Unit 2_1

HTML & XHTML

K J SHARMA

Introduction to HTML

- HTML : Hyper Text Markup Language
- A browser understands and interpret the HTML tags, identifies the structure of the document (which part are which) and makes decision about presentation (how the parts look) of the document.
- HTML also provides tags to make the document look attractive using graphics, font size and colors.
- User can make a link to the other document by creating Hypertext Links also known as Hyperlinks.

Website Development Process

- A Web site is composed of individual pages that are linked together each of these relating to a different aspects of your site such as news , links and biography.
- It is a much like a SDLC (Software development Life Cycle).
  - 1. Requirements
  - 2. Design
  - 3. Write Code
  - 4. Test
  - 5. Upload
  - 6. Reiterate

Basic HTML

- A Page can be loaded into a browser by two ways
  - By writing a URL in the address bar
  - By manually open a file

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

Tags

- The essential tags that are required to create a HTML document are:

<html>..... </html>

<head>..... </head>

<body>..... </body>

Tags

- HTML Tag <HTML>:
- The <HTML> tag encloses **all other HTML tags** and associated text within your document.

```
<HTML>
    Your Title and Document (contains text with HTML tags) goes here
</HTML>
```

- The slash mark is always used in closing tags.

Tags

- HEAD Tag <HEAD>:
- HEAD tag comes after the HTML start tag. It contains TITLE tag to give the document a title that displays on the browsers title bar at the top.

```
<HEAD>
    <TITLE> Your title goes here </TITLE>
</HEAD>
```

Tags

- BODY Tag <BODY>:
- The BODY tag contains **all the text and graphics of the document** with all the HTML tags that are used for control and formatting of the page.

```
<BODY>
    Your Document goes here
</BODY>
```

- An HTML document, web page can be created using a text editor, Notepad, Netbeans, Sublime text or WordPad. All the HTML documents should have the extension .htm or .html

Basic Example

- Example:

```
<HTML>
  <HEAD>
      <TITLE>  My first Page  </TITLE>
  </HEAD>
  <BODY>
      WELCOME TO MY FIRST WEB PAGE
  </BODY>
</HTML>
```

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>

Container and Empty Tags

- Container Tags : Tags which have **both the opening and closing** i.e. <TAG> and </TAG> are called container tags.
- Empty Tags: Tags, which have **only opening and no ending**, are called empty tags. Line break
 or
 and <HR /> tags are empty tags.

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>

 Next Line

_{displays text in Subscript}

^{displays text in Superscript}

<SMALL> displays text in smaller font as compared to normal Font</SMALL>

<BIG> displays text in larger font as compared to normal font</BIG>

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="BLUE"> …. </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 6. Text with header tags is displayed in larger and bolder fonts than the normal body text by a web browser.
- In this case, the 1 corresponds to the largest size heading while the 6 corresponds to the smallest size

Formatting Web Page

- Browsers ignore extra space within HTML document.
- For example: You can have text “Hello BVM “ in HTML document but in browser it display, “Hello BVM”.
- **Paragraph tag <p>:**
  - This tag <P> indicates a paragraph, used to separate two paragraphs with a blank line.

<P> Welcome to the world of HTML </P>

**Line Break tag
:**

- The empty tag
 is used where the text needs to start from a new line and not continue on the same line. To get every sentence on a new line, it is necessary to use a line break.

Example:

National Institute of Open Schooling

B-31B, Kailash Colony

New Delhi-110048

Formatting Web Page

- **Preformatted Text Tag <PRE>:**
- <PRE> tag can be used, where it requires total control, over spacing and line breaks. Browser preserves your space and line break in the text written inside the tag. It uses courier font.
  - <PRE> Welcome to the world of HTML </PRE>
- **Horizontal Rule tag <HR>:**
- An empty tag <HR> basically used to draw lines and horizontal rules. It can be used to separate two sections of text. It accept SIZE, COLOR, ALIGN and more attributes.
- Example:

```
<BODY>
    Your horizontal rule goes here. <HR>
    The rest of the text goes here.
</BODY>
```

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 rarely 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 many browsers.

Attributes used with <BODY>

- **BGCOLOR**: To define the background color, use the BGCOLOR attribute in the <BODY> tag
  - <BODY BGCOLOR= “black”>

  Document’s Content

  </BODY>
- **TEXT**: To define the text color, use the TEXT attribute in the <BODY> tag
  - <BODY TEXT= “white”>

  Document’s Content

  </BODY>

Example

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

Attributes used with <BODY>

- **BACKGROUND**: It is used to point to an image file that will be used as the background of the document.
  - <BODY BACKGROUND= "filename.jpg">

  Document background Changed

  </BODY>
- **Margins**: Set the left hand/right hand margins of the document
  - <BODY LEFTMARGIN= "60" TOPMARGIN="60">

    This document is indented 60 pixels from the left hand side and also from top side of the page.

