

# Chapter 4

# Introduction to HTML



## Learning Objectives

By the end of this chapter, learner will be able to:

- Understanding of basic structure of HTML
- Learning of various container and empty tags
- Learn various html tags and their syntax.
- Understanding of formatting elements of HTML

## INTRODUCTION

HTML refers to Hypertext Markup Language. There is a special kind of text used by web browsers that represents the data. This data may be in the form of letters, images, audios or videos. This special text is given emphasis, which some people may say, it is marked up through a link to the other documents. Thus a page formed using the special text is called a document or a webpage. A webpage can get opened in a web browser. The web browser accesses the web page from the web server (a place which holds most of the webpages). A web server may be placed anywhere in the world. This means that a web browser can access a webserver only if it connects to internet (network of networks across globe). The HTML was founded by the group called “World Wide Web Consortium” in 1990.

## 1. OVERVIEW OF HTML

### 1.1. Who Invented HTML

HTML was invented in November 1990 by a scientist called Tim Berneses-Lee. The purpose was to make it easier for scientists at different university to gain access to each other's research documents.

### 1.2 A Brief history

HTML is not an invention but an improved version of Standard Generalised Markup Language(SGML).SGML is a Meta Language (general -- purpose language)used for defining and creating descriptive markup language.

### 1.3 What tools do you need?

To get started with html documents, only two basic things are required

- A text editor/HTML editor
- A Web Browser

### 1.4 Tags and Attributes

The World Wide Web Consortium has given a set of standards while building the HTML language. The W3C uses some special words to define an action.

A **tag** is a special word enclosed in angle-brackets < >. A tag tells the browser to perform an action as asked by the special word. The special word may be written either in lower case or upper case. The browser will respond to both the cases equally.

The HTML tags are normally comes in pair of start and end tag(an opening tag and closing tag). While the start tag is written in the beginning of the element as <SpecialWord>, the end tag is written at the completion of the element as </SpecialWord>.

**For example:** When you want to begin with writing source code using HTML, you write the start tag as <HTML> and when you have completely written in the HTML document and want to end it, you write the end tag as </HTML> i.e. insert a forward slash followed by HTML in angled brackets.

The characteristics or the features of a tag are defined by an **attribute**. An attribute is used inside a tag. An attribute always takes a *value* to help the browser perform the specific task in a particular direction. There may be more than one attribute used inside a tag.

An **element** is a combination of a start tag, the text(we also use text to insert graphics) and the end tag.

**For example:**

<body> element begins with start tag, followed by text and ends with end tag.</body>

**In simple words**, one can equate an element to a block, a tag to an instruction and an attribute to an extension to a instruction.

**Container of Tags:** One set of tags may contain another set of tags. This is called nesting of tags. The second block of tags is always contained in first block as shown below:

<TAG1> <TAG2>.....</TAG2> </TAG1>

<TAG1> and </TAG1> is the first block of tags. <TAG2> and </TAG2> is the second block of tags.

## 2. STRUCTURE OF HTML DOCUMENT

The basic structure of HTML document is shown below:

<HTML>	
<HEAD>	
<TITLE> The Structure of HTML Document </TITLE>	First section
</HEAD>	
<BODY>	
The Body of the HTML Document	Second section
</BODY>	
</HTML>	

The basic structure of the HTML document is divided into two sections namely, the head and the body. The browser enters the first section after executing the start tag of HTML (telling the browser to begin interpreting the HTML commands) and start tag of HEAD. The first section helps in changing the heading on the title bar of the HTML document (the webpage). The starting of the heading is shown after the start tag of TITLE and the end is shown by </TITLE>. The end tag of HEAD i.e. </HEAD> tells the browser that the end of first section has come.

The second section begins with the start tag of BODY. The data on the webpage is displayed through the tags used in this section. The end tag of BODY i.e. </BODY> tells the browser that no more data is to be inserted on the webpage and the end of the web document has come. After the completion of this section, the slash HTML or the end tag of HTML tells the browser to stop looking for HTML commands. This implies that any tag used after the end tag of HTML will not be interpreted by the browser and so no action will be performed.

**Please Note:** All the sentences containing any number of whitespaces written inside a tag within the body element will appear as written in the HTML code. Any whitespace inserted outside the tag within the body element will be interpreted as null, void or amounting to nothing by the browser. That is, such whitespaces outside the tag will not appear anywhere on the webpage.

## 3. SAVING THE HTML DOCUMENT

When you have finished writing the HTML code in the text editor, click on File menu and select Save option. This opens a window, which asks you to save the file in a folder and

give a name and an extension to the file. The extension in this file will be .html or .htm. (e.g. **basic.htm** or **firstHTMLDocument.html**). This will turn the file into a webpage.

In order to modify the webpage, either open the web page and click on View→source or open the webpage with notepad.

## 4. CONTAINER AND EMPTY TAGS

Before we proceed further to formatting tags, it is necessary for you to understand the difference between the container and the empty tag. A **container tag** has both the start and the end tag. The text or the graphic is inserted inside the beginning and end tag of the container tag. For example: <body>This is a container tag</body>. The <BODY> tag here is a container tag which has both the beginning and the ending tag and the text in between both the tags.

The **empty tag** is a stand-alone tag. This implies that such a tag has beginning but no ending tag. For example: The <BR> tag is used for adding one line break. Such a tag does not need an end so as to tell the browser, that end of line break has come because there is no need. Such a tag is called empty tag. **HR** is another empty tag. This tag is used to insert a horizontal rule on the web page. **Comment** tag is also an empty tag. This tag is ignored by the browser. This tag is used to increase the readability of the HTML source code. With this tag, you can insert a description about a command. This is written as : <!--, followed by description or remark on a command, followed by -->. For example: <!-- Hello --> <BODY>...</BODY>

The second section of the webpage begins with the <BODY> tag. This defines the visible section of the document. It has a number of attributes which controls the overall appearance of the document. The attributes that are used with this tag are listed below in the table:

Attribute of the <body> tag	Description
BGCOLOR	The background of the webpage is displayed with a color that has been taken as value by this attribute.
BACKGROUND	The background of the webpage is displayed with an image whose address is taken as value by this attribute.
TEXT	Specifies the color of the text in the document.
LINK	Defines the color of the link in the document
ALINK	Defines the color of the active link in the document
VLINK	Defines the color of the visited link in the document

## 4.1 Formatting Elements

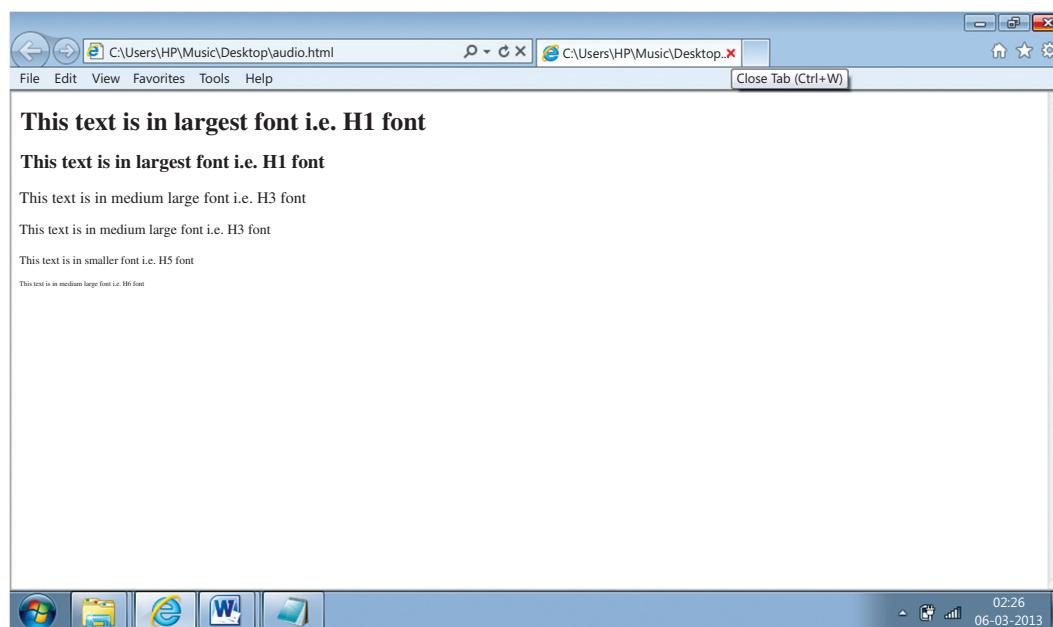
In a web page, the text is an important component especially when there is no picture or graphic. It becomes therefore necessary to change the style of text at every paragraph, so that they become presentable. There are a number of tags that help you to format the text.

### 4.1.1 <Heading Tags>

Heading tag is used to display the heading or the main topic on the web page. This tag varies from H1 to H6. This is a container tag. The heading tag <H1> shows the heading with the largest font size. As you increase the number in the heading tag, the font size goes down as shown in the example given below:

```
<H1> This text is in largest font i.e. H1 font </H1>
<H2> This text is in larger font i.e. H2 font </H2>
<H3> This text is in medium large font i.e. H3 font </H3>
<H4> This text is in medium small font i.e. H4 font </H4>
<H5> This text is in smaller font i.e. H5 font </H5>
<H6> This text is in smallest font i.e. H6 font </H6>
```

The above code produces the following output:



We can see from the output that the size of the font keeps decreasing as one increases the number in the heading tag.

### 4.1.2 The <FONT> tag

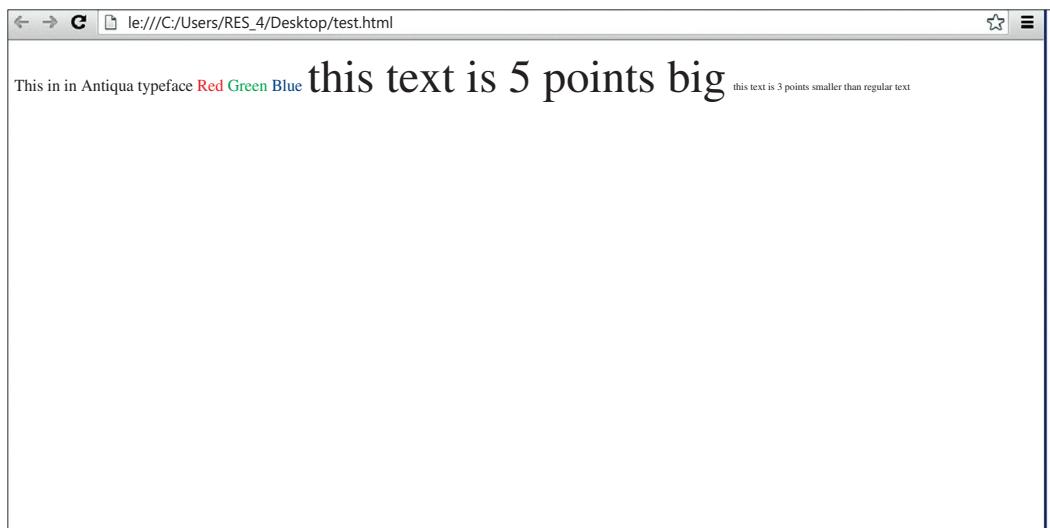
The FONT tag is a container tag that has a number of attributes listed below in the table

Attribute of the <font> tag	Description
FACE	Sets the text to the name of the font used as its value.
SIZE	Decides the scale of the text. It can range between -7 and +7.
COLOR	Changes the color of the text written inside the container tag.

The following example will help you understand the use of FONT tag.

```
<font face="Book Antiqua">This is in Antiqua typeface</font>
<font color="#ff0000">Red</font>
<font color="#00ff00">Green</font>
<font color="#0000ff">Blue</font>
<font size=+5> this text is 5 points big</font>
<font size=-3> this text is 3 points smaller than regular text </font>
```

The above code produces the following output:

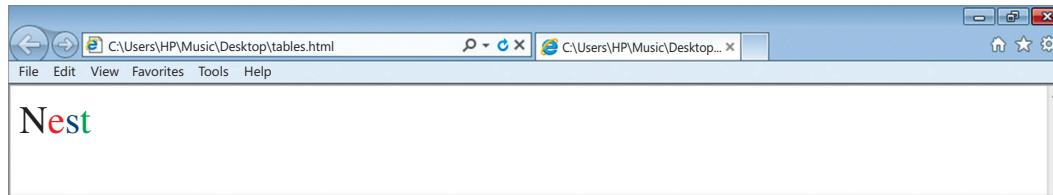


**Please Note:** The face name is case insensitive.

Font tag can be nested. We can understand this by an example.

```
<font size=+3>N<font color=red>e</font><font color=blue>s</font><font
color=green>t</font></font>
```

The above produce the following output:



#### 4.1.3. Entering Paragraph Text on your Web page

A paragraph can be written on the web document using the `<p>` tag. This is a container tag, though the `</p>` tag is optional. It uses one attribute called *align* that takes the value left, right or center.

```
<FONT SIZE=+4><P ALIGN="CENTER">
This paragraph is centered.
</P>
</FONT>
```

In the above code, the align attribute takes the value center. The output of the above code is:



#### 4.1.4. The CENTER tag

Is needed to place the text in the center. Sometimes it may not be possible to use align attribute again and again along with a tag. Then it is better to use nested form of center tag once and use other tags inside the opening and closing center tags.

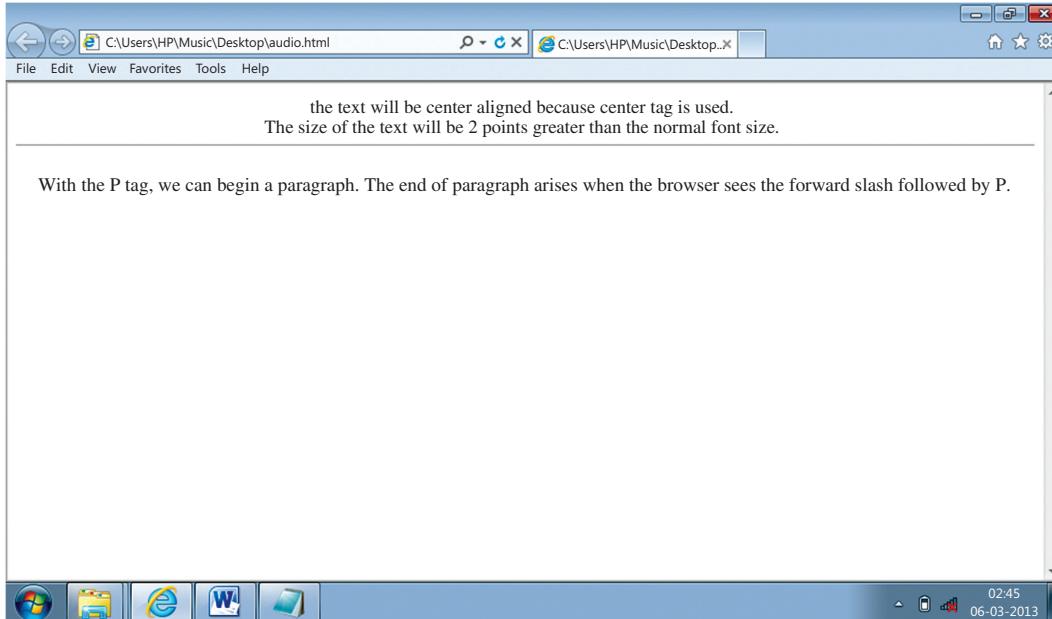
*For example:*

```
<center>
<font size=+2> the text will be center aligned because center tag is used.
<br>
    The size of the text will be 2 points greater than the normal font size.
<br>
<hr>
<br>
<p>
```

With the P tag, we can begin a paragraph. The end of paragraph arises when the browser sees the forward slash followed by P.

```
</p>
</font>
</center>
```

The above code produces the following output:



**Please note:** In the above output, the line that separates the font tag with the paragraph tag has been placed on the webpage using `<hr>` tag. The `<hr>` tag is an empty tag, similar to `<br>`.

#### 4.1.5. Bold, italics and underline

There are other tag that help in changing the style of the font. They make the text boldface, italics and underlined. They are shown in the table below:

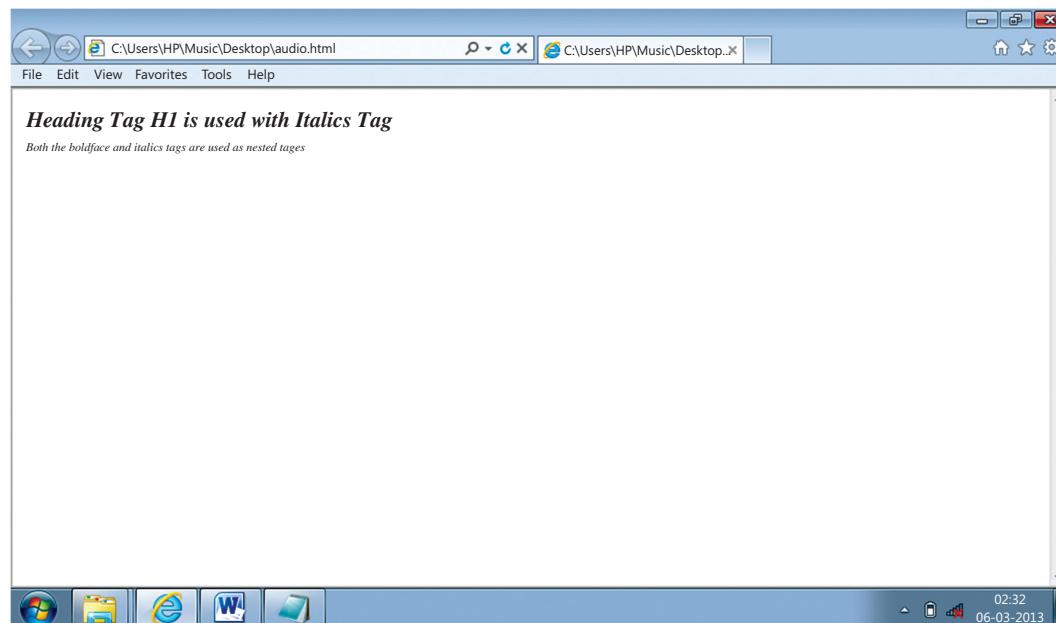
Tags	Meaning
<code>&lt;B&gt;, &lt;/B&gt;</code>	Bold text
<code>&lt;I&gt;, &lt;/I&gt;</code>	Italic text
<code>&lt;U&gt;, &lt;/U&gt;</code>	Underlined text

#### For Example

The following code uses tag `<I>` in combination with header tag `<H1>`.

```
<H1><I>Heading Tag H1 is used with the Italics Tag</I></H1>
<B><I>Both the boldface and italics tags are used as nested tags</I></B>
```

The above code produces the following output:



#### 4.1.6 The following table gives a list of tag used in the chapter, with their example and the output:

S. No.	Start tag	End Tag	Example	Output
1	<h3>	</h3>	<H3>Use H1 or H2 or H3 etc. for headings</H3>It automatically adds a paragraph break after the heading.	Use H1 or H2 or H3 etc. for headings It automatically adds a paragraph break after the heading.
2	<font face="Arial">	</font>	You can <font face="Verdana, Arial, Helvetica, sans-serif">change the actual font used to some extent within your text.</font> In this instance, the browser will attempt to use "Arial"; if not, it will ignore the instruction.	You can change the actual font used to some extent within your text. In this instance, the browser will attempt to use "Verdiana" if the computer has it; if not, "Arial"; if not, "Helvetica"; if not, a generic sans-serif font; if not, it will ignore the instruction.

S. No.	Start tag	End Tag	Example	Output
3	<font size=+2>	</font>	Increases <font size=+2>font size</font> by the amount of the number. You can also use <font size=-2>negative</font> numbers.	Increases font size by the amount of the number. You can also use negative numbers.
4	<font color = "#0000FF">	</font>	You can <font color="#0000FF">change the font color</font> within your text.	You can change the font color within your text.
5	<p align=right>	</p>	Right aligned paragraph. <p align=right>You can use the "p" tag as a container to align text to the right</p>	Right aligned paragraph. You can use the "p" tag as a container to align text to the right
6	<center>	</center>	<center>Centers the text</center>	Centers the text
7	<b>	</b>	This is for <b>bold</b> text	This is for bold text
8	<i>	</i>	This is for <i>italic</i> text	This is for italic text

## Summary

1. The World Wide Web Consortium has given a set of standards while building the HTML language.
2. The basic structure of the HTML document is divided into two sections namely, the head and the body.
3. A container tag has both the start and the end tag.
4. HR is another empty tag. This tag is used to insert a horizontal rule on the web page.
5. Heading tag is used to display the heading or the main topic on the web page. This tag varies from H1 to H6.
6. A paragraph can be written on the web document using the <p> tag. There
7. Bold, Italic and Underline are those tags that help in changing the style of the font.

# EXERCISE

## A. Name the tag used for:-

1. Inserting a section break
2. Marking up text to appear bold
3. Marking up text to appear italic
4. To change the font size of the entire html document.
5. To write a paragraph aligned to the right side of the page.

## B. Correct the errors in the following HTML code:

```
<HTML>
<TITLE> My first program
<BODY>
<P Align="centre"> This is my first web program </P>
<HEAD>
<HTML>
```

## C. Multiple choice Questions

1. Html uses
  - (a) Pre specified tags
  - (b) User defined tags
  - (c) Fixed tags
  - (d) Tags used for linking
2. What is the correct html tag for inserting a line break?
  - (a) <break>
  - (b) <br>
  - (c) <lb>
  - (d) <line break>
3. Choose the correct HTML tag to make the text bold
  - (a) <bold>
  - (b) <b>
  - (c) <large>
  - (d) <Big>
4. Choose the correct html tag for the largest heading
  - (a) <h1>
  - (b) <heading>
  - (c) <head>
  - (d) <h6>
5. How many blank line breaks will a browser create if you enter four <br> tag
  - (a) 5
  - (b) None
  - (c) 3
  - (d) 4

## D. State True or False:-

1. Html is a case sensitive language.

2. SGML is an improved version of HTML.
3. A tag is a special word enclosed in angle-brackets < >.
4. HTML is divided into 3 sections head, title and body.
5. VLINK defines the link of active link.

**E. Answer the following questions:-**

- Q.1. What is font tag? Name the various attributes of font tag.
- Q.2. Difference between <br> and <hr> tag.
- Q.3. Differentiate between LINK, ALINK and VLINK.
- Q.4. Explain heading tag with the help of a suitable example.
- Q.5. Difference between container tag and empty tag.
- Q.6. Write down the basic structure of HTML document.
- Q.7. How do you create a comment tag?
- Q.8. Name and explain any 2 attributes of body tag.
- Q.9. Name the tools required to create a html document.
- Q.10. Write a short note on HTML.

**F. Lab Session**

- ❖ Create a HTML document to print your name 5 times in 5 different fonts.
- ❖ Write a HTML document to display the name of school in bold and italic both.
- ❖ Create a HTML document containing three paragraphs with different alignments.
- ❖ Create HTML document containing different heading tags.

# Chapter 5

## HTML II



### Learning Objectives

By the end of this chapter, learner will be able to:

- Differentiate the different types of lists created in HMTL.
- Display the data using Lists tag available in HTML.
- Link web pages using <A> tag.
- Insert audio & Video in a web page to make it more interactive.
- Insert images in a web page.
- State the purpose of Inline & external images.
- Use images and Email addresses as hyperlinks.

### INTRODUCTION

As we have already discussed in previous chapter about HTML. Hypertext Markup Language is used by web browsers that represents the data. In this chapter, we will cover advance formatting tags of HTML such as Lists, inserting images, videos, music and creating links between two or more webpages.

