INRODUCTION TO HTML

These lecture notes are in continuity of Video Lecture series presented at ComputerScience.pk It will help you to learn HTML. This course has divided into five lectures.

LECTURE 01

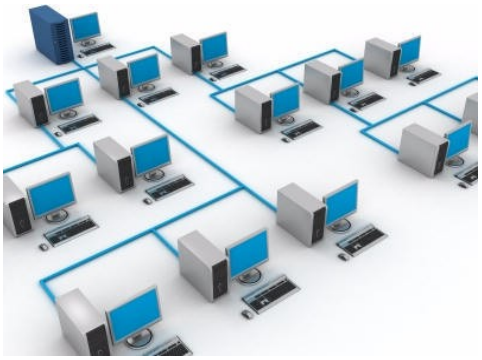
In this lecture you will get introduced with infrastructure of internet, web browser, web page and websites.

1.1. Internet

Internet is an important source of information sharing. Internet means **Inter**national **Net**work. When we share different resources (resources includes information and hardware both) between more than one computers it is called Network and the way of sharing resource among all computers of the world is called Internet. Internet is a global system of interconnected computer networks. Internet is such a network where millions of private, public, academic, business, local and government networks are linked to each other or in other words we can say that internet is collection of many networks.[1]

The Internet carries a vast range of information and services. One of the greatest things about the Internet is that nobody really owns it. It is a global collection of networks, both big and small. These networks connect together in many different ways to form the single entity that we know as the **Internet**.

Via internet you can send and receive e-mail. You can chat with text or voice. You can browse the World Wide Web. And you can perform countless other tasks with the appropriate software.



Internet (a network of networks) [1.1]

1.2. World Wide Web (WWW)

The World Wide Web, or simply Web, is a way of accessing information over the medium of the Internet. It is an information-sharing model that is built on top of the Internet [2]. We access the

Document using URLs (Universal Resource Locators). For example http://www.google.com is URL where http is name of protocol and www.google.com is address of document that we want to view.

1.2.1 Web Page and Website

A document over the WWW is call **web-page** it may contain text, images, videos. It may also contain the links to other web pages these links are called Hyperlinks. If we want to write a webpage then we have to do it in HTML. This is language which we use to create web-pages. A **website** is collection of related web-pages. When same kind of web-pages combine and put under into one name that is called website.

1.2.2 Web Browser

Web browser is a program that is used to view a web-page/website. We write URL(address) of website that we want to view in address bar of web browser and it will take us to that website. There are different web browsers are available like Internet Explorer (IE), Google chrome, Mozilla Firefox. We can use any of them.

1.2.3 HTML

As in last section we discuss that HTML is language that use to create web-pages. HTML stands for Hyper Text Markup Language. Remember it is not a programming language it is a mark up language. HTML documents contain **HTML tags** and plain text.

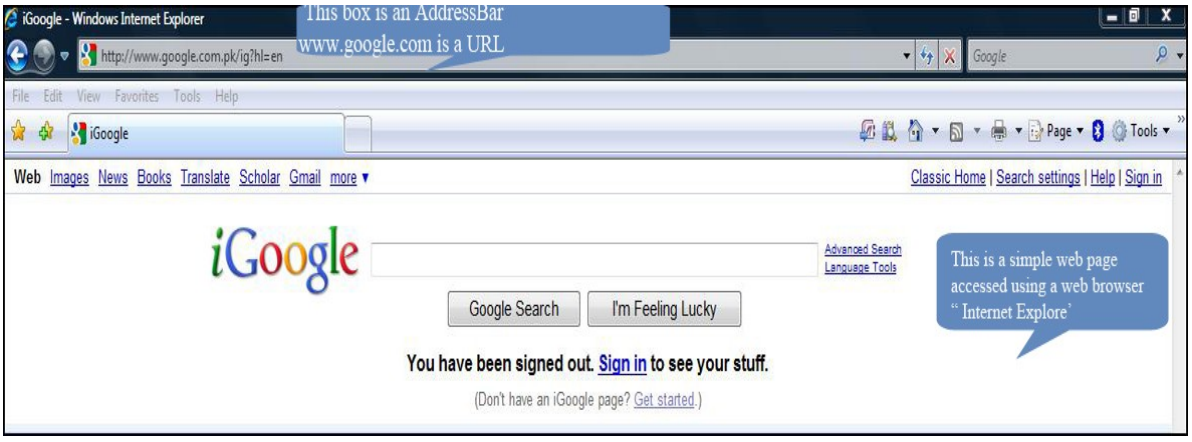


Fig 1.2 Web-browser and its elements

2. Writing First Web Page in HTML (HTML_Lecture01.html)

Tags: In html we use **tags** to tell web browser how to show web-page. Everything in html file that start with "**<**" and end with **">"** is called tag. For example <html> , <head> and <body>.

Every HTML page start with <html> and ends with </html> tags. First tag <html> is called opening of tag and second one </html> is called closing of tag. All remaining tags used for developing the web page will be written in these two tags

There are two sub portion of <html> tag one is <head> </head>and other is <body> </body> Both body and head tags have their own uses. The information that we want to show to user should be written inside opening and closing tags of **body tag.** The purpose of head tag will be discussed in some other course.

We have enough background knowledge to start our first website.

1. **Task:** Open Notepad (Go to start menu click at run and type Notepad)

Explanatory Note: To make web site we can use any Text editor .there are many text editors available on the internet: Textpad, notepad++. For this course we will use notepad.

2. **Task:** Write following line of code into text editor.

code	
<html> <head> </head> <body> Its my first webpage </body> </html>	In this code some text is included in body opening and closing tags Whatever written inside <body> tag show to user.

3. **Task :** Now Save html file (Press ctrl+s) . Type any name for the file and don't forget to change the extension from .txt to html or htm. Also choose All File option from bottom **[important]**.

