



After studying this lesson, you will have better understanding of,

- A brief introduction of multimedia
- World Wide Web (WWW)
- The tools and software that can be used to develop websites
- Basic HTML for website development

Communication means exchange of information between people. Because of the advances in technology, today, we can use characters, words, images, sound, animation and videos for our exchange of information. Today, the relationship between computers and communication provides us with a great opportunity to enhance media technology with parallel development in the Internet technology. These developments have provided us with the concept of the Global Village which indicates that the societies in the world are no longer distant communities. The computers which were used for data processing few decades ago have now become the major navigators of multimedia technology.

What is multimedia? The simple definition of multimedia can be given as a collection of various different media. These media can be newspapers, magazines, television, radio etc. When multimedia technology is defined in the context of computers it would be a collection of text, words, data, images, graphics, sound, animation and videos which facilitate the exchange of information.

Today we can see multimedia based information on the Internet using the web technology in various different fields such as engineering, medical, entertainment, education, advertisement, digital arts and also in scientific research activities. In the e-Learning process which is now used in education and in computer based encyclopedias, the web based multimedia technology plays a leading role. In such applications, the information is presented in various forms such as text, sound, images, 2D or 3D diagrams and in additional detailed information presented as animation and videos. In some applications the pronunciation of a language, music or sound of a bird can be presented as sounds.

Suppose you want to send a message to a friend in another country. If you can send that message as a sound using your own voice as an e-mail or include that in a web page, then your friend will be happy. This will enable you to reduce the distant nature between you and your friend. Then you will have used multimedia technology to increase your relationship without noticing it. The satisfaction you gained through that is in very high level. What do you understand from this simple example? You may realize the combination of computer technology, communication technology and multimedia technology has brought the communities and family members much closer.



## 5.1 Organization of Information for Website Development

In 1989, Tim Berners-Lee introduced to the world the World Wide Web (WWW) which is now distributed all over the world through the Internet. This system is today developed into a medium to communicate multimedia based information. The WWW has some agreed standards on the following.

1. How to organize the multimedia and other information.
2. How to store such organized information in the computer system.
3. How to link information in one computer to information in another computer in the network.
4. How to retrieve such information.
5. How to use information.

A computer named 'WWW Server' in the network is used to store web pages organized using the above standards and the other computers in the network can obtain information in these web pages. One 'WWW Server' can be used to store websites of various organizations or individuals and every website has a 'Home page' and other web pages of the site are linked to the home page using 'Hyperlinks' or 'Hyper-media'. The main feature of the 'WWW Server' system with web pages which are connected through 'Hyperlink' or 'Hyper-media' is that the information can be obtained in any order, any time by anybody (there are systems in which information should be given in a particular order. The information provided through radio and televisions are examples of such information). Using 'Hyper-media' links an important item in a web page can be linked to another web page in the same computer system or to a web page in another 'WWW-Server' in the Internet to get more detailed information about the item. It is possible to state four possible situations where such links can be established.

1. A link to another section in the same web page.
2. A link to a web page in the same web site.
3. A link to another web site in the Internet.
4. A link to another web page in another website in the Internet.

Another important feature of the 'WWW' is the ability to link different multimedia information. For example a link can be established to an image, video clip, sound clip or an animation picture.

If the files in the Internet are developed using only text, it is easy to obtain such files from the Internet. In order to prepare web based files, a special language called HTML (Hypertext Markup Language) can be used which has some special tags to indicate the type of information in the file using a specified set of rules. The HTML has some special instruction codes (tags) to incorporate image, sound, video and animation into a web file. A software tool called 'Web Browser' is needed to access the information in a web file. The Web browser interprets the instruction codes in a HTML file and provides the information in a web file in an appropriate way to the user on the monitor of the computer. The process takes place in four steps.

1. First a request is made to the computer which provides the information and checks whether information can be obtained .
2. If information can be obtained in this way the information will be provided to the client computer which requests information using 'HTTP' technology.
3. The information provided will be displayed on the client computer in an appropriate way according to the HTML tags in the file by the web browser.
4. If any image or multimedia content is to be displayed or played this will be executed using the tools in the client computer.

In addition to the standard tags in 'HTML', other software tools ('Plug-ins') with various capabilities developed by different companies can be incorporated in to an HTML file. This will give value addition to the retrieval of content in the Internet. HTML is a kind of word processor and a HTML file can be used in a computer with any operating system. The facilities of a word processor such as creation of fonts of varies sizes and shapes, title and sub title creation, tables, lists, paragraphs and different features in paragraphs can be done using HTML. In addition to this the multimedia files like images, sounds, animations and videos can be incorporated into an HTML file.

A web browser is needed to obtain the large information in the WWW which can be used in any computer. Some of these web browsers can be downloaded from the Internet without paying any fee. Some of the widely used web browsers are 'Firefox', 'Internet Explorer', 'Safari', 'Opera' and 'Google Chrome'. These web browsers retrieve and provide information in a very user friendly way by point and click of a mouse. The basic capabilities of a web browser are given below.

- ◆ The ability to display an HTML file in plain text according to the HTML tags in the file.
- ◆ The ability to display web pages with images having an image file format GIF, JPG or PNG.
- ◆ The ability to play other multimedia files in an HTML file such as sound, video and animation.

- ◆ The ability to access web sites with ‘FTP’, Gopher’ and ‘Usenet’ facilities.
- ◆ The ability to provide facility to input user information in a form and obtain such information.
- ◆ The ability to provide access to search engines so that the user can search information on web pages or web sites which he or she needs.

As mentioned before, a web browser has the capability of handing web pages with ‘Rich-text’ and other features such as paragraphs, fonts and images. In addition to this there are web sites in which live radio and live TV can be played. Web browsers have the ability to access such web sites and provide such facilities. Further, web browsers can be used for Live Chat, Internet Phone, Internet Meeting, News Groups and Teleconferencing. The web browsers with appropriate ‘Plug-in’s can be used to execute applications developed using different application software.

Web browsers with Plug-in s have advanced capabilities. For example, if you want to watch a video of a format such as ‘Quick Time Movie’ (a special multimedia video format), you can add the ‘plug-in’ ‘Quick Time Movie Player’ to your browser and watch it. Most of these Plug-ins can be downloaded freely from the Internet.

‘Firefox’, ‘Internet Explorer’ and ‘Safari’ are widely used web browsers and they can be downloaded freely from the Internet. The following are the important features of web browsers.



### Handling Media Using Plug-ins

‘Media Handler’ allows the browser to perform the operations using ‘Plug-ins avoiding any problems associated with the use of a ‘Plug-in.



### Use of ‘Java Scripts’

Web browsers have the ability to browse web sites with programming language code such as ‘Java Script’ . ‘Java Script’ is a programming language and codes written in this language can be included in your HTML pages.



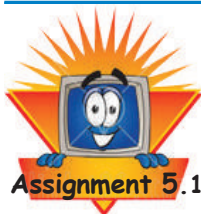
## Value Added 'HTML'

Using more advanced features of HTML, high quality web sites (close to pages of a magazine) can be created.



## Electronic Mail (e-Mail)

Important applications like 'e-Mail' can be used.



Assignment 5.1

★ Collect information about different web browsers using internet search engines and state about each web browser.

★ Create a table about Plug-in used today. State the purpose of used Plug-in on that table too.



## 5.2 Use of Web Development Tools to Develop Web Sites

We have discussed that the web pages used in the WWW are developed according to the rules of the Hypertext Markup Language (HTML). Web pages written in HTML are displayed on the screen by the web browsers. Multimedia files such as sounds, videos, images can be included in an HTML file. In order to establish links between items in other web pages and other web pages in web in the Internet, 'Hyper-links' can be established using HTML. 'Hyper-Links' can be used to link multimedia files too.

In web site development three major types of tools can be used.

1. Text Editors
2. Object Editors
3. WYSIWIG - Editors

## 1. Text Editors

When developing web sites using a simple text editor you should have a good understanding about the HTML tags. A simple text editors such as 'Notepad' or 'Notepad++' can be used for this purpose and you need to type the HTML tags in appropriate way and you need good knowledge of HTML tags for this purpose. The basic knowledge needed for this activity will be provided in stages.

We can discuss about some simple text editors which can be used for this purpose. We can obtain them free of charge.

1. Notepad - Free too distributed with windows operating system By Microsoft Institute from their first windows operating system in 1985.
2. GEdit - Tool developed to use with Unicode. (See figure 5.1)
3. TextEdit - Free tool distributed with Macintosh Operating System.
4. TED Notepad -Text editors which developed from 2001 by Joraj Similovic can be used with windows operating system.

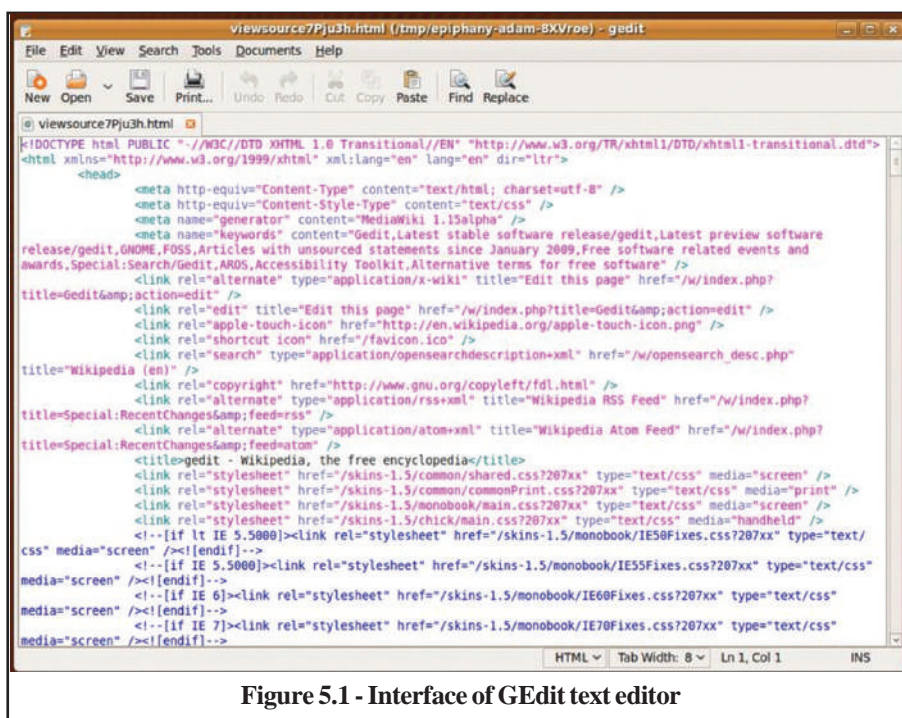


Figure 5.1 - Interface of GEdit text editor

## 2. Object Editors

Can use pre designed models the object editors designed with user friendly HTML tags and attributed and specially, different colours are use to display tags and attributes.

Another special feature of these object editors is ability to manipulate codes of different computer languages. Rather can edit codes as need is another special feature this has. For an example, if you use HTML this provide facilities for that or if you use Java language to edit it provides interface with these facilities. Examples for those editors are follows.

1. EditPlus - Created for windows operating system by Sangil Kim for Es - Computing Institute.
2. Homesite - Homesite developed by Adobe is use for windows operating system. Specially use for edit HTML codes.
3. Notepad++ - It has become a widely use editor which is created by Don Ho and can edit many computer languages by this, mostly use to edit HTML codes. This is free and can use with windows, Mac and Linux operating systems. More than 16 million people have downloaded Notepad++ from [www.SoureForge.net](http://www.SoureForge.net) web site. See figure 5.2.



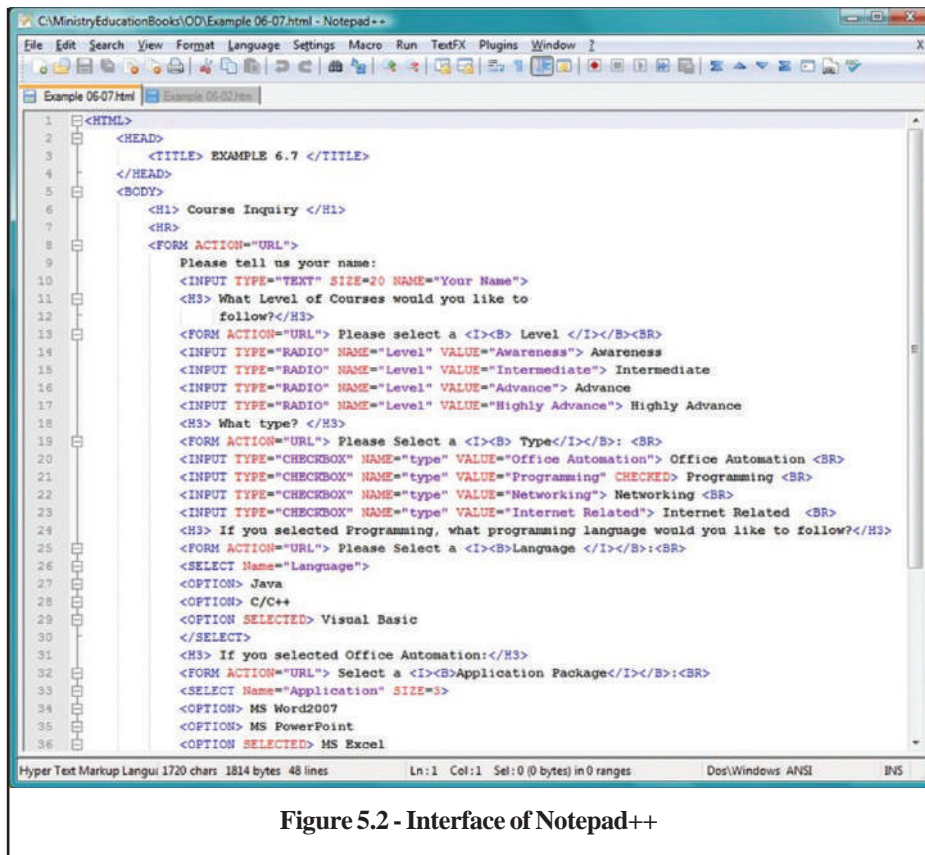
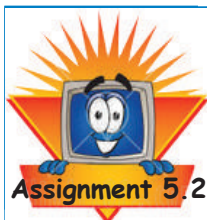


Figure 5.2 - Interface of Notepad++



Write a report about 'WYSIWIG - Editors use to create web sites. State about producer, Name of the person and whether it is a free or commercial tool and its special features.

### 3. WYSIWIG Editors

These editors can be used by even users new to this and who do not have wide knowledge of HTML codes to develop simple / basic web sites without any effort. These kind of editors have to be purchase from the market and some examples for them are as follows.

- ColdFusion
- Dream Weaver

Introduced by Adobe Inc. and

- Expression Web
- SharePoint Designer
- Visual Studio
- Visual Web Developer Express are some of editors introduced by Microsoft Company.



### 5.3 Use of HTML to design web sites

As a Markup Language, the purpose of HTML tags or codes are to provide a set of general rules that suggest how content should look when rendered.

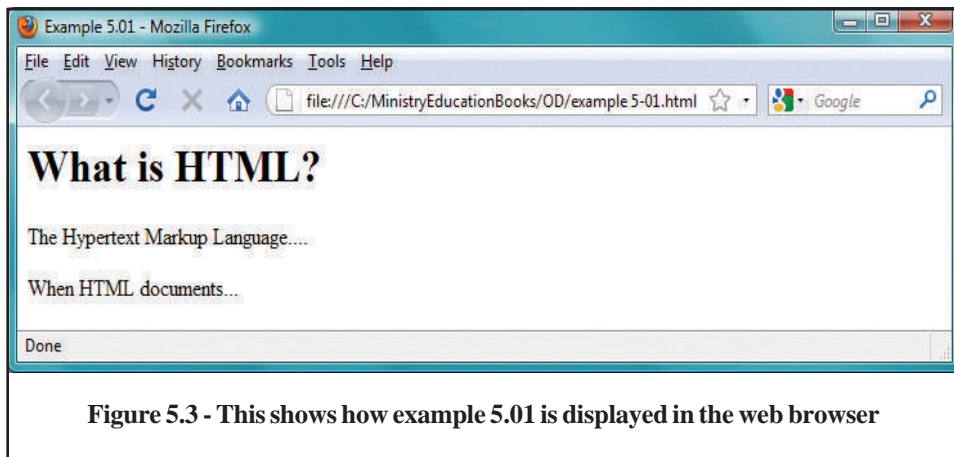
#### INFORMATION

Example 5.1 shows how HTML scripts are used for web pages and figure 5.3 shows first HTML script displayed on the internet browser, Firefox. It is displayed some of the important HTML tags for your attention.