#### 1. HTML Lists

Lists provide the information in a structured and easy to read format. The data item on the webpage can catalogued or indexed. The index that is formed using numbers like 1,2,3,...or symbols like →, β, ∞ is called a List in HTML. These lists help in formatting the data and put them in a particular order. There are three types of lists that you can use in HTML. They are:

- ❖ UL - creates an unordered or bulleted list
- ❖ OL - creates an ordered or numbered list
- ❖ DL - creates a definition or glossary list

The first two are very similar in structure, while definition lists have a unique setup. To create either kind, first specify the start of a list and then identify each line item in the list

##### 1.1 Unordered List <ul> ....</ul>

It classifies the data items that have equal importance i.e. none of the data items are ranked. They are identified by a symbol. It may be a □ square, a ○ circle or a ● disc. The

attribute TYPE helps in using the symbols to create a list. This attribute takes the value as the name of the symbol.

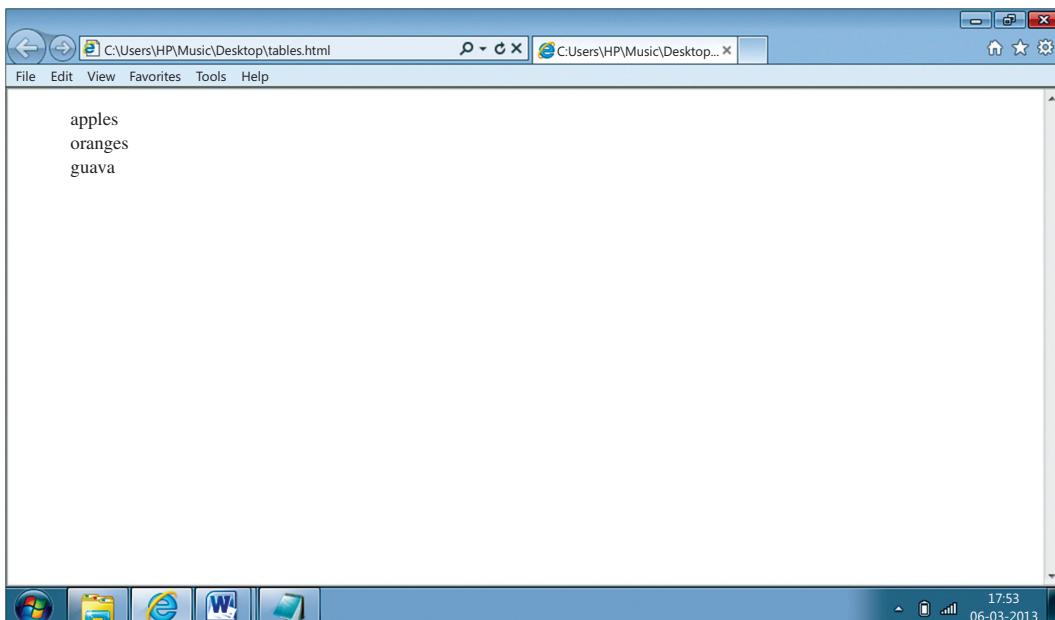
```
<ul type="square">  
<ul type="disc">  
<ul type="circle">
```

This is a container tag. It has both the opening and the closing tag. However the closing tag is optional. The listing is created under it using the `<li>` tag. Again `<li>` tag is a container tag. The data item to be listed is input between the opening `<li>` and the closing `</li>` tag as shown in the following example:

**For Example1:**

```
<body>  
  <ul>  
    <li>apples </li>  
    <li>oranges</li>  
    <li>guava </li>  
  </ul>  
</body>
```

In the above code the data item comprises of the fruits that have equal importance to the user. They are listed using unordered list. When you do not use the attribute named type, the default symbol is used i.e. disc. The output of the above code is:

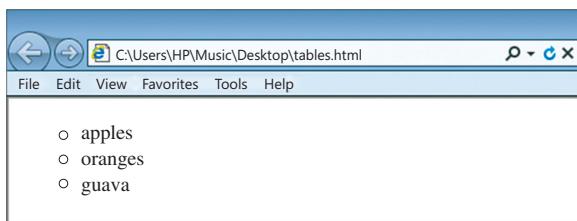


If you want to change the symbol to circle, use the following code:

*For Example2:*

```
<body>
    <ul type ="circle">
        <li>apples </li>
        <li>oranges</li>
        <li>guava </li>
    </ul>
</body>
```

The output of the above code is:



## 1.2 Ordered Lists `<ol> ... </ol>`

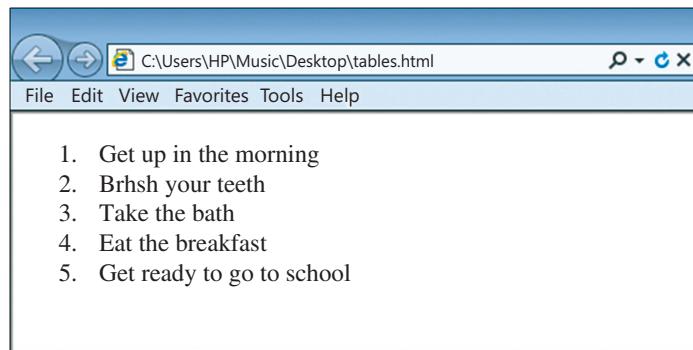
It classifies the data items that do not have equal importance. All the data items are ranked. The ranking can be done using the numbers, the roman letter or alphabets. The default symbol is number. In case you want to change to other symbols of ordered list, you can use the attribute. The attributes used with this tag are given in the table below:

Attributes of <code>&lt;ol&gt;</code> tag	Description
TYPE	Changes the symbol used with the list. It takes the value as the symbol itself i.e. it can be "a" or "A" or "I" or "i" or "1".
START	Begins the list with value specified. It takes the value of the symbol from where to begin the list

*For example 3:*

```
<body>
    <ol>
        <li>Get up in the morning</li>
        <li>Brush your teeth</li>
        <li>Take the bath</li>
        <li>Eat the breakfast</li>
        <li>Get ready to go to school</li>
    </ol>
</body>
```

The above code produces the following output. Notice that the symbol used to create the list is number. Thus number becomes the default symbol.

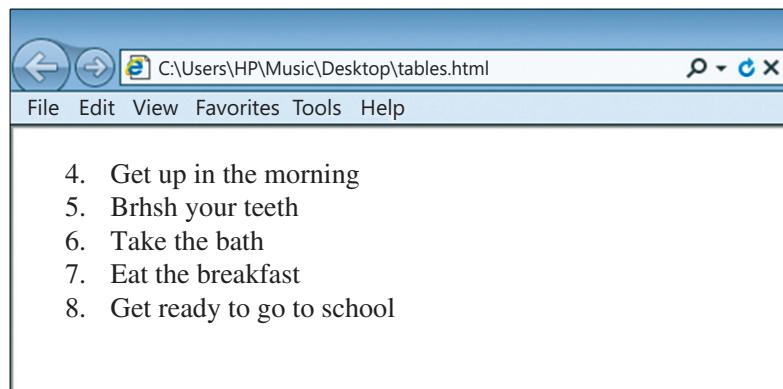


The **start** attribute allows you to further customize an ordered list by setting a new starting digit for the ordered list element as can be seen in the following example:

**For example 4:**

```
<body>
<ol start="4" >
<li>Get up in the morning</li>
<li>Brush your teeth</li>
<li>Take the bath</li>
<li>Eat the breakfast</li>
<li>Get ready to go to school</li>
</ol>
</body>
```

The above code produces the following output. Notice that the list begins from number 4 and the sequence is maintained after it.

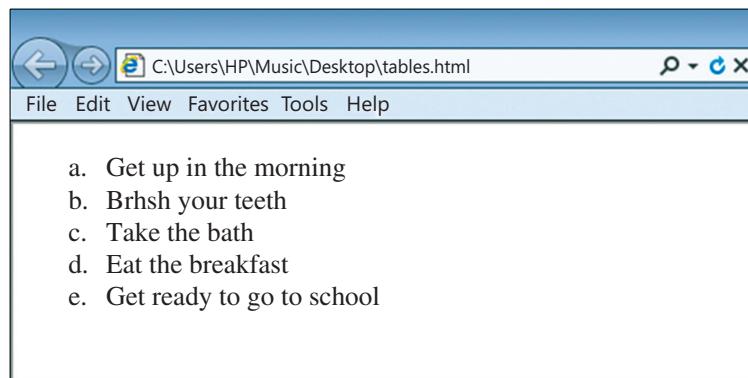


The **type** attribute changes the symbol as shown in the following example.

*For example 5:*

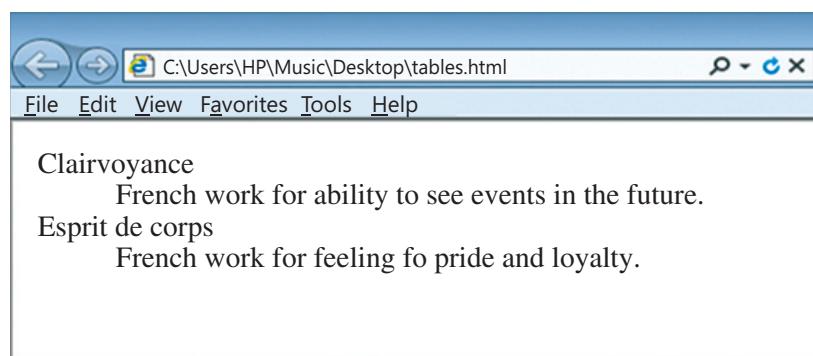
```
<body>
<ol type = “a”>
<li>Get up in the morning</li>
<li>Brush your teeth</li>
<li>Take the bath</li>
<li>Eat the breakfast</li>
<li>Get ready to go to school</li>
</ol>
</body>
```

The output of the above code is given below. Notice that the symbol has changed from default number to the alphabet.



### 1.3 Definition Term Lists **<dl> .... </dl>**

Definition lists (**<dl>**) are the list elements that have an array of tags. The list prepared by **<dl>** tag is similar to a dictionary. The other tags used with this are **<dt>** to define the definition term and the **<dd>** for the definition of the list item.



**For example 6:**

```
<dl>
  <dt>clairvoyance</dt>
  <dd>French word for ability to see events in the future.</dd>
  <dt><b>Esprit de corps</b></dt>
  <dd>French word for feeling of pride and loyalty.</dd>
</dt>
</dl>
```

The above code produces the following output. The opening `<dl>` tag starts the definition list. The container `<dt>` tag opens the definition terms like Clairvoyance and Esprit de corps. While the first word is in regular font, the second word is in boldface because another container tag `<b>` is nested inside `<dt>` tag. The meaning of the definition term is provided by `<dd>` definition description. Notice that the container tag `<dd>` presents the definition description below definition term slightly right tabbed as shown in the output window.

## 2. IMAGE

### 2.1 Meaning of Image

An image add a flair to a webpage. The image in a web page is a drawing painted through paintbrush or a photograph taken through a digital camera or a clipart. There are 2 types of types of images. They are i) inline image ii) external image. The inline image is shown when the webpage is opened in the browser. On the other hand, the external image is shown only when demanded by the user by clicking on a link.

### 2.2 Inserting an inline image to the webpage

You can insert an image using the `<IMG>` tag. This tag does not have an end tag. The basic syntax of `<IMG>` tag is given below:

```
<img src = " address or the path to the image file"
      width= " "
      height= " "
      alt= " "
      longdesc= "htmlfilename">
```

Let us discuss the attributes one by one:

### 2.2.1 SRC

The address or the path to the image is taken as value by SRC attribute. Let us discuss the cases of different addresses that can be accepted by SRC attribute.

#### Case1

If you have saved “Flower.jpg” in “Documents” folder, then the address would be: “C:\My documents\My Pictures\Flower.jpg”

#### Case2

If you have saved “Flower.jpg” in the same folder as the HTML document, then the address would be: “Flower.jpg”

#### Case3

If “Flower.jpg” is not in your computer but is saved in folder ‘images’ of the Web server of yahoo, then the address would be:

“<http://www.yahoo.com/images/flower.jpg>”

### 2.2.2 Width and Height

The width and the height attribute defines the boundaries of image. The value can be an absolute number (recognized as pixels) or in percentage (in proportion to the size of web window).

#### For example7:

An image of height 150 pixels and width 200 pixels is inserted on webpage as:

```

```

The output of the above code is as under. It displays an image of two white flowers on the web page.



#### Note

The image is made of pixels. When you increase the size of the image, the resolution of the image gets decreased. This makes the image less clearer to view. The width and height aren't strictly necessary but help to speed the display of your Web page.



### **2.2.3 ALT**

When the image does not get download (due to heavy traffic or unsupportive browser), the user may expect a description of the image. The “alt” attribute is used for such purposes as shown here:

*For example 8:*

```

```

### **2.2.4. Longdesc**

If the description is too long, you can even attach an html file, in another attribute called “longdesc”. This attribute is complementary to “alt” attribute as shown:

*For example 9:*

```

```

### **2.2.5 Align**

You can use the “align” attribute to place the image on left or right side of the webpage. If the align attribute is set to left, the image floats to the left margin. If it is set to right, the image floats to the right margin.

*For example 10:*

```
<p>
 The image will
be flowed to the left side of the webpage and this text will therefore be placed on right side.
</p>
```

In the above code the paragraph tag `<p>` helps in forming the paragraph to be displayed along with the image on the webpage. “Alt” attributes describes the image when the image cannot be displayed by the browser. “Height” and “width” attribute decides the area of the image on the web page and the “align” attribute defines the position of the image on the web page. Since the image is set to the left side, the text flows towards the right side as seen in the output below:



The Image will be flowed to the left side of the webpage and this text will therefore be placed on right side.

## 2.3 Inserting external image

An external image may be required in any of the following situation:

1. When the image formats like BMP or PICT are not supported by the browsers. Most browsers support either GIF format or JPG format.
2. When an image is to be viewed in text-only browser.
3. When you want to see the larger size of the inline image.



### Note

The external image can be inserted on the webpage using an anchor tag which may be learnt from the later section of the chapter.

## 2.4 Inserting audio or video

When you prepare a webpage, an audio or moving picture makes the page impressive and pleasing. When you want to show the operations of your business, you can do so by inserting a movie. Both the audio and video can be inserted using a plug-in. A plug-in is a small computer program that extends the standard functionality of the browser. You can insert such plug-in using the `<embed>` tag. The embed tag acts as container to non-HTML resource.

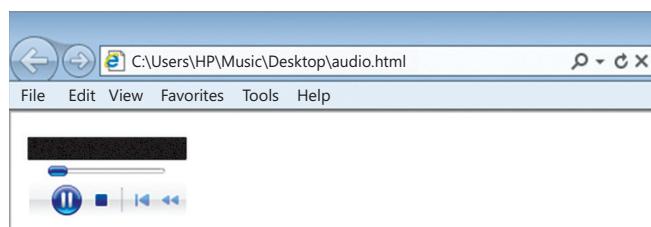
### 2.4.1. The `<embed>` Element to insert audio

The `<embed>` tag defines a container for external (non-HTML) content. The non-HTML contents are the objects other than the text and the graphics used in HTML. They are sound effects, the video clips and moving pictures. If you want to insert a song at the background of the webpage, use the following code to embed a MP3 file in the webpage.

*For example 11:*

```
<embed height="50" width="100" src="titanic.mp3">
```

The above code displays an audio player (of the dimensions as specified in the code) on one corner of the web page as shown in the output. The songs begin to play, the moment the webpage gets opened. However, the user can stop or pause the song whenever he so desires. If you want to place the audio player in the center, you can use the center element since it does not have another attribute to place it in center of the window.



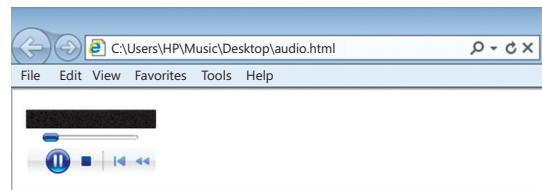
## 2.4.2. The “control” and “autoplay” Attribute of <audio> tag.

The “autoplay” attribute of <audio> specifies that the audio will start playing as soon as it is ready. The song inserted at the background of the webpage, use the following code to embed and auto play a MP3 file in the webpage.

*For example 12:*

```
<audio controls autoplay>
<embed height="50" width="100" src="titanic.mp3">
</audio>
```

The above code displays an audio player on one corner of the web page as shown in the output. The songs begin to play automatically, the moment the webpage gets opened.



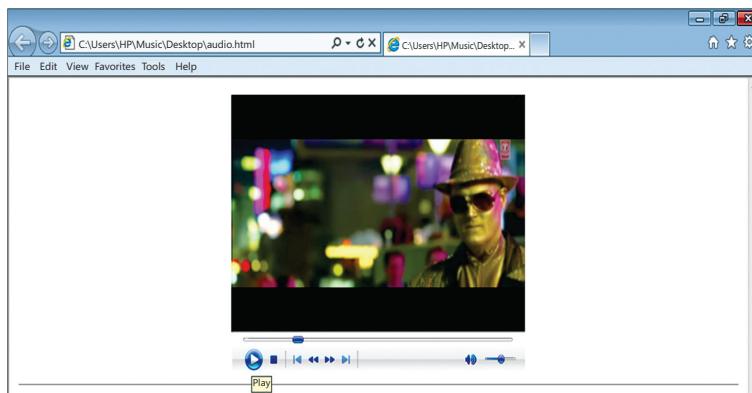
## 2.4.3. Inserting video

To make the webpage more interactive, you can insert a video in addition to sound in the webpage. The video may be in the form of a video clip, or a video movie. A video file is recognized by the extension .mp4 or .avi. use the following code to insert the video movie at one corner. If you want to place the player in the center of the webpage, you can use the center tag as shown below:

*For example 12:*

```
<body>
  <center>
    <embed height="250" width="320" src="movie.mp4">
    <br> <hr>
  </center>
</body>
```

The above code produces the following output:



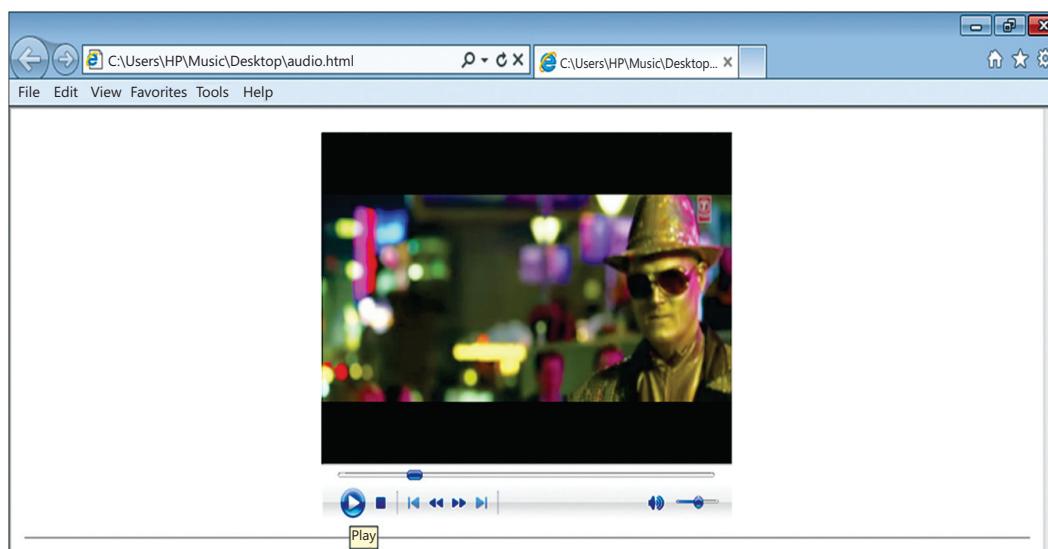
#### **2.4.4 Inserting video using “control” attribute**

The “control” attribute specifies that video controls should be displayed (such as a play/pause button etc). Use the following code to insert the video movie in the webpage, you can use the “control” attribute with embed tag as shown below:

*For example 12:*

```
body>
<center>
<video controls>
<embed height="250" width="320" src="movie.mp4">
</video>
</center>
</body>
```

<The above code produces the following output:



#### **2.4.5. Inserting video using “preload” attribute**

This attribute was formerly known as “autobuffer” and it was an boolean attribute as “controls”.

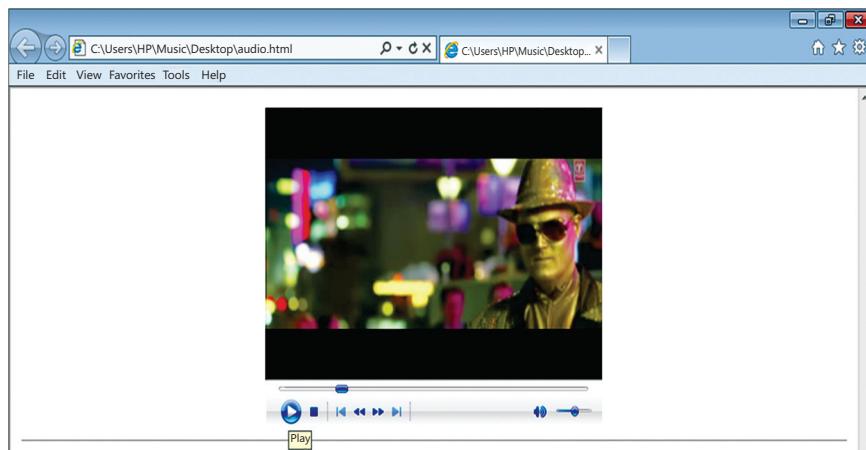
- ❖ **none** - do not buffer video file automatically.
- ❖ **metadata** - only buffer the metadata of video
- ❖ **auto** - buffer video file before it gets played.

Use the following code to insert the video movie in the webpage, you can use the “preload” attribute with embed tag as shown below:

*For example 12:*

```
<body>
<center>
<video controls preload="none">
<embed height="250" width="320" src="movie.mp4">
</video>
</center>
</body>
```

The above code produces the following output:



### 3. LINKING

You can add more than one page in your website. These additional pages are linked to the home page via a text or a picture. This linking is done using an anchor element in HTML.

#### 3.1 Anchor Element: .....

An anchor element is used to create a hyperlink in a webpage. The word anchor has come from the function performed by anchor in a ship. As an anchor supports the ship when it reaches the shore, similarly, the document linked supports the text or the picture on the homepage.

An anchor element consists of three parts.

1. The start tag  containing the attribute like href (mandatory), target (optional), name (optional)
2. The text or the image to be hyperlinked
3. The end tag .

The basic *syntax* of anchor tag is:

```
<a href = "Address of the supporting web page"  
target = "_blank or _top"  
name = "text">  
text acting as hyperlink  
</a>
```

The attributes of anchor tag are *href*, *name* and *target*. Let us discuss them:

1. **Href:** The meaning of **href** is hypertext reference. This attribute is mandatory in anchor tag. The **href** attribute takes the value as the address of the supporting document. Both the relative and the absolute links can act as values to the **href** attribute.

**For Example 13:**

```
<a href ="http://www.w3.org/">website of W3C</a>
```

To link to a page on another Web site you need to give the full web address. Such type of link is **absolute** as it specifies both the protocol name i.e. “http” and the hostname i.e. www.w3.org.

The **relative** link can only link to a page from the same site. If you were linking to a page in the same folder, the **href** would be just “page1.html” as shown below:.

```
<a href="page1.html">
```

2. **TARGET:** The target attribute helps in opening a web page. The value “\_blank” opens the webpage in a new browser window. The value “\_top” opens the linked webpage in the currently active browser window.

**For example 14**

If you want to open the webpage in a new window, following code is to be used.

```
<a href="http://www.google.com" target="_blank">Search Engine</a>
```

If you want to open the linked webpage in the same browser window as the current one, following code is to be used:

```
<html>  
<body>  
<p>Open the webpage in a the current window</p>  
<a href="http:// www.google.com /" target="_top"> Want to Google! </a>  
</body>  
</html>
```

The above code will open the webpage of google on clicking the link “Want to Google” in the same browser window as the existing window. It will not open a new window to load the webpage of google.com

3. **NAME:** NAME attribute gives a name to the anchor tag. This attribute takes the value as “text string”. This helps in linking to a specific section within the webpage that has been named.

