More advanced HTML

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1. INTRODUCTION

In the following section you will learn a bit more about advanced HTML programming. You should however keep in mind that you are responsible for your own progress in advanced programming. It will however be optimistic to think that at the end of this module you will know everything there is to HTML. You will however have a very good knowledge regarding the complete layout and design of your site. You will be able to use tables, frames and insert basic animated text. You can build on your knowledge gained by accessing the legion information on the web regarding HTML. Although in another course the elements of DHTML (Dynamic HTML) are taught, you can start experimenting with this unique element of HTML as you complete this module.

2. FUNCTION OF THE ICONS

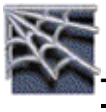
 **OUTCOMES:** Each unit of this study guide has a certain objective. This icon indicates that the particular objective for that unit will follow.

 **DEFINITION:** This icon indicates that a definition will follow. It is important that these definitions are studied carefully.

 **ACTIVITY:** The activity icon indicates that you must perform an activity. The activity will help you to consider a certain aspect of the text in more detail.

 **KNOWLEDGE REVIEW**: Wherever you see this icon you must complete self-evaluation questions which will test if you have mastered the preceding section. This icon will be encountered at least at the end of each unit.

 **TAKE NOTE:** The “Take Note”-icon indicates that there is an important piece of information which you need cognisance of.

 **TRY THIS:** The “TRY THIS”-icon indicates that an exercise will follow that you should complete on your PC.

3. FUNDAMENTALS OF HTML

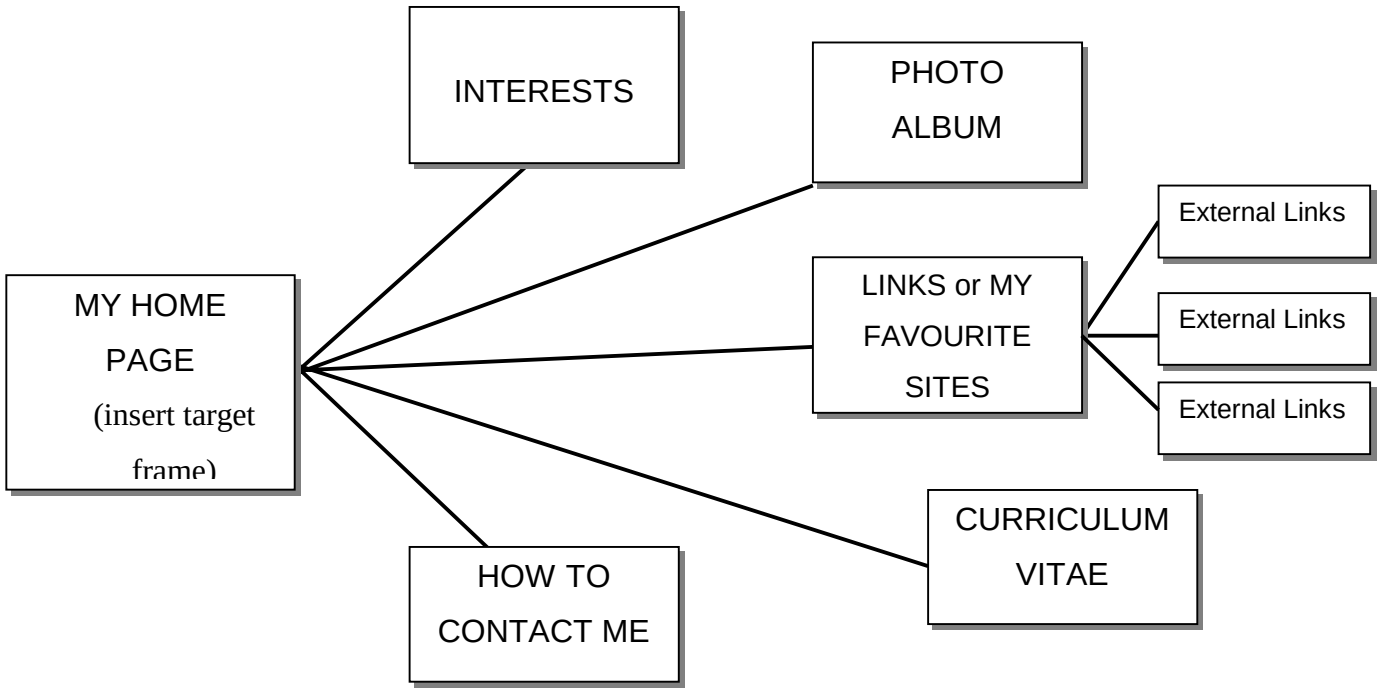
OUTCOMES:

After the completion of this chapter you will be able to:

- plan a web site
- use navigation menus to navigate within your planned site by using hypertext and graphical links
- define links to other sites by using hypertext and graphical links
- define Mailto: links using hypertext and graphics

3.1 Planning your site

Before you can start to create a web site, using HTML, you need to have a basic idea of how it will look and function. Adequate planning can lead to very creative designs and will save you a lot of time as well. One of the best and easiest ways to plan a web site is to make a freehand graphical drawing of the site. This will include all the different pages, links, frames and navigation required. A rough planning can look as follows:



Links to all the planned pages will appear on the homepage, but there can also be links **to** all the pages **on** all the pages (this will be discussed in the following section).

