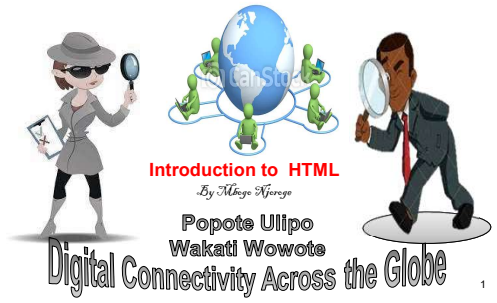
KSTVET

WEB TECHNOLOGY



Introduction to HTML

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Terminology & Tags

- 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 client software program which is used to display web pages.
- **Tag:** "Normal text" surrounded by bracketed *tags* **< ….. >** that tell browsers how to display web pages
- Codes enclosed in brackets, Usually paired tag
  <TITLE>My Web Page</TITLE>
- ***Not*** case sensitive
  <TITLE> = <title> = <TITLE>

- HTML Editor – A word processor that has been specialized to make the writing of HTML documents more effortless.
- File Saved with the extension **".htm"** or **".html"**

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a)Tag: Tags are always written within angles brackets. it is a piece of text is used to identify an element so that the browser realizes how to display its contents.e.g.<HTML> tag indicates the start of an HTML document .HTML tag can be two types. They are:-

- **Paired Tags** :A tag is said to be a paired tag if text is placed between a tag and its companions tag.In paired tag ,the first tag is referred to as opening tag and the second tag is referred to as closing tag.
- **Unpaired Tags**: An unpaired tag does not have a companion tag .unpaired tag also known as singular or Stand-Alone tags.e.g:
,<hr> etc.

b) Attribute: Attribute is the property of an tag that specified in the opening angle brackets. It supplies additional information like color,size,home font-style etc to the browser about a tag. E.g. most of the common attributes are height, color,width,src,border,align etc.

c) DTD: Document Type Definition is a collection of rules written in standard Generalized Markup Language(SGML).HTML is define in terms of its DTDS. All the details of HTML tags, entities and related document structure are defined in the DTDS.

d) ELEMENT: Element is the component of a document's structure such as a title, a paragraph or a list. It can include an opening and a closing tag and the contents within it

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.
- 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 standard Microsoft Windows text editors, NotePad. We may use also textpad.

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HTML Basic Tags

```
<HTML>
  <HEAD>
    <TITLE> Kenya School of TVET</TITLE>
  </HEAD>
  <BODY>
    This is what is displayed within documents' main content area
  </BODY>
</HTML>
```

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- The HEAD of your document point to the title bar of the Window. 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.
- 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.

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HTML 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.
- 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.

-

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Colors: Names, RGB, and Hex values

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

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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 **blue** background color:

a) <BODY BGCOLOR="# FFFF00"> </BODY>

b) **<BODY** bgcolor="blue">
<h1 color="***black***">Hello,Hello!</h1>
<p color="***white***">This text is white.</p>
</BODY>

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MARQUEE TAG

- This tag is used text horizontally across the screen.it is mainly used to deliver a specfic message to the visitor or to scroll Ads on a page.
- Example: <marquee> hello world></marquee>

Attributes of marquee tag

- **Bgcolor :** Sets the background color of the marquee.
- **Direction :** Sets the direction of the marquee box to either left-to-right, right-to-left, up-to-down and down-to-up.
- **Width**: This sets how wide the marquee should be.
- **Loop**: This sets how many times the marquee should 'Loop' its text. Each trip counts as one loop.

Headings, Paragraphs, Breaks & Horizontal Rules

We will now add headings to your page, insert paragraphs, add some breaks, and add horizontal rules.

Objectives

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

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Headings, <Hn> </Hn>

- Where **n** is an integer within the range 1 to 6
- 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.