#### **For example 15:**

If you have a long webpage with a section about “sales”, this section can be given a name using name attribute as shown below. The purpose of the name is that *another anchor* can link to the named anchor.

```
<A name="salessection">Sales Order Set Up</A>
```

#### **Linking to the named anchor:**

To link to a named anchor, add a hash mark (#) to the end of the Uniform Resource Locator of the webpage followed by the name of the section, it will open.

#### **For example 16:**

To link to a section named “**salessection**” within the page called **namedexample.html**, the following code is used:

```
<A href="namedexample.html#salessection">Sales</A>
```

If the link is to a named anchor in the same webpage then you don’t need the file name of the webpage, just the hash mark and the name of the anchor.

#### **For example 17:**

To link to the salessection in our existing webpage, the following code is to be used:

```
<A href="#salessection">Sales</A>
```

#### **Please Note:**

The named anchor itself doesn't have a hash mark	<A name="salessection">
A <i>link</i> to the named anchor <i>always</i> has a hash mark.	<A href="#salessection">

### **3.2 E-mail link**

You can create an e-mail link on your page. The browser will read an e-mail link, using the value starting with “mailto:” rather than http://, with your e-mail address rather than a web address. The syntax is given below:

```
<A HREF="mailto:yourusername@emailaccountname.com">E-mail the username</A>
```

### **For Example 18:**

You want to create an email link to yourself, then the code would be:

```
<A href="mailto:myself@gmail.com">E-mail to myself!</A>
```

When the user would click on the link "**E-mail to myself!**", the mailbox of gmail will get opened with the address myself@gmail.com after the field "To".

### **3.3 Image as a Link**

The basic syntax to create an image link is:

```
<a href="address of the file to be opened when you click on the image">  
  
</a>
```

The attribute **src** in **<img>** tag takes the value of the address to the image whereas, **href** attribute takes the value of the address of the HTML document that will be loaded when you click on the image.

### **For example 19:**

You want to open the website of Facebook when somebody click on the image that is called Facebook.jpg, then the code would be:

```
<a href= https://www.facebook.com/>  
  <img src= "facebook.jpg">  
</a>
```



### **3.4. Colors of the link**

You can set the color of text that acts as a link using **<body>** tag. The general syntax is:

```
<body link ="#hexadecimal code of the color or the nameofcolour"  
      vlink ="#hexadecimal code of the color or the nameofcolour "  
      alink ="#hexadecimal code of the color or the nameofcolour ">
```

In the above code, the link attribute in the **<body>** tag is a standard link. It is a text link that has not been clicked by the user, yet. It appears in its standard color i.e. blue whose hexadecimal code is 0000FF.

The vlink attribute in the **<body>** tag is a visited link. It is a text link that has been clicked by user at least once. The standard colour of this link is purple whose hexadecimal code is 800080.

The alink attribute in the <body> tag is an active link. It is a text link that may change its colour when the user brings the mouse over it. The standard colour of this link is red whose hexadecimal code is FF0000.

### **For example 20:**

If you want to set the colour of the link to red, alink to green and vlink to pink as against their standard colours, use the following code:

```
<BODY link="red" alink="green" vlink="pink">
```

### **For example 21:**

If you want to use a hexadecimal number for the above colours, following will be the code:

```
<body link="#FF0000" alink ="#04B45F" vlink ="#FF00FF" >
```



#### Note

The hexadecimal code of the colour can be seen from the website: <http://html-color-codes.info/>

## **Summary**

---

- ❖ Lists provide the information in a structured and easy to read format. There are three types of lists : OL,UL & DL.
- ❖ UL tag classifies the data items that have equal importance i.e. none of the data items are ranked. They are identified by a symbol. It may be a □ square, a ○ circle or a ● disc.
- ❖ OL tag classifies the data items that do not have equal importance. The data items in a list are represented using numbers, the roman letter or alphabets. The default symbol is number.
- ❖ Definition lists (<dl>) are the list elements that have an array of tags. The other tags used with this are <dt> to define the definition term and the <dd> for the definition of the list item.
- ❖ The image in a web page is a drawing painted through paintbrush or a photograph taken through a digital camera or a clipart. There are 2 types of types of images: i) inline image ii) external image.
- ❖ The <embed> tag defines a container for external (non-HTML) content. They are sound effects, the video clips and moving pictures.
- ❖ An <a> (anchor) tag is used to create a hyperlink in a webpage. An anchor element consists of three parts : (1) href (mandatory), target (optional), name (optional), (2) the text or the image to be hyperlinked and (3) the end tag </a>.
- ❖ An e-mail link can be created in a web page using [mailto:](#) attribute.



# EXERCISE

## A. Multiple Choice Questions:

1. What is the correct html command for inserting an image?  
(a) <image src="image.gif">  
(b) <img> image.gif</img>  
(c)   
(d) <img href="image.gif">
2. Which one of the following is the list type that will create a bulleted list?  
(a) Unordered  
(b) Option  
(c) Decorated  
(d) Ordered
3. Which html tag is used to render text as italics?  
(a) <b></b>  
(b) <i></i>  
(c) <ital></ital>  
(d) Text style="italics"
4. We can view the source code of html in  
(a) Notepad  
(b) Power point  
(c) Excel  
(d) Paint
5. To wrap the text to the next line, the tag used for  
(a) <BR>  
(b) <P>  
(c) <I>  
(d) <LI>

## B. Give one line code for the following

- (a) To make "My School Web Page" as the title of a web page.
- (b) To change the background color of a web page to blue.
- (c) To insert a horizontal line of yellow color
- (d) To insert an image pic1.jpg onto web page .
- (e) To insert the list as given below:
  - (i) SHIVANK
  - (ii) SARTHAK
  - (iii) SANYAM

## C. From the list given below pick the correct answer:

BGCOLOR, HEAD, HTML, VLINK, P, FONT, SIZE, I

- (a) This attribute defines the size of the text in the font element.
- (b) This attribute changes the background color of a web page.
- (c) This tag displays text in italic.

- (d) This element identifies the document as an HTML document.
- (e) This element defines the HTML header and does not affect the appearance of the document.
- (f) This element is used to insert a line break with extra spaces in the starting.
- (g) This element changes the color of the visited link.
- (h) This element displays text or characters in a specific style and size.

#### **D. Answer the following questions**

- Q.1. What is the difference between ordered list and unordered list?
- Q.2. Distinguish between href and name attributes of <A> tag with the help of each.
- Q.3. Define Definition term with the help of a suitable example
- Q.4. Which three tags are used to create definition lists?
- Q.5. Differentiate <BODY BACKGROUND> and <IMG> Tag.
- Q.6. Your school's web address is [www.littlebuds.com](http://www.littlebuds.com). You want to create a link to this website from your web page. Write the HTML code you will use to do this.
- Q.7. Difference between <A> as an anchor and <A> as a link
- Q.8. Create an ordered list of the name of the subjects you study in school.
- Q.9. Name and explain the various attributes of <UL> tag.
- Q.10. How can we set the color of text that acts as a link in a web page? Explain with the help of an example.

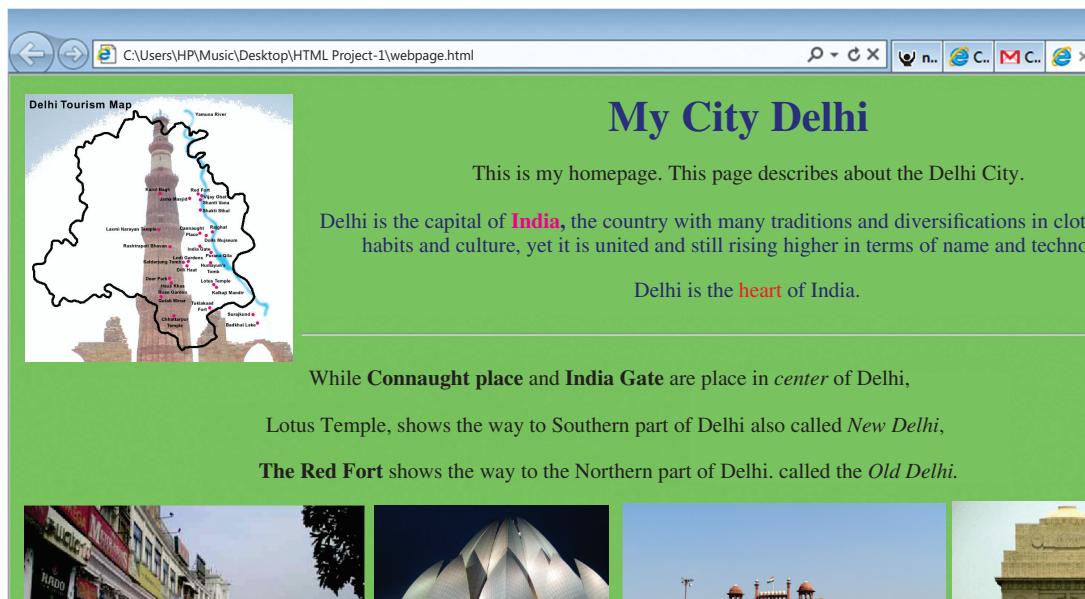
#### **E. Lab Session**

1. Shivank wants to make a list of vegetables in a web page. He has typed all vegetables name without any formatting. Suggest the type of list for his web page?
2. Write an HTML document to print name of your friends in an unordered format.
3. Create an unordered list of your hobbies.
4. Neha's parents wants to create a web page as an invitation for his Graduation Party and send this to all his friends. Can you help them in designing this invitation using the details given below:
  - (a) Title as "Party".
  - (b) Web page color as Yellow
  - (c) Pic1.jpg as an image in the center of the page.
  - (d) "lets Rock" as the heading below the image in red color
  - (e) With 2 lines break place the text of size 12 and color BLUE

5. Create a website for Travel & Tourism company, which should include 3-4 webpages.
6. Create a homepage for your school website that includes the following:
  - (a) Title
  - (b) Image of school building
  - (c) List of school activities
  - (d) Video of School infrastructure
  - (e) Photo gallery

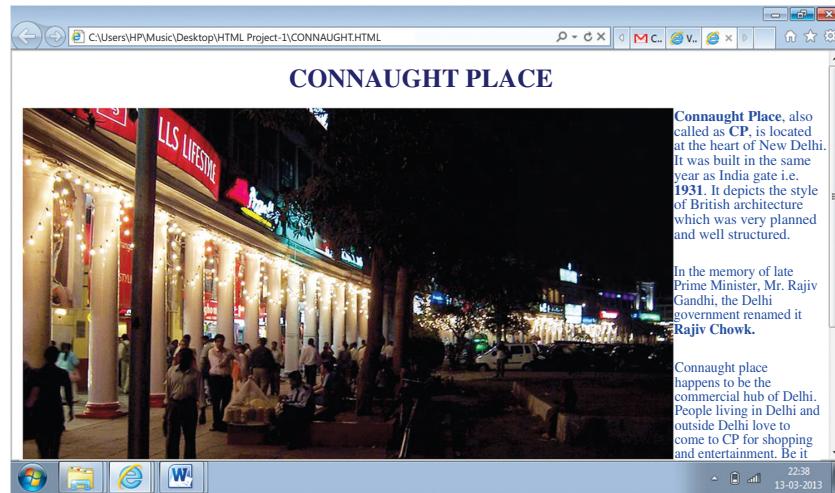
## PROJECT IN HTML

Suppose we want to create the following website showing the various features of city Delhi, then we need a homepage (first page that gets loaded) and the additional pages that are linked to the homepage. The following figure shows the homepage prepared by the basic tags studies in the syllabus. This homepage is called webpage.html.



All the images except the first image (map of Delhi) are hyperlinks. That is, when the user places the cursor above the image, the image will display its name. On clicking the first image of Connaught place the file, Connaught.html gets loaded in a different window. Similarly, Lotus.html gets opened when the user clicks on image of lotus temple, redfort.html is loaded when the image redfort.jpg is clicked and Indiagate.html gets loaded in a different window when user clicks of Indiagate.jpg.

In order to prepare individual HTML files, insert the image using IMG tag and then type the text for each in paragraph tag. The individual HTML files are given below. While Connaught.html is:



Redfort.html looks like:

**RED FORT**

The Red fort also known as Lal Qila is a 17th century fort constructed by the Mughal emperor, Shah Jahan city of Delhi, India that served as the residence of the Mughal emperor, Shah Jahan city of Delhi, India that served as the residence of the Mughal Emperors. The fort was the place for Mughal emperor Shah Jahan's new capital, Shahjahanabad, the seventh city in the Delhi site. He moved his capital here from Agra in a move designed to bring prestige to his reign.

It served as the capital of the Mughals until 1857, when Mughal emperor Bahadur Shah Zafar was exiled by the British Indian government.

The Red Fort derives its name from the extensive use of red sandstone on the massive walls that surround the fort.

Every year on 15 August, the Independence day of India from the British Prime Minister hoists the national flag at the Red Fort, followed by a nationally broadcast speech.

The Red Fort is one of the most popular tourist destinations in Old Delhi, attracting thousands of visitors every year. Today a sound and light show describing Mughal history is a tourist attraction in the evenings.

It also happens to be the largest monument in Old Delhi.

The lotus.html is:

**LOTUS TEMPLE**

**Lotus Temple**, is located in New Delhi, India. It is a Bahai House of Worship completed in 1986. It is noted for its flowerlike shape.

It is one of the attractions in the city. The Lotus Temple has won numerous architectural awards. Inspired by the lotus flower, the design for the House of Worship in New Delhi is composed of 27 free-standing marble clad "petals" arranged in clusters of three to form nine sides. The nine doors of the Lotus Temple open onto a central hall.

It is capable of holding up to 2,500 people.

## The indiagate.html is:

The India Gate is the national monument of India. Situated in the heart of New Delhi, it was designed by Sir Edwin Lutyens.

It was built in 1931. It was originally known as the All India War Memorial, it is a prominent landmark in Delhi and commemorates of 90,000 soldiers of the British Indian Army who lost their lives in World War I and the Third Anglo-Afghan War.

It is composed of red and pale sandstone and granite. Today, India Gate is the site of the Indian Army's Tomb of the Unknown Soldier, known as Amar Jawan Jyoti. the meaning of Amar Jawan Jyoti is "the flame of the immortal soldier"

The India Gate is the famous picnic spot for families living in Delhi. Children enjoy playing and swimming in the Children's park which is just a few footsteps from the India Gate. you can see many families enjoying in the grounds around the India Gate.

This project consists of a homepage and 4 linked pages, for sake of simplicity. The homepage has most of the images, the hyperlinks and the bulleted list, the use of empty tags like <br> and <hr>.

The additional pages may not contain the mixture of many tags if the project is small (as in the present case). For your convenience the code of individual HTML documents are also provided:

## Connaught.html

```
<html>
<head>
<title>About Connaught Place</title>
</head>
<body Text="darkblue">
<h1 align="center"> CONNAUGHT PLACE </h1>
<font face="arial">

<p><b>Connaught Place</b>, also called as <b>CP</b>, is located at the heart of New Delhi.
It was built in the same year as India gate i.e. <b>1931</b>.
It depicts the style of British architecture which was very planned and well structured.
<p>In the memory of late Prime Minister, Mr. Rajiv Gandhi, the Delhi Government renamed it <b>Rajiv Chowk</b>. </p>
<p>
```

```

Connaught place happens to be the commercial hub of Delhi.
People living in Delhi and outside Delhi love to come to CP for
<i>shopping</i> and <i>entertainment</i>.
Be it anything from the restaurant, to the road side handicraft shop, to
a national or international bank,
you would find everything here, right from a grocery store to a car
showroom.
you can also find the offices of tours operators and airlines in India.
<p>
Markets and shops in Connaught place are structured in the <b>inner</b>
and <b>outer circle</b>.
Connaught place provides the best resource to shop with a number of options
available.
Connaught place is surrounded by Panchkula Marg, Kasturba Gandhi Marg, Baba
Khadak Singh Marg and Barakhamba Marg.
</body>
</html>
```

## Lotus.html

```

<html>
<head>
<title>Lotus Temple</title>
</head>
<body bgcolor="lightblue">
<h1 align="center"> LOTUS TEMPLE </h1>
<font face="arial">

<p><b>Lotus Temple</b>,
is located in New Delhi, India.
It is a Baháí House of Worship completed in 1986. It is noted for its
flowerlike shape.
<p>It is one of the attractions in the city.
The Lotus Temple has won numerous architectural awards.
<p>
Inspired by the lotus flower, the design for the House of Worship in New
Delhi is composed of 27 free-standing marble clad “petals” arranged in
clusters of three to form nine sides.
The nine doors of the Lotus Temple open onto a central hall.

<p>It is capable of holding up to 2,500 people.

</body>
</html>
```

## Redfort.html

```
<html>
<head>
<title>
Red Fort</title>
</head>
<body bgcolor="pink" text="Brown">

<h1 align="center"> RED FORT </h1>
<font face="arial" size="4">
<p>The Red Fort also known as LalQila is a 17th century fort
constructed by the Mughal emperor, Shah Jahan
city of Delhi, India
that served as the residence of the Mughal Emperors.
The fort was the palace for Mughal Emperor Shah Jahan's new capital,
Shahjahanabad, the seventh city in the Delhi site.
He moved his capital here from Agra in a move designed to bring
prestige to his reign.
<p>It served as the capital of the Mughals until 1857,
when Mughal emperor Bahadur Shah Zafar was exiled
by the British Indian government.
<p> The Red Fort derives its name from the extensive use of red sandstone
on the massive walls that surround the fort.
<p>Every year on 15 August, the Independence day of India from the
British,
Prime Minister hoists the national flag at the Red Fort, followed by a
nationally broadcast speech.
<p>The Red Fort is one of the most popular tourist destinations in Old
Delhi,
attracting thousands of visitors every year. Today, a sound and light show
describing Mughal history is a tourist attraction in the evenings.
<p>
It also happens to be the largest monument in Old Delhi.

</font>
</body>
</html>
```

## Indiagate.html

```
<html>
<head>
<title>
India Gate
</title>
</head>
<body>

<h1 align="center"> INDIA GATE</h1>
<font face="Comic Sans MS" color="DarkBlue">
<p>The India Gate is the national monument of India.
Situated in the heart of New Delhi,
it was designed by Sir Edwin Lutyens.
<p>It was built in 1931.
It was originally known as the All India War Memorial,
it is a prominent landmark in Delhi and commemorates the 90,000 soldiers
of the British Indian Army who lost their lives in World War I
and the Third Anglo-Afghan War.
<p>It is composed of red and pale sandstone and granite.
Today, India Gate is the site of the Indian Army's Tomb
of the Unknown Soldier, known as Amar JawanJyoti.
The meaning of Amar JawanJyoti is "the flame of the immortal soldier".
<hr>

<p>The India Gate is the famous picnic spot for families living in
Delhi.
Children enjoy playing and swinging in the <a href="chidrenpark.html"
target="_blank">Children's park
</a>which is just a few footsteps from the India Gate.
You can see many families enjoying in the grounds around the India
Gate.

</body>
</html>
```

And the homepage named webpage.html is:

```
<html>
<head>
<title>Visit Delhi</title>
</head>
<body bgcolor="lightgreen" text="darkblue">
<center>
<font face="Bookman Old Style">

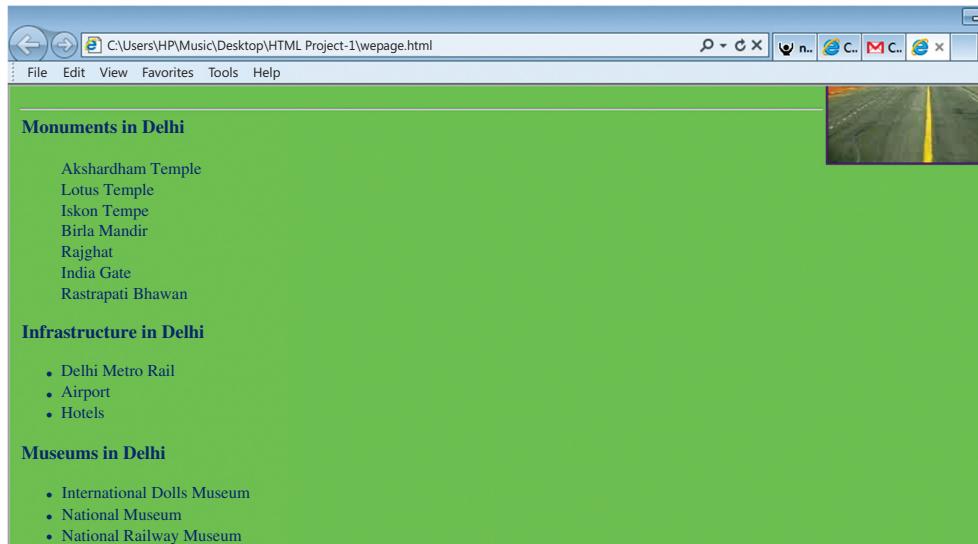
<h1 align="center"> My City Delhi </h1></font>
<font size="4">
<p>This is my homepage.
This page describes about the Delhi City.
<p>Delhi is the capital of
<b><font color="Magenta"> India </font></b>, 
the country with many traditions
and diversifications in clothing,
food habits and culture, yet
it is united and still rising higher in
terms of name and technology.</p>
<p>
Delhi is the <font color="red">heart </font> of India.
</p>
<hr>
<p><font color="Black">
While <b>Connaught place </b> and <b> India Gate </b> are placed in <i>center</i> of Delhi,</p>
<p><b>Lotus Temple</b>, shows the way to Southern part of Delhi also called
<i>New Delhi</i>,
<p><b>The Red Fort</b> shows the way to the Northern part of Delhi, called
the <i>Old Delhi</i>.
</font></p>
</center>
<a href="indiagate.html" target="_blank"></a>
<a href="connaught.html" target="_blank"></a>
<a href="redfort.html" target="_blank"></a>
<a href="lotus.html" target="_blank"></a>
<br><br><br><br><br><br><br><br><br>
<hr>
<b> Monuments in Delhi</b>
```

```

<ul>
<li>Akshardham Temple</li>
<li>Lotus Temple</li>
<li>Iskon Temple </li>
<li>Birla Mandir</li>
<li>Rajghat</li>
<li>India Gate</li>
<li>Rastrapati Bhawan</li>
</ul><b> Infrastructure in Delhi</b>
<ul>
<li>Delhi Metro Rail</li>
<li>Airport</li>
<li>Hotels</li>
</ul><b>Museums in Delhi</b>
<ul><li> International Dolls Museum</li>
<li>National Museum</li>
<li>National Railway Museum</li>
<li>National Science Center</li>
</ul>
</font>
</body>
</html>

```

Notice in the homepage, there is use of unordered list. This is to show the various features of Delhi.



The bottom portion of homepage is as under:

You can see that in the above homepage, everything is vertically aligned. This is due to the fact that important tags like table and frameset has not been used. These will be used in the syllabus next year. Hence, using the basic tags, a simple project can only be undertaken. Therefore, prepare the above project and implement your ideas to expand it further.



# Chapter 3

## Tables

### Learning Objectives

By the end of this chapter, learner will be able to:

- Describes the various uses of the TABLE tag and its sub elements in HTML.
- Recognize the different attributes of each tag for each of the TABLE elements.
- Use the TABLE and its sub elements to create web layout.
- Given a design use appropriate tabs from the TABLE group.
- Use Frames in the HTML page to divide the browser into different sections.
- Display data in a tabular form using table tag.

### INTRODUCTION

The data on the webpage can be represented in tabular form. In HTML the format can be defined using <TABLE> tag.

The <TABLE> tag arranges the data items on the web page in rows and columns. The *basic* syntax of table tag along with the attributes is given as under:

The TABLE Element (<TABLE>) represents data in two or more dimensions.

```
<body>
<TABLE border =“number”
       align= “left/right/center”
       width= “number%”
       bgcolor= “NameOfColor”
       background= “addressOfFile”
       bordercolor= “#hexadecimalNumberOfColour”>
<TR>
    <TD> text 1</TD>
    <TD> text 2</TD>
</TR>
</TABLE>
</body>
```

## 1. STRUCTURE OF <TABLE> TAG

The structure of table is formed using the Table tag.