One of the following elements when planning a site is to create, save or capture the graphics that you intend to use on your site. It is always a good idea to save all the files involved in creating your web page to one specific folder. In the above-mentioned example you can create a folder named **My Homepage** and save all the files to this folder.

After you have planned the web site you wish to design, you should consider the methods of navigation you wish to use to navigate your site.

3.2 Use navigation menus

Navigation menus can take on a variety of forms, from hypertext links, graphical buttons to sophisticated Java applets. For the purpose of this module attention will only be paid to the first two mentioned methods of navigation.

3.2.1 Hypertext navigation

As you have already learned, text can be used to link to any URL of your choice. For this precise reason text can be used to navigate within your site. The location of the text depends completely on you. In more advanced web sites you will find that hypertext navigation are used as a backup system and will usually appear at the **bottom** of a web page in the following format:

Services | Products | Feedback

In HTML code:

```
<p align="center"><a href="services.html"><font face="verdana"
size="2">Services</a> |
<a href="products.html">Products</a> |
<a href="feedback.html">Feedback</a></font></p>
```

You may also have this at the top of your page or just after your <**heading**>. When learning about frames and tables you may choose to have the navigation elements to the left, right, top or bottom of your page, vertically or horizontally, to facilitate the ergonomics of your site and easy navigation.

A hypertext link can also used inside a paragraph e.g.:

Should you require a written quote from us please make use of our feedback section as well.

Hypertext link

The HTML code:

```
<font face="Verdana" size="3" >Should you require a written
quote from us please make use of our <a
href="feedback.html">feedback</a> section as well.</font>
```

In this way by adding an anchor reference to text you can navigate anywhere in your site. By substituting the feedback.html reference by an external link you can also use the link to navigate outside your site (see the next section) Remember that these kinds of HTML code will always appear within the **<body> </body>** tags.

TRY THIS:

Programme the following source code and view it in your browser:

- Three hypertext links each separated by a |, linking to the following sites:
  a. www.tsa.ac.za
  b. www.microsoft.com
  c. www.padi.com

3.2.2 Graphical button navigation

The most common method of navigation within and outside of web pages is by graphical button navigation. By this we mean that an anchor tag, **<a href>**, is assigned to a graphic, depicting a button, which will allow the user to link to the specific URL. One of the great disadvantages of this method of navigation is that the graphics have to be custom designed to suite your needs. Alternatively you can capture these graphics from other sites (the onus rests on you to ensure that these captured graphics are not copyright protected). Bear in mind that any graphic file with the extensions .jpg or .gif can be used to link to.

A typical graphical button navigation will appear as follows:

HTML code:

```
<a href="previous.html"><img src="previous.jpg"  border="0"
width="35" height="35"></a><p>
<a href="services.html"><img src="services.jpg"  border="0"
width="35" height="35"></a><p>
<a href="help.html"><img src="help.jpg"  border="0" width="35"
height="35"></a><p>
<a href="home.html"><img src="home.jpg"  border="0" width="35"
height="35"></a><p>
```

TAKE NOTE:

Do not get confused with the absence of the text under the buttons in the above-mentioned example. In this case the text was saved as part of the graphics file and is thus treated as one entity. From the above example it is clear that all the buttons link to internal pages.

3.3 Define links to other sites

As with the internal links to different pages of your site, you can link to external sites in almost the same way. As explained earlier the **<a href>** tags determines where you link to.

3.3.1 Hypertext links to external sites

The following example illustrates how a hypertext link can be used to link to an external site:

Feel free to read the latest news from CNN after you have browsed through my site

Hypertext link

HTML code:

```
<font face="Verdana" size="3">Feel free to read the latest news
from <a href="http://www.cnn.com">CNN</a> after you have
browsed through my site</font>
```

The **<a href>** links the CNN text to the CNN homepage. Comparing this example to those in 3.2.1 you can see that the determining factor for linking to pages (internal and external) is the anchor tag.

3.3.2 Graphical links to external sites

As with the hypertext examples you can use a graphic to link to an external site e.g.

HTML code:

```
<p align="center"><a
href="http://www.microsoft.com/ie/download/"><font
face="Verdana"><img src="ie4logo.gif" alt="Get Microsoft
Internet Explorer " align="middle" border="0" width="88"
height="31"></font></a>
```

The above HTML **centres** the graphic, **links** it to the Microsoft download pages and displays an **alternative** text when your mouse hovers over the image.

