Web Programming

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What is a Web Site?

- a *Web site is a collection of related Web pages, images, videos or other digital assets that are addressed relative to a common Uniform Resource Locator (URL), often consisting of only the domain name, or the IP address, and the root path ('/') in an Internet Protocol-based network*. A Web site is hosted on at least one Web server, accessible via a network such as the Internet or a private local area network.

Web site categories

- Personal Web sites
- Commercial Web sites
- Organizational including government and non-profit organization Web sites, and
- Entertainment Web sites

Static pages.
Content is served from the server's file-system.
Pages built using Server Side Includes or Common Gateway Interface (CGI).
Frames and Tables used to position and align the elements on a pag

Web 2.0

- Web 2.0, also known as Library 2.0, is user-centred Web, where blogs, wikis, social networks, multimedia applications, dynamic programming scripts are being used for collection, contribution and collaboration on the Web.

The web browser technologies are used in Web 2.0 development and it includes AJAX and JavaScript frameworks. Recently, AJAX and JavaScript frameworks have become a very popular means of creating web 2.0 sites.these 8 tools mentioned below:

Podcasting
Blogging
Tagging
Curating with RSS

Social bookmarking

Social networking

Web 3.0

- Web 3.0, also known as semantic Web, is smarter and can understand what you want. The searcher no longer needs to wade through a plethora of information or filter out search results but gets the target information straight by working on a combination of information based on his requirement as he understands and preferences he wants i.e. one needs to be less specific and more natural with his queries. This technology should aid the users obtain answers faster and accurately.

This is particularly true from the perspective of machine conception as opposed to human understanding. The Semantic Web necessitates the use of a declarative ontological language like OWL to produce domain-specific ontologies that machines can use to reason about information and make new conclusions, not simply match keywords.
can use to reason about information and make new conclusions, not simply match keywords.
Artificial Intelligence
3D Graphics

Types of Web sites

static Web site

- In static Web site the information is displayed in the same format as they are stored in the server. Such information is primarily coded in HTML (and the address ends in .htm). Most of the Web sites are static as they present pre-defined, static information, in the sense the pages retrieved by different users at different times remain the same. To make a change to the content, the files need to be manually opened, data changed and the new version should be uploading to the Web.

Dynamic Web site

- Dynamic Web site pages are ones that retrieves fresh information each time you view (like the latest news you see or various games you play on the Web).
- example familiar to all is the _seat availability‘ facility in the Indian Railways Web site. The information on seat availability is likely to change every second on fresh reservation or cancellation of reservations. Here, the data in the railway reservation database are updated in real time and the site /browser retrieves the latest status as a response to your search.

Protocols

- http
- https
- Fttp
- SSL

Web **Server**

- The Web **Server** is a computer that holds and serves a Web site. The Web server includes the hardware, operating system, Web server software, TCP/IP protocols and site content (Web pages, images and other files). Using the HTTP protocol, the Web server delivers Web pages to browsers. If the Web server is used internally within an organization and is not exposed to the public, it is an intranet server and if it serves to external machines (outside the organization) it will be called an Internet (Web) server.

Projects

What is HTML?

- HTML, otherwise known as HyperText Markup Language, is the language used to create Web pages
- Using HTML, you can create a Web page with text, graphics, sound, and video

Tags

- The essence of HTML programming is tags
- A tag is a keyword enclosed by angle brackets (Example: <I>)
- There are opening and closing tags for many but not all tags; The affected text is between the two tags

More Tags…

- The opening and closing tags use the same command except the closing tag contains and additional forward slash /
- For example, the expression `<B> Warning </B>` would cause the word ‘Warning’ to appear in bold face on a Web page

Nested Tags

- Whenever you have HTML tags within other HTML tags, you must close the nearest tag first
- Example:

    <H1> <I> The Nation </I> </H1>

Structure of a Web Page

- All Web pages share a common structure
- All Web pages should contain a pair of <HTML>, <HEAD>, <TITLE>, and <BODY> tags

```
<HTML>
<HEAD>
<TITLE> Example </TITLE>
</HEAD>
<BODY>
    This is where you would include the text and images on your Web page.
</BODY>
</HTML>
```

The <TITLE> Tag

- Choose the title of your Web page carefully; The title of a Web page determines its ranking in certain search engines
- The title will also appear on Favorite lists, History lists, and Bookmark lists to identify your page

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.

