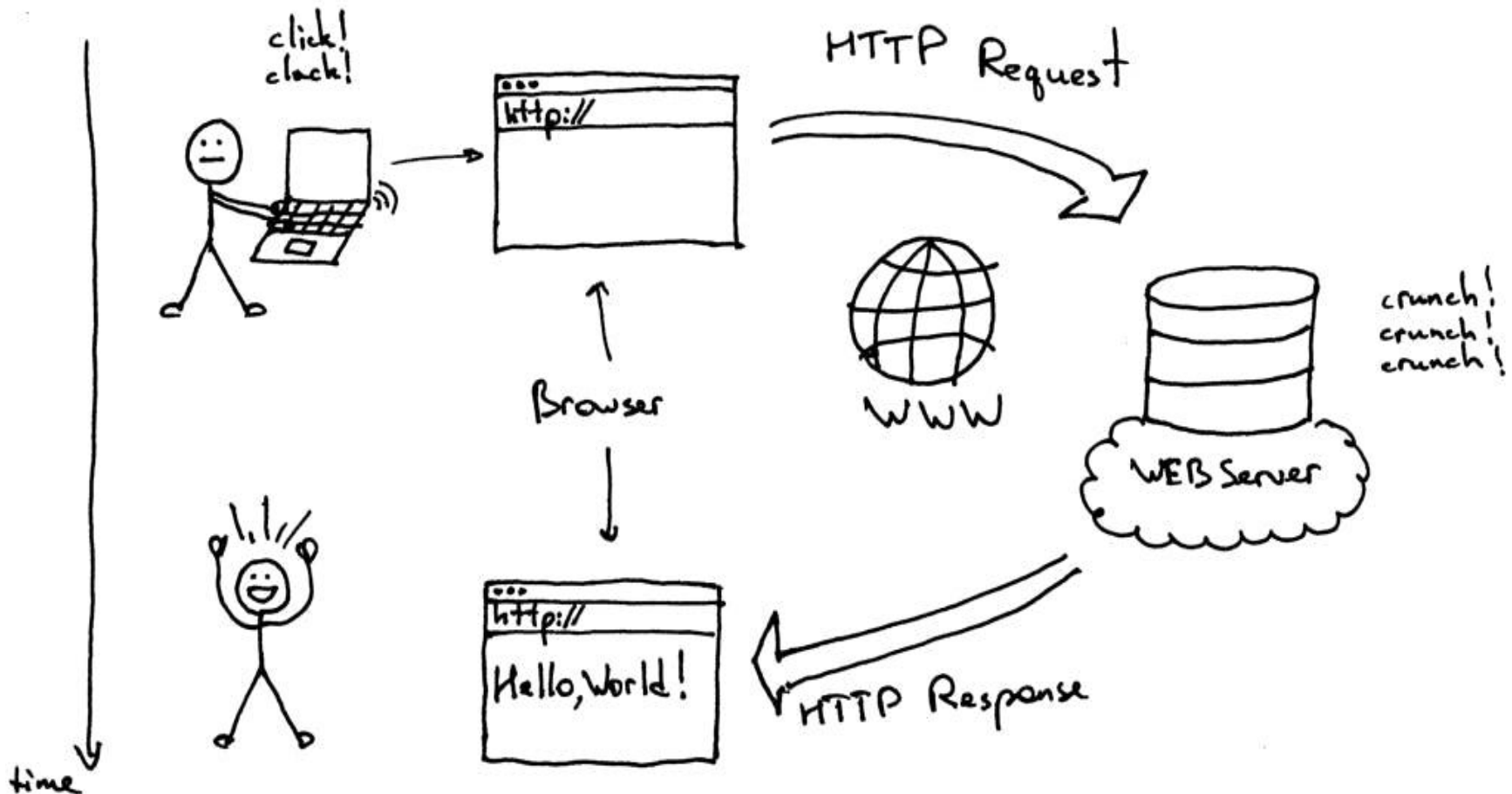# INTRODUCTION TO WEB TECHNOLOGY

- COURSE CODE: CS111
- LANGUAGES COVERED
  - HTML5
  - CSS
  - JAVASCRIPT
  - BOOTSTRAP

ASSESMENT DETAILS

- PROJECT BASED LEARNING- 20% WEIGHTAGE

- SESSIONAL TEST-03- 30% WEIGHTAGE
  - MCQ and CODING QUESTIONS

- END-TERM EXAMINATION- 50% WEIGHAGE
  - MCQ and CODING QUESTIONS

CLIENT-SERVER COMMUNICATION

Introduction to
HTML

Definitions

- W W W – World Wide Web.
- HTML – **HyperText Markup Language** – The Language of Web Pages on the World Wide Web.

  HTML is a text formatting language.
- URL – Uniform Resource Locator.
- Browser – A software program which is used to show web pages.

- "Normal text" surrounded by bracketed *tags* that tell browsers how to display web pages
- Pages end with ".htm" or ".html"
- HTML Editor – A word processor that has been specialized to make the writing of HTML documents more effortless.

Tags

- Codes enclosed in brackets
- Usually paired

  <TITLE>My Web Page</TITLE>

- *Not* case sensitive

  <TITLE> = <title> = <TITLE>

Choosing Text Editor

- There are many different programs that you can use to create web documents.

- HTML Editors enable users to create documents quickly and easily by pushing a few buttons. Instead of entering all of the HTML codes by hand.

- These programs will generate the HTML Source Code for you.

Choosing Text Editor

- HTML Editors are excellent tools for experienced web developers; however; it is important that you learn and understand the HTML language so that you can edit code and fix "bugs" in your pages.

- For this Course, we will focus on using the NotePad++,VSCode. Student may use also textpad or any other text editor of choice.

HTML Page Creation & Editing

1. Choose a Text Editor.

2. Create a Basic Starting Document.

3. Understand and set Document Properties.

4. View Your Results in a Browser.

Creating a Basic Starting Document

```html
<HTML>
<HEAD>
    <TITLE>Chitkara University</TITLE>
</HEAD>
<BODY>
        This is what is displayed.
</BODY>
</HTML>
```

Creating a Basic Starting Document

- The HEAD of your document point to above window part. The TITLE of your document appears in the very top line of the user's browser. If the user chooses to "Bookmark" your page or save as a "Favorite"; it is the TITLE that is added to the list.

- The text in your TITLE should be as descriptive as possible because this is what many search engines, on the internet, use for indexing your site.

Setting Document Properties

- Document properties are controlled by attributes of the BODY element. For example, there are color settings for the background color of the page, the document's text and different states of links.
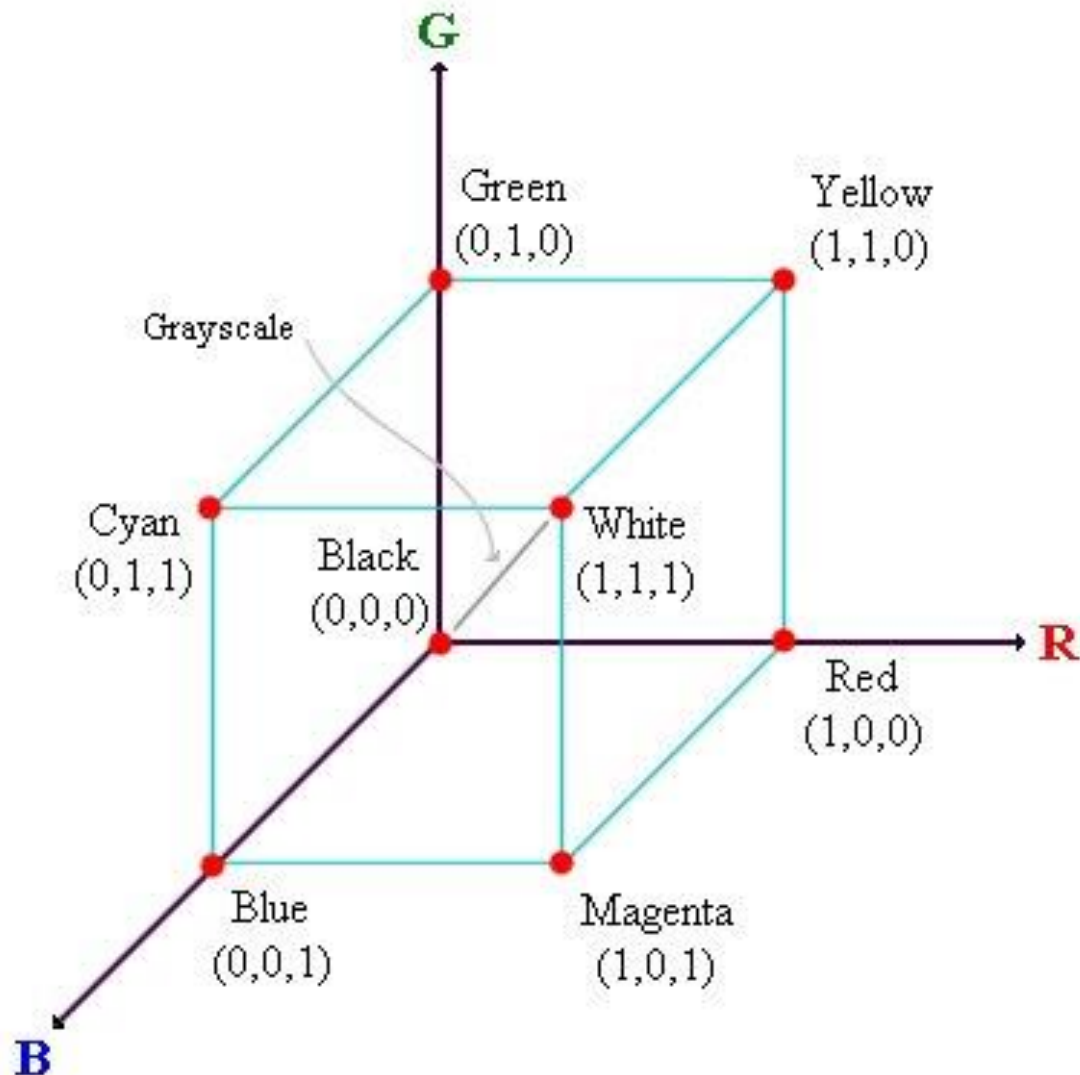
Color Codes

- Colors are set using "RGB" color codes, which are, represented as hexadecimal values. Each 2-digit section of the code represents the amount, in sequence, of red, green or blue that forms the color. For example, a RGB value with 00 as the first two digits has no red in the color.