  </BODY>

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 GOOGLE, I would type:

  <A HREF="http://www.google.com">google</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: kjsharma@gmail.com">email K J Sharma</A>

List in Web Page

- HTML supports several ways of arranging items in lists. The most commonly used are:
  - Ordered List(Numbered List)
  - Unordered List(Bulleted List)

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 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

Control List Counting:

- By default, an ordered list will start counting from 1. If you want to start counting from a specified number, you can use the **start** attribute.
- Example:
- <OL start=”10”>
- <LI> Brinjal</LI> <LI> Cabbage</LI>
- </OL>

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

Description List

- A description list is a list of terms, with a description of each term. The <dl> tag defines the description list, the <dt> tag defines the term (name), and the <dd> tag describes each term
- **Example:**
- <dl>

<dt>BVM</dt>

<dd>- Engineering College</dd>

<dt>SEMCOM</dt>

<dd>- Commerce College</dd>

- </dl>

Nested List

- List can be nested(lists inside lists)
- Example:
- <UL>

<LI> Non Flying Bird</LI>

<LI>Flying Bird

<OL>

<LI>Parrot</LI>

<LI>Pigeons</LI>

</OL>

</LI>

</UL>

Using HTML Tables

Defining a Table Structure

- The first step to creating a table is to specify the table structure:
  - the number of rows and columns
  - the location of column headings
- Once the table structure is in place, you can start entering data into the table.

Using the <table>, <tr>, and <td> Tags

- Graphical tables are enclosed within a two-sided **<table>** tag that identifies the start and ending of the table structure.
- Each row of the table is indicated using a **<tr>** (for table row).
- Within each table row, a **<td>** (for table data) tag indicates the presence of individual table cells.

The General Table Syntax


```
<table>
  <tr>
   <td> First Cell </td>
   <td> Second Cell </td>
  </tr>
  <tr>
   <td> Third Cell </td>
   <td> Fourth Cell </td>
  </tr>
</table>
```

two rows

First Cell	Second Cell
Third Cell	Fourth Cell

two columns

Columns within a Table

- HTML does not provide a tag for table columns.
- In the original HTML specifications, the number of columns is determined by how many cells are inserted within each row.
  - for example, if you have four **<td>** tags in each table row, that table has four columns

Creating Headings with the <th> Tag

- HTML provides the **<th>** tag for table headings.
- Text formatted with the **<th>** tag is centered within the cell and displayed in a boldface font.
- The **<th>** tag is most often used for column headings, but you can use it for any cell that you want to contain centered boldfaced text.

Adding Table Headings to the Table

Text in cells formatted with the `<th>` tag is bold and centered above each table column.

Group	Runner	Time	Origin
Men	1. Peter Teagan	2:12:34	San Antonio, Texas
Men	2. Kyle Wills	2:13:05	Billings, Montana
Men	3. Jason Wu	2:14:28	Cutler, Colorado
Women	1. Laura Blake	2:28:21	Park City, Colorado
Women	2. Kathy Lasker	2:30:11	Chicago, Illinois
Women	3. Lisa Peterson	2:31:14	Seattle, Washington

table headings

```
<table>
    <tr>
        <th>Group</th>
        <th>Runner</th>
        <th>Time</th>
        <th>Origin</th>
    </tr>
    <tr>
        <td>Men</td>
        <td>1. Peter Teagan</td>
        <td>2:12:34</td>
        <td>San Antonio, Texas</td>
    </tr>
```

Creating a Table Caption

- HTML allows you to specify a caption for a table.
- The syntax for creating a caption is: **`<caption align="alignment">caption text</caption>`**
  - ***alignment*** indicates the caption placement
  - a value of ***"bottom"*** centers the caption below the table
  - a value of ***"top"*** or ***"center"*** centers the caption above the table
  - a value of ***"left"*** or ***"right"*** place the caption above the table to the left or right

Table Captions

- Only **Internet Explorer** supports all caption values.
- **Netscape** supports only the "**top**" and "**bottom**" values.
- The **<caption>** tag works only with tables, the tag must be placed within the table structure.
- Captions are shown as normal text without special formatting.
- Captions can be formatted by embedding the caption text within other HTML tags.
  - for example, place the caption text within a pair of **<b>** and **<i>** tags causes the caption to display as bold and italic

Result of a Table Caption

caption text

```
<table>
   <caption align="top"><b>Race Results</b></caption>
   <tr>
      <th>Group</th>
      <th>Runner</th>
      <th>Time</th>
      <th>Origin</th>
   </tr>
```

Race Results

Group	Runner	Time	Origin
Men	1. Peter Teagan	2:12:34	San Antonio, Texas
Men	2. Kyle Wills	2:13:05	Billings, Montana
Men	3. Jason Wu	2:14:28	Cutler, Colorado
Women	1. Laura Blake	2:28:21	Park City, Colorado
Women	2. Kathy Lasker	2:30:11	Chicago, Illinois
Women	3. Lisa Peterson	2:31:14	Seattle, Washington

Modifying the Appearance of a Table