3.4 Define Mailto: links

One of the unique features of an interactive web site is the ability of the browser or surfer to communicate with the creator of the pages. As with the hypertext and graphical links, the **`mailto:`** tag can be used with both. Consider the following examples:

Feel free to mail me for further detail.

Hypertext link

HTML code:

```
<font face="Verdana" sized="3">Feel free to <a
href="mailto:me@myaddress.com">mail</a> me for further detail.
```

All of the major browsers are programmed to recognise the **mailto:** tag as an e-mail action that has to be performed. As soon as one clicks on a **mailto:** tag your default e-mail editor will open a new compose message and automatically insert the e-mail address specified in the **<a href>** tag.

In the same way you can use a graphic and assign a **mailto:** tag to it, e.g.:

HTML code:

```
<a href="mailto:me@myaddress.com"><img src="3demail.gif"
alt="Email us" border="0" width="100" height="62"></a>
```

The graphic file **3demail.gif** has been linked to the **mailto:** tag and **alternative** text has been assigned to the graphic file that will appear as soon as you move over the graphic with your cursor.

To some extend you have now worked with graphics. The main aim of the above exercises was to teach you how to use hyperlinks to navigate within and outside of your web site. Should you feel confused at this stage do not worry because graphic use will now be covered in much more detail.

TRY THIS:

Programme the following source code and view it in your browser:

- Use any image file on your computer and assign a hyperlink to it
- Assign alternative text to it
- Assign a mailto: tag to the graphic

KNOWLEDGE REVIEW:

1. Explain why you will plan a site.
2. Draw a diagram explaining the layout of your site

4. TABLES

OUTCOMES:

After you have completed this section you will be able to:

- define a table
- set the attributes for a table
- format cell contents and properties
- insert graphics, text and colour in cells

4.1 Defining a table

One of the main reasons for creating a table in an HTML document would be to space your text and graphics on your web page. When inserting a borderless table you will have a lot of control pertaining to the location of your graphics and text. As with many of the HTML tags you have already learned, the **<table>…</table>** tag does have a few attributes which makes it unique.

The **<table>…</table>** tag is the main wrapper for all the other table elements, and other table elements will be ignored if they aren't wrapped inside of a **<table> ... </table>** element. You can use the **<table>** tag anywhere in the **<body>** of an HTML document. To define the data requirement (e.g. text or graphics you wish to insert) for each cell the <td>…</td> element are used, but functions within the <tr>…</tr> element. These two elements will be covered later on in the study guide. Attention will first be paid to the attributes of the **<table>…</table>** tag.

4.1.1 Assigning a border value

<…border=”value”>

The **border=””** attribute can be used to both control and set the borders to be displayed for the table. If present, then a border will be drawn around all data cells. The exact thickness and display of this default border is at the discretion of individual browsers. If this attribute isn't present, then the border is not displayed, but the table is rendered in the same position as if there were a border (i.e. allowing room for the border). It can also be given a value, i.e. **border=”value”** which specifies the thickness that the table border should be displayed with. The border value can be set to 0, which regains all the space that the browser has set aside for any borders (as in the case where no border has been set described above).

4.1.2 Cellpading and cellspacing

<…cellpadding=”value” cellspacing=”value”>

The **cellpadding=”value”** is the amount of white space between the borders of the table cell and the actual cell data (whatever is to be displayed in the cell). It defaults to an effective value of 1.

The **cellspacing=”value”** is the amount of space inserted between individual table data cells. It defaults to an effective value of 2.

The following example gives the most compact table possible.

```
<table border="0" cellspacing="0" cellpadding="0">
```

Cellpading and **cellspacing** can be used to obtain the correct location of your text or images in relation to your page.

4.1.3 Setting columns

<…cols="number of columns">

The purpose of the **cols="number of columns"** attribute is to insert the number of columns you wish to use in your table. This also allows the browser to incrementally display large tables as the cell data is downloaded.

```
<table border="0" cellspacing="0" cellpadding="0" cols=”2”>
```

4.1.4 Setting the width and height

<…width="value or percent">

If used, this attribute can specify either the exact width of the table in pixels, or the width of the table as a percentage of the browser display window.

<…height="value or percent">

If used, this attribute can specify either the exact height of the table in pixels, or the height of the table as a percentage of the browser display window.

```
<table border="0" cellspacing="0" cellpadding="0" cols=”2”
width=”55” height=”10”>
```

OR

```
<table border="0" cellspacing="0" cellpadding="0" cols=”2”
width=”10%” height=”5%”>
```

4.1.5 Table alignment

<…align="left|right">

Some browsers (**Internet Explorer** and **Netscape**) support the **align** attribute to the **<table>** element. Like that used for floating images, it allows a table to be aligned to the left or right of the page, allowing text to flow around the table. Also, as with floating images, it is necessary to have knowledge of the **<br clear="…">** element, to be able to organise the text display so as to minimise poor formatting.

```
<table border="0" cellspacing="0" cellpadding="0" cols="2"
width="10%" height="5%" align="center">
```

