use of cell spacing <b></font> </h1>
<body bgcolor="#87CEFA">
<body>
<table  border=5 cellspacing=10 cellpadding=0 bordercolor="red" bgcolor="pink">
<tr>
<td> Item 1 </td>
<td rowspan=2> item 2 </td>
<td> item 3</td>
</tr>
</tr>
<td> item 4 </td>
<td> item 5 </td>
</tr>
</table>
</body>
</html>
```

FORM

It is an interface to allow user to enter data in website

```
<html>
<head></head>
<title>Smart Form</title>
<body>
<center><font size=6 color="red">
REGISTRATION FORM</font></center>
<center font size=5 color="blue">
Smart InfoTech</font></center>
<form method="post"action=smart_it@outlook.com>
name: <input type ="text" size=25 maxlength=25><br>
address: <textarea cols=20 rows=2></textarea><br>
Course<br>
<input type="checkbox" name="choice" > Basic <br>
<input type="checkbox" name="choice"> Graphic <br>
<input type="checkbox" name="choice"> Accounting <br>
sex: <input type="radio" name="sex" CHECKED>male      
<input type="radio" name="sex">female <br>
address: <textarea cols=20 rows=2></textarea><br>
Qualification: <SELECT>
<option> SLC
<OPTION> Inter
<OPTION> Bachelor
<OPTION> Master
<OPTION> Other
</select> <br> type your code
<input type = "password" size=15 maxlength=12> <br>
<input type="submit" value="click me to send">
<input type="reset" value="clear">
</html>
```

MARQUEE

It is used for moving text on the webpage

```
<marquee behavior= "scroll/slide/alternate" direction="left/right/up/down"> Text </marquee>
```

Frame

Frameset element allows a designer to define a multiple frame web page, where each frame displays its own HTML document. Frames can be scrolled and resized by the user, unless scrolling and resizing is turned off

```
<Frameset rows="n,n">
<Frameset cols="n,n">
```

Example

banner.html

```
<html>
<body background="banner.jpg" text="yellow">
</body>
</html>
```

side.html

```
<html>
<body bgcolor="pink">
<a href=#>HOME </a> <br>
<a href=#>ABOUT ME </a>
<br>
<a href=#>Site Map</a> <br>
<a href=#>Our Services </a>
<br>
<a href=#>Downloads </a>
<br>
</body>
</html>
```

main.html

```
<html>
<head> <title> </title> </head>
<body >
<h1> This is Main Page </h1>
</body>
</html>
```

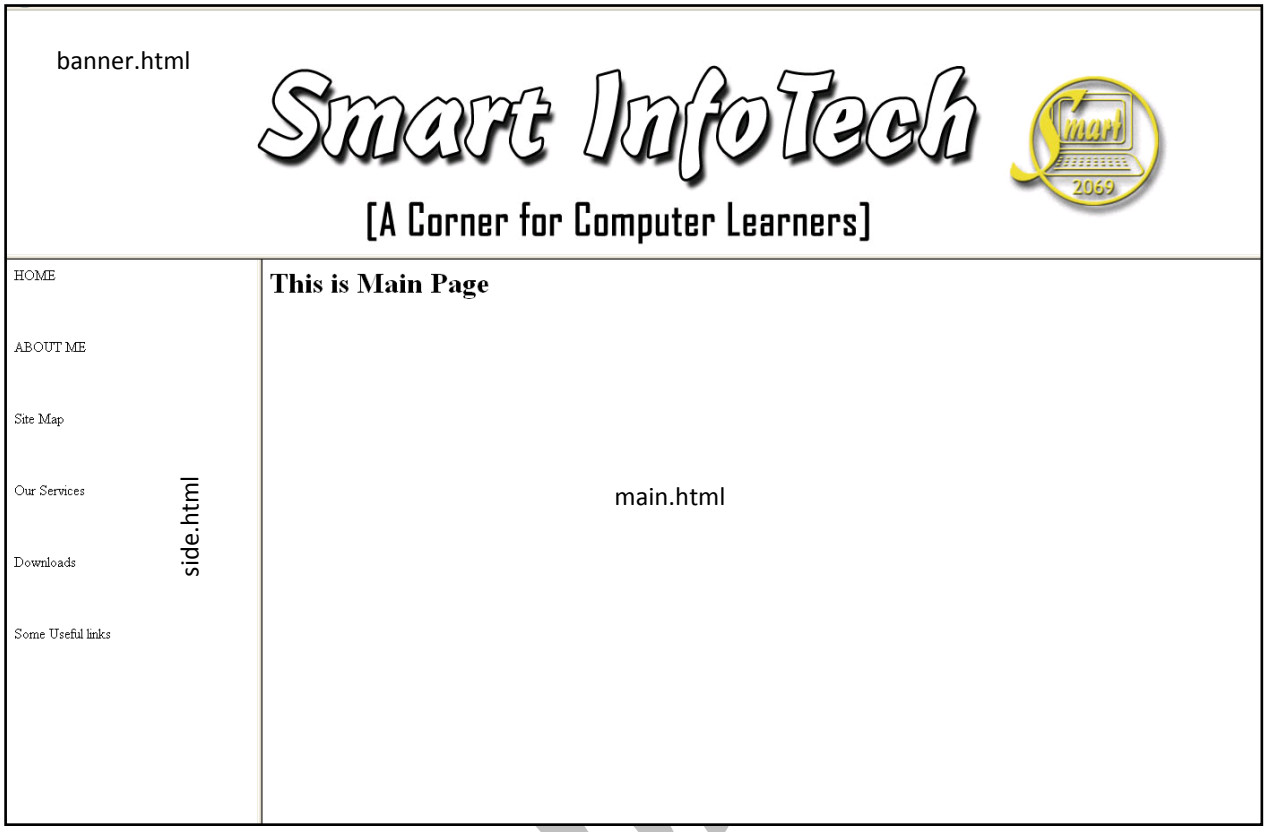
Now, lets include all the html files in another file (index.html)

index.html