#### Example 5.1

```
<HTML>
<TITLE>EXAMPLE 5.1</TITLE>
<H1>What is HTML?</H1>
<P>The Hypertext Markup Language....</P>

<P>When HTML documents...</P>
</HTML>
```



**Figure 5.3 - This shows how example 5.01 is displayed in the web browser**

In this example, `<HTML>`, `<TITLE></TITLE>`, `<H1></H1>`, `<P></P>` and `</HTML>` tags are used and Figure 5.3 shows how it is displayed in your computer monitor using Firefox browser.

`<HTML>`

Starts the HTML document.

`<TITLE>`

Text inside `<TITLE>` tag displays the title of your web on the browser Title Bar.

`<H1>`

This is used to display the main title of your web page.

`<P>`

Used to highlight the paragraph of your web page.



## HTML Tags

Each tag consists of the name of the tag surrounded by the less-than '`<`' and greater-than '`>`' signs. To tell the browser that something is a tag, you simply place “less than” and “greater than” symbols around them. The LESS THAN symbol is "`<`" and the GREATER THAN symbol is "`>`". For example, P (for Paragraph) can be

used as <P> in the web page. When you create web pages you can use <P> for paragraphs, sections and other phrases and to mark the end of such a section you can use </P> ending tag. The ending tag in this case is not compulsory; however there are some cases where ending the tag cannot be omitted. Such tags will be discussed later in this section.

### **Notes :**

*There is no need to use a couple of Tags for some instructional tags, and for security tags it is essential to use a couple of tags. For example, it is not essential to put </P> at the tag end of the paragraph.*

*HTML tags are not case sensitive. You can use CAPITAL Letters as well as simple letters. For example <TITLE>, <titLe>, <Title> and <title> have all the same result.*

## **BODY, HEAD and TITLE for the HTML Document**

Each HTML document begins with an <HTML> and ends with </HTML> tags and this implies that the document is made up of Hypertext Markup Language tags. HTML stands for Hypertext Markup Language which is the language of web page design. Example 5.2 shows how you can use tags such as <HTML>, <HEAD>, <TITLE>, <BODY>, <H1>, <H2>, <H3> and <H4> and Figure 5.4 shows the interface of the web page.

### **Example 5.2**

```
<HTML>
  <HEAD>
    <TITLE>[XAMPLE .0]</TITLE>
  </HEAD>
  <BODY>
    <H1>This is where the body of the document...</H1>
    <H2>This is Heading One</H2>
    <H3>This is Heading Two</H3>
    <H4>This is Heading Three</H4>
  </BODY>
```

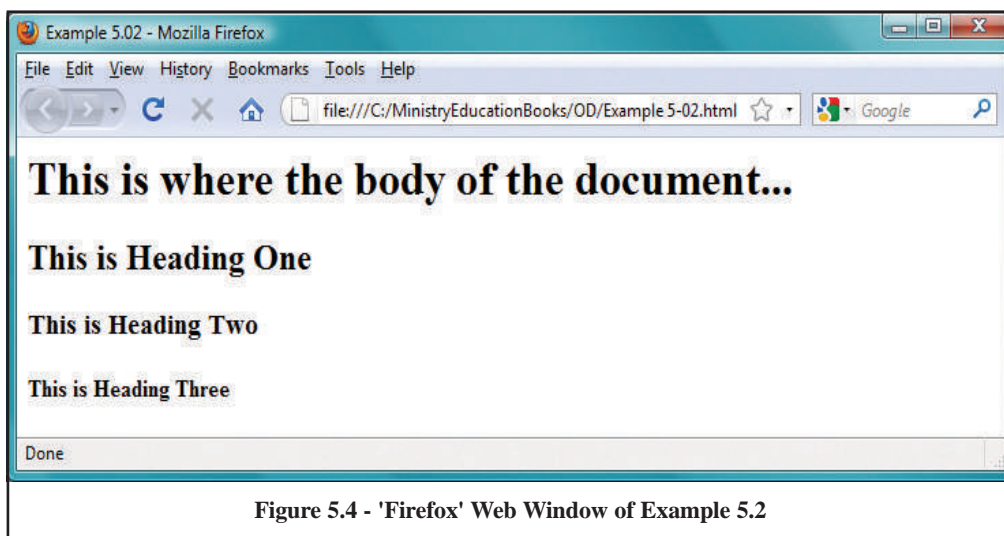


Figure 5.4 - 'Firefox' Web Window of Example 5.2



## The Head

<code>&lt;HEAD&gt;—&lt;/HEAD&gt;</code>	The <code>&lt;HEAD&gt;</code> tag encloses the code that provides information about the document.
-----------------------------------------	---------------------------------------------------------------------------------------------------

After Putting `<HTML>` to identify the main information use `<HEAD>` tag. To end this put `</HEAD>` and within these two tags use `<TITLE>` tag.



## The Title

<code>&lt;TITLE&gt;—&lt;/TITLE&gt;</code>	The <code>&lt;TITLE&gt;</code> tag is used to specify the text that appears in the Web browser's title bar.
-------------------------------------------	-------------------------------------------------------------------------------------------------------------

You will find an additional starting and ending pair of tags, the `<TITLE>` and `</TITLE>` inside the HEAD section, i.e. with `<TITLE>University of Colombo` `</TITLE>` between them and you are only allowed one TITLE element per page. So what is the purpose of this? Look at the display of the document and you will find that this text is shown on the top, at the Title bar of the browser. Thus, any text between the `<TITLE>` tags will be displayed here.



## The Body

`<BODY>—</BODY>`

The `<BODY>` tag encloses all text, images, and other elements that will be visible to the user on the web page.

The `<BODY>` tags contain the content of the HTML page and to identify this section it is surrounded by `<BODY>` and `</BODY>`. The text between the `<BODY>` tags is displayed inside the browser window. In our case, we have the text “This is where the body of the document...” You will notice that this is displayed inside the browser window.



## Heading

`<H1>—</H1>` `<H2>—</H2>`  
`<H3>—</H3>` `<H4>—</H4>`  
`<H5>—</H5>` `<H6>—</H6>`

ALIGN=Option  
(LEFTIRIGHTICENTER)

The six levels of text headings ranging from the largest (`<H1>`) to the smallest (`<H6>`). Text headings appear in bold face font.

The alignment of the heading.

Headings help define the format and structure of the document. They provide valuable tool in highlighting important information, headings and sub headings and the nature of the document as a whole.

As you can see, the heading tags come in pairs with the opening and closing tags. Any text surrounded by these tags will be displayed differently depending on the heading number. There are six levels of headings in HTML specified by `<H1>`, `<H2>`, `<H3>`, `<H4>`, `<H5>` and `<H6>` tags. The use of these in an HTML document are as follows:

```

<H1> First Level Heading </H1>
<H2> Second Level Heading </H2>
<H3> Third Level Heading </H3>
<H4> Fourth Level Heading </H4>
<H5> Fifth Level Heading </H5>
<H6> Sixth Level Heading </H6>

```

When you use these tags, no other tags can be used inside these tags and if they are used, they will be ignored. Heading or sub heading can be aligned to the left, right or centre using 'ALIGN' attribute. If it is necessary <H1 ALIGN = CENTER> Title of the heading </H1> can be used to align the title at the centre of the web page. These values can be assigned to ALIGN and their 'LEFT', 'RIGHT' and 'CENTER'.

## PARAGRAPH AND LINE BREAKS

<p style="text-align: center;">&lt;P&gt;—&lt;/P&gt;</p> <p style="text-align: center;">ALIGN=Option (LEFT  RIGHT  CENTER)</p>	<p>The &lt;P&gt; tag defines the beginning and ending of a paragraph of text.</p> <p>The alignment of the text in the paragraph</p>
-----------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------

When you create web pages you can use <P> for paragraphs, sections and other phrases and to mark the end of such section you can use </P> ending tag. The Ending tag, in this case, is not compulsory; however there are some cases where the ending tag cannot be omitted. Such tags will be discussed later in this section. <P> for Paragraph, tells your browser to insert a blank or empty line and then begin a new line (a new paragraph). <BR> (for Line Break) tells the browser when a line has ended while <P> tells the browser to leave a blank line and begin a new paragraph.

### Example 5.3

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE 5.0</TITLE>
  </HEAD>
  <BODY>
    <H1>Paragraph and line Demo</H1>
    <P>This is first Paragraph </P>
    <H2>This is heading 2</H2>
    <P>The paragraph two<BR>The paragraph three</P>
  </BODY>
</HTML>
```

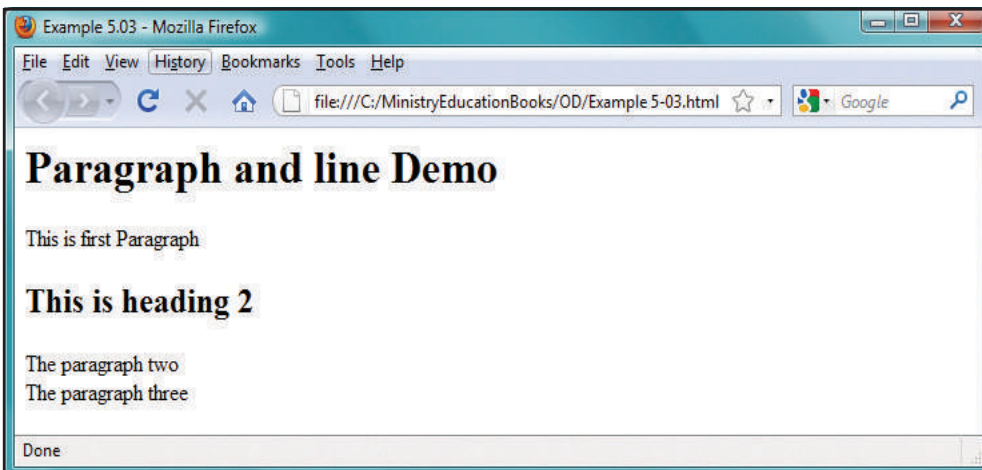


Figure 5.5 - Title, Paragraph and line breaks



## Line Break

`<BR>`  
`CLEAR=option`  
(LEFTIRIGHTIALLI NONE)

The `<BR>` tag forces a line break in the text. Causes the next line to start at the spot in which the specified margin is clear.

`<BR>` tells your browser to go to the beginning of the next line. (BR stands for line **BR**reak). `<BR>` acts in the same way as the ENTER key on your keyboard. When you press the ENTER key, the cursor goes to the beginning of the next line. With `<BR>`, the browser is also told to go to the beginning of the next line. The `<BR>` tag has no end `</BR>` tag because it doesn't need to. Just the presence of `<BR>` adds a line break.



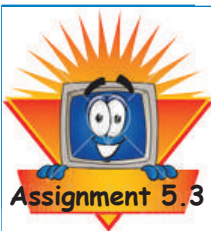
**Notes :**

1. When you display the file in a browser, you will find that the line breaks we had introduced (by hitting 'Enter' key) are ignored by the browser. The browser 'wraps' the text only at the end of the window space. This is because HTML has a special Line Break Tag, <BR> (BR for Line Break). You should use this tag to introduce any line breaks.
2. When you want to display your paragraph aligning to left, to right or to centre, the ALIGN attribute can be used with <P> tag. The ALIGN attribute takes one of the four values: LEFT, RIGHT, CENTER, or JUSTIFY. Following shows some of the examples.

<P ALIGN = "RIGHT" >

<P ALIGN = "CENTER" >

<P ALIGN = "LEFT" >



1. It is needed to create a web site about world Heritage in Sri Lanka which is identified by the UNESCO. Write a report on such a web site with a help of your teacher or internet. Insert descriptions about heritage under a heading and sub headings of your report.
2. Create a simple web page of your report using Notepad. For that use the following tags you studied <HTML>, <HEAD>, <TITLE>, <BODY> <H1>, <H2>, <P> and <BR>.
3. Save the web document you create as 'Heritage.html' on the hard disk. For this, create a folder as 'Heritage' and save the above file as 'Heritage.html' in that.
4. Check the appearance of your web page using any web browser you use.

**N.B. :-**

- When you create the web page, you can use any language, i.e., Sinhala, Tamil or English as you wish.
- When you save web pages in hard disk, you may use '.html' or '.htm' as a file extension. '.html' is the extension use by most of the web community.

## HORIZONTAL LINES

### Example 5.4

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE 5.4</TITLE>
  </HEAD>
  <BODY>
    <H1>Horizontal Rules</H1>
    <HR COLOR=#FF0000>
    <P><HR size= 4 width=80% COLOR=#CCFFCC>
  <P><HR size=10 width=40>
    <P><HR size=10 width=40 ALIGN="LEFT">
  <P><HR size= 5 width=20% ALIGN="RIGHT">
  <P><HR size= 4 width=80% NOSHADE>
  <P><HR size=10 width=40 NOSHADE>
  </BODY>
```

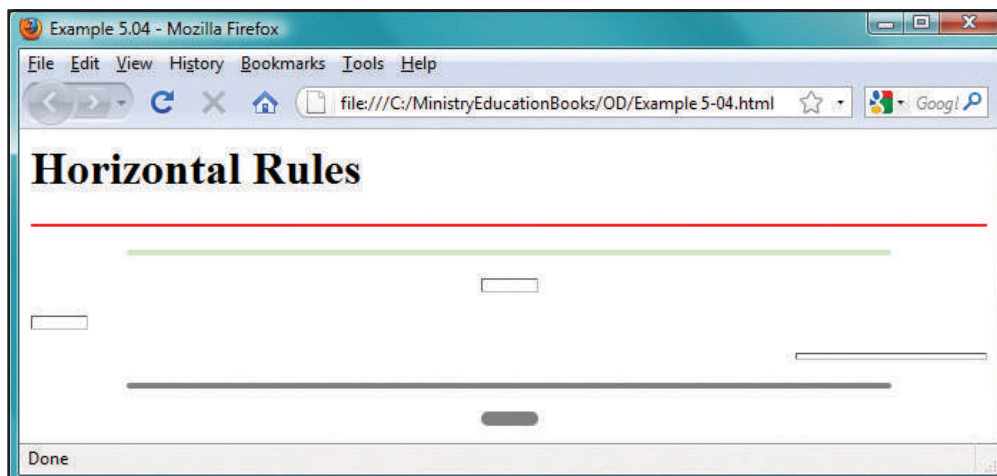


Figure 5.6 - Web Page with horizontal lines

To separate block of text in a document you can use the simple but useful `<HR>` tag which puts a straight line across the page. There is no ending tag for the horizontal rule. The very inclusion of `<HR>` introduces the separating the line.

When you use Internet Explorer you can change the size, width, colour and alignment of the horizontal rule using various attributes.



## Size

The **SIZE** attribute defines the thickness of the horizontal rule. It changes the thickness by specifying the number of pixels with the value.

**eg :** `<HR SIZE = 5>`



## Width

**WIDTH** attribute defines the length or width of the rule. A value is required for this attribute. This value can be expressed in pixel numbers or percentage, which determines the length based on the width of the browser window.

**eg :**

`<HR SIZE = 8 WIDTH = 50>` (Length of the line in Pixels)

`<HR SIZE = 8 WIDTH = 50%>` (Length of the line in percentage)



## Alignment

**ALIGN** attributes align horizontal rules using one of the three values for **ALIGN** attribute, "CENTER" (align to the centre), "LEFT" (align to the left), or "RIGHT" (align to the right).

**eg :**

`<HR SIZE = 8 WIDTH = 50 ALIGN = "CENTER">`

`<HR SIZE = 8 WIDTH = 50% ALIGN = "LEFT">`

`<HR SIZE = 8 WIDTH = 50 ALIGN = "RIGHT">`

The line is aligned to the centre even without specifying **ALIGN** attribute. This is because **ALIGN = "CENTRE"** is a default attribute value for the `<HR>` tag.



## No Shade

**NOSHADE** attribute is used to shade the line and they have this 3D kind of effect. If you don't want this, use the **NOSHADE** attribute. **NOSHADE** takes no values.