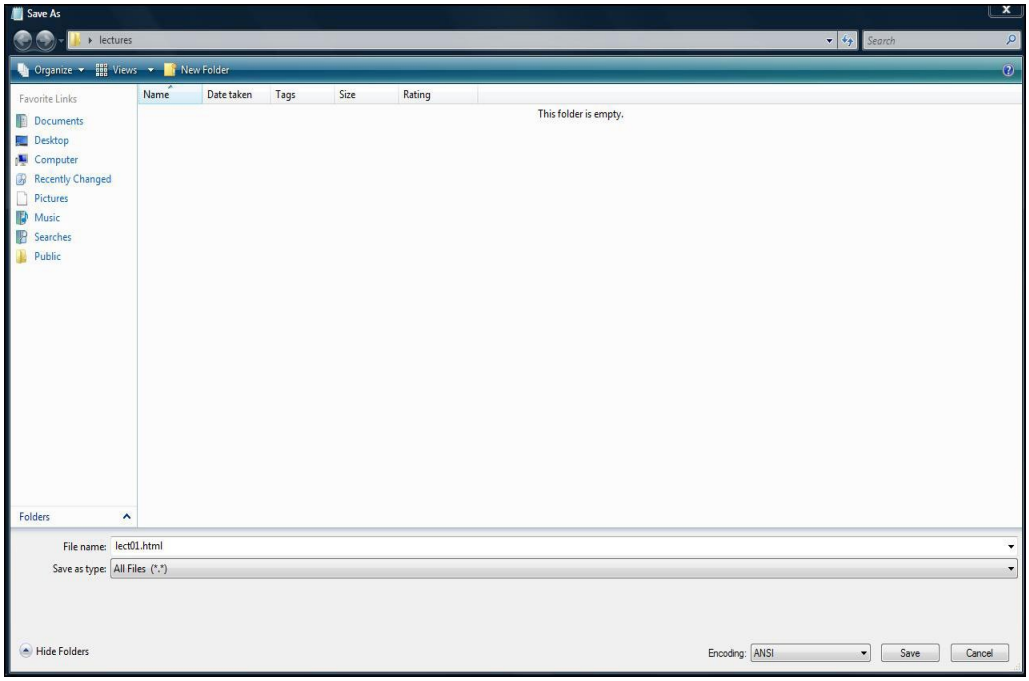
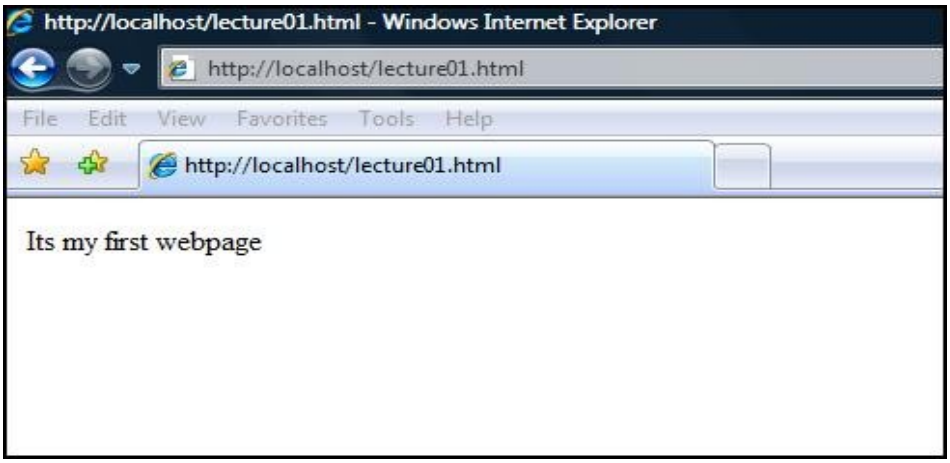


Fig 1.3 Choose a file name and file type

4. Open the file in any web browser by double clicking on it and the output will be:



Note 1: Now whenever you need to make changes to your HTML file you can open this file in notepad and make changes and then save it. If you want to view these changes just open this file in your web browser.

Note 2: The browser does not display the HTML tags, but uses the tags to interpret the content of the page.

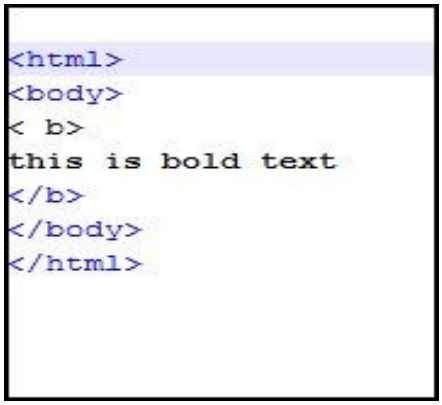
Lecture 02

In last lecture we saw how to create a simple web page. We can do lot more then that for example we can bold the text , italic the text and add pictures on web page. In this lecture we get familiar with more html tags; <b> , <i> , <p> ,
 .

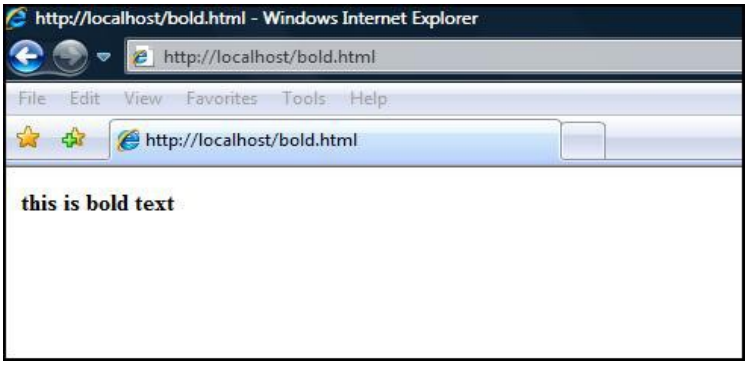
2.1 Bold Tag

<b> tag is used to bold the text. Any text written in opening and closing tags of html will get bold.

3. **Task:** Open your html file in Notepad
4. **Task:** Write following line of code into text editor.

	In this code b tag is included in body tag and some text is written in the b tag. This text text will be displayed as bold.

5. Now Save html file (Press ctrl+s) .
6. Open the file in any web browser by double clicking on it and the output will be:



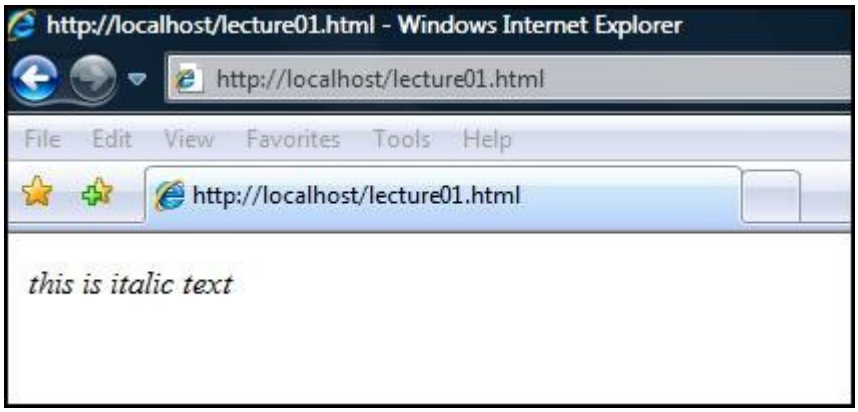
2.2 Italic Tag

 tag is used to italicize the text. Any text written in opening and closing tags of html will get italic.

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

<html> <body> < i> this is italic text </body> </html>	In this code i tag is included in body tag and some text is written in i tag. Resultantly this is italic text will be displayed as italicized.

3. Now Save html file (Press ctrl+s) .
4. Open the file in any web browser by double clicking on it and the output will be:



2.3 Hierarchical structure of HTML

One thing which is very important to know is that we can use a tag inside another tag.