<…valign="top|bottom|center">

The **Internet Explorer** and **Netscape** support this attribute that specifies the vertical alignment of the text displayed in the table cells. The default (which is also used if the attribute is not set is centre-aligned.)

```
<table border="0" cellspacing="0" cellpadding="0" cols="2"
width="10%" height="5%" align="center" valign="bottom">
```

4.1.6 Setting colours and background images

<…bgcolor="#rrggbb|colour name">

Internet Explorer and **Netscape** support use of this attribute (also supported in the **<body>** element). It allows the background colour of the table to be specified, using either the specified colour names, or a rrggbb colour combination or hex triplet.

<…bordercolor="#rrggbb|colour name">

Internet Explorer includes support for this attribute that sets the border colour of the table. Any of the pre-defined colour names can be used, as well

as any colour defined by a rrggbb hex triplet. It is necessary for the **<…border=”value”>** attribute to be present in the main **<table>** element for border colouring to work, e.g.:

```
<table border="0" cellspacing="0" cellpadding="0" cols=”2”
width=”10%” height=”5%” align=”center” bordercolor=”ff00ff”>
```

<…bordercolorlight="#rrggbb|colour name">

Internet Explorer allows use of the **bordercolorlight** attribute to set independently, the lighter colour to be displayed on a 3-dimensional table border. It is the opposite of **bordercolordark**. Any of the pre-defined colour names can be used, as well as any colour defined by a rrggbb hex triplet. It is necessary for the **<…border=”value”>** attribute to be present in the main **<table>** element for border colouring to work.

Example:

```
<table border="0" cellspacing="0" cellpadding="0" cols=”2”
width=”10%” height=”5%” align=”center”
bordercolorlight=”ff00ff”>
```

<…bordercolordark="#rrggbb|colour name">

Internet Explorer allows use of the **bordercolordark** attribute to set independently, the darker colour to be displayed on a 3-dimensional table border. It is the opposite of **bordercolorlight**. Any of the pre-defined colour names can be used, as well as any colour defined by a rrggbb hex triplet. It is necessary for the **<…border=”value”>** attribute to be present in the main **<table>** element for border colouring to work.

```
<table border="0" cellspacing="0" cellpadding="0" cols=”2”
width=”10%” height=”5%” align=”center”
bordercolordark=”ff00ff”>
```

The **bgcolor, bordercolor, bordercolorlight** and **bordercolordark** attributes can also be used in **<th>, <tr>** and **<td>** elements, with the colour defined in the last element over-riding those defined before. E.g. if a **<td>** element contains a **bordercolor** attribute setting, the setting specified will be used instead of any colour settings that may have been specified in the **<tr>** element, which in turn over-rides any colour settings in the **<table>** element.

<…background="url of image">

Internet Explorer and **Netscape** support the placing of images in the **<table>** element. (Also in the **<td>** and **<th>** elements) If used in the **<table>** element, the image in question will be tiled behind all of the table cells. Any of the supported graphic file formats can be used as a graphic behind a table.

4.1.7 Inserting an image

Inserting an image into a table can be achieved in the same manner as inserting an image file into the **<body>** tag of an HTML document. The **<img src="file name">** can appear anywhere in the **<td>** element depending on the cell in which you wish to intend to insert the element e.g.:

```
<table border="1" cols="2">
      <tr>
            <td><img src="tree.jpg"></td>
            <td>A tree from South Africa</td>
      </tr>
</table>
```

The above example will insert the image file **"tree.jpg"** into the first row, first column of the table. The text **"A tree from South Africa"** will be inserted in the second column of the first row of the table.

4.2 The <th> element

This stands for **table header**. Header cells are identical to **data** cells in all respects, with the exception that header cells are in a **bold** font, and have a default **align=center**.

4.3 The <td> element

This stands for **table data**, and specifies a standard table data cell. Table data cells must only appear **within** table rows. Each row need not have the same number of cells specified, as short rows will be padded with blank cells on the right. A cell can contain any of the HTML elements normally present in the body of an HTML document.

4.4 Attributes used by <th> and <td>

The following attributes can be used with **<th>** or **<td>**

<…align="left|center|right">

This attribute controls whether text inside the table cell(s) is aligned to the left, right or centred within the cell.

<…valign="top|middle|bottom|baseline">

The **valign** attribute controls whether text inside the table cell(s) is aligned to the top, bottom, or vertically centred within the cell. It can also specify that all the cells in the row should be vertically aligned to the same baseline.

<…width="value_or_percent">

If used, this attribute can specify either the exact width of the data cell in pixels, or the width of the data cell as a percentage of the table being displayed. Only one data cell can set the width for an entire column, so it is

good practice to specify all data cells in the same column as having the same width, if the attribute is set at all.