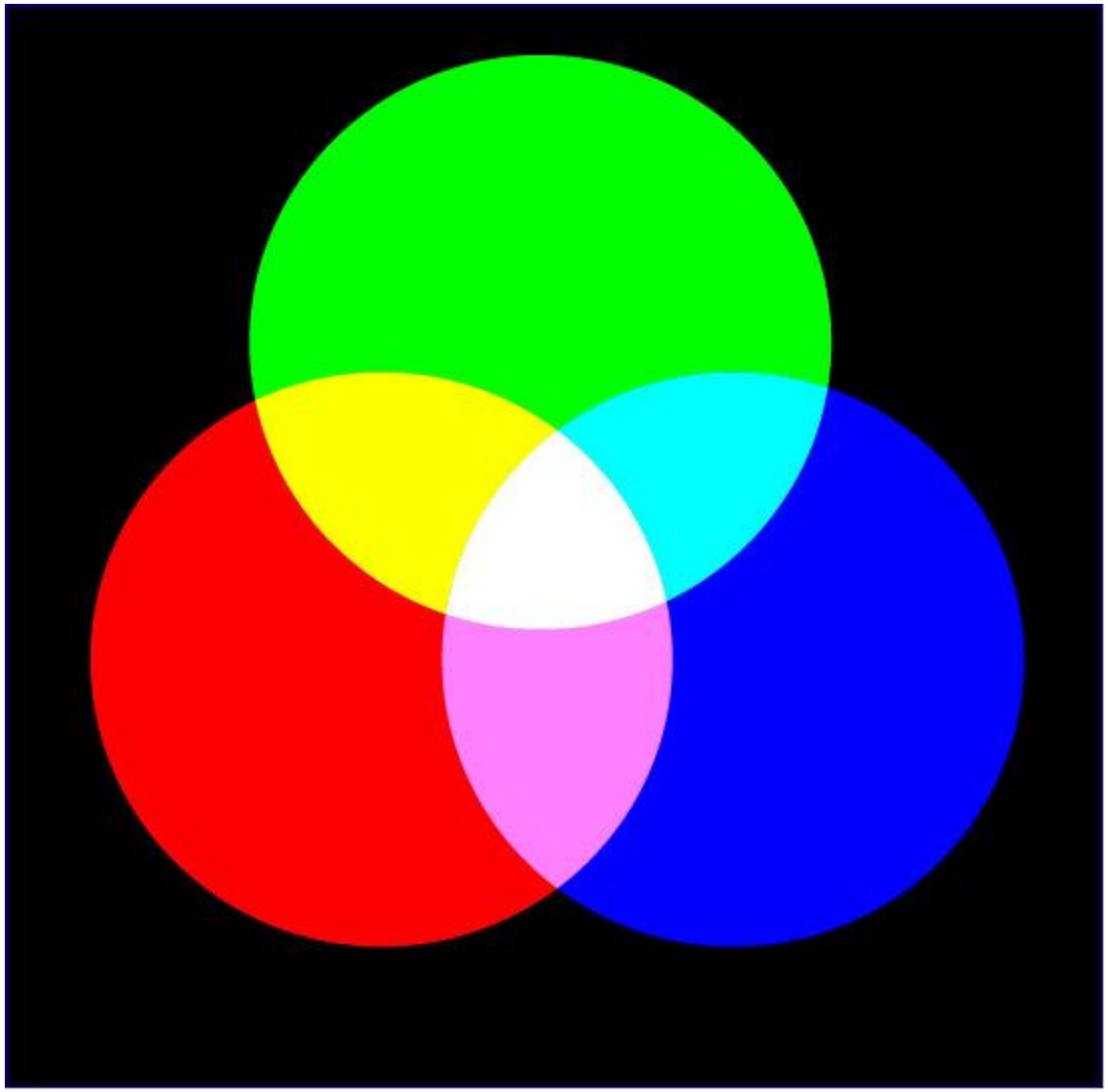
Setting Document Properties

- 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.