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

Level 1 Heading
Level 2 Heading
Level 3 Heading
Level 4 Heading
Level 5 Heading
Level 1 Heading

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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.

```
<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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The Break Tag,

- Line breaks allow you to decide where the text will break on to the next line or will continue to the end of the window to automatically wrap to the next line on the display window.
- A
 is an empty Element, meaning that it may contain attributes but it does not contain content.
- The
 element **does not** have a corresponding closing tag.

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

Heading 1
Paragraph 1,
Line 2
Line 3
.....

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Horizontal Rule Tag, <HR>

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

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Character Formatting Tags

You will now learn how to enhance your docuent 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 the text.
2. Use Common Character Formatting Elements.
3. Align your text.
4. Add special characters.
5. Use other character formatting elements.

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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.

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Bold, Italic and other Character Formatting Elements & Alignment

- **<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.** ***Eg; The simple HTML Guide***
- 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.
  - **<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 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**.
- Some of the most commonly used special characters are shown in table below

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	™ ™

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 **}**
- **Examples**

```
<P><STRIKE> strike-through text </STRIKE></BR>
    <BIG>places text in a big font </BIG><BR>
    <SMALL> places text in a small font</SMALL><BR>
    <SUB> places text in subscript position </SUB>
    Normal
    <SUP> places text in superscript style position </SUP><BR>
</P>
```


The List Tags

How to create a variety of lists that are either numbered or bulleted

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> Books …</LI>
    <LI> Pens …</LI>
</UL>
```

→

- Books
- Pens

- 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> Cow</LI>
    <LI> Dog</LI>
    <LI> Goat</LI>
</UL>
```

→

- Cow
- Dog
- Goat

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

```
<OL>
    <LI> Father</LI>
    <LI> Mother</LI>
    <LI> Daughter</LI>
</OL>
```

→

1. Father
2. Mother
3. Daughter

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

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, ……

You can specify a starting number for an ordered list.

```
<OL TYPE =“i”>
    <LI> Plate</LI>
    <LI> Cup</LI>
</OL>
  <P>  More Kitchen Utensils </P>
<OL TYPE=“i” START=“3”>
  <LI> List item …</LI>
</OL>
```

i. Plate
ii. Cup

More Kitchen Utensils

iii. Spoon

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> WEB TECH </DT>
    <DD> Web Technology </DD>
    <DT> Chicken </DT>
    <DD> A domesticated bird</DD>
</DL>
```

WEB TECH
Web Technology
Hen
A female bird

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Nested Lists

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

```
<UL TYPE = “square”>
    <LI> Domestic Animals</LI>
    <LI> Live Stock
        <OL TYPE=“i” START=“4”>
            <LI> Goat </LI>
            <LI> Sheep </LI>
            <LI> Cow </LI>
            <LI> Pig </LI>
            <LI> Donkey </LI>
        </OL>
    </LI>
    <LI> Mifugo Halisi </LI>
</UL>
```

Nested list

- Domestic Animals
- Live Stock
  - iv. Goat
  - v. Sheep
  - vi. Cow
  - vii. Pig
  - viii. Donkey
- Mifugo Halisi

Nested list

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Exercise / Zoezi

What will be the output when the code is executed in a browser?

```
<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>
```

? ?

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The Image Tag

You will now learn how to ADD images into html pages.

- **<IMG>**This tag defines a graphic image on the page.
- **Image File (SRC:source):** This value will be a URL (location of the image)
- **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.

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Image Tag Attributes

- **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.

Examples

a) <IMG SRC=" wanaWebTech.gif" width=“80" height="60">
b) <IMG SRC=“kstvet.gif" ALT="Maneno fafanulizi ya kilichomo kwa picha">
c) <IMG SRC=" pichYao.gif “ Hspace="30" Vspace="10" border=20>

Anchors, URLs

You will now focus on how to integrate 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. Describe commonly used Link Types.
3. Define commonly used URLs’ and their relevant attributes

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The LINK Tags; <A> … </A> & mailto attribute

1) The tags used to produce links are the <A> and </A>. The <A> tells the browser where the link should start and the </A> indicates where the link ends. Everything between these two are components of the link.

Example:
To qualify the phrase "**Click to Launch Google** " as a link to Google

<A HREF="http://www.google.com"> Click to Launch Google </A>

E-Mail (Electronic Mail) Link
E.g. mailto:kstvet@google.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 kstvet@google.com

<A HREF="mailto:kstvet@google.com">Send me More Information </A>

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The LINK, VLINK, and ALINK Attributes

These attributes control the colors of the different link states:

1. LINK – initial appearance – default = Blue.
2. VLINK – visited link – default = Purple.
3. ALINK –active link being clicked–default= Yellow.