```
<html>
<frameset rows="30%,70%" noscrolling >
  <frame name="banner" src="banner.html" align="right">

<frameset cols="20%, 80%">
<frame name="side" src="side.html" noresize>
<frame name="main" src="main.html">
</frameset> </html>
```

Index.html



Tags and attributes

<body> tag
- Bgcolor
- Background
- Text
- Link/vlink/alink
- Background
- Bgcolor
- Leftmargin/topmargin
- Text

<font> tag
- Color
- Face
- Size

<table> tag
- Align
- Background
- Bgcolor
- Border
- Bordercolor
- Height
- Width
- Cellpadding
- Cellspacing
- Rules: internal borders

<td> /<th> tag
- Align, valign
- Bgcolor
- Colspan, rowspan
- Height, width

<img> tag
- Src
- Align
- Alt: alternate text
- Border
- Height, width
- Hspace, vspace

<frame> tag
- Border
- Bordercolor
- Framespacing
- Name
- Noresize
- Marginwidth, marginheight
- Scrolling
- Scr
- Target
- Title

<hr> tag
- Align
- Noshade
- Size
- Width
- Color

<marquee> tag
- Behavior
- Direction
- Loop (repeatition)
- Scrollamount
- (space betn each repetition)
- Scrolldelay (speed)

** tag**
- Type
- Start

<a> tag
- Href
- Name

Some other html tags

<embed>: to attach audio, video file on html document
<small>: used to reduce font size by one point
<big>: used to enlarge font size by one point
<address>: displays as footer text appears in italic
<s> or ***<strike>***: displays text as strike through
******: displays text as bold
: emphasizes text as italic
***<Tt>*:** displays in 'Type writer' or courier font
<code>: it is logical tage displays in courier font with fixed width font and indicates as computer code.
<caption>: displays as table caption or name
<dl> <dt> and ***<dd>*:** description list, description term and description
<BLOCKQUOTE>: indentation
<iframe>: defines inline frame

Some important terminologies

CMS: A content management system (CMS) s a computer application that allows publishing, editing and modifying content, organizing, deleting as well as maintenance from a central interface
Hotspot/ hypertext: The text which creates link is called hotspot or hypertext
CSS: It stands for Cascading Style Sheet which defines how to display html elements. CSS can be external or internal.
Javascript: It is the scripting language used in web application to add interactivity to HTML pages. It is directly embedded to HTML pages.
PHP: PHP was originally an acronym for Personal Home Pages, but is now a recursive acronym for PHP: Hypertext Preprocessor. It is server-side scripting language that allows web developers to create dynamic content that interacts with databases like MySQL.
URL and URI: A URI is an identifier for some resource, but a URL gives you specific information as to obtain that resource. A URI is a URL and as one commenter poi nted out, it is now considered incorrect to use URL when describing applications. Generally, if the URL describes both the *location* and *name* of a resource, the term to use is URI. Since this is generally the case most of us encounter everyday, URI is the correct term.
[Note: A URI identifies a resource by name in a given namespace but not define how the resource maybe obtained. This type of URI is called a URN. You may see URNs used in XML Schema documents to define a namespace, usually using a syntax such as:
<xsd:schema xmlns="http://www.w3.org/2001/XMLSchema"]
ASP: An Active Server Page, commonly called an "ASP page," is a webpage that may contain scripts as well as standard HTML. ASP runs inside IIS (Internet Information Services)
XML: Extensible Markup Language (XML) is a markup language that defines a set of rules for encoding documents in a format which is both human-readable and machine-readable
Skeleton of HTML: Skeleton of HTML defines the basic structure of HTML Document
Browser: Application to open website

Different web browsers:

- WorldWideWeb (later called nexus), February 25, 1991
- Mosaic, April 22, 1993
- Netscape Navigator and Netscape Communicator, October 13, 1994
- Internet Explorer, August 16, 1995
- Opera, 1996, see History of the Opera web browser
- Mozilla Navigator, June 5, 2002[19]
- Safari, January 7, 2003
- Mozilla Firefox, November 9, 2004
- Google Chrome, September 2, 2008