**eg :**

`<HR SIZE = 10 WIDTH = 40 NOSHADE>`



<code>&lt;B&gt;—&lt;/B&gt;</code>	The <code>&lt;B&gt;</code> tag displays the enclosed text in the bold type.
<code>&lt;BIG&gt;—&lt;/BIG&gt;</code>	The <code>&lt;BIG&gt;</code> tag increased the size of the enclosed text. The exact appearance of the text depends on the browser and the default font size.
<code>&lt;BLINK&gt;—&lt;/BLINK&gt;</code>	The <code>&lt;BLINK&gt;</code> tag causes the enclosed text to blink on and off.
<code>&lt;CITE&gt;—&lt;/CITE&gt;</code>	The <code>&lt;CITE&gt;</code> tag is used for citation and usually displayed in italics.
<code>&lt;CODE&gt;—&lt;/CODE&gt;</code>	The <code>&lt;CODE&gt;</code> tag is used for text taken from code for a computer program. It is usually displayed in a fixed width font.
<code>&lt;EM&gt;—&lt;/EM&gt;</code>	The <code>&lt;EM&gt;</code> is used to emphasize text. The enclosed text is usually displays in italics
<code>&lt;I&gt;—&lt;/I&gt;</code>	The <code>&lt;I&gt;</code> tag italicizes the enclosed text.
<code>&lt;KBD&gt;—&lt;/KBD&gt;</code>	The <code>&lt;KBD&gt;</code> is used for text made for appear as if it is came from a typewriter or keyboard.Text is displayed with a fixed width font.
<code>&lt;SAMP&gt;—&lt;/SAMP&gt;</code>	The <code>&lt;SAMP&gt;</code> tag displays text in a fixed width font.
<code>&lt;SMALL&gt;—&lt;/SMALL&gt;</code>	The <code>&lt;SMALL&gt;</code> tag decreases the size of the enclosed text. The exact appearance of the text depends on the browser and the default font size.
<code>&lt;STYLE&gt;—&lt;/STYLE&gt;</code>	Contains information that identifies the style sheet in use.
<code>&lt;SUB&gt;—&lt;/SUB&gt;</code>	The <code>&lt;SUB&gt;</code> tag displays the enclosed text as a subscript.
<code>&lt;SUP&gt;—&lt;/SUP&gt;</code>	The <code>&lt;SUP&gt;</code> tag displays the enclosed text as a superscript.
<code>&lt;TT&gt;—&lt;/TT&gt;</code>	The <code>&lt;TT&gt;</code> tag displays text in a fixed width, teletype style font.
<code>&lt;U&gt;—&lt;/U&gt;</code>	The <code>&lt;U&gt;</code> tag underlines the enclose text. The <code>&lt;U&gt;</code> tag should be avoided because it will confide users with hypertext, which is typically underlined.
<code>&lt;VAR&gt;—&lt;/VAR&gt;</code>	The <code>&lt;VAR&gt;</code> tag is used for text that represents a variable and is usually displayed in italics.

### Example 5.5

```
<HTML>
  <HEAD>
    <TITLE><del>EXAMPLE 5.5</del></TITLE>
  </HEAD>
  <BODY>
    <H1>Character Emphasis </H1>
    <P>this is <EM>Emphasis (Usually Italic)
</EM> text
      <P>this is <STRONG>Stronger emphasis
(Usually bold)</STRONG> text
    <P>this is <TT>Teletext </TT> text
    <P>this is <B>Bold</B> text
    <P>this is <I>Italic</I> text
    <P>this is <U>Underline</U> text
    <P>this is <BIG>BIGGER</BIG> text
    <P>this is <SMALL>SMALLER</SMALL> text
    <P>this is <SUB>Subscripted</SUB> text
    <P>this is <SUP>Superscripted</SUP> text
  </BODY>
</HTML>
```

Text in HTML code can be dressed up or changed the styles in various ways so that it's displayed differently by the browser. Using character tags, text can be made **Bold**, Underlined, *Italicized*, ~~Strike-through~~ etc. Moreover, you can make text *both italicized* and bold at the same time. Always remember to put the end tag of the nested element before the end tag of the enclosing element.

There are many tags that perform such embellishments on text. These tags can be either Physical Tags or Logical Tags.

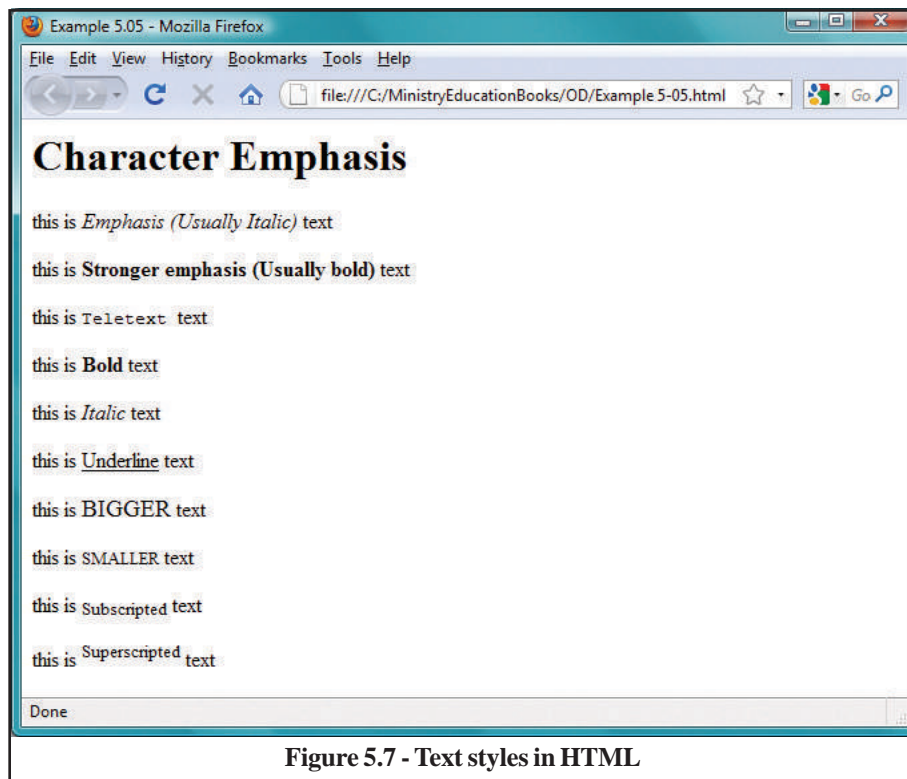


Figure 5.7 - Text styles in HTML



## Character tags

<EM>	<i>Emphasis</i> (Usually <i>Italics</i> )
<STRONG>	<b>Stronger</b> emphasis (Usually <b>bold</b> )
<B>	<b>Boldface</b> where available (Browser may render line in another manner if <b>boldface</b> is not possible)
<I>	<i>Italic</i> (may be rendered as started in some cases)
<U>	<u>Underline</u> (Maybe rendered as started in some cases)
<BIG>	Bigger text
<SMALL>	Smaller text
<SUB>	Subscripted text
<SUP>	Superscripted text
<BLINK>	Flashing text

## ~~FONT~~ ~~FACE~~ ~~COLOR~~

<code>&lt;FONT&gt;—&lt;/FONT&gt;</code>	The <code>&lt;FONT&gt;</code> tag used to control the appearance of the text it encloses.
<code>SIZE = Value</code>	Size of the font in points, it can be absolute or relative. Specifying <code>SIZE=5</code> sets the font size to 5 points. Specifying <code>SIZE=+5</code> set the font size 5 points larger than default tag.
<code>COLOR = Colour</code>	The colour of the enclosed text.
<code>FACE=List</code>	The font faces of the text. Multiple font face can be specified, separated by commas. The browser will try to render the text in the order specified by the list.

In HTML, various properties of text can be changed using the `<FONT>` tag. Font size and colour can be modified using the appropriate attribute of this tag.

`SIZE`: Changes Size.

`COLOR`: Changes the colour.



### Font Size attribute

```
<FONT SIZE = n >
```

Font size can be changed in two different ways.

The size attribute takes a number from 1 to 7 as its value with 1 as the smallest and 3 the default.

Value of n 1 and 2 for Small Size

Value of n 3 for Normal Size

Value of n 4 to 7 for Large Size.

Also, you can use relative values, `+n` and `-n`, for increasing or decreasing font size relative to the current size. For increasing relative font size use values `+1` to `+6` and for decreasing use `-1` to `-6`.

```
<FONT SIZE = +n > or <FONT SIZE = -n>
```

Relative changes in font size with `<FONT SIZE = + 2>` or `<FONT SIZE = - 2>` increment or decrement the font size by 2 point scale relative to the size specified in the nearest.

#### Example 5.6

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE 5.6</TITLE>
  </HEAD>
  <BODY>
    <H1>Font size and colour</H1>
    <FONT SIZE=4 COLOR="#0000FF">
    <P>This font is in Blue</FONT>
    <FONT SIZE=6>
    <P>This font is in size 6</FONT>
    <FONT SIZE=3 COLOR="black">
    <P>This font is in size 3 and Black color</
FONT>
  </BODY>
</HTML>
```

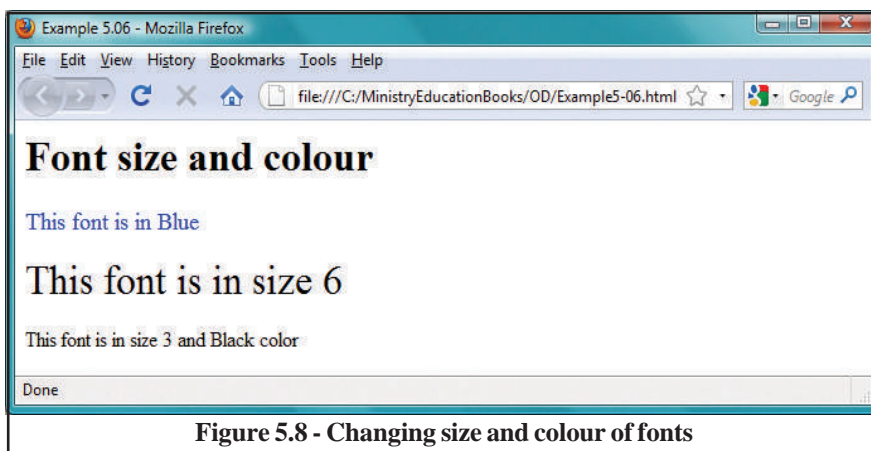


Figure 5.8 - Changing size and colour of fonts



### Font Colour attributes

The COLOR attribute takes either the hexadecimal colour value or just the colour name. Some common colour names are Blue, Green, Red, Yellow, White, Black, Cyan, Magenta, Pink etc.

```
<FONT COLOR = "#RRGGBB" >
```



Colours for monitors are expressed in RGB, Red (RR), Green (GG) and Blue (BB). The combinations of these colours yield other colours. The RGB values can be expressed in percentages, integer values 0-255 or hexadecimal values 00 - FF.

Since we are concerned about colours on web pages we shall concentrate on hexadecimal representation. In this notation, we use numbers 0 to 9 and alphabet A to F.

0 means no colour and F means full colour.

Each colour in hexadecimal notation takes six digits, where the first two represent RED, the second two, GREEN and the last two BLUE colour.

**For example,**

```
<FONT COLOR = "#8F8FBD" > (for light steel blue colour)
<FONT COLOR = "blue" > (for blue colour)
```

**Notes :**

- *In HTML with <FONT> tag you can use size and COLOUR tags together.*

```
<FONT COLOR = "White" SIZE = 5 >
```



































- *When you use colours relative hexadecimal values can be obtained from Table 5.1*
- *If the colour value is not available in Table 5.1 it can be obtained from 'Adobe Photoshop'*

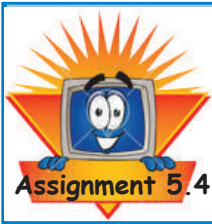


**Table 5.1 Colours, Values & Names**

 RGB=#FFFFFF White	 RGB=#FF0000 Red
 RGB=#FF00FF Magenta	 RGB=#00FFFF Cyan
 RGB=#5F9F9F Cadet Blue	 RGB=#D98719 Cool Copper
 RGB=#42426F Corn Flower Blue	 RGB=#5C4033 Dark Brown
 RGB=#A9A9A9 Dark Gray	 RGB=#006400 Dark Green
 RGB=#BDB76B Dark Khaki	 RGB=#4F4F2F Dark Olive Green
 RGB=#FF8C00 Dark Orange	 RGB=#9932CD Dark Orchid
 RGB=#871F78 Dark Purple	 RGB=#E9967A Dark Salmon
 RGB=#545454 Dim Grey	 RGB=#856363 Dusty Rose
 RGB=#F5CCB0 Faded Brown	 RGB=#238E23 Forest Green
 RGB=#215E21 Hunter Green	 RGB=#4B0082 Indigo
 RGB=#FFFFF0 Ivory	 RGB=#9F9F9F Khaki
 RGB=#8F8FBD Light Steel Blue	 RGB=#E9C2A6 Light Wood
 RGB=#8E236B Maroon	 RGB=#32CD99 Medium Aquamarine
 RGB=#2F2F4F Midnight Blue	 RGB=#23238E Navy Blue
 RGB=#00009C New Midnight Blue	 RGB=#EBC79E New Tan
 RGB=#8C1717 Scarlet	 RGB=#238E68 Sea Green

**Table 5.1 (Cont.....)**

 RGB=#E6E8FA Silver	 RGB=#3299CC Sky Blue
 RGB=#4F2F4F Violet	 RGB=#CC3299 Violet Red
 RGB=#00FF00 Green	 RGB=#0000FF Blue
 RGB=#FFFF00 Yellow	 RGB=#000000 Black
 RGB=#B87333 Copper	 RGB=#FF7F00 Coral
 RGB=#2F4F2F Dark Green	 RGB=#4A766E Dark Green Copper
 RGB=#D19275 Feldspar	 RGB=#8E2323 Firebrick
 RGB=#CD7F32 Gold	 RGB=#DDB700 Goldenrod
 RGB=#A8A8A8 Light Gray	 RGB=#E9C2A6 Light Wood
 RGB=#32CD32 Lime Green	 RGB=#E47833 Mandarin Orange
 RGB=#3232CD Medium Blue	 RGB=#6B8E23 Medium Forest Green
 RGB=#EAEAAE Medium Golden Rod	 RGB=#9370DB Medium Orchid
 RGB=#426F42 Medium Sea Green	 RGB=#7F00FF Medium Slate Blue
 RGB=#7FFF00 Medium Spring Green	 RGB=#DB7093 Medium Violet Red
 RGB=#70DBDB MediumTurquoise	 RGB=#A68064 Medium Wood
 RGB=#4D4DFF Neon Blue	 RGB=#FF6EC7 Neon Pink
 RGB=#CFB53B Old Gold	 RGB=#FF7F00 Orange



1. Take again your web page to Notepad tool and try to develop its appearance.
2. To develop the appearance of your web page use appropriate decorative horizontal lines and colours to for characters. Use white colour from table 5.1 when choosing colours.
3. Save 'Heritage.html' again in your computer.

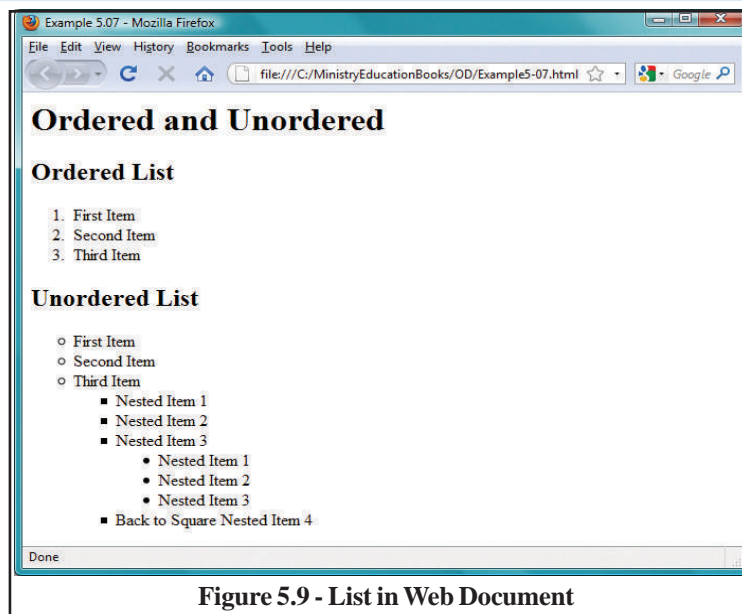


When we create HTML documents, we all understand the importance of lists in the document. They are an indispensable tool for cataloguing and indexing various objects and events.

Two kinds of lists are very common and used by us regularly. The Ordered Lists help us keep an organized inventory wherein the list items are ranked while in Unordered Lists, the classification is not important and the list items do not occur in any assorted order.

## Example 5.7