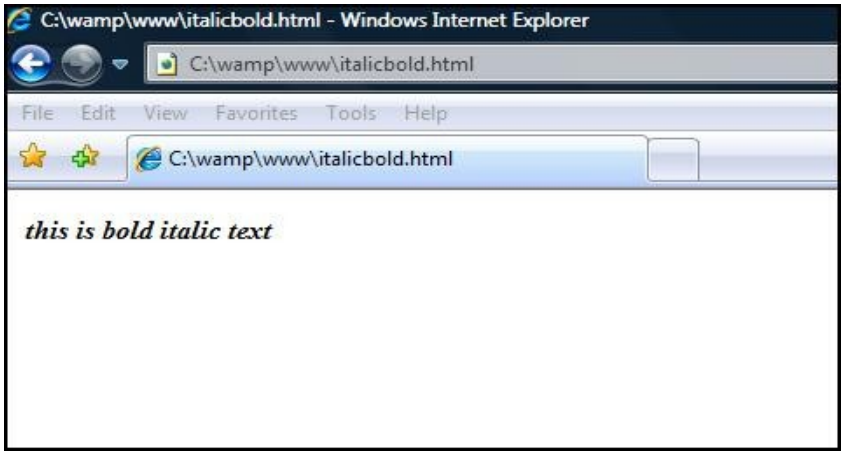
1. **Task:** Open your html file in Notepad

2. **Task:** Write following line of code into text editor.

<html> <body> < i> this is bold text </body> </html>	In this code i & b tags are included in body tag and some text is written in the innermost tag. Text will take a combined effect from these tags and result will be an italic bold text.

3. Now Save html file (Press ctrl+s) .

4. Open the file in any web browser by double clicking on it and the output will be:



Explanatory Note: That means when we use tag inside tags. Important is inner tag should be closed before the outer tag. You can not write something italic text   **this is incorrect** method. If a tag open inside another tag then it should be close before opening tag. Correct way to write above is italic text

2.4 Paragraph Tag

<p> is called paragraph tag. It is used to write a paragraph.

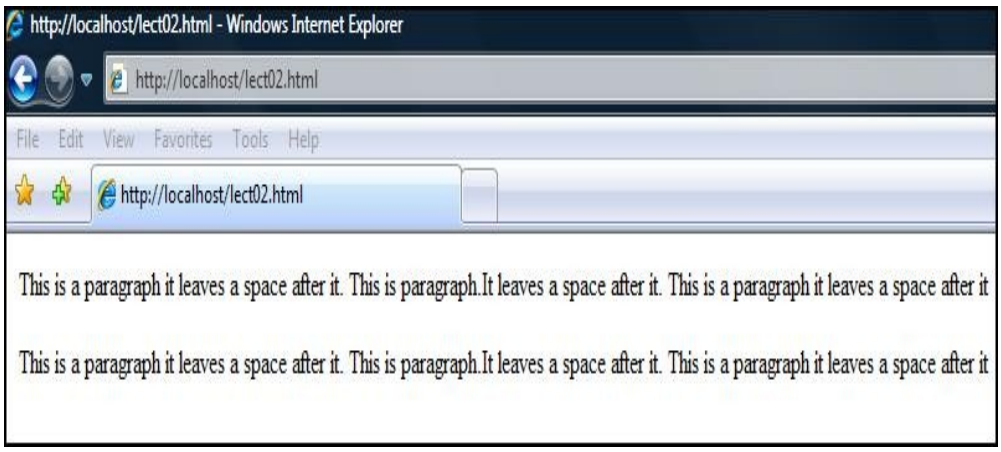
<p> tag leaves a line break before and after it.

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<body>
<p>
This is a paragraph it leaves a space after it.
This is paragraph.It leaves a space after it.
This is a paragraph it leaves a space after it
</p>
<p>
This is a paragraph it leaves a space after it.
This is paragraph.It leaves a space after it.
This is a paragraph it leaves a space after it
</p>
</body>
</html>
```

In this code some text is separately included in two p tags. These paragraphs will be displayed with one space between them. As p tag leave one line before it and one line after it text

3. Now Save html file (Press ctrl+s).
4. Open the file in any web browser by double clicking on it and the output will be:



2.5 Break Tag

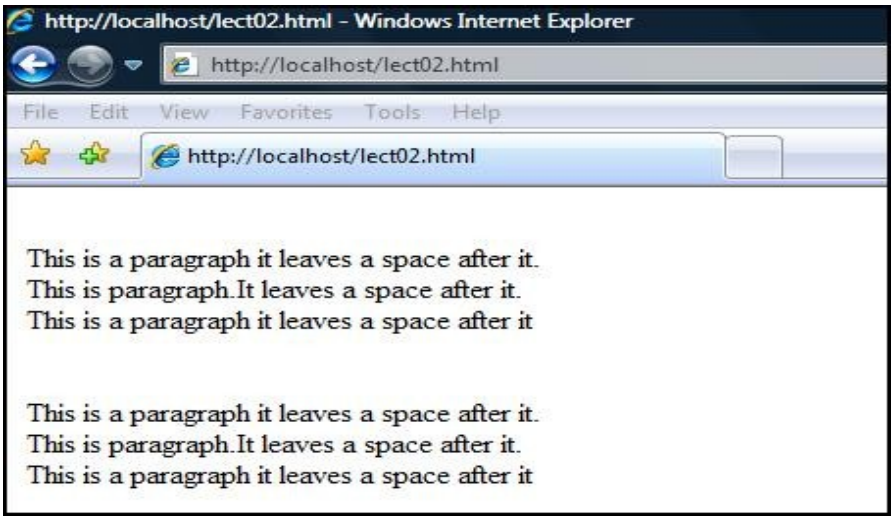
 is called break tag. It is used to give a line break after it.

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.
3. Now Save html file (Press ctrl+s) .