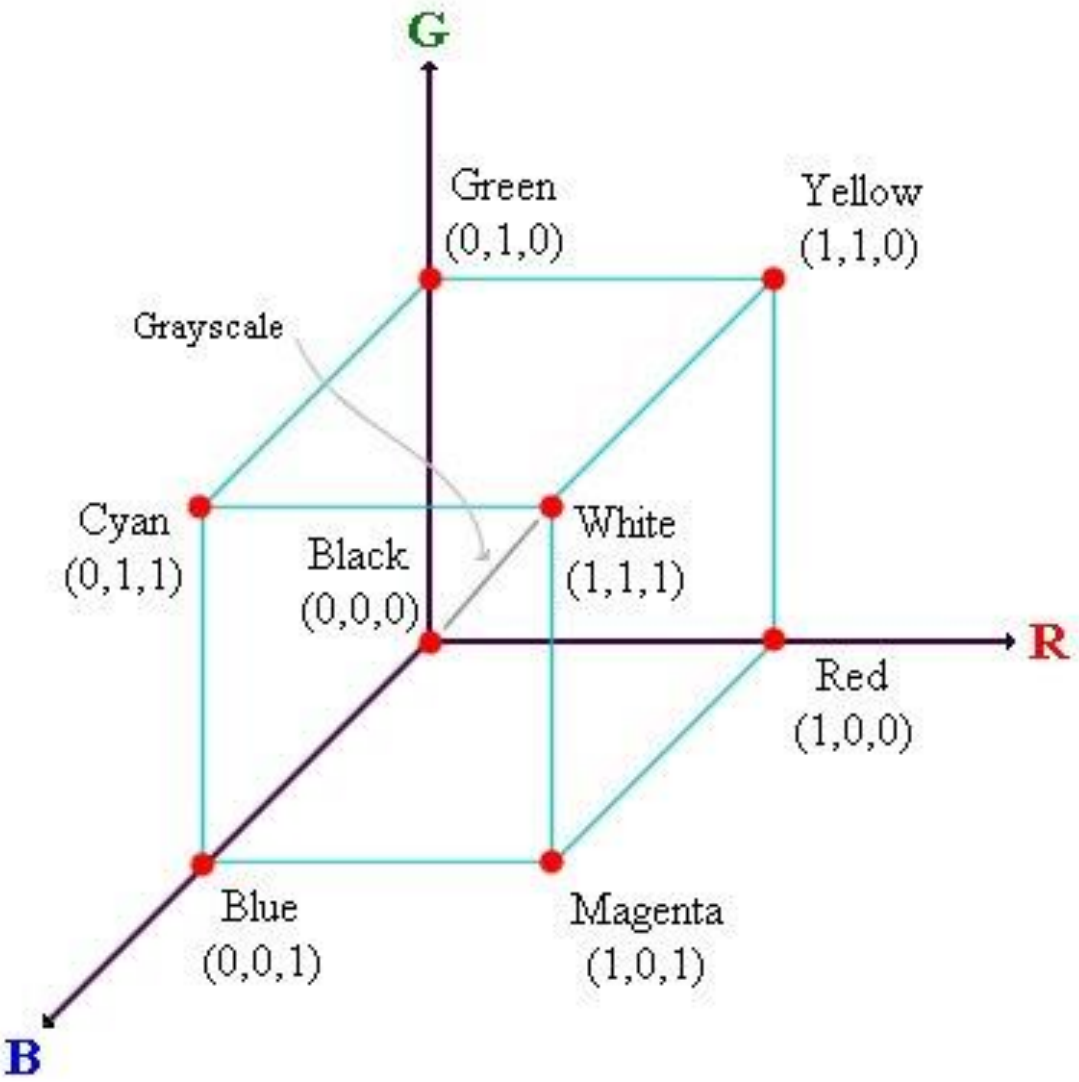
Color Codes

- 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.