<…height="value_or_percent">

If used, this attribute can specify either the exact height of the data cell in pixels, or the height of the data cell as a percentage of the browser display window. Only one data cell can set the height for an entire row.

Netscape supports use of the **width="value%"** and "**pixel_value**" for this element (it only supports the **height="%value"** attribute for the main **<table>** element). **Internet Explorer** supports both percentage and pixel values for both the HEIGHT and **width** attributes. For **width="%value"** settings, the **width="%value"** also needs to be set in the main **<table>** element and the cell/header columns (affected by any cell with a **width="%value"** setting) will be scaled as a percentage of the table width (which would be scaled as a percentage of the browser window).
Also, for **width="value"** settings, the table will only be sized to the maximum extent of the browser window width (with cells/headers being scaled accordingly), unless the **width="value"** setting is used in the main **<table>** element, set to the combined size of the cells/headers. For **height="%value"** settings, the cell (and any rows it is part of) will be rendered as the percentage of the browser window, regardless of any **height** settings in the main **<table>.** If only one cell has a **width** or **height** attribute set, then that setting is used for all the columns/rows of the table that the cell is part of. If more than one cell in a row or column have **width** or **height** attributes set, then the largest setting of all the constituent data cells will be used for the entire row/column of the table.

<…nowrap>

If this attribute appears in any table cell (**<th>** or **<td>**) it means the lines within this cell cannot be broken to fit the width of the cell. Be cautious in use of this attribute as it can result in excessively wide cells.

<…colspan="value">

This attribute can appear in any table cell (**<th>** or **<td>**) and it specifies how many columns of the table this cell should span. The default **colspan** for any cell is 1.

<…rowspan="value">

This attribute can appear in any table cell (**<th>** or **<td>**) and it specifies how many rows of the table this cell should span. The default **rowspan** for any cell is 1. A span that extends into rows that were never specified with a **<tr>** will be truncated.

<…bgcolor="#rrggbb|colour name">

Internet Explorer and **Netscape** support use of this attribute (also supported in the **<body>** element). It allows the background colour of the data cell to be specified, using either the specified colour names, or a rrggbb hex triplet.

<…bordercolor="#rrggbb|colour name">

Internet Explorer includes support for this attribute that sets the border colour of the data cell. Any of the pre-defined colour names can be used, as well as any colour defined by a rrggbb hex triplet. It is necessary for the BORDER attribute to be present in the main **<table>** element for border colouring to work.

<…bordercolorlight="#rrggbb|colour name">

Internet Explorer allows use of the **bordercolorlight** attribute to set independently, the lighter colour to be displayed on a 3-dimensional data cell border. It is the opposite of **bordercolordark**. Any of the pre-defined colour

names can be used, as well as any colour defined by a rrggbb hex triplet. It is necessary for the BORDER attribute to be present in the main **<table>** element for border colouring to work.

<…bordercolordark="#rrggbb|colour name">

Internet Explorer allows use of the **bordercolordark** attribute to set independently, the darker colour to be displayed on a 3-dimensional data cell border. It is the opposite of **bordercolorlight**. Any of the pre-defined colour names can be used, as well as any colour defined by a rrggbb hex triplet. It is necessary for the BORDER attribute to be present in the main **<table>** element for border colouring to work.

The **bgcolor, bordercolor, bordercolorlight** and **bordercolordark** attributes can also be used in **<table>**, **<th>** and **<tr>** elements, with the colour defined in the last element over-riding those defined before. E.g. if a **<td>** element contains a **bordercolor** attribute setting, the setting specified will be used instead of any colour settings that may have been specified in the **<tr>** element, which in turn over-rides any colour settings in the **<table>** element.

<…background="url of image">

Internet Explorer and **Netscape** support the placing of images inside the <td> element. (Also in the **<table>**, and **<th>** elements) If used in the **<td>** element, the image in question will be tiled behind the particular data cell. Any of the supported graphic file formats can be used as a graphic behind a table.

4.5 The <tr> element

This stands for **table row**. The number of rows in a table is exactly specified by how many **<tr>** elements are contained within it, regardless of cells that may attempt to use the **rowspan** attribute to span into non-specified rows.

The **<tr>** element can have the following attributes.

<…align="left|center|right">

This controls whether text inside the table cell(s) is aligned to the left, right or centre of the cell.

<…valign="top|middle|bottom|baseline">

This attribute controls whether text inside the table cell(s) is aligned to the top, bottom, or vertically centred within the cell. It can also specify that all the cells in the row should be vertically aligned to the same baseline.

<…bgcolor="#rrggbb|colour name">

Internet Explorer and **Netscape** support use of this attribute (also supported in the **<body>** element). It allows the background colour of the table to be specified, using either the specified colour names, or a rrggbb hex triplet.