```
<HTML>
<HEAD>
  <TITLE>[EXAMPLE 0.0]</TITLE>
</HEAD>
<BODY>
  <H1>Ordered and Unordered</H1>
  <H2>Ordered List</H2>
  <OL TYPE=1 START=1>
    <LI> First Item
    <LI> Second Item
    <LI> Third Item
  </OL>
  <H2>Unordered List</H2>
  <UL TYPE=CIRCLE>
    <LI> First Item
    <LI> Second Item
    <LI> Third Item
      <UL TYPE=SQUARE>
        <LI> Nested Item 1
        <LI> Nested Item 2
      </UL>
    <LI> Nested Item 3
      <UL TYPE=DISC>
        <LI> Nested Item 1
        <LI> Nested Item 2
        <LI> Nested Item 3
      </UL>
    <LI>Back to Square Nested Item 4
  </UL>
</BODY>
</HTML>
```





## Ordered List

<code>&lt;OL&gt;—&lt;/OL&gt;</code>	The <code>&lt;OL&gt;</code> tag encloses an ordered list of <code>&lt;LI&gt;</code> items. Typically ordered list are rendered as numbered list
<code>START=<i>value</i></code>	The <i>values</i> of the starting number in the ordered list
<code>TYPE=<i>Option</i></code> (Alallil1)	Specifies how ordered items are to be marked. A=uppercase letters, a=lowercase letter, I=uppercase Roman numerals, i=lowercase Roman numerals, 1=Digits, the default is 1.

The `<OL>` (Ordered List) helps keep an organized list with numbers or symbols (Eg. 1, 2, 3 ..... or i, ii, iii or a, b, c) where in the list items. If the ranking of items is desired, we employ `<OL>` for ordered lists and `</OL>` as ending tag. To place individual list items, you should use the `<LI>` (**L**ist **I**tem).

Example,

```
<OL><LI> Item 1 </OL>
<OL><LI> Item 1
    <LI> Item 2
</OL>
```

An ending tag for a list item `</LI>` is not required.

Numbers are the default bullets in ordered lists but you can change them using the `TYPE` attribute of `<OL>` tag. This attribute takes one of the two values:

Example,

```
<OL TYPE = 1 START = 1>
```

can be used, Number list can also specify the numbering type and starting number.

For example,

```
<OL TYPE = i START = 3>
```



## Un-ordered List

`<UL>—</UL>`  
`TYPE=Option`  
(DISKICIRCLEISQUARE)

The `<UL>` tag enclose an an ordered list of `<LI>` items. Typically ordered list are rendered as symbolic list. TYPE specifies how ordered items are to be marked.

`<UL>` - `</UL>` are the starting and ending tags of Unordered lists. List items are included using the `<LI>` tag.

**Eg :**

```
<UL>  
<LI>    Item 1  
<LI>    Item 2  
</UL>
```

Unordered lists also support the TYPE attribute that takes disc, circle or square as its value.

For example,

```
<UL TYPE = DISC>
```



## Definition List

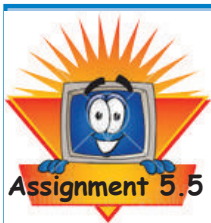
`<DD>`

The `<DD>` tag formats text to be used as relative definitions in the `<DL>` list

These lists are great for making glossaries. As you know, a glossary consists of a term and a definition. For HTML Definition lists, which are enclosed between <DL> and </DL> (**Definition List**), you have to use <DT> (**Definition Title**) to indicate the Term and <DD> (**Definition Description**) to denote the definition.

For example,

```
<DL>
  <DT> Title 1
  <DD> Description 1
  <DT> Title 2
  <DD> Description 2
</DL>
```



Now you have already created a web page named 'heritage.html' about 7 cultural and natural heritages in Sri Lanka which are identified by the UNESCO. They have categorized 6 of them as cultural heritages and 1 as natural heritage.

Again insert your 'heritage.html' web page on to text editors tool. Then make a list as 6 cultural heritages and 1 natural heritage under the heading at the beginning of the page. Put numbers to the list.

Then put wide descriptions of each heritage under sub headings and after making that list save that again as 'heritage.html'

**Note :**

*Information about world heritage sites in Sri Lanka can be obtained from the 'http://whc.UNESCO.org/en/statesparties/lk' web sites.*





## Comments

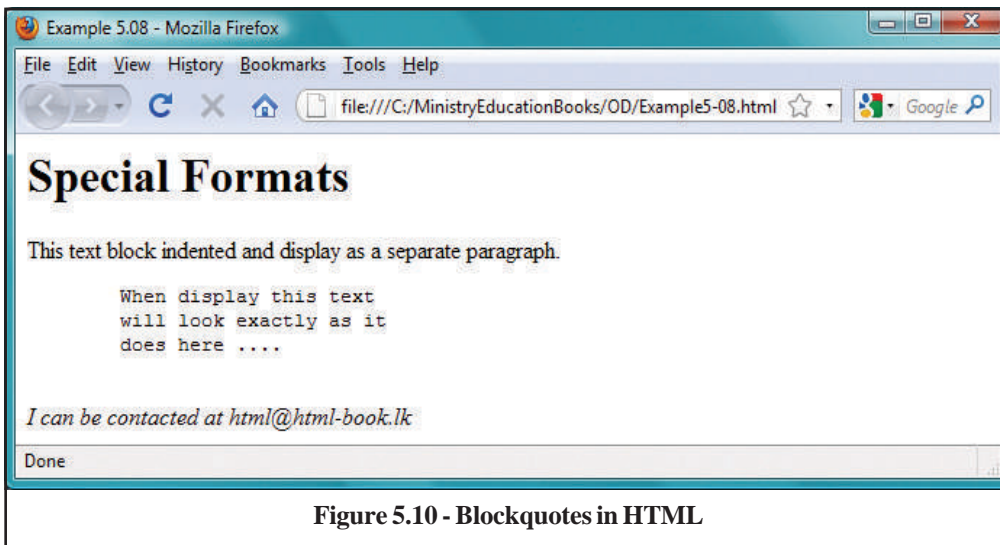
As your HTML pages grow, so will their complexity. Maintaining such complex pages can be quite a problem if there is no way to add documentation to these files.

Fortunately, HTML provides tags through which you can add comments to various sections of your scripts. The starting comment tag is `<!--` (that's the 'lesser than' sign followed by an exclamation mark and two dashes) and the ending tag is `-->`.

```
<!-- This tag displays the text in the source
but not in the Internet Explorer display -->
```

### Example 5.8

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE 5.8</TITLE>
  </HEAD>
  <BODY>
    <H1>Special Formats</H1>
    <!-- - Comments line - This text will not
display in the Netscape display - -->
    <BLOCKOUT>This text block indented and
display as a separate paragraph.
    </BLOCKOUT>
    <PRE>
When display this text
will look exactly as it
does here ....
    </PRE>
    <ADDRESS>
I can be contacted at
html@html-book.lk
    </ADDRESS>
  </BODY>
</HTML>
```



**Figure 5.10 - Blockquotes in HTML**



## Block quotes

If you wish to introduce some large body of text and make it stand out from the rest, you should put it between `<BLOCKQUOTE>` - `</BLOCKQUOTE>`. The enclosed text will be indented from the left and right margins and also adds space at the top and bottom quite like this paragraph.

```
<BLOCKQUOTE>
```

```
This is tag display the text block indented and as a
separate paragraph.
```

```
</BLOCKQUOTE>
```



## Pre-formatted Text

```
<PRE>—</PRE>
```

The `<PRE>` tag retains the pre-formatted appearance of the text in the HTML file, including any line breaks or spaces. Text is usually displayed in a fixed width font.

Text within `<PRE>` - `</PRE>` (**PRE**-format) is rendered along with any spaces, tabs, returns. So there is no need of using the `<BR>` tag and tabs can be introduced quite like this or spaces like this.

```
<PRE>
When displayed this text
will look exactly
</PRE>
as it does here ....
```



## Address

`<ADDRESS>`—`</ADDRESS>`

The `<ADDRESS>` tag is used for information such as addresses, authorship, and so forth. The text is usually italicized and in some browsers it is indented.

The `<ADDRESS>` - `</ADDRESS>` tag is a logical formatting element. You should use this to include any address. This should **NEVER** be used for physical layout as it may be rendered differently by the browsers.

```
<ADDRESS>
I can be contacted at
info@ucsc.cmb.ac.lk
</ADDRESS>
```

**HAESIN**

By now you know enough to write a very nice, text-based home page, but it is the ability of the Web to provide pictures, technically called images, graphics, pictures or sometimes icons, that have made it so popular. By adding images to the web pages,

it will add better look and feel as well as complete information about the topic by text and by visuals. In section, you'll learn how to place an image on your page and also how to turn an image into a link to another page.

There are two basic image file formats you will find on the Web. Each is denoted to the browser by a different suffix. GIF is an acronym for Graphics Interchange Format and JPEG or JPG (pronounced "j-peg") are two names to denote the other format. JPEG is an acronym for Joint Photographic Experts Group, the organization that invented the format.

GIF format was invented by CompuServe and it's very popular. The reason is that it's a simple format. It's a series of coloured picture elements, or dots, known as pixels, that line up to make a picture.

The JPEG format is unique in that it uses compression after it has been created. For example, if the picture is 10K bytes when displayed, it may be only 4K bytes when stored.

Let's start this section with an image of the Sinharaja Rainforest, which has been stored in your computer hard disk. The name of the image file is 'Sinharaja.jpg.' Including images is very simple. You employ the <IMG> (for IMAGE) tag. The required attribute of this tag is SRC, which takes the value of the image file's URL For example:

```
<IMG SRC="Sinharaja.jpg">
```

### Example 5.9

```
<HTML>
<HEAD>
  <TITLE>[XAMPLE 0]</TITLE>
</HEAD>
<BODY>
  <H1>Inserting Image</H1>
  <P>Sinharaja Rainforest<BR>
  <IMG SRC="Sinharaja.jpg" ALT="Sinharaja
Forest">
  <P>Sinharaja is the country's last viable area of
primary tropical rainforest. More than 60% of the trees
are endemic and many of them are considered rare. There
is much endemic wildlife, especially birds, but the reserve
is also home to over 50% of Sri Lanka's endemic species
of mammals and butterflies. As well as many kinds of
insects, reptiles and rare amphibians. </P>
</BODY>
</HTML>
```

The SRC attribute determines the source of the image file and takes a URL as value. We have used a relative URL which shows that 'Sinharaja.jpg' is located in the same directory as this file or another web site with its location. For example if the 'Sinharaja .jpg' image is located in the web address of [www.ucsc.cmb.ac.lk](http://www.ucsc.cmb.ac.lk), it can be inserted as follows.

```
<IMG SRC="http://www.ucsc.cmb.ac.lk / Sinharaja.jpg">
```

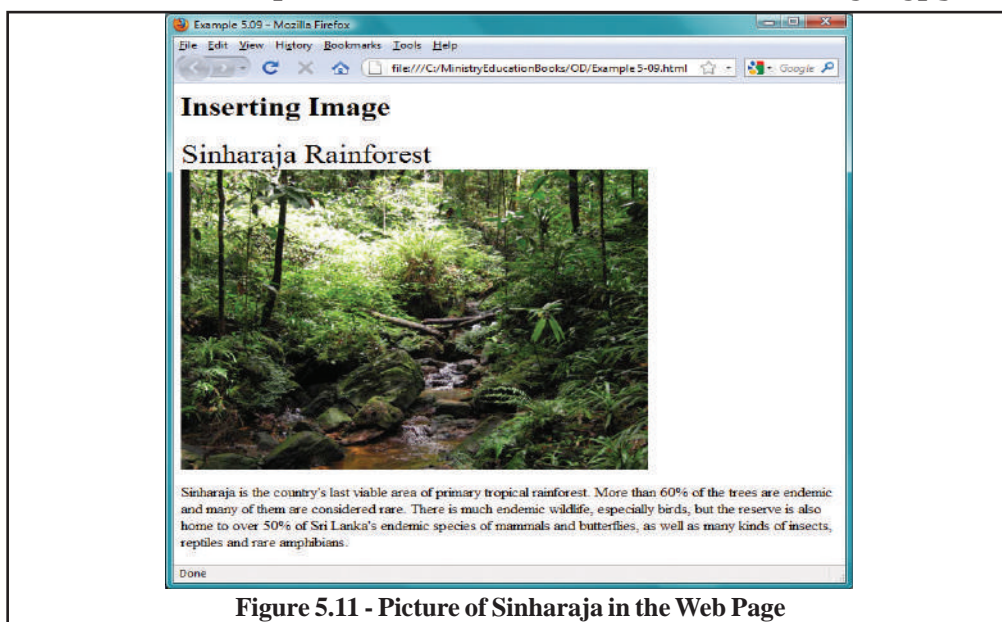


Figure 5.11 - Picture of Sinharaja in the Web Page



## Alternative Images

The <ALT> (**AL**Ternate image) attribute is now required. You can put some advisory text with the use of this attribute. This text is displayed when the mouse pointer is placed on the image. You should get into the good habit of including ALT tags. Visitors using text-based browsers or who have turned off images in their browsers will not be able to see the image. However, they would be able to read the image description through the ALT attribute.

```
<IMG SRC="Sinharaja.jpg" ALT = "Image of Sinharaja Rainforest">
```

## ALIGN & WIDTH

Image can be placed at a specified position, in relation to the paragraph. In this case few attributes can be used like in Figure 5.10, such as 'ALIGN' and 'WIDTH'.

### Example 5.10

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE 5.10</TITLE>
  </HEAD>
  <BODY>
    <H1>Aligning Text & Images</H1>
    <P> The text aligns with the top of the
    image.</P>
    <IMG ALT="Galle Port" ALIGN=TOP WIDTH=360
    SRC="Galle Port.jpg">
    <H2><FONT SIZE=6><B> Galle Port <B>
    </FONT></H2>
  </BODY>
</HTML>
```



## Alignment

The ALIGN attribute is used to align other HTML elements such as text around the image. Thus, `<IMG SRC="Galle Port .jpg" WIDTH="360" ALIGN="TOP">` will align the image to the top and text to its bottom.

```
<IMG ALIGN=TOP SRC="image.gif">
```

ALIGN can also take "TOP", "BOTTOM" or "MIDDLE" as value. These align the text to the top, middle or bottom of the image.

TOP	The text aligns with the top of image
TEXTTOP	The image is aligned with the top of the tallest text in the line.
MIDDLE	The text aligns with the middle of the image
BOTTOM	The text aligns with the bottom of the image
LEFT	The image aligns with the left margin, and the text wraps around the right.
RIGHT	The image aligns with the right margin, and the text wraps around the left.

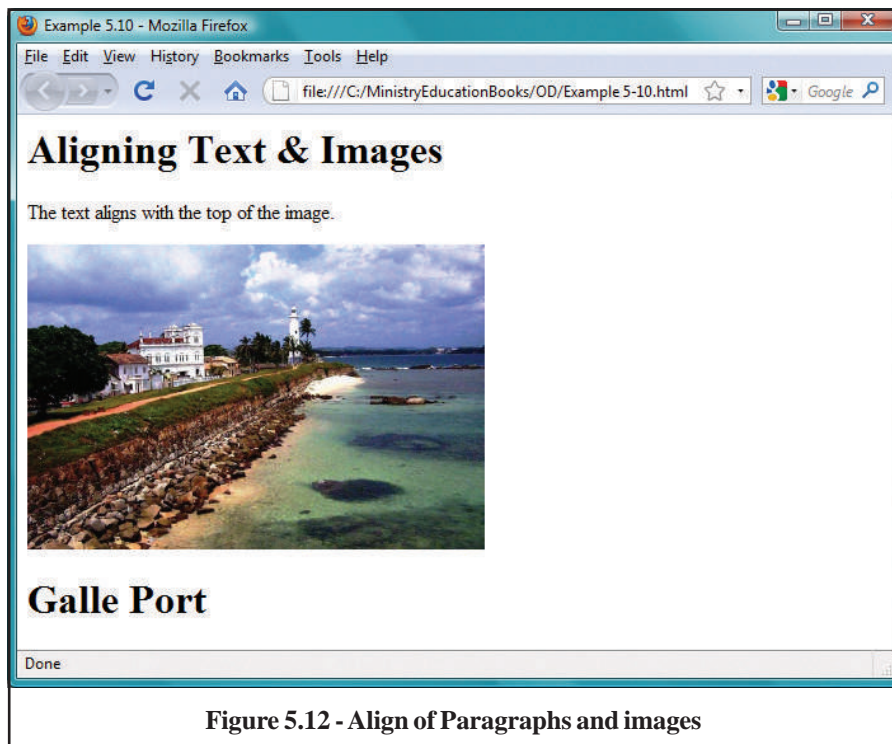


Figure 5.12 - Align of Paragraphs and images



## Width and Height

The WIDTH and HEIGHT attributes take pixel dimensions of the image as values. You can find the width and the height of the image in pixels using a graphics program such as Paint Shop Pro or Adobe PhotoShop.

Your image will display correctly even if you skip using these attributes. However, you should ALWAYS include them as this helps the browser window to allocate space for your image.

```
<IMG WIDTH=Value HEIGHT=Value>
(Value = No of Pixels)
(see figure 5.12 for example)
```



## Border

Use this attribute to put a border around the image. The attribute takes a number as value. This number determines the thickness of the border in pixels.

