

21.1 Introduction

The shared language of communication of the World Wide Web (WWW) was developed in Switzerland. This has four official languages. It was difficult for people to communicate without a common language in computers. They developed a language somewhat similar to Esperanto (which is combination of different languages of Europe) named Hyper Text Markup Language HTML.

HTML allows to format text, add rules, graphics, sound and video and save it all in a text only ASCII file that any computer can read. The key to HTML is in the *tags*, the keywords enclosed in less than (<) and greater than (>) signs that indicates what kind of content is coming up.

HTML looks like a lot of text sprinkled with greater than and smaller than signs until you open the file with a special program called a *browser*. A browser can interpret the HTML tags and then show the formatted document on screen. The three most common browsers are Netscape Communicator, Microsoft Internet Explorer and Mosaic.

The main or the key ingredient of the HTML is its *Hypertext*. HTML documents can contain links to other HTML documents or practically anything else on the Internet. You can create several Web pages and have your cursor jump from one to another as required. You can also create links to other organization's Web pages, giving your users access to information held at other sites.

Writing in a markup language means that you are writing a text and add special tags around the words and paragraphs. The tags indicate the different parts of the page or paragraphs.

You might have heard the name DHTML and XML. What are they? DHTML is actually a combination of technologies used to create dynamic content on web pages. It draws on HTML 4, Cascading Style Sheets and usually Java Script. These elements are supposed to work together following the rules of the Document Object Model (DOM), to change the content of a page even after it has been loaded into the browser.

HTML forms part of a larger, more powerful mark-up language called SGML. In an effort to harness the power of SGML (Standard Generalized Markup Language) without losing the simplicity of HTML, the wwwc has developed Extensible Markup Language (XML) that can be used to create your own mark-up languages specially suited to your topic.

HTML codes control the appearance, layout and flow of the page with different colors, images, multimedia, etc. The simplest thing is that the page is designed in simplest text with simple tags around the text.

21.2 Importance of HTML

1. HTML can be used to display any type of document.
2. It is a versatile language and can be used in any platform (Macintosh, Unix, Windows, etc.).

3. HTML makes text attractive.
4. It has special feature of linking one document with the other.

21.3 Web Browsers

The users view information in the Internet (Word Wide Web). A browser is a software program used to view HTML documents within the www. The primary goal of a web browser is to send and receive data from the web server. The language used to define the contents of these pages in WWS is HTML. The common browsers are: Netscape Communicator, Internet Explorer and Mosaic.

21.4 HTML Tags

HTML tags are commands written between less than (<) and greater than (>) signs. These are also known as angle brackets. There are opening and closing versions for many tags and the affected text is contained within the two tags. Both the opening and closing tags use the same command word but the closing tag carries an initial extra forward slash symbol (/).

<TAG> text to be affected </TAG>
opening tag text closing tag

21.4.1 Some Common Tags

- <HTML> This tag recognizes the document as a HTML document.
- <HEAD> This tag identifies the beginning and end of a header.
- <TITLE> This tag is used to place the text in the title bar of the browser window.
- <BODY> This tag is used for the beginning and end of the text or body section.

Practical 1

Step 1. Open the Notepad.

Step 2. Type the following lines of text.

```
<HTML>
<HEAD>
<TITLE> MY FIRST WEB </TITLE> </HEAD>
<BODY>
<P>MY NEPAL MY PRIDE</P>
<P>MY TEACHER MY LIGHT </P>
<P>LEARNING HTML </P>
</BODY>
</HTML>
```

Fig. 21.1

Step 3. Now save the file and supply the extension HTML

Step 4. Open the browser (Here Netscape Communicator)

Step 5. Click on the File option of the menu bar.

Step 6. Select Open Page.

Step 7. Select Choose File.

Step 8. Select file from the list. If all the files are not shown then select All files from the list.

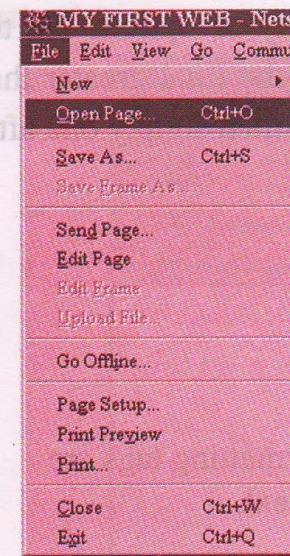


Fig. 21.2: Step 6 dialog box

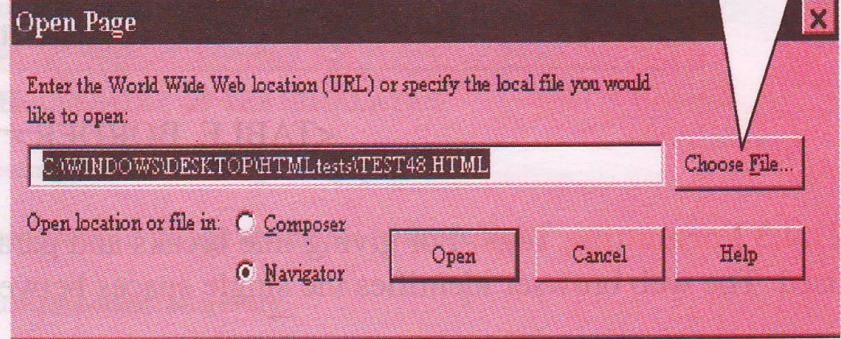


Fig. 21.3: Step 7 dialog box

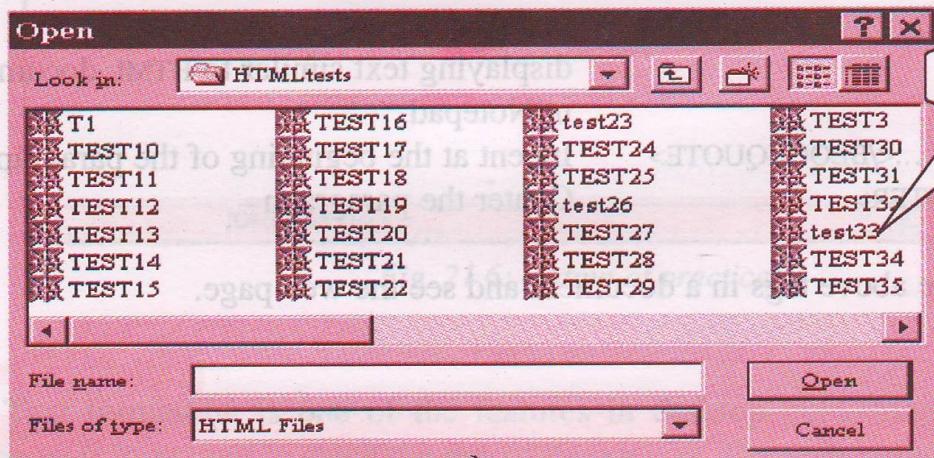


Fig. 21.4: Step 7 continued

The content of the file will be shown as given in the picture below.

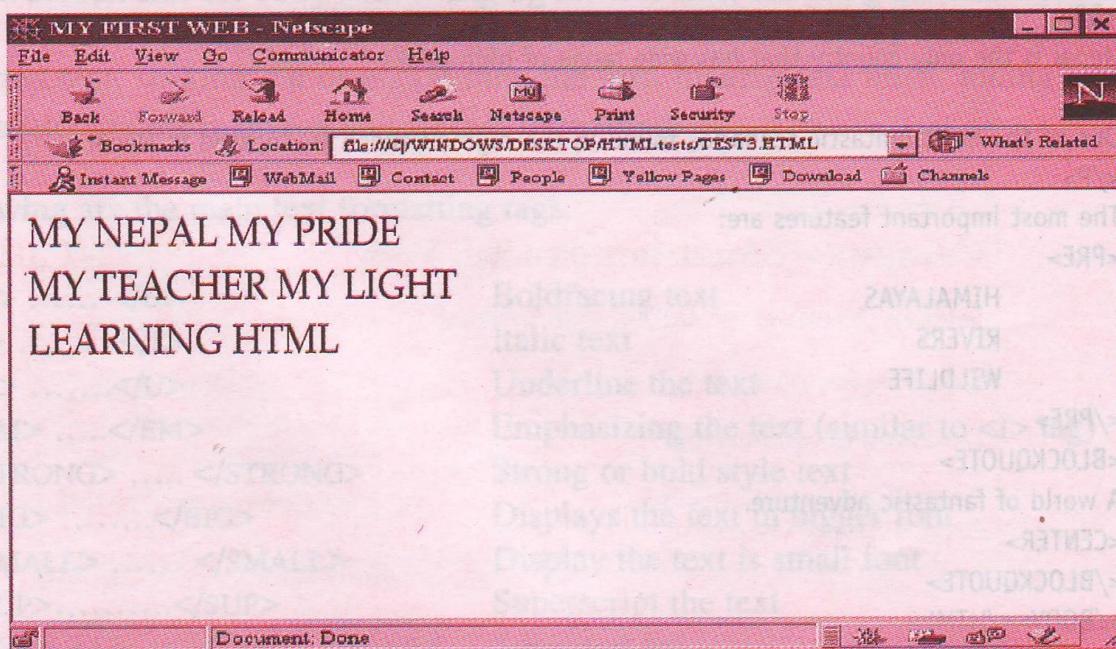
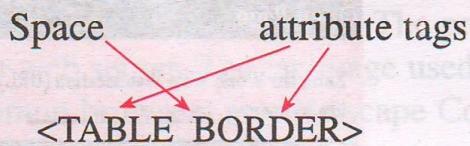


Fig. 21.5: Output of practical 1

Select drop list
and choose the
option all files

21.4.2 Attributes: Many tags have special *attributes* that offer a variety of options for the contained text. The attribute is entered between the command word and the final greater than symbol. You can use a number of attributes in a single tag. They can be written simply one after the other in any order with a space between each one.



21.4.3 Formatting Tags: For giving line breaks and paragraph breaks, formatting tags are used. The web browser identifies the single spaces between the words or text.

Tag	Purpose
 	Line break
<P> ...</P>	Paragraph break
<PRE></PRE>	displaying text similar to HTML document as in Notepad
<BLOCKQUOTE></BLOCKQUOTE>	Indent at the beginning of the paragraph
<CENTER></CENTER>	Center the paragraph

Let us include the above tags in a document and see the web page.

Practical 2

```
<HTML><HEAD>
<TITLE>THIS USES SIMPLE FORMATTING TAGS</TITLE> </HEAD>
<BODY>
<CENTER>WELCOME TO THE COUNTRY OF THE HIMALAYAS
<BR>
Nepal is the only country that has wide range of high peaks
<P>
One of the most fantastic scenarios found in the high altitudes are located in Nepal
</P>
The most important features are:
<PRE>
    HIMALAYAS
    RIVERS
    WILDLIFE
</PRE>
<BLOCKQUOTE>
A world of fantastic adventure.
<CENTER>
</BLOCKQUOTE>
</BODY></HTML>
```

Output

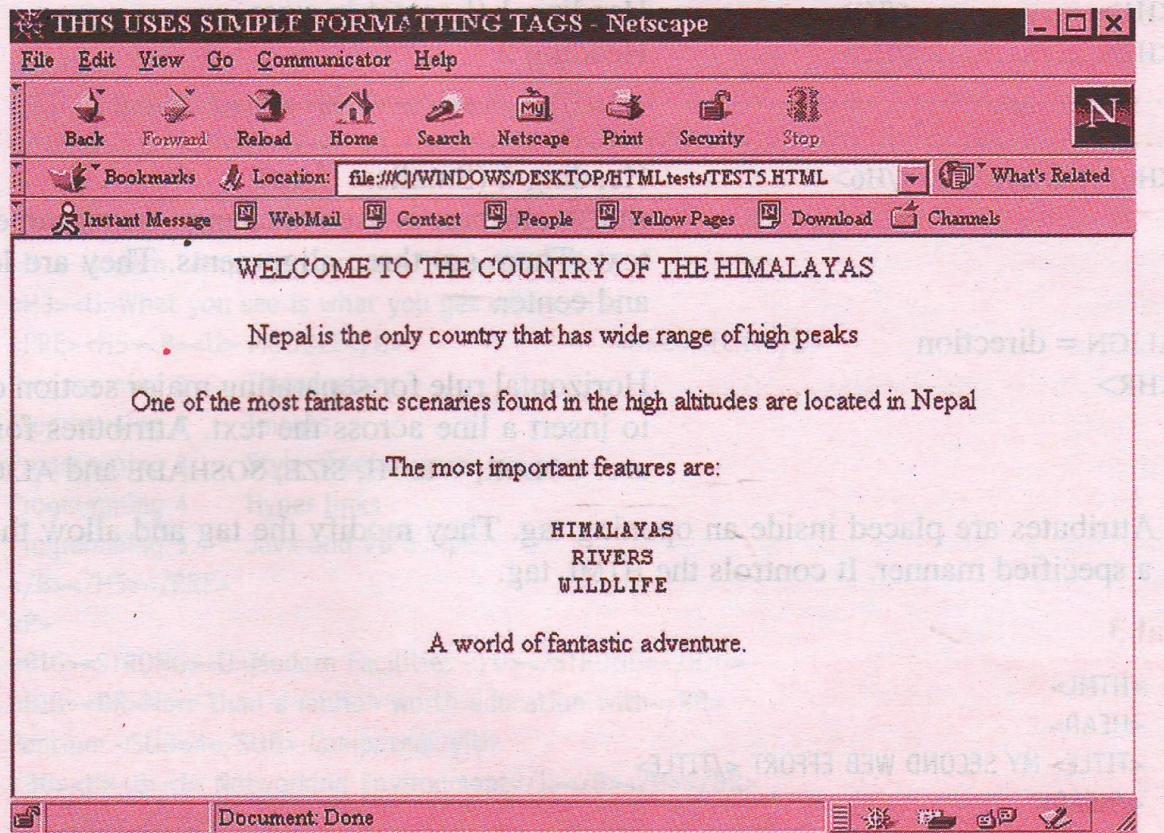


Fig. 21.6: Output of practical 2

21.5 Text Formatting

Text formatting is one of the features in desktop publishing. Similarly, a web page should be well formatted to catch the eye of the viewer. The web browser may be different than what you are expecting and some of the formats are not visible for the user. Nevertheless, we try to use some text formatting features such as changing the font, making text bold or italic, choosing a default size for body text, changing the text size, choosing the default colour for text, changing the text colour, creating superscripts and subscripts, using monospaced font, using preformatted text, striking out or underlining the text, making text blink, hiding text or adding comments, etc. are the main features of text formatting.

The following are the main text formatting tags.

HTML Tag

<I> </I>
<U> </U>

<BIG> </BIG>
<SMALL> </SMALL>
^{.....}
_{.....}

Purpose of use

Boldfacing text
Italic text
Underline the text
Emphasizing the text (similar to <I> tag)
Strong or bold style text
Displays the text in bigger font
Display the text is small font
Superscript the text
Subscript the text

21.4.2 **<STRIKE>****</STRIKE>**
<H1>.....**</H1>**
<H2>**</H2>**

Striking the text
Heading 1 (Largest in size)
Heading 2

<H6> **</H6>**

Heading 6 (Smallest font)

ALIGN attribute is used to change the alignment of the text. There are three alignments. They are left, right and center.

ALIGN = direction

<HR>

Horizontal rule for separating major section of text or to insert a line across the text. Attributes for HR tag are: COLOR, WIDTH, SIZE, SOSHADe and ALIGN.