The rows of the table are formed using the TR tag.

The data in the cells of the rows are inserted using either the TH tag or the TD tag. The TH tag encloses the Header object and makes the data boldface and center aligned. The TD keeps the data in regular font and left aligned by default. The TH and TD tags are nested inside the TR tag and the TR tag in turn is nested within the TABLE tag.

### 1.1. The attributes of table tag are discussed below one by one

#### 1.1.1. Border

This attribute is used to insert the lines on four sides of the table. The inside lines shows the rows and columns of the table and the outside lines displays the dimensions of the table. This attribute takes the value as a number starting from 1 to any number. The value one displays one pixel line on inside and outside of the table. However, the value larger than one only thickens the outer lines (giving a 3D effect) leaving the inside lines to one pixel point. When this attribute is omitted, neither inside nor outside lines are visible. Let us take the 3 cases one by one:

**Case 1.1:** The border attribute takes the value one, results in both inside and outside border.

In the above code, the attribute “border” takes the value as one. This displays both the inside and outside border of one point. The table row is formed using <TR> tag and the <TD> tag helps in inserting the text – “thin bordered cell” in the cells of the rows and columns of the table. The code produces the output in figure 1.

```
<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE border = 1>
    <TR>
        <TD> thin bordered cell 1</TD>
        <TD> thin bordered cell 2</TD>
    </TR>
    <TR>
```

```

<TD> thin bordered cell 3</TD>
    <TD> thin bordered cell 4</TD>
</TR>
</TABLE>
</BODY>
</HTML>

```

Output produced by the above HTML code:

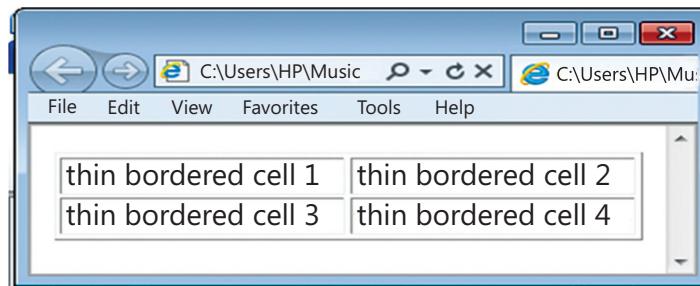


Figure 1

**Case 1.2:** If the value is taken to be as high as 40, the outer border width changes.

The table tag uses the border attribute with the value 40. This increases the length and the height of the entire table. The outside border thickens, giving the table a 3D effect. The `<TR>` tag defines the rows of the table and the `<TD>` tag is used to insert “thick bordered cell” in each of the cells of the two rows as shown in the output figure 2.

```

<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE border = 40>
    <TR>
        <TD> thick bordered cell 1</TD>
        <TD> thick bordered cell 2</TD>
    </TR>
    <TR>
        <TD> thick bordered cell 3</TD>
        <TD> thick bordered cell 4</TD>
    </TR>
</TABLE>
</BODY>
</HTML>

```

Output produced by the above HTML code:

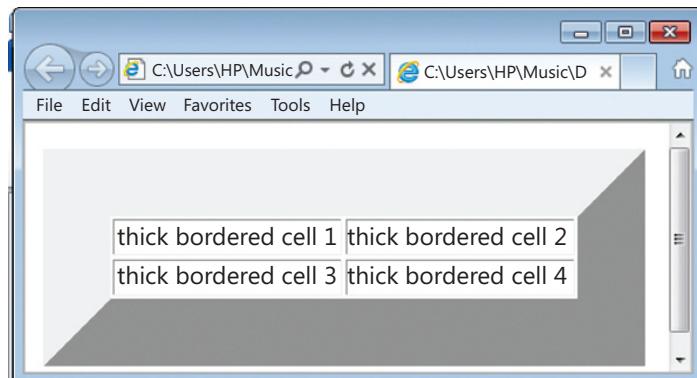


Figure 2

**Case 1.3:** If the border attribute is omitted:

The output from the above code is shown in figure 3. The table is shown without the inside and outside border. Also, note in the output that the data in the first row is bolder than that in the second row. This is due to the use of **<TH>** element in the first row and **<TD>** in the second row. The **<TH>** tag is meant to prepare the header of the table. Since the text of header is bolder than the rest of the text, it makes the text bold but keeps the font size similar to the rest of the text.

```
<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE >
    <TR>
        <TH> no border cell 1</TH>
        <TH> no border cell 2</TH>
    </TR>
    <TR>
        <TD> no border cell 3</TD>
        <TD> no border cell 4</TD>
    </TR>
</TABLE>
</BODY>
</HTML>
```

The output from the above code is shown in figure 3. The table is shown without the inside and outside border. Also, note in the output that the data in the first row is bolder

than that in the second row. This is due to the use of <TH> element in the first row and <TD> in the second row. The <TH> tag is meant to prepare the header of the table. Since the text of header is bolder than the rest of the text, it makes the text bold but keeps the font size similar to the rest of the text.

Output produced by the above HTML code:

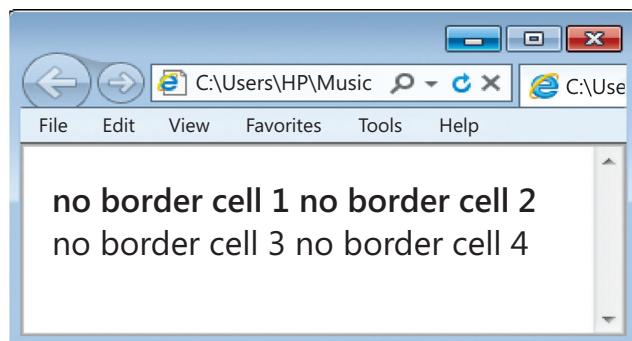


Figure 3

### 1.1.2. Align

The align attribute helps in placing the table on the webpage. If you want to place it in the center of the webpage, use the “center” value, for right side use “right” and for the left side of the web page, the value “left”. If you omit this attribute in the <TABLE> tag, the table will be placed at its default position which is usually “left”.

**Case 2.1:** The following code assigns the value “center” to the align attribute.

```
<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE Border = 1 Align="Center">
    <TR>
        <TD> center aligned1</TD>
        <TD> center aligned2</TD>
    </TR>
    <TR>
        <TD> center aligned3</TD>
        <TD> center aligned4</TD>
    </TR>
</TABLE>
</BODY>
</HMTL>
```

The output from the above code positions the table in the center of the web page as below:

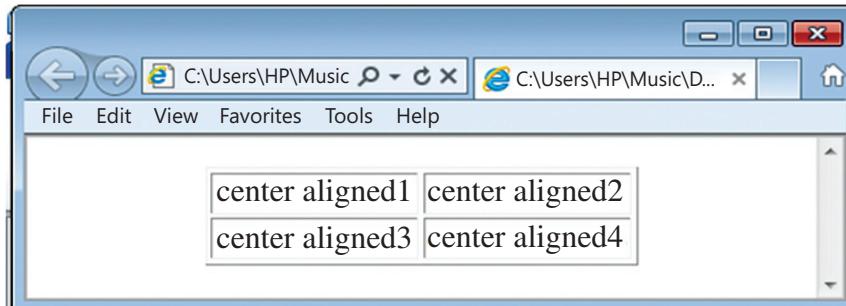


Figure 4

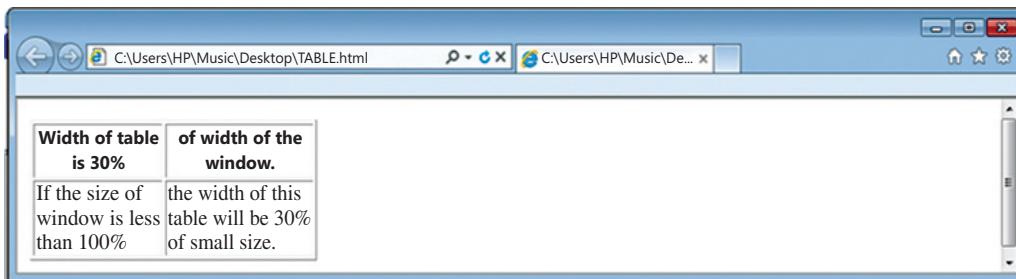
### 1.1.3. Width

The width attribute helps in identifying the breadth of the table in comparison to the webpage. It accepts the value as a number (in pixels) or in percentage (in proportion to the width of the webpage). If you omit this attribute, the width of the table is set according to the length of the characters inside the cells.

**Case 3.1:** Where, the width of the table is set to 30% of the web page's width.

```
<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE border=1 width = 30%>
    <TR>
        <TH> width of table 30% </TH>
        <TH> of width of the window </TH>
    </TR>
    <TR>
        <TD> if the size of window is small </TD>
        <TD> the width of table will be 30% of small size</TD>
    </TR>
</TABLE>
</BODY>
</HTML>
```

The above code displays the breadth of the table to be 30% of the width of the webpage as shown below:



A screenshot of a Microsoft Internet Explorer browser window. The address bar shows 'C:\Users\HP\Music\Desktop\TABLE.html'. The main content area contains a table with two rows and four columns. The first row has two columns: the left one contains the text 'Width of table is 30%' and the right one contains 'of width of the window.'. The second row has two columns: the left one contains 'If the size of window is less than 100%' and the right one contains 'the width of this table will be 30% of small size.' The table has a border and is centered on the page.

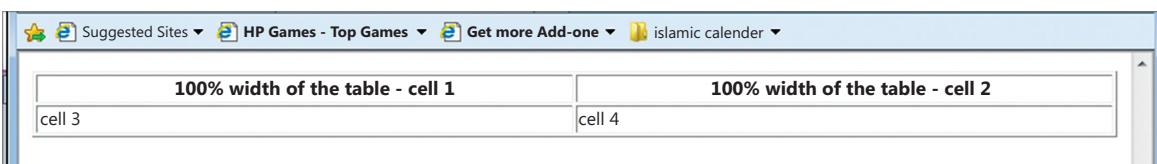
Figure 5

**Case 3.2:** Where, the width of the table is set to 100% of the web page's width.

```
<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE border=1 width = 100%>
    <TR>
        <TH>100% width of the table - cell 1</TH>
        <TH>100% width of the table - cell 2</TH>
    </TR>
    <TR>
        <TD> cell 3</TD>
        <TD> cell 4</TD>
    </TR>
</TABLE>
</BODY>
</HTML>
```

The code above displays the table with the breadth equal to the breadth of the webpage as shown in the figure 6. The table occupies 100% of the width of the web page.

Output produced by the above HTML code:



A screenshot of a Microsoft Internet Explorer browser window. The address bar shows 'Suggested Sites' and other links. The main content area contains a table with two rows and four columns. The first row has two columns: the left one contains '100% width of the table - cell 1' and the right one contains '100% width of the table - cell 2'. The second row has two columns: the left one contains 'cell 3' and the right one contains 'cell 4'. The table has a border and is centered on the page.

Figure 6

#### 1.1.4. Border color

The colour of the lines inside and outside the table can also be changed using the “Border Color” attribute. It accepts the value as name of the colour. If you omit this attribute, the colour of the table border is set to its default grey.

**Case 4.1:** Let us set the lines of table as red in the following code:

```
<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE border=10 border color=red>
    <TR>
        <TD>border line thickness is set to 10</TD>
        <TD>border colour is red</TD>
    </TR>
    <TR>
        <TD>red as tomato</TD>
        <TD>red as apple</TD>
    </TR>
</TABLE>
</BODY>
</HTML>
```

The Microsoft Internet Explorer displays the output in figure 7. The table is shown with red coloured border lines on both inside and outside the table. The outside line gets its thickness from the border attribute which has the value equal to 10. This means the width of the outside border is 10 pixels wide.

Output produced by the above HTML code:

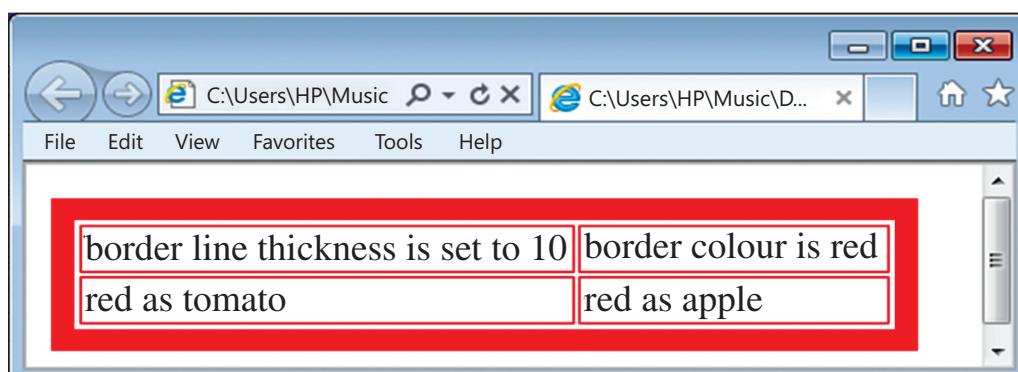


Figure 7

### 1.1.5. Bgcolor

The background color of a table can be set using the attribute bgcolor. This attribute takes the name of the colour or hexadecimal number as value.

#### Case 5.1:

```
<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE border =1 bgcolor= pink>
    <TR>
        <TH>border line point 1</TH>
        <TH> pink as lily </TH>
    </TR>
    <TR>
        <TD> background colour of the table is pink </TD>
        <TD>&nbsp;</TD>
    </TR>
</TABLE>
</BODY>
</HTML>
```

The above code gives a background colour to the table. Here the background is set to the colour pink as shown in figure 8. The breadth of the table is set according to the contents in the cells of the table. The last cell is formed and is empty because one character space is assigned to this cell using the special character &nbsp;. The special character provides the result only when used in lowercase.

**Note:** If you want to set individual cells of the table with different background colour, the attribute bgcolor can be used with either <TH> tag or <TD> tag.

Output produced by the above HTML code:



Figure 8

### 1.1.6. Background

If you want to place an image or a picture at the background of the table, you can do so using the background attribute. This attribute takes the value as the address or the path of the picture. The picture may be a bitmap or a graphic image. In the following code, the image named “yellowww.jpg” is set as background to the entire table.

```
<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE border =”1” background=”c:\yellowww.jpg”>
    <TR>
        <TH>lily</TH>
        <TH>rose</TH>
        <TH>lotus</TH>
    </TR>
    <TR>
        <TD>white, yellow</TD>
        <TD>white, yellow</TD>
        <TD>white, pink</TD>
    </TR>
</TABLE>
</BODY>
</HTML>
```

The above code displays the output in figure 9. The background of the entire table is set to the image named yellowww.jpg.

Output produced by the above HTML code:

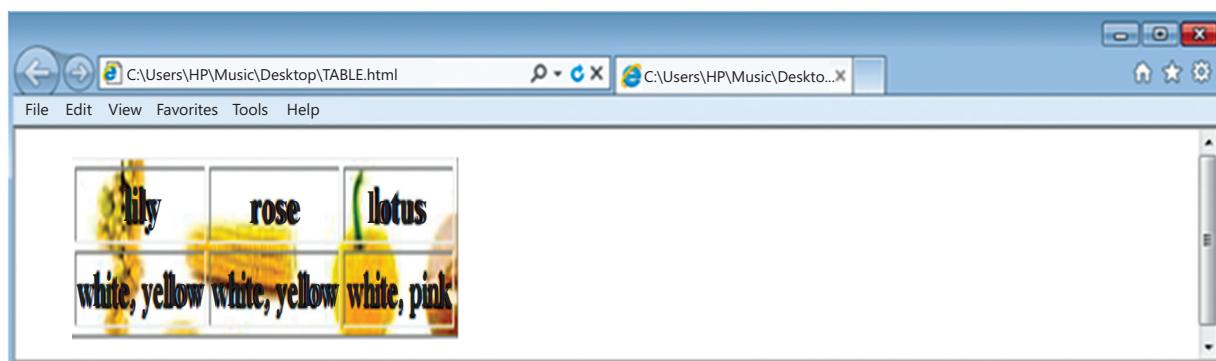


Figure 9

**Note:** The image can set to individual cells as well by using the background attribute in the <TH> and <TD> tag.

## 2. THE TH OR TD ELEMENT

The TH element or <TH> tag helps in identifying a table header. Correspondingly, TD element or <TD> tag identifies the table data cell. The text inserted using the TH element is in boldface and centred by default. Compared to this, TD element or the <td> tag is aligned to the left and the text is in regular font. The attributes used with <TD> or <TH> tag are: Align, Colspan, No wrap, Rowspan, Valign.

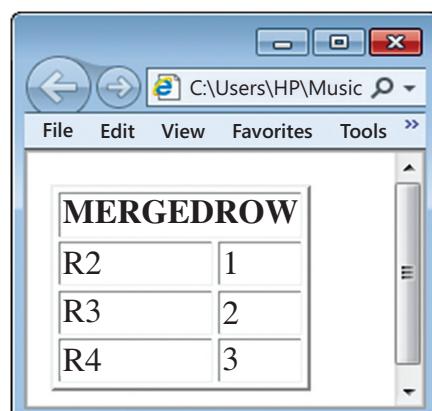
The align attribute is similar to that of table, except that it align the text inside the cell rather than the table. Valign takes the value top, middle, bottom to vertically align the text inside a cell.

The Nowrap attribute does not allow the text to flow to the next line in the cell. If the sentence is wider than the width of the cell, nowrap will show the sentence in one straight line. Let us now discuss colspan and rowspan.

### 3.1. COLSPAN

The colspan attribute helps in merging the columns of a row. This attribute is not used with table tag but with the <TH> or the <TD> tag.

**Case Colspan:** If you want to prepare the table where there are 4 rows and the all the other rows except the first row are divided into two columns. In other words, the two columns of the first row are merged into a row, use the following code:



A screenshot of a Microsoft Internet Explorer browser window. The address bar shows 'C:\Users\HP\Music'. The menu bar includes File, Edit, View, Favorites, Tools, and a Help button. The main content area displays a table with the following data:

MERGEDROW	
R2	1
R3	2
R4	3

Figure 10

```

<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE border=2>
    <TR>
        <TH colspan=2>MERGEDROW</TH>
    </TR>
    <TR>
        <TD>R2</TD>
        <TD>1</TD>
    </TR>
    <TR>
        <TD> R3</TD>
        <TD>2</TD>
    </TR>
    <TR>
        <TD>R4</TD>
        <TD>3</TD>
    </TR>
</TABLE>
</BODY>
</HTML>

```

**Case No Colspan:** If the row in the example above does not span across three columns, the code will be:

```

<HMTL>
<HEAD><TITLE> </TITLE></HEAD>
<BODY>
<TABLE border=2>
    <TR>
        <TH>MERGEDROW</TH>
    </TR>
    <TR>
        <TD>R2</TD>
        <TD>1</TD>
    </TR>
    <TR>

```

```

<TD>R3</TD>
<TD>2</TD>
</TR><TR>
<TD>R4</TD>
<TD>3</TD>
</TR>
</TABLE>
</BODY>
</HTML>

```

This code produces the result shown in figure 11. The table shows the empty cells, also referred to as Ghost Cells. These empty cells do not give proper presentation to the table and its contents. To display a header row followed by two columns at the bottom, colspan is the only option.

The screenshot shows a web browser window with the title bar 'C:\Users\HP\Music'. The main content area displays a table with four rows. The first row is merged and labeled 'MERGEDROW'. The second row contains cells 'R2' and '1'. The third row contains cells 'R3' and '2'. The fourth row contains cells 'R4' and '3'. Arrows point from the text 'Ghost cells' to the empty cells in the second and third rows.

Figure 11

### 3.2. ROWSPAN

When the table's cells spans across more than one row, it is called ROWSPAN. If we want to give the table a nice sidebar, this attribute is used. The rowspan appears as merged cells. We use this attributes in the <TH> or <TD> tags. We have to assign a number for how many rows we wish to span downwards.

**Case Rowspan:** Taking the similar example as above, we have the following code:

```

<TABLE border=1>
<TR>
    <td rowspan=2> MERGEDCOLUMN </TD>
    <TD>Col2Row1 </TD>
</TR>
<TR>
    <TD>Col2Row2</TD>
</TR>
</TABLE>

```

The code here produces the output in figure 12. The output displays how rowspan merges the two rows into one to form a sidebar. In other words, this sidebar acts as a single row that gets divided into two rows in the next column of the table.

A screenshot of an Internet Explorer browser window. The address bar shows 'C:\Users\HP\Music'. The menu bar includes 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help'. The main content area displays a table with the following structure:

MERGEDCOLUMNS	Col2Row1
	Col2Row2

Figure 12

**Case NoRowspan:** In case you don't wish to use rowspan, then you might end up creating a ghost cell as shown by the following code:

```
<TABLE border=1>
<TR>      <TD> Col1Row1</TD>
            <TD>Col2Row1 </TD>
</TR>
<TR>      <TD>Col1Row2</TD>
</TR>
</TABLE>
```

The above code produces the output in figure 13:

The table does not give the clear picture as to whether the ghost cell be used for some purpose, whether the last be merged into the cell above it or cell on its left. In order to get rid of such question and to better present data, we make use of the attribute provided by HTML called **Rowspan**.

A screenshot of an Internet Explorer browser window. The address bar shows 'C:\Users\HP\Music'. The menu bar includes 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help'. The main content area displays a table with the following structure:

Col1Row1	Col2Row1
Col1Row1	

An arrow points to the empty cell in the second row, labeled 'Ghost cells'.

Figure 13

### 3. THE CAPTION TAG

The `<caption>` tag is used to provide a text to the table so as to explain the contents of the table. It is generally in bold, at center with respect to the table. However, the position of the caption can be on either the top or the bottom of the table using the 'align' attribute as shown below:

```

TABLE BORDER = 1>
<CAPTION align=bottom>Table with caption</CAPTION>
<TR>
    <TH> coordinates 1, 1 </TH>
    <TH> 1, 2</TH>
</TR>
<TR>
    <TD> 2, 1</TD>
    <TD> coordinates 2, 2</TD>
</TR>
</TABLE>

```

Figure 14 displays the result of the code. The bottom of the table is captioned with “Table with caption”.

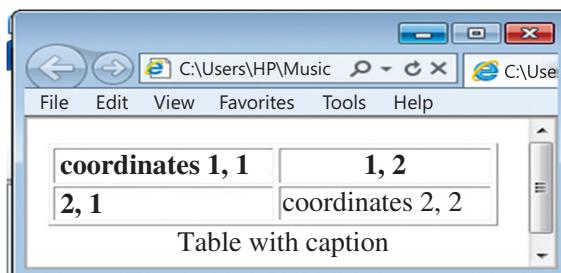


Figure 14

Let us quickly revise the list of attributes used with TABLE, TH, TD elements, before moving on to the next section on frames. The following table displays a list of function, tags, attributes and values associated with <TABLE>, <TH> and <TD> element.

S.No.	Description	Tags and Attributes	Values
1.	Define Table	<TABLE></TABLE>	
2.	Table Border	<TABLE BORDER=?> </TABLE>	
3.	Desired Width	<TABLE WIDTH=?>	(in pixels)
4.	Width Percent	<TABLE WIDTH=%>	(percentage of page)
5.	Table Row	<TR></TR>	
6.	Alignment	<TR ALIGN=LEFT RIGHT  CENTER MIDDLE BOTTOM>	
7.	Table Cell	<TD></TD>	(must appear within table rows)

8.	Table Header	<TH></TH>	(same as data, except bold & centered)
9.	Alignment	<TH or TD ALIGN=LEFT RIGHT  CENTER MIDDLE BOTTOM>	
10.	No Linebreaks	<TH or TD NOWRAP>	
11.	Desired Width	<TH or TD WIDTH=?>	(in pixels)
12.	Width Percent	<TH or TD WIDTH=%>	(percentage of table)
13.	Cell Color	<TH or TD BGCOLOR="#\$\$\$\$\$\$">	
14.	Columns to Span	<TH or TD COLSPAN=?>	
15.	Rows to Span	<TH or TD ROWSPAN=?>	
16.	Table Caption	<CAPTION></CAPTION>	
17.	Alignment	<CAPTION ALIGN=TOP BOTTOM>	(above/below table)

## 4. FRAMES

A frame divides the screen into separate windows with both vertical and horizontal scroll bars.. The windows so formed may appear to be sub-windows of the main window (the webpage). This allows the user to access different pages of a website from one screen if designed to do so. Frames are needed when you want to have menus on one side and the contents or the operations on the other side. When the user clicks on one of the menu items, the contents become visible on the other side.