```
<IMG BORDER=n>
(n = No of Pixel)
```





## Space

HSPACE (**H**ORIZONTAL **S**PACE) and VSPACE (**V**ERTICAL **S**PACE) attributes introduce horizontal or vertical space around an image. They take a number as value that determines the number of pixel space created.

`<IMG SRC="Sinharaja.jpg" HSPACE="30">` will put 30 pixel space on the left and the right side of the image.

VSPACE accomplishes something similar to HSPACE but adds space to the top and bottom of the image.

```
<IMG VSPACE=n HSPACE=n>
```

(n = No of Pixel)

## BACKGROUND & TEXT COLORS

Can use HTML attributes in tags to change background colours and foreground colour / text colours.

### Example 5.11

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE 5.11</TITLE>
  </HEAD>
  <BODY BGCOLOR="#527F76" TEXT="#C0D9D9">
    <H1>Set Background & Text Color</H1>
    <P>Green Copper Background & Light Blue Text</P>

    <IMG ALIGN="CENTER" SRC="Galle Port.jpg"
    ALT="Galle Port">
    <P><FONT SIZE=6 COLOR=#44FF44><B> Galle Port
    </B></FONT></P>
  </BODY>
</HTML>
```

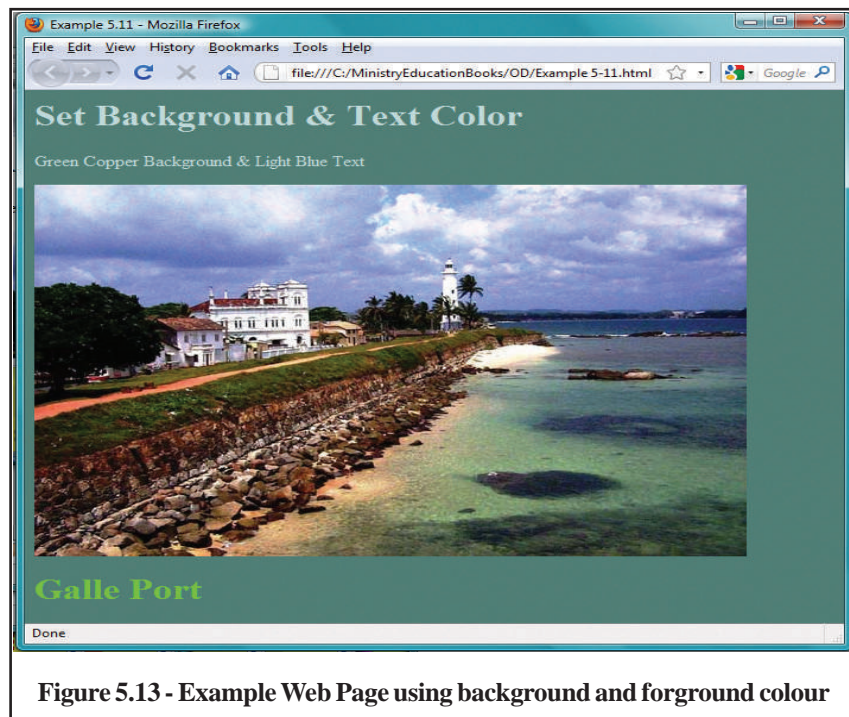


Figure 5.13 - Example Web Page using background and foreground colour



## Background Color

This attribute controls the background colour properties of the document as a whole. Some of these properties are:

**BGCOLOR**: controls the background colour of the document

The **BGCOLOR** takes hexadecimal colour code or colour name as their value. This attribute must be used with **<BODY>** tag.

```
<BODY BGCOLOR="#RRGGBB">
```

'RRGGBB' of this is 3 hexadecimal digits of paired numbers. 'RR' is for red colour, 'GG' is for green colour and at last 'BB' is for blue colour. Therefore, one can give values for each colour and combination of these three colours gives the background colour. For an example, '8F8FBD' can be used for 'Light Steel Blue' colour.

```
<BODY BGCOLOR="#8F8FBD">
```



## Text Color

TEXT attribute specifies colour of normal text in a page. This attribute must be used with <BODY> tag.

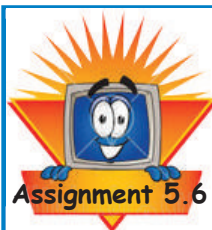
```
<BODY TEXT=" #RRGGBB " >
```

Background colour and text colour can change as follows.

```
<BODY BGCOLOR="white" TEXT="blue" >
```

### Notes :

1. See the Table 5.1 for Colour Names.
2. You must be concerned with the colour used for background and for ground; as such reader may have difficulties of reading the web page.



1. Take your 'heritage.html' web page to Notepad again.
2. Take photographs of 7 world heritage in Sri Lanka from internet or any other way. Save those 7 heritage with appropriate file name and 'GIF' or 'JPG' file format. Adjust size of photographs using Adobe Photoshop if want. Save those 7 images with appropriate file name in 'heritage' folder of hard disk.
3. Insert above 7 images under subheadings for the topics world heritage in the 'heritage.html' web document. Use tag <IMG> and subtags which you studied to insert those images. Decorate your web page using appropriate character colours.
4. Finally save your 'Heritage.html' web document again and finally check it using web browser.

## BACKGROUND IMAGES

Takes a URL of an image as value and puts this image as the background. Background images are tiled by browsers.

### Example 5.12

```
<HTML>
<HEAD>
  <TITLE>EXAMPLE 5.12</TITLE>
</HEAD>
<BODY BACKGROUND="teapot.jpg" TEXT="#101010" >
  <H1>Set Background with a picture</H1>
  <P>
    <B>Picture with Border</B></P>
    <IMG ALIGN="CENTER" SRC="teastate.jpg"
BORDER="10" WIDTH=400>
    <P>
      <STRONG><BIG>Tea States in Sri Lanka</BIG></STRONG></P>
  </BODY>
</HTML>
```



Figure 5.14 - Images in Background

```
<BODY BACKGROUND="teapot.jpg">
```

Now, you can see your own image as a background.

**Note :**

1. To decorate beautiful pictures, you can use Adobe Photoshop like image editing software.
2. When you use picture as background make sure your text is clearly visible.

## LINKS

HTML documents contain certain 'hot spots'. These hot spots provide anchors that link to other documents/files on the Internet. The stupendous growth of the Internet and the WWW is attributed to these tags. It's hard to imagine a network without links and interlinks.

Let us look at this tag in detail.

When making a link using 'Links' to a web page or a web site, we must know the actual folder or URL. The following example shows how 'Links' can be used within HTML.

```
<A HREF="http://www.ucsc.cmb.ac.lk"> </A>  
( HREF : HYPertext REFERENCE )
```

The HREF attribute is required and takes the URL address of the destination page as value. Without this attribute-value, no links will be created. Some text is enclosed between the anchor tags. This text serves as the hot spot. When a visitor clicks on this 'hot spot', he or she will be transported to the target page. <A> is a starting tag and </A> is an ending tag.

For example, Click <A HREF=<http://www.ucsc.cmb.ac.lk>> here </A> to make a link.

<code>&lt;A&gt;—&lt;/A&gt;</code>	The <code>&lt;A&gt;</code> tag marks the beginning and end of hypertext link.
<code>HREF=URL</code>	Indicates the target, file name, or URL that the hypertext point to.
<code>NAME=Text</code>	Specified a name for an enclosed text, allowing it to be target of a hyperlink.
<code>REL=Text</code>	Specified the relationship between the current page and link specified by HREF property.
<code>REV=Text</code> specified	Specified the reverse relationship between the current page and link by HREF property.
<code>TARGET=Text</code>	Specifies the default target window or frame for the hyperlink.
<code>TITLE=Text</code>	Provide a title for the document whose address is given by the HREF property.

As in figure 5.15, by activating 'Read more about Sinharaja' (by clicking with the mouse), user may visit these web sites. The example below specifies the link address of the destination to [www.ebooks.lk](http://www.ebooks.lk)

### Example 5.13

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE</TITLE>
  </HEAD>
  <BODY>
    <H1>Creating Links with other source</H1>
    <P><FONT SIZE=6>Sinharaja Forest</FONT></P>
    <IMG SRC="Polonnaruwa.jpg" ALT="Sinharaja Forest"><BR>
    <A
  HREF="http://www.Sinharaja.lk/Sinharaja.html">Read move about
  Sinharaja</A>
    <P>
    Click
    <A HREF="http://www.ebooks.lk">here</A>
    to read more about eBooks</P>
  </BODY>
</HTML>
```

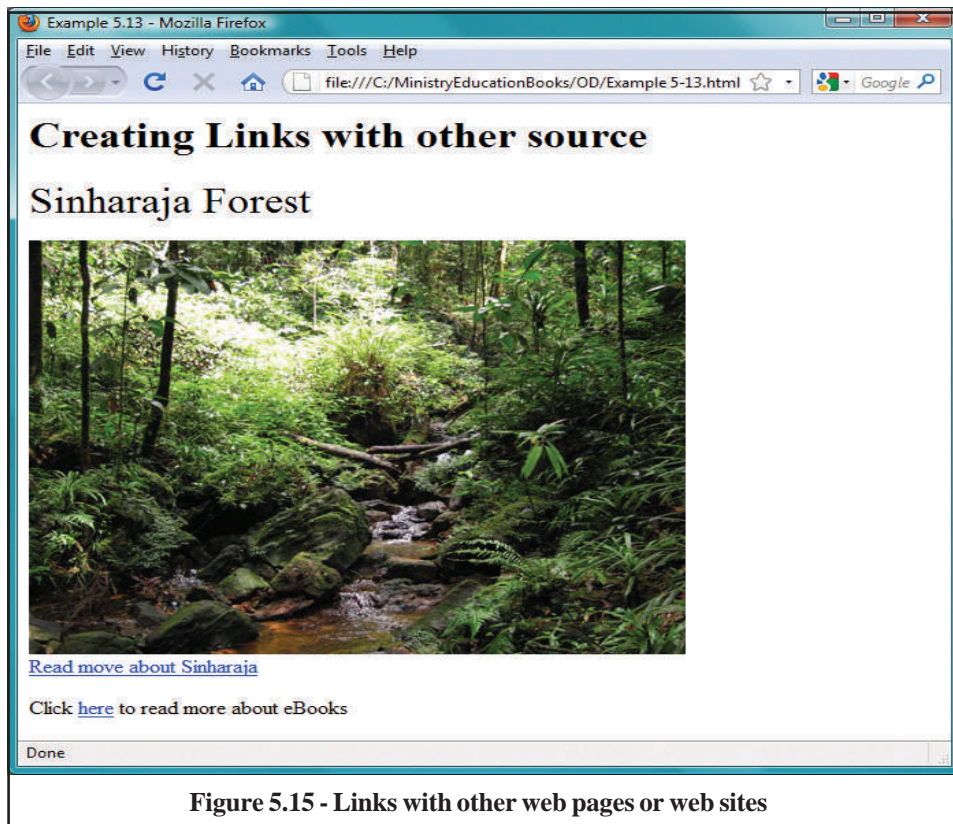


Figure 5.15 - Links with other web pages or web sites



## Link Attribute

LINK (UN-VISITED LINK), VLINK (VISITED LINK) and ALINK (ACTIVATED LINK) attributes colour should be different from normal text colour in the Web browser, so that visitor recognizes it from its display. The default colour is blue (#0000FF). Visited link colour by default will be purple. You can change this default colour by giving the new colour value for LINK, VLINK and ALINK attributes. For example;

```
<BODY   LINK   = "#RRGGBB"
        VLINK  = "#RRGGBB"
        ALINK  = "#RRGGBB" >
```

When you make links with web sites, there are 3 ways you can follow.

1. Links within save document
2. Links for another web page within saved web site.
3. Links to another web site or web page on other web site.

Detailed exploration will be given later.

## LINKS WITHIN A DOCUMENT

So far we have discussed only inter-document linking. What if you want to make the visitor jump to different sections of the SAME page? We employ the <A> tag in this case too, but its format changes slightly. Instead of a URL in the HREF attribute, we use names.

There are two main points to remember, they are,

1. The point of click
2. The return anchor point

### Example 5.14

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE</TITLE>
  </HEAD>
  <BODY>
    <H1>Linking Within a Document</H1>
    <P>
    <H3> This document contains some links
      to other sections within itself.
      Click the Section that you wish to view.
    </H3>
    <BR><A HREF="#Part1"> Part 1 </A>
    <BR><A HREF="#Part2"> Part 2 </A>
    <BR><A HREF="#Part3"> Part 3 </A>
    <A NAME= "Part1"> <H3>Part 1 </H3></A>
    <BR>Part one of the document
    <A NAME= "Part2"> <H3>Part 2 </H3></A>
    <BR>Part two of the document
    <A NAME= "Part3"> <H3>Part 3 </H3></A>
    <BR>Part three of the document
  </BODY>
</HTML>
```





## Making the Anchor

First, an anchor `<A>` is set at the desired place in the document using the `NAME` attribute. In this case I put the following code at the top of the page.

```
<A NAME="Part1"> Part 1 </A>
```

The value of `NAME` attribute can be anything you want. Also note that it is not necessary to enclose any text or other HTML element if the anchor tag is used in this manner.

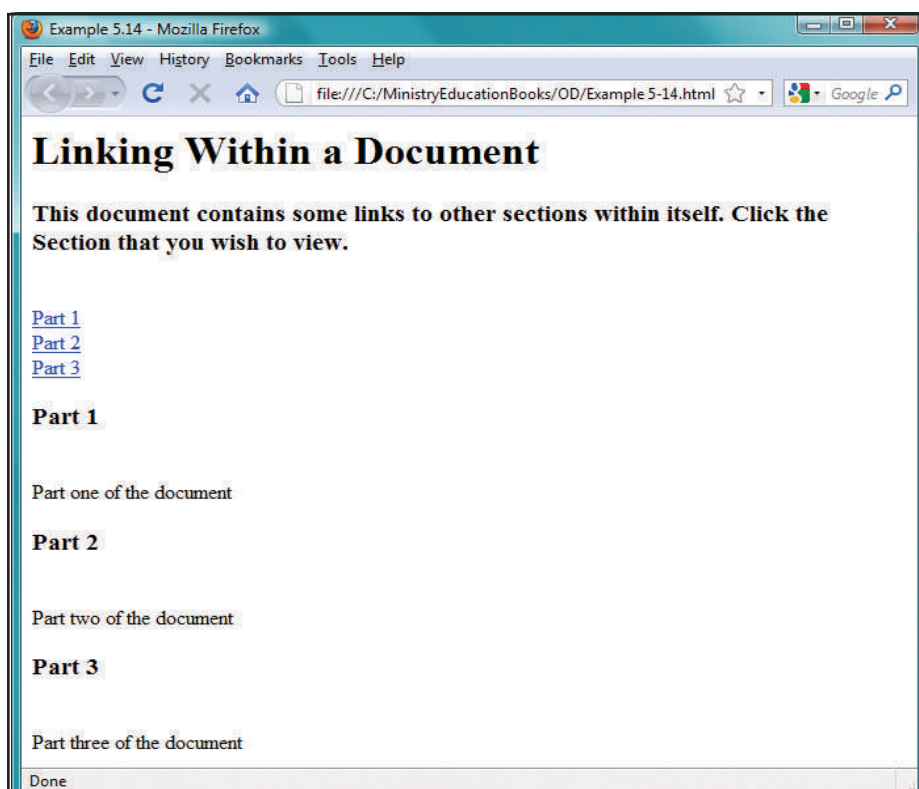


Figure 5.16 - Make a link within the page



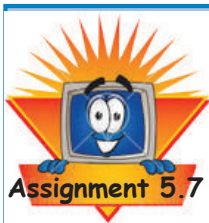
## Making the Link

After setting an anchor with its NAME attribute we employ another set of <A> to make a link that points to it:

```
<A HREF = "#Part1"> Part 1 </A>
```

If the link is associated with another web page, then HREF must have the attribute with web address followed by section name. For example;

```
<A HREF = "names.html#Part1"> Part 1 </A>
```



You have listed about world heritage in Sri Lanka by Assignment 5.5 and then described above those heritage under different sub headings. Create links as described above using those lists and descriptions. Then view how those links are work.

## IMAGE HOTSPOTS

In previous sections we looked in to the links to a text. Text placed between <A>..</A> tags becomes a hot spot providing a link to another document or to some anchor on the same page. Image can also be used as hot spots if they are inserted between the anchor tags <A HREF>.