Attributes are placed inside an opening tag. They modify the tag and allow the tags to work in a specified manner. It controls the HTML tag.

Practical 3

```
<HTML>
<HEAD>
<TITLE> MY SECOND WEB EFFORT </TITLE>
</HEAD>
<P>
<H1> Computer Education through Web </H1>
<H2> Internet Explorer is another web browser <H2>
<H3> Learn Computer Practically </H3>
<P>
Learning programming
<HR> Learn Computer Concept
<BR> Programming Concept
</BODY>
</HTML>
```

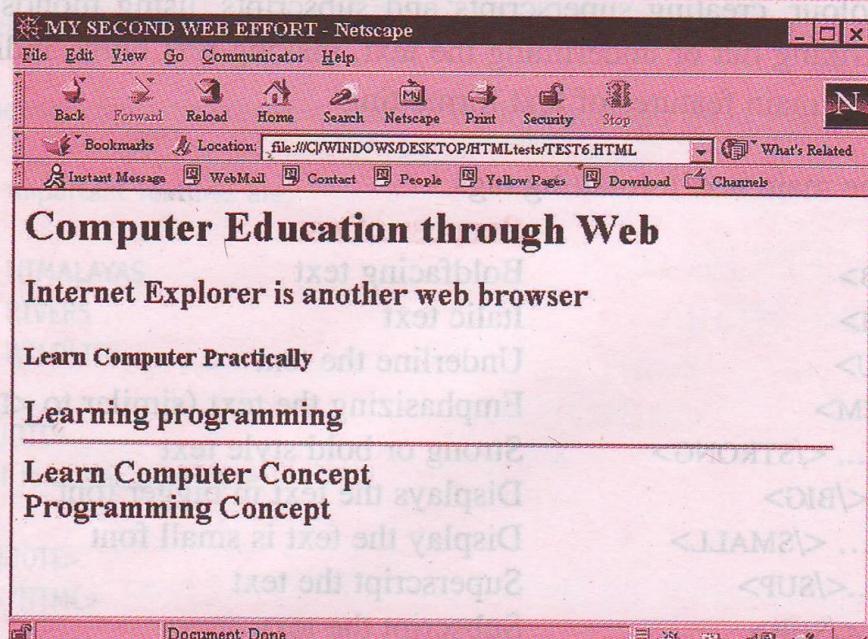


Fig. 21.7: Output of practical 3

Practical 4

```
<HTML>
<HEAD>
<TITLE> Introduction to Web Programming </TITLE>
</HEAD>
<BODY>
<P><CENTER>
<H1> Modern Computer Concept</H1></CENTER>
<H3><U>What you see is what you get </U></H3>
<PRE><H5><B><U> MODULE</U> <U>CONTENT</U>
Programming 1    Introductory
Programming 2    Images
Programming 3    Style sheets
Programming 4    Hyper links
Programming 5    Java and VB Script
</B></H5></PRE>
<P>
<BIG><STRONG><U>Modern Facilities </U></STRONG></BIG>
<BR>More than a million worth education with</BR>
Pentium <SUB>4</SUB> Computers with
<BR><U><B><I> Networking Environment</I></B></U></BR>
</BODY></HTML>
```

Output

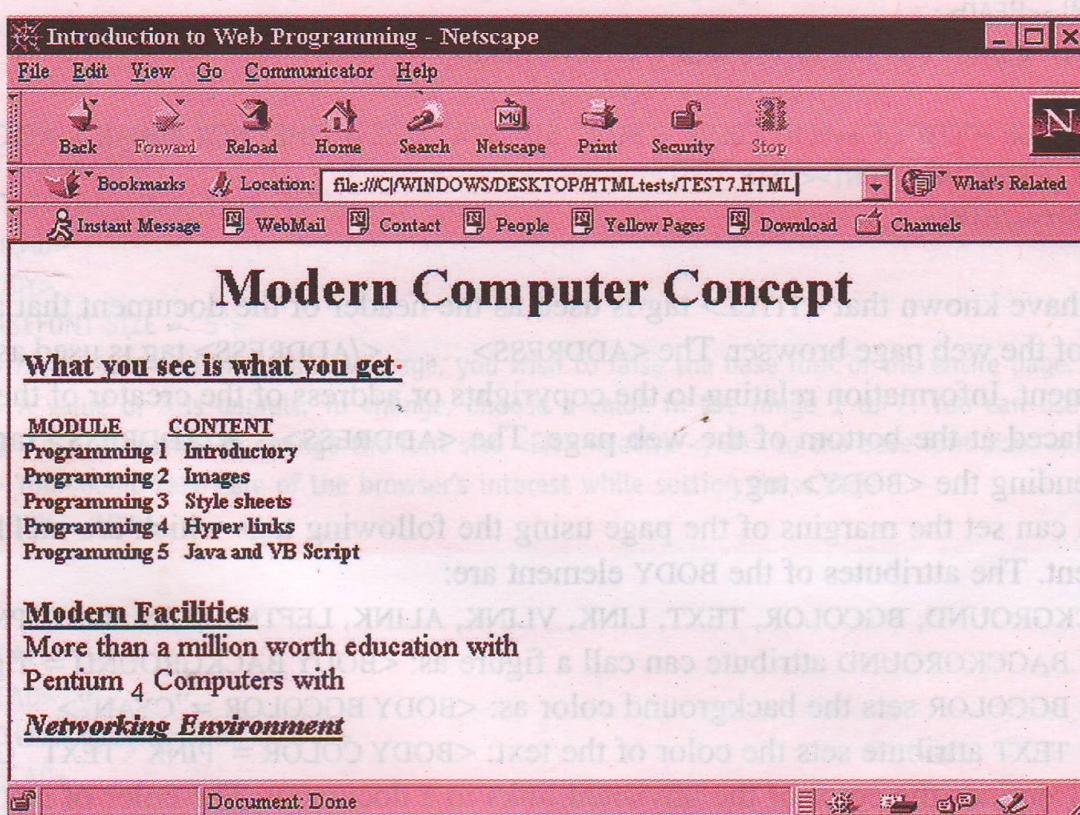


Fig. 21.8: Output of practical 4

The HR (Horizontal Rule) has the following syntax:

```
<HR ALIGN = "CENTER"/"LEFT"/"RIGHT" NOSHADE COLOR = NAME SIZE ="THICKNESS" WIDTH  
= "WIDTH">
```

21.5.1 Changing the Font: You can change the font style, font name, font size and color using the FONT tag. The opening and closing of FONT tag is:

Practical 5

```
<HTML>  
<HEAD>  
<TITLE> Using Different font </TITLE>  
</HEAD>  
<BODY>  
  
<FONT SIZE = 5 COLOR = "purple" face ="Copperplate Gothic Bold"> This will appear in big  
purple color with Copperplate Gothic Bold font. </FONT>  
</BODY></HTML>
```

The SIZE attribute can take any value from 1 (smallest) to 7 (fairly large), with 3 being the normal size. The COLOR attribute can take any of the following standard color names: black, white, red, green, blue, yellow, aqua, fuchsia, gray, lime, maroon, purple, navy, olive, silver or teal.

Practical 6

```
<HTML><HEAD>  
<TITLE> USING FONT TAG IN THE WEB </TITLE></HEAD>  
<BODY>  
<H1 ALIGN ="CENTER"><FONT COLOR ="BLUE" SIZE ="4" FACE ="TIMES NEW ROMAN"> WELCOME IN THE  
WORLD OF WEB DESIGNING </FONT></H1>  
</BODY></HTML>
```

We have known that <TITLE> tag is used as the header of the document that appears on the title bar of the web page browser. The <ADDRESS></ADDRESS> tag is used as the footer of the document. Information relating to the copyrights or address of the creator of the web page is usually placed at the bottom of the web page. The <ADDRESS>....</ADDRESS> tag is placed just before ending the <BODY> tag.

You can set the margins of the page using the following tags which are included in the BODY element. The attributes of the BODY element are:

BACKGROUND, BGCOLOR, TEXT, LINK, VLINK, ALINK, LEFTMARGIN and TOPMARGIN.

The BAGCKGROUND attribute can call a figure as: <BODY BACKGROUND ="figure.jpg">

The BGCOLOR sets the background color as: <BODY BGCOLOR ="CYAN">

The TEXT attribute sets the color of the text: <BODY COLOR ="PINK" TEXT "GREEN">

LINK defines the color of the unvisited links in a document. The color of LINK attribute is blue (#0000FF).

Fig. 21.7. Output of practical 3

ALINK defines the color of the link as it is being clicked. The default color of ALINK is red (#FF0000).

VLINK defines the color of a link after it has been visited. The default color of VLINK attribute is purple (#400040).

LEFTMARGIN sets the left margin. LEFTMARGIN = "value" sets the number spaces on the left edge.

TOPMARGIN attribute sets the top margin of the document. TOPMARGIN ="value"; where value is a number.

Practical 7

```
<HTML><HEAD>
<TITLE> Using Different Fonts </TITLE>
</HEAD>
<BODY LEFTMARGIN = "20">
<FONT FACE = "GoldMine"> You can change the font face as you need </FONT> to change just a few letters.
<P><FONT FACE = "New Century, Futura Extra Bold"> or you can change the font face for entire sentence or
paragraph </FONT>
<P> If the user's browser does not have the first font, it looks for the second one. <FONT FACE
= "Springfield, Extra Bold">If the browser can't find any of the fonts listed, it uses the font specified in
the user's preferences </FONT>
</BODY></HTML>
```

21.5.2 Choosing Default Font: You can select a size for all the body text on your page by using the BASEFONT tag. After using base font, you can change put other attributes as required to enhance the web page.

Practical 8

```
<HTML><HEAD>
<TITLE> Using Base Font </TITLE>
</HEAD>
<BODY>
<BASEFONT SIZE = "5">
<P> For a short and important we page, you wish to raise the base font of the entire page.
<P> A value of 3 is default. To change, choose a value in the range 1 to 7. You can use the &lt;FONT
SIZE="n"&gt; marker to change the font size <EM> relative </EM> to the base font size. </FONT>
<P> You should take care of the browser's interest while setting these tags.
</BODY></HTML>
```

Practical 9

```
<HTML>
<HEAD>
<TITLE> Changing Font </TITLE>
</HEAD>
<BODY>
<P>Notice that how the letters are changed in the following word.<BR>
```

```

<FONT SIZE = "+1">f</FONT>
<FONT SIZE = "+2">i</FONT>
<FONT SIZE = "+3">s</FONT>
<FONT SIZE = "+4">h</FONT>
<FONT SIZE = "+3">e</FONT>
<FONT SIZE = "+2">y</FONT>
<FONT SIZE = "+1">e</FONT>
<P> This is another example for you to have great letter.
<FONT SIZE = "7">I</FONT>nitial <FONT SIZE = "7">C</FONT>aps
</BODY></HTML>

```

21.5.3 Changing the Text Colour: The colour in the web page enhances its readability and attracts the viewer to that particular word or location on the page. A colour for the words related to link or hyperlink text makes it more attractive.

Practical 10

```

<HTML>
<HEAD>
<TITLE> Using Colour </TITLE>
</HEAD>
<BODY TEXT ="blue">
<H1><FONT COLOR = "red"> Changing the color </FONT></H1>
<P><FONT COLOR = "#F1A60A"> changing font color trial. </FONT>
<FONT COLOR = "#F6E60A"> You can put many colours in the page </FONT>
</BODY>
</HTML>

```

21.5.4 Superscripts and Subscripts: When preparing web pages, we may require to include some formulae. These formulae contain the superscripts (raised) and subscripts (lowered). For example H_2O contains a subscript and $(a+b)^2$ contains a superscript. These numbers can be written in the HTML by using SUP (superscript) and SUB (subscript) tags.

Practical 11

```

<HTML>
<HEAD> <TITLE> Superscript and Subscript </TITLE>
</HEAD>
<BODY>
<P> <H2> To the power </H2>
Use superscripts and subscripts as in  $ax^2 + bx + c = 0$  and use superscripts in the molecular formula like  $H_2O$ .
</BODY>
</HTML>

```

20.5.5 Monospaced Font: Monospaced font is used for displaying computer codes, URLs or other text that you wish to offset from main page. There are several tags for using monospaced font. Such as CODE (computer code), KBD (keyboard input), SAMP (sample text) and TT (typewriter text), etc.

For formatting several lines of monospaced text, you should use the PRE marker which does the task of pre-formatting the text.

Practical 12

```
<HTML>
<HEAD><TITLE> Monospaced Font </TITLE>
</HEAD>
<BODY>
<P> Monospaced fonts are perfect for offsetting text from the regular paragraph.
<P> Here are some examples.
<P> Type <CODE>dir </CODE> to show a list of directory.
<P> Type <KBD> Yes</KBD> at the prompt.
<P> These are <SAMP> sample for monospaced font or text </SAMP>.
<P> <TT> This is typewriter font </TT>
</BODY>
</HTML>
```

When you use a browser you will find the words like dir, Yes in different font than the browser's default font.

21.5.6 Preformatted Text: The browsers had different capacities. The browser decides where to divide each line of text and eliminates extra spaces and returns. Preformatted text provides facility to maintain the original line breaks and spacing that you have inserted in the text.

Practical 13

```
<HTML><HEAD>
<TITLE> Use of Preformatted Text </TITLE>
</HEAD>
<BODY>
<P> This is an example.
<STRONG> ANY </STRONG> browser:
<PRE>

          <STRONG> <U> Sport Result </U> </STRONG>
Title      School        Winner
Football   NJBHS         Team
Basket Ball NJBHS         Team
TT          WWW           Santosh and Raman
</PRE></BODY></HTML>
```

21.5.7 Strike Out and Underlining: The tags such as STRIKE and U are very common for striking the text and underling the text. In addition to these tags, DEL (for deletion) and INS (for insert) tags can also be used. These tags can also be applied in styles which you will study in future.

Practical 14

```
<HTML>
<HEAD>
<TITLE> Test for Strike and Underline </TITLE>
<BODY>
<P> This is <U> underlined text </U>
<BR>
<P> This is <STRIKE> strike through </STRIKE></BR>
</BODY>
</HTML>
```

20.5.8 Blinking Text: One of the interesting way to make the text very much attractive is making it blink. You can use BLINK tag to anchors, links or any other important text that you have on the page.

Practical 15

```
<HTML>
<HEAD>
<TITLE> Blinking text </TITLE> </HEAD>
<BODY>
```

Blinking text is particularly useful when used with an anchor. It particularly attracts <BLINK>mice </BLINK> and other pointing devices.
</BODY>
</HTML>

21.6 Lists

Lists as in Word document can be created in web pages also. Special HTML tags are used for this purpose. You can create different types lists such as: Plain list, numbered list or bulleted list as well as lists of definitions. All lists are formed by a principal code to specify what sort of list you want to create and a secondary code to specify what sort of items you want to create.

21.6.1 Ordered List: The ordered list is the list prepared in a numbering format. It explains the step-by-step instructions how to complete a particular task. The ordered list can be created in the BODY part of the HML document or page.

The ordered list begins with tag and terminates with tag. The attributes of tag are TYPE and START. The type attribute controls the numbering style in the page. The START attribute changes the numbering sequence or it is used for renumbering. Start value is always numeric and is converted automatically, according to the TYPE value.

The list items should be short. Inserting a line break (BR) in a list item breaks the text to the next line, but it maintains the same indenting. The text after the OL marker appears indented by the same amount as the following list item but without a number or letter.