A frame divides the webpage into different windows. It makes some structural changes to the main window. Hence, it is not written inside the body element, but it forms its own element, outside the head section of HTML document called the FRAMESET. A FRAMESET element is the parent element that defines the characteristics of individual frame pages. The basic *syntax* of FRAMESET element is:

```

<html>
<head> ... </head>
<FRAMESET cols= "number%,number%">
  <frame src = "address of HTML document">
  <frame src = "address of HTML document">
</FRAMESET>
</html>

```

The attributes used with the FRAMESET element are given in the table below:

Attributes	Value accepted	Description
Rows	Number in percentage or star (*) indicating the rest of the window	Divides the main window horizontally in proportion to main window
Cols	Number in percentage or star (*) indicating the rest of the window	Divides the main window vertically in proportion to main window
Border	Number	Increases the width of the outer border.
Frame border	Number	Used with netscape navigator to surround the sub-window with a border. If value is set to zero, no outer lines appear around the frame.
Frame spacing	Number	If set to zero, it removes the ugly grey lines appearing between the two frames, otherwise it increases the width of the grey line.

The FRAMESET element works in conjunction with the FRAME tag whose attributes are discussed below:

S No	Attributes	Value	Description
1	src (mandatory attribute)	Address of the HTML document	To load the HTML webpage in the frame defined by FRAMESET element
2	scrolling	Yes/Auto/No	<b>Yes</b> will insert both the scrolls irrespective of the size of the sub-window. <b>Auto</b> will insert the scrolls only when the contents of the sub-window are not visible <b>No</b> will not insert any scrolls even when all the contents are not visible.
3	Noresize	Noresize	when used this attribute does not allow the user to adjust the size of the frame in the webpage.
4.	Name	A noun	Assign a name to the frame
	Target	The noun of name attribute	This attribute specifies the name of a frame where a document is to be opened.

If you want to make a webpage that uses two frames divided in columns, you should follow these steps:

1. Create an HTML document with the FRAMESET element as shown below.

```
<FRAMESET cols="120,*">
<frame src="menu.html" name="menu">
<frame src="main.html" name="main">
</FRAMESET>
```

In the above code, the left side of the column is 120 pixels and the Star indicates the rest of the screen. A star has been used because the screen size varies; it may be 640 pixels across, or 800 or 1024 pixels across. The 'src' attribute opens the menu.html document in left side frame and main.html gets opened in right side frame. Both the frames are given a name through the 'name' attribute. The names are used by navigational frame which has been discussed later in the chapter.

2. Create a number of HTML documents (containing the body tag) that you would like to load into the frames. (Atleast as many as the frames that are there in the FRAMESET element of step 1 here you need to have two documents; menu.html and main.html)
3. When a FRAMESET page is loaded, the browser automatically loads the HTML documents designed in step2 as requested by each of the FRAME tag within the FRAMESET.

The rest of the chapter discusses the different types of frames that you can design.

#### **For example 1:**

If you want to divide the webpage in equal sizes horizontally, and want to display a.html in first and b.html in second, you will use the following code:

```
<html>
<head>...</head>
<FRAMESET rows= "50%,50%">
<frame src = "a.html">
<frame src = "b.html">
</FRAMESET>
</html>
```

### For example 2:

If you want to divide the webpage in the form of a “T”, where there are two horizontal sub-windows and the second sub-window (frame) is again divided into two columns, you can use the following code:

```
<html><head>...</head>
<FRAMESET rows="20%,*">
<frame src="a.html">
<FRAMESET cols="30%,*>
<frame src="b.html">
<frame src="c.html">
</FRAMESET>
</FRAMESET>
</html>
```

### For example 3:

If you want to divide the webpage in the form of an “inverted T”, where there are two horizontal frames and the first frame is again divided into two columns, you can use the following code:

```
<FRAMESET rows="16%,84%">
<FRAMESET cols="50%,50%">
<frame src="a.html" name="topleft">
<frame src="b.html" name="topright">
</FRAMESET>
<frame src="secondrow.html" name="2row">
</FRAMESET>
```

The first FRAMESET divides the screen into two rows. Now since the control has come to the first row of the new screen, the second FRAMESET can divide it into two columns, open the two HTML documents, a.html and b.html, give them a name and then move the control to the second row of the new screen. Since now the control is on the second screen, SRC can now open secondrow.html as shown in figure 15.

Output produced by the above HTML code:

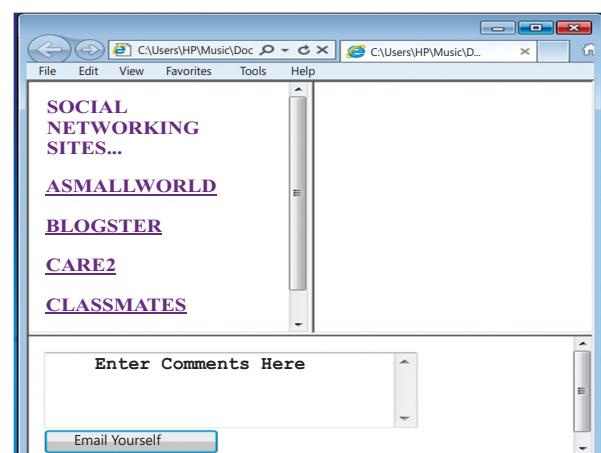


Figure 15

#### **For example 4:**

If you do not want to show the grey border dividing the frames and there is 50 pixels space between the two frames, you can use the following code. The output of this code is given below:

```
<html>
<head>
</head>
<FRAMESET cols="120,*" frameborder=0 framespacing=50>
    <frame src ="a.html">
    <frame src ="formbutton.html">
</FRAMESET>
</html>
```

Output produced by the above HTML code:



Figure 16

#### **For example 5:**

If you want to insert scrolls in the frames when the contents of the frame are not visible, use the value “auto” as shown below:

```
<html>
<head>
</head>
<FRAMESET cols="120,*" frameborder=0 framespacing=50>
    <frame src ="a.html" scrolling=auto>
    <frame src ="formbutton.html" scrolling=no>
</FRAMESET>
</html>
```

The difference between example 4 and example 5 is that the latter does not show horizontal scroll bars in the right side frame

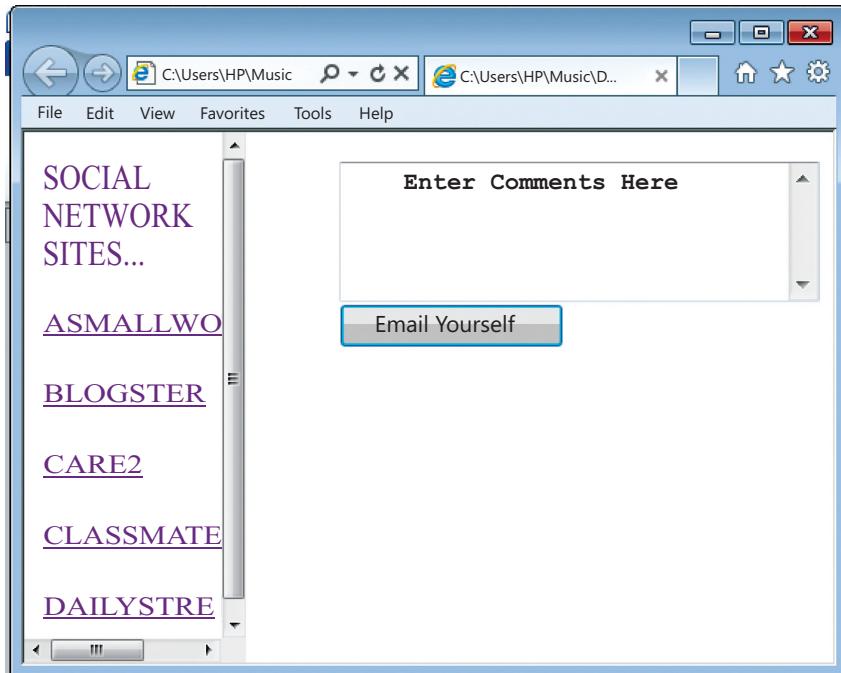


Figure 17

#### For example 6:

If you do not want the user to adjust the frame size in the webpage, use noresize attribute. Since it takes the value “noreferrer”, you can omit the value and simply write the attribute as shown below:

```
<html>
<head>...</head>
<FRAMESET cols=“120,*” frameborder=“0” framespacing = “0”>
<frame src = “a.html” scrolling= no noresizenoresize
```

#### For example 7: Jumping from one section to another

If you want to navigate from one section to another in a frame then you may have to name each section using anchor tag and use the name (S12) in **src** attribute of the **<frame>** tag as shown below. Notice that the name of the HTML document is followed by hash symbol (#). This symbol separates the name of the HTML file and the section within it.

```
<html>
<head>...</head>
<FRAMESET cols=“120,*”>
<frame src = “a.html”>
<frame src = “Jump.html#S12”>
</FRAMESET>
</html>
```

Further, the HTML document named “jump.html” should contain a section with the name S12. To implement this, we prepare the body of “jump.html” as under:

```
<html>
<head> ... </head>
<body>
<a name = “S1”> </a>
<h1> Section 1 </h1> This is section 1.
<h1> Section 2 </h1> This is section 2.
<h1> Section 3 </h1> This is section 3.
<h1> Section 4 </h1> This is section 4.
<h1> Section 5 </h1> This is section 5.
<h1> Section 6 </h1> This is section 6.
<h1> Section 7 </h1> This is section 7.
<h1> Section 8 </h1> This is section 8.
<h1> Section 9 </h1> This is section 9.
<h1> Section 10 </h1> This is section 10.
<h1> Section 11 </h1> This is section 11.
<a name = “S12”> </a>
<h1> Section 12 </h1> This is section 12.
<h1> Section 13 </h1> This is section 13.
<h1> Section 14 </h1> This is section 14.
<h1> Section 15 </h1> This is section 15.
</body>
</html>
```

Now when the first code is executed, it calls the HTML document i.e. jump.html. The section number S12 of jump.html becomes visible the moment it gets loaded in the second frame.

### For example 8: Navigational frame

If you want to show the menu items as links on the first frame and display the content of the click on the second frame, you need to prepare a navigational frame.

First divide the webpage into frames as done earlier. Also give a name to each frame as shown below. Save this file as **b.html**.

```
<html>
<head>...</head>
<FRAMESET cols="30%,*">
    <frame src ="a.html" name="menu">
    <frame src ="b.html" name="content">
</FRAMESET>
</html>
```

Secondly, prepare **a.html** using the HTML code given below:

```
<html>
<head></head>
<body>
    <font face="Felix Titling" size="4" color="purple">
        Social Networking Sites...
        <a href= "http://www.asmallworld.net/" target= "content">
            <h4> ASmallWorld</h4></a>
        <a href= "http://www.blogster.com/" target= "content">
            <h4>Blogster</h4></a>
        <a href= "http://www.care2.com/" target= "content"> <h4>Care2</h4></a>
        <a href= "http://www.classmates.com/" target= "content">
            <h4>Classmates</h4></a>
        <a href= "http://www.dailystrength.org/" target= "content">
            <h4>DailyStrength</h4></a>
    </font>
</body>
</html>
```

The output window of a.html is shown in figure 18

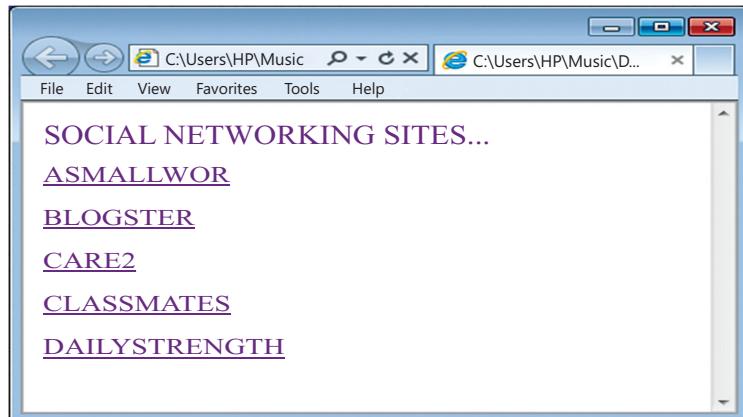


Figure 18

When a user clicks on one of the social networking sites like A Small World or the Class Mates, the webpage will get opened in the second frame on the right hand site of b.html. It is this frame whose name is "content" and which is being called by **target** attribute in **anchor** tag in a.html.

The figure 19 shows a navigational frame, which means that you can navigate from one social networking site to another without changing the webpage or moving from one window to another. By remaining in the existing window, you can switch from one site to another, i.e. you can navigate from one social networking site to another. Just run the HTML document (b.html), see the output in figure 19 and enjoy the fun...

A screenshot of a Microsoft Internet Explorer browser window. The title bar shows the path 'C:\Users\HP\Music\Desktop\b.html'. The menu bar includes File, Edit, View, Favorites, Tools, and Help. The main content area is divided into two frames. The left frame, titled 'SOCIAL NETWORKING SITES...', contains links to ASMALLWOR, BLOGSTER, CARE2, CLASSMATES, and DAILYSTRENGTH. The right frame, titled 'classmates™', displays an advertisement for the website: 'classmates is the best way to find old high school friends and browse the biggest collection of yearbooks'. Below the ad, there is a section titled 'I graduated in' followed by a grid of state names. The grid is organized into four columns: Alabama, Illinois, Montana, Rhode Island; Alaska, Indiana, Nebraska, South Carolina; Arizona, Iowa, Nevada, south Dakota; Arkansas, Kansas, New Hampshire, Tennessee; California, Kentucky, New Jersey, Texas; Colorado, Louisiana, New Mexico, Utah; Connecticut, Maine, New York, Vermont; Delaware, Maryland, North Carolina, Virginia; District of Columbia, Massachusetts, North Dakota, Washington; Florida, Michigan, Ohio, West Virginia. The browser has a standard blue header and a vertical scroll bar on the right.

Figure 19

# Summary

1. The <TABLE> tag arranges the data items on the web page in rows and columns.
  2. The TH tag encloses the Header object and makes the data boldface and center aligned.
  3. The TD keeps the data in regular font and left aligned by default.
  4. TR tag in turn is nested within the TABLE tag and is used to define rows in a table.
  5. The colspan attribute helps in merging the columns of a row. This attribute is not used with table tag but with the <TH> or the <TD> tag.
  6. When the table's cells spans across more than one row, it is called ROWSPAN. If we want to give the table a nice sidebar, this attribute is used. The rowspan appears as merged cells.
  7. The <caption> tag is used to provide a text to the table so as to explain the contents of the table. It is generally in bold, at center with respect to the table.
  8. A frame divides the screen into separate windows with both vertical and horizontal scroll bars.. The windows so formed may appear to be sub-windows of the main window (the webpage).
  9. A FRAMESET element is the parent element that defines the characteristics of individual frame pages.

# EXERCISE

## A. Multiple choice questions

6. In order to add border to a table, BORDER tag is specified in which tag
  - (a) THEAD
  - (b) TBORDER
  - (c) TABLE
  - (d) TR
7. Which of these tags are called table tags?
  - (a) <Thead><body ><tr>
  - (b) <Table><tr><td>
  - (c) <Table><head><tfoot>
  - (d) <Table><tr><tt>
8. \_\_\_\_\_ tag is used to define the heading of a table
  - (a) TABLE
  - (b) COLUMN
  - (c) HEADING
  - (d) TITLE
9. Which HTML command is used to align the contents of the cell to right.
  - (a) <TR align= right->
  - (b) <TD align = right>
  - (c) <TD> align = right
  - (d) All of the above
10. Which of the following statements is incorrect:
  - (a) < frame rows = "20% , 80 %">
  - (b) < frame cols = "40% , 60 %">
  - (c) < frame rows = "60% , 60 %">
  - (d) < frame rows = "60% , 40 %">

#### B. Answer the following questions:

1. What attribute will be used on the CAPTION tag to put the table description at the bottom of the table?
2. Write the code to display a 'ghost cell'.
3. Name the tag that defines how to divide the window into frames.
4. Name the tag that is used to put HTML document into frames.
5. Where the text is displayed which is specified in the <caption> tag?
6. Which attribute will you use if you do not want frame windows to be resizable?
7. Differentiate between <TH> and <Caption> tags.
8. How <TD> and <TR> are different from each other?
9. What is the purpose of using Frames in HTML pages?
10. Discuss all the tags with their attributes to create a frame.
11. What does 'n' stands for in the following tags?
  - (a) <Table border=n>
  - (b) <table bgcolor = "n">
  - (c) <td bgcolor = "n">
  - (d) <td width = n>
  - (e) <a href= "n">

12. Which code snippet will display the following? Explain why

MERGEDROW	
R2	1
R3	2
R4	3

Option A

```
<TABLE border=2>  
  <TR>  
    <TH>MERGEDROW</TH>  
    <TH> </TH>  
  </TR>  
  <TR>  
    <TD>R2</TD>  
    <TD>1</TD>  
  </TR>  
  <TR>  
    <TD>R3</TD>  
    <TD>2</TD>  
  </TR>  
  <TR>  
    <TD>R4</TD>  
    <TD>3</TD>  
  </TR>  
</TABLE>
```

Option B

```
<TABLE border=2>  
  <TR>  
    <TH>MERGEDROW</TH>  
    <TH>&nbsp;</TH>  
  </TR>  
  <TR>  
    <TD>R2</TD>  
    <TD>1</TD>  
  </TR>  
  <TR>  
    <TD>R3</TD>  
    <TD>2</TD>  
  </TR>  
  <TR>  
    <TD>R4</TD>  
    <TD>3</TD>  
  </TR>  
</TABLE>
```

### C. Lab Session

**Task 1:** Create a website with a header area and two columns below to contain the navigation bar on the left and the content bar to the right. Given below is the task you must complete with this unit

#00FFFF	
30% #00CCCC	70% #00EEEE

Create a folder to store all your project files in one place

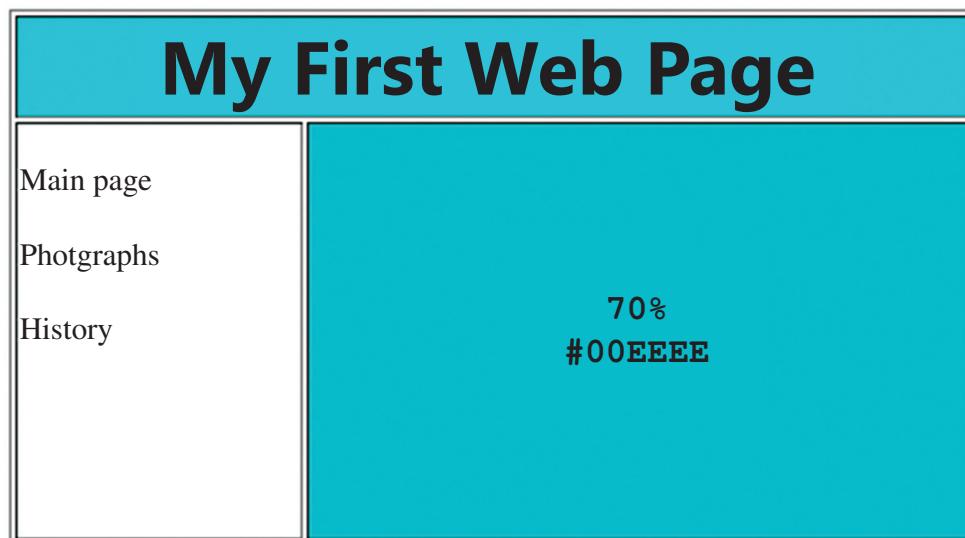
Create your HTML page

Define the table and the required elements to display the image given here.

The 30% and 70% define the column widths

The hash code in each area define the colour code to be used

**Task 2:** Make the required changes to the original file to create the following display. Save it as task2.html

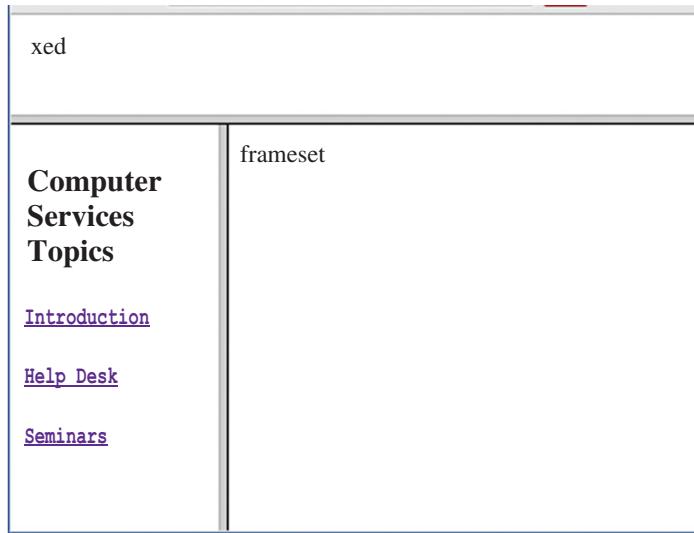


More information about the TABLE element can be found at

<https://developer.mozilla.org/en-US/docs/Web/HTML/Element/table>

**Task 3:** Now create the same kind of visual effect that you did with tables but use frames instead. Save the document as task3.html

When displayed it should look like this.



**Note:** The Frameset and Frame are not supported in HTML5.

**Task 4:** Write the coding in HTML to create a Table as shown below:

#### STUDENT MARKSHEET

Roll no.	Name	Marks		
		First Term	Second Term	Third Term
1	Arpit Kumar	140	160	175
2	Nilima Kapoor	190	180	116
3	Prerna Sharma	130	115	178

**Hyperlink the names with the following files**

1. Arpit Kumar: Arpit.ppt
2. Nilima Kapoor: Nilima.ppt
3. Prerna Sharma: Prerna.ppt



# Chapter 4

# Forms

## Learning Objectives

After learning this chapter learner will be able to:-

- State the purpose of the FORM tag.
- List the attributes that can be used with the FORM tag to make web page more interactive.
- Learn to post the details filled in the form on the server.
- Differentiate the working of different controls.
- Understand the use of all the controls placed on the form.
- Assign attributes to the <input> element to create the different FORM objects

## INTRODUCTION

A form is an object that is used for collecting data from the user. We generally come across such forms whenever we are creating a new account either in bank (manually) or for an email id (computerized).

In HTML, a form is a window that consists of the elements of a form called the form fields. These fields may be text field, text area, drop-down box, radio buttons, checkbox and/or a command button. HTML forms are used to pass data to a server. A form can be inserted in HTML documents using the HTML form element which acts as a container for all the input elements. All the information collected by a form can be submitted to a processing agent (a file containing a script made to process this information) that's usually specified in the "action" attribute of the Form tag.

The basic syntax is of a form is:

```
<form method = “get | post” action = “”>  
  <input>  
  <input>  
</form>
```

The above code contains both the start tag and the end tag of <form> to indicate the beginning of form object and end of form object. The <input> tag inside the form tag

does not have an end tag. There can be as many <input> tags as form fields you want in your web page.

## 1. METHOD ATTRIBUTE OF FORM

The method attribute specifies how to send form-data (the form-data is sent to the page specified in the action attribute). The form-data can be sent as URL variables (with method="get") or as HTTP post transaction (with method="post").