The Format for setting these attributes is:

<BODY BGCOLOR="White" TEXT="Red" LINK="Blue"
VLINK="#FF00FF"
ALINK="FFFF00">
</BODY>

*****Zoezi:***
Determine the color names whose color-code values are specified for the VLINK and the ALINK in the above HTML code snippet

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The Table Tags; <TABLE> … </TABLE>

Lets now focus on how to integrate tables into a web page via HTML code

Objectives:

1. Insert/create a table into a HTML page
2. Explain and apply basic table's attributes.
3. Edit a table.

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The <TABLE></TABLE> element has four sub-tags/elements:

1. Table Row<TR></TR>.
2. Table Header <TH></TH>.
3. Table Data <TD></TD>.
4. Caption <CAPTION></CAPTION>.

NB: The table row elements usually contain table header elements or table data elements.

```
<table border="1">
<tr>
    <th> Home County </th>
    <th> County Rep </th>
</tr>
<tr>
    <td> Kitui </td>
    <td> Nairobi </td>
</tr>
<tr>
    <td> Muikali </td>
    <td> Nairobian </td>
</tr>
</table>
```

Home County	County Rep
Kitui	Muikali
Nairobi	Nairobian

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Commonly Used 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.
- **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.

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

```
<HTML>
  <TABLE BORDER=1 CELLPADDING=2>
  <CAPTION ALIGN="BOTTOM"> Label For My Table </CAPTION>
</HTML>
```

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

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.

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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.

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Example 1

```
<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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Example 2

```
<Table border=1 cellpadding =2>
    <tr> <th> County </th> <th> County Rep </th> </tr>
    <tr> <td colspan=2> The counties & Rep names are </td> </tr>
    <tr> <td rowspan=2> Nairobi </td>
    <td> Nairobian </td> </tr>
    <tr> <td> Wanairobi</td> </tr>
</table>
```

County	County Rep
The counties & Rep names are	
Nairobi	Nairobian
	Wanairobi

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Note;

i. **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.

ii. **A default TABLE has no borders**
By default, tables are drawn without border lines. You need the BORDER attribute to draw the lines.

iii. **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

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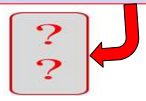
Exercise / Zoezi

What will be the output when the code snippet is executed in a browser

```
<BODY>
<TABLE BORDER width="750">
<TR> <TD colspan="4" align="center" > Wana Genz Magazine</TD></TR>