- Type: '1' produces the list as 1,2,3,... order (Arabic)
- Type: 'A' produces the list as A, B, C, ...order (Alphanumeric and uppercase)
- Type: 'a' produces the list as a, b, c,order (alphanumeric and lowercase)
- Type: 'I' produces the list as I, II, III,order (Upper Roman)
- Type: 'i' produces the list as i, ii, iii,order (lower Roman)

Practical 16

```
<HTML>
<HEAD><TITLE> Using Ordered List </TITLE>
</HEAD>
<BODY>
<P> Ordered lists are very useful for listing the items. It gives the outline of the options.
<H1> Starting the computer </H1>
<OL>
<LI> Check the power chord of the computer.
<LI> Put on the switch of the volt guard.
<LI> Put on the power switch of the computer.
</OL>

<H1> Using another type of numbering </H1>
<OL TYPE = I>
<LI> Indentation
<LI> Page layout
<LI> Page formatting
<LI> Header and footer
</OL>
</BODY>
</HTML>
```

21.6.2 Unordered list: One of the most widely used lists is unordered list. The list shown does not have particular order. You can use any image you want for bullets by setting the bullet lists. Inserting a line break in a list item breaks the text to the next line. It maintains the same indenting. The text placed after the UL marker appears indented by the same amount as the following list item but without a bullet. The TYPE marker in a list item overrides the TYPE marker used in the unordered list definition and affects the current list item as well as any subsequent list items.

Unordered list presents the information in bullet format within tags. tag is used for listing the items. TYPE is used as an attribute of unordered list.

Type: "disc" /"fill round" gives solid round bullet

Type: "square" gives solid square black bullet

Type: "circle" gives solid black circled bullet

Practical 17

```
<HTML>
<HEAD><TITLE> HTML and Java Script</TITLE>
</HEAD>
<BODY>
<CENTER> <H1> Creating HTML and JavaScript </H1> </CENTER>
<P><H2>Learning to Create HTML tags can help you in many ways </H2></P>

<OL>
<LI><P><H3>You will develop a deeper understanding of how HTML really works. <H3></P></LI>

<UL>
<LI><P><H3> You will be able to troubleshoot web pages. <H3></P></LI>
<UL>
<LI><P><H3>You will be able to view other pages </H3></P></LI>
</UL>
</UL>
<LI><P><H3>You will understand how HTML and JavaScript work together. </H3></P></LI>
</OL>
</BODY>
</HTML>
```

Practical 18

```
<HTML><HEAD><TITLE> Creating Unordered List </TITLE>
</HEAD>
<BODY>
Unordered lists are very common .
<UL><EM><FONT SIZE =1> New or improved features of HTML
<BR> All features not included </FONT></EM>
<LI TYPE =round> One click page layout
<LI TYPE =disc> Spell checker
<LI> Unlimited undo and redo
<LI TYPE =round> Special HTML features
</UL>
<H1> The lodge offers
<UL>
<LI> Live music and dancing
<LI TYPE = square> Midnight snacks
<LI TYPE = disc> Free disco
</UL>
</BODY>
</HTML>
```

21.6.3 Definition list: The definition list uses special markers. This type of list is particularly suited to glossaries but can be used in any kind of listing. In this kind of list, each item in the list has a

term and a definition for the term, is arranged in a manner that the term is somehow highlighted or drawn out from the text.

<DL></DL> is used for definition list. This tag is associated with two other tags <DT> and <DD>. <DT> tag is used as Definition Term and <DD> tag is used as Definition Description.

Practical 19

```
<HTML><HEAD>
<TITLE> Creating Definition List </TITLE>
</HEAD>
<BODY>
    HTML provides special marker for definition lists.
    <H1> English Tenses </H1>
    <DL>
        <DT> <STRONG> Present </STRONG><BR>
        <DD><EM> "I go." This is present tense. </EM>
        <DT><STRONG> Future </STRONG> <BR>
        <DD><EM> I will go. This is future tense. </EM>
    </DL>
</BODY>
</HTML>
```

21.6.4 Nested List: A list inside another list makes a combination of two or more types of lists. Such a list inside another list constructs the nested list. This is particularly useful with an outline rendered with ordered list where you may want several levels of items.

It is good to give tab to indent the nested lists. The nested lists are automatically indented by browsers. By default, the first level of an unordered list will have solid round bullets, the next will have empty round bullets and the last will have square bullets. You can use TYPE tag to specify the type of bullet you want.

Practical 20

```
<HTML>
<HEAD><TITLE> Nested List </TITLE> </HEAD>
<BODY>
    <P><H1> <FONT SIZE = "5" COLOR = "BLUE"> <!--The title in blue color -->
    Content of the book </FONT></H1>
    <OL TYPE = I>
        <LI> Computer System
            <OL TYPE = A>
                <LI> Introduction
                <LI> Input System
                <LI> Processing
                <LI> Output
            </OL>
    </OL>
```

```

<LI> Types of Computer
    <OL TYPE = A>
        <LI> Analog Computer
        <LI> Digital Computer
        <LI> Hybrid Computer
    </OL>
</BODY>
</HTML>

```

Practical 21

```

<HTML>
<HEAD>
<TITLE> Learning Computer Programming </TITLE> </HEAD>
<FONT SIZE = "5" COLOR = "BLUE"> <!—This is the comment. The first line will be blue in color —>
Modern Computer Concept 2003 </FONT>
<HR COLOR = RED> <!— Red horizontal line —>
The book includes latest syllabus.
<BR> <!—line break—>
The new feature with Web Page Designing and JavaScript
<B><I><U> <!—the text will be bold italic and underlined —>
Read to gain more knowledge. </U></I></B>
<OL TYPE "1" START ="1"> <U> <FONT COLOR ="GREEN"> Increase your ability with </FONT></U>
<LI> QBASIC Programming
<LI> MS Access
<LI> Web Designing
</OL>
<P><H4> <!—the latest technology study guide. —>
<UL><U> Some other features include </U>
<LI> Computer Fundamental
<LI> Computer Architecture
<LI> Computer programming with C++
</UL>
</BODY>
</HTML>

```

21.6.5 Special Characters: The special characters are the symbols or characters used on a web page. Such characters are used when they are preceded by an ampersand (&) and followed by a semicolon (;). Some of these special characters are given in the example below.

Practical 22

```

<HTML>
<HEAD> <TITLE> Test of Special Character </TITLE> </HEAD>
<BODY>
AMPERSAND: &AMP;<P>
COPYRIGHT: &COPY;<P>
LEFT ANGLE BRACKET: &LT; <P>

```

```
RIGHT ANGLE BRACKET: &GT; <P>
DOUBLE QUOTES: &QUOT;<P>
</BODY></HTML>
```

Practical 23

```
<HTML> </HEAD>
<HEAD><TITLE> Background Colour</TITLE>
<BODY BGCOLOR = BLUE>
<CENTER><H1> Organizing Tags </H1><CENTER>
<P> A web page can be organized in different ways. Some of the pages can be organized by using various types of links or hyper links, colours, single spacing, double spacing and use of the breaks.</P>
<BR>The line arrangement
<BR> Hyperlinks
<BR> Beautiful fonts
<BR> Attractive pictures
<BR> Arranged tables
<HR>
<P><H2> Line sizes </H2> <P>
A horizontal rule (HR) tag 50% wide and 10 increments high.
<HR WIDTH = "50%" SIZE = 10>
A horizontal rule (HR) tag with 25% wide and 20 increments high.
<HR WIDTH = "25%" SIZE = 20>
A horizontal rule tag with 10% wide and 30 increments high.
<HR WIDTH = 10% SIZE = 30>

A Horizontal Rule tag without any attributes and values.
<HR>
</BODY>
</HTML>
```

21.7 Hyperlinks Or Links

A link is a connecting point in the web page. A link connects another html file. The links are the distinguishing features of World Wide Web. The link provides facility to skip from one page to the other, call up a movie or download a file with FTP.

A link basically has three parts: a destination, a label and a target. The first part is the most important. The most common links connect to the other web pages and sometimes to specific locations on other web pages called *anchors*. All destinations are defined by writing a URL and generally visible to the visitor in the status bar of the browser.

The second part of the link is the label, the part the visitor sees and clicks on to reach the destination. It can be text, an image or both. The label text is often underlined.

The last part of the link is the target. The target determines where the destination will be displayed. The target might be a particular named window or frame.

The hyperlink allows the user to switch between the pages when required. Clicking on any text or image will open an entire new web page. To create a link in an HTML page, `<A>` tag is used. `<A>` tag is often called anchor tag as it can also be used to create anchors for links.

Practical 27

25 October 2014

```
<HTML>
<HEAD><TITLE> Using Anchors: Dynamic Table of Contents</TITLE>
</HEAD>
<BODY>
<BODY TEXT = "BLUE">
<A NAME ="#TOP"> TOP OF THE PAGE </A>
<H1> Table of Contents </H1>
<!-- This is the beginning of the page -->
<OL>
<!-- These are the two lists. -->
<LI> <A HREF="#INTRO"> Introduction </A>
<LI> <A HREF="#DES"> Description</A>
</OL> <BR>
<P> <A NAME="INTRO">Introduction</A>
<H1> This is introduction.</H1>
```

The text begin for introductory part of the web page. The length of the text is dependent to the topic. If you are explaining about some classification of animals, the length will definitely increase. Here are some blank lines left for you.

Blank lines begin

.....

.....

These lines can have any text.

For switching to the top of the page once again, we have included a code at this position. See here. Now, you can move to the top of the same document.

```
<A HREF ="#TOP"> TOP OF THE PAGE </A>
<BR>
<P>
<HR COLOR = BLUE> </HR>
<!-- this is a break line for separating two headings -->
<BR>
<A NAME="DES">Description</A>
<H1> This is the description </H1>
```

This section includes the description of the topic. It depends on what kind of topic you have included. For example

```
<H3> Classification of Animals </H3>
<OL>
<LI> Phylum
<LI> Sub phylum
<LI> Class
<LI> Sub class
<LI> Order
<LI> Sub order
<LI> Genus
<LI> Species
</OL>
```

The above list is imaginary. You can have an actual list. These lists and texts can be included in the description part. The coming line is for linking to the top of the page.

```
<P>
<A HREF ="#TOP"> TOP OF THE PAGE </A>
</BODY>
</HTML>
```

When you run the HTML codes with the help of browser, you will see the output as shown in figure.

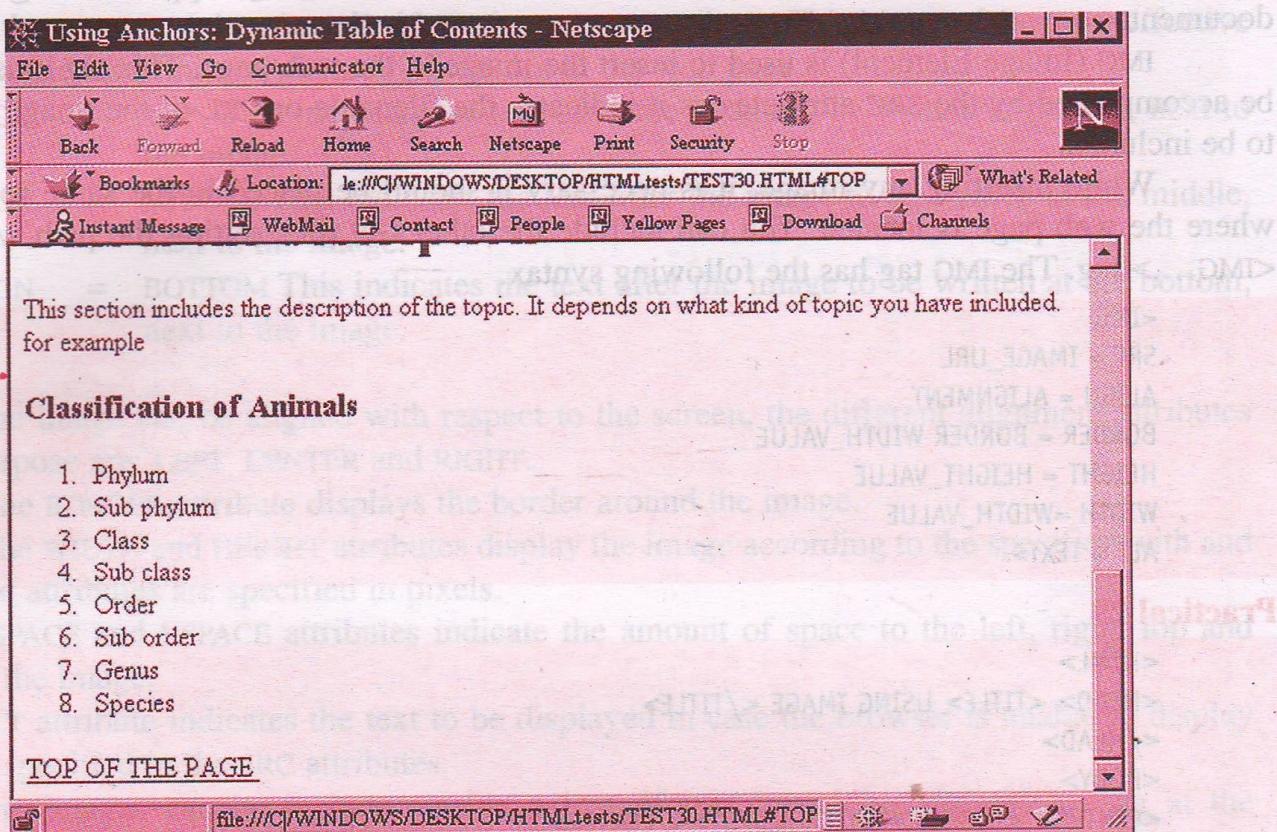


Fig. 21.9: Creating anchors

21.7.3 Email Link: Apart from intra page links, the <A> tag can also be used for creating email links. Email link creates a new message addressed to the specified recipient using the web user's installed mail client. The email address, in this case, must be specified after the code "mailto:" statement in <A HREF > tag.

Practical 28

```
<HTML> <HEAD>
<TITLE> EMAIL LINK </TITLE>
</HEAD>
<BODY>
Send your email to <A HREF = mailto:ekta@wlink.com
```

21.8 Creating Images

Web pages contain the text pictures, graphics, tables, links within the document, email link, hyper link, etc. One of the remarkable features of Web page that has enhanced its capabilities of attraction is the image in the document. The most common images that can be easily inserted in the Web page are the GIF and JPEG formats. GIF is most of the times used as it supports animation and the files are compressed. The JPEG files are also used but they are not compressed. Using software like GIF Animator and Adobe Photoshop, special effects can be

inserted on the images to suit the requirements of a web page. In linked graphics, a link is created to the image that is to be displayed while in-line, the image appears along with the document.

IMG (Image Element) is used to insert the image in the web page. This tag must always be accompanied by the SRC attributes as it indicates the filename or URL of the image which is to be included.

While inserting any image, it is necessary it should be placed in the same root folder where the web page is located. You can include the other GIF files setting the path within the <IMG....> tag. The IMG tag has the following syntax.

```
<IMG  
SRC = IMAGE_URL  
ALIGN = ALIGNMENT  
BORDER = BORDER WIDTH_VALUE  
HEIGHT = HEIGHT_VALUE  
WIDTH = WIDTH_VALUE  
ALT = TEXT>
```

Practical 29

```
<HTML>  
<HEAD> <TITLE> USING IMAGE </TITLE>  
</HEAD>  
<BODY>  
<CENTER> <IMG SRC="VILLAGE.JPG"></CENTER>  
</BODY></HTML>
```

[Note: You need to have VILLAGE.JPG file in the same folder.]