### 1.1 GET method:

- ❖ Appends form-data into the URL in name/value pairs
- ❖ The length of a URL is limited (about 3000 characters)
- ❖ Never use GET to send sensitive data! (will be visible in the URL)
- ❖ Useful for form submissions where a user want to bookmark the result
- ❖ GET is better for non-secure data, like query strings in Google

### 1.2 POST method:

- ❖ Appends form-data inside the body of the HTTP request (data is not shown in URL)
- ❖ It has no size limitations
- ❖ Form submissions with POST cannot be bookmarked

#### Syntax

```
<form method="get|post" action= "address">
```

- ❖ action=address
- ❖ method=post or method=get

### 1.3 Attribute Values

Value	Description
Get	Default. Appends the form-data to the URL in name/value pairs: URL?name=value&name=value
Post	Sends the form-data as an HTTP post transaction

## 2. INPUT TAG

The <input> tag collects the information from the user.

The attributes are:

Attribute Name	Description
Name	takes a string of characters as internal name of the field, to be used as a reference later
Size	takes the value of a number in quotes which is equal to the width of the field.
Maxlength	takes the value of a number in quotes which is equal to the maximum number of characters that can be entered.
Type	takes the value of the field. It can take the value as “text” or “radio” or “checkbox” or “submit”.

### 2.1 TextBox Field

If the value of the **type** attribute is “text” i.e. <input type= “Text”>, the form will show a textbox. This textbox accepts the input in one line.

Along with this the TextBox field accepts value, size, name, maxlength, align and tabindex within the <input> tag.

Attributes of Text Field	Description
Size	It defines the width of the field. It contains no. of visible characters.
Maxlength	It defines the maximum length of the field. It contains maximum no. of characters that can be entered in the field.
Name	It adds an internal name to the field so the program that handles the form can identify the fields.
Value	It defines what will appear in the box as the default value.
Align	It defines how the text field will be aligned on the form. Valid entries are: TOP, MIDDLE, BOTTOM, RIGHT, LEFT, TEXTTOP, BASELINE, ABSMIDDLE, ABSBOTTOM.
Tabindex	It defines in which order the different fields should be activated when the visitor clicks the tab key.

### For Example:

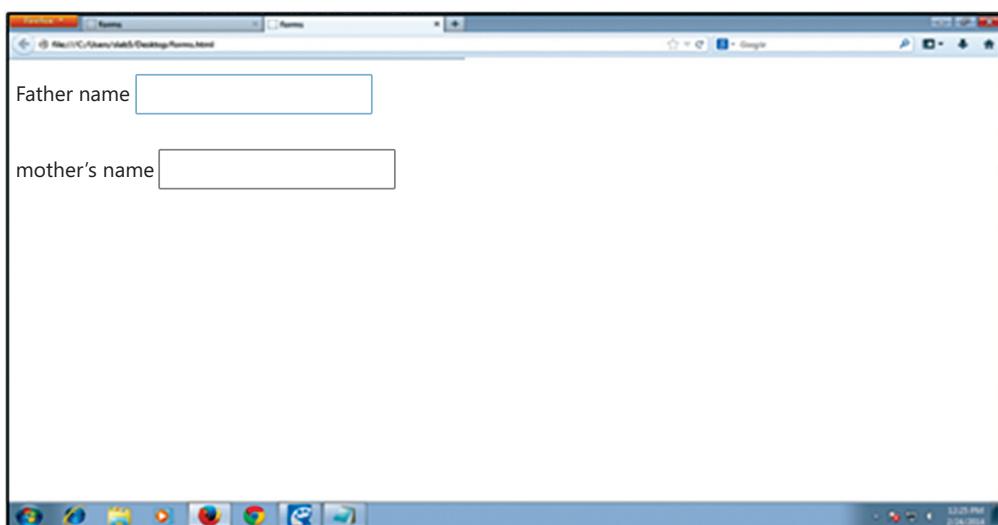
Two textboxes whose internal name (computer can understand the internal name) is “Fname” and “Mname” are created using the value “text” for the **type** attribute. The internal name is different from the label.

HTML Code:

```
<form>  
Father's Name:  
<input type="text" size = "20" name="FName" >  
<br>  
Mother's name:  
<input type="text" size = "20" name="MName">  
</form>
```

The above code creates two textboxes, each of which is 20 characters wide. The two textboxes are arranged vertically one below the other. The **<br>** tag does the work of Enter key.

### Output:



### 2.2 Text Area



Text areas are the fields that displays several text lines at a time. Textarea field is generally used to prepare the body of the email or use it to take comment from the user. The **<textarea>** tag has both start and the end tag indicating from where the textarea begins and where the area where you were writing text ends.

The attributes are:

Attribute Name	Description
Cols and Rows	It takes the value as number. While cols indicate the length of the textarea, the rows indicate the number of rows with text that will be visible at a time.
Name	It provides an internal name to the textarea field as understood by the computer.
Tabindex	It defines the order number of activation of this field when the visitor clicks on the tab key.
Wrap	<p>It helps in flowing the text to the next row in a paragraph when the text reaches the right hand border of the text area.</p> <ul style="list-style-type: none"><li>(i) It can take three types of values as discussed below:</li><li>(ii) If the text is not wrapped, i.e. its value is set to "<b>wrap off</b>", it will be placed in the first row of the text area. In such a case if the sentence doesn't get completed at the right hand border of the text area, the text after the border will not be visible.</li><li>(iii) The value <b>Virtual</b> recognizes the text with line breaks when textarea is loaded on the web page.</li><li>(iv) <b>Physical</b> defines the format of the text. It will appear on the webpage as inserted by the user.</li></ul>

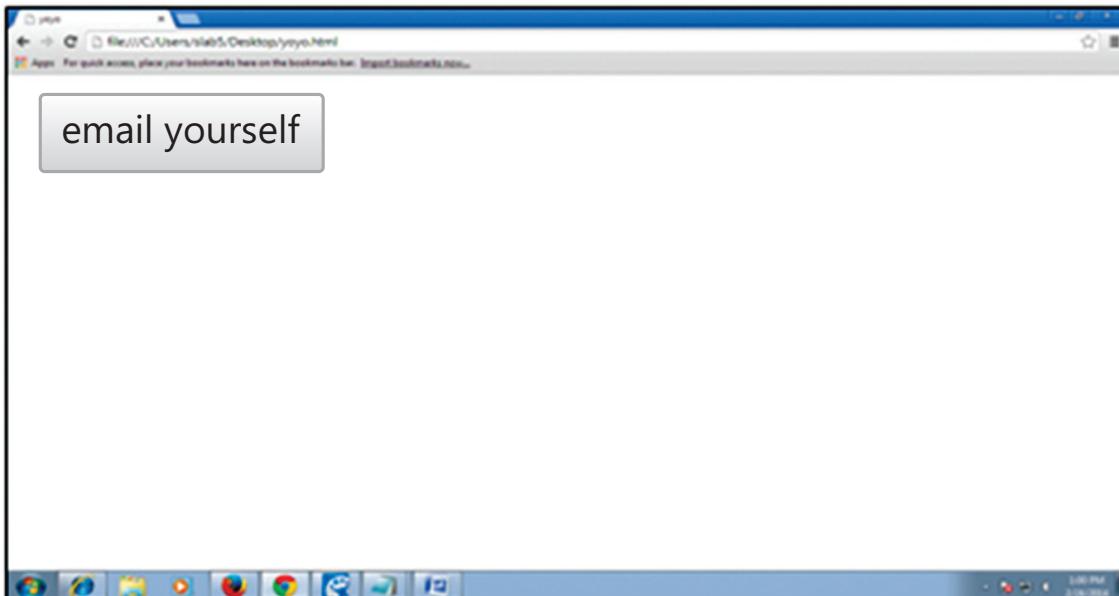
#### For Example:

The following code displays the use of <textarea> tag.

```
<form method="post" action="mailto:youremail@gmail.com">
    <textarea rows="5" cols="30" wrap="physical" name="comments">
        Enter Comments Here
    </textarea>
    <input type="submit" value="Email Yourself">
</form>
```

The above code produces the following output which displays a text area of 5 lines visible at a time and 30 characters long with a word wrap facility where the text flows to the next line if the active text area is smaller than 30 characters due to small size of the webpage opened by the user.

## Output:



### 2.3. Radio Buttons

If the value of the **type** attribute is “radio” i.e. `<input type=“Radio”>`, the form will show a radio button. This button is also called toggle button.

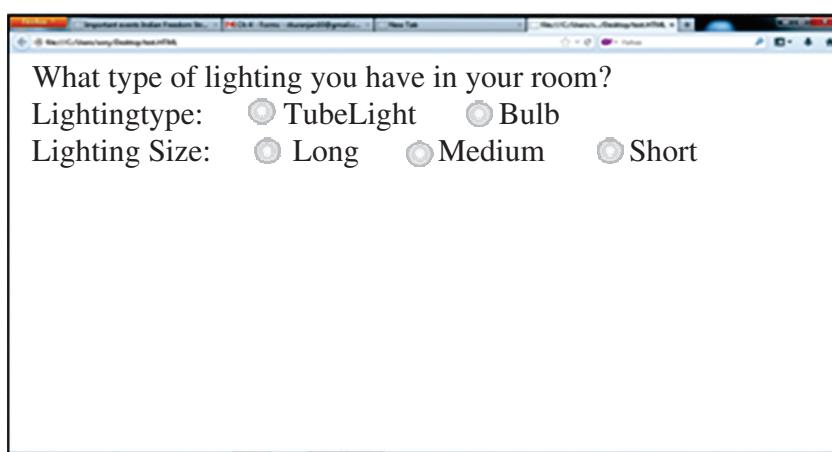
Radio button enables the selection of one of the options out of the many.

Attributes of Text Field	Description
Name	It adds an internal name to the field so the program that handles the form can identify the fields. To group the radio buttons so that only one could be selected at a time, same name is given to all the buttons.
Value	It defines what will be submitted if checked.
Align	It defines how the text field will be aligned on the form. Valid entries are: TOP, MIDDLE, BOTTOM, RIGHT, LEFT, TEXTTOP, BASELINE, ABSMIDDLE, ABSBOTTOM.
Tabindex	It defines in which order the different fields should be activated when the visitor clicks the tab key.
Checked	This attribute can have value (e.g., <code>checked=“checked”</code>   <code>unchecked</code> ).

### For Example:

```
<form>
What type of lighting you have in your room? <br>
Lightingtype:
<input type="radio" name="Ltype" value="tube">TubeLight
<input type="radio" name="Ltype" value="bulb">Bulb <br>
Lighting Size:
<input type="radio" name="LSize" value="Long">Long
<input type="radio" name="LSize" value="medium">Medium
<input type="radio" name="LSize" value="short">Short <br></form>
```

The above code produces the following output:



The user is allowed to select one of the two from Lighting type i.e. either TubeLight or Bulb. Similarly, the user can select any one of the three from Lighting Size i.e. Long, Medium and Short. This is achieved by naming all options of a set the same. Here all light type has the name Ltype while all light size is name LSize. This is where the id attribute comes handy, especially if the value has to be used later on.

### 2.4. Checkboxes

If the value of the type attribute is “checkbox” i.e. `<input type=“Checkbox”>`, the form will show a checkbox. As compared to radio button, a checkbox allows for multiple selections of items.

The check box’s attributes namely, name, align, value and tabindex behave the same as a radio button’s attributes.

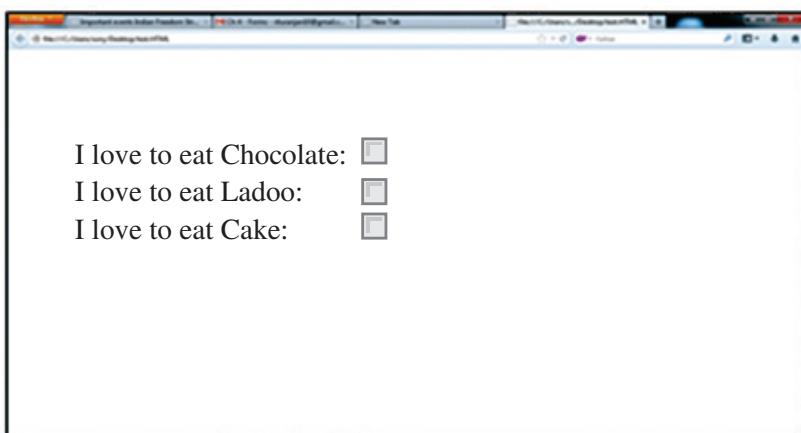
Every checkbox does not get a different name, rather a collection of checkboxes get the same name so as to refer to a group as shown in the following code.

#### For example:

All the checkboxes have the same name i.e. “sweet”, though the value for each one of them is different.

```
<form>
I love to eat Chocolate:
<input type="checkbox" name="sweet" value="Chocolate">
<br>
I love to eat Ladoo:
<input type="checkbox" name="sweet" value="Ladoo">
<br>
I love to eat Cake:
<input type="checkbox" name="sweet" value="Cake">
</form>
```

The output of the above code is shown below:



## 2.5. Command Button

If the value of the **type** attribute is “Submit” i.e. `<input type=“submit | reset”>`, the form will show a command button.

- ❖ **Submit buttons:** When activated, a submit button submits a form. A form may contain more than one submit button.
- ❖ **Reset buttons:** When activated, a reset button resets all controls to their initial values.

This command button will perform some action when the user clicks on it. The action is defined by **action** attribute in `<form>` tag along with the **method** attribute as shown in the following code:

```
<form method="post" action="mailto:youremail@email.com">
<input type="submit" value="Email Yourself">
</form>
```

The above code displays the following output:



When the user click on the command button called “Email Yourself”, the action specified in `<form>` tag is performed. It opens your email inbox in `email.com`.

## 2.6. Drop down Box

Drop down Box contains a list that prompts the user to select one item from the list. It is created by using `<select>` and `<option>` tags. Both `<Select>` and `<option>` tag have start and an end tag. A SELECT element must contain at least one OPTION element.

The attributes used are:

Attribute	Description
Name	It adds an internal name to the field so the program that handles the form can identify the fields
Size	It defines the number of items to be visible when user clicks on the drop down box
Multiple	It allows for multiple selections
Value	It defines what will be submitted to the computer when an item is selected. If the <b>value</b> attribute takes the string as “CHO”, then “CHO” will only be understood by the computer when the item selected is “Chocolate”.

The `<option>` tag is used for creating a list inside a `<select>` tag as shown under:

```
<select>
<option>Chocolate</option>
<option>Ladoo</option>
<option>Cake</option>
</select>
```

## Highlighting one item in the dropdown box

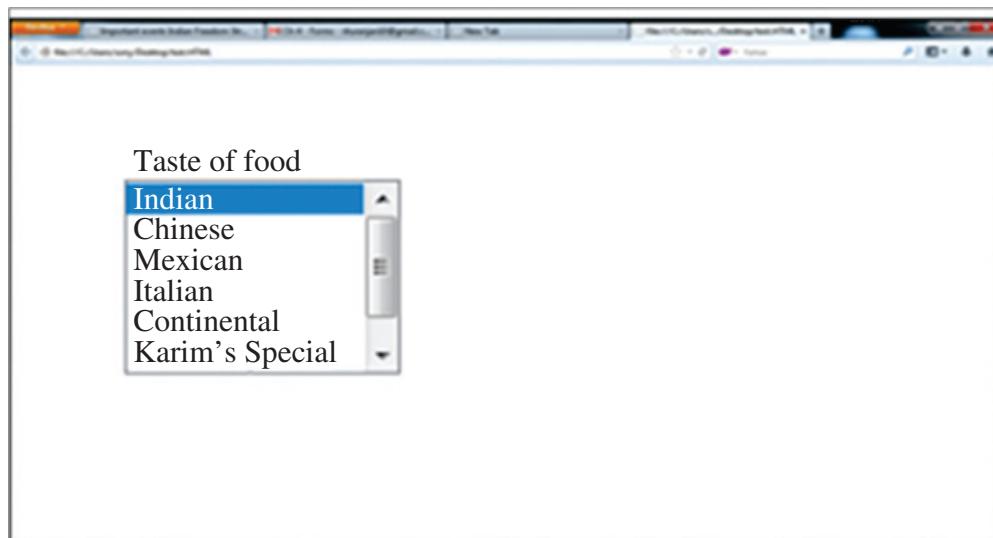
You can force an item to be selected by default by adding the “selected” in the <option> tag as <option selected>.

### For Example:

The following code displays the use of <select> and <option> tag to show the dropdown box in the browser. The **size attribute takes the value as number “4”, specifying the dropdown box to show 4 items at a time in the list box.**

```
<form method="post" action="mailto:youremail@email.com">
Taste of food
<select multiple name="taste" size="4">
<option value="indian" selected>Indian</option>
<option value="chinese" >Chinese</option>
<option value="mexican" >Mexican</option>
<option value="italian" >Italian</option>
<option value="continental" >Continental</option>
<option value="karim" >Karim's Special</option>
<option value="japanese" >Japanese Sweets</option>
</select>
<input type="submit" value="Email Yourself">
</form>
```

The following output will display 6 items in the dropdown box, which is already open and where the first item is already selected.



# Summary

1. A form is an object that is used for collecting data from the user.
  2. A The method attribute specifies how to send form-data using URL variables (with method="get") or as HTTP post transaction (with method="post").
  3. A The <input> tag collects the information from the user.
  4. A The textfield control accepts the input in one line.
  5. A Text areas are the fields that displays several text lines at a time. The <textarea> tag has both start and the end tag.
  6. A Radio button enables the selection of one of the options out of the many.
  7. A Checkbox allows for multiple selections of items.
  8. A The command button placed on the form performs some action when the user clicks on it.
  9. A Submit buttons: When activated, a submit button submits a form. A form may contain more than one submit button.
  10. Reset buttons: When activated, a reset button resets all controls to their initial values.
  11. Drop down Box contains a list that prompts the user to select one item from the list. It is created by using <select> and <option> tags.

# EXERCISE

## A. Multiple choice questions

### **B. Answer the following questions:**

1. Why forms are used in web pages?
  2. Explain all the attributes of Form tag.
  3. Differentiate between Get & Post methods of Form tag.
  4. How text field and text area controls are different from each other?
  5. Explain the use of Radio buttons in HTML forms with the help of an suitable example.
  6. Mention all the attributes of Check box. Justify how it is different from Radio button.
  7. State the purpose of Submit and Reset button.
  8. Which attributes are necessary to insert drop down list in a HTML page?
  9. Sometimes it is better to use the text area element instead of an input element of type text. Write a short note to explain when and why?

## C. Lab Session

1. Write HTML code to generate the following form. Save it as task1.html

Name	<input type="text" value="First Name"/>	<input type="text" value="Last Name"/>
Gender	<input type="text" value="Male"/>	
Age	<input checked="" type="radio"/> Below 25 <input type="radio"/> Above 25	
Hobbies	<input type="checkbox"/> Outdoor Games <input type="checkbox"/> Painting <input type="checkbox"/> Dancing <input type="checkbox"/> Music	
<input type="button" value="Submit"/>		

2. Write HTML code to generate the following form. Save it as task2.html

Emergency Contact Info		More Actions ▾	
<b>First Name</b>	<input type="text"/>	<b>Emergency Contact Info</b>	
<b>Last Name</b>	<input type="text"/>	<b>Name</b>	<input type="text"/>
<b>Gender</b>	Male <input type="radio"/>	<b>Relationship</b>	<input type="text"/>
<b>Date of Birth</b>	<input type="text"/> [dd-MMM-yyyy]	<b>Address</b>	<input type="text"/>
<b>Medical Information</b>			
<b>Hospital preference</b>	<input type="text"/>	<b>City</b>	<input type="text"/>
<b>Insurance Company</b>	<input type="text"/>	<b>State</b>	-Select- <input type="button" value="▼"/>
<b>Policy Number</b>	<input type="text"/>	<b>Country</b>	-Select- <input type="button" value="▼"/>
<b>Physician's Name</b>	<input type="text"/>	<b>Home Phone</b>	<input type="text"/>
<b>Phone Number</b>	<input type="text"/>	<b>Work Phone</b>	<input type="text"/>
<b>Allergies (If any)</b>			
<input type="button" value="Submit"/>   <input type="button" value="Reset"/>			

3. Generate the output by using the following code:

```

<FORM action="http://prog/user" method="post">
    <P>
        <LABEL for="firstname">First name: </LABEL>
        <INPUT type="text" id="fname"><BR>
        <LABEL for="lastname">Last name: </LABEL>
        <INPUT type="text" id="lname"><BR>
        <LABEL for="email">email: </LABEL>
        <INPUT type="text" id="mail"><BR>
        <INPUT type="radio" name="Gender" value="Male"> Male<BR>
        <INPUT type="radio" name="Gender" value="Female"> Female<BR>
        <INPUT type="submit" value="Send"> <INPUT type="reset">
    </P>
</FORM>

```



# Chapter 5

## DHTML & CSS

### Learning Objectives

By the end of this chapter, learner will be able to:

- Differentiate between HTML & DHTML
- State the purpose of using CSS.
- List different advantages and disadvantages of using CSS.
- Understand the working of all the mentioned properties of CSS.
- Create an interactive webpage using CSS.

### INTRODUCTION

When we open any web page and sends it to the computer requesting it cannot get any more data from the server unless a new request is made. So to overcome this drawback we use Dynamic HTML (DHTML) which is combining HTML and a scripting language that runs on the Client's browser to bring special effects to otherwise static pages.

#### 1. DHTML

DHTML is the combination of HTML and JavaScript. DHTML is the combination of several built-in browser features in fourth generation browsers that enable a web page to be more dynamic.

**DHTML is a combination of technologies used to create dynamic and interactive Web sites.**

- ❖ **HTML** - For creating text and image links and other page elements.
- ❖ **CSS** - Style Sheets for further formatting of text and html, plus other added features such as positioning and layering content.
- ❖ **JavaScript** - The programming language that allows you to accesses and dynamically control the individual properties of both HTML and Style Sheets

“Dynamic” is defined as the ability of the browser to alter a web page’s look and style after the document has loaded.

DHTML is not a scripting language (like JavaScript), but merely a browser feature- or enhancement- that gives your browser the ability to be dynamic.

DHTML is a collection of features that together, enable your web page to be dynamic. It is the ability of the browser to alter a web page's look and style after the document has loaded.

### **With DHTML you can create:**

- ❖ Animation
- ❖ Pop-up menus
- ❖ Inclusion of Web page content from external data sources
- ❖ Elements that can be dragged and dropped within the Web page

### **Features of DHTML:**

- ❖ DHTML makes documents dynamic. It allows the designer to control how the HTML displays Web pages' content.
- ❖ Web page reacts and change with the actions of the visitor.
- ❖ DHTML helps to exactly position any element in the window, and change that position after the document has loaded.
- ❖ It can hide and show content as needed.
- ❖ DHTML allows any HTML element (any object on the screen that can be controlled independently using JavaScript) in Internet Explorer to be manipulated at any time, turning plain HTML into dynamic HTML.
- ❖ With DHTML, changes occur entirely on the client-side (on the user's browser).

### **Components of DHTML:** Dynamic HTML includes the following components:

- ❖ Conventional HTML
- ❖ Scripts – Small programs designed to manipulate Web pages.
- ❖ Document Object Model (DOM) – The road map through which you can locate any element in an HTML document and use a scripting language, such as JavaScript, to change the element's properties.
- ❖ Absolute Positioning – The elements on the page are placed in a fixed location, as opposed to relative positioning, in which an element's location is relative to particular elements on the page.
- ❖ Multimedia filters – Multimedia features that create visual effects for text, images, and other objects, without imposing long download times on the user.

## 2. CASCADING STYLE SHEETS (CSS)

In this chapter, we will discuss CSS in detail.

**Cascading Style Sheets (CSS)** is a style sheet language used for describing the look and formatting of a document written in a markup language. It is a way to provide style to HTML. Whereas the HTML is the meaning or content, the style sheet is the *presentation* of that document.