<TR>
    <TD rowspan="2" width="25%">Toleo Jipya</TD><TD colspan="2"> Yaliyomo </TD>
    <TD rowspan="2" width="25%"> Matangazo</TD></TR>
<TR><TD width="25%">Gents Corner </TD> <TD width="25%"> <Ladies Joint
    </TD></TR>
</TABLE>
</BODY>
```



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The Frames Tags
<FRAMESET> … </FRAMeSET >

Objectives:

Upon completing this section, you should be able to:

1. Create a Frame based page.
2. Apply the Frameset, Frame, and Noframes elements to a HTML web page
3. Apply the core attributes of the Frames elements to control the page display layout
4. Set Targets appropriately.

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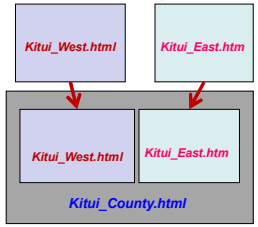
- A framed page is made up of multiple HTML pages. One of the HTML document code describes how to break up the single browser window into multiple windowpanes. Each windowpane is filled with an HTML document.
- Eg; to make a framed page with TWO windowpanes, one on the left and one on the right requires three HTML pages. ***Kitui_West.html*** and ***Kitui_East.htm*** are the HTML pages that contain content while a parent framme ***Kitui_County.html*** is the page that describes the division of the single browser window into two windowpanes.



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The Frame Page Architecture

- A <FRAMESET> element is placed in the html document before the <BODY> element. The <FRAMESET> describes the amount of screen real estate given to each windowpane by dividing the screen into ROWS or COLS.
- The <FRAMESET> will then define <FRAME> elements, one per division of the browser window.
- NB: Because there is no BODY container, FRAMESET pages can't have background images and background colors associated with them.

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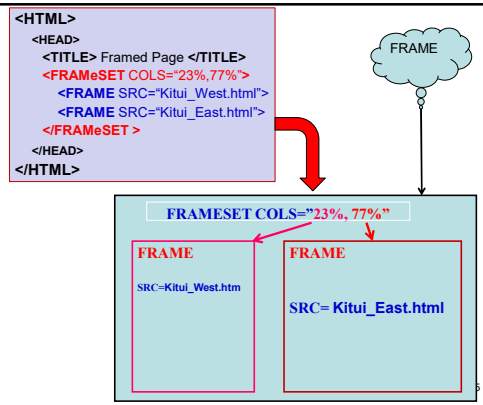

<FRAMESET> : The FRAMESET element creates divisions in the browser window in a single direction. This allows you to define divisions as either rows or columns.

- **ROWS :** Determines the size and number of rectangular rows within a <FRAMESET>. They are set from top of the display area to the bottom.

Possible values are:

- Absolute pixel units, I.e. "360,120".
- A percentage of screen height, e.g. "75%,25%".
- Proportional values using the asterisk (*). This is often combined with a value in pixels , e.g. "360,*".
- <Frameset cols="200,20%,*,2*">

- **COLS:** Determines the size and number of rectangular columns within a <FRAMESET>. They are set from left to right of the display area.

Possible values are:

- Absolute pixel units, I.e. "480,160".
- A percentage of screen width, e.g. "75%,25%".
- Proportional values using the asterisk (*). This is often combined with a value in pixels , e.g. "480,*".

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Other FRAMESET & FRAMES Attributes

- **FRAMEBORDER :** Possible values **0**, **1**, **YES**, **NO**. A setting of zero will create a borderless frame.
- **FRAMESPACING:** This attribute is specified in **pixels**. If you go to borderless frames you will need to set this value to zero as well, or you will have a gap between your frames where the border used to be.
- **BORDER(thickness of the Frame):** This attribute specified in pixels. A setting of zero will create a borderless frame. Default value is 5.
- **BORDERCOLOR:** This attribute is allows you choose a color for your border. This attribute is rarely used.

<FRAME>: This element defines a single frame within a frameset. There will be a FRAME element for each division created by the FRAMESET element. This tag has the following attributes:

- **SRC:** Required, as it provides the URL for the page that will be displayed in the frame.
- **NAME:** Required for frames that will allow targeting by other HTML documents. Works in conjunction with the target attribute of the <A>, <AREA>, <BASE>, and <FORM> tags.

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More <FRAME> Tag Attributes

- **MARGINWIDTH:** Optional attribute stated in pixels. Determines horizontal space between the <FRAME> contents and the frame's borders.
- **MARGINHEIGHT:** Optional attribute stated in pixels. Determines vertical space between the <FRAME> contents and the frame's borders.
- **SCROLLING**: Displays a scroll bar(s) in the frame. Possible values are:

1. **Yes** – always display scroll bar(s).
2. **No** – never display scroll bar(s).
3. **Auto** – browser will decide based on frame contents.

By default: scrolling is auto.

NORESIZE: Optional – prevents viewers from resizing the frame. By default the user can stretch or shrink the frame's display by selecting the frame's border and moving it up, down, left, or right.

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- **<NOFRAMES>:** defines a frame where capable browsers ignore all HTML within this tag including the contents of the BODY element. This element does not have any attributes.

```
<FRAMESET COLS="23%,77%">
<FRAME  SRC=""   NAME="left_pane“>
<FRAME  SRC=""   NAME="right_pane">
    <NOFRAMES>
    <P> This is a Framed Page. Upgrade your browser to support
       frames.</P>
    </NOFRAMES>
</FRAMESET>
```

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Compound FRAMESET Divisions

- In this case a second **FRAMESET** element is embended /inserted into another **FRAMESET** in the place the place of a **FRAME** element that would describe the second row. This allows columns and rows to manifest in the same parent frame
- The second **FRAMESET** element will divide the remaining screen real estate into **2** columns.
- This nested **FRAMESET** will then be followed by **2 FRAME** elements to describe each of the subsequent frame divisions created.

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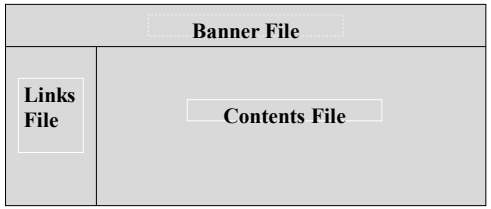
Eg;
You may want to create a frames design with a combination of rows and columns as depicted below.



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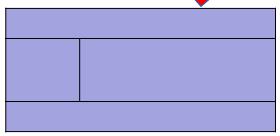
Example: Compound FRAMESET Divisions