```
<html>
<body>
<p>
<br/>This is a paragraph it leaves a space after it.<br/>
This is paragraph.It leaves a space after it.<br/>
This is a paragraph it leaves a space after it
</p>
<p>
<br/>This is a paragraph it leaves a space after it.<br/>
This is paragraph.It leaves a space after it.<br/>
This is a paragraph it leaves a space after it
</p>
</body>
</html>
```

In this code some text is separately included in two p tags. And a break tag is also included in these tags. Due to br tag a space will be introduced before the stuff where br tag is placed.

4. Open the file in any web browser by double clicking on it and the output will be:



Attributes of tags

All html tags have a number of attributes. It includes id, class, style etc.id attribute is used to assign a unique value to an element or tag. Class attribute is used to give a unique class name to an element.

2.6 Image tag

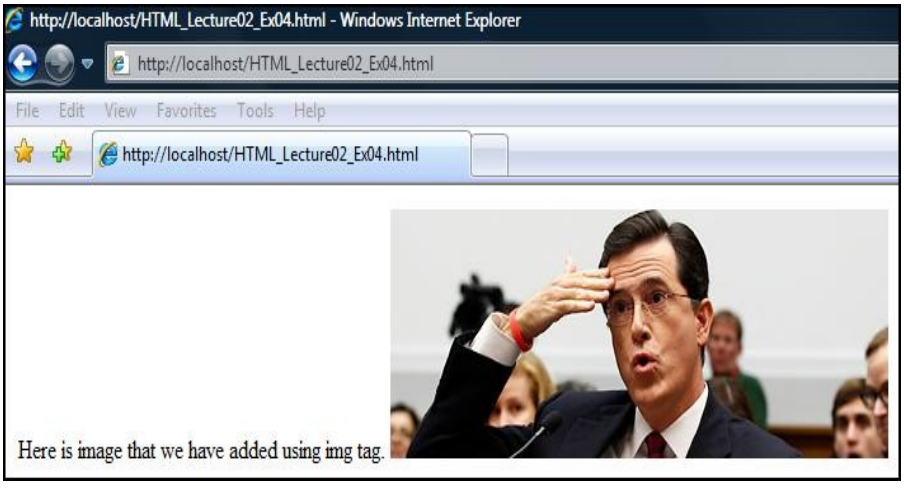
To put an image on a web page <img> tag is used. For this purpose the attribute of <img> tag that is necessarily be used is src. Src attribute is used to give the path to the image.

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<head> </head>
<body>
Here is image that we have added using img tag.
<img src="images/pic1.jpg"/>
</body>
</html>
```

Here we have used an image tag to display an image in the browser. "src" property of <img> tag is used to give path of the image

3. Now Save html file (Press ctrl+s) .
4. Open the file in any web browser by double clicking on it and the output will be:



Note: Path of the image will be given in this way only when image is located in the same folder as the html document.

Image tag has some other attributes like width and height which are used to control the dimensions of the images that is to be displayed.

Lecture 03

In this lecture we will learn about some more tags of html that includes links and list tags i.e.<a>, <ul>, <ol>

3.1 Hyperlink

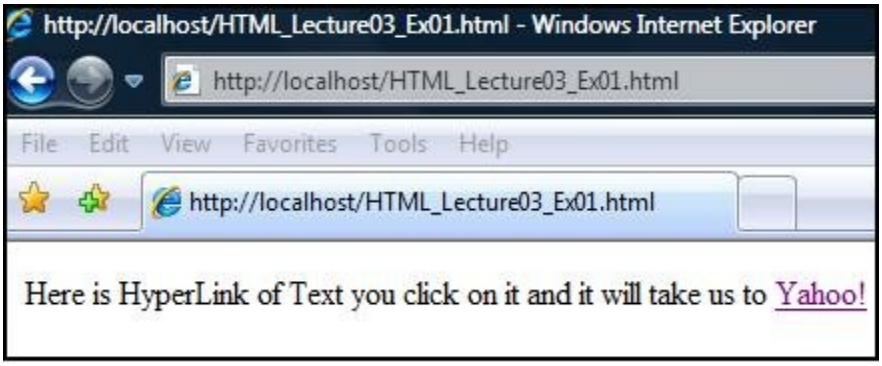
We can link pages using hyperlink tag. Linking mean we can go from one web page to other by simply clicking on it. In <a> tag a stands for anchor. And <a> tag must use it attribute **href** to give the website address in it**.**

5. **Task:** Open your html file in Notepad
6. **Task:** Write following line of code into text editor.

```
<html>
<head></head>
<body>
Here is HyperLink of Text you click on it
and it will take us to
<a href="http://www.yahoo.com">
Yahoo!
</a>
</body>
</html>
```

In this code a link is applied to text. href arrtibute of anchor tag is used to give URL of the web page. As shown in the last step of this task yahoo is shown as a link to a web page clicking it will take you to yahoo.com

7. Now Save html file (Press ctrl+s).
8. Open the file in any web browser by double clicking on it and the output will be:



Up till now we learned to make a hyperlink on a text now we proceed by making a hyperlink over an image. It can be done very easily. As we have already talked in the html hierarchy that we can use a tag within another tag.

To create a link to an image we will use image tag inside the anchor tag.

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

<html> <head></head> <body> Here is image with hyperlink when you click at image it will take you to yahoo.com <a href="http://www.yahoo.com"> <img src="images/pic1.jpg"> </a> </body> </html>	In this code a link is made to yahoo.com web page but this time we have applied link to an image. By clicking on image you can open yahoo.com

3. Now Save html file (Press ctrl+s).
4. Open the file in any web browser by double clicking on it and the output will be:

Explanatory Note: Now when you open html file in your browser ,you will see the image whose path has been gave in src attribute now if you place your mouse on displayed image it will change its shape form arrow to hand. By clicking over it you will be directed to the page whose address is given in href attribute. In this case it is yahoo.com.

3.2 List

Sometimes we need to show information in numbering or in bullets format. For this html provide us un-order list <ul> and ordered <ol> list.

3.2.1 Un-ordered List Tag

HTML offers authors several mechanisms for specifying lists of information. To present list of Information in bulleted format we can use <ul> tag.

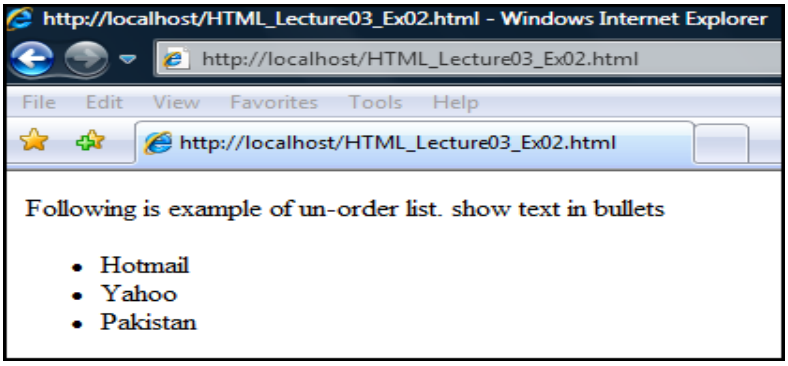
1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<head>  </head>
<body>
Following is example of un-order list.
show text in bullets
<ul>
<li>Hotmail</li>
<li>Yahoo</li>
<li>Pakistan</li>
</ul>
</body>
</html>
```

In this example we have presented a list of information in the bullet ed form.

Default bullet is a circular.

3. Now Save html file (Press ctrl+s).
4. Open the file in any web browser by double clicking on it and the output will be:



Note: There are different styles of bullets like square ,disc, circle. But customized bullets can be used.

3.2.2 Ordered List Tag

To present list of Information in numbering format we can use <ol> tag.

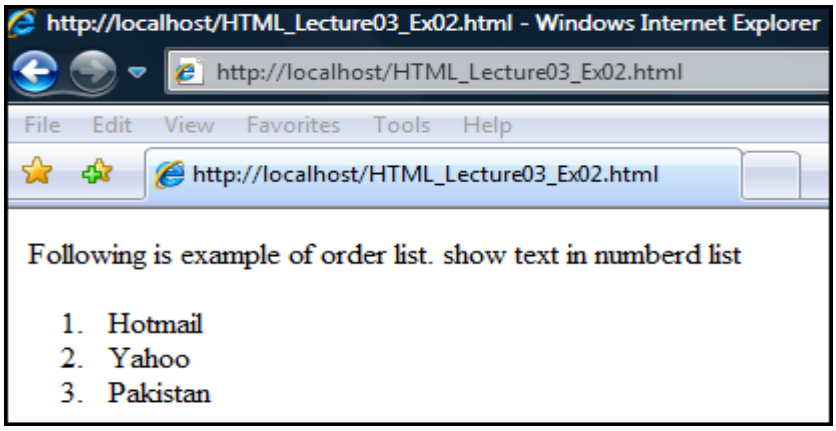
1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<head>  </head>
<body>
Following is example of order list.
show text in numberd list <br>
<ol>
<li> Hotmail </li>
<li> Yahoo </li>
<li> Pakistan </li>
</ol>
</body>
</html>
```