Let us see how this can be done. The name of the button is 'Part1.jpg', so.

```
<A HREF = http://www.ucsc.cmb.ac.lk>  
<IMG SRC="part1.jpg"></A>
```

can be used. If the anchor point is forth same document you can use.

```
<A NAME="#Part1">  
<IMG SRC="part1.jpg"></A>
```

This is given in Example 5.15 and web browser output is given in figure 5.17.

### Example 5.15

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE 5.15</TITLE>
  </HEAD>
  <BODY>
    <H1>Linking Using Buttons</H1>
    <P>
      <H3> This document contains some buttons
      links to other sections. Click the
      section that you wish to view.</H3>
    </P>
    <P>
      <A HREF = "#part1"> <IMG SRC="part1.jpg"
ALIGN=TOP></A>
      <A HREF= "#part2"><IMG SRC="part2.jpg" ALIGN=TOP></A>

      <A HREF = "#part3"> <IMG SRC="part3.jpg" ALIGN=TOP></A>

    </P>
    <A NAME= "part1"> <H3>Part 1 </H3></A>
    <BR>Part one of the document
    <A NAME= "part2"> <H3>Part 2 </H3></A>
    <BR>Part two of the document
    <A NAME= "part3"> <H3>Part 3 </H3></A>
    <BR>Part three of the document
  </BODY>
</HTML>
```

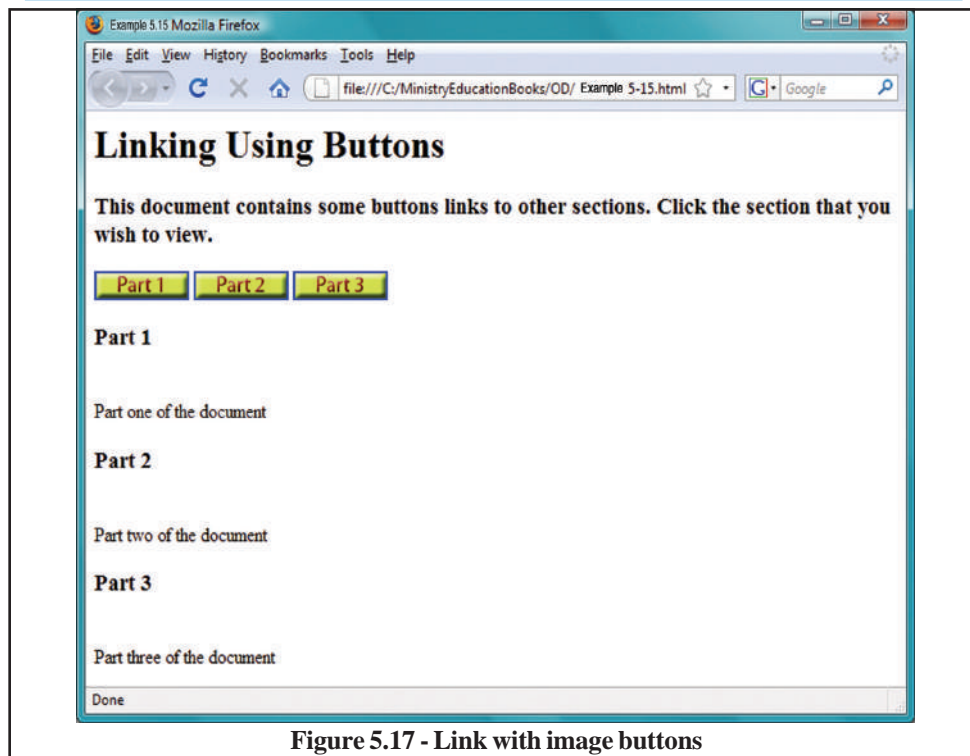


Figure 5.17 - Link with image buttons



## Image button Alignment

If you wish to align image buttons in your web you can use "ALIGN" attribute with <IMG> tag. ALIGN attribute has three valid values. They are LEFT, CENTER and RIGHT.

```
<IMG SRC="part1.jpg" ALIGN = MIDDLE>
```



## Setting the border of image buttons

You can set the border width or set the size of the border for image buttons. For example,

```
<IMG SRC="part1.jpg" BORDER = 0>
```

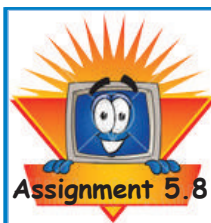
BORDER = 0 no border

BORDER = 1 thin border

BORDER = 2 thick border

The BORDER attribute with its value can be placed with <IMG> tag.

```
<IMG SRC="part1.jpg" BORDER=0 ALIGN=MIDDLE>
```



Insert 7 image buttons created using Adobe Photoshop above the list you used to link in the Assignment 5.7 and give appropriate links according to example 5.5. Assign links for the parts of web document.

## LENT DE HATE APS

Perhaps you may need to make multiple links with one image button. Especially you may use this technique to include menus in your web page. For example let's look at the attribute image below. In this image allow you to place multiple links using client - side - image - map coordinates.

For this you have to consider two steps.

1. You must provide the image information.
2. You must provide the image coordinate information. The example 5.16 is given below using image map with its coordinates to make links to different sections of the same web page. The output is given in figure 5.18.

### Example 5.16

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE 5.16</TITLE>
  </HEAD>
  <BODY>
    <H1>Linking Using Image Map</H1>
    <P>
      <H3> This document contains Image Maps links to other
        sections. Click the section that you wish to view.
      </H3>
      <IMG SRC="Header.jpg" USEMAP="#buttonbar">
      <MAP NAME="buttonbar">
        <AREA HREF="#part1" SHAPE="RECT" COORDS=" 40, 0, 100, 28">
        <AREA HREF="#part2" SHAPE="RECT" COORDS="110, 0, 170, 28">
        <AREA HREF="#part3" SHAPE="RECT" COORDS="180, 0, 240, 28">
        <AREA HREF="#part4" SHAPE="RECT" COORDS="250, 0, 310, 28">
        <AREA HREF="#part5" SHAPE="RECT" COORDS="320, 0, 380, 28">
        <AREA HREF="#part6" SHAPE="RECT" COORDS="390, 0, 450, 28">
      </MAP>
      <P><A NAME="part1"> <B>Part 1 </B></A>
      <BR> Blah, Blah, Blah
      <P><A NAME="part2"> <B>Part 2 </B></A>
      <BR> Blah, Blah, Blah
      <P><A NAME="part3"> <B>Part 3 </B></A>
      <BR> Blah, Blah, Blah
      <P><A NAME="part4"> <B>Part 4 </B></A>
      <BR> Blah, Blah, Blah
      <P><A NAME="part5"> <B>Part 5 </B></A>
      <BR> Blah, Blah, Blah
      <P><A NAME="part6"> <B>Part 6 </B></A>
      <BR> Blah, Blah, Blah
    </BODY>
  </HTML>
```

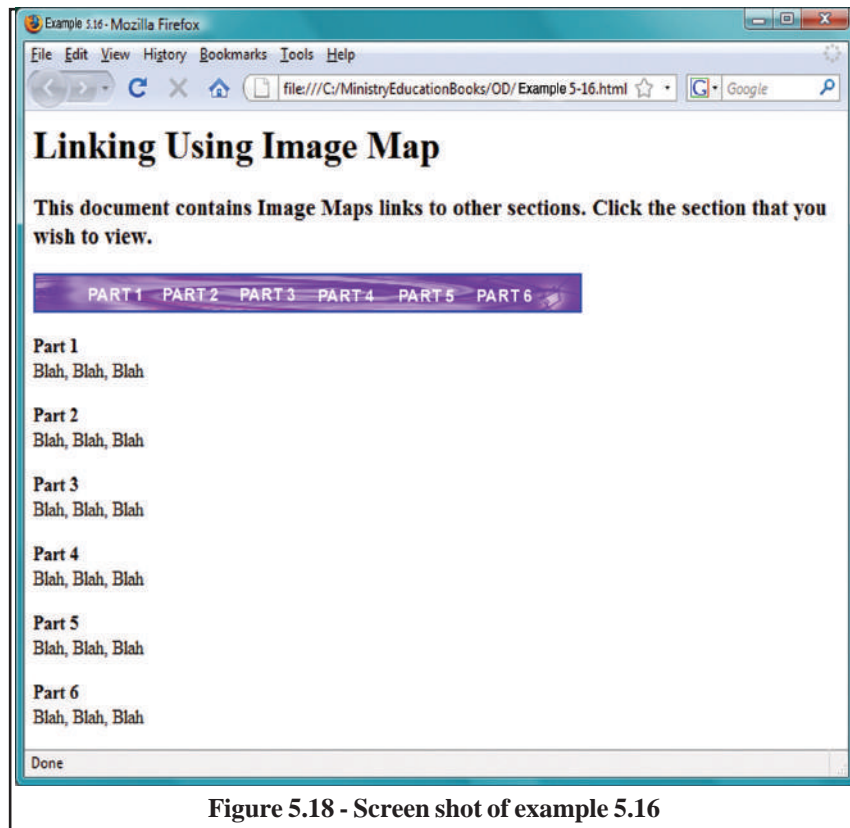


Figure 5.18 - Screen shot of example 5.16



## Declaring image map

You simply place the IMAGE MAP information into a few HTML markup tags. <IMG> tag containing the name of the image with USE MAP attribute. The example is given bellow.

```
<IMG SRC= "Header.jpg" USEMAP="#buttonbar">
```



## Setting Map Details

The MAP tag contains the MAP coordinate of the link, URLS to map them to, 'SHAPE' of the coordinates and move importantly name of the image map. The <AREA> tag has COORDS, HREF and SHAPE attribute and necessary values to

be assigned. When you mark the area coordinates, it should be given in X, Y coordinates in pixel. Then URL to the page references can be given.

```
<MAP NAME = "buttonbar">
<AREA SHAPE = "RECT"
COORDS = "40,0,100,28" HREF = #Part1">
<AREA SHAPE = "RECT"
COORDS = "110,0,170,28" HREF = #Part2">
<AREA SHAPE = "RECT"
COORDS = "180,0,240,28" HREF = #Part3">
<AREA SHAPE = "RECT"
COORDS = "250,0,310,28" HREF = #Part4">
<AREA SHAPE = "RECT"
COORDS = "320,0,380,28" HREF = #Part5">
<AREA SHAPE = "RECT"
COORDS = "390,0,450,28" HREF = #Part6">
</MAP>
```



## How to calculate pixel coordinates

For each image MAP need two pair of 'X' and 'Y' coordinates. If you use 'RECT' type, since it is a rectangle, we will use two sets of X and Y coordinates. The first set defines where to start the rectangle, where the top - left (40,0) edge and second two numbers define where to end the rectangle. This will be bottom right edge (100,28) of the rectangle. An example is given below.

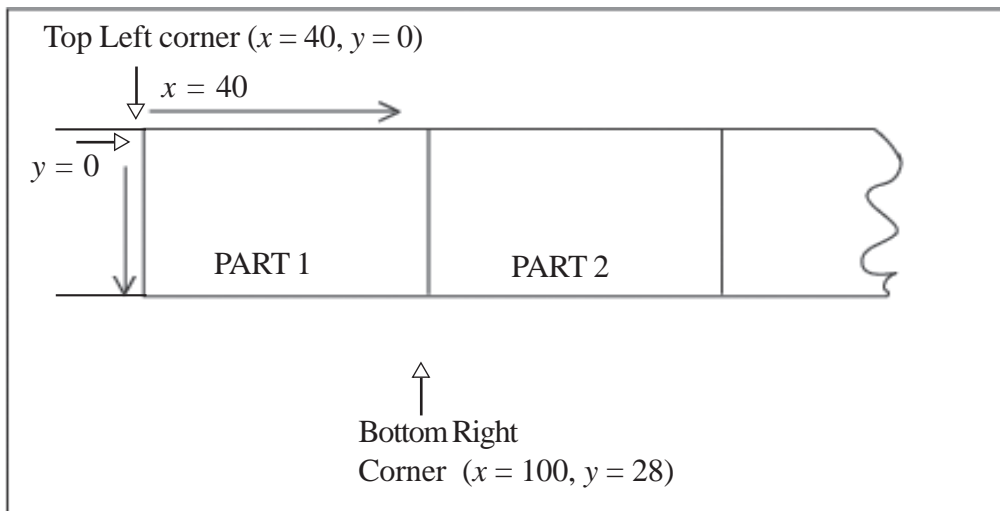
Coordinates for 'Part 1'

Top left Corner	40,0	(40 across" 0 Down)
Bottom Right Corner	100,28	(100 across" 28 Down)

Coordinates for 'Part 2'

Top left Corner	110, 0	(110 across" 0 Down)
Bottom Right	170,28	(200 across" 28 Down)

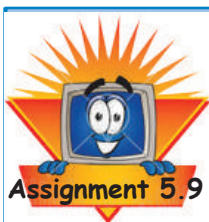
For free distribution



**Notes :**

*Use of 'Image map' is very popular and simple. It is easy to browser through single mouse click.*

*The two principal types of image map are client - side image map and server - side image map. To tell the browser to use server - side image map you can use <ISMAP> attribute and if it is Client - side image map you can use <MAP> attribute with <IMN> tag. Using client - side image map you may have quick access to the information and client - side will be slower response.*



- Open 'heritage.html' web document again. Mark locations of world heritage in Sri Lanka in a map of Sri Lanka which is created to suit to your web document. Use 'Adobe photoshop' computer image editors for this.
- Create appropriate links to the marked locations on the map using 'Image map'.
- Check whether the links are working by clicking the left button of the mouse on the links you created.



The <TABLE> tag was introduced for displaying content in a tabular format. However, web developers started utilizing this tag for page layout, placing various objects in table cells to achieve a holistic page design. The cross browser compatibility of Cascading Style Sheets (whenever that happens) will provide a powerful tool for page layout and design and might degrade this unconventional use of <TABLE>.

The code of a very simple table is presented below along with its display in a browser: The opening and closing table tags are <TABLE> and </TABLE>. A table consists of many rows each of which begins with <TR> (Table Row) and ends with </TR>. The <TD> and </TD> tags denote a table cell. Each cell should start with <TD> (Table Data) and end with </TD>. The contents of the cell are placed between these tags. The three cells themselves are placed in a single row (one pair of <TR> - </TR>). The table below consists of seven rows and three columns. Each row can contain one or more cells. The table information (text, graphics etc.) are contained inside the table cells. The table below has twenty one cells.

```
<TABLE>
  <TR>
    <TH> Num 1 </TH> <TH> Num 2 </TH>
  </TR>
  <TR>
    <TD> 5 </TD> <TD> 6 </TD>
  </TR>
</TABLE>
```

### Example 5.17

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE</TITLE>
  </HEAD>
  <BODY>
    <H1>Tables in HTML</H1>
    <TABLE BORDER=1>
      <CAPTION ALIGN=BOTTOM>100,000,000 Countries
with or more population
      </CAPTION>
      <TR><TH>No<TH>Country<TH>Population</TR>
      <TR><TD>1</TD><TD>China (mainland only)
</TD><TD ALIGN=RIGHT> 1,322,597,000</TD></TR>
      <TR><TD>2</TD><TD>India</TD><TD ALIGN=RIGHT>
1,131,043,000</TD></TR>
      <TR><TD>3</TD><TD>Indonesia</TD><TD
ALIGN=RIGHT> 231,627,000</TD></TR>
      <TR><TD>4</TD><TD>Pakistan</TD><TD
ALIGN=RIGHT> 161,998,000</TD></TR>
      <TR><TD>5</TD><TD>Bangladesh</TD><TD
ALIGN=RIGHT> 158,665,000</TD></TR>
      <TR><TD>6</TD><TD>Japan</TD><TD ALIGN=RIGHT>
127,718,000</TD></TR> </TABLE>
  </BODY>
</HTML>
```

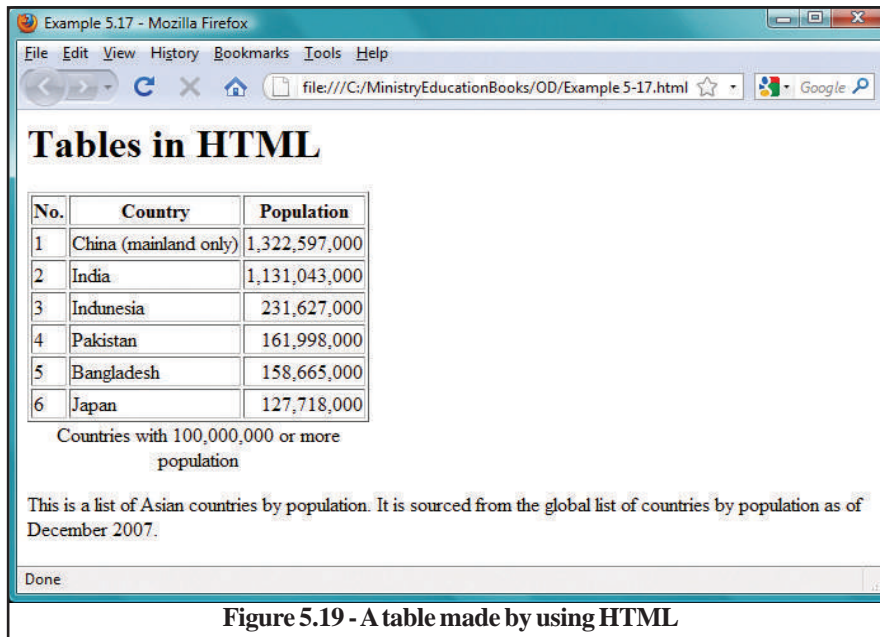


Figure 5.19 - A table made by using HTML



## Caption

Each table can have a caption. For example,

```
<CAPTION>  
This is the caption  
</CAPTION>
```

Caption can be placed on the top of the table, bottom of the table or middle of the table. The ALIGN attribute with CAPTION can be used for this purpose and “Top”, “Middle” or “Bottom” values can be assigned to ALIGN attribute.