```
<HEAD>
  <FRAMESET ROWS="25%,50%,25%"
       <FRAME SRC="">
       <FRAMESET COLS="25%,*">
                 <FRAME SRC=" ">
                 <FRAME SRC=" ">
       </FRAMESET>
       <FRAME SRC=" ">
  </FRAMESET>
</HEAD>
```



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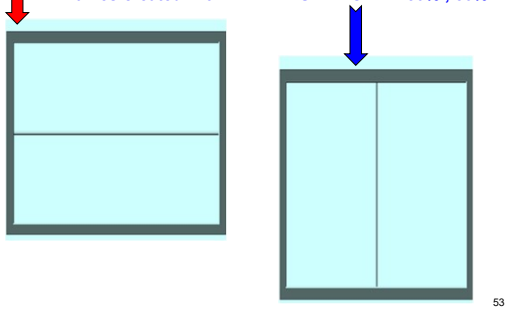
Frames created with < FRAMESET ROW = “50% , 50%” >

Frames created with < FRAMESET ROW = “50% , 50%” >



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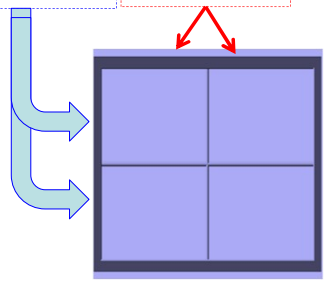
Frames created with

< FRAMESET ROW = “50% , 50%” COLS = “50% , 50%” >



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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. Implement an action for the FORM.

NB:

- ***Forms work in all browsers.***
- ***Forms are Platform Independent.***

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- 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>
```

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<FORM> Tag 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.

- 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>.

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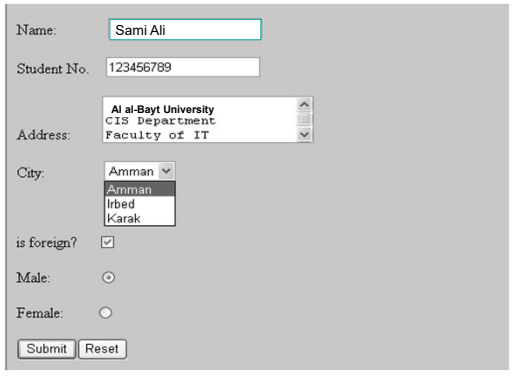
Example



Form <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.

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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.

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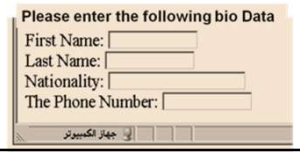
Example on Text Box

```
<HTML> <HEAD> <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: Password Box in Form

```
<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>
```

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 Boxes

- **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> <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 Buttons

Radio Button: Radio buttons allow the users to select only one option in a set of mutually exclusive selection items.

<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.

***Zoezi:** Describe how the various attribute values of the Radio Button are set and the effect of each of the values*

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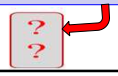
**Exercise / Zoezi: Radio Buttons

What will be the output when the code snippet is executed in a browser

```
<HTML> <HEAD> <TITLE>CheckBoxType</TITLE> </HEAD>
<BODY>
    <h1> <font color=green>Please check one of the following</font></h1>
    <FORM name="fomc3"  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>
```



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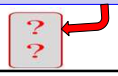
**Exercise / Zoezi: Radio Buttons

What will be the output when the code snippet is executed in a browser

```
<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>
```



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Push Buttons

- **Push Button:** used with JavaScript to cause an action to occur after a user or system event takes place.

<INPUT TYPE="BUTTON">

Browser will display 

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.

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**Exercise / Zoezi: Radio Buttons

What will be the output when the code snippet is executed in a browser

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

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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:

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

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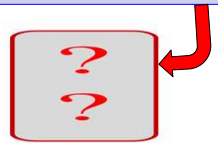
**Exercise / Zoezi: Radio Buttons

What will be the output when the code snippet is executed in a browser