In this example we have presented a list of information in the Numbered form.

Default Numbering is 1,2,3……

3. Save html file (Press ctrl+s).
4. Open the file in any web browser by double clicking on it and the output will be:



Note: To specify the type of the numbering, type attribute of the <ol> is used.
For different styles of numbering there are three built in types of bullets like A, i, 1.

3.3 HTML Tables

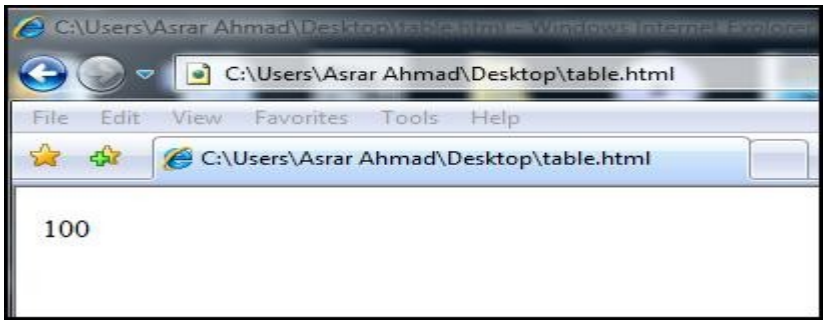
HTML also have table tag. Mostly this tag is use to show the data in tabular form. Content that is appearing on a web page can be included in a html table. This is called tabular form. As a table contain rows and columns. In html, to present the rows in a table <tr> tag is used, <tr> tag is included as many times in table tag as many rows are required in the table. To present the columns <td> tag is used , <td> tag is included as many times as many columns are required in the table.
The intersection of a row and a column is called a cell. Like other tags of html .table tag also contain the border attribute.

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<body>
<table>
<tr>
<td>100</td>
</tr></table>
</body>
</html>
```

This is simplest form of the table containing only one row and one column.

3. Now Save html file (Press ctrl+s).
4. Open the file in any web browser by double clicking on it and the output will be:



Now we do little bit complex example.

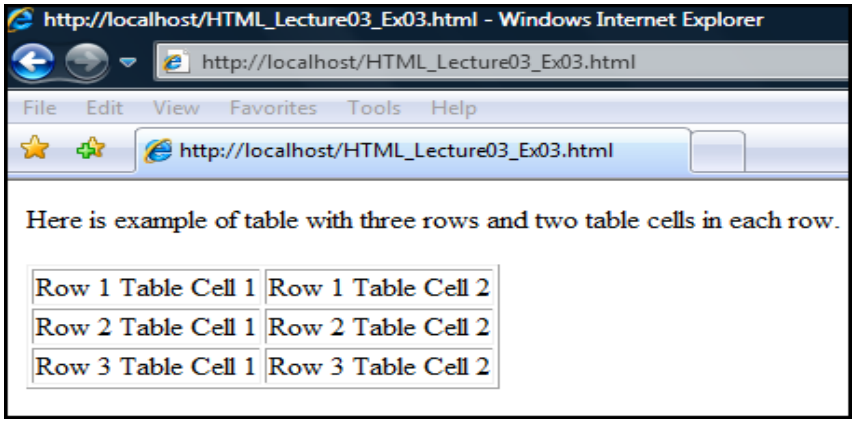
1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<head></head>
<body>
Here is example of table with three rows
and two table cells in each row. <br><br>
<table border="1">
 <tr>
   <td>Row 1 Table Cell 1</td>
   <td>Row 1 Table Cell 2</td>
 </tr>
 <tr>
   <td>Row 2 Table Cell 1</td>
   <td>Row 2 Table Cell 2</td>
 </tr>
 <tr>
   <td>Row 3 Table Cell 1</td>
   <td>Row 3 Table Cell 2</td>
 </tr>
 </table>
</body>
</html>
```

This is another table. In this table we have used border attribute to apply a border other than a default border

This table contains 3 rows and two columns for each row

3. Now Save HTML file (Press ctrl+s).
4. Open the file in any web browser by double clicking on it and the output will be:


http://localhost/HTML_Lecture03_Ex03.html - Windows Internet Explorer
http://localhost/HTML_Lecture03_Ex03.html
File Edit View Favorites Tools Help
http://localhost/HTML_Lecture03_Ex03.html
Here is example of table with three rows and two table cells in each row.
Row 1 Table Cell 1
Row 1 Table Cell 2
Row 2 Table Cell 1
Row 2 Table Cell 2
Row 3 Table Cell 1
Row 3 Table Cell 2

Lecture 04

In this lecture we will see more details of html tables.

To give an organized an appealing look to a web page, its content may be shown within a table. we can define entire structure of the web in a table.

In this picture whole webpage structure in defined in a table

Fig 4.1 web page containing table with rowspan and columnspan

Now we will learn some more attributes of table tag that includes column-span and row-span.

4.1 Column-span

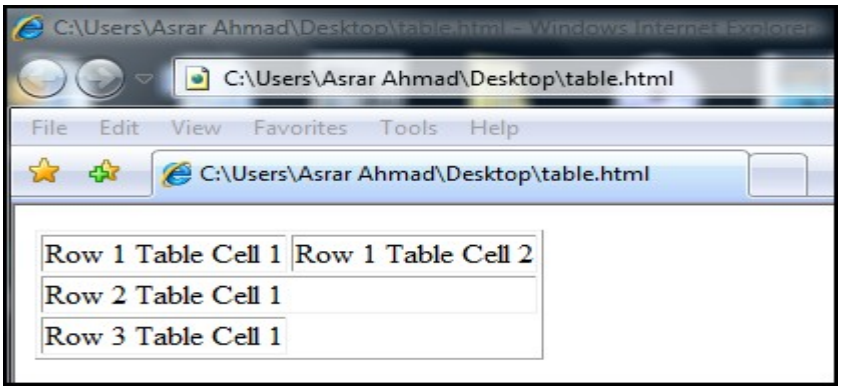
Column-span is applied to increase the size of a column.