Cascading Style Sheets (CSS) is a simple mechanism for adding style (e.g., fonts, colors, spacing) to Web documents.

**The advantages of using CSS are:**

- ❖ It controls layout of many documents from one single style sheet.
- ❖ It has more precise control of layout.
- ❖ It applies different layouts to different media-types.
- ❖ It has numerous advanced and sophisticated techniques to be applied on web pages.

**The Limitations of CSS are:** CSS is very limited in browser compatibility. When you design a web page and you want it to display exactly as you like it. The problem with CSS is that it displays webpages very differently in the different browsers.

Your webpage looks perfect in Mozilla may look different in Internet Explorer. This is a big problem for your site's success.

### 2.1 Methods of applying CSS to an HTML document

There are three ways you can apply CSS to an HTML document. The First method is “In-Line”, Second method is “Internal” and the Third method i.e. external which is most important.

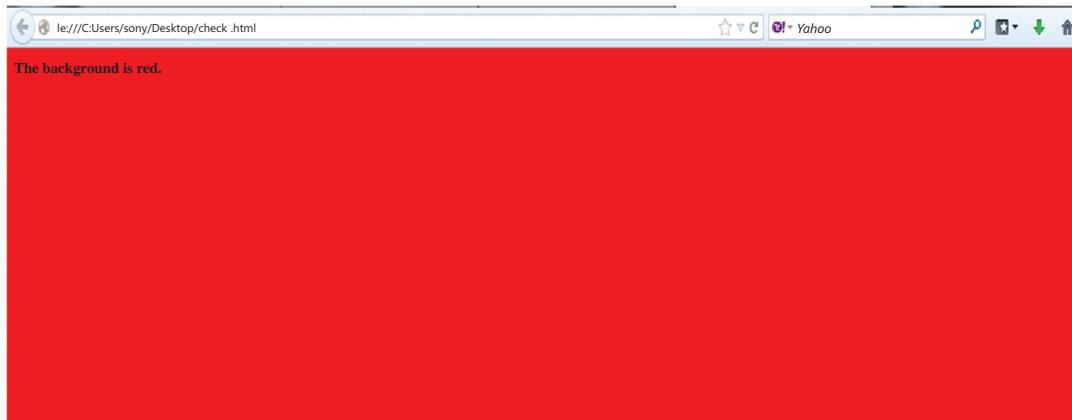
#### Method 1: In-line (the attribute style)

One way to apply CSS to HTML is by using the HTML attribute style.

**Example 1:** To apply the red background color in a webpage, it can be applied in the following manner.

```
<html>
  <head>
    <title>Example</title>
  </head>
  <body style="background-color: #FF0000;">
    <p>The background is red.</p>
  </body>
</html>
```

The above code will produce the following output:

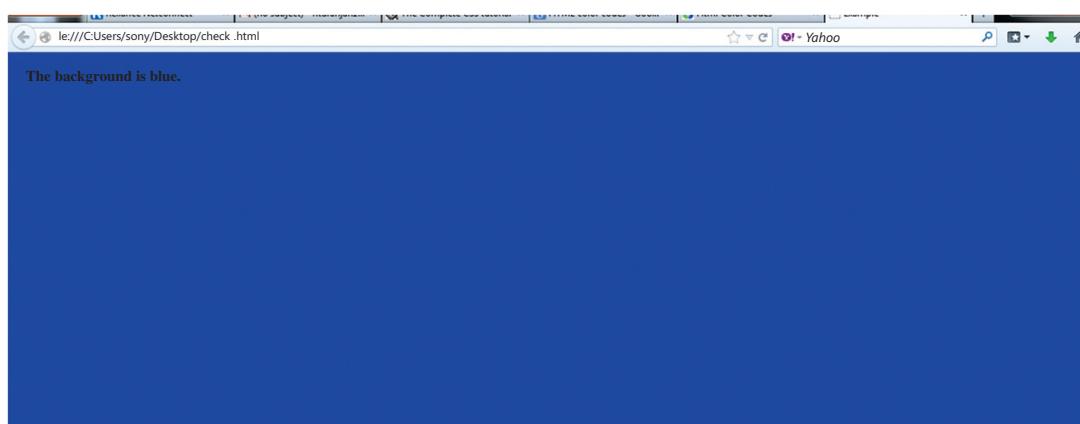


### Method 2: Internal (the tag style)

Another way is to include the CSS codes using the HTML tag <style>. For example like this:

```
<html>
<head>
    <title>Example</title>
    <style type="text/css">
        body {background-color: #0000FF ;}
    </style>
</head>
<body>
    <p> The background is Blue.</p>
</body>
</html>
```

The above code will produce the following output:

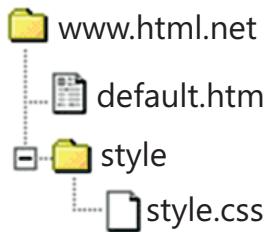


### Method 3: External (link to a style sheet)

The method to link html with style sheet is called external style sheet.

An external style sheet is a text file with the extension .css. Like other files, we can place the style sheet on your web server or hard disk.

For example, save the style sheet with the name **style.css** and place it in a folder named **style**.



To create a link from the HTML document (default.htm) to the style sheet (style.css). The following code will be inserted in the header section of the HTML code i.e. between the <head> and </head> tags. HTML file.

```
<link rel="stylesheet" type="text/css" href="style/style.css" />
```

**The code will be as follows:**

Default.htm

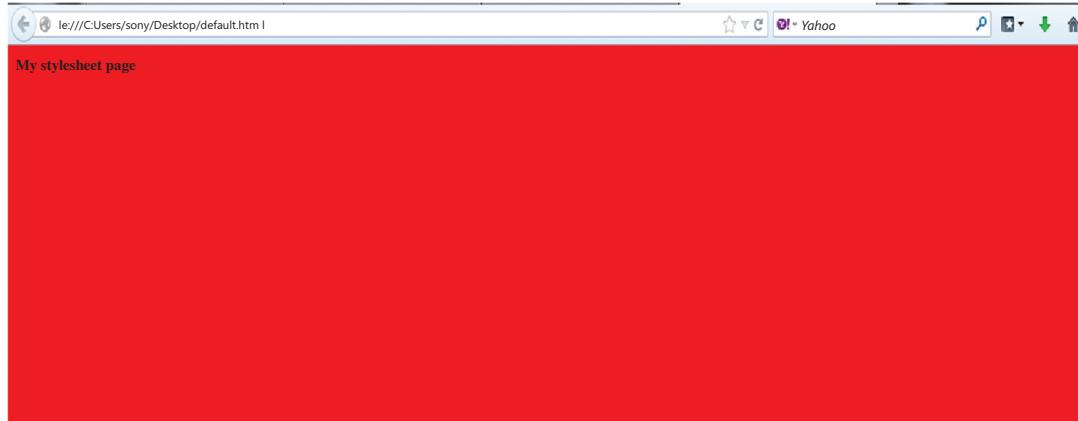
```
<html>
  <head>
    <title>My document</title>
    <link rel="stylesheet" type="text/css" href="style.css" />
  </head>
  <body>
    <h1>My stylesheet Page</h1>
  </body>
</html>
```

**style.css**

```
body {
  background-color: #FF0000;
}
```

This link will display the layout from the CSS file in the browser when displaying the HTML file.

Output of the above code will be as follows:



One CSS file can be used to control the layout of many HTML documents. Using CSS, the change can be made in a few seconds just by changing one code in the central style sheet.

### 3. FONT

#### 3.1 Font Properties

- ❖ FONT-FAMILY
- ❖ FONT-STYLE
- ❖ FONT-SIZE
- ❖ FONT-VARIANT
- ❖ FONT-WEIGHT

##### 3.1.1 Font family [font-family]

The property font-family is used to apply prioritized list of fonts in a web page. If the first font of the list is not installed on the computer then the next font of the list will be displayed until a suitable font is found.

**Fonts family is divided into two categories:**

1. Family-name

e.g. be "Arial", "Times New Roman" or "Tahoma".

2. Generic family

Generic families can be described as groups of family-names with uniformed appearances.

Example: sans-serif, which is a collection of fonts without “feet”.

<b>Times New Roman</b>	These three font-families belong to the genetic family <b>serif</b> . They are characterized by all having “feet”.
<b>Trebuchet</b> <b>Arial</b> <b>Verdana</b>	These three font-families belong to the genetic family <b>sans-serif</b> . They are all characterized by all having “feet”.
<b>Courier</b> <b>Courier New</b> <b>Andale Mono</b>	These three font-families belong to the genetic family <b>monospace</b> . They are all characterized by all characters having a fixed width.

An example of inserting list of fonts in a web page:

```
h1 {font-family: arial, comic sans-serif, "Times New Roman";}  
h2 {font-family: "Times New Roman", verdana, serif;}
```

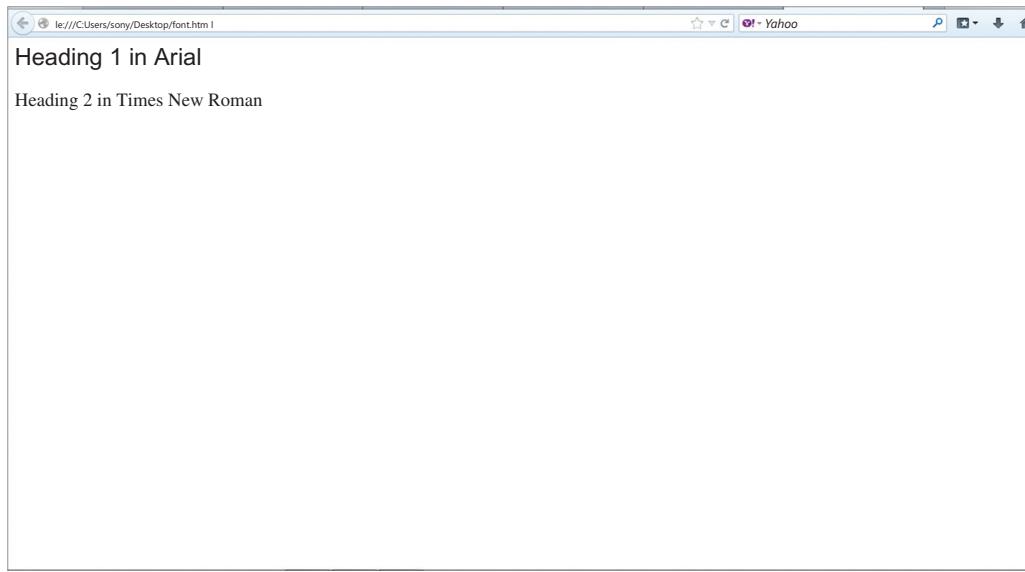
**Code inserted in font.html:**

```
<html>  
<head>  
<title>Example </title>  
  
<link rel="stylesheet" href="ex1.css" type="text/css"/>  
</head>  
<body>  
  <h1>Heading 1 in Arial</h1>  
  
  <h2>Heading 2 in Times New Roman</h2>  
  
  </body>  
</html>
```

**Code inserted in ex1.css:**

```
h1 {font-family: arial, comic sans-serif, "Times New Roman";}  
h2 {font-family: "Times New Roman", verdana, serif;}
```

Output produced by the above code:



### 3.1.2 Font style

The property **font-style** defines the chosen font either in **normal**, **italic** or **oblique**. In the example below, all headlines marked with <h2> will be shown in italics.

```
h1 {font-family: arial, verdana, sans-serif; font-style: oblique;}  
h2 {font-family: "Times New Roman", serif; font-style: italic;}
```

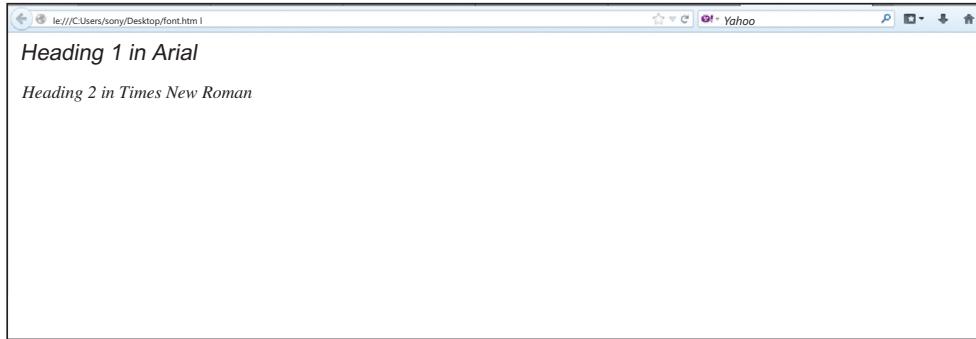
**Code inserted in font.html:**

```
<html>  
<head>  
<title>Example </title>  
  
<link rel="stylesheet" href="ex1.css" type="text/css"/>  
</head>  
<body>  
    <h1>Heading 1 in Arial</h1>  
  
    <h2>Heading 2 in Times New Roman</h2>  
  
    </body>  
</html>
```

### Code inserted in ex1.css:

```
h1 {font-family: arial, comic sans-serif, "Times New Roman"; font-style: oblique;}  
h2 {font-family: "Times New Roman", verdana, serif; font-style: italic;}
```

Output produced by the above code:



### 3.1.3 Font variant

This property is used to select **normal** or **small-caps** variants of a font. A **small-caps** font displays the smaller sized capitalized letters (upper case) instead of lower case letters.

Sans Book SC <b>ABCABC</b>	Sans Bold SC <b>ABCABC</b>	Serif Book SC <b>ABCABC</b>	Serif Bold SC <b>ABCABC</b>
-------------------------------	-------------------------------	--------------------------------	--------------------------------

If font-variant is set to **small-caps** and no small-caps font is available the browser will most likely show the text in uppercase instead.

```
h1 {font-variant: small-caps;}  
h2 {font-variant: normal;}
```

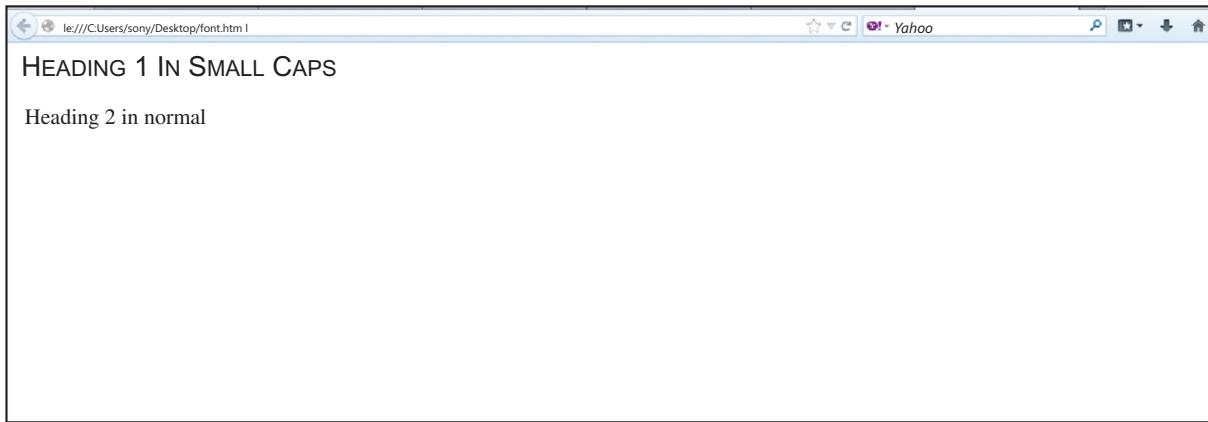
### Code inserted in font.html:

```
<html>  
<head>  
<title>Example </title>  
  
<link rel="stylesheet" href="ex1.css" type="text/css"/>  
</head>  
<body>  
  <h1>Heading 1 in Arial</h1>  
  
  <h2>Heading 2 in Times New Roman</h2>  
</body>  
</html>
```

**Code inserted in ex1.css:**

```
h1 {font-family: arial, comic sans-serif, "Times New Roman"; font-variant: small-caps;}  
h2 {font-family: "Times New Roman", verdana, serif; font-style: italic; font-variant: normal;}
```

Output produced by the above code:



### 3.1.4 Font weight

This property describes how bold or “heavy” a font should be presented. A font can either be **normal** or **bold**. Some browsers supports the use of numbers between 100-900(in hundreds) to describe the weight of a font.

```
p {font-family: arial, verdana, sans-serif; font-weight: normal;}  
td {font-family: arial, verdana, sans-serif; font-weight: bold;}
```

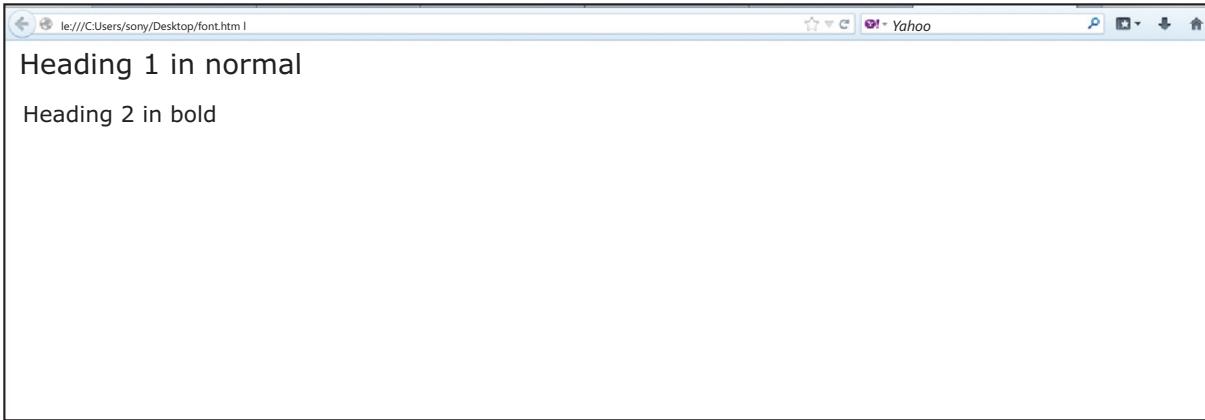
**Code inserted in font.html:**

```
<html>  
<head>  
<title>Example </title>  
  
<link rel="stylesheet" href="ex1.css" type="text/css"/>  
</head>  
<body>  
    <h1>Heading 1 in normal</h1>  
  
    <h2>Heading 2 in bold</h2>  
  
    </body>  
</html>
```

**Code inserted in ex1.css:**

```
{font-family: arial, verdana, sans-serif; font-weight: normal;}  
{font-family: arial, verdana, sans-serif; font-weight: bold;}
```

Output produced by the above code:



**3.1.5 Font size [font-size]**

The font-size property is used to set the size of a font.

There are many different units (e.g. pixels and percentages) to describe font sizes. The following example will illustrate the following effect of font size in a web page.

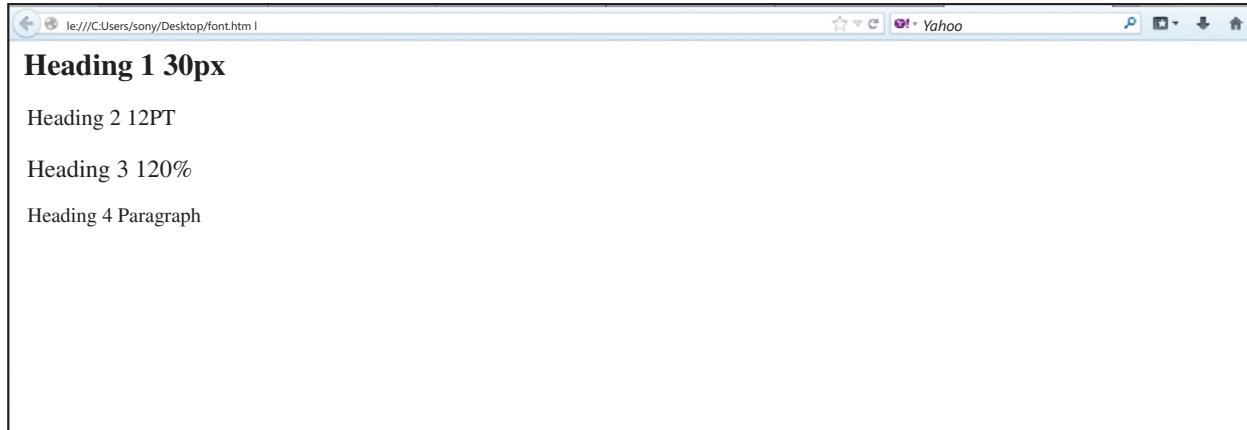
**Code inserted in font.html:**

```
<html>  
<head>  
<title>Example</title>  
  
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />  
</head>  
<body>  
  <h1>Heading 1 30px</h1>  
  <h2>Heading 2 12pt</h2>  
  <h3>Heading 3 120%</h3>  
  <p> Heading 4 paragraph</p>  
  
</body>  
</html>
```

**Code inserted in ex1.css:**

```
h1 {font-size: 30px;}  
h2 {font-size: 12pt;}  
h3 {font-size: 120%;}  
p {font-size: 1em;}
```

Output produced by the above code:



The units ‘px’ and ‘pt’ make the font size absolute, while ‘%’ and ‘em’ allow the user to adjust the font size as he/she see fit. Some users suffer from poor vision or a monitor of bad quality. To make your website readable for everybody, you should use adjustable units such as ‘%’ or ‘em’.

### **3.1.6 Combining [font] styles:**

All the different font properties can be combined in one single property.

For example, to apply different font-properties for <p> tag following code can be used:

```
p {  
    font-style: italic;  
    font-weight: bold;  
    font-size: 30px;  
    font-family: arial, sans-serif;}
```

The order of values for font properties is:

font-style | font-variant | font-weight | font-size | font-family

### **Example:**

Display the content using all the font properties of font family.

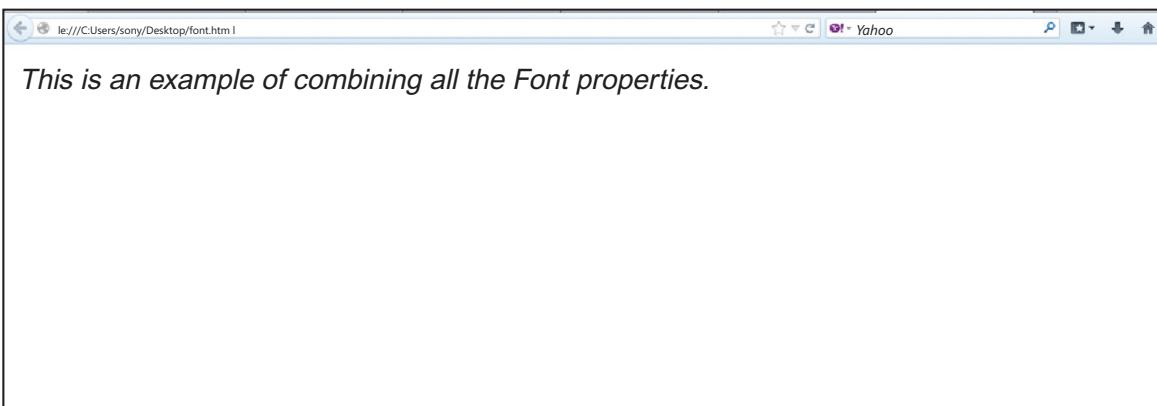
### **Code to be inserted in Font.html**

```
<html>
<head>
<title>Example </title>
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />
</head>
<body>
<p> This an example of combining all the Font properties.</p>
</body>
</html>
```

### **Code to be inserted in ex1.css**

```
p {      font-style: italic;
          font-weight: bold;
          font-size: 30px;
          font-family: arial, sans-serif; }
```

Output produced by the following above code:



## **4. COLOR PROPERTIES**

- ❖ TEXT-INDENT
- ❖ TEXT-ALIGN
- ❖ TEXT-DECORATION
- ❖ LETTER-SPACING
- ❖ TEXT-TRANSFORM

## 4.1 Text indentation

The text-indent property allows you to add effects to text paragraphs by applying an indent to the first line of the paragraph.