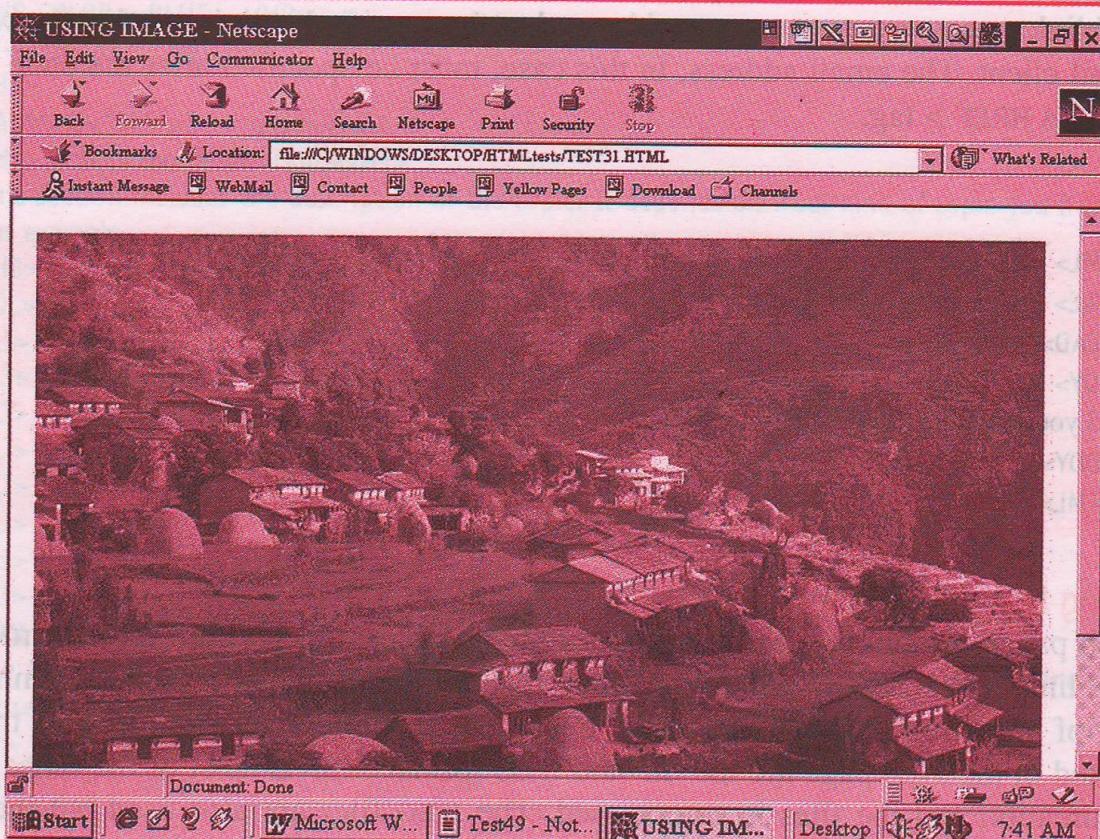


Fig. 21.10: Village

The output of the above HTML codes will be as shown in the figure. This file is located at the same path where the program file is resident. The alignment of the image with respect to the text or the screen can be controlled by using ALIGN attribute. This is one of the most effective attributes while inserting the picture or graphics in the web page.

ALIGN = TOP This indicates the text after the image to be written at the top, next to the image.

ALIGN = MIDDLE This indicates the text after the image to be written at the middle, next to the image.

ALIGN = BOTTOM This indicates the text after the image to be written at the bottom, next to the image.

The image can be aligned with respect to the screen, the different alignment attributes for this purpose are: LEFT, CENTER and RIGHT.

The BORDER attribute displays the border around the image.

The WIDTH and HEIGHT attributes display the image according to the specified width and height. The attributes are specified in pixels.

HSPACE and VSPACE attributes indicate the amount of space to the left, right, top and bottom of the image.

ALT attribute indicates the text to be displayed in case the browser is unable to display the image specified in the SRC attributes.

The images can be included inside a line of text by adding the tag at the appropriate point inside an element tag such as <H1>, <P>, <ADDRESS>, etc.

Practical 30

```
<HTML>
<HEAD>
<TITLE> USING IMAGES </TITLE>
</HEAD>
<BODY BGCOLOR = CYAN TEXT =BLUE>
<H1> <IMG SRC="globe.gif" ALIGN =RIGHT ALIGN =MIDDLE HEIGHT =100 WIDTH =150>
WEB PAGE DESIGNING PRACTICE</H1>
<P> DESIGN, WRITE, ILLUSTRATE AND HOSTING <B> WWW</B></P>
<UL>
<LI> Introduction to HTML codes
<LI> Text Formatting
<LI> Images
<LI> Page Layout
<LI> Tables
<LI> Frames
<LI> Forms
<LI> Multimedia
<LI> Java Scripts
</UL>
</BODY>
</HTML>
```

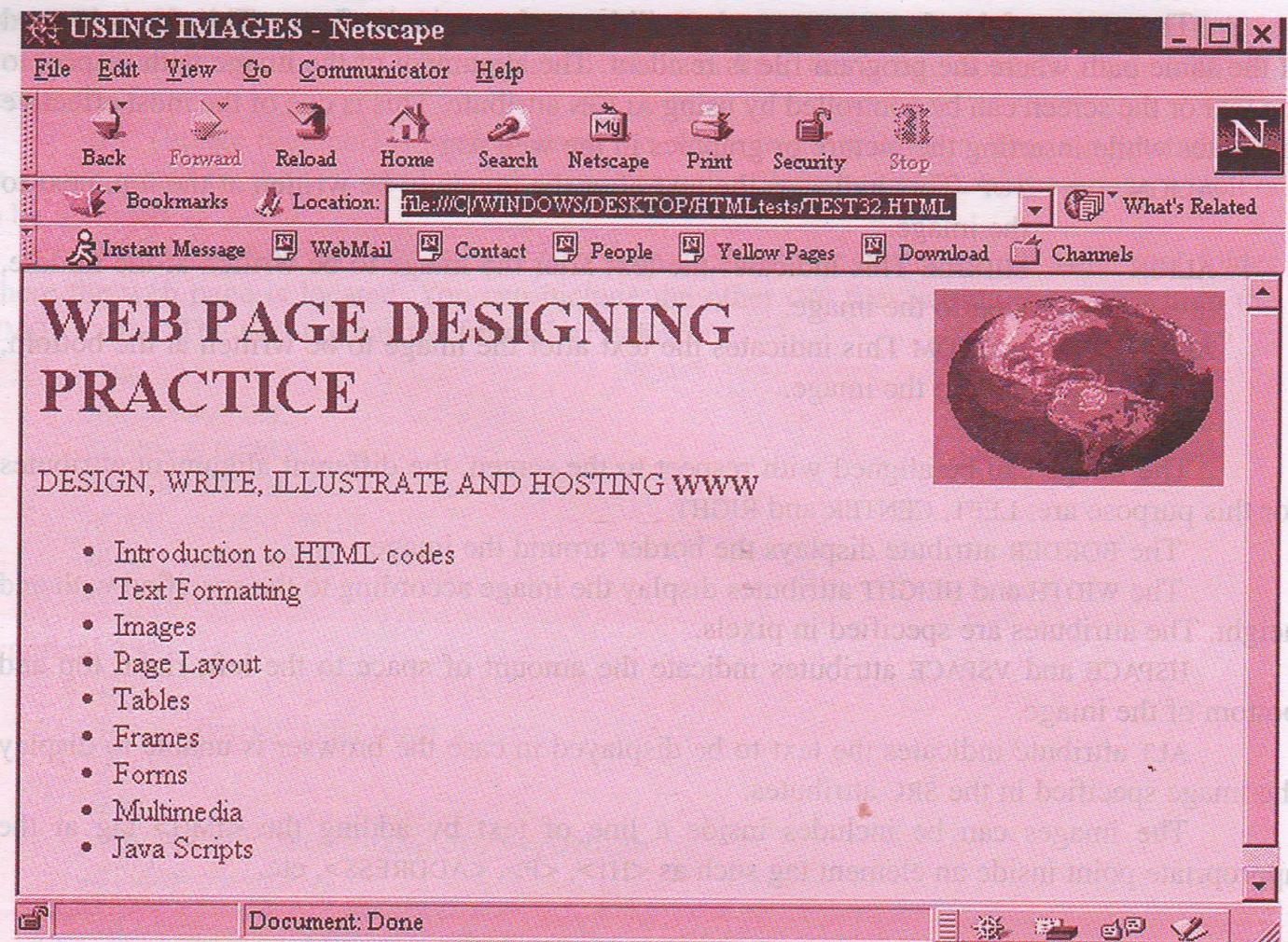


Fig. 21.11: Inserting image with text

21.8.1 Linking Icons to External Images: If you have a particular large image, you can create a miniature version or icon of it that displays quickly on the page and then add a link that leads the visitor to the full size image.

Practical 31

```

<HTML><HEAD><TITLE> Using icon </TITLE>
</HEAD>
<BODY>
<H2> HANDSHAKE </H2>
<BR>
<A HREF = "Thanks.gif">
<IMG SRC = "Thanks.icon.gif" ALT "Image of hand shake">
The full image is </A>
</BODY>
</HTML>
    
```

Fig. 21.10: Village

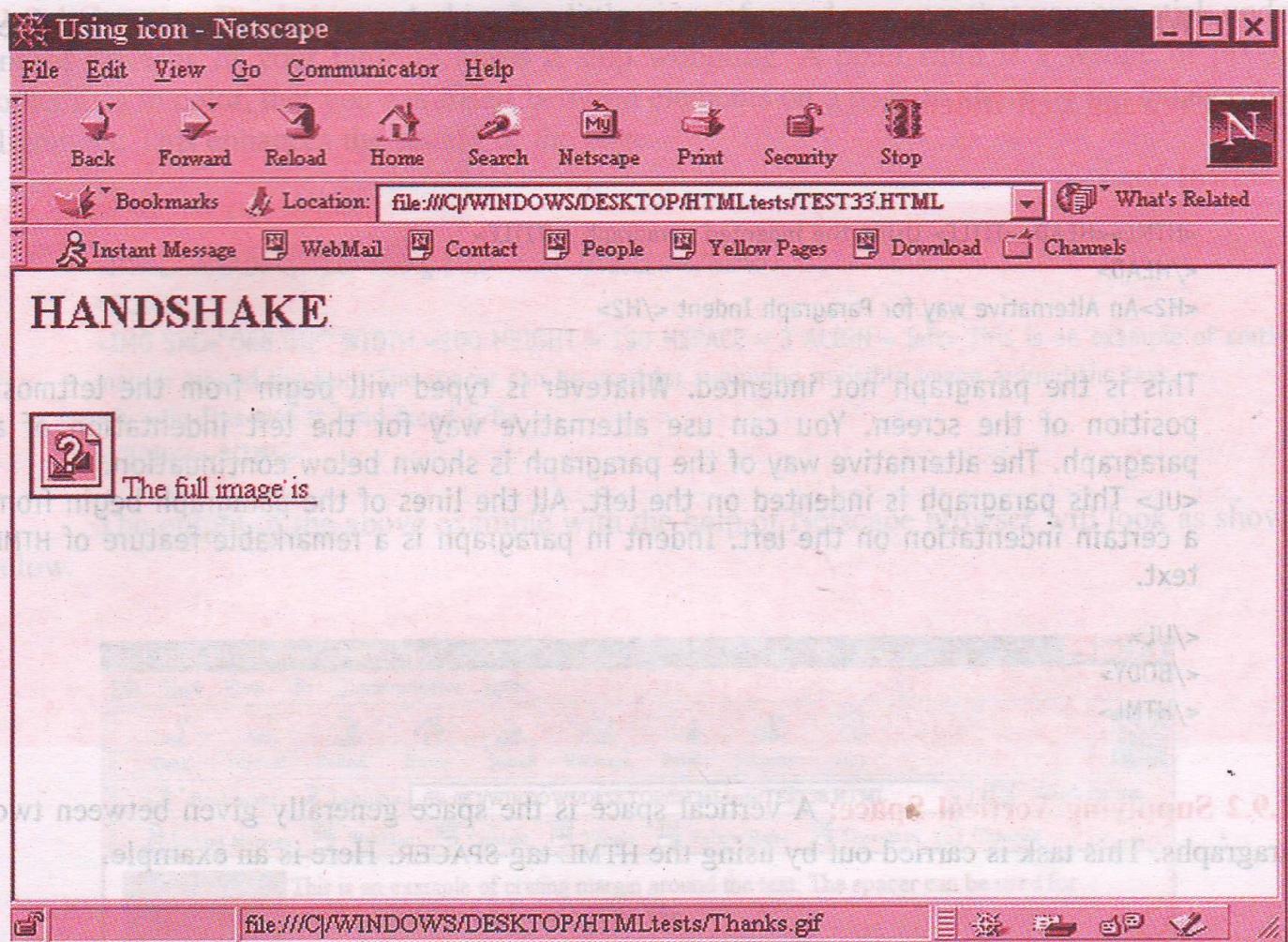


Fig. 21.12: The output of practical 31

21.9 Page Layout

Some HTML tags are limited to certain words and some effect the entire page. The feature of using these tags that effect the entire page help to design the page layout. The page layout features are: setting margins and columns, controlling the spacing between the elements on the page, changing the background color for the entire page, dividing a page into logical sections, positioning elements in layers and determining when line breaks should occur or should not occur.

Practical 32

```
<HTML><HEAD><TITLE> Using spacers </TITLE></HEAD>
<BODY>
<SPACER TYPE = "horizontal" SIZE = 36> Spacers are an ideal substitute for tabs, which don't exit in HTML.
Instead, use a spacer for indenting your paragraphs.
<P>
<SPACER TYPE = "horizontal" SIZE = 36> Personally, I've never been very fond of indented paragraphs,
myself preferring the rather square block text. Sign.
</BODY>
</HTML>
```

When you run the above example, you will get two paragraphs indented at the first line.

21.9.1 Creating Left Indent

Practical 33:

```
<HTML><HEAD><TITLE> Using the indented paragraph </TITLE>
</HEAD>
<H2>An Alternative way for Paragraph Indent </H2>
```

This is the paragraph not indented. Whatever is typed will begin from the leftmost position of the screen. You can use alternative way for the left indentation of a paragraph. The alternative way of the paragraph is shown below continuation.

 This paragraph is indented on the left. All the lines of the paragraph begin from a certain indentation on the left. Indent in paragraph is a remarkable feature of HTML text.

```
</UL>
</BODY>
</HTML>
```

21.9.2 Supplying Vertical Space:

A vertical space is the space generally given between two paragraphs. This task is carried out by using the HTML tag SPACER. Here is an example.

Practical 34

```
<HTML><HEAD><TITLE>Paragrah Space </TITLE></HEAD>
<BODY>
<SPACER TYPE = "horizontal" SIZE = 36> Spacers help to supply horizontal as well as vertical spaces
<SPACER TYPE = "vertical" SIZE =24>
<SPACER TYPE = "horizontal" SIZE =36> This paragraph is indented vertically at a distance of 24 pixels and
36 characters horizontally
</BODY>
</HTML>
```

21.9.3 Creating Blocks of Space:

The SPACER tag can be used for supplying space around the text. The following example illustrates block of space.