<…bordercolor="#rrggbb|colour name">

Internet Explorer includes support for this attribute that sets the border colour of the row. Any of the pre-defined colour names can be used, as well as any colour defined by a rrggbb hex triplet. It is necessary for the BORDER attribute to be present in the main **<table>** element for border colouring to work.

bordercolorlight="#rrggbb|colour name"

Internet Explorer allows use of the **bordercolorlight** attribute to set independently, the lighter colour to be displayed on a 3-dimensional row border. It is the opposite of **bordercolordark**. Any of the pre-defined colour names can be used, as well as any colour defined by a rrggbb hex triplet. It is necessary for the BORDER attribute to be present in the main **<table>** element for border colouring to work.

<…bordercolordark="#rrggbb|colour name">

Internet Explorer allows use of the **bordercolordark** attribute to set independently, the darker colour to be displayed on a 3-dimensional row border. It is the opposite of **bordercolorlight**. Any of the pre-defined colour names can be used, as well as any colour defined by a rrggbb hex triplet. It is necessary for the BORDER attribute to be present in the main **<table>** element for border colouring to work.

<…background="url of image">

Netscape supports the placing of images inside the **<tr>** element. (Also in the**<table>**, and **<th>** elements) If used in the **<tr>** element, the image in question will be tiled behind the entire table row. Any of the supported graphic file formats can be used as a graphic behind a table row.

The **bgcolor, bordercolor, bordercolorlight** and **bordercolordark** attributes can also be used in **<table>**, **<th>** and **<td>** elements, with the colour defined in the last element over-riding those defined before. E.g. if a **<td>** element contains a **bordercolor** attribute setting, the setting specified will be used instead of any colour settings that may have been specified in the **<tr>** element, which in turn over-rides any colour settings in the **<table>** element.

TRY THIS:

Programme an HTML code where you:

1. design a three column, three row table
2. set different border colours
3. In column 1 row 1 insert an image
4. In column 2 row 1 type some text to describe your graphic
5. In column 3 row 1 insert a smaller image
6. In column 1 row 2 type some text and align it in the middle
7. In column 2 row 2 change the cell colour to black
8. In column 3 row 2 insert an image
9. In column 1 row 3 insert a background image
10. In column 2 row 3 type some text and align it bottom
11. In column 3 row 3 type some text and align it right

5. LAYOUT

OUTCOMES:

After you have completed this section you will be able to:

- do a comprehensive layout of your webpage
- define frame, frameset and noframes
- target your frames

5.1 Why do layouts?

Up to now you have been taught a variety of HTML codes that you can use in creating a very professional looking web site. Another important element in designing a web site is the layout of your whole site. Up to now you have only worked in single web pages at a time, linking to other single web pages. As discussed in the **Plan your site** section, the layout of your site will is very important and will determine its user-friendliness. By using frames you will be able to create a split frame in your site and in effect be able to view multiple web pages in one browser window.

5.2 Defining <frameset>, <frame> and <noframes>

You can create frames to divide a browser window into different panes of information that can be viewed and changed independently. The elements to implement frames are <**frameset>, <frame>,** and <**noframes>**. The attribute <**target>** of the <**a>** (anchor) element is also added.

5.2.1 <frameset>

This element is the container for a frame. Instead of having a <**body>** element, a frame document uses <**frameset>**. This element can be nested which means that you can put this element within itself.

<frameset> has the following attributes:

<…rows="row_height_value_list">

This takes a list of values, separated by comma marks. They can represent absolute **pixel**, **percentage**, or **relative scaling values**. The total set by the values given in the <**rows>** attribute should not exceed 100% (as the total rows are extended across the whole available browser display window).

If any of the values are single numerical values then these are considered to be absolute **pixel values**. It is not recommended that you fix a frame set by using a complete set of pixel values, because browsers use a variety of different screen resolutions when viewing documents, so the layout may become distorted.

Percentage values can be given for this attribute. If the total percentage values given exceed 100% then the browser will scale down all values so that the total is 100%. The remaining value option is to use a *** (pound)** character. This tells the browser that the frame is a relative size frame and should be displayed accordingly.

Numerical values can be used with the ***** character, to scale the relative frame sections within the browser window.
E.g.:
To specify a three vertical framed layout, where the first section uses 20% of the display window, the second uses 100 pixels and the third section uses the remaining screen, use:

```
<frameset rows="20%, 100, *">
```

To split the layout into two vertical frames, the first using a quarter of the display window, the second using three-quarters of the window, use:

```
<frameset rows="25%, 75%">
```

This would be exactly the same as using **<frameset rows="*, 3*">**

<…cols="column_width_list">

The **cols** attribute takes as its value a comma separated list of values that is of the **exact same syntax** as the list described above for the **rows** attribute.