LINK, VLINK, and ALINK

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="#FFFFFF" TEXT="#FF0000"
LINK="#0000FF"
VLINK="#FF00FF"
ALINK="FFFF00"> </BODY>

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>
```

Text Formatting

- Manipulating text in HTML can be tricky; Oftentimes, what you see is NOT what you get
- For instance, special HTML tags are needed to create paragraphs, move to the next line, and create headings

Text Formatting Tags

<B> **Bold Face** </B>

<I> *Italics* </I>

<U> Underline </U>

<P> New Paragraph </P>

 Next Line

Changing the Font

- The expression <FONT FACE = “fontname”> … </FONT> can be used to change the font of the enclosed text
- To change the size of text use the expression <FONT SIZE=n> …. </FONT> where n is a number between 1 and 7

Changing the Font

- To change the color, use <FONT COLOR="red">…. </FONT>; The color can also be defined using hexadecimal representation (Example: #ffffff)
- These attributes can be combined to change the font, size, and color of the text all at once; For example, <FONT SIZE=4 FACE="Courier" COLOR="red"> …. </FONT>

Headings

- Web pages are typically organized into sections with headings; To create a heading use the expression <Hn>…</Hn> where n is a number between 1 and 7
- In this case, the 1 corresponds to the largest size heading while the 7 corresponds to the smallest size

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,….

Break,

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

Break,

```
<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

….

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* - Underlined - Colored
Emphasized - **Strong** - Tele Type

Aligning Text

- The ALIGN attribute can be inserted in the <P> and <Hn> tags to right justify, center, or left justify the text
- For example, <H1 ALIGN=CENTER> The New York Times </H1> would create a centered heading of the largest size

Comment Statements

- Comment statements are notes in the HTML code that explain the important features of the code
- The comments do not appear on the Web page itself but are a useful reference to the author of the page and other programmers
- To create a comment statement use the <!-- …. --> tags

The Infamous Blink Tag

- It is possible to make text blink using the <BLINK> … </BLINK> tag
- However, it is best to use this feature at most sparingly or not at all; What seems like a good idea to a Web designer can become very annoying to a Web user
- The <BLINK> tag is not supported by Internet Explorer

Page Formatting

- To define the background color, use the BGCOLOR attribute in the <BODY> tag
- To define the text color, use the TEXT attribute in the <BODY> tag
- To define the size of the text, type <BASEFONT SIZE=n>

Example

```
<HTML>
<HEAD>
<TITLE> Example </TITLE>
</HEAD>
<BODY BGCOLOR="black"  TEXT="white">
<BASEFONT SIZE=7>
    This is where you would include the text and
    images on your Web page.
</BODY>
</HTML>
```

Inserting Images

- Type <IMG SRC = “image.ext”>, where image.ext indicates the location of the image file
- The WIDTH=n and HEIGHT=n attributes can be used to adjust the size of an image
- The attribute BORDER=n can be used to add a border n pixels thick around the image

Alternate Text

- Some browsers don't support images. In this case, the ALT attribute can be used to create text that appears instead of the image.
- Example:

  <IMG SRC="satellite.jpg" ALT = "Picture of satellite">

Links

- A link lets you move from one page to another, play movies and sound, send email, download files, and more….
- A link has three parts: a **destination**, a **label**, and a **target**
- To create a link type

  <A HREF="page.html"> label </A>

Anatomy of a Link

<A HREF="page.html"> label </A>

- In the above link, "page.html" is the destination. The destination specifies the address of the Web page or file the user will access when he/she clicks on the link.
- The label is the text that will appear underlined or highlighted on the page