```
<BODY>
    <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>
<BODY>
```



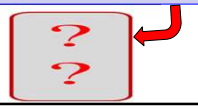
Reset Button

- 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"> Reset
- Browser will display
- **Reset** buttons have the following attributes:
- TYPE: reset.
- VALUE: determines the text label on the button, (usually **Reset** or **Refresh** or **Clear**).

**Exercise / Zoezi: Radio Buttons

What will be the output when the code snippet is executed in a browser

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



File Handling

- **File Upload:** You can use a file upload to allow surfers to upload files to your web server.
- **<INPUT TYPE="FILE">**
- Browser will display 
- 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.

Code Example for File Handling

```
<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="Submit File">
    </FORM>
</BODY>
```


Other Elements used in Forms

- **<TEXTAREA></TEXTAREA>:** is an element that allows for free form text entry with ability to allow text to flow thru multiple lines

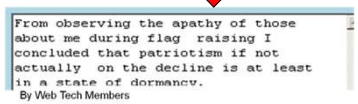
Browser will display 

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.

Code Example for TEXTAREA Tag

```
<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.
            By Web Tech Members
        </TEXTAREA>:
    </FORM>
</BODY>
```



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Other Elements used in Forms

- The **<SELECT> … </SELECT>** element tags, where the attributes are set differently.

The Select element 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 set.

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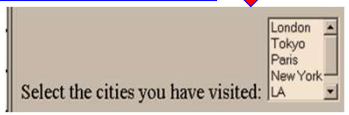
****Exercise / Zoezi: Radio Buttons**

What will be the output when the code snippet is executed in a browser

```
<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>
```



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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.

List Box: 

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

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Option

The list items may be added to the **<SELECT>** element by inserting **<OPTION> … </OPTION>** tags.

The **Option** tag 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.

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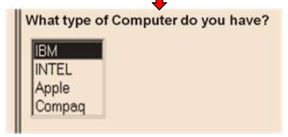
```
<BODY>
<h2><font color=blue>What type of Computer do you have?</font><h2>
    <FORM>
        <SELECT NAME="ComputerType" size=4>
          <OPTION  value="IBM" SELECTED> IBM</OPTION>
          <OPTION  value="INTEL"> INTEL</OPTION>
          <OPTION value=" Apple"> Apple</OPTION>
          <OPTION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



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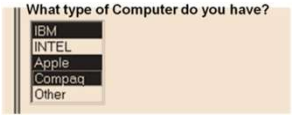
```
<BODY>
<h2><font color=blue> What type of Computer do you have? </font><h2>
    <FORM>
    <SELECT NAME="Computer Type" size=5   multiple>
      <OPTION  value="IBM" > IBM</OPTION>
      <OPTION  value="INTEL"> INTEL</OPTION>
      <OPTION value=" Apple"> Apple</OPTION>
      <OPTION value="Compaq"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



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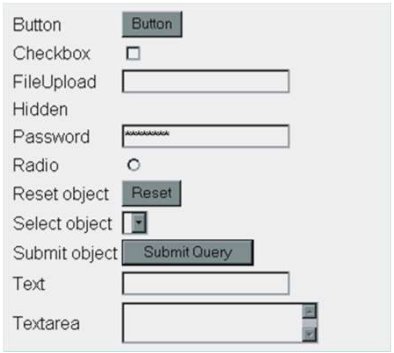
In summary here are the commonly used form elements



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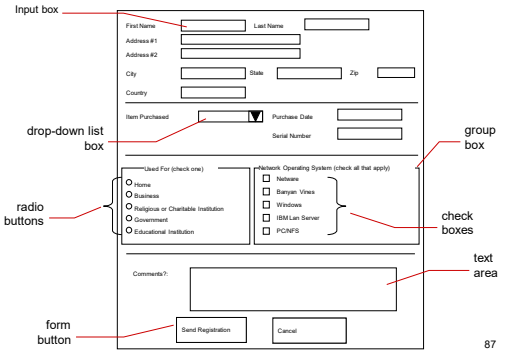
Form Components and Elements



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Input Types

Type	Description	
type="button"	Display a button which can be clicked to perform an action from a script	button
type="checkbox"	Display a check box	
type="file"	Display a browse button to locate and select a file	Browse...
type="hidden"	Create a hidden field, not viewable on the form	
type="image"	Display an inline image which can be clicked to perform an action from a script	
type="password"	Display a text box in which hides text entered by the user	
type="radio"	Display a radio (option) button	
type="reset"	Display a button which resets the form when clicked	reset
type="submit"	Display a button which submits the form when clicked	submit
type="text"	Display a text box in which displays text entered by the user	LanGear

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