Main Colours
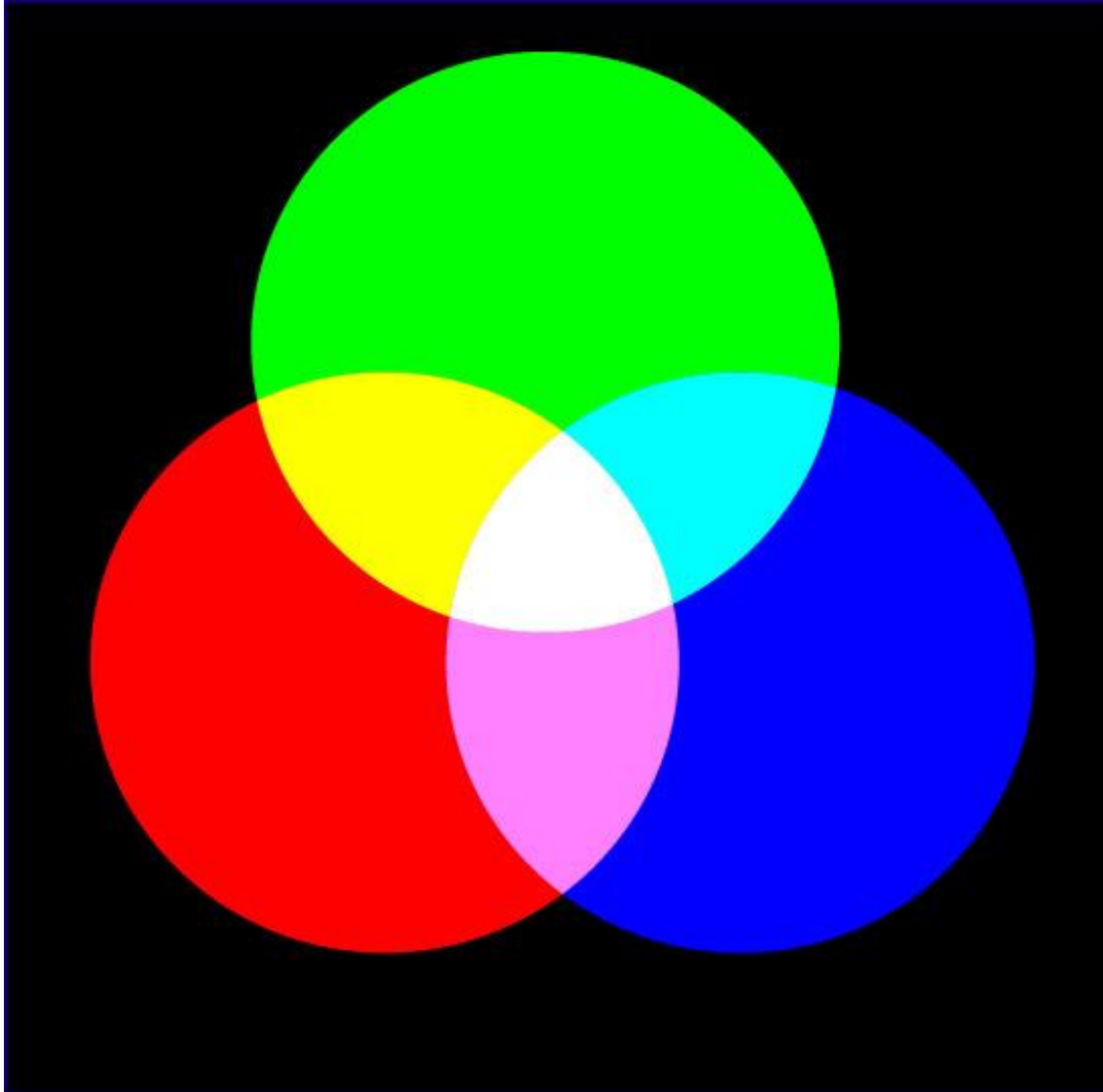
RGB Colour Model

16 Basic Colors

Color Name	RGB Triplet	Hexadecimal	Color Name	RGB Triplet	Hexadecimal
Aqua	(0,255,255)	00FFFF	Navy	(0,0,128)	000080
Black	(0,0,0)	000000	Olive	(128,128,0)	808000
Blue	(0,0,255)	0000FF	Purple	(128,0,128)	800080
Fuchsia	(255,0,255)	FF00FF	Red	(255,0,0)	FF0000
Gray	(128,128,128)	808080	Silver	(192,192,192)	C0C0C0
Green	(0,128,0)	008000	Teal	(0,128,128)	008080
Lime	(0,255,0)	00FF00	White	(255,255,255)	FFFFFF
Maroon	(128,0,0)	800000	Yellow	(255,255,0)	FFFF00

Color Codes

1.	WHITE	1.	#FFFFFF
2.	BLACK	2.	#000000
3.	RED	3.	#FF0000
4.	GREEN	4.	#00FF00
5.	BLUE	5.	#0000FF
6.	MAGENTA	6.	#FF00FF
7.	CYAN	7.	#00FFFF
8.	YELLOW	8.	#FFFF00
9.	AQUAMARINE	9.	#70DB93
10.	BAKER'S CHOCOLATE	10.	#5C3317
11.	VIOLET	11.	#9F5F9F
12.	BRASS	12.	#B5A642
13.	COPPER	13.	#B87333
14.	PINK	14.	#FF6EC7
15.	ORANGE	15.	#FF7F00

Color Codes

- If you require more information about color values, there is an excellent site entitled "VGDesign's Interactive Color Cube" that displays the background color code when you put your cursor over a small color sample. The Web address is :

  http://www.vgdesign.com/color.html

The Body Element

- The BODY element of a web page is an important element in regards to the page's appearance. Here are the attributes of the **BODY** tag to control all the levels:

  TEXT="#RRGGBB" to change the color of **all the text** on the page (**full page text color.**)

- This element contains information about the page's background color, the background image, as well as the text and link colors.

Background Color

- It is very common to see web pages with their background color set to white or some other colors.

- To set your document's background color, you need to edit the <BODY> element by adding the BGCOLOR attribute. The following example will display a document with a white background color:

<BODY BGCOLOR="#FFFFFF"></BODY>

TEXT Color

- The TEXT attribute is used to control the color of all the normal text in the document. The default color for text is black. The TEXT attribute would be added as follows:

<BODY BGCOLOR="#FFFFFF" TEXT="#FF0000"></BODY>

In this example the document's page color is white and the text would be red.

Using Image Background

- The BODY element also gives you ability of setting an image as the document's background.

- An example of a background image's HTML code is as follows:

<BODY BACKGROUND="hi.gif" BGCOLOR="#FFFFFF"></BODY>

Previewing Your Work

- Once you have created your basic starting document and set your document properties it is a good idea to save your file.
- To save a file, in NotePad, follow these steps:
1. Locate and click on the menu called "File".
2. Select the option under File Menu labeled "Save As".
3. In the "File Name" text box, type in the entire name of your file (including the extension name .html).

Edit, Save and View Cycle

- To preview Your Work, open a web browser and do the following:

1. Click on the menu labeled "File".
2. Locate the menu option, "Open".

Edit, Save and View Cycle

3. In the "Open" dialog box, click on the "Browse" button and locate your web document.

4. Click "OK" once you have selected your file.

- The web browser will load the same document but with the new revisions. This process is the Edit, Save and View Cycle.

Headings, Paragraphs, Breaks & Horizontal Rules

In this chapter you will add headings to your page, insert paragraphs, add some breaks, and add horizontal rules.

Objectives

Upon completing this section, you should be able to

1. List and describe the different Heading elements.
2. Use Paragraphs to add text to a document.
3. Insert breaks where necessary.
4. Add a Horizontal Rule.

Headings, <Hx> </Hx>

■ Inside the **BODY** element, heading elements **H1** through **H6** are generally used for major divisions of the document. Headings are permitted to appear in any order, but you will obtain the best results when your documents are displayed in a browser if you follow these guidelines:

1. **H1**: should be used as the highest level of heading, **H2** as the next highest, and so forth.

2. You should not skip heading levels: e.g., an **H3** should not appear after an **H1**, unless there is an **H2** between them.

Headings, <Hx> </Hx>

```
<HTML>
<HEAD>
<TITLE> Example Page</TITLE>
</HEAD>
<BODY>
<H1> Heading 1 </H1>
<H2> Heading 2 </H2>
<H3> Heading 3 </H3>
<H4> Heading 4 </H4>
<H5> Heading 5 </H5>
<H6> Heading 6 </H6>
</BODY>
</HTML>
```

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Heading 6

Paragraphs, <P> </P>

- Paragraphs allow you to add text to a document in such a way that it will automatically adjust the end of line to suite the window size of the browser in which it is being displayed. Each line of text will stretch the entire length of the window.

Paragraphs, <P> </P>

```
<HTML><HEAD>
<TITLE> Example Page</TITLE>
</HEAD>
<BODY></H1> Heading 1 </H1>
<P> Paragraph 1, ….</P>
<H2> Heading 2 </H2>
<P> Paragraph 2, ….</P>
<H3> Heading 3 </H3>
<P> Paragraph 3, ….</P>
<H4> Heading 4 </H4>
<P> Paragraph 4, ….</P>
<H5> Heading 5 </H5>
<P> Paragraph 5, ….</P>
<H6> Heading 6</H6>
<P> Paragraph 6, ….</P>
</BODY></HTML>
```

Heading 1

Paragraph 1,….

Heading 2

Paragraph 2,….

Heading 3

Paragraph 3,….

Heading 4

Paragraph 4,….

Heading 5

Paragraph 5,….

Heading 6

Paragraph 6,….

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Break,

- Line breaks allow you to decide where the text will break on a line or continue to the end of the window.

- A <BR> is an empty Element, meaning that it may contain attributes but it does not contain content.

- The <BR> element does not have a closing tag.

Break,

<HTML>
<HEAD>
<TITLE> Example Page</TITLE>
</HEAD>
<BODY>
<H1> Heading 1 </H1>
<P>Paragraph 1,
Line 2
 Line 3
….
</P>
</BODY>
</HTML>

Heading 1

Paragraph 1,….

Line 2

Line 3

….

Horizontal Rule, <HR>

- The <HR> element causes the browser to display a horizontal line (rule) in your document.
- <HR> does not use a closing tag, </HR>.

Horizontal Rule, <HR>

Attribute	Description	Default Value
SIZE	Height of the rule in pixels	2 pixels
WIDTH	Width of the rule in pixels or percentage of screen width	100%
NOSHADE	Draw the rule with a flat look instead of a 3D look	Not set (3D look)
ALIGN	Aligns the line (Left, Center, Right)	Center
COLOR	Sets a color for the rule (IE 3.0 or later)	Not set

Horizontal Rule, <HR>

```
<HTML>
<HEAD>
<TITLE> Example Page</TITLE>
</HEAD>
<BODY>
<H1> Heading 1 </H1>
<P>Paragraph 1, <BR>
Line 2 <BR>
<HR>Line 3 <BR>
</P>
</BODY>
</HTML>
```

Heading 1

Paragraph 1,....

Line 2

_____

Line 3

Character Formatting

In this chapter you will learn how to enhance your page with Bold, Italics, and other character formatting options.

Objectives

Upon completing this section, you should be able to

1. Change the color and size of your text.
2. Use Common Character Formatting Elements.
3. Align your text.
4. Add special characters.
5. Use other character formatting elements.

Bold, Italic and other Character Formatting Elements

- **<FONT SIZE="+2">** Two sizes bigger**</FONT>**
- The size attribute can be set as an absolute value from 1 to 7 or as a relative value using the "+" or "-" sign. Normal text size is 3 (from -2 to +4).
- **<B> Bold </B>**
- **<I> *Italic* </I>**
- **<U> Underline </U>**
- Color = "#RRGGBB" The COLOR attribute of the FONT element. E.g., **<FONT COLOR="#RRGGBB">this text has color</FONT>**
- **<PRE> Preformatted </PRE>** Text enclosed by PRE tags is displayed in a mono-spaced font. Spaces and line breaks are supported without additional elements or special characters.

Bold, Italic and other Character Formatting Elements

- **<EM>** *Emphasis* **</EM>** Browsers usually display this as italics.

- **<STRONG> STRONG </STRONG>** Browsers display this as bold.

- **<TT> TELETYPE </TT>** Text is displayed in a mono-spaced font. A typewriter text, e.g. fixed-width font.

- **<CITE> Citation </CITE>** represents a document citation (**italics**). **For titles of books, films, etc .Typically displayed in italics)** *.A Beginner's Guide to HTML***)**

Bold, Italic and other Character Formatting Elements

`<P> <FONT SIZE="+1"> One Size Larger </FONT> - Normal –`

`<FONT SIZE="-1"> One Size Smaller </FONT> <BR>`

`<B> Bold</B> - <I> italics</I> - <U> Underlined </U> -`

`<FONT COLOR="#FF0000"> Colored </FONT> <BR>`

`<EM> Emphasized</EM> - <STRONG> Strong </STRONG> - <TT> Tele Type </TT> <BR>`

One Size Larger - Normal – One Size Smaller
Bold - *italics* - <u>Underlined</u> - Colored
Emphasized - **Strong** - Tele Type

Alignment

- Some elements have attributes for alignment (ALIGN) e.g. Headings, Paragraphs and Horizontal Rules.

- The Three alignment values are : LEFT, RIGHT, CENTER.

- <CENTER></CENTER> Will center elements.

Alignment

- **<DIV ALIGN="value"></DIV>** Represents a division in the document and can contain most other element type. The alignment attribute of the DIV element is well supported.

- **<TABLE></TABLE>** Inside a TABLE, alignment can be set for each individual cell.

Special Characters & Symbols

- These Characters are recognized in HTML as they begin with an ampersand and end with with a semi-colon e.g. **&value;** The value will either be an entity name or a standard ASCII character number. They are called **escape sequences**.