The **frameset** element can be nested. In this way, frame sections can be set up where the display window can be split into either horizontal or vertical sections, with any of these being further sub-divided by nested **frameset** elements e.g.:

```
<frameset rows="*,*"><!-- two rows, each equal height -->
   <frameset cols="*,*"><!-- two columns, equal width -->
      <frame src="display.html"  name="upperleft-frame">
      <frame src="display.html"  name="upperright-frame">
   </frameset>
   <frameset cols="*,*"><!-- two columns, equal width -->
      <frame src="display.html" name="lowerleft-frame">
      <frame src="display.html" name="lowerright-frame">
   </frameset>
</frameset>
```

The above example will divide the browser window into 4 blocks or frames. In each frame will be displayed the **display.html** file. In other words from the above HTML code you will have a **four** frames with each frame displaying the same HTML document.

<…border="pixel value">

This allows the global setting of frame border thickness by using this attribute within the **<frameset>** element. It accepts a **pixel** value, which determines the thickness of any borders used within the frame set e.g.:

```
<frameset border=”2”>
```

<… bordercolor="#rrggbb or colour name">

This specific attribute sets the colours for the border of the specified <**frameset>**. It can also be used in the **<frame>** element (see below) for setting the border colours of a specific frame. It accepts any #rrggbb hex triplet as a value. Any **bordercolor** setting in a **<frameset>** element is over-ridden by a setting present in the **<frame>** element.

<…frameborder="yes|no|0"> or <…framespacing="value">

This attribute can be used to set the borders globally for an entire **<frameset>**, using values of either "**yes**" or "**no**". **Internet Explorer** does support the use of this attribute in the **<frameset>** element, using the value "0" to produce borderless frames. To produce this effect, it also requires using the <**framespacing="0">** attribute. (The **framespacing** attribute sets the amount of 'grey' space between each frame of the frame set.)

5.2.2 **<frame>**

This element identifies a single frame in a **<frameset**> and has the following attributes:

<…src="url">

The *url* refers to the resource to be initially displayed in this frame.

<…name = "text">

This assigns a name to the frame; this name then can be used in other documents in the <**target>** attribute of the anchor element.

<…marginwidth = "value">

The number of pixels to add to the left and right of the contents of frame the frame.

<…marginheight = "value" >

The number of pixels to add to the top and bottom of the contents of frame the frame.

<…scrolling = "yes|no|auto": >

- yes = add scrollbars, even if they are not needed;
- no = NEVER add scrollbars even if they are needed;
- auto = add scrollbars if they are needed; (default)

It is always a good idea to use auto because screen resolution and browser type will effect the appearance of your page.

<noresize>

This attribute is a flag that indicates the frame is not resizable by the user; Normally, a user can manually alter the size of the frame using "grab buttons" that appear on the display of the frame. The <**noresize>** attribute makes this resizing impossible.

5.2.3 <noframes>

The **<noframes>** element brackets content that will be rendered by non-frame-enabled browsers e.g.:

```
<noframes>
   <body>
      <p>
      This document requires a browser capable
      of rendering frames to view it.
   </body>
</noframes>
```

5.2.4 <a href="url">

The attribute **<target>** is added to the anchor tag. This attribute defines in which frame the new content referenced in the anchor will be displayed when selected e.g.:

```
<a href="http://www.cnn.com/ target="display_area">
```

When one therefore link to the **cnn.com** site as specified by the anchor tag, the cnn.com site will be displayed in the frame named **display_area**.

<**target>** has the following possible values:

<name>

This is used to allocate a name to a <**frame>** element's <**name>** attribute. This will specify a name for that relevant frame which can be used in a <**target>** on another page so that your page will appear in the frame specified by the name, e.g.:

```
<frame src="display.html"  name="display_area">
```

In this case the name given to this frame is **display_area**. Any <**a href="url">** referring a target to the **display_area** will link to this frame.

There are a number of special or "magic" target names that can also be used. All of the magic targets begin with an underscore "_".

- **_self**: new document is displayed in the same frame as the anchor that loads it; this is the default e.g.:

```
<a href="http://www.cnn.com/ target="_self">
```

- **_parent**: displays the new document in the parent frame and works almost the same as the **_top** target; if no parent, same as _self e.g.:

```
<a href="http://www.cnn.com/ target="_parent">
```

- **_top**: displays the new document in the entire browser window; if no frames, same as _self e.g.:

```
<a href="http://www.cnn.com/ target="_top">
```

- **_blank**: display the new document in a new, unnamed browser window e.g.:

```
<a href="http://www.cnn.com/ target="_blank">
```

5.2.5 <base>

Consider the following example:

```
<frameset cols="*,3*">
      <frame src="contents.html" name="frame1">
      <frame src="coverpage.html" name="frame2">
</frameset>
```

It is likely that every link specified in **contents.html** will need to be targeted to **frame2**. Rather than put **target="frame2"** in every anchor tag, you can define a **<base target>**, to which every **<a href="url">** on the page will link. At the very top of the **contents.html** file, put a **<base>** tag:

```
<base target="frame2">
```

This is equivalent to putting **target="frame2"** in every anchor tag.