Practical 35

```
<HTML><HEAD><TITLE>Block Space </TITLE> </HEAD>
<BODY>
<SPACER TYPE = "block" WIDTH = 100 HEIGHT = 100 ALIGN = left> This tag gives a block of space. The space
has width and height specified. You can choose other number for this purpose.
<P> You can give space on the right also.
</BODY></HTML>
```

21.9.4 Creating Pixel shims: A shim is a little piece of wood or paper that you can stick under one of the legs of your table to make it stop wobbling. A pixel shim is a wedge of pixels, sometimes in color, that you can insert between elements on a page to shore up the balance and alignment. This enhances the beauty of the page.

Practical 36

```
<HTML><HEAD><TITLE> Using pixel shim </TITLE> </HEAD>
<BODY>
<IMG SRC="ORB.GIF" WIDTH =100 HEIGHT = 150 HSPACE = 3 ALIGN = left> This is an example of crating margin around the text. The spacer can be used for supplying invisible image around the text
<P> <B> This text is bold faced </B>
</BODY></HTML>
```

The output of the above example with the help of Netscape browser will look as shown below.

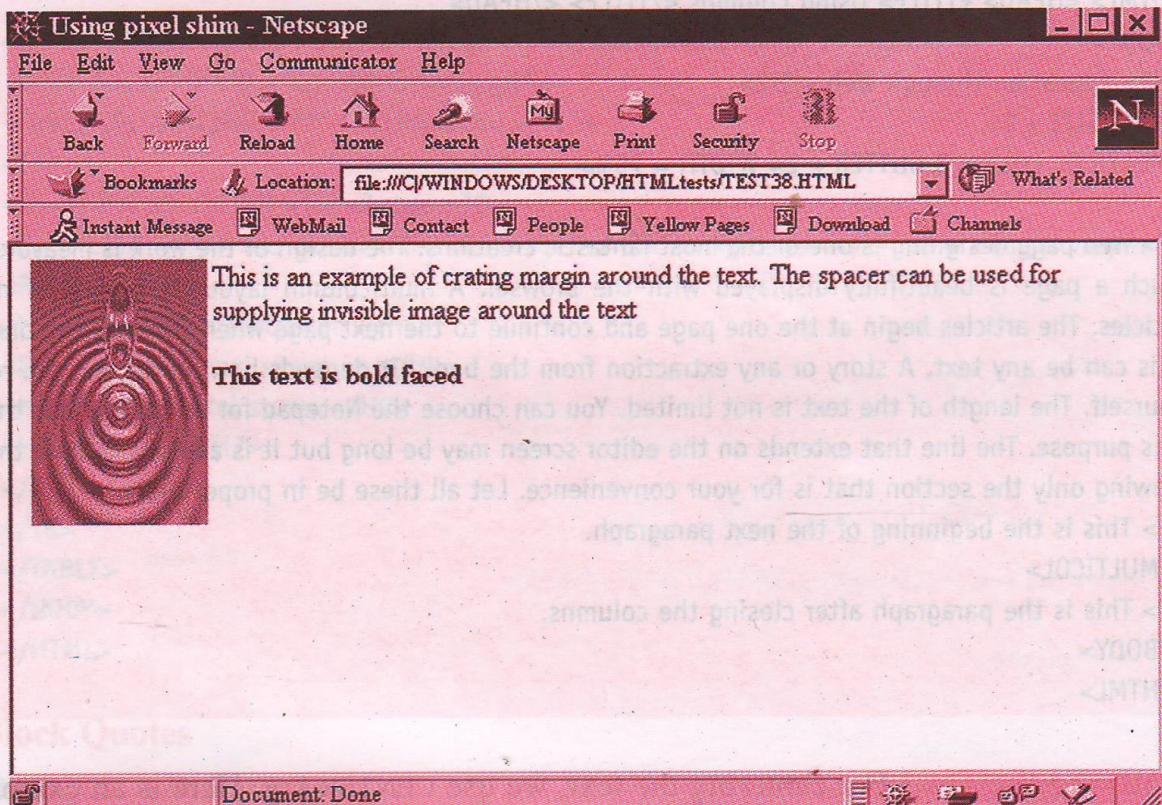


Fig. 21.13: Output of practical 36

21.9.5 Creating a Marquee: A marquee is text that starts at one part of the screen and floats across to the left, rather like the messages that advertise sales in the window of 24 hour banking system.

Practical 37: (Supported by IE only)

```
<HTML><HEAD><TITLE>Using Marquee</TITLE></HEAD>
<BODY>
<H1> Banking System </H1>
```

There are numerous banks in Kathmandu. Some of them open in the afternoon and some early in the morning. They even open in the nights. But their identification are not clear yet. Some of the banks in Kathmandu have provided Master Card, Visa Card and ATM card. The ATM card is one of the most convenient method of drawing money and depositing.

```
<MARQUEE WIDTH=75% HEIGHT=15 BEHAVIOR=scroll DIRECTION = left LOOP = infinite BGCOLOR=yellow>
Attention: Visit Standard Chartered Bank
</MARQUEE>
</BODY>
</HTML>
```

21.9.6 Creating Columns: We have seen columnar documents and columns on the newspapers. The columns on the Web page can be created exactly in the same way. The Netscape navigator recognizes the columns very well. The columns must be of the same width.

Practical 38

```
<HTML> <HEAD> <TITLE> Using Columns </TITLE> </HEAD>
<BODY>
<H2> Education through Web </H2>
<FONT SIZE - 1>
<MULTICOL COLS = 3 GUTTER = 24 WIDTH = 75%>
```

<P> Web page designing is one of the most fantastic creations. The design of the work is measured by how much a page is beautifully displayed with the browser. A multicolumn layout is typical of newspaper articles. The articles begin at the one page and continue to the next page when finished the one column. This can be any text. A story or any extraction from the book. It depends how much text you require for yourself. The length of the text is not limited. You can choose the Notepad for editor and see the text for this purpose. The line that extends on the editor screen may be long but it is advised to type the text for viewing only the section that is for your convenience. Let all these be in proper order.

```
<P> This is the beginning of the next paragraph.
</MULTICOL>
<P> This is the paragraph after closing the columns.
</BODY>
</HTML>
```

21.9.7 Centering the Text: For centering the text, we use CENTER tag. Here is an example.

Practical 39

```
<HTML> <HEAD> <TITLE> Learning Centering </TITLE> </HEAD>
<BODY>
```

```
<H1 ALIGN =CENTER> THE EARTH </H1>
```

The heading is placed at the center. For aligning text at the center we use the tag CENTER.

```
<CENTER> This is the beginning of the text being centered. The length of the text with the help of text editor may be long lines. They will be placed at the center by dividing spaced equally. </CENTER>
```

```
<P> The Earth is the home planet </P>
```

```
</BODY></HTML>
```

21.9.8 Background Colour: The background colour gives a colour on the back of text, pictures, etc. The tag used for this purpose is `BGCOLOR="rrggbb"` where `rrggbb` is the hexadecimal representation of the desired color.

Practical 40

```
<HTML><HEAD><TITLE> Background Color </TITLE>
</HEAD>
<BODY BGCOLOR =PINK> the text below is on the red background
</body>
</html>
```

21.9.9 Background Image: You can use an image as a background or backdrop. A background image should not detract from the readability of your page, but instead make it more attractive.

Practical 41

```
<HTML><HEAD><TITLE> Using an image on the background </TITLE> </HEAD>
<BODY BACKGROUND ="Christmas Trees.gif">
<TABLE CELLSPACING = "2" CELLPADDING = "1">
<TR>
<TD WIDTH 50 VALIGN =TOP>&nbsp;<TD>
<TD VALIGN =TOP> You can also use an image for the background. Make these images very small.
<P>
<H1> Star Trek Organization </H1>
<H2> Organizational structure </H2>
<H2> Departmental stores </H2>
<H2> Mobility </H2>
</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

Using Block Quotes

`<BLOCKQUOTE></BLOCKQUOTE>`

Quoting short passages of text

Controlling line breaks

`<NOBR>`

21.10 Tables

Tables are very important in HTML pages. They are generally used to display the information in tabular form. They also locate the image exactly the place you desire. The tables are specified in HTML row by row and each row definition contains definitions for each of the cells in that row. The cells of the tables are square in shape. A cell can contain normal data or a

table heading. The table headings are of two types. They are row heading (horizontal) or column heading (vertical). For creating table we use `<TABLE></TABLE>` tag.

Inside the `<TABLE>` tag a number of other tags are included. They make the contents of the table. `<TR></TR>` tag is used for creating the row of the table. The table heading label are specified with `<TH></TH>` tag. They are generally emphasized. Table data are values. They are located inside the cell of the table. They are identified by `<TD> ...</TD>` tag. The combination of the table headings and table data make up the actual table.

`<CAPTION>` tag is an optional tag used before the table rows and it contains the title of the table. It closes with `</CAPTION>`. This tag contains the attribute ALIGN with the parameters like TOP or BOTTOM which changes the position of the caption.

Syntax

```
<TABLE>
<TR>
    <TH> Table Heading </TH>
    <TD> Data of cell </TD>
    <TD> Data of cell </TD>
    <TD> Data of cell </TD>
</TR>
</TABLE>
```

You can create empty cells. The empty cells can be created as given below:

```
<TR>
    <TD></TD>
</TR>
```

Practical 42: Table with horizontal title

```
<HTML><HEAD><TITLE>Creating Table</TITLE></HEAD>
<BODY>
<TABLE BORDER>
<TR>
    <TH>January
    <TD>1200
<TR>
    <TH>February
    <TD>1250
<TR>
    <TH>March
    <TD>1150
</TABLE>
</BODY></HTML>
```

Now you can change the titles on the top of the each column and data just below it.

Practical 43

```
<HTML><HEAD><TITLE>Creating Table</TITLE></HEAD>
<BODY>
<TABLE BORDER>
<TR>
    <TH>January
    <TH>February
    <TH>March
<TR>
    <TD>1200
    <TD>1250
    <TD>1150
</TABLE>
</BODY></HTML>
```

Note: Without the attribute *BORDER*, you will see the data aligned and printed in a columnar form.

21.10.1 Header Cells on Top and Left: The objective of the table is to present data in a clear way. In most of the cases you will need header cells across the top of the table and down the left side to identify the data under discussion.

Practical 44

```
<HTML><HEAD><TITLE>Creating Table</TITLE></HEAD>
<BODY>
<TABLE BORDER>
<TR>
    <TD><BR>
    <TH> Maize
    <TH>Wheat
    <TH>Rice
<TR>
    <TH> Qtr 1
    <TD>1200
    <TD>1250
    <TD>1150
<TR>
    <TH> Qtr 2
    <TD>1300
    <TD>1350
    <TD>1250
<TR>
    <TH> Qtr 3
    <TD>1350
    <TD>1300
    <TD>1200
</TABLE>
</BODY></HTML>
```

21.10.2 Using Caption: A caption is the detail of the table. It can be located at different places or alignments. For supplying caption, the tag `<CAPTION> ...</CAPTION>` is used. You can use ALIGN attribute which may be **top**, **left**, **right** or **bottom** (top is the default and left and right are dependent on the browser).

Practical 45

```
<HTML><HEAD><TITLE>Creating Table</TITLE></HEAD>
<BODY>
<CENTER>
<TABLE BORDER>
<CAPTION ALIGN =bottom> Product analysis </CAPTION>
<TR>
    <TD><BR>
    <TH> Maize
    <TH> Wheat
    <TH> Rice
<TR>
    <TH> Qtr 1
    <TD>1200
    <TD>1250
    <TD>1150
<TR>
    <TH> Qtr 2
    <TD>1300
    <TD>1350
    <TD>1250
<TR>
    <TH> Qtr 3
    <TD>1350
    <TD>1300
    <TD>1200
</TABLE>
</CENTER>
</BODY></HTML>
```

21.10.3 Table Cell Alignment: The tables are displayed on a line on the left side of the page. The table can be aligned at the center, left or right margins and the text can be wrapped alongside them.

The HTML provides several options for aligning the data within the cells both horizontally and vertically. The ALIGN attribute defines whether the data within a cell has to be aligned to the left margin of the cell (LEFT), the right margin of the cell (RIGHT) or center (CENTER). The vertical alignment (VALIGN) attribute defines the vertical alignment of the data within the cell. The heading cells are centered both horizontally and vertically by default and data cells are centered vertically but aligned to the left.

Practical 46

```
<HTML><HEAD><TITLE> Examination Procedure </TITLE>
</HEAD><BODY>
<TABLE BORDER ALIGN =CENTER>
<CAPTION><FONT COLOR=BLUE SIZE=4> Examination Schedule </FONT></CAPTION>
<TR>
    <TH>First Term </TH>
    <TH>Mid Term </TH>
    <TH>Second Term</TH>
    <TH>Final Exam</TH>
</TR>
<TR>
    <TD ALIGN=CENTER>20%</TD>
    <TD ALIGN=CENTER>10%</TD>
    <TD ALIGN=CENTER>20%</TD>
    <TD ALIGN=CENTER>50%</TD>
<TR>    <TD> Term Break
        <UL>
            <LI> First Unit 10
            <LI> Second Unit 10
            <LI> Project work 10
            <LI> Term test 70
        </UL>
    </TD>
    <TD ALIGN=CENTER> OK</TD>
    <TD ALIGN=CENTER> OK</TD>
    <TD ALIGN=CENTER> OK</TD>
</TR>
</TABLE>
</BODY></HTML>
```

Output:

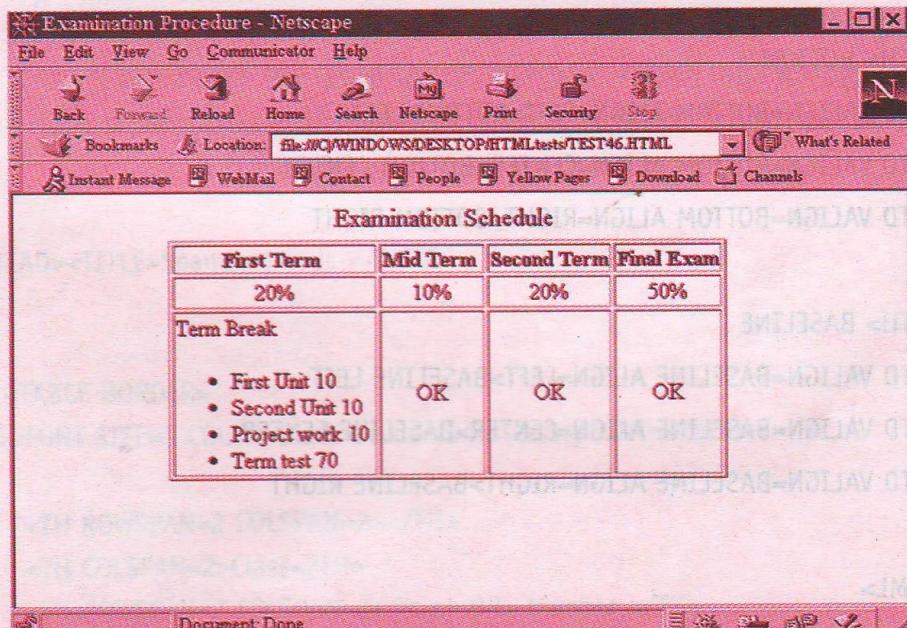


Fig. 21.14: Output of practical 46

Practical 47