Example: Links

- To create a link to CNN, I would type:

  <A HREF="http://www.cnn.com">CNN</A>

- To create a link to MIT, I would type:

  <A HREF="http://www.mit.edu">MIT</A>

Changing the Color of Links

- The LINK, VLINK, and ALINK attributes can be inserted in the <BODY> tag to define the color of a link
  - LINK defines the color of links that have not been visited
  - VLINK defines the color of links that have already been visited
  - ALINK defines the color of a link when a user clicks on it

Using Links to Send Email

- To create a link to an email address, type <A HREF="mailto:email_address"> Label</A>
- For example, to create a link to send email to myself, I would type: <A HREF="mailto: ktdunn@mit.edu">email Katie Dunn</A>

Anchors

- Anchors enable a user to jump to a specific place on a Web site
- Two steps are necessary to create an anchor. First you must create the anchor itself. Then you must create a link to the anchor from another point in the document.

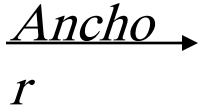
Anchors

- To create the anchor itself, type <A NAME="anchor name">label</A> at the point in the Web page where you want the user to jump to
- To create the link, type <A HREF="#anchor name">label</A> at the point in the text where you want the link to appear

Example: Anchor

```
<A HREF="#chap2">Chapter Two</A><BR>
```


```
<A NAME="chap2">Chapter 2 </A>
```



Ordered Lists

- Ordered lists are a list of numbered items.
- To create an ordered list, type:

```
<OL>
    <LI> This is step one.
    <LI> This is step two.
    <LI> This is step three.
</OL>
```

Here's how it would look on the Web:

1. **This is step one.**
2. **This is step two.**
3. **This is step three.**

More Ordered Lists….

- The TYPE=x attribute allows you to change the the kind of symbol that appears in the list.
  - A is for capital letters
  - a is for lowercase letters
  - I is for capital roman numerals
  - i is for lowercase roman numerals

Unordered Lists

- An unordered list is a list of bulleted items
- To create an unordered list, type:

```
<UL>
    <LI> First item in list
    <LI> Second item in list
    <LI> Third item in list
</UL>
```

Here's how it would look on the Web:

- First item in list
- Second item in list
- Third item in list

More Unordered Lists…

- The TYPE=shape attribute allows you to change the type of bullet that appears
  - *circle* corresponds to an empty round bullet
  - *square* corresponds to a square bullet
  - *disc* corresponds to a solid round bullet; this is the default value