```
<CAPTION ALIGN = "Bottom" >  
This is the Caption  
</CAPTION>
```



## Border

For each table, we can set a border. It makes a border around the table. For this BORDER attribute can be used along with <TABLE> tag. The thickness of this border depends on the number in pixels supplied as its value. For example:

```
<TABLE Border = 1>
```



## Center

Table can be align into the center of the screen with <CENTER> and </CENTER> tag.

## ALIGNMENTS

Now you have understood the basic tags that comprise a HTML table. Let us look at some of their important attributes.

### Example 5.18

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE 5.18</TITLE>
  </HEAD>
  <BODY>
    <H1>Table Enhancements</H1>
    <TABLE BORDER=0 CELLPADDING=2>
      <CAPTION ALIGN=BOTTOM>Flowers in Sri Lanka</CAPTION>
      <TR><TH>Orchid<TH>Rose<TH>Orchid</TR>
      <TR>
        <TD><IMG SRC="orchid.jpg"></TD>
        <TD><IMG SRC="rose.jpg"></TD>
        <TD><IMG SRC="orchid2.jpg"></TD>
      </TR>
    </TABLE>
    <P><TABLE BORDER=1 CELLSPACING=8 WIDTH=80%>
      <TR BGCOLOR=#FFFF00><TH>Heading1<TH>Heading 2</
    TR>
      <TR>
        <TD BGCOLOR=#00FF00>5.321</TD>
        <TD BGCOLOR=#00FFFF>5.23</TD>
      </TR>
    </TABLE>
  </BODY>
</HTML>
```

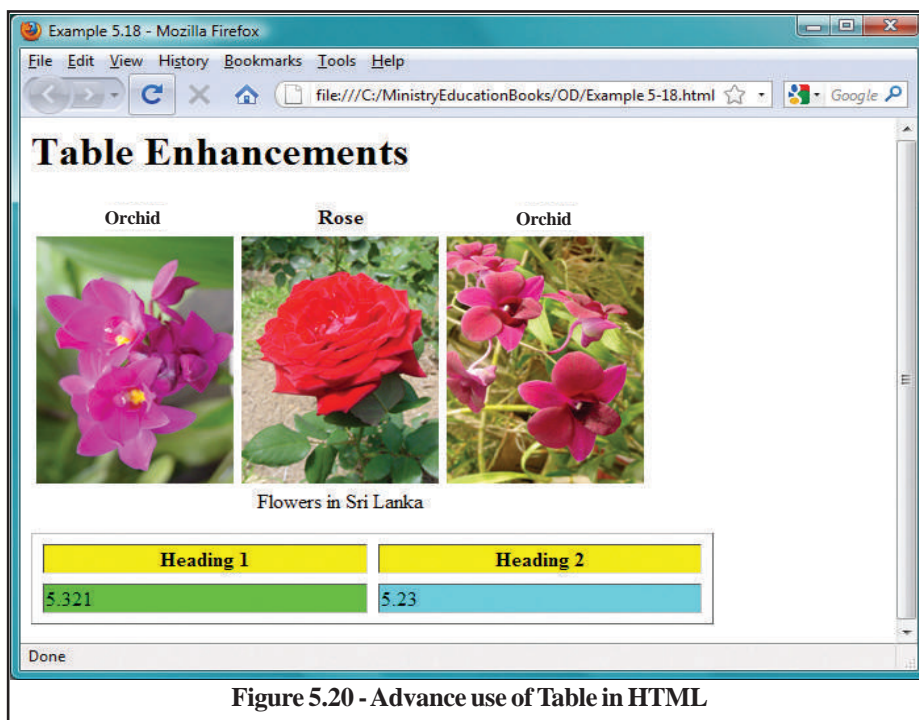


Figure 5.20 - Advance use of Table in HTML



## Cell Padding

Its value, supplied as number of pixels, denotes the amount of space between the edge of the table and its contents.

```
<TABLE CELLPADDING=8>
```



## Cell Spacing

This attribute sets the width in pixels between the individual table cells. The default value for CELLSPACING is 2, if we make this as 0, our table borders look neater.

```
<TABLE CELLSPACING=8>
```



## Width

The WIDTH determines the table width. Its value can be in pixels and results in a fixed table size or in percentages where the table width changes depending on the size of browser window.

```
<TABLE WIDTH = 50%> (Percentage of width of the browser window)
```

```
<TABLE WIDTH = 50> (Width in pixel)
```

(see figure 5.18)



## Aligning Table Data

Data can be aligned horizontally or vertically on a table.

ALIGN	<p>attribute value can be CENTER, LEFT, RIGHT or JUSTIFY, which determines how cell contents are aligned.</p> <pre>&lt;TR ALIGN = LEFT&gt;</pre> <ul style="list-style-type: none"> <li>• Default value of ALIGN attribute is 'LEFT'</li> </ul>
VALIGN	<p>align the contents to the TOP, MIDDLE or BOTTOM of the cell.</p> <pre>&lt;TR VALIGN= BOTTOM&gt;</pre> <ul style="list-style-type: none"> <li>• Default value of VALIGN attribute is 'BOTTOM'</li> </ul>

## UNEVEN TABLES

You would have seen tables with uneven columns and uneven rows. There are two ways to look at this. We can consider the table to consist of four columns with the first and second row divided into four columns and third row divided into three columns. HTML uses <TABLE> tag with its attributes to make this type of tables.



### ROWSPAN

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 is particularly useful in this situation to add borders to the table during the design process, even if the table will not ultimately use borders. The ROWSPAN attribute forces this cell to span 3 rows.

#### ROWSPAN


```
<TD ROWSPAN=3>
```



### COLSPAN

Column Span extends cells on a horizontal row (left and right). The line to add for Column Span is COLSPAN="X". This line adds onto the <TD> cell. 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.

#### COLSPAN


For example <TD COLSPAN=3> will combine 3 columns.

### Example 5.19

```
<HTML>
  <HEAD><TITLE>EXAMPLE 5.19</TITLE></HEAD>
  <BODY>
    <H1>Table with Mixed Cells</H1>
    <TABLE BORDER=6 ALIGN=CENTER WIDTH=70% BGCOLOR=#EBC79E>
      <TR><TH>Time<TH>January<TH>February<TH>March</TR>
      <TR><TD>08:00-09:00<TD>Mathematics<TD>Sinhala<TD>Mathematics</TR>
      <TR><TD>09:30-11:00<TD COLSPAN=2>Information Technology
      <TD>English</TR>
      <TR><TD>11:00-12:00<TD>Mathematics
      <TD ROWSPAN=3 VALIGN="MIDDLE"
      ALIGN="CENTER">Sports<TD>Sinhala</TR>
      <TR><TD>13:30-14:30<TD>Science<TD>English</TR>
      <TR><TD>15:00-16:00<TD>Sinhala<TD>Science</TR>
      <TR><TD>16:30-17:30<TD>English<TD>Sinhala<TD>Mathematics</TR>
    </TABLE>
  </BODY>
</HTML>
```

Example 5.19 shows all of attributes with <TR> and <TD> and figure 5.21 shows the browser output.

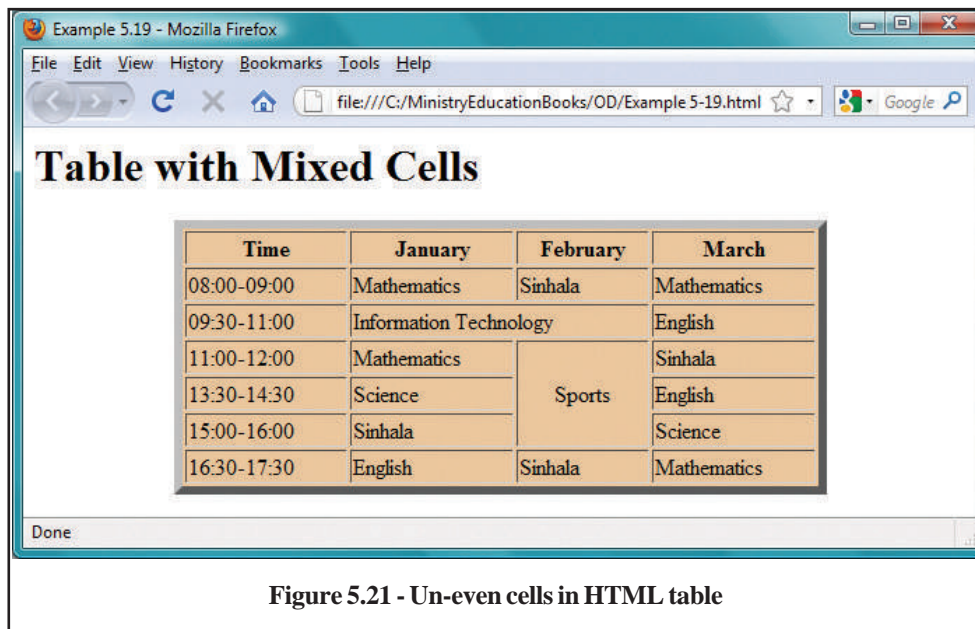
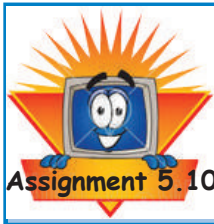


Figure 5.21 - Un-even cells in HTML table



Open 'heritage.html' web document you developed on Notepad. Present Nature of the heritage, serial number, year it is identified by the UNESCO as heritage and an image by a table after the list that you already created. Sample of that table is shown below.

<b>World Heritage on Sri Lanka Accepted by the UNESCO</b>				
<b>Nature</b>	<b>Serial No.</b>	<b>Name</b>	<b>Year</b>	<b>Image</b>
<b>Cultural</b>	1	<b>Sacred City of Anuradhapura</b>	1982	
	2	<b>Ancient City of Sigiriya</b>		
	3	<b>Ancient City of Polonnaruwa</b>		
	4	<b>Sacred City of Kandy</b>	1988	
	5	<b>Old Town of Galle and its Fortress</b>		
		6	<b>Golden Temple of Dambulla</b>	1991
<b>Natural</b>	7	<b>Sinharaja Forest Reserve</b>	1988	
<b>Source - UNESCO website</b>				

### DOCUMENT

So far we have displayed HTML document in a single browser window and the page can be printed as a single HTML file. Therefore, the main document is considered as body (BODY) of the document.

However, HTML frames allow authors to present documents in multiple views, which may be independent windows or sub windows. Multiple views offer designers



a way to keep certain information visible, while other views are scrolled or replaced. For example, within the same window, one frame might display a static banner, a second a navigation menu, and a third the main document (Contents) that can be scrolled through or replaced by navigating in the second frame.

A framed page consists of two or more HTML documents. Since each document is a separate entity with its own URL, it behaves independently of the others. Thus, scrolling or reloading of one document will not result in equivalent behavior in the others. Each frame has its own name and we will be discussing this later. To design frame document in HTML two new tags <FRAMESET> and <FRAME> can be used.

<FRAME>	The <FRAME> tag defines a single frame within a set of frames.
BODERCOLOUR= <i>Color</i>	Specifies the color of the frame border.
FRAMEBORDER= <i>Option</i> (YES/NO)	Specifies whether the frame border is visible.
FRAMESPACING= <i>Value</i>	Specifies the amount of space between frames in pixels.
MARGINHEIGHT= <i>Value</i>	Specifies the amount of space above and below the frame object and the frame borders.
MARGINWIDTH= <i>Value</i>	Specifies the amount of space to the left and right of the frame and object, in pixels.
NAME= <i>Text</i>	Label assigned to the frame.
NORESIZE	Specifies whether scroll bars are needed.
SCROLLING= <i>Option</i> (YES/NO/AUTO)	AUTO (the default) displays scroll bars only as needed.
SRC= <i>Document</i>	Specifies the document or URL of the object to be displayed in the frame.

FRAME Document is similar to HTML document, but <BODY> will not be used. Instead of BODY tag replaced with FRAMESET tag. For example:

```
<HTML>
<HEAD> . . . . . </HEAD>
<FRAMESET>
. . . . .
</FRAMESET>
</HTML>
```

The <FRAMESET> informs the browser that the document contains frames. The ROWS and COLS attribute of this tag tells the browser to display the frames in columns. Value of this attribute might confuse you initially but it's actually quite simple; it determines the amount of space allocated for each of the two frames.

<FRAMESET>—</FRAMESET>	The <FRAMESET> tag marks the beginning and the end of a set of frames.
BORDER= <i>Value</i>	The size of the borders in pixels.
BORDERCOLOR= <i>Color</i>	The color of the frame borders.
COLS= <i>List</i>	The size of each column in set of frames. Columns can be specified either in pixels, or percentage of displayed area, or with an asterisk (*) indicating that any remaining space be allotted to that column e.g. COLS="40,25%,*"
ROWS= <i>LIST</i>	The size of each row in set of frames. Rows can be specified either in pixels, as percentage of the display area, or with an asterisk (*) indicating that any remaining space be allotted to that column. E.g. COLS="40,25%,*"



## Defining Rows

The ROW attribute specifies the layout of horizontal frames. It is a comma-separated list of pixels, percentages, and relative lengths. The default value is 100%, meaning one row.

```
<FRAMESET ROWS = "Value, Value, Value" >
```

```
<FRAMESET ROWS = "20%, 60%, 20%" >
```

This example divides the screen vertically into three sections (i.e., creates a top 20%, middle 60% and a bottom 20% of the browser window).

**Value** will tell the browser to allocate amount of pixels vertically for the first frame and the rest for the other frames.

**Value%** will place the frame in 10% of horizontal space and the rest will be occupied by the other frames.

**Value\*** tell the browser to allocate the rest of the space. If only one \* is specified it receives the remaining space and if 2\* is specified it to allocate double size of the remaining space.

```
<FRAMESET ROWS = "50 , * , 2* , 30%>
```

The example creates four columns: the first has a fixed width of 50 pixels (useful, for example, to hold an image with a known size). The fourth column receives 30% of the remaining space. Second and third columns receive remaining space in 1:2 ratios.



## Defining columns

COLS is similar to ROWS and puts frames in vertical columns inserted horizontal rows.

```
<FRAMESET COLS = "50 , * , 2* , 30%>
```

The first <FRAMESET ...> tag says “this frameset will have two rows” (and, implicitly, only one column, since COLS was left out). The nested first <FRAMESET...> is creating two columns, and the nested second first <FRAMESET ...> is creating two columns in second row.

For example,

```
<FRAMESET Rows="50% , 50%>
  <FRAMESET COLS = "20% , 80%>
  </FRAMESET>
  <FRAMESET COLS="80% 20%>
  </FRAMESET>
</FRAMESET>
```



## Defining frame contents

<FRAME ...> sets a single frame in the framed page to include information. <FRAME ...> always goes inside a <FRAMESET ...> element. The SRC (SOURCE) attribute, which is required, indicates the URL of the page that goes in the frame. In most situations you should also use NAME to give the frame a name so that links can target the frame.

```
<FRAME SRC = "Cell11.html" >
```

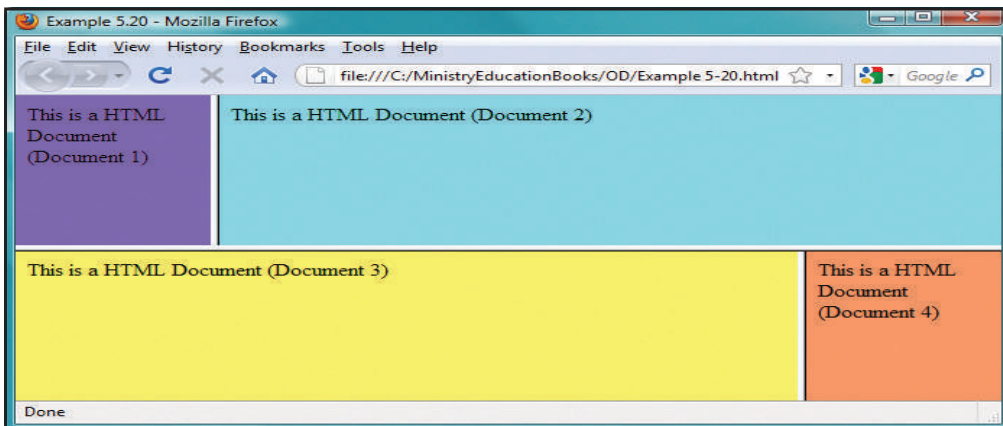
The figure 5.22 below shows how CELL1.HTML, CELL2.HTML, CELL3.HTML and CELL4.HTML appeared in four frames (see example 5.20 for HTML code). In example 5.20, four web pages included in four frames using FRAME tag and its SRC attributes. The four examples are listed in Example 5.20(a), Example 5.20(b), Example 5.20(c) and Example 5.20(d).