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<head></head>
<body>
<table border="1">
 <tr>
   <td>Row 1 Table Cell 1</td>
   <td>Row 1 Table Cell 2</td>
 <tr>
 <tr>
   <td colspan="2">Row 2 Table Cell 1</td>
 </tr>
 <tr>
   <td>Row 3 Table Cell 1</td>
   <td>Row 3 Table Cell 2</td>
 <tr>
 </table>
</body>
</html>
```

In this code column-span=2 is applied so that the cell on which this span is applied get space equal to two columns.

3. Now Save html file (Press ctrl+s) .
4. Open the file in any web browser by double clicking on it and the output will be:



Explanatory Note: In this example 2nd row of table contain columns that have a span of 2.That means through column-span we gave this cell a space equal to two columns.

4.2 Row-span

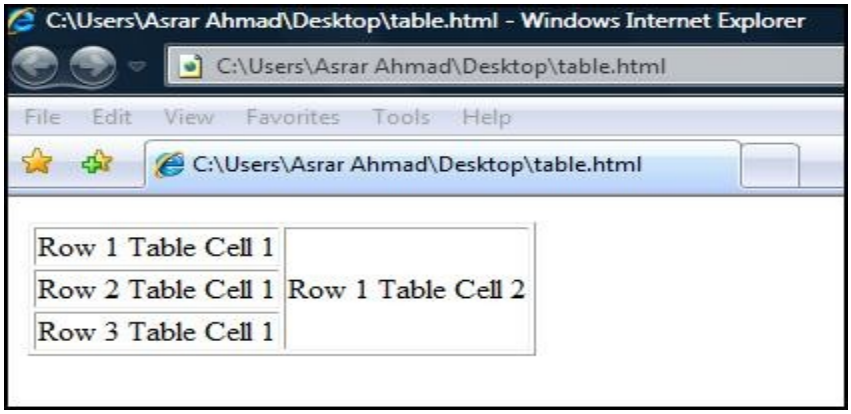
Just like column-span we can also apply row span over the rows of the table.

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<head></head>
<body>
<table border="1">
 <tr>
   <td>Row 1 Table Cell 1</td>
   <td rowspan="3">Row 1 Table Cell 2</td>
 </tr>
 <tr>
   <td>Row 2 Table Cell 1</td>
 </tr>
 <tr>
   <td>Row 3 Table Cell 1</td>
 </tr>
</table>
</body>
</html>
```

In this code row-span=3 is applied so that the cell on which this span is applied get space equal to three rows.

3. Now Save html file (Press ctrl+s) .
4. Open the file in any web browser by double clicking on it and the output will be:



On a web page along with text content ,image and video content can also be included in a table to make the web page more arranged and attractive.

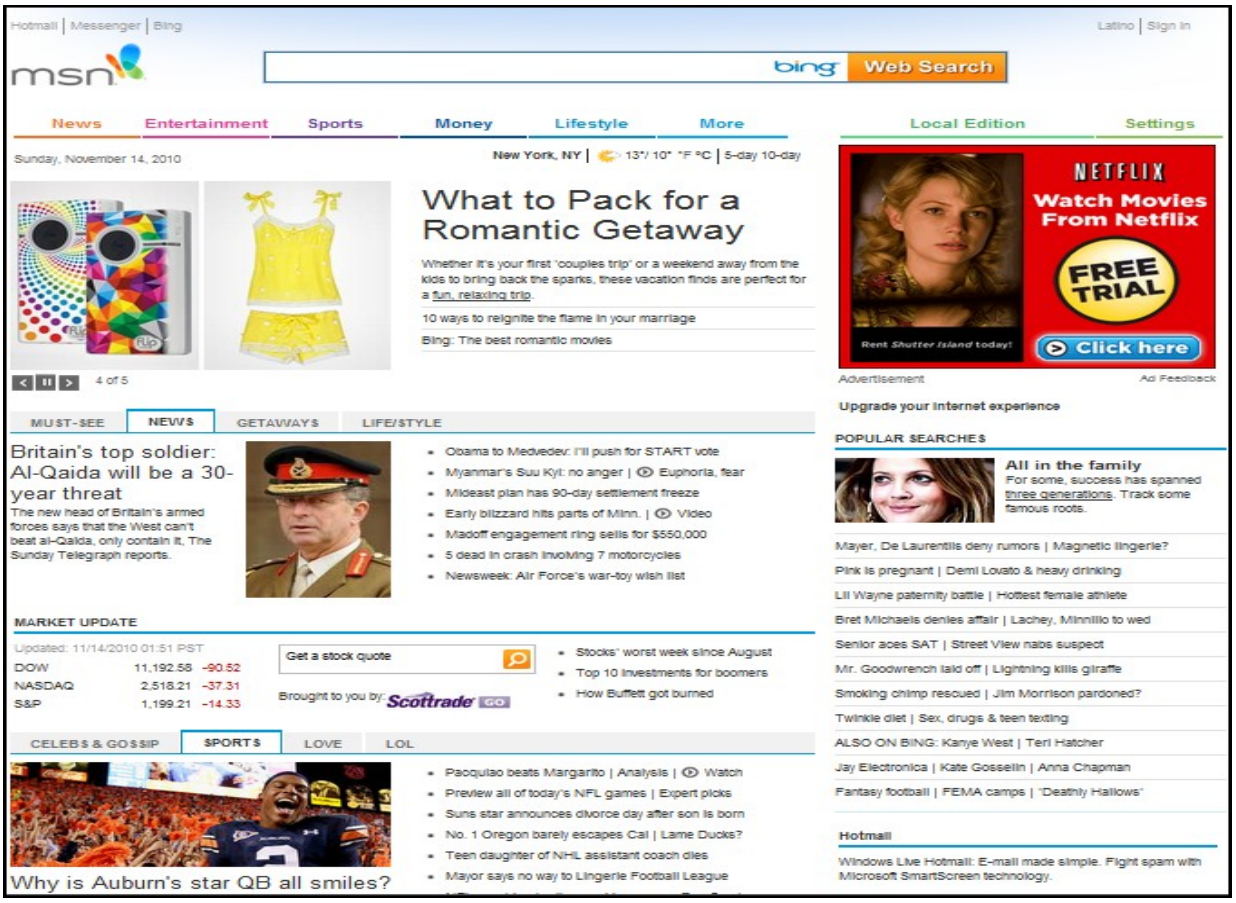


Fig 4.2 This picture is an example of multimedia content on the webpage

This can be done easily. Let see how to do it.