```
<HTML><HEAD><TITLE> Alignment Test</TITLE></HEAD>
<BODY>
<TABLE BORDER WIDTH =100% HEIGHT =100%>
<CAPTION> Aligning Every Way </CAPTION>
<TR>
    <TD COLSPAN =2 ROWSPAN=2 HEIGHT=10><NR>
    <TH COLSPAN=3 HEIGHT=10>HORIZONTAL
<TR>
    <TH HEIGHT=10>LEFT
    <TH HEIGHT=10>CENTER
    <TH HEIGHT=10>RIGHT
<TR>
    <TH ROWSPAN=4>V
    <TH> TOP
    <TD VALIGN=TOP ALIGN=LEFT>TOP LEFT
    <TD VALIGN=TOP ALIGN=CENTER>TOP CENTER
    <TD VALIGN=TOP ALIGN=RIGHT>TOP RIGHT
<TR>
    <TH> MIDDLE
    <TD VALIGN=MIDDLE ALIGN=LEFT>MIDDLE LEFT
    <TD VALIGN=MIDDLE ALIGN=CENTER>MIDDLE CENTER
    <TD VALIGN=MIDDLE ALIGN=RIGHT>MIDDLE RIGHT
<TR>
    <TH> BOTTOM
    <TD VALIGN=BOTTOM ALIGN=LEFT>BOTTOM LEFT
    <TD VALIGN=BOTTOM ALIGN=CENTER>BOTTOM CENTER
    <TD VALIGN=BOTTOM ALIGN=RIGHT>BOTTOM RIGHT
<TR>
    <TH> BASELINE
    <TD VALIGN=BASELINE ALIGN=LEFT>BASELINE LEFT
    <TD VALIGN=BASELINE ALIGN=CENTER>BASELINE CENTER
    <TD VALIGN=BASELINE ALIGN=RIGHT>BASELINE RIGHT
</TABLE>
</BODY></HTML>
```

Output

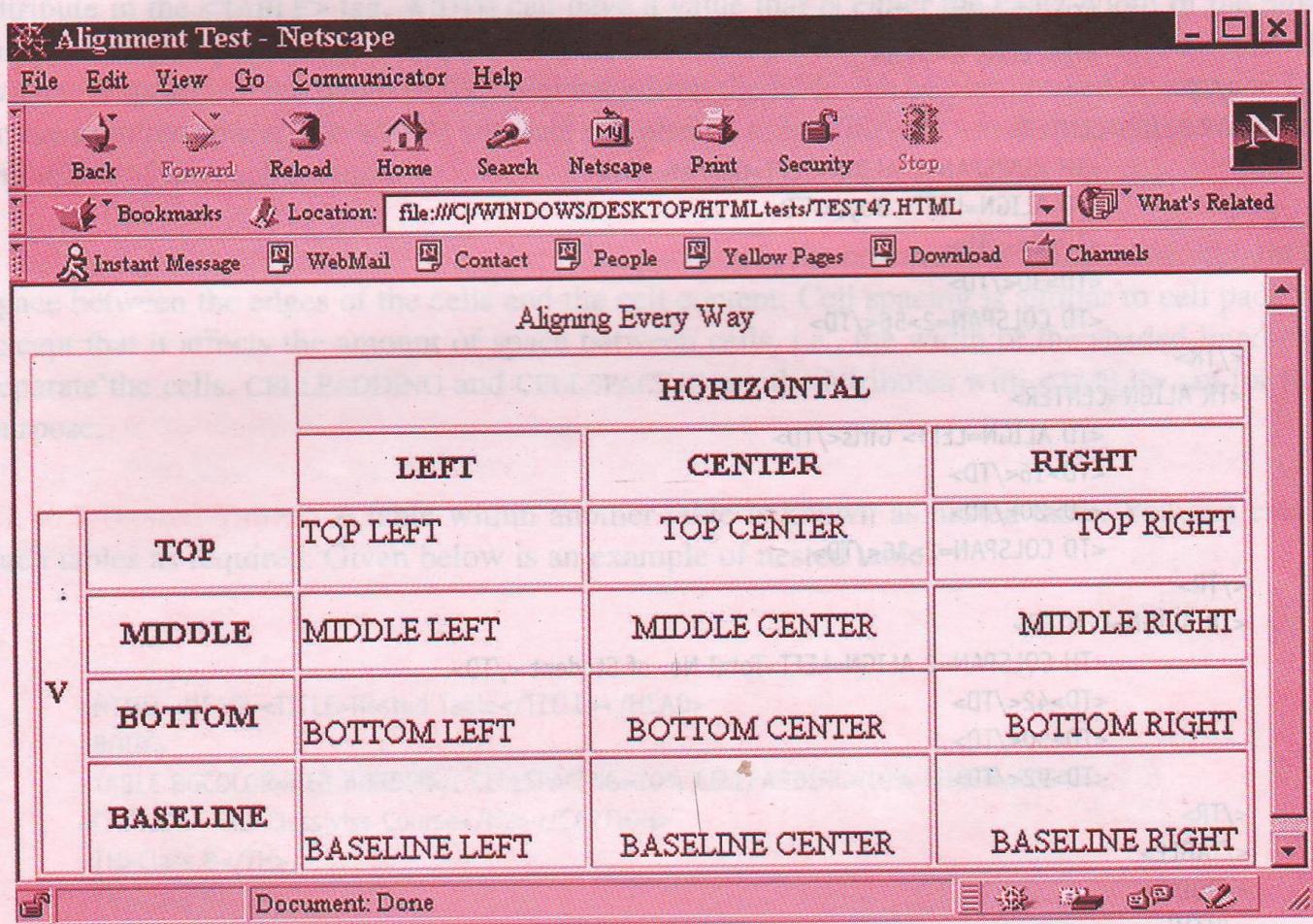


Fig. 21.15: Output of practical 47 .

21.10.4 Spanning Rows and Columns: There are some situations in which you need to convey the message in more than one cell at the same time. You can span the row or column into more than one row and more than one column. To create a cell that spans multiple rows or columns, ROWSPAN or COLSPAN attributes are used in the <TH> or <TD> tags along with the number rows or columns. The data within that cell then fills entire width or length of the combined cells.

Practical 48

```
<HTML><HEAD><TITLE>Spanning Cells </TITLE>
</HEAD>
<BODY>
<CENTER> <TABLE BORDER>
<CAPTION><FONT SIZE=5 COLOR=BLUE>Students in Class</FONT></SPAN>
<TR>
    <TH ROWSPAN=2 COLSPAN=2></TH>
    <TH COLSPAN=2>Class</TH>
    <TH ROWSPAN=2 COLSPAN=2> Total<BR> Number </TH>
</TR>
```

```

<TR>
    <TH> Class IX </TH>
    <TH> Class X </TH>
</TR>
<TR ALIGN= CENTER>
    <TH ROWSPAN=2 ALIGN= LEFT>Gender</TH>
    <TD ALIGN= LEFT> Boys</TD>
    <TD>26</TD>
    <TD>30</TD>
    <TD COLSPAN=2>56</TD>
</TR>
<TR ALIGN= CENTER>
    <TD ALIGN= LEFT> Girls</TD>
    <TD>16</TD>
    <TD>20</TD>
    <TD COLSPAN=2>36</TD>
</TR>
<TR ALIGN= CENTER>
    <TH COLSPAN=2 ALIGN= LEFT>Total No. of Student </TD>
    <TD>42</TD>
    <TD>50</TD>
    <TD>92</TD>
</TR>
</TABLE>
</BODY>
</HTML>

```

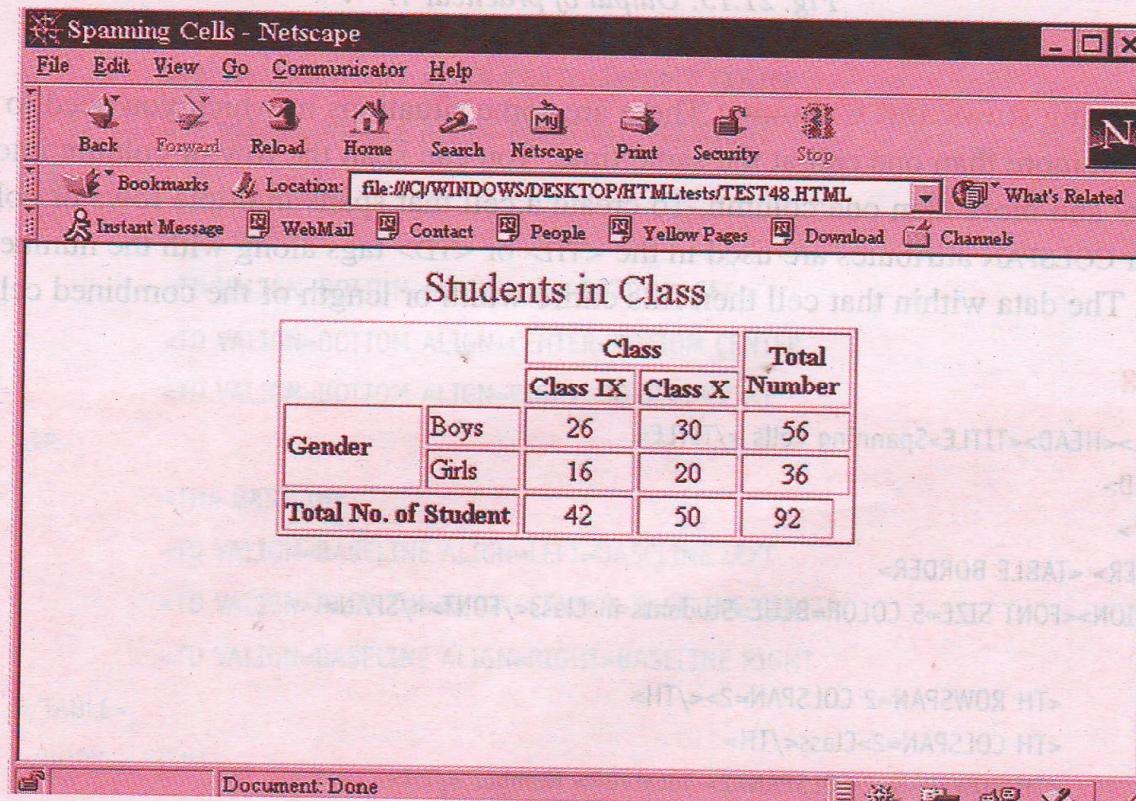


Fig. 21.16: Output of practical 48

21.10.5 Defining Table and Column width: The width of the table can be altered by using WITH attribute in the <TABLE> tag. WIDTH can have a value that is either the exact width of the table (in pixels) or a percentage (such as 50 percent or 70 percent) of the current screen width. If WIDTH is specified, the width of the columns within the table can be compressed or expanded to fit the required space. The WIDTH attribute can also be used with <TH> and <TD> tags to indicate the width of the each column.

21.10.6 Cell padding and Cell Spacing: Cell padding is the process of leaving some amount of space between the edges of the cells and the cell content. Cell spacing is similar to cell padding except that it affects the amount of space between cells, i.e., the width of the shaded lined that separate the cells. CELLPADDING and CELLSPACING are the attributes with <TABLE> tag for this purpose.

21.10.7 Nested Tables: A table within another table is known as nested table. You can create such tables as required. Given below is an example of nested table.

Practical 49

```
<HTML><HEAD><TITLE>Nested Table</TITLE></HEAD>
<BODY>
<TABLE BGCOLOR=RED BORDER=1 CELLSPACING=10% CELLPADDING=10% WIDTH=100%>
<CAPTION><H2>Classwise Course</H2></CAPTION>
<TH>Class 8</TH>
<TH>Class 9</TH>
<TH>Class 10</TH>
<TR>
    <TD BGCOLOR=YELLOW>
        <TABLE BORDER=2 WIDTH=100%>
            <CAPTION>Nested Table</CAPTION>
                <TH>PRACT</TH>
                <TH>THEORY</TH>
            <TR>
                <TD>WINDOWS</TD>
                <TD>FUNDAMENTAL</TD>
            </TR>
        </TABLE>
    </TD>
    <TD BGCOLOR=PINK>
        <TABLE BORDER=2 WIDTH=100%>
            <CAPTION> Nested Table</CAPTION>
            <TH>PRACT</TH>
            <TH>THEORY</TH>
            <TR>
                <TD>WEB DESIGN</TD>
                <TD>NETWORKING</TD>
            </TR>
        </TABLE>
    </TD>
</TR>
</TABLE>
```

```

</TR>
</TABLE>
</TD>

<TD BGCOLOR=CYAN>
<TABLE BORDER=2 WIDTH=100%>
<CAPTION> Nested Table</CAPTION>
<TH>PRACT</TH>
<TH>THEORY</TH>
<TR>
<TD>C, C++</TD>
<TD>Computer Architecture </TD>
</TR>
</TABLE>
</TD>

</TR>
</TABLE>
</BODY>
</HTML>

```

Output

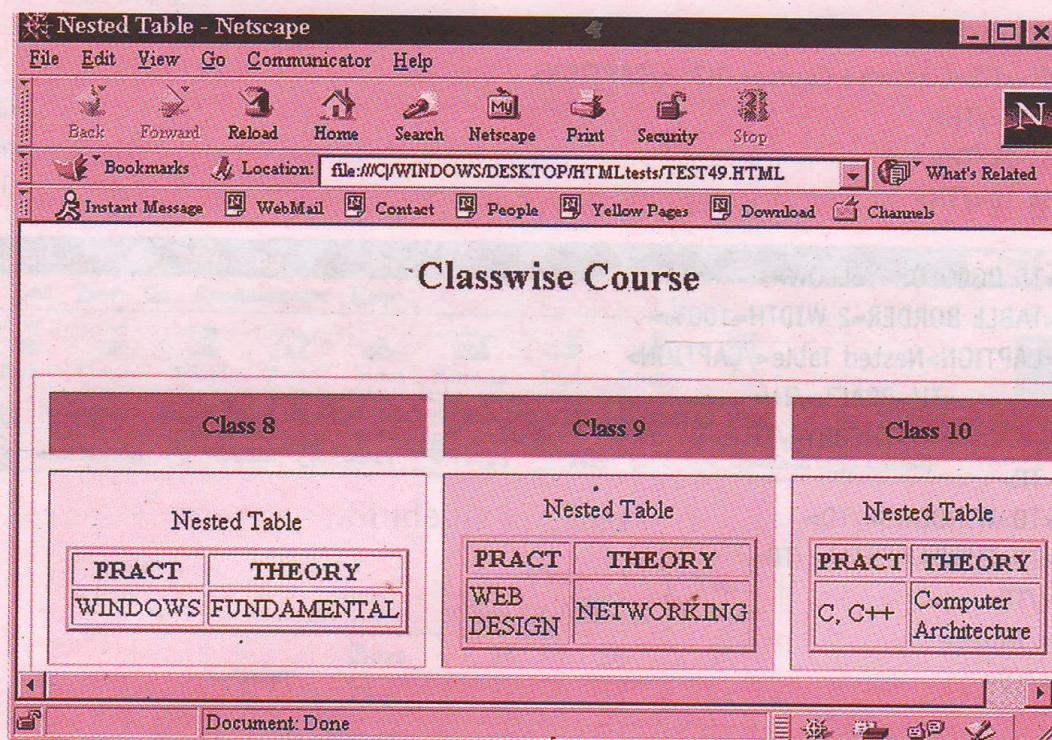


Fig. 21.17: Output of practical 49

21.10.8 Changing the Cell Color: You can change the cell or single table color as given above example. To supply the color use the attribute *BGCOLOR = colorname* inside the *<TD>* tag as: *<TD BGCOLOR=PINK>* or for a single cell as *<TD BGCOLOR = PINK>* whichever you find convenient and attractive.

21.11 Frames

The frame can be used to organize the site. It helps to navigate easily. A page can be divided into more than one page by using a special feature called *frameset*. Each frame contains its own Web page. They can be even viewed in a separate window.

It is convenient to open more than one page on the same screen and choose each window for viewing its content. For example, you can have a stationary banner frame across the top of the page or window that includes your company name and logo. Meanwhile, a dynamic window or frame can be included on the left side for the contents. The main area of the window will be devoted to the *contents frame*, whose data changes each time your visitor clicks on a new topic in the table of contents on the left side.

Each frameset can be considered as a single window. Each pane shows different information. You have to decide how many panes your window will have, what size each of them will have, how their borders should look and whether they should have scroll bars, etc. Once you have created a window, you can create the initial landscape behind the window by assigning individual URLs to each pane (frame).

Practical 50