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,

   - Hang on to the canoe
   - Use the canoe for support and
   - Swim to shore

e. Don't overexert yourself

f. Use a bow light at night

```
<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,
    - Hang on to the canoe
    - Use the canoe for support
        IV. Be careful
        V. Do not look around
    - Swim to shore
e. Don't overexert yourself
f. Use a bow light at night

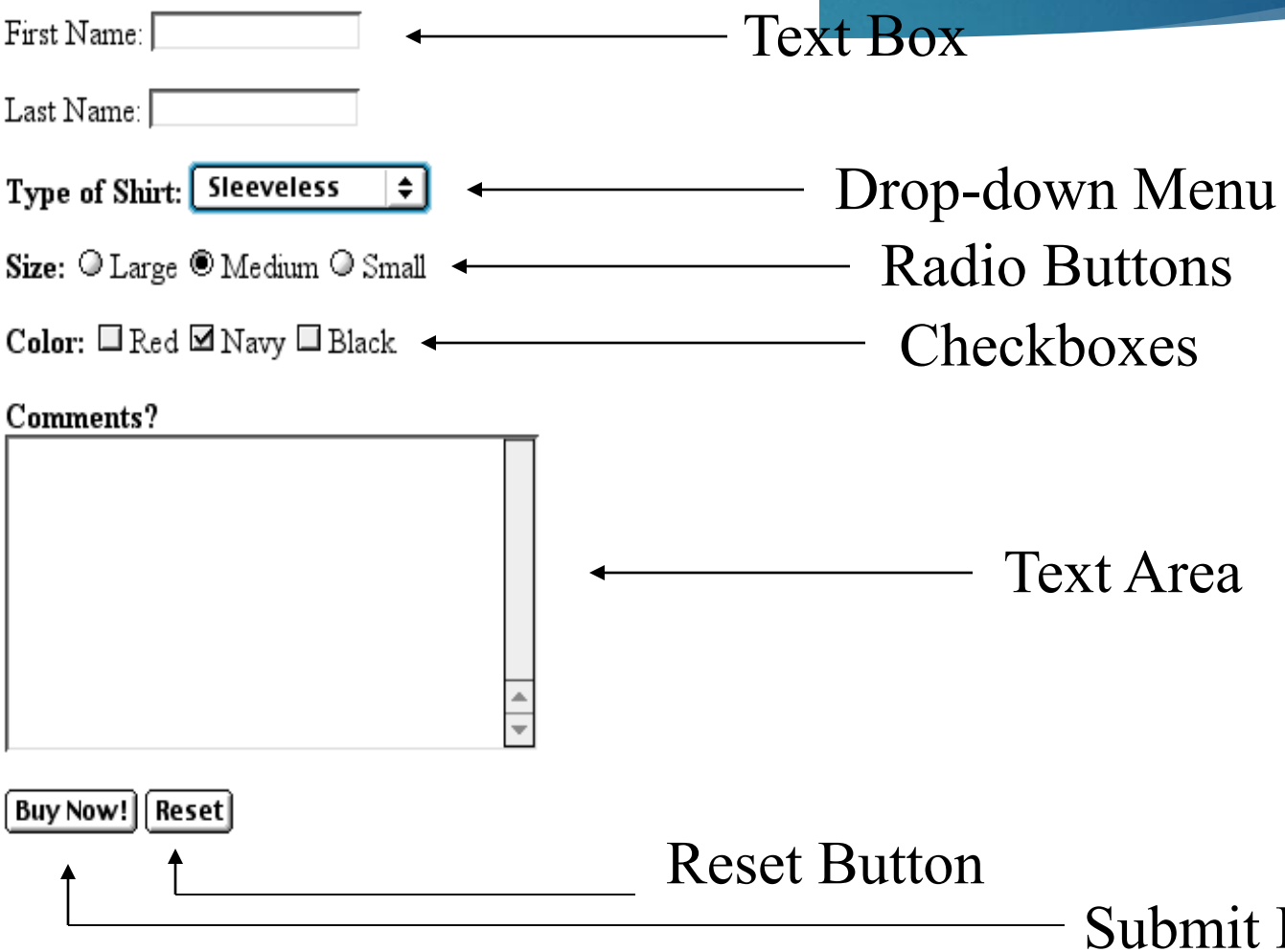
Forms

- What are forms?
  - An HTML form is an area of the document that allows users to enter information into fields.
  - A form may be used to collect personal information, opinions in polls, user preferences and other kinds of information.

Forms

- There are two basic components of a Web form: the shell, the part that the user fills out, and the script which processes the information
- HTML tags are used to create the form shell. Using HTML you can create text boxes, radio buttons, checkboxes, drop-down menus, and more...

Example: Form



The Form Shell

- A form shell has three important parts:
  - the <FORM> tag, which includes the address of the script which will process the form
  - the form elements, like text boxes and radio buttons
  - the submit button which triggers the script to send the entered information to the server

Creating the Shell

- To create a form shell, type <FORM METHOD=POST ACTION="script_url"> where "script_url" is the address of the script
- Create the form elements
- End with a closing </FORM> tag

Creating Text Boxes

- To create a text box, type <INPUT TYPE="text" NAME="name" VALUE="value" SIZE=n MAXLENGTH=n>
- The NAME, VALUE, SIZE, and MAXLENGTH attributes are optional

Text Box Attributes

- The NAME attribute is used to identify the text box to the processing script
- The VALUE attribute is used to specify the text that will initially appear in the text box
- The SIZE attribute is used to define the size of the box in characters
- The MAXLENGTH attribute is used to define the maximum number of characters that can be typed in the box

Example: Text Box