So again we will use anchor tag to add an image to table.

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<head>
</head>
<body>
<table>
<tr>
<td colspan="3" align="center">
<h1>This week in Review</h1></td>
</tr>
<tr>
<td><img src="images/img1.jpg" /></td>
<td><img src="images/img2.jpg" /></td>
<td><img src="images/img?.jpg" /></td>
</tr>
<tr>
 <td>
Snooping victim jumps to death</td>
<td align="center">
Remembering Tony Curtis </td>
<td>
Meet &#39;cheapest family in America&#39;</td>
</tr>
</table>
</body>
</html>
```

In this code we have tried to develop a web page that contains text and images placed inside the table element.

Using Table enhances the look and feel of the page.

3. Now Save html file (Press ctrl+s) .
4. Open the file in any web browser by double clicking on it and the output will be:

Lecture 05

Till now we only have talked about those tags that are related to make a website "Presentable and organized".

But now we will talk about html forms that are used to create interactivity between a website and a user. You will not find a single website on the internet that doesn't include html forms. Every website is using more or less number of tags of html forms.

For example forms are used in an online shopping websites and creating user registration on any website.

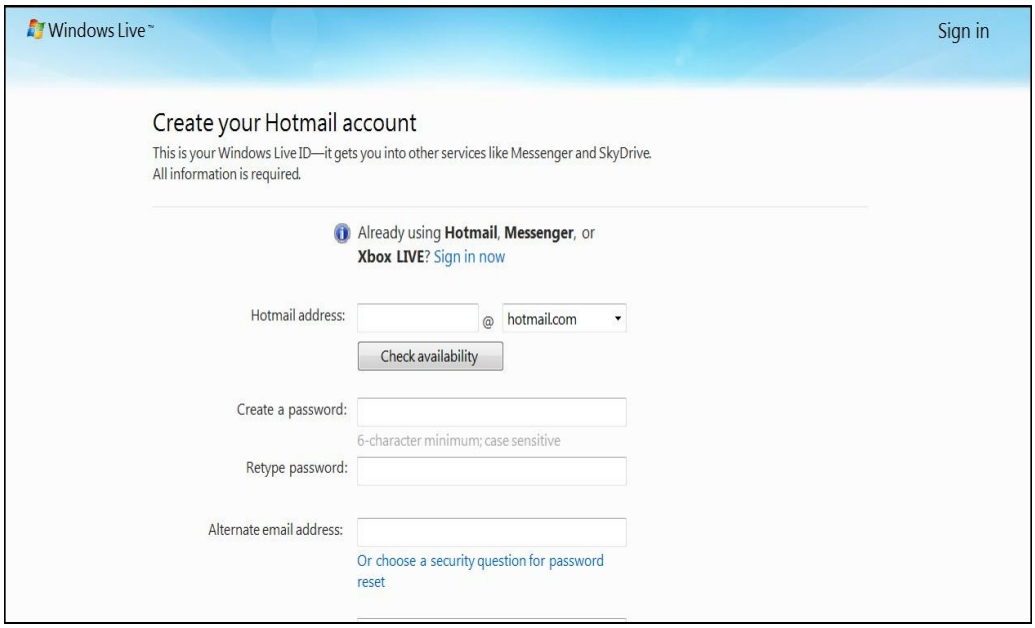


Fig 5.1 This picture is an example of forms on a webpage

5.1 Html Forms

In this lecture we will read about forms in html and input tags. Form also possess closing and opening tags like html tag

<form>

This is form opening tag

</form>

This is form closing tag

Now remaining form code is typed in these two tags .There are different input items available for forms e.g. Buttons, textboxes, check box, radio buttons etc.

To use these input items ,we have to specify them in the type attribute of the form input tag.

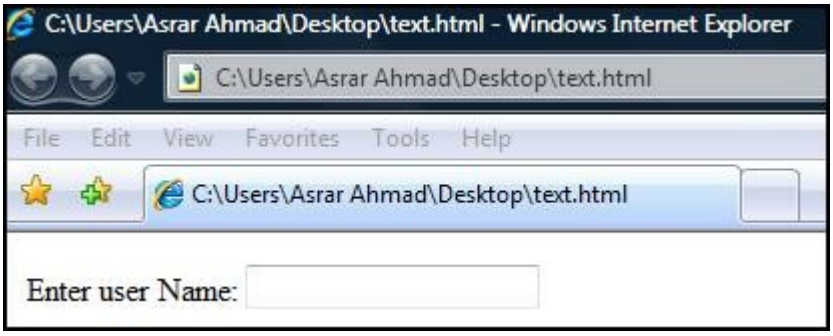
5.1.1 Text input

This item is used to take a single line input from a user. It can be used for typing an email address, username, address etc. Indeed this is the only input item which is very common.

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

`<html>` `<body>` `<form>` `Enter user Name: <input type="text"/>  ` `<form>` `</body>` `</html>`	Form input Text is used to include a textbox in html web page

3. Now Save html file (Press ctrl+s) .
4. Open the file in any web browser by double clicking on it and the output will be:



5.1.2 Password

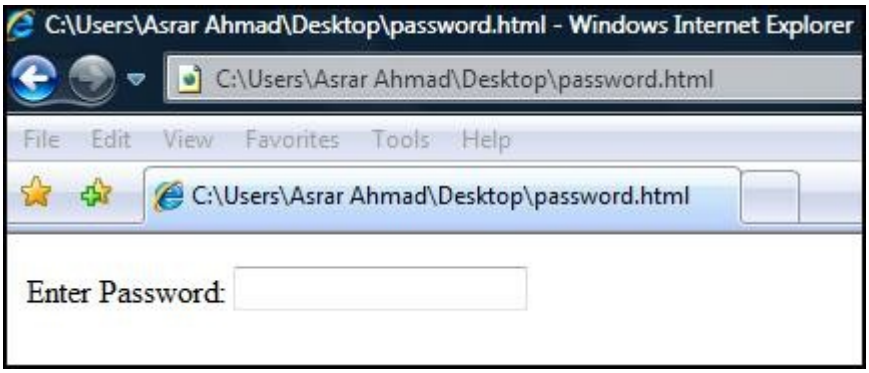
It can be used on the user registration page or on user log in page

1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<body><form>
Enter password: <input type="password"/> <br>
<form>
</body></html>
```

Form input password is used to include a textbox in html based web page that will take the text as hidden text.

3. Now Save html file (Press ctrl+s) .
4. Open the file in any web browser by double clicking on it and the output will be:



5.1.3 Checkbox

This input item is provided to allow users to select more than one options out of a number of available options.