```
<HTML><HEAD><TITLE>INTRODUCING FRAME</TITLE></HEAD>
<FRAMESET ROWS="45,* ,45">
<FRAME NAME="banner" SRC="test48.html">
<FRAME NAME="photos" SRC="test47.html">
<FRAME NAME="buttons" SRC="test49.html">

</FRAMESET>
```

Output

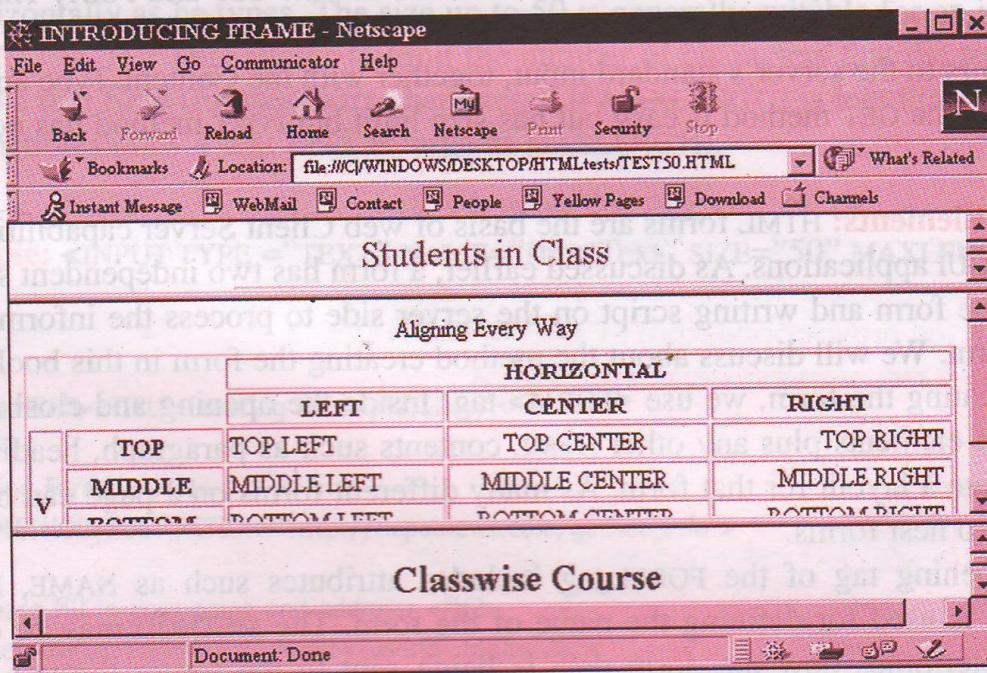


Fig. 21.18: Output of practical 50

In the above example, there are three windows or panes shown. Each of them correspond to individual html files.

21.12 Forms

A form generally consists of blank spaces where the visitor can respond, the check boxes or radio buttons for selection, submit button, cancel button etc. They are generally created for the client side. The user looks on the form, gets information and begins to fill. After filling the form he submits to the server.

There are two basic parts of a form: the structure or shell that consists of fields, labels and buttons that the visitors see on a page and the processing script that takes the information from the user and converts it into a format that you can read or tally.

Constructing a form's shell part is similar to creating the other web pages. You can create text boxes, special password boxes, radio buttons, check boxes, drop down list or menus, larger text areas and even clickable images. Each element of the form is given a name that will serve as a label to identify the data once it is processed.

Processing the data obtained from the form is somewhat complicated. The principal tool, the CGI (Common Gateway Interface) script, is typically written in Perl or some other programming language. A CGI script is a program that communicates with the server in a standard way.

21.12.1 The Working of CGI Script: Each element on your form should have a *name* and a *value* associated with it. The name identifies the data that is being sent. It might be something like `visitor_name`. The value is the data and that can either come from you or from the visitor who types it in afield. When a visitor clicks the submit button, the `name_value` pair of each form element is sent to the server. The CGI script takes all the `name_value` pairs and separates them out into something a real human can read and understand.

There are two ways to send information to the server: GET and POST. The GET method appends the `name_value` pairs to the end of the URL. The POST method sends a data file with the `name_value` pairs to the server's standard input, together with the Content-Type and the Content length in bytes. The GET method is easy but has size limit but POST method has no size limit.

21.12.2 Form Elements: HTML forms are the basis of web Client Server capabilities. Forms are the client side GUI applications. As discussed earlier, a form has two independent steps: creating the layout of the form and writing script on the server side to process the information you get back from a form. We will discuss about the method creating the form in this book.

For creating the form, we use `<FORM>` tag. Inside the opening and closing FORM tags, individual form elements plus any other HTML contents such as paragraph, heading, table, etc., are used to create a layout for that form. As many different forms on a page can be used, but it is not possible to nest forms.

The opening tag of the FORM tag includes attributes such as NAME, METHOD and ACTION. NAME is used for defining the name of the form. The METHOD may be either GET or POST which determines how the form data is being sent to the server through the script to process. The ACTION attribute is a pointer to the script that processes the form on the server side.

The following simple form elements are included that enable building of HTML data input forms.

Element	End Tag Required	Description
FORM	Yes	Start a form
INPUT	No	Specify type of form input to accept from the user
OPTION	Yes/No	An entry in a <SELECT> list
SELECT	Yes	A pick list or drop down selection list
TEXTAREA	Yes	A free form test input box

Each of the form element is placed inside the <FORM></FORM> tag.

21.12.3 Creating a Form:

A form has three important parts.

- (a) The FORM tag that includes the URL of the CGI script that will process the form
- (b) The form elements like fields and menus
- (c) The submit button which sends data to the CGI script.

Before creating the form, let us examine the following elements.

- (a) **Text fields:** The Text fields enables the client to type text into a single-line field. To create a text-entry field, you can either use TYPE = "TEXT" in the <INPUT> tag or leave off the TYPE specification altogether.
- (b) **Name:** Name indicates the name of the field as passed to the script processing the form
- (c) **Size:** SIZE indicates the length of the text-entry field in characters; the field is 20 characters by default. The client can insert many characters. The field will scroll horizontally as he types. The size up to 50 is generally suitable for an input.
- (d) **maxlength:** This allows to limit the number of characters that the reader can type into a text field (refuses extra characters). If MAXLENGTH is less than SIZE, browsers sometimes draw a text field as large as MAXLENGTH.

Syntax Example: <INPUT TYPE = "TEXT" NAME = "shortText" SIZE = "50" MAXLENGTH = "10">

Practical 51

```
<HTML><HEAD><TITLE>Creating Form</TITLE></HEAD>
<BODY>
<H1>Using Forms 1</H1>
<FORM METHOD=POST ACTION="http://nepalnews.com/gather_info">
<HR>
<H2>Please fill in your name and address: </H2>
<P>Name:<INPUT TYPE="text" NAME="userid" SIZE="20">
<P>Zone:<INPUT TYPE="text" NAME="address1" SIZE="30">
<P>City:<INPUT TYPE="text" NAME="city" SIZE="15">
<P>Block:<INPT TYPE:"text" NAME="block" SIZE="5">
<HR>
```

```

<INPUT TYPE="submit" VALUE="Send info">
<INPUT TYPE="reset">
</FORM>
</BODY>
</HTML>

```

Output:

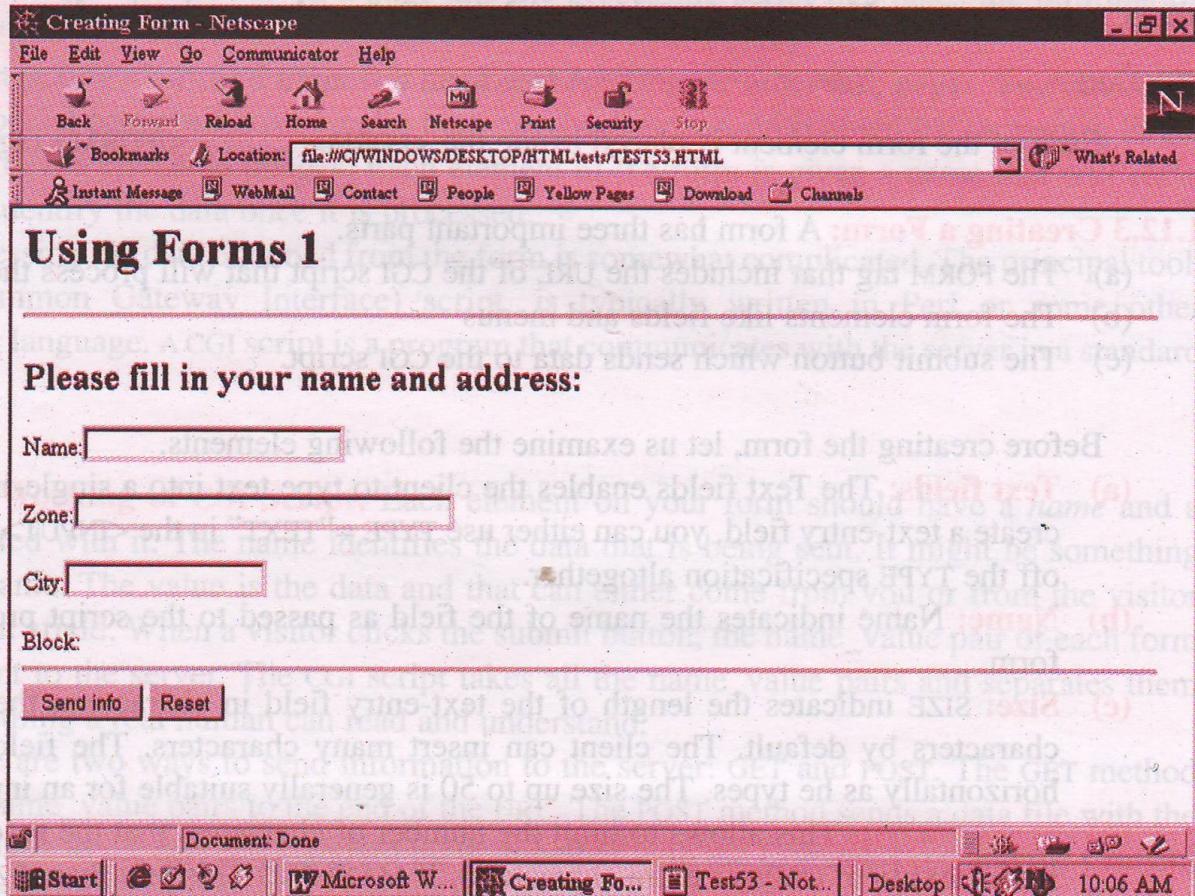


Fig. 21.19: Output of practical 51

21.12.4 Creating Password Box: Password fields are also used which are indicated by TYPE =password. Password text fields are identical to ordinary text fields. The characters typed are echoed back in the browser (masked) as asterisks or bullets.

```
<INPUT TYPE ="PASSWORD" NAME="passwd">
```

Practical 52

```

<HTML><HEAD><TITLE>Password Test</TITLE></HEAD>
<BODY>
<H1>Creating Password</H1>
<P>Password style input items hide the text with asterisks or bullets.
<FORM METHOD=POST ACTION="http://site.com/cgilist/textbox">
<H2>Please fill in your name and password</H2>
<P>Name:<INPUT TYPE="text" NAME="userid" SIZE="25">

```

```

Password:<INPUT TYPE="password" NAME="password" SIZE="8">
<HR>
<INPUT TYPE="submit" VALUE="Send Info">
<INPUT TYPE="reset">
</FORM>
</BODY></HTML>

```

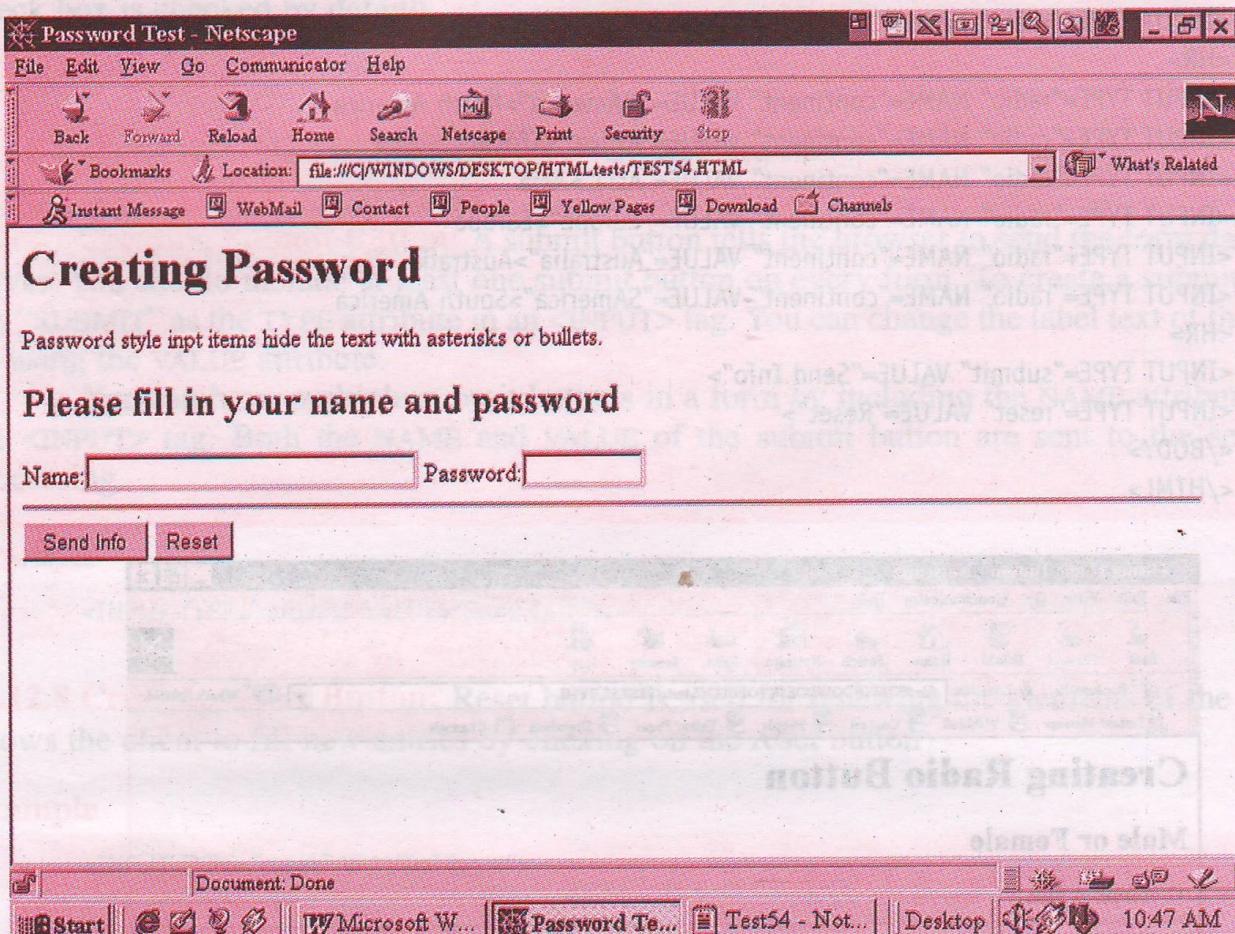


Fig. 21.20: Output of practical 52

Creating Larger Text Area

In some cases you want to give the visitor more room to write. Text area for this purpose can be expanded by giving the code <TEXTAREA>....</TEXTAREA>

Typical Example