- The next table represents some of the more commonly used special characters. For a comprehensive listing, visit the W3C's section on special characters at:
  http://www.w3.org/MarkUp/HTMLPlus/htmlplus_13.html

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Special Characters & Symbols

Special Character	Entity Name	Special Character	Entity Name
Ampersand	& &	Greater-than sign	> >
Asterisk	∗ **	Less-than sign	< <
Cent sign	¢ ¢	Non-breaking space	
Copyright	© ©	Quotation mark	" "
Fraction one qtr	¼ ¼	Registration mark	® ®
Fraction one half	½ ½	Trademark sign	™ ™

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Additional Character Formatting Elements

- **<STRIKE>** strike-through text**</STRIKE>**

  DEL is used for **STRIKE at the latest browsers**

- **<BIG>** places text in a big font**</BIG>**

- **<SMALL>** places text in a small font**</SMALL>**

- **_{** places text in subscript position **}**

- **^{** places text in superscript style position **}**

Example

<P><STRIKE> strike-through text </STRIKE></BR>

<BIG>places text in a big font </BIG>

<SMALL> places text in a small font</SMALL>

_{places text in subscript position}
Normal
^{places text in superscript style position}
   </P>

Lists

In this chapter you will learn how to create a variety of lists.

Objectives

Upon completing this section, you should be able to

1.   Create an unordered list.

2.   Create an ordered list.

3.   Create a defined list.

4.   Nest Lists.

List Elements

- HTML supplies several list elements. Most list elements are composed of one or more <LI> (List Item) elements.

- UL : Unordered List. Items in this list start with a list mark such as a bullet. Browsers will usually change the list mark in nested lists.

<UL>

<LI> List item **…</LI>**

<LI> List item **…</LI>**

</UL>

- List item …
- List item …

List Elements

- You have the choice of three bullet types: **disc(default), circle, square.**
- These are controlled in Netscape Navigator by the "TYPE" attribute for the <UL> element.

<UL TYPE="square">

<LI> List item …</LI>

<LI> List item …</LI>

<LI> List item …</LI>

</UL>

- List item …
- List item …
- List item …

List Elements

- OL: Ordered List. Items in this list are numbered automatically by the browser.

<OL>

<LI> List item …</LI>

<LI> List item …</LI>

<LI> List item …</LI>

</OL>

1. **List item …**
2. **List item …**
3. **List item**

- You have the choice of setting the TYPE Attribute to one of five numbering styles.

List Elements

TYPE	Numbering	Styles
1	**Arabic numbers**	**1,2,3, ……**
a	**Lower alpha**	**a, b, c, ……**
A	**Upper alpha**	**A, B, C, ……**
i	**Lower roman**	**i, ii, iii, ……**
I	**Upper roman**	**I, II, III, ……**

List Elements

- You can specify a starting number for an ordered list.

<OL TYPE ="i">

<LI> List item …</LI>

<LI> List item …</LI>

</OL>

<P> text ….</P>

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

<LI> List item …</LI>

</OL>

List Elements

i.   List item …

ii.   List item …

Text ….

iii.   List item …

List Elements

- **DL: Definition List**. This kind of list is different from the others. Each item in a DL consists of one or more **Definition Terms (DT elements),** followed by one or more **Definition Description (DD elements).**

<DL>

<DT> HTML </DT>

<DD> Hyper Text Markup Language </DD>

<DT> DOG </DT>

<DD> A human's best friend!</DD>

</DL>

HTML

      Hyper Text Markup Language

DOG

      A human's best friend!

Nesting Lists

- You can nest lists by inserting a UL, OL, etc., inside a list item (LI).

EXample

\<UL TYPE = "square">

\<LI> List item …\</LI>

\<LI> List item …

\<OL TYPE="i" START="3">

\<LI> List item …\</LI>

\<LI> List item …\</LI>

\<LI> List item …\</LI>

\<LI> List item …\</LI>

\<LI> List item …\</LI>

\</OL>

\</LI>

\<LI> List item …\</LI>

\</UL>

- List item …
- List item …
    - iii. List item …
    - iv. List item …
    - v. List item …
    - vi. List item …
    - vii. List item …
- List item …

What will be the output?

<H1 ALIGN="CENTER">SAFETY TIPS FOR CANOEISTS</H1>

<OL **TYPE="a" START="2"**>

<LI>Be able to swim </LI>

<LI>Wear a life jacket at all times </LI>

<LI>Don't stand up or move around. If canoe tips,

   <UL>

   <LI>Hang on to the canoe </LI>

   <LI>Use the canoe for support and </LI>

   <LI>Swim to shore

   </UL> </LI>

<LI>Don't overexert yourself </LI>

<LI>Use a bow light at night </LI>

</OL>

The output….

SAFETY TIPS FOR CANOEISTS

b. Be able to swim

c. Wear a life jacket at all times

d. Don't stand up or move around. If canoe tips,

   o Hang on to the canoe

   o Use the canoe for support and

   o Swim to shore

e. Don't overexert yourself

f. Use a bow light at night

```html
<H1 ALIGN="CENTER">SAFETY TIPS FOR CANOEISTS</H1>
<OL TYPE="a" START="2">
<LI>Be able to swim </LI>
<LI>Wear a life jacket at all times </LI>
<LI>Don't stand up or move around. If canoe tips,
<UL>
<LI>Hang on to the canoe </LI>
<LI>Use the canoe for support
<OL type="I" start="4">
<LI> Be careful </LI>
<LI> Do not look around</LI>
</LI> </OL>
 <LI>Swim to shore
</UL> </LI>
<LI>Don't overexert yourself </LI>
<LI>Use a bow light at night </LI>
</OL>
```

What
will
be the
output?

The output….

SAFETY TIPS FOR CANOEISTS

b. Be able to swim

c. Wear a life jacket at all times

d. Don't stand up or move around. If canoe tips,

  o Hang on to the canoe

  o Use the canoe for support

   IV. Be careful

    V. Do not look around

  o Swim to shore

e. Don't overexert yourself

f. Use a bow light at night

Images

In this chapter you will learn about images and how to place images in your pages.

Objectives

Upon completing this section, you should be able to

1. Add images to your pages.

Images

- **<IMG>**This element defines a graphic image on the page.
- **Image File (SRC:source):** This value will be a URL (location of the image) E.g. http://www.domain.com/dir/file.ext or /dir/file.txt.
- **Alternate Text (ALT):** This is a text field that describes an image or acts as a label. It is displayed when they position the cursor over a graphic image.
- **Alignment (ALIGN):** This allows you to align the image on your page.

Images

- **Width (WIDTH):** is the width of the image in pixels.
- **Height (HEIGHT):** is the height of the image in pixels.
- **Border (BORDER):** is for a border around the image, specified in pixels.
- **HSPACE:** is for Horizontal Space on both sides of the image specified in pixels. A setting of 5 will put 5 pixels of invisible space on both sides of the image.
- **VSPACE:** is for Vertical Space on top and bottom of the image specified in pixels. A setting of 5 will put 5 pixels of invisible space above and bellow the image.

Some Examples on images

1) <IMG SRC"=jordan.gif" border=4>

2) <IMG SRC "=jordan.gif "width="60" height="60">

3) <IMG SRC"=jordan.gif "ALT="This is a text that goes with the image">

4) <IMG SRC "=jordan.gif" Hspace"=30 " Vspace"=10" border=20>

5) < IMG SRC =" jordan.gif" align="left">

blast blast blast blast blast

Anchors, URLs and Image Maps

In this chapter you will learn about Uniform Resource Locator, and how to add them as Anchor or Links inside your web pages.

Objectives

Upon completing this section, you should be able to

1. Insert links into documents.

2. Define Link Types.

3. Define URL.

4. List some commonly used URLs.

5. Plan an Image Map.

HOW TO MAKE A LINK

1) The tags used to produce links are the **\<A>** and **\</A>.** The **\<A>** tells where the link should start and the **\</A>** indicates where the link ends. Everything between these two will work as a link.

2) The example below shows how to make the word **Here** work as a link to yahoo.

Click **\<A HREF="http://www.yahoo.com">here\</A>** to go to yahoo.

More on LINKs

<body LINK="#C0C0C0" VLINK="#808080" ALINK="#FF0000">

- **LINK - standard link - to a page the visitor hasn't been to yet. (standard color is blue - #0000FF).**
VLINK - visited link - to a page the visitor has been to before. (standard color is purple - #800080).
ALINK - active link - the color of the link when the mouse is on it. (standard color is red - #FF0000).

If the programmer what to change the color

- **Click <a href"=http//:www.yahoo.com">here to go to yahoo.**

Internal Links

- Internal Links : Links can also be created inside large documents to simplify navigation. Today's world wants to be able to get the information quickly. Internal links can help you meet these goals.

1. Select some text at a place in the document that you would like to create a link to, then add an anchor to link to like this:

   <A NAME="bookmark_name"></A>

   The Name attribute of an anchor element specifies a location in the document that we link to shortly. All NAME attributes in a document must be unique.

2. Next select the text that you would like to create as a link to the location created above.

   <A HREF="#bookmark_name">Go To Book Mark</A>

E-Mail (Electronic Mail)

E.g. mailto:kmf@yahoo.com

- The type of service is identified as the mail client program. This type of link will launch the users mail client.

- The recipient of the message is kmf@yahoo.com

<A HREF="mailto:kmf@yahoo.com">Send me

More Information </A>

Image Maps

- Image maps are images, usually in gif format that have been divided into regions; clicking in a region of the image cause the web surfer to be connected to a new URL. Image maps are graphical form of creating links between pages.

- There are two type of image maps:

  Client side and server side

Both types of image maps involve a listing of co-ordinates that define the mapping regions and which URLs those coordinates are associated with. This is known as the map file.

Area Shapes Used

Finding the coordinates....

Rectangle — (x_1, y_1), (x_2, y_2)

Circle — r, (x, y)

Polygon — (x_1, y_1), (x_2, y_2), (x_3, y_3), (x_4, y_4), (x_5, y_5)
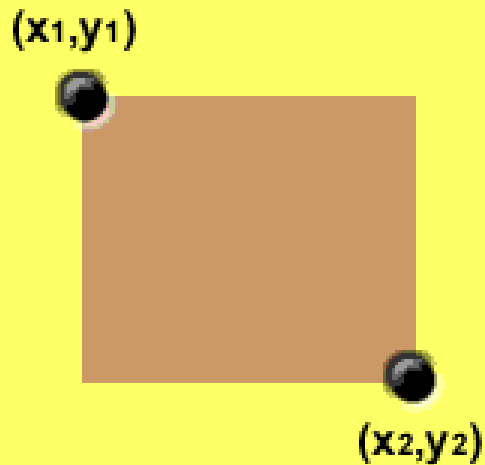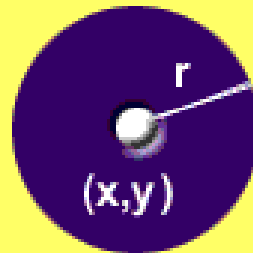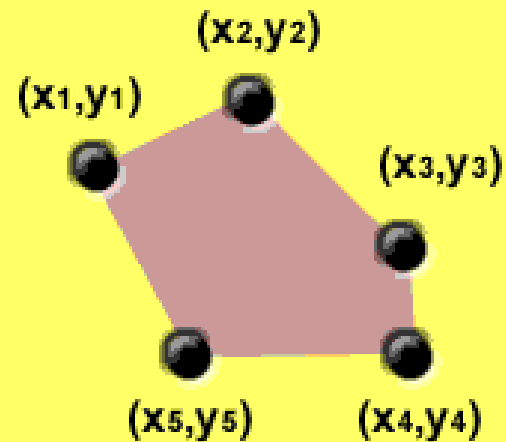
Client-Side Image Maps

- Client-side image maps (USEMAP) use a map file that is part of the HTML document (in an element called MAP), and is linked to the image by the Web browser.

```html
<IMG SRC="note.GIF"  Width=200 Height=200
border="5" USEMAP="#map1">
<MAP NAME="map1">
<AREA SHAPE="RECT" COORDS="0,0,90,90"
HREF="hi.html"  ALT="see me…">
<AREA SHAPE="RECT" COORDS="100,100,160,160"
HREF="divPara.html"  ALT="see him…" >
<AREA SHAPE="CIRCLE" COORDS="150,50,20"
HREF="house.html"  ALT="see it…" >
</MAP>
```

We can use Poly as well as Rect……

Shapes, Coords

- ## Types of Shapes
  - Rect → used for squares and ordered shapes.
  - Circle → used for circles.
  - Poly → used for unordered shapes.