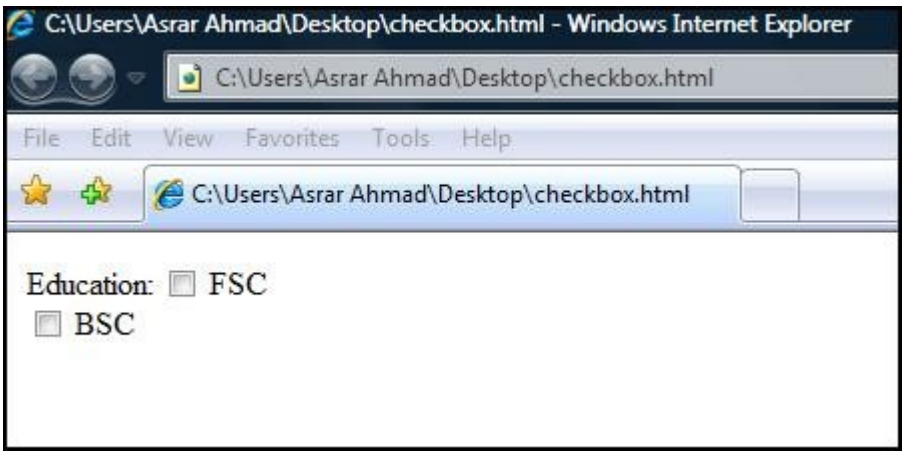
1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<body><form>
Education:
<input type="checkbox" name="checkbox"/> FSC <br>
<input type="checkbox" name="checkbox"/> BSC <br>
<form></body>
</html>
```

Here we have used form input checkbox

Type attribute is given value checkbox to place a checkbox in the page.

3. Now Save html file (Press ctrl+s) .
4. Open the file in any web browser by double clicking on it and the output will be:



5.1.4 Radio-buttons

This item is provided to the user to make one selection out of a number of available options.

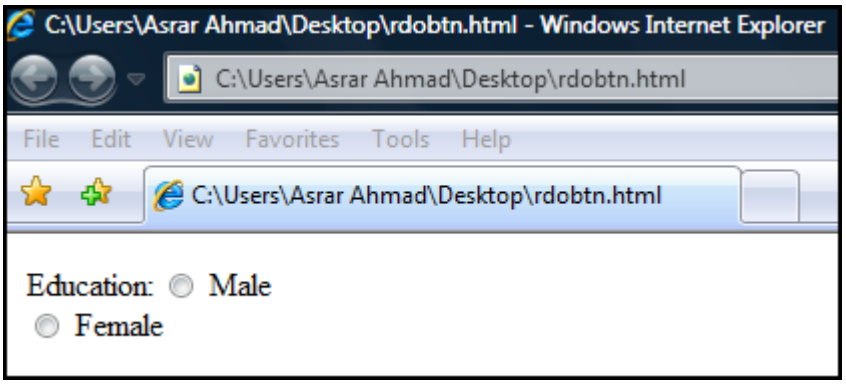
1. **Task:** Open your html file in Notepad
2. **Task:** Write following line of code into text editor.

```
<html>
<body>
<form>
Education:
<input type="radio" name="gender"/> Male <br>
<input type="radio" name="gender"/> Female <br>
<form>
</body>
</html>
```

Here we have used form input type =Radio

Type attribute is given value radio to place a radio-button in the page. Radio button allow user to choose only one option out of many.

3. Now Save html file (Press ctrl+s) .
4. Open the file in any web browser by double clicking on it and the output will be:



5.1.5 Drop-Downlist

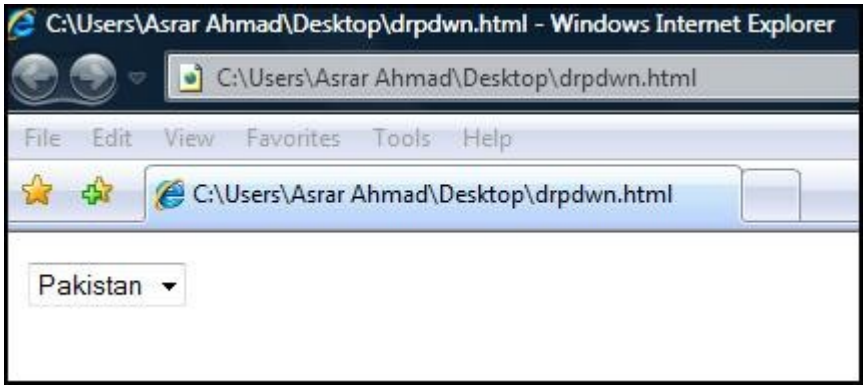
To select one item out ofa large number of available options

1. **Task:** Open your html file in Notepad

2. **Task:** Write following line of code into text editor.

<html> <body> <form> <select> <option> Pakistan</option> <option> India</option> </select> <form> </body> </html>	this code is including a dropdown or a selection menu in the web page Select tag is used under the form tag to place a selection menu in the web page

3. Now Save html file (Press ctrl+s) .
4. Open the file in any web browser by double clicking on it and the output will be:



5.1.6 Button

To include button which is the most essential part of the forms in html ,it can be added to the web site in this manner.

1. **Task:** Open your html file in Notepad

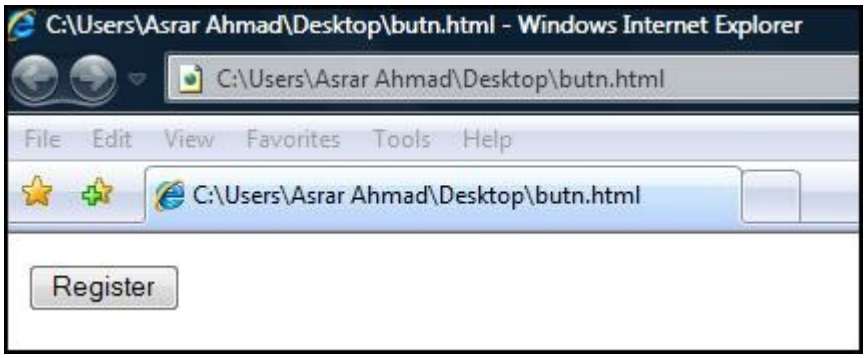
2. **Task:** Write following line of code into text editor.

```
<html>
<body>
<form>
<input type="button" value="Register"/>
<form>
</body>
</html>
```

In this code the type property of input tag is assigned a value Button to declare that we want to place a button in our web page.

3. Now Save html file (Press ctrl+s) .

4. Open the file in any web browser by double clicking on it and the output will be:



References:

1 http://en.wikipedia.org/wiki/Internet

2 http://www.webopedia.com/DidYouKnow/Internet/2002/Web_vs_Internet.asp

Fig 1.1 http://insitepcsupport.com/yahoo_site_admin/assets/images/Network.40125638.jpg

Fig 1.2 http://www.google.com

Fig 4.1 www.computerscience.pk

Fig 4.2 www.msn.com

Fig 5.1 https://signup.live.com/