### Example 5.20

```
<HTML>
  <HEAD>
    <TITLE>EXAMPLE 5.20</TITLE>
  </HEAD>

  <FRAMESET rows="50%,50%">
    <FRAMESET COLS="20%,80%">
      <FRAME SRC="CELL1.HTML">
      <FRAME SRC="CELL2.HTML">
    </FRAMESET>

    <FRAMESET COLS="80%,20%">
      <FRAME SRC="CELL3.HTML">
      <FRAME SRC="CELL4.HTML">
    </FRAMESET>
  </FRAMESET>
</HTML>
```



**Figure 5.22 - How 4 frames approved in a computer web screen and how 4 web pages included on that 4 frames**

**Example 5.20 (a)**

```
<HTML>
<HEAD>
<TITLE> Cell1.html </TITLE>
</HEAD>
<BODY BGCOLOR="#9966ff">
    This is a HTML Document (Document 1)
</BODY>
</HTML>
```

**Example 5.20 (b)**

```
<HTML>
<HEAD>
<TITLE> Cell2.html </TITLE>
</HEAD>
<BODY BGCOLOR="#66ffff">
    This is a HTML Document (Document 2)
</BODY>
</HTML>
```

### Example 5.20 (c)

```
<HTML>
<HEAD>
<TITLE> Cell3.html </TITLE>
</HEAD>
<BODY BGCOLOR="#ffff66">
  This is a HTML Document (Document 3)
</BODY>
</HTML>
```

### Example 5.20 (d)

```
<HTML>
<HEAD>
<TITLE> Cell4.html </TITLE>
</HEAD>
<BODY BGCOLOR="#ff9966">
  This is a HTML Document (Document 4)
</BODY>
</HTML>
```

## FRAME ATTRIBUTES

To arrange and display the each web document in your own manner, 6 important attributes can be used with <FRAME> tag.

```
SRC = "URL"
```

SRC is a required attribute and takes the HTML document or URL of a document to load in the frame as a value.

```
NAME= window-name
```

NAME attribute of the <FRAME> tag specifies a name for the frame that can be used for easy reference. The name attribute of the <FRAME> tag helps us gives names to our frames so that they can be referenced or targeted. This is especially helpful when using scripting languages such as JavaScript or VB Script. We shall see its use soon.

### Example 5.21

```
<HTML>
<HEAD>
  <TITLE>[XAMPLE [.]</TITLE>
</HEAD>
  <FRAMESET rows="50%,80%">
    <FRAMESET COLS="20%,80%">
      <FRAME SRC="[XAMPLE [.] .html "
        MARGINWIDTH=" 5 "
        MARGINHEIGHT=" 5 "
        SCROLLING="AUTO" , , >
      <FRAME SRC="[XAMPLE [.] .html "
        MARGINWIDTH=" 5 "
        MARGINHEIGHT=" 5 "
        SCROLLING="AUTO" , , >
    </FRAMESET>
  <FRAMESET COLS="80%,20%">
    <FRAME SRC="[XAMPLE [.] .html "
      MARGINWIDTH=" 5 "
      MARGINHEIGHT=" 5 "
      SCROLLING="AUTO" , , >
    <FRAME SRC="[XAMPLE [.] .html "
      MARGINWIDTH=" 5 "
      MARGINHEIGHT=" 5 " ,
      SCROLLING="AUTO" , , >
  </FRAMESET>
</FRAMESET>
</HTML>
```

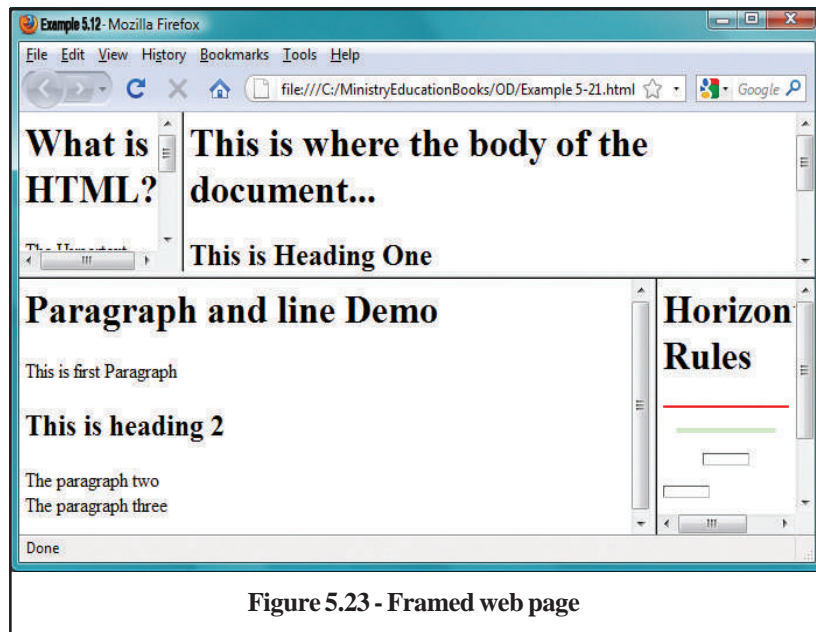


Figure 5.23 - Framed web page



**MARGINWIDTH = "Value"**

MARGINWIDTH defines the amount of space in pixels between the left and right hand sides of the frame and its contents.

**MARGINHEIGHT = "Value"**

MARGINHEIGHT defines the amount of space in pixels between the top and bottom edges of the frame and its contents.

**SCROLLING = |yes|no|auto|**

SCROLLING says if there should be a scroll bar on the right and/or bottom of the frame. The SCROLLING attributes taken are 'YES', 'NO' or 'AUTO' as its values. A value of 'YES' will display a scroll bar even though one is not required. 'NO' will prevent any scroll bars and AUTO is the default: there will be scroll bars on the side and/or bottom as needed. It's best to avoid using SCROLLING. If you turn off scrolling, users with small screens may be unable to see all of what you have in the frame, and that makes for an annoying page.





## NORESIZE

NORESIZE says that the user cannot make the frame bigger or smaller by sliding the borders. Normally the user can put the mouse over the border and move the border left/right or up/down. NORESIZE disables that ability. All borders that run along the frame are affected. For example, this code uses NORESIZE with the frame for the title bar, and so the border along the bottom of the title bar cannot be resized. However, the two frames at the bottom of the page can still be resized by moving the border left and right.

Example 5.22 demonstrates how complex frames are used in HTML. Individual web pages are placed into separate frames and figure 5.24 show how this display in web browser window.

## ~~USER NOFRAMES~~

<code>&lt;NOFRAMES&gt;--</code>	Enclosing body tags to be used by browsers,
<code>&lt;/NOFRAMES&gt;</code>	which do not support frames.

Some old browsers do not support frames. This `<FRAME>` tag displays alternate content for such browsers. You can put any kind of HTML code to help the users of non-frame browsers by introducing `<NOFRAMES>` and `</NOFRAMES>` tags.

### Example 5.22

```
<HTML>
  <HEAD>
    <TITLE>[XAMPLE [].]</TITLE>
  </HEAD>

  <FRAMESET rows="50%,50%">

  <NOFRAMES>
  <H1 ALIGN=CENTER> <BLINK>Alert<$/BLIK><H1>
  <P>This document uses frames.
    If you see this message you
    need a new browser!!!
  </NOFRAMES>

  <FRAMESET COLS = "20%,80%">
    <FRAME SRC= "[XAMPLE [].].html"
      MARGINWIDTH = "5"
      MARGINHEIGHT = "5"
      SCROLLING = "AUTO" , ,>

  <FRAME SRC= "[XAMPLE [].].html"
    MARGINWIDTH = "5"
    MARGINHEIGHT = "5"
    SCROLLING = "AUTO" , ,>
  </FRAMESET>
  <FRAMESET COLS = "80%,20%">
    <FRAME SRC = "[XAMPLE [].].html"
      MARGINWIDTH = "5"
      MARGINHEIGHT = "5"
      SCROLLING = "AUTO" , ,>

  <FRAME SRC = "[XAMPLE [].].html"
    MARGINWIDTH = "5"
    MARGINHEIGHT = "5"
    SCROLLING = "AUTO" , ,>
  </FRAMESETt>
  </FRAMESETt>
</HTML>
```

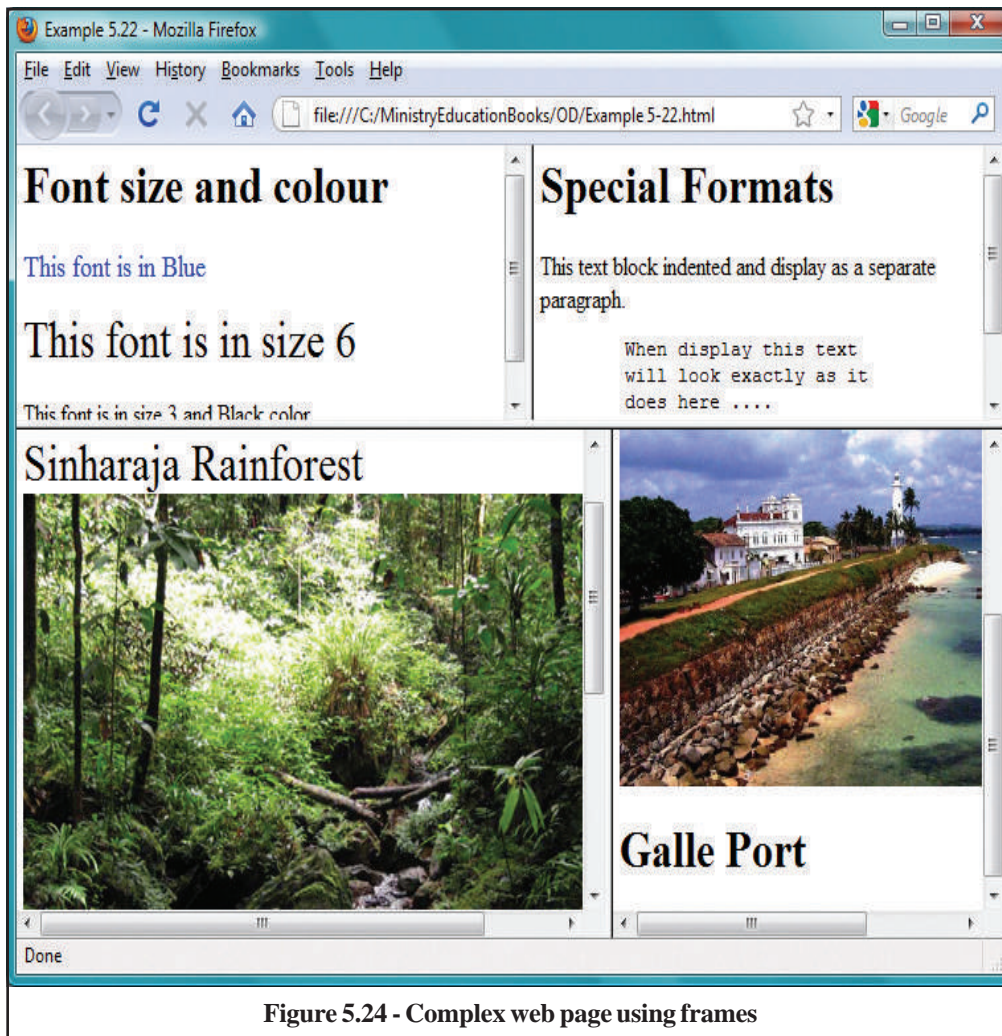


Figure 5.24 - Complex web page using frames

Each frame is given a name using `<FRAME NAME="...">`. These names uniquely identify each frame. Using these names, links in other frames can tell the browser which frames the link targets. To target one of these frames, the link should have a `TARGET` attribute set to the name of the frame where the linked page should appear. So, for example, this code creates a link to `tfetacos.html` and targets that link to the `MAIN` frame:



## Setting Targets

TARGET controls where the new document will be displayed when the user follows a link. Most of the time, clicking on a link simply loads a new document in the same window where the link was. You can use this with <A> tag.

```
<A HERF = "URL" TARGRT = "Windows">
```

The <BASE> tag specifies a default address or a default target for all links on a page. The <BASE> tag goes inside the <HEAD> .. </HEAD> element.

```
<BASE TARGET = "window-name">
```

TARGET can be used with Client-side Image Map and in that case it can come under <AREA> tag.

```
<AREA SHAPE = "shape" CORDS = "X,Y,X,Y"  
  HREF = "URL" TARGET= "window-name")
```

As described in previous session, the Target attribute of <A> is most often used when dealing with frames. It specifies the window (eg. Window-name) in which the document should be loaded. The TARGET attribute can take one of the four values below, note the underscore can be use to combine spate word.

```
TARGET="_blank"
```

The link web file will be displayed in a new window.

```
TARGET="_self"
```

The link web will be displayed in the same window as the anchor.

```
TARGET="_parent"
```

the link web will be displayed in the immediate FRAMESET parent of the document.

```
TARGET="_top"
```

The link web will be displayed in the full window.



## 5.4 Demonstrates preparedness to publish web sites



### WWW Server

A World Wide Web (WWW) Server is a computer that contains WWW materials and is able to transfer the materials and documents through WWW Browse that are requested by a client. A WWW server is simply a program that answers requests for documents from World Wide Web clients over the Internet.



### Hyper-Text Transport Protocol (HTTP)

The Hypertext Transfer Protocol (HTTP) is an Application Protocol responsible for distributing and collaborating hypermedia information systems with the support of web browser.



### Web Browser

A World Wide Web browser is a easy client side software application for retrieving and presenting information resources on the World Wide Web for information searchers.

For examples Netscape Communicator and Internet Explorer work under Windows operating system and UNIX/Linux operating systems.



### Hyper-Text Markup Language (HTML)

HTML stands for Hyper Text Markup Language. It is a type of computer language that is primarily used for files that are posted on the internet and viewed by web browsers. In addition to the page content itself, HTML files provide layout and formatting information not only for text document, but also for multimedia information. Although it may seem complex to the uninitiated, HTML has relatively simple syntax. All text, graphics, and design elements of a web page are “tagged” with codes that instruct the web browser how to display the files.





## Uniform Resource Locators (URL)

Uniform Resource Locator (URL), which means it is a uniform (same throughout the world) way to locate a resource (file or document) on the Internet. World Wide Web software, such as Internet explorer or FireFox browsers, uses the URL to retrieve a file from the computer on which it resides. The format or syntax of the URL is:

`<form>://<host>/<path to file>`



## Form

The *form* means the protocols such as http or ftp use the URL to retrieve a file from the computer on which it resides.



## Host

The *host* is the site address consists of the host computer name, the domain name and the domain type. The domain name should be descriptive for easy comprehension and is usually the name of the organization or company.

(Eg. `<form>://www.hotmail.com`)



## Path to File

*path to file* specifies the hierarchic location of the said file on the computer. For instance, in `<form>://<host>/index.html` the file `index.html` is located in the server (host) root directory.

Examples for URL,

`http://www.ucsc.cmb.ac.lk`

This retrieves the information from `ucsc.cmb.ac.lk` from world wide web (www)

`http://ftp.ucsc.cmb.ac.lk/movies/sample.mov`

This specifies the use of an http (Web browser) application, a unique computer named *ftp.ucsc.cmb.ac.lk*, and download the file *sample.move* to be accessed on that computer subdirectory *movie* whose pathname is */movies/sample.mov*. The mov is a video file will be start playing on your browse after downloading.

`ftp://info.ucsc.cmb.ac.lk/file/document.doc`

In this example, browser may contact the *ftp://info.ucsc.cmb.ac.lk* computer and it accesses the *document.doc* file available in the sub directory called *file*.