TRY THIS:

Programme the following HTML code:

1. a frameset splitting the screen into three
2. use the following measurements:
   First frame = 25%
   Second frame = 50%

Third frame = 25%

3. Assign target names to each frame
4. Link three different HTML documents to the frames
5. Use the <a href> and <target> tags on the three different documents to do a cross linking in the following manner:

   Frame 1 link to frame 2, frame 2 link to frame 3, frame 3 link to frame 1

5.3 Defining <marquees>

The <MARQUEE> element allows the author to create a region of text that can be made to scroll across the screen (much like the Windows Marquee screen saver) e.g.:

```
<marquee>this text will scroll from right to left slowly</marquee>
```

Marquees can be aligned to the left or right-hand side in the HTML document and have a variety of attributes to control them.

<…align="left|right|top|middle|bottom">

This attribute can be set to either **left, right, top, middle** or **bottom** and specifies that the text around the marquee should align with the top, middle , or bottom of the marquee.

For example:

```
<marquee align=top>Hello there!!</marquee>welcome to this page
```

The text "Welcome to this page"' would be aligned with the top of the Marquee (which scrolls the text "Hello there!!" across the screen. (***NOTE :*** Until the Marquee width is limited by setting the **width** attribute, then the Marquee will occupy the whole width of the browser window and any following text will be rendered below the Marquee.)

<…behavior="scroll|slide|alternate">

This can be set to **scroll, slide** or **alternate**. It specifies how the text displayed in the Marquee should behave. <**scroll>** (the default) makes the Marquee test start completely off one side of the browser window, scroll all the way across and completely off the opposite side, then start again. <**slide>** causes the text to scroll in from one side of the browser window, then stick at the end of its scroll cycle. <**alternate>** means bounce back and forth within the marquee. E.g.

```
<marquee behavior=alternate>
this marquee will "bounce" across the screen</marquee>
```

<…bgcolor="#rrggbb|colour name">

This specifies a background colour for the marquee, either as a rrggbb hex triplet, or as one of the pre-named colours. E.g.

```
<marquee bgcolor="#f0f8ff">nice background colour!<marquee>
```

<…direction="left|right">

This specifies in which direction the text should scroll. The default is **left**, which means scrolling to the left from the right. This attribute can also be set to RIGHT, which would cause the marquee to scroll from the left to the right.

<…height="value|value%">

This specifies the height of the marquee, either in pixels **(height=n)** or as a percentage of the screen height **(height=n%)**.

<…hspace="value">

This attribute is the same as that for images. It is used to specify the number of pixels of free space at the left and right hand sides of the **<marquee>** so that text that flows around the **<marquee>** doesn't push up against the sides.

<…loop="value|-1|infinite">

loop=n specifies how many times a marquee will loop when activated. If n=-1, or **loop=infinite** is specified, the marquee action will loop indefinitely.

By default, <**marquee...>**'s will loop indefinitely.

<…scrollamount="value">

Specifies the number of pixels between each successive draw of the marquee text. That is, the amount for the text to move between each draw.

<…scrolldelay="value">

scrolldelay specifies the number of milliseconds between each successive draw of the marquee text. That is, it controls the speed at which text draw takes place e.g.:

```
<marquee scrolldelay=1 scrollamount=75>i'm fast</marquee>
```

<…style="in line styling">

As well as using previously defined style sheet settings, the **<marquee>** element can have in-line stylings attached to it. For example:

```
<marquee style="{font-family:arial;font-size:8pt}">This is
written in ariel</marquee>
```

would display the **<marquee>** in an 8pt Arial font.

<…vspace="value">

This attribute is the same as that for images. It is used to specify the number of pixels of free space at the top and bottom of the **<marquee>** so that text that flows around the **<marquee>** doesn't push up against the top or bottom.

<…width="value|value%">

This specifies the width of the marquee, either in pixels **(width=n)** or as a percentage of the screen height **(width=n%)**.

<font face="font name">

If you wish to set the **<font>** to be displayed in the **<marquee>**, then the **<font>** declaration needs to be ***outside*** the **<marquee>**

E.g.

```
<font face="comic sans ms"><marquee>hello</marquee></font>
```

TRY THIS:

Design any scrolling marquee that has the following characteristics:

1. Scrolls from right to left
2. Blue background
3. Verdana fonts
4. Width = 50%
5. Height = 10%
6. 5 scrolldelay
7. Looping 10 times and then stopping

6. CONCLUSION

CONGRATULATIONS on completing this HTML course! By now you should be VERY competent in designing a comprehensive web site. As we have been stressing throughout this course, the web is dynamic and constantly changing. You should therefore ensure that you stay abreast with the changes in technology and HTML design. Never be afraid to experiment. We trust that you have found this course very fulfilling and that you are eager to learn even more. We look forward to your published sites!

Surfs up!