```

<BR><TEXTAREA NAME="Byron" ROWS="5" COLS="65"> Lord Byron is renowned
as great poet .....</TEXTAREA>

```

21.12.5 Creating Radio Buttons: Radio buttons indicate a list of items of which only one can be chosen. If one radio button in a list is selected, all the other radio buttons in the same list is deselected.

Radio buttons are used by specifying "radio" for their TYPE attribute. The groups of radio buttons are indicated using the same NAME for each button in the group. Each radio button in the group must have unique VALUE attribute indicating selection value.

Practical 53

```
<HTML><HEAD><TITLE>Using Radio Button</TITLE></HEAD>
<BODY>
<H1>Creating Radio Button</H1>
<FORM METHOD=POST ACTION="http://site.com/bin/gatherbutton">
<H2>Male or Female</H2>
<INPUT TYPE="radio" NAME="sex" VALUE="woman">Woman
<INPUT TYPE="radio" NAME="sex" VALUE="man">Man
<HR>
<INPUT TYPE="radio" NAME="continent" VALUE="NAmerica">North America
<INPUT TYPE="radio" NAME="continent" VALUE="Africa">Africa
<INPUT TYPE="radio" NAME="continent" VALUE="Asia">Asia
<INPUT TYPE="radio" NAME="continent" VALUE="Europe">Europe
<INPUT TYPE="radio" NAME="continent" VALUE="Australia">Australia
<INPUT TYPE="radio" NAME="continent" VALUE="SAmerica">South America
<HR>
<INPUT TYPE="submit" VALUE="Send Info">
<INPUT TYPE="reset" VALUE="Reset">
</BODY>
</HTML>
```

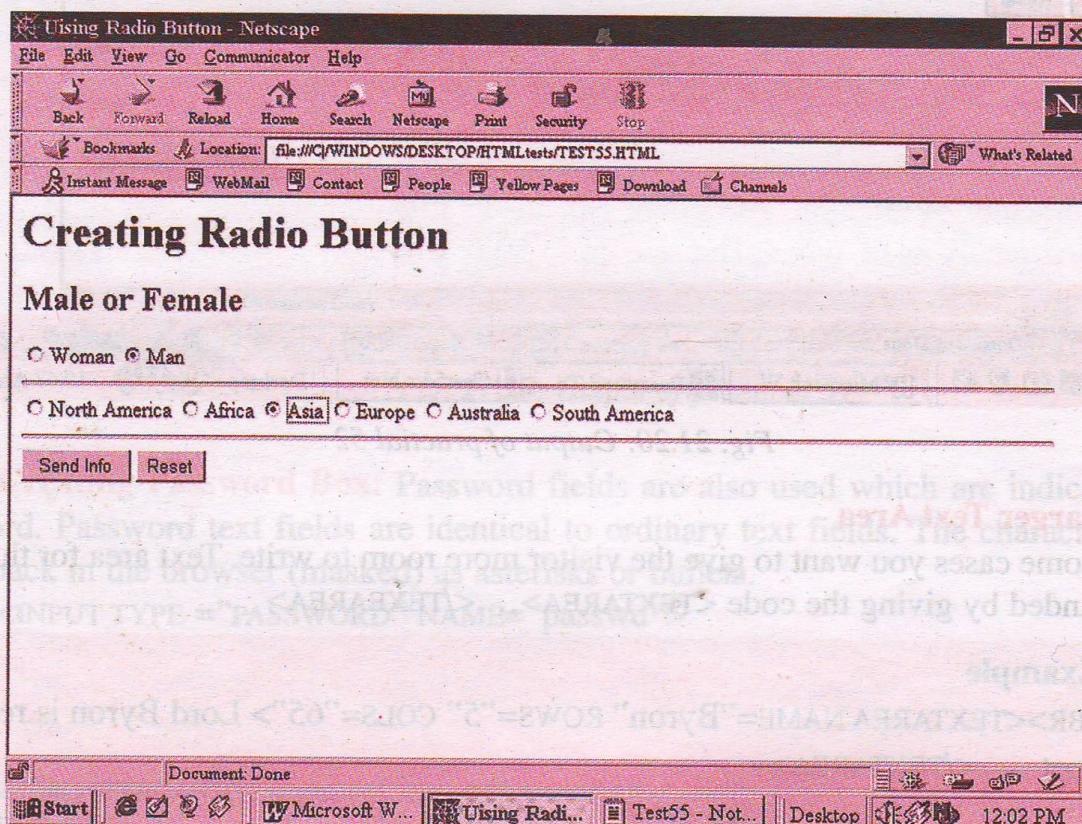


Fig. 21.21: Output of practical 53

21.12.6 Creating Checkbox: Check boxes make possible to choose multiple items in a list. Each check box can be either checked or unchecked (default is unchecked). Check boxes use "checkbox" as their TYPE attribute.

Example

```
<INPUT TYPE = "checkbox" NAME="red"> Red  
<INPUT TYPE="checkbox" NAME="yellow">Yellow
```

When the form is submitted, only the name/value pairs for each selected check box are submitted and unchecked boxes are ignored. You can use the CHECKED attribute to indicate check box is checked by default.

Example

```
<INPUT TYPE="checkbox" NAME="Accholder" CHECKED>Accholder
```

21.12.7 Creating Submit Button: A submit button tells the browser to send the form data to the server. You should include at least one submit button on every form. To create a submit button, use “SUBMIT” as the TYPE attribute in an <INPUT> tag. You can change the label text of the button by using the VALUE attribute.

You can have multiple submit buttons in a form by including the NAME attribute inside the <INPUT> tag. Both the NAME and VALUE of the submit button are sent to the server for processing.

Example

```
<INPUT TYPE="submit" VALUE="Send Info">
```

21.12.8 Creating Reset Button: Reset button is used for renewing the elements of the form. It allows the client to fill new entries by clicking on the reset button

Example

```
<INPUT TYPE="reset" VALUE="Reset">
```

21.12.9 Creating Menus: Creating menus for your visitors makes it easy for them to enter information or provide criteria for a search. For this purpose <SELECT>....</SELECT> tag is used. Selections enable the client to select one or more items from a menu or a scrolling list. The <SELECT> tag and individual options within the selection indicate by the <OPTION> tag are used for creating such list.

Example: Menu List

```
<P>Select a cloth color:  
<SELECT NAME="cloth color">  
<OPTION VALUE="black">Black  
<OPTION VALUE="grey">Grey  
<OPTION VALUE="red">Red  
<OPTION VALUE="blue">Blue  
</SELECT></P>
```

You can create a sub menu inside the menu list.

Practical 54

```
<HTML><HEAD><TITLE>Testing Menus</TITLE></HEAD>
<BODY>
<H1>Creating Menus</H1>
<P>Choose an Option from the listed items.
<FORM METHOD=POST ACTION:"http://nepalnews.com/testweb.html">
<P>What is your profession?<BR>
<HR>
<SELECT NAME=menu SIZE=5 MULTIPLE>
<OPTION VALUE="Business">Business
<OPTION VALUE="Government office">Government
<OPTION VALUE="NGO">Intl Org
<OPTION VALUE="Student">Student
<OPTION VALUE="Politician">Politician

</SELECT>
</HR>
<HR>
<INPUT TYPE="Submit" VALUE="Send Info">
<INPUT TYPE="Reset" VALUE="Reset">
</HR>
</FORM>
</BODY>
</HTML>
```

Output

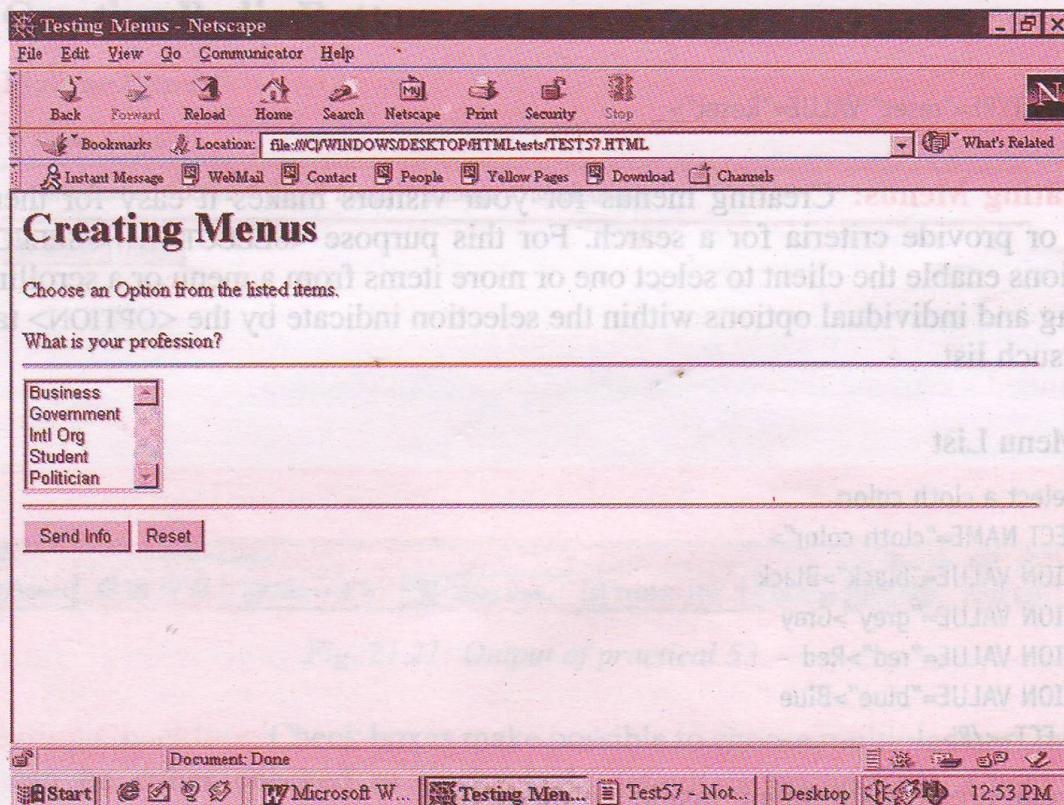


Fig. 21.22: Output of practical 54

21.12.10 Uploading the Files by the Visitors: If the information you need from the folks filling out your form is complicated, you might want to have them upload an entire file to your server. For uploading more than one file, you can use a separate file.

Practical 55

```
<HTML><HEAD><TITLE>Uploading Files</TITLE></HEAD>
<BODY>
<H1>Creating Menus</H1>
<P>Users may choose one or more options.
<FORM METHOD=POST ACTION="http://mysite.com/bin/htmlfiles.cgi">
Name:<INPUT TYPE="text" NAME="firstname" SIZE="20">
<P><B>What files your are sending?</B>
<BR><INPUT TYPE="file" ENCTYPE="multipart/form-data" NAME="files" SIZE="40">
<INPUT TYPE="submit" NAME="Submit" VALUE="Submit">
</FORM>
</BODY></HTML>
```

Output

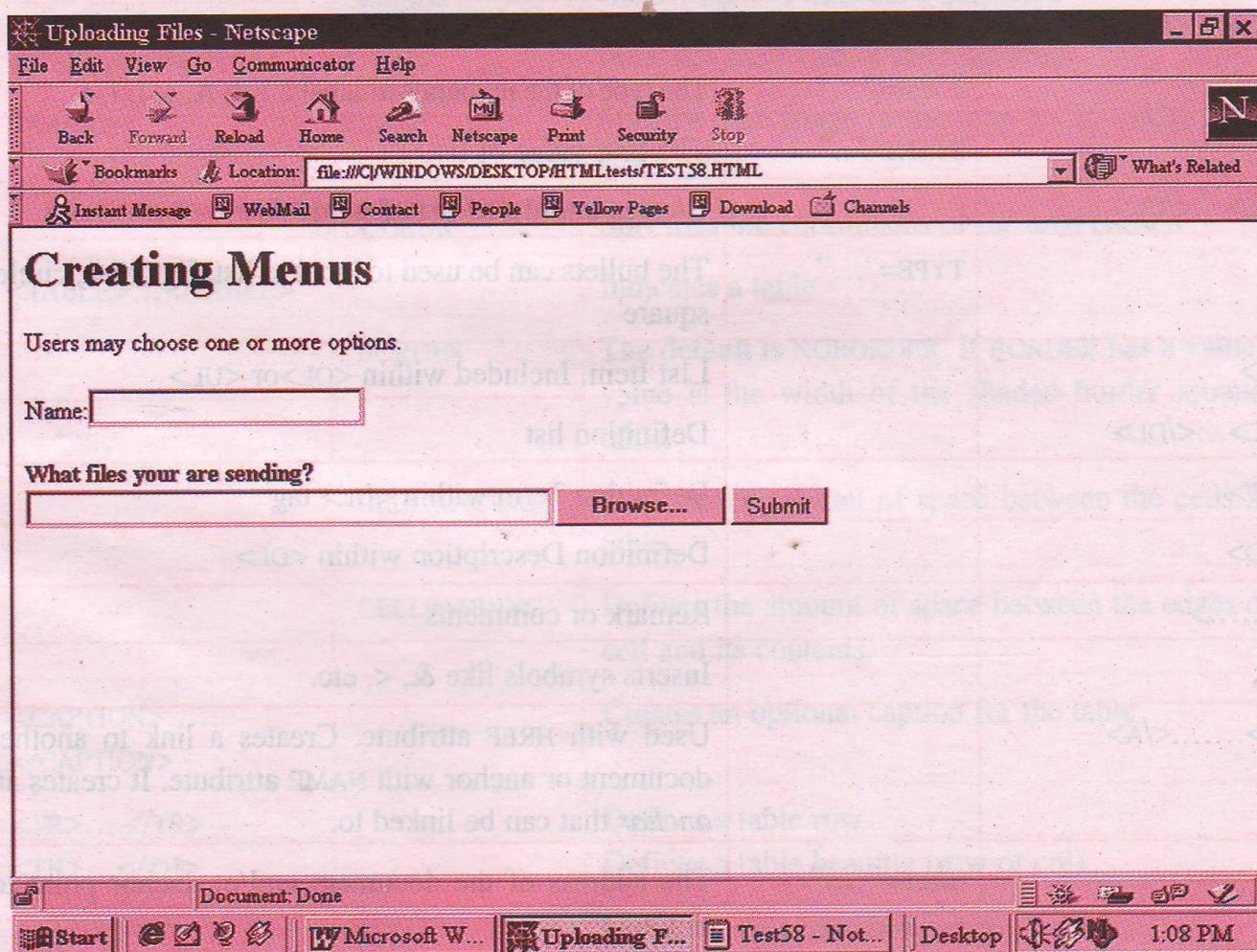


Fig. 21.23: Output of practical 55