```
First Name: <INPUT TYPE="text"
NAME="FirstName"
VALUE="First Name" SIZE=20>

<BR><BR>


Last Name: <INPUT
TYPE="text"
NAME="LastName"
VALUE="Last Name" SIZE=20>

<BR><BR>
```

- Here's how it would look on the Web:

First Name: First Name

Last Name: Last Name

Creating Larger Text Areas

- To create larger text areas, type <TEXTAREA NAME="name" ROWS=n1 COLS=n2 WRAP> Default Text </TEXTAREA>, where n1 is the height of the text box in rows and n2 is the width of the text box in characters
- The WRAP attribute causes the cursor to move automatically to the next line as the user types

Example: Text Area

```
<B>Comments?</B>
<BR>
<TEXTAREA NAME="Comments"
ROWS=10 COLS=50 WRAP>
</TEXTAREA>
```

Creating Radio Buttons

- To create a radio button, type <INPUT TYPE="radio" NAME="name" VALUE="data">Label, where "data" is the text that will be sent to the server if the button is checked and "Label" is the text that identifies the button to the user

Example: Radio Buttons

```
<B> Size: </B>
<INPUT TYPE="radio" NAME="Size"
  VALUE="Large">Large
<INPUT TYPE="radio" NAME="Size"
  VALUE="Medium">Medium
<INPUT TYPE="radio" NAME="Size"
  VALUE="Small">Small
```

Creating Checkboxes

- To create a checkbox, type <INPUT TYPE="checkbox" NAME="name" VALUE="value">Label
- If you give a group of radio buttons or checkboxes the same name, the user will only be able to select one button or box at a time

Example: Checkboxes

```
<B> Color: </B>
<INPUT TYPE="checkbox"
NAME="Color"      VALUE="Red">Red
<INPUT TYPE="checkbox"
NAME="Color"
VALUE="Navy">Navy
<INPUT TYPE="checkbox"
NAME="Color"
VALUE="Black">Black
```

Creating Drop-down Menus

- To create a drop-down menu, type <SELECT NAME="name" SIZE=n MULTIPLE>
- Then type <OPTION VALUE= "value">Label
- In this case the SIZE attribute specifies the height of the menu in lines and MULTIPLE allows users to select more than one menu option

Example: Drop-down Menu

```
<B>WHICH IS FAVOURITE FRUIT:</B>
<SELECT>
<OPTION VALUE="MANGOES">MANGOES
<OPTION VALUE="PAPAYA">PAPAYA
<OPTION VALUE="GUAVA">GUAVA
<OPTION VALUE="BANANA"> BANANA
<OPTION VALUE="PINEAPPLE">PINEAPPLE
</SELECT>
```

Creating a Submit Button

- To create a submit button, type <INPUT TYPE="submit">
- If you would like the button to say something other than submit, use the VALUE attribute
- For example, <INPUT TYPE="submit" VALUE="Buy Now!"> would create a button that says "Buy Now!"

Creating a Reset Button

- To create a reset button, type <INPUT TYPE="reset">
- The VALUE attribute can be used in the same way to change the text that appears on the button

Tables

- Tables can be used to display rows and columns of data, create multi-column text, captions for images, and sidebars
- The <TABLE> tag is used to create a table; the <TR> tag defines the beginning of a row while the <TD> tag defines the beginning of a cell

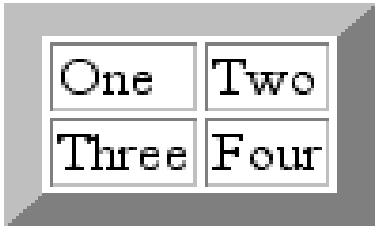
Adding a Border

- The BORDER=n attribute allows you to add a border n pixels thick around the table
- To make a solid border color, use the BORDERCOLOR="color" attribute
- To make a shaded colored border, use BODERCOLORDARK="color" and BORDERCOLORLIGHT="color"

Creating Simple Table