- ## Number of coordenations for each shape:
  - Rect →4 numbers for two corners
  - Circle →3 numbers for the center & R
  - Poly → depends on the number of corners of the shape(2 numbers for each corner)

Tables

In this chapter you will learn that tables have many uses in HTML.

Objectives:

Upon completing this section, you should be able to:

1. Insert a table.
2. Explain a table's attributes.
3. Edit a table.
4. Add a table header.

Tables

- The <TABLE></TABLE> element has four sub-elements:
1. Table Row<TR></TR>.
2. Table Header <TH></TH>.
3. Table Data <TD></TD>.
4. Caption <CAPTION></CAPTION>.
- The table row elements usually contain table header elements or table data elements.

Tables

```
<table border="1">
<tr>
<th> Column 1 header </th>
<th> Column 2 header </th>
</tr>
<tr>
<td> Row1, Col1 </td>
<td> Row1, Col2 </td>
</tr>
<tr>
<td> Row2, Col1 </td>
<td> Row2, Col2 </td>
</tr>
</table>
```

Tables

Column 1 Header	Column 2 Header
Row1, Col1	Row1, Col2
Row2, Col1	Row2, Col2

Tables Attributes

- **BGColor:** Some browsers support background colors in a table.

- **Width:** you can specify the table width as an absolute number of pixels or a percentage of the document width. You can set the width for the table cells as well.

- **Border:** You can choose a numerical value for the border width, which specifies the border in pixels.

- **CellSpacing:** Cell Spacing represents the space between cells and is specified in pixels.

Table Attributes

- **CellPadding:** Cell Padding is the space between the cell border and the cell contents and is specified in pixels.
- **Align:** tables can have left, right, or center alignment.
- **Background:** Background Image, will be titled in IE3.0 and above.
- BorderColor, BorderColorDark.

Table Caption

- A table caption allows you to specify a line of text that will appear centered above or bellow the table.

<TABLE BORDER=1 CELLPADDING=2>

<CAPTION ALIGN="BOTTOM"> Label For My Table </CAPTION>

- The Caption element has one attribute ALIGN that can be either TOP (Above the table) or BOTTOM (below the table).

Table Header

- Table Data cells are represented by the TD element. Cells can also be TH (Table Header) elements which results in the contents of the table header cells appearing centered and in bold text.

Table Data and Table Header Attributes

- **Colspan:** Specifies how many cell columns of the table this cell should span.

- **Rowspan:** Specifies how many cell rows of the table this cell should span.

- **Align:** cell data can have left, right, or center alignment.

- **Valign:** cell data can have top, middle, or bottom alignment.

- **Width:** you can specify the width as an absolute number of pixels or a percentage of the document width.

- **Height:** You can specify the height as an absolute number of pixels or a percentage of the document height.

Basic Table Code

```
<TABLE BORDER=1 width=50%>
<CAPTION>  <h1>Spare Parts <h1> </Caption>
<TR><TH>Stock Number</TH><TH>Description</TH><TH>List
    Price</TH></TR>
<TR><TD bgcolor=red>3476-AB</TD><TD>76mm
    Socket</TD><TD>45.00</TD></TR>
<TR><TD >3478-AB</TD><TD><font color=blue>78mm Socket</font>
    </TD><TD>47.50</TD></TR>
<TR><TD>3480-AB</TD><TD>80mm Socket</TD><TD>50.00</TD></TR>
</TABLE>
```

Spare Parts

Stock Number	Description	List Price
3476-AB	76mm Socket	45.00
3478-AB	78mm Socket	47.50
3480-AB	80mm Socket	50.00

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Table Data and Table Header Attributes

<Table border=1 cellpadding =2>

<tr> <th> Column 1 Header</th> <th>
 Column 2 Header</th> </tr>

<tr> <td colspan=2> Row 1 Col 1</td> </tr>

<tr> <td rowspan=2>Row 2 Col 1</td>

<td> Row 2 Col2</td> </tr>

<tr> <td> Row 3 Col2</td> </tr>

</table>

Table Data and Table Header Attributes

Column 1 Header	Column 2 Header
Row 1 Col 1	
Row 2 Col 1	Row 2 Col 2
	Row 3 Col 2

Special Things to Note

- **TH, TD and TR should always have end tags.**
  Although the end tags are formally optional, many browsers will mess up the formatting of the table if you omit the end tags. In particular, you should **always** use end tags if you have a TABLE within a TABLE -- in this situation, the table parser gets hopelessly confused if you don't close your TH, TD and TR elements.
- **A default TABLE has no borders**
  By default, tables are drawn without border lines. You need the BORDER attribute to draw the lines.
- **By default, a table is flush with the left margin**
  TABLEs are plopped over on the left margin. If you want centered tables, You can either: place the table inside a DIV element with attribute ALIGN="center".
  Most current browsers also supports table alignment, using the ALIGN attribute. Allowed values are "left", "right", or "center", for example: <TABLE ALIGN="left">. The values "left" and "right" float the table to the left or right of the page, with text flow allowed around the table. This is entirely equivalent to IMG alignment

What will be the output?

<TABLE BORDER width="750">

<TR> <TD colspan="4" align="center">Page Banner</TD></TR>

<TR> <TD rowspan="2" width="25%">Nav Links</TD><TD colspan="2">Feature Article</TD> <TD rowspan="2" width="25%">Linked Ads</TD></TR>

<TR><TD width="25%">News Column 1 </TD> <TD width="25%"><News Column 2 </TD></TR>

</TABLE>

The Output

Creating a Page Template - Microsoft Internet Explorer

File   Edit   View   Favorites   Tools   Help

Back | Forward | Stop | Refresh | Home | Search | Favorites | Media | History | Mail | Print | Edit | Discuss | Related

Page Banner		
Nav Links	Feature Article	Linked Ads
	News Column 1	News Column 2

Targets

- When you use links for use in a frames environment you will need to specify an additional attribute called **TARGET**.

- The **TARGET** attribute uses the NAME attribute of the **FRAME** element.

- If we were to place a link in doc1.html that linked to doc3.html and we wanted doc3.html to be displayed in the right windowpane; the HTML code would appear in doc1.html as follows:

<A HREF="doc3.html" TARGET="right_pane">Link to Document 3 </A>

Special Targets

- There are **4** special target names that cannot be assigned by the NAME attribute of the FRAME tag.

1. **TARGET="_top"** : This loads the linked document into the full browser window with the URL specified by the HREF attribute. All frames disappear, leaving the new linked page to occupy the entire window. The back is turned on.

2. **TARGET="_blank"** : Opens an unnamed new browser window and loads the document specified in the URL attribute into the new window (and your old window stays open). The back is turned off. Other windows remains on.

3. **TARGET="_self"** : Loads the document in the same window where the anchor was {*Clicked*}. This is the **default** setting for linking elements.

4. **TARGET="_parent"** : the _parent frame is a prior frameset that the current frameset was "spawned" from. If there isn't one it is the browser window. The document is loaded into the area occupied by the columns or rows frameset containing the frame that contains the link. The back is turned on. All windows disappear.

If a frame contains the following link, then clicking the link launches a new, unnamed browser display window that contains the content defined in stuff.HTM. This can be a simple HTML document, or an entirely new FRAMESET definition.

1.   **<A HREF="stuff.html" TARGET="_blank">**

If a frame contains the following link, then clicking the link will simply cause the frame which contains the link to clear, and its content will be replaced with whatever is in stuff.htm.

2.   **<A HREF="stuff.html" TARGET="_self">**

If a frame contains the following link, the frameset that contains the frame that contains this link will be replaced by stuff.HTM.

3.   **<A HREF="stuff.html" TARGET="_parent">**

Finally, if a frame contains the following link, clicking the link replaces the entire browser window with the contents of stuff.HTM.

4.   **<A HREF="stuff.html" TARGET="_top">**

FORMS

- Forms add the ability to web pages to not only provide the person viewing the document with dynamic information but also to obtain information from the person viewing it, and process the information.

Objectives:

Upon completing this section, you should be able to

1. Create a FORM.
2. Add elements to a FORM.

3. Define CGI (Common Gateway Interface).
4. Describe the purpose of a CGI Application.
5. Specify an action for the FORM.
- Forms work in all browsers.
- Forms are Platform Independent.

FORMS

- To insert a form we use the <FORM></FORM> tags. The rest of the form elements must be inserted in between the form tags.

<HTML> <HEAD>

<TITLE> Sample Form</TITLE>

</HEAD>

<BODY BGCOLOR="FFFFFF">

<FORM ACTION = http://www.xnu.com/formtest.asp>

<P> First Name: <INPUT TYPE="TEXT" NAME="fname" MAXLENGTH="50"> </P>

<P> <INPUT TYPE="SUBMIT" NAME="fsubmit1" VALUE="Send Info"> </P>

</FORM>

</BODY> </HTML>

<FORM> element attributes

- **ACTION:** is the **URL** of the **CGI** (Common Gateway Interface) program that is going to accept the data from the form, process it, and send a response back to the browser.

- **METHOD: GET** (default) or **POST** specifies which **HTTP** method will be used to send the form's contents to the web server. The CGI application should be written to accept the data from either method.

- **NAME:** is a form name used by VBScript or JavaScripts.

- **TARGET:** is the target frame where the response page will show up.

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Form Elements

- **Form elements have properties: Text boxes, Password boxes, Checkboxes, Option(Radio) buttons, Submit, Reset, File, Hidden and Image.**

- **The properties are specified in the TYPE Attribute of the HTML element <INPUT></INPUT>.**

Name: Sami Ali

Student No. 123456789

Address:
Al al-Bayt University
CIS Department
Faculty of IT

City: Amman

Amman
Irbed
Karak

is foreign? ☑

Male: ⦿

Female: ○

Submit Reset

Form Elements

<INPUT> Element's Properties
TYPE= Type of INPUT entry field.
NAME = Variable name passed to CGI application
VALUE= The data associated with the variable name to be passed to the CGI application
CHECKED= Button/box checked
SIZE= Number of visible characters in text field
MAXLENGHT= Maximum number of characters accepted.

Text Box

- **Text boxes**: Used to provide input fields for text, phone numbers, dates, etc.

<INPUT TYPE= " TEXT " >

Browser will display

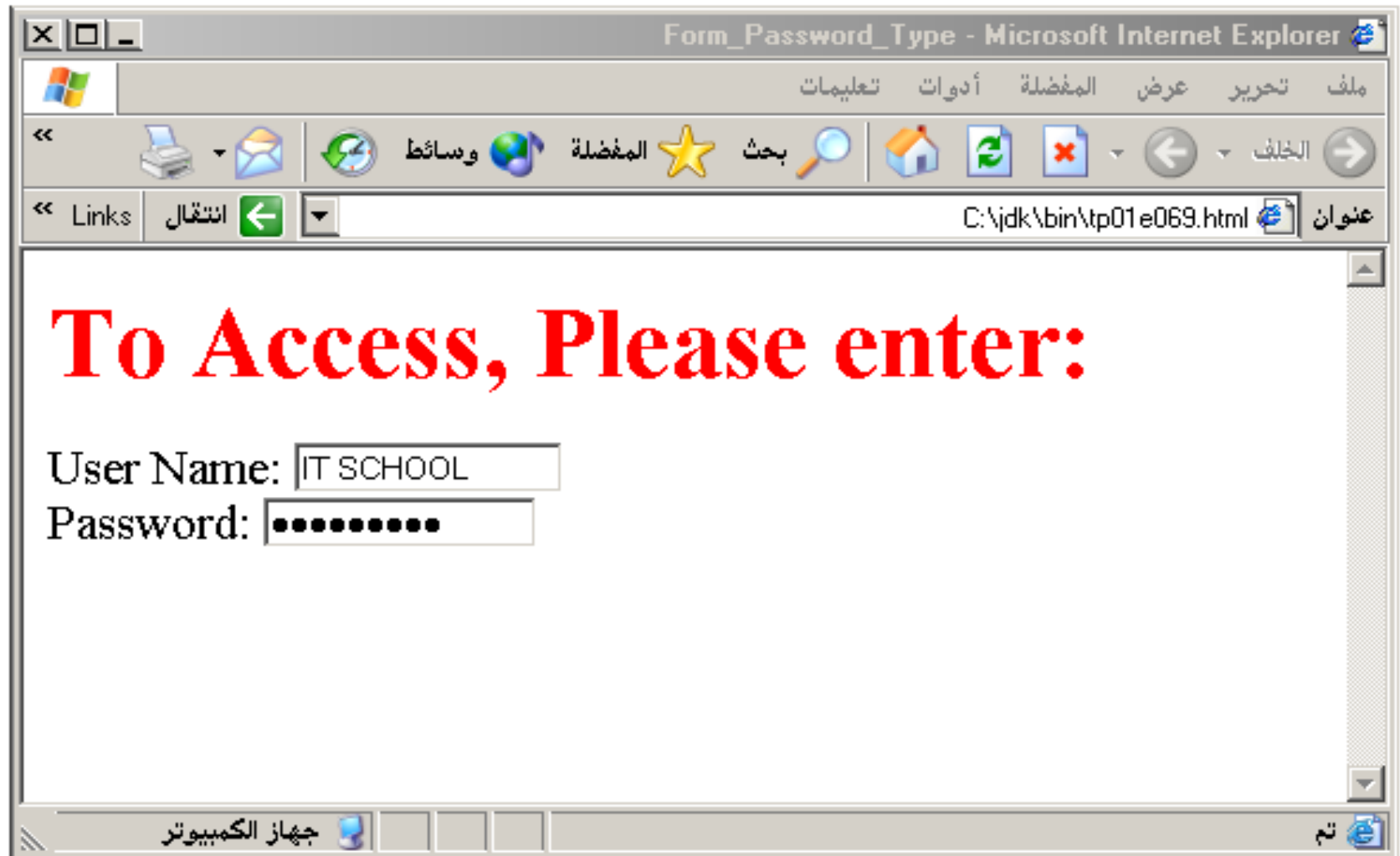Textboxes use the following attributes:

- **TYPE:** text.
- **SIZE:** determines the size of the textbox in characters. **Default=20** characters.
- **MAXLENGHT** *:* determines the maximum number of characters that the field will accept.
- **NAME:** is the name of the variable to be sent to the CGI application.
- **VALUE:** will display its contents as the default value.

Example on Text Box

```
<TITLE>Form_Text_Type</TITLE>
</HEAD> <BODY>
<h1> <font color=blue>Please enter the following
   bioData</font></h1>
<FORM name"=fome1 " Method= " get " Action= " URL " >
First Name :<INPUT TYPE"=TEXT "NAME"=FName"
SIZE"=15 "MAXLENGTH"=25"><BR>
Last Name :<INPUT TYPE"=TEXT "NAME"=LName"
SIZE"=15 "MAXLENGTH"=25"><BR>
Nationality :<INPUT TYPE"=TEXT "NAME"=Country"
SIZE"=25 "MAXLENGTH"=25"><BR>
The Phone Number :<INPUT TYPE"=TEXT "NAME"=Phone"
SIZE"=15 "MAXLENGTH"=12"><BR>
</FORM> </BODY> </HTML>
```

Password

- **Password:** Used to allow entry of passwords.

<INPUT TYPE= " PASSWORD " >

Browser will display

Text typed in a password box is starred out in the browser display.

Password boxes use the following attributes:

- **TYPE:** password.
- **SIZE:** determines the size of the textbox in characters.
- **MAXLENGHT:** determines the maximum size of the password in characters.
- **NAME:** is the name of the variable to be sent to the CGI application.
- **VALUE:** is usually blank.

Example on Password Box

```
<HTML><HEAD>
<TITLE>Form_Password_Type</TITLE></HEAD>
<BODY>
<h1> <font color=red>To Access, Please
enter:</font></h1>
<FORM name"=fome2  "Action"=url  "method"=get">
User Name :<INPUT TYPE"=TEXT "Name"=FName"
SIZE"=15 "MAXLENGTH"=25"><BR>
Password :<INPUT TYPE"=PASSWORD "
NAME"=PWord "  value ""=SIZE"=15"
MAXLENGTH"=25"><BR>
</FORM></BODY> </HTML>
```

Output

Form_Password_Type - Microsoft Internet Explorer

ملف   تحرير   عرض   المفضلة   أدوات   تعليمات

Links   انتقال   C:\jdk\bin\tp01e069.html   عنوان

To Access, Please enter:

User Name: IT SCHOOL

Password: ●●●●●●●●●

جهاز الكمبيوتر   تم

Hidden

- **Hidden:** Used to send data to the CGI application that you don't want the web surfer to see, change or have to enter but is necessary for the application to process the form correctly.

<INPUT TYPE="HIDDEN">

Nothing is displayed in the browser.

Hidden inputs have the following attributes:

- **TYPE:** hidden.
- **NAME:** is the name of the variable to be sent to the CGI application.
- **VALUE:** is usually set a value expected by the CGI application.

Check Box

- **Check Box:** Check boxes allow the users to select more than one option.

<INPUT TYPE="CHECKBOX">

Browser will display

Checkboxes have the following attributes:

- **TYPE:** checkbox.

- **CHECKED:** is blank or CHECKED as the initial status.

- **NAME:** is the name of the variable to be sent to the CGI application.

- **VALUE:** is usually set to a value.

```html
<HTML> <HEAD><TITLE>CheckBoxType</TITLE> </HEAD>
<BODY>
<h1> <font color=green>Please check one of the
following</font></h1>
<FORM name"=fome3  "Action"=url  "method"=get">
<font color=red> Select Country :</font><BR>
jordan:<INPUT TYPE"=CheckBox "Name"=country  "
CHECKED><BR>
Yemen<INPUT TYPE"=CheckBox " Name"=country"><BR>
Qatar:<INPUT TYPE"=CheckBox "Name"=country"><BR>
<BR>
<font color=blue>Select Language:</font><BR>
Arabic:<INPUT TYPE"=CheckBox "Name"=language  "
CHECKED><BR> English:<INPUT TYPE"=CheckBox "
Name"=language"><BR>
French:<INPUT TYPE"=CheckBox "Name"=language">
<BR></FORM> </BODY></HTML>
```
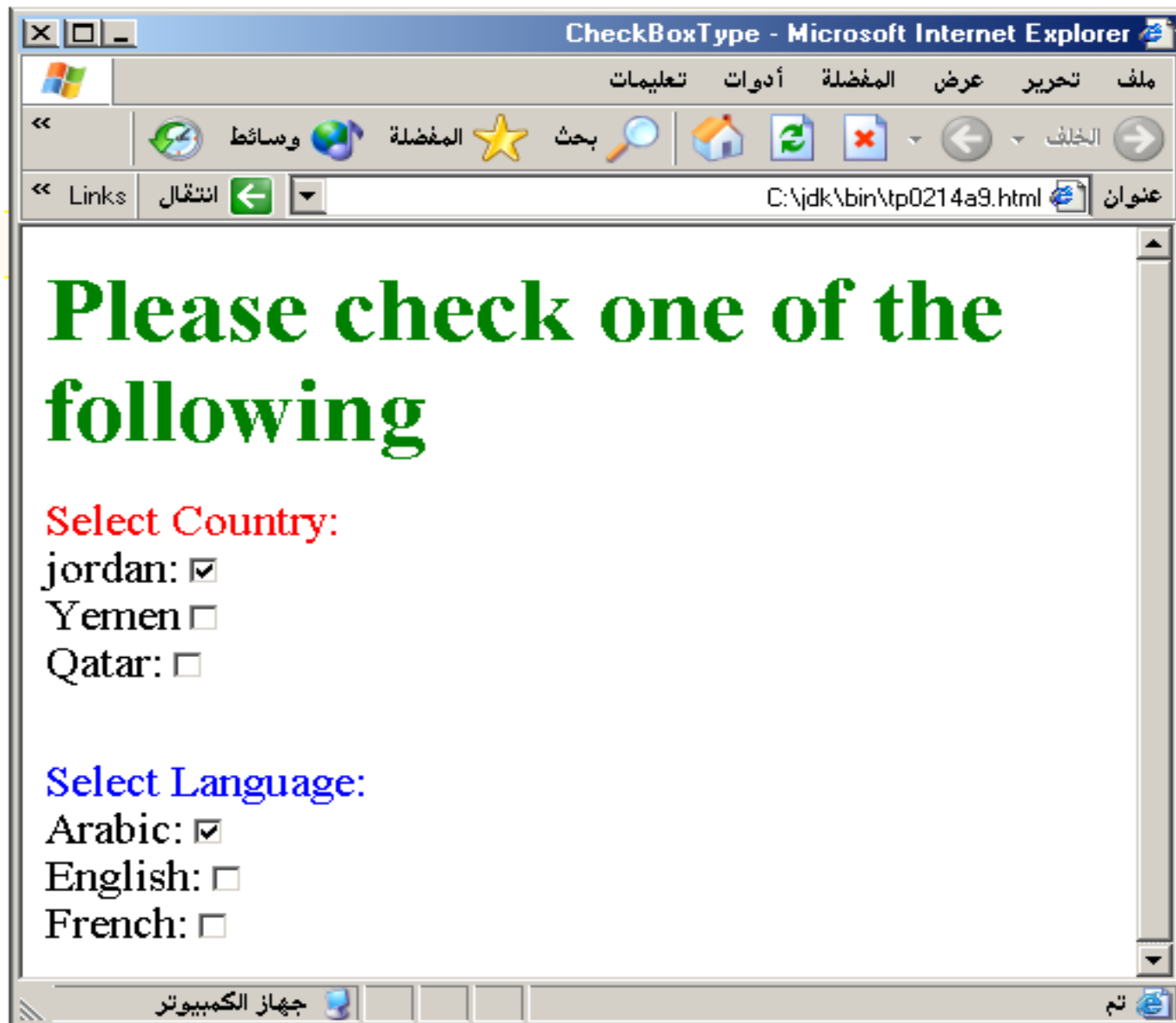
Radio Button

- **Radio Button:** Radio buttons allow the users to select only one option.

<INPUT TYPE="RADIO">

Browser will display

Radio buttons have the following attributes:

- **TYPE:** radio.
- **CHECKED:** is blank or CHECKED as the initial status. Only one radio button can be checked
- **NAME:** is the name of the variable to be sent to the CGI application.
- **VALUE:** usually has a set value.

```html
<HTML> <HEAD><TITLE>CheckBoxType</TITLE> </HEAD>
<BODY>
<h1> <font color=green>Please check one of the
following</font></h1>
<FORM name"=fome3  "Action"=url  "method"=get">
<font color=red> Select Country :</font><BR>
jordan:<INPUT TYPE" =RADIO " Name"=country  "
CHECKED><BR>
Yemen<INPUT TYPE"=RADIO  " Name"=country"><BR>
Qatar:<INPUT TYPE"=RADIO " Name"=country"><BR>
<BR>
<font color=blue>Select Language:</font><BR>
Arabic:<INPUT TYPE"=RADIO " Name"=language  "
CHECKED><BR> English:<INPUT TYPE "=RADIO  "
Name"=language"><BR>
French:<INPUT TYPE "=RADIO  " Name"=language">
<BR></FORM> </BODY></HTML>
```
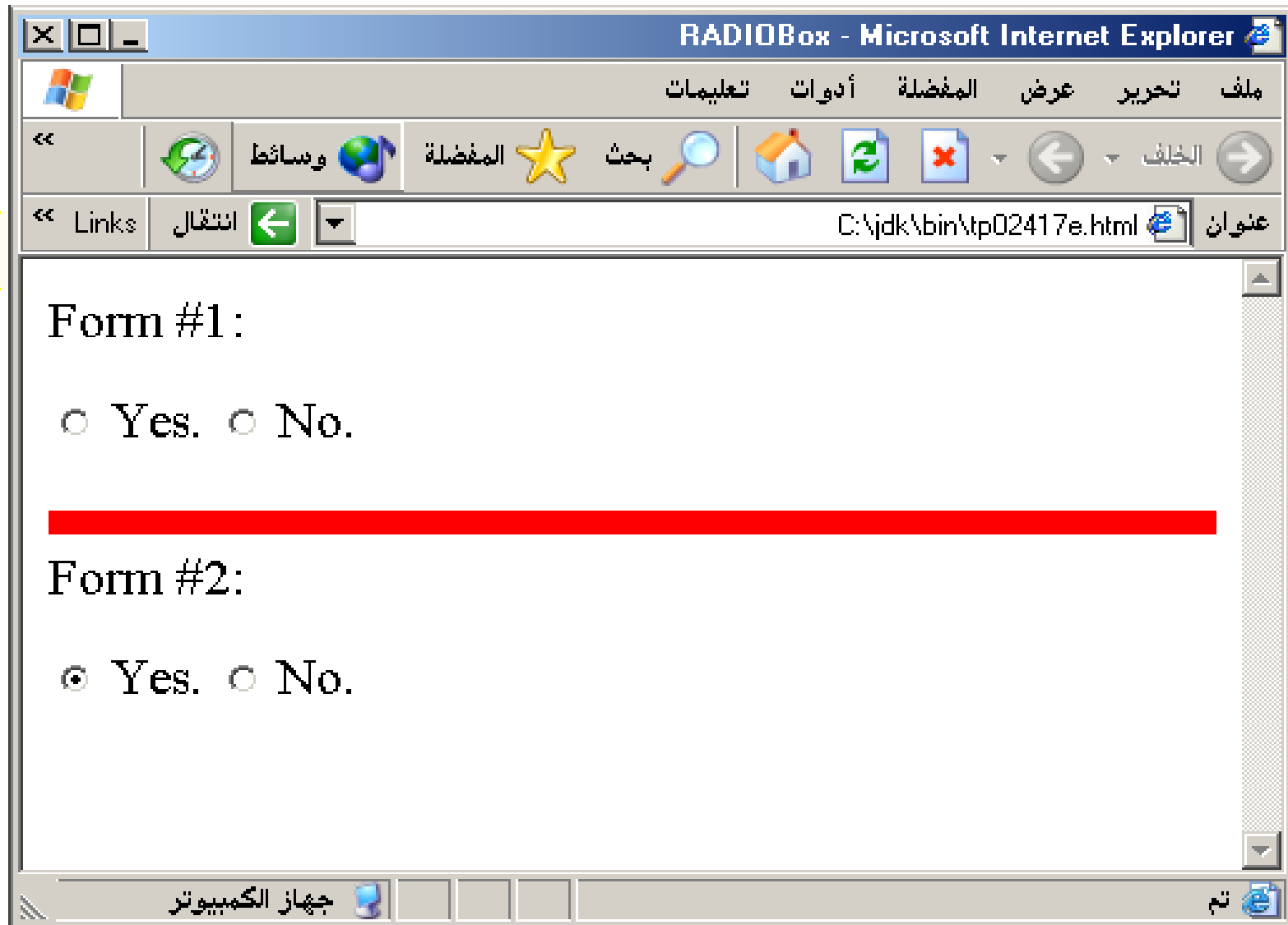
Please check one of the following

Select Country:
jordan: ⦿
Yemen ○
Qatar: ○

Select Language:
Arabic: ⦿
English: ○
French: ○

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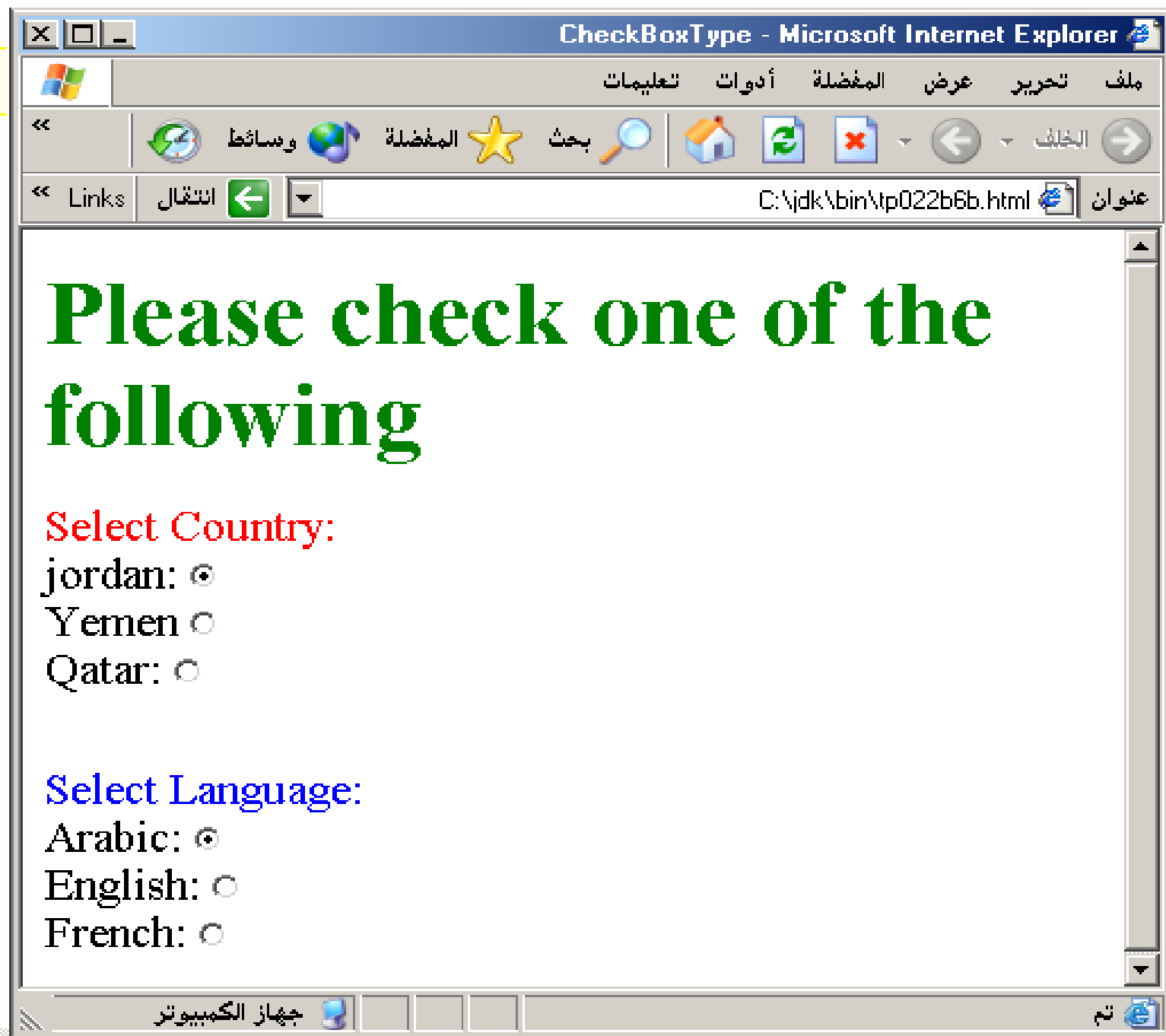
```
<HTML><HEAD>
<TITLE>RADIOBox</TITLE> </HEAD>
<BODY>
Form #1:
<FORM>
 <INPUT TYPE="radio" NAME="choice" VALUE="one"> Yes.
  <INPUT TYPE="radio" NAME="choice" VALUE="two"> No.
</FORM>
<HR color=red size="10" >
Form #2:
<FORM>
    <INPUT TYPE="radio" NAME="choice" VALUE="three"
CHECKED> Yes.
  <INPUT TYPE="radio" NAME="choice" VALUE="four"> No.
</FORM>
</BODY></HTML>
```

Push Button

- **Push Button:** This element would be used with JavaScript to cause an action to take place.
<INPUT TYPE="BUTTON">
Browser will display

BUTTON

Push Button has the following attributes:

- **TYPE:** button.
- **NAME:** is the name of the button to be used in scripting.
- **VALUE:** determines the text label on the button.

```html
<DIV align=center><BR><BR>
<FORM>
<FONT Color=red>
<h1>Press Here to see a baby crying:<BR>
<INPUT TYPE"=button "
  VALUE"=PressMe"><BR><BR>
<FONT Color=blue>
Click Here to see a baby shouting:<BR>
<INPUT TYPE"=button "VALUE"=ClickMe ">
  <BR><BR>
<FONT Color=green>
Hit Here to see a baby eating:<BR>
<INPUT TYPE"=button "VALUE"=HitME "> <BR><BR>
<FONT Color=yellow>
</FORM></DIV>
```

Press Here to see a baby crying:

PressMe

Click Here to see a baby shouting:

ClickMe

Hit Here to see a baby eating:

HitME

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Submit Button

- **Submit:** Every set of Form tags requires a Submit button. This is the element causes the browser to send the names and values of the other elements to the CGI Application specified by the ACTION attribute of the FORM element.

<INPUT TYPE="SUBMIT">

The browser will display

Submit has the following attributes:

Submit Query

- **TYPE:** submit.
- **NAME:** value used by the CGI script for processing.
- **VALUE:** determines the text label on the button, usually Submit Query.

```
<FORM    Action"=URL        "method"=get">
First Name :<INPUT TYPE"=TEXT "Size=25
name"=firstName"><BR>
Family Name :<INPUT TYPE"=TEXT "Size=25
name"=LastName"><BR>
<BR>
<FONT Color=red>
Press Here to submit the data:<BR>
<INPUT TYPE"=submit "VALUE"=SubmitData " >
</FORM>
```

First Name: [   ]
Family Name: [   ]

Press Here to submit the data:

[SubmitData]
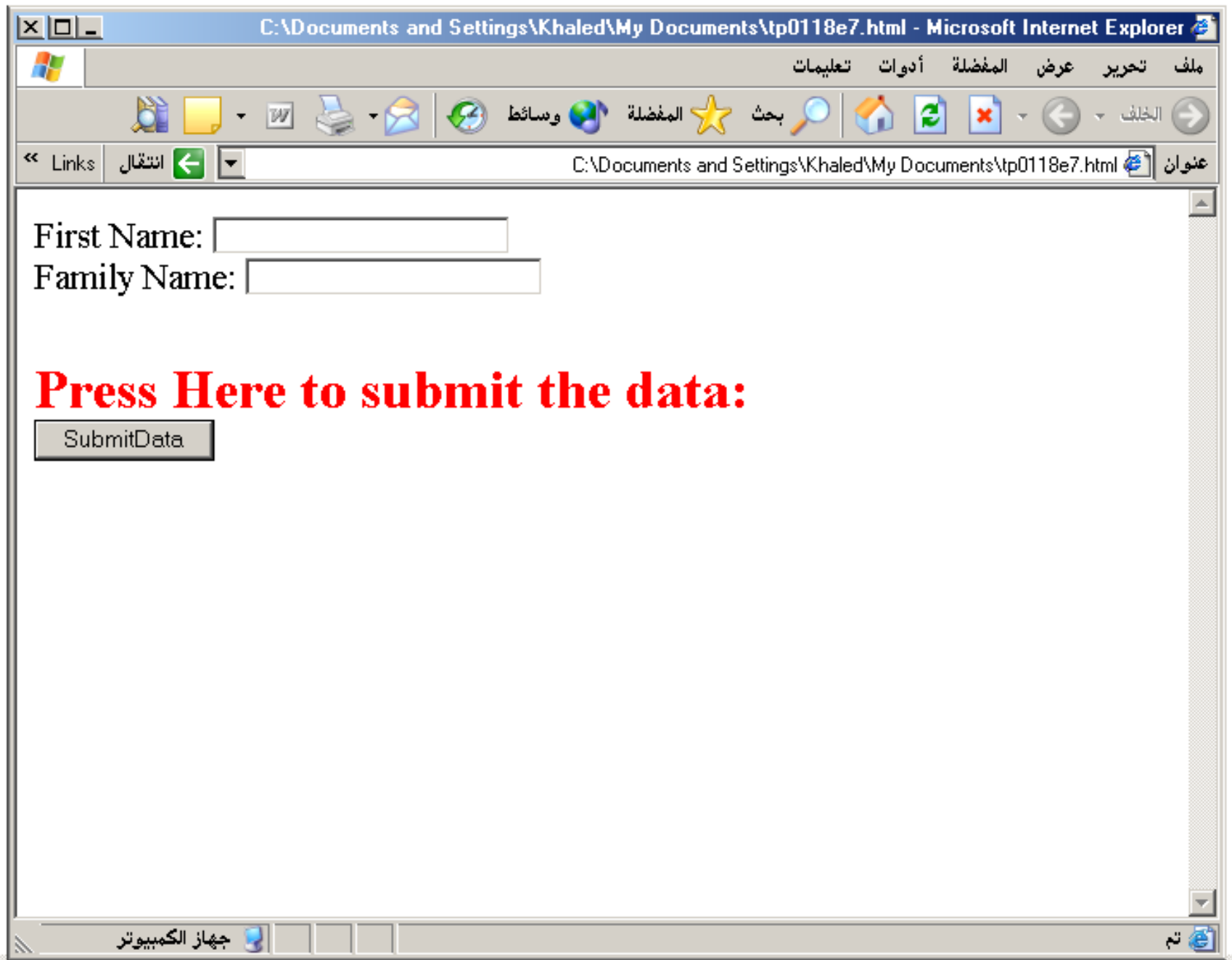
Reset Button

- **Reset**: It is a good idea to include one of these for each form where users are entering data. It allows the surfer to clear all the input in the form.

- **<INPUT TYPE="RESET">**

- Browser will display Reset

-

- Reset buttons have the following attributes:
- **TYPE**: reset.
- **VALUE**: determines the text label on the button, usually Reset.

```
<FORM    Action"=URL       "method"=get">
First Name :<INPUT TYPE"=TEXT "Size=25
name"=firstName"> <BR>
Family Name :<INPUT TYPE"=TEXT "Size=25
name"=LastName"><BR>
<BR>
<FONT Color=  red>
<STRONG><font size=5>Press Here to submit
the data:</font></STRONG><BR>
<INPUT TYPE"=submit "VALUE"=SubmitData">
<INPUT TYPE"=RESET "VALUE"=Reset">
</FORM>
```

First Name: [   ]

Family Name: [   ]

Press Here to submit the data:

[SubmitData]   [Reset]
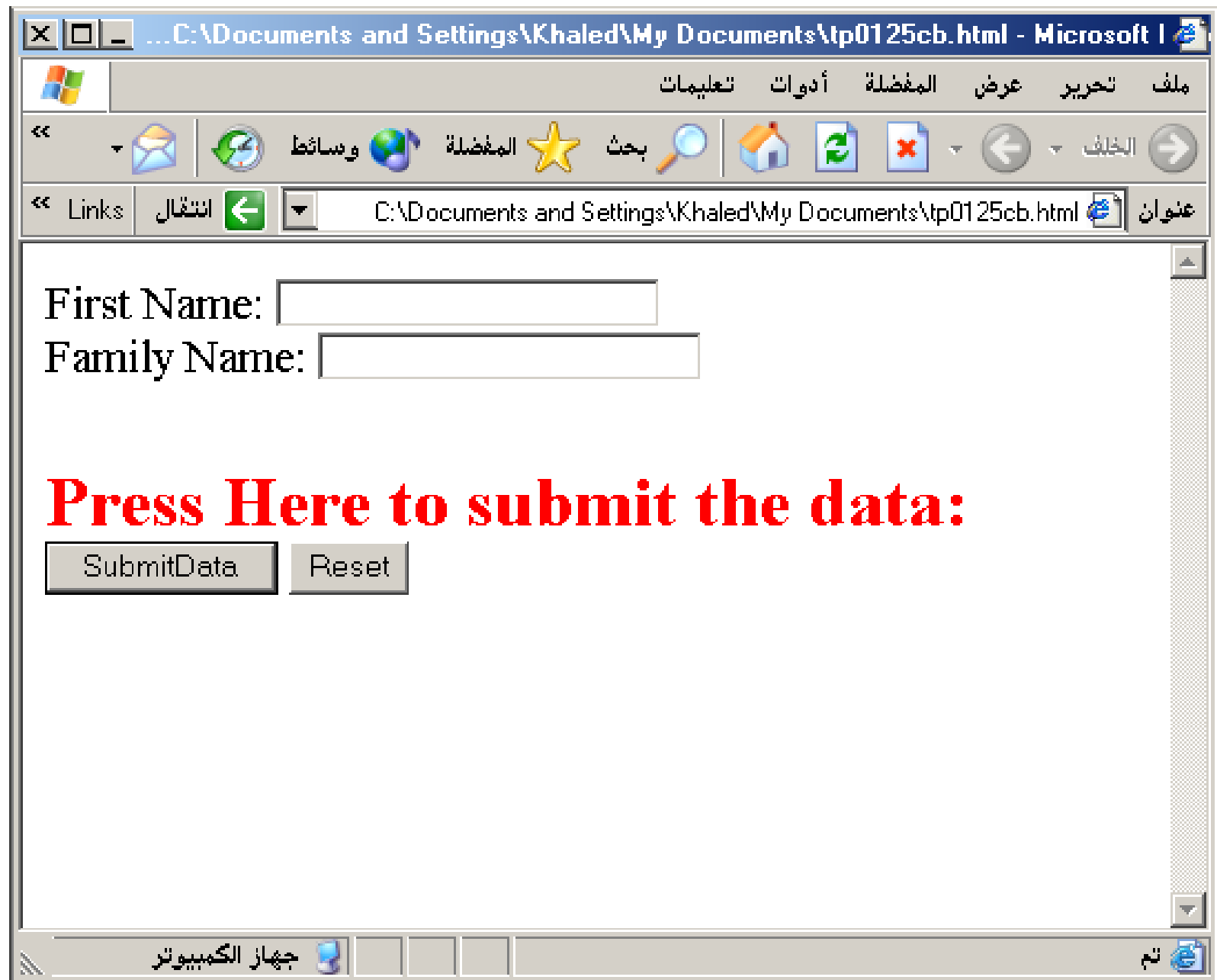
Image Submit Button

- **Image Submit Button:** Allows you to substitute an image for the standard submit button.

<INPUT TYPE="IMAGE" SRC="jordan.gif">

Image submit button has the following attributes:

- **TYPE:** Image.

- **NAME:** is the name of the button to be used in scripting.
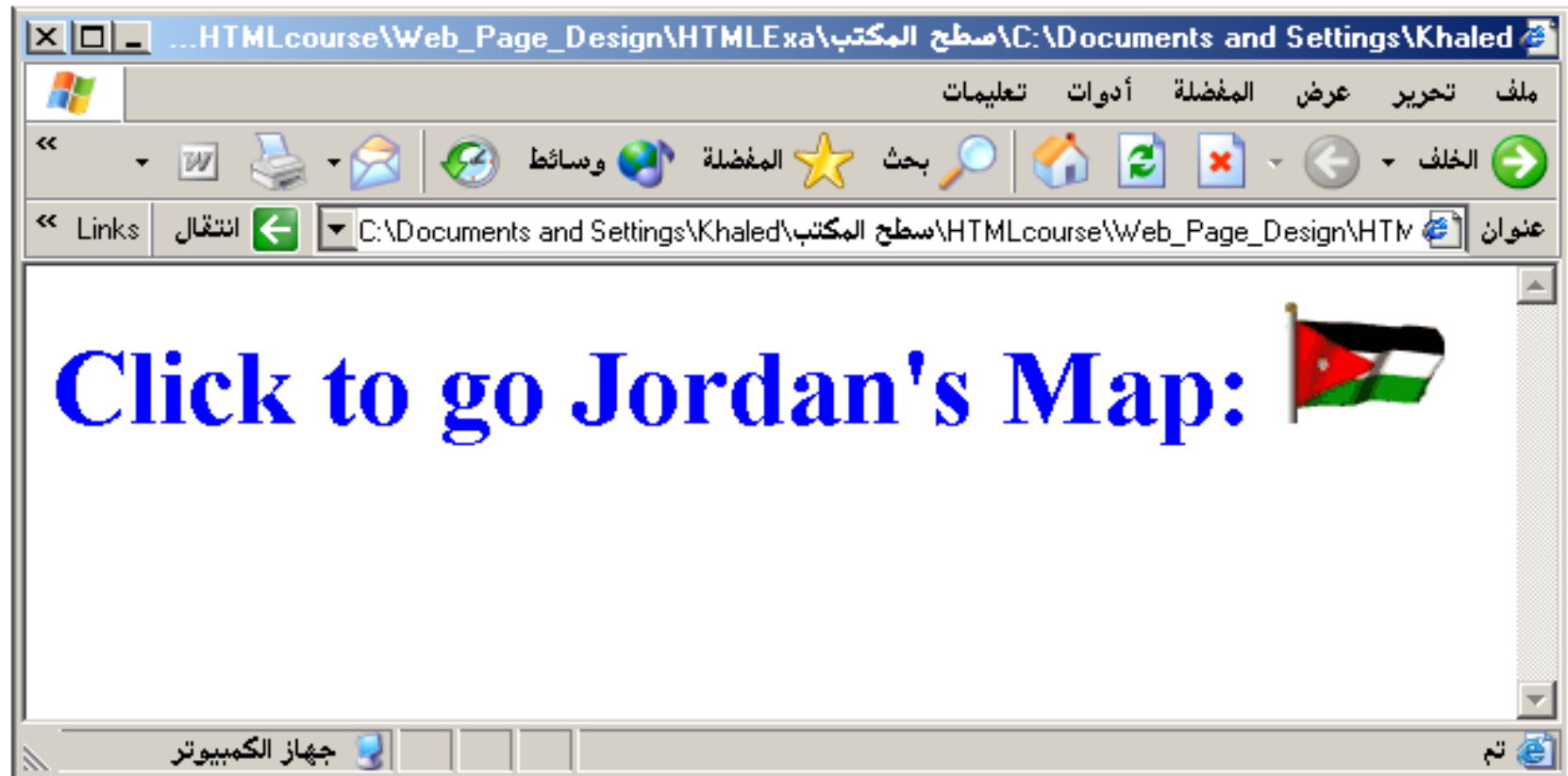
- **SRC:** URL of the Image file.

```
<form>
<H1><font color=blue>
Click to go Jordan's Map:
<INPUT  TYPE"=IMAGE  "SRC"=jordan.gif">
</form>
```

File

- **File Upload:** You can use a file upload to allow surfers to upload files to your web server.

- **<INPUT TYPE="FILE">**

- Browser will display [_____| Browse...]

- File Upload has the following attributes:

- **TYPE:** file.

- **SIZE:** is the size of the text box in characters.

- **NAME:** is the name of the variable to be sent to the CGI application.

- **MAXLENGHT:** is the maximum size of the input in the textbox in characters.

```html
<BODY bgcolor=lightblue>
<form>
<H3><font color=forestgreen>
Please attach your file here to for uploading to
My <font color =red>SERVER...<BR>

<INPUT  TYPE="File"  name="myFile"
  size="30">

<INPUT  TYPE="Submit"  value="SubmitFile">
</form>
</BODY>
```
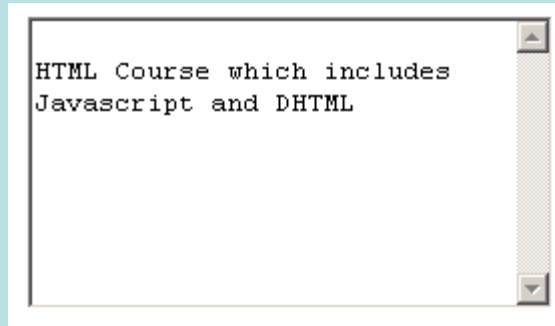
Other Elements used in Forms

- **<TEXTAREA></TEXTAREA>:** is an element that allows for free form text entry.

Browser will display

```
HTML Course which includes
Javascript and DHTML
```
:

Textarea has the following attributes:

- **NAME:** is the name of the variable to be sent to the CGI application.

- **ROWS:** the number of rows to the textbox.

- **COLS:** the number of columns to the textbox.

```
<BODY bgcolor=lightblue>
<form>
<TEXTAREA   COLS=40  ROWS=20
Name="comments"  >
From observing the apathy of those
about me during flag  raising I
concluded that patriotism if not
actually   on the decline is at least
in a state of dormancy.
Written by Khaled Al-Fagih
</TEXTAREA>:
</form>
</BODY>
```

From observing the apathy of those
about me during flag raising I
concluded that patriotism if not
actually on the decline is at least
in a state of dormancy.
Written by Khaled Al-Fagih

10.6.1.2 The **wrap** attribute

Normally, text typed in the text area by the user is transmitted to the server exactly as typed, with lines broken only where the user pressed the Enter key. Since this is often not the desired action by the user, you can enable word wrapping within the text area. When the user types a line that is longer than the width of the text area, the browser automatically moves the extra text down to the next line, breaking the line at the nearest point between words in the line.

With the `wrap` attribute set to `virtual`, the text is wrapped within the text area for presentation to the user, but the text is transmitted to the server as if no wrapping had occurred, except where the user pressed the Enter key.

With the `wrap` attribute set to `physical`, the text is wrapped within the text area and is transmitted to the server as if the user had actually typed it that way. This the most useful way to use word wrap, since the text is transmitted exactly as the user sees it in the text area.

To obtain the default action, set the `wrap` attribute to `off`.

As an example, consider the following 60 characters of text being typed into a 40-character-wide text area:

```
Word wrapping is a feature that makes life easier for users.
```

With `wrap=off`, the text area will contain one line and the user will have to scroll to the right to see all of the text. One line of text will be transmitted to the server.

With `wrap=virtual`, the text area will contain two lines of text, broken after the word "makes." Only one line of text will be transmitted to the server: the entire line with no embedded newline characters.

With `wrap=physical`, the text area will contain two lines of text, broken after the word "makes." Two lines of text will be sent to the server, separated by a newline character after the word "makes."
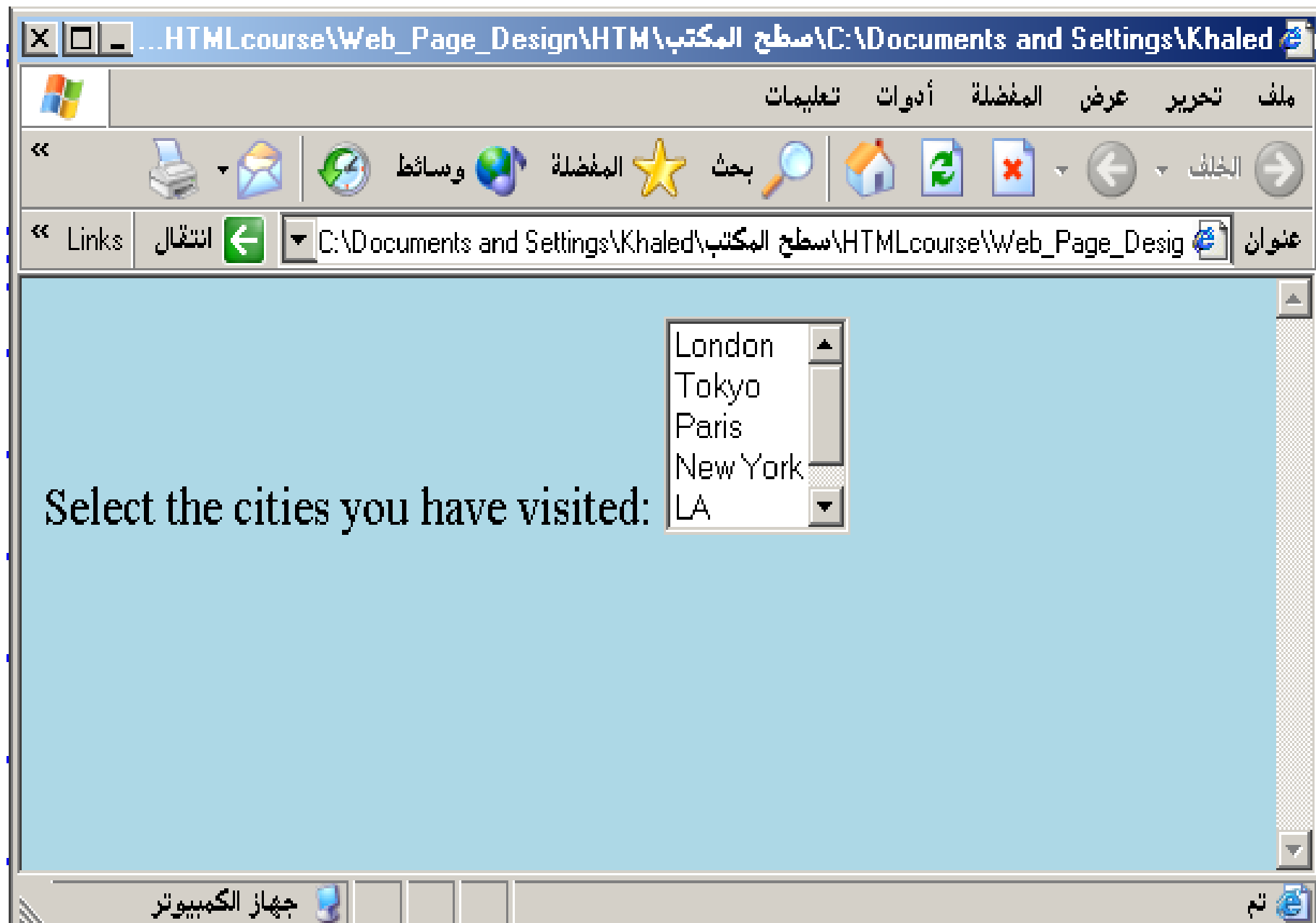
Other Elements used in Forms

- The two following examples are **<SELECT></SELECT>** elements, where the attributes are set differently.

The Select elements attributes are:

- **NAME:** is the name of the variable to be sent to the CGI application.

- **SIZE:** this sets the number of **visible** choices.

- **MULTIPLE:** the presence of this attribute signifies that the user can make multiple selections. By default only one selection is allowed.

```
<BODY bgcolor=lightblue>
<form>
Select the cities you have visited:
<SELECT name="list"  size=5>
<option> London</option>
<option> Tokyo</option>
<option> Paris</option>
<option> New York</option>
<option> LA</option>
<option> KL</option>
</SELECT>
</form>
</BODY>
```
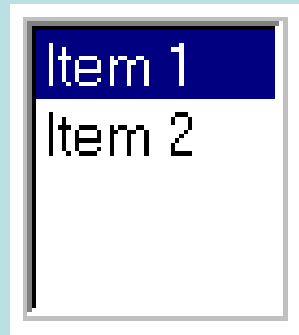
Select the cities you have visited:

| London |
| Tokyo |
| Paris |
| New York |
| LA |

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Other Elements used in Forms

- **Drop Down List:**

- **Name:** is the name of the variable to be sent to the CGI application.

- **Size:** 1.

Other Elements used in Forms

- **List Box:**

- **Name:** is the name of the variable to be sent to the CGI application.
- **SIZE:** is greater than one.

Other Elements used in Forms

- **Option**

The list items are added to the **<SELECT>** element by inserting **<OPTION></OPTION>** elements.

The Option Element's attributes are:

- **SELECTED:** When this attribute is present, the option is selected when the document is initially loaded. **It is an error for more than one option to be selected.**

- **VALUE:** Specifies the value the variable named in the select element.

```
</HEAD>
<BODY>
<h2><font color=blue>What type of Computer do you
   have?</font><h2>
<FORM>
<SELECT NAME="ComputerType" size=4>
   <OPTION  value="IBM" SELECTED> IBM</OPTION>
   <OPTION  value="INTEL"> INTEL</OPTION>
   <OPTION value=" Apple"> Apple</OPTION>
   <OPTION value="Compaq"> Compaq</OPTION>
</SELECT>
</FORM></BODY></HTML>
```

C:\Documents and Settings\Khaled\سطح المكتب\HTMLcourse\Web_Page

What type of Computer do you have?

- IBM
- INTEL
- Apple
- Compaq

جهاز الكمبيوتر

```html
<HEAD> <TITLE>SELECT with Mutiple </TITLE>
  </HEAD>
<BODY>
<h2><font color=blue>What type of Computer do you
  have?</font><h2>
<FORM>
<SELECT NAME="ComputerType" size=5   multiple>
  <OPTION  value="IBM" > IBM</OPTION>
  <OPTION  value="INTEL"> INTEL</OPTION>
  <OPTION value=" Apple"> Apple</OPTION>
  <OPTION value="Compaq" SELECTED>
  Compaq</OPTION>
  <OPTION value=" other"> Other</OPTION>
</SELECT>
</FORM></BODY></HTML>
```
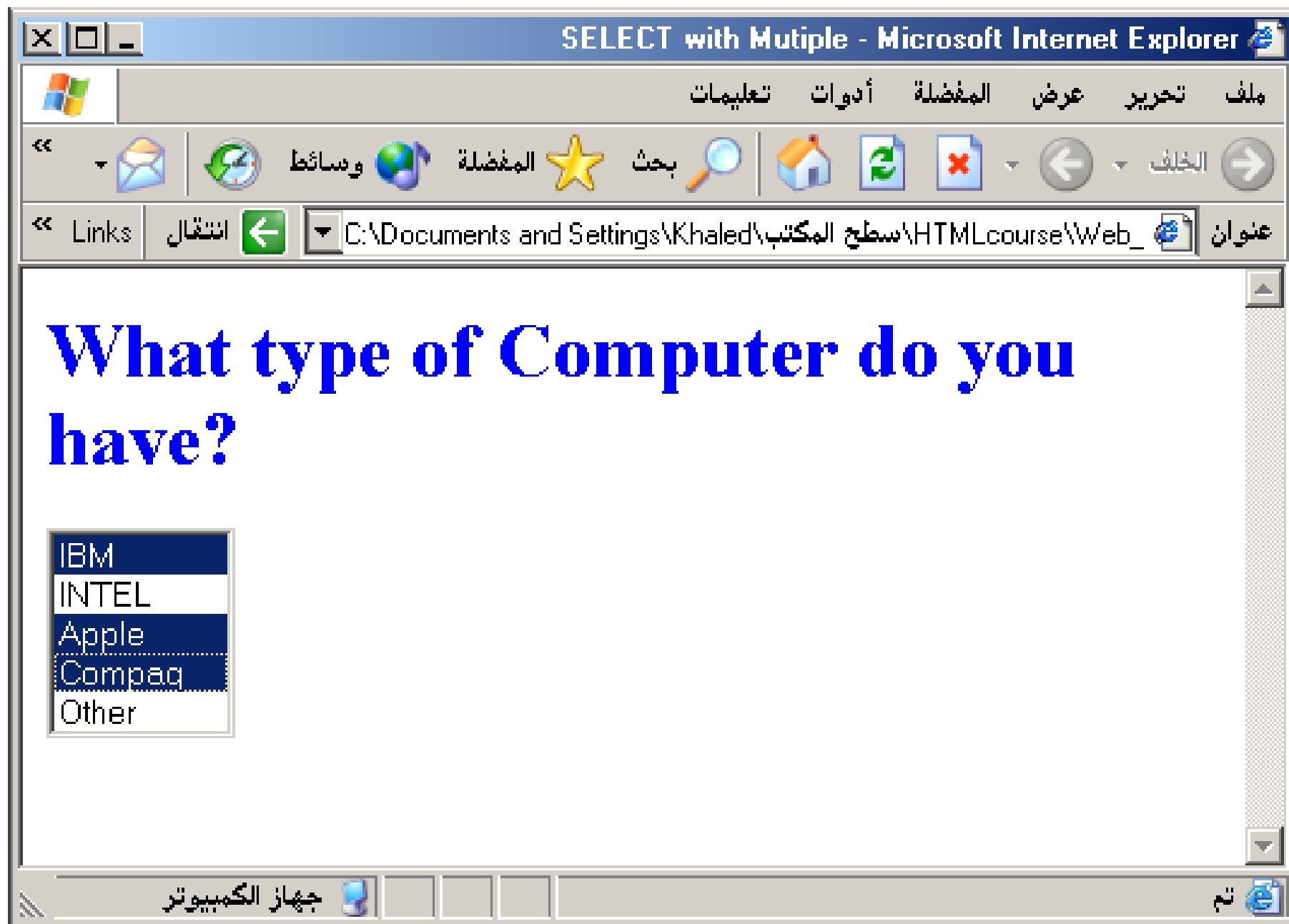
What type of Computer do you have?

- IBM
- INTEL
- Apple
- Compaq
- Other

There are eleven different types of form elements:

Button	[Button]
Checkbox	☐
FileUpload	[ ]
Hidden	
Password	[**********]
Radio	○
Reset object	[Reset]
Select object	[▼]
Submit object	[Submit Query]
Text	[ ]
Textarea	[ ]