### Example:

To apply **40px** indentation to all text paragraphs marked with `<p>`, the following code will be used:

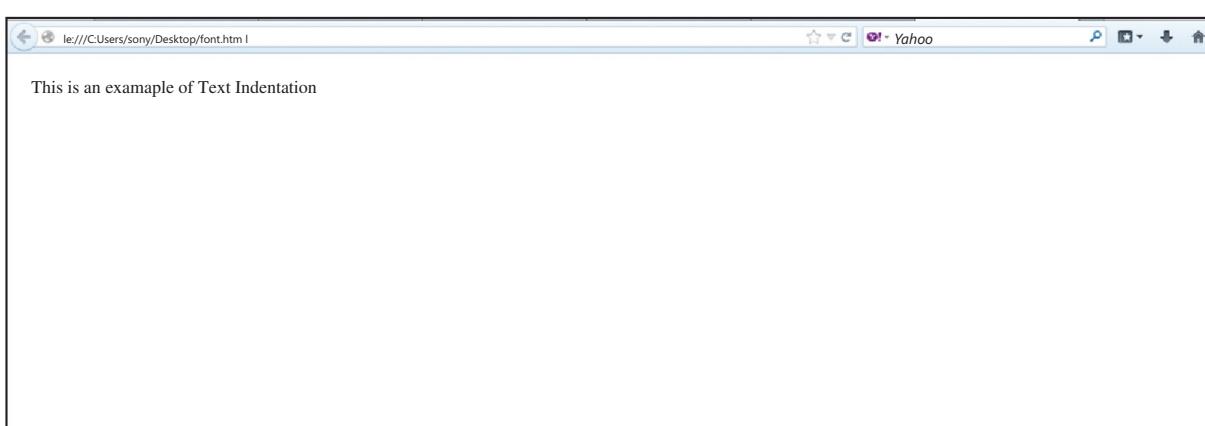
### Code to be inserted in font.html:

```
<html>
<head>
<title>Example</title>
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />
</head>
<body>
<p> This an example of Text Indentation.</p>
</body>
</html>
```

### Code to be inserted in ex1.css

```
p {
    text-indent: 60px;
}
```

### Output produced by the above following code:



## 4.2 Text alignment

The text-align property gives the same effect as attribute align gives in old versions of HTML. The text can either be aligned to the **left**, to the **right** or **center** of the screen. CSS allows you to apply Justified alignment on text which is not available in HTML. The value **justify** will stretch each line so that both the right and left margins are straight.

### Example:

Display the text in table headings <th> aligned to the right while the table data <td> in the centre of the browser window and normal text in paragraphs to be justified.

### Code to be inserted in font.html

```
<html>
<head>
<title>Example </title>
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />
</head>
<body>
    <h1>Text alignment</h1>

    <h2>Text alignmen in table</h2>

    <table border="1" width="100%">
        <tr>
            <th>Heading 1</th>
            <th>Heading 2</th>
        </tr>
        <tr>
            <td>Cell 1</td>
            <td>Cell 2</td>
        </tr>
        <tr>
            <td>Cell 3</td>
            <td>Cell 4</td>
        </tr>
    </table>

    <h2>Justified text in paragraphs</h2>
    <p>The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to serve several billion users worldwide. It is
```

a network of networks that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless, and optical networking technologies. The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents of the World Wide Web (WWW), the infrastructure to support email, and peer-to-peer networks.

</p>

<p>The Internet has no centralized governance in either technological implementation or policies for access and usage; each constituent network sets its own policies. Only the overreaching definitions of the two principal name spaces in the Internet, the Internet Protocol address space and the Domain Name System, are directed by a maintainer organization, the Internet Corporation for Assigned Names and Numbers (ICANN). The technical underpinning and standardization of the core protocols (IPv4 and IPv6) is an activity of the Internet Engineering Task Force (IETF), a non-profit organization of loosely affiliated international participants that anyone may associate with by contributing technical expertise.</p>

</body>

</html>

#### **Code to be inserted in ex1.css**

```
th {  
    text-align: right;  
}  
  
td {  
    text-align: center;  
}  
  
p {  
    text-align: justify;  
}
```

## Output produced by the following above code:

The screenshot shows a Microsoft Internet Explorer window with the URL "ie:///C:/Users/sony/Desktop/font.htm l". The page content includes:

- Text alignment**: A heading followed by the text "Text alignment in table".
- Table**:

Heading 1	Heading 2
Cell 1	Cell 2
Cell 3	Cell 4
- Justified text in paragraphs**: A heading followed by a justified paragraph of text about the Internet.
- Internet Description**: A justified paragraph explaining the structure and purpose of the Internet.

## 4.3 Text decoration

The text-decoration property makes it is possible to add different “decorations” or “effects” to text. For example, you can underline the text, have a line through or above the text, etc.

+In the following example, `<h1>` are underlined headlines, `<h2>` are headlines with a line above the text and `<h3>` are headlines with a line though the text.

### Code to be inserted in font.html

```
<html>
<head>
<title>Example </title>
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />
</head>
<body>
    <h1>Text Underline</h1>

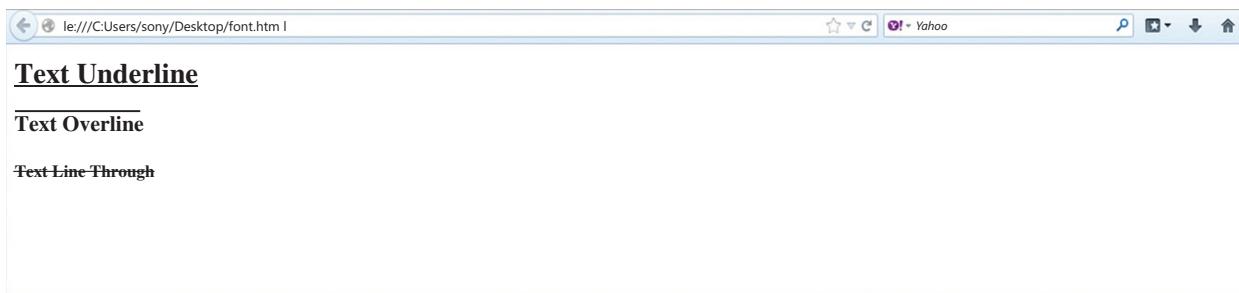
    <h2>Text Overline</h2>
    <h3> Text Line Through</h3>

</body>
</html>
```

### **Code to be inserted in ex1.css**

```
h1 {  
    text-decoration: underline;  
}  
  
h2 {  
    text-decoration: overline;  
}  
  
h3 {  
    text-decoration: line-through;  
}
```

### **Output produced by the above following code:**



### **4.4 Letter space**

This property is used to give the specified spacing between the text characters. The value of the property is simply the desired width.

#### **Example:**

To give **3px** spacing between the letters in a text paragraph **<p>** and **6px** between letters in headlines **<h1>** the following code will be used:

### **Code to be inserted in font.html**

```
<html>  
<head>  
<title>Example </title>  
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />  
</head>  
<body>
```

```
<h1>Example showing Letter Spacing</h1>
```

```
<p>The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to serve several billion users worldwide. It is a network of networks that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless, and optical networking technologies. The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents of the World Wide Web (WWW), the infrastructure to support email, and peer-to-peer networks.
```

```
</p>
```

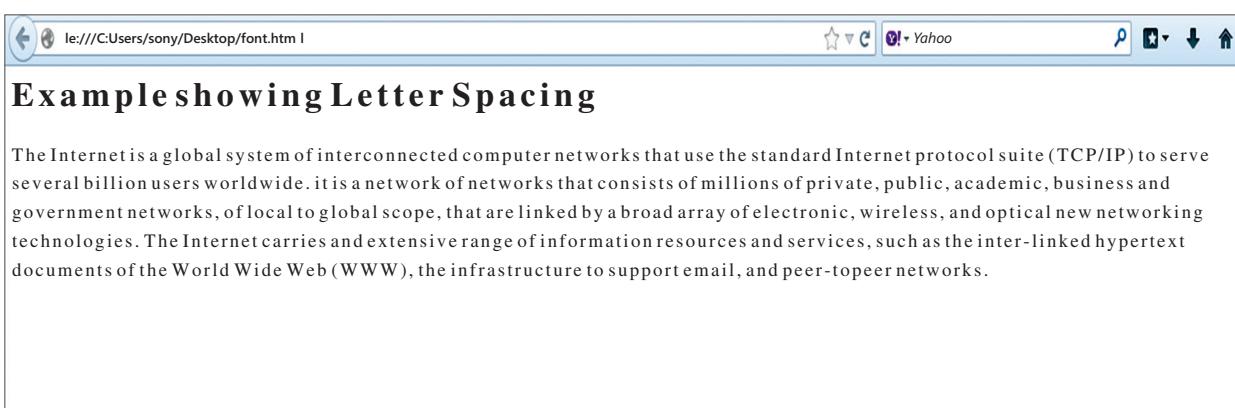
```
</body>
```

```
</html>
```

**Code to be inserted in ex1.css**

```
h1 {  
    letter-spacing: 6px;  
}  
  
p {  
    letter-spacing: 3px;  
}
```

**Output produced by the following above code:**



## 4.5 Text transformation

The **text-transform** property controls the capitalization of a text. You can choose to **capitalize**, use **uppercase** or **lowercase** regardless of how the original text is looks in the HTML code.

An example could be the word “headline” which can be presented to the user as “HEADLINE” or “Headline”. There are four possible values for text-transform:

**Capitalize** : Capitalizes the first letter of each word. For example: “information technology” will be “Information Technology”.

**Uppercase** : Converts all letters to uppercase. For example: “ information technology” will be “INFORMATION TECHNOLOGY”.

**Lowercase** : Converts all letters to lowercase. For example: “INFORMATION TECHNOLOGY” will be “ information technology”.

**None** : No transformations - the text is presented as it appears in the HTML code.

**Example:**

Display the heading in Capital letters and list items in uppercase.

**Code to be inserted in font.html**

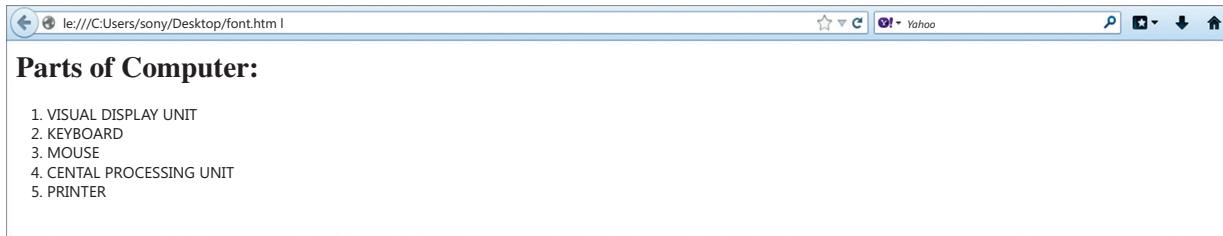
```
<html>
<head>
<title>Example </title>
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />
</head>
<body>
<h1>Parts of Computer:</h1>
<ol>
<li> Visual Dispaly Unit</li>
<li> Keyboard </li>
<li> Mouse </li>
<li> Central Processing Unit </li>
<li> Printer </li>
</ol>
</body>
</html>
```

**Code to be inserted in ex1.css**

```
h1 {
    text-transform: capitalize;
}
```

```
li {  
    text-transform: uppercase;  
}
```

**Output produced by the following above code:**



## 5. BACKGROUND PROPERTIES

- ❖ FOREGROUND-COLOR
- ❖ BACKGROUND-COLOR
- ❖ BACKGROUND-IMAGE
- ❖ BACKGROUND-REPEAT

### 5.1 Foreground color: the 'color' property

The color property describes the foreground color of a text to be displayed in browser.

Example, display all headlines in a document to be green colour.

**Code to be inserted in font.html:**

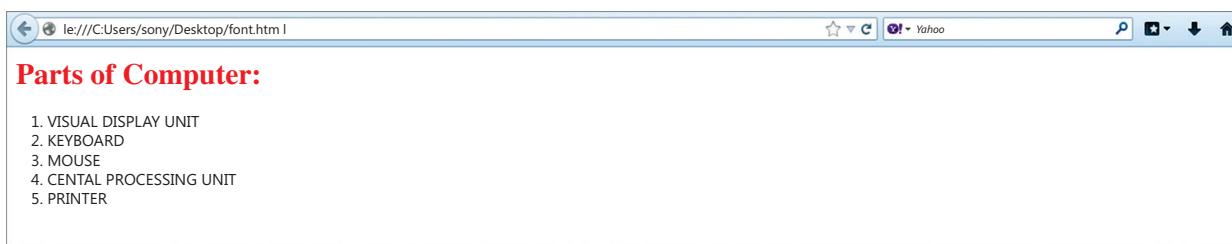
```
<html>  
<head>  
<title>Example </title>  
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />  
</head>  
<body>  
    <h1>Parts of Computer:</h1>  
  
    <ol>  
        <li> Visual Dispaly Unit</li>  
        <li> Keyboard </li>  
        <li> Mouse </li>  
        <li> Central Processing Unit </li>
```

```
<li> Printer </li>
</ol>
</body>
</html>
```

**Code to be inserted in ex1.css:**

```
h1 {
    color: #ff0000;
}
```

**Output produced by the following above code:**



Colors can be entered as hexadecimal values as in the example above (#ff0000), or you can use the names of the colors (“red”) or rgb-values (rgb(255,0,0)).

## 5.2. ‘background-color’ property

The background-color property describes the background color of browser window.

To change the background color of an entire page, the background-color property should be applied to the `<body>` tag. You can also apply background colors to other elements including headlines and text.

Example, apply different background colors to `<body>` and `<h1>` tags.

**Code to be inserted in font.html**

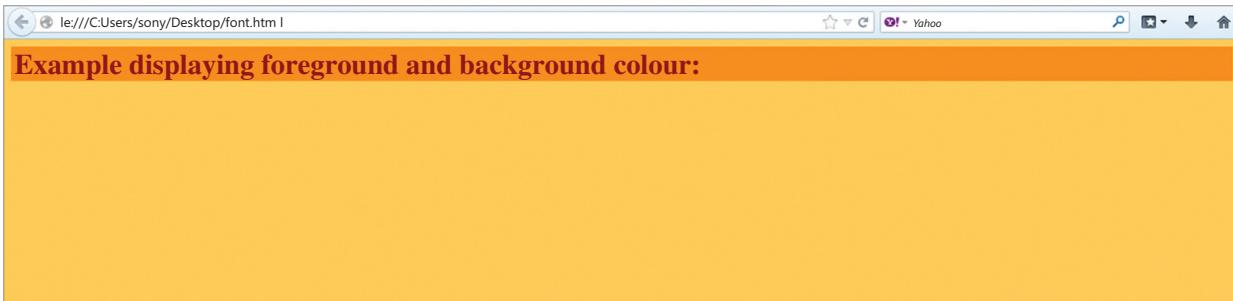
```
<html>
<head>
<title>Example </title>
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />
</head>
<body>
    <h1> Example displaying foreground and background colour.</h1>
</body>
</html>
```

### **Code to be inserted in ex1.css**

```
body {  
    background-color: #FFCC60;  
}  
  
h1 {  
    color: #990011;  
    background-color: #FC9004;  
}
```

Notice that two properties have been applied to <h1> by dividing them by a semicolon.

### **Code produced by the following above code:**



### **5.3 Background images [background-image]**

The background-image property is used to insert a background image in a web page.

To insert the image of the butterfly as a background image for a web page, simply apply the background-image property to <body> and specify the location of the image.

### **Code to be inserted in font.html**

```
<html>  
<head>  
<title>Example </title>  
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />  
</head>  
<body>  
    <h1> Inserting Image</h1>  
  
</body>  
</html>
```

### Code to be inserted in ex1.css

```
body {  
    background-color: #FFCC66;  
    background-image: url("earth.gif");  
}  
  
h1 {  
    color: #990000;  
    background-color: #FC9804;  
}
```

### Output to be produced by the above following code:

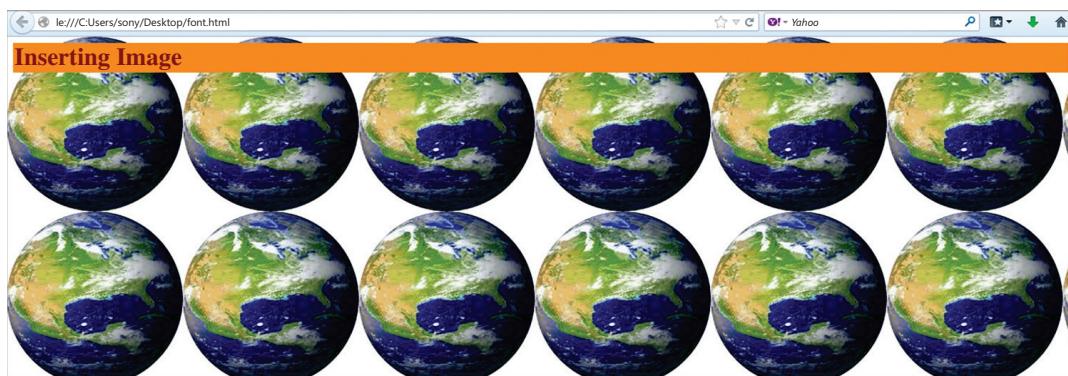


Image will be inserted by giving the specified the location of the image as `url("earth.gif")`. This means that the image is located in the same folder as the style sheet. You can also refer to images in other folders using `url("../images/earth.gif")` or even on the Internet indicating the full address of the file: `url("http://www.example.net/earth.gif")`.

### 5.4 Repeat background image [background-repeat]

As you have seen in the example above, that by default the image of the earth was repeated both horizontally and vertically to cover the entire screen. The `background-repeat` property controls this behaviour.

The four different values for `background-repeat` are as follows:

Value	Description
<code>background-repeat: repeat-x</code>	The image is repeated horizontally
<code>background-repeat: repeat-y</code>	The image is repeated vertically
<code>background-repeat: repeat</code>	The image is repeated both horizontally and vertically
<code>background-repeat: no-repeat</code>	The image is not repeated

For example, to avoid repetition of a background image the following code can be used:

**Code to be inserted in font.html**

```
<html>
<head>
<title>Example </title>
<link rel="stylesheet" href="ex1.css" type="text/css" media="all" />
</head>
<body>
    <h1> Inserting Image</h1>
</body>
</html>
```

**Code to be inserted in ex1.css**

```
body {
    background-color: #FFCC66;
    background-image: url("earth.gif");
    background-repeat: no-repeat;
}

h1 {
    color: #990000;
    background-color: #FC9804;
}
```

**Output to be produced by the following above code:**



# Summary

1. DHTML is the combination of several built-in browser features in fourth generation browsers that enable a web page to be more dynamic.
  2. CSS - Style Sheets for further formatting of text and html, plus other added features such as positioning and layering content.
  3. JavaScript - The programming language that allows you to access and dynamically control the individual properties of both HTML and Style Sheets.
  4. There are three ways to apply CSS to an HTML document.
  5. The property font-family is used to apply prioritized list of fonts in a web page.
  6. The property font-style defines the chosen font either in **normal**, **italic** or **oblique**.
  7. The Font-variant property is used to select **normal** or **small-caps** variants of a font.
  8. The Font-weight property describes how bold or “heavy” a font should be presented. A font can either be **normal** or **bold**.
  9. The font-size property is used to set the size of a font.
  10. The text-indent property allows you to add effects to text paragraphs by applying an indent to the first line of the paragraph.
  11. The text-align property gives the same effect as attribute align gives in old versions of HTML. The text can either be aligned to the **left**, to the **right** or **center** of the screen.
  12. The text-decoration property makes it is possible to add different “decorations” or “effects” to text.
  13. The Letter-spacing property is used to give the specified spacing between the text characters.
  14. The text-transform property controls the capitalization of a text. You can choose to **capitalize**, use **uppercase** or **lowercase** effects to be applied on text in the HTML code.
  15. The color property describes the foreground color of a text to be displayed in browser.
  16. The background-color property describes the background color of browser window.
  17. The background-image property is used to insert a background image in a web page.
  18. The background-repeat property avoids the repetition of the image set as a background for the web page.

# EXERCISE

## A. Multiple choice questions

2. The units ‘\_\_’ and ‘\_\_’ allow the user to adjust the font size according to him/her.  
(a) ‘#’ and ‘me’  
(b) ‘%’ and ‘em’  
(c) ‘\$’ and ‘es’  
(d) All of the above
3. The \_\_\_\_\_ makes it is possible to add different “decorations” or “effects” to text.  
(a) Text Align property  
(b) Text Indent property  
(c) Letter spacing property  
(d) None of the above
4. DHTML is a combination of \_\_\_\_\_ and \_\_\_\_\_.  
(a) DOM and CSS  
(b) CSS and Conventional HTML  
(c) HTML and JavaScript  
(d) None of the above
5. \_\_\_\_\_ is a style sheet language used for describing the look and formatting of a document written in a markup language.  
(a) Document Object Model (DOM)  
(b) Multimedia filters  
(c) Cascading Style Sheets (CSS)  
(d) DHTML
6. Which property is used to give the specified spacing between the text characters?  
(a) Text Decoration  
(b) Letter Spacing  
(c) Text Transform  
(d) None of the above
7. The units ‘px’ and ‘\_\_’ make the font size absolute.  
(a) ‘pr’  
(b) ‘pn’  
(c) ‘pz’  
(d) ‘pt’
8. The \_\_\_\_\_ repeats the image both horizontally and vertically to cover the entire screen.  
(a) Background Image property  
(b) Foreground Color property  
(c) Background Color property  
(d) Background Repeat property

#### B. Fill in the blanks:

1. Font-family style differentiates between \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ font faces.
2. The font-variant property refers to the \_\_\_\_\_ variant of the font face.
3. CSS uses a numeric scale of multiples of \_\_\_\_\_ to \_\_\_\_\_.
4. The CSS specification also allows browser to render any \_\_\_\_\_ value as normal.
5. The text decoration has to rendered with \_\_\_\_\_.
6. The \_\_\_\_\_ property allows you to add effects to text paragraphs by applying an indent to the first line of the paragraph.
7. Font variant property is used to select \_\_\_\_\_ or \_\_\_\_\_ variants of a font
8. The \_\_\_\_\_ property describes the foreground color of a text to be displayed in browser.

9. The property font-style defines the chosen font either in \_\_\_\_\_, \_\_\_\_\_ or \_\_\_\_\_.
10. The property \_\_\_\_\_ is used to apply prioritized list of fonts in a web page.
11. The text-transform property controls the \_\_\_\_\_ of a text.
12. The \_\_\_\_\_ property describes the background color of browser window.
13. The \_\_\_\_\_ property is used to insert a background image in a web page.

### C. Answer the following questions:

1. Explain CSS with reference to DHTML
2. List some advantages and disadvantages of CSS.
3. What is the extension of a CSS file?
4. Explain how would we embedded Style in your HTML.
5. List down the various font-family property ? Give an example of each.
6. What do you mean by font-variant? Give example of each.
7. Explain font-weight?
8. Mention the properties of CSS used to insert Letter spacing in a line.
9. How many types of text alignments can be included in a CSS page.
10. How the text in a webpage can be capitalized using CSS properties?
11. Explain the CSS properties to set the foreground and background color of the webpages.
12. Which property of CSS controls the repetition of image inserted in a web page as a background?

### D. Lab Session

1. Create a web page for a company name web@Creation using attributes such as Background color along with other attribute.
2. Create a webpage for departmental store using all the listing tags with margin attributes of CSS, where they sold following items:  
(a) Furniture            (b) Electronic Items    (c) Home Appliances  
(d) Computer Books    (e) Cosmetics
3. Design a webpage where heading is placed from the left 40 using relative-position of CSS having headings A B C D.
4. Write code to develop Webpage that is having some paragraph with the different size unit.