```
<TABLE BORDER=10>
    <TR>
     <TD>One</TD>
     <TD>Two</TD>
    </TR>
    <TR>
     <TD>Three</TD>
     <TD>Four</TD>
    </TR>
</TABLE>
```

- Here's how it would look on the Web:



Adjusting the Width

- When a Web browser displays a table, it often adds extra space. To eliminate this space use the WIDTH =n attribute in the <TABLE> and <TD> tags
- Keep in mind - a cell cannot be smaller than its contents, and if you make a table wider than the browser window, users will not be able to see parts of it.

Centering a Table

- There are two ways to center a table
  - Type <TABLE ALIGN=CENTER>
  - Enclose the <TABLE> tags in opening and closing <CENTER> tags

Wrapping Text around a Table

- It is possible to wrap text around a table. This technique is often used to keep images and captions together within an article.
- To wrap text around a table, type <TABLE ALIGN = LEFT> to align the table to the left while the text flows to the right.
- Create the table using the <TR>, <TD>, and </TABLE> tags as you normally would

Adding Space around a Table

- To add space around a table, use the HSPACE=n and VSPACE=n attributes in the <TABLE> tag
- Example:

```
<TABLE HSPACE=20 VSPACE=20>
```

Spanning Cells Across Columns

- It is often necessary to span one cell across many columns. For example, you would use this technique to span a headline across the columns of a newspaper article.
- To span a cell across many columns, type <TD COLSPAN=n>, where n is the number of columns to be spanned

Spanning Cells Across Rows

- To span a cell across many rows, type <TD ROWSPAN=n>, where n is the number of rows

Aligning Cell Content

- By default, a cell's content are aligned horizontally to the left and and vertically in the middle.
- Use VALIGN=direction to change the vertical alignment, where "direction" is top, middle, bottom, or baseline □
- Use ALIGN=direction to change the horizontal alignment where "direction" is left, center, or right

Controlling Cell Spacing

- Cell spacing is the space *between* cells while cell padding is the space *around* the contents of a cell
- To control both types of spacing, use the CELLSPACING =n and CELLPADDING=n attributes in the <TABLE> tag

Nesting Tables

- Create the inner table
- Create the outer table and determine which cell of the outer table will hold the inner table
- Test both tables separately to make sure they work
- Copy the inner table into the cell of the outer table
- Don't nest too many tables. If you find yourself doing that, find an easier way to lay out your Web page

Changing a Cell's Color

- To change a cell's color, add the BGCOLOR="color" attribute to the <TD> tag
- Example:

```
<TD BGCOLOR="blue">
```

Dividing Your Table into Column Groups

- You can divide your table into two kinds of column groups: structural and non-structural.
- Structural column groups control where dividing lines are drawn; Non-structural groups do not
- Both let you format an entire column of cells at once

Column Groups

- To create structural column groups, type <COLGROUP SPAN=n> after the <TABLE> tag, where n is the number of columns in the group
- To create non-structural column groups, type <COL SPAN=n>, where n is the number of columns in the group

Dividing Table into Horizontal Sections

- You can also create a horizontal section consisting of one or more rows. This allows you to format the rows all at once
- To create a horizontal section, type <THEAD>, <TBODY>, or <TFOOT> before the first <TR> tag of the section
- Netscape does not support these tags

Controlling Line Breaks

- Unless you specify otherwise a browser will divide the lines in a cell as it sees fit.
- The NOWRAP attribute placed within the <TD> tag forces the browser to keep all the text in a cell on one line
- Example:
  - <TD NOWRAP>Washington, D.C.

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

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
News Column 1
News Column 2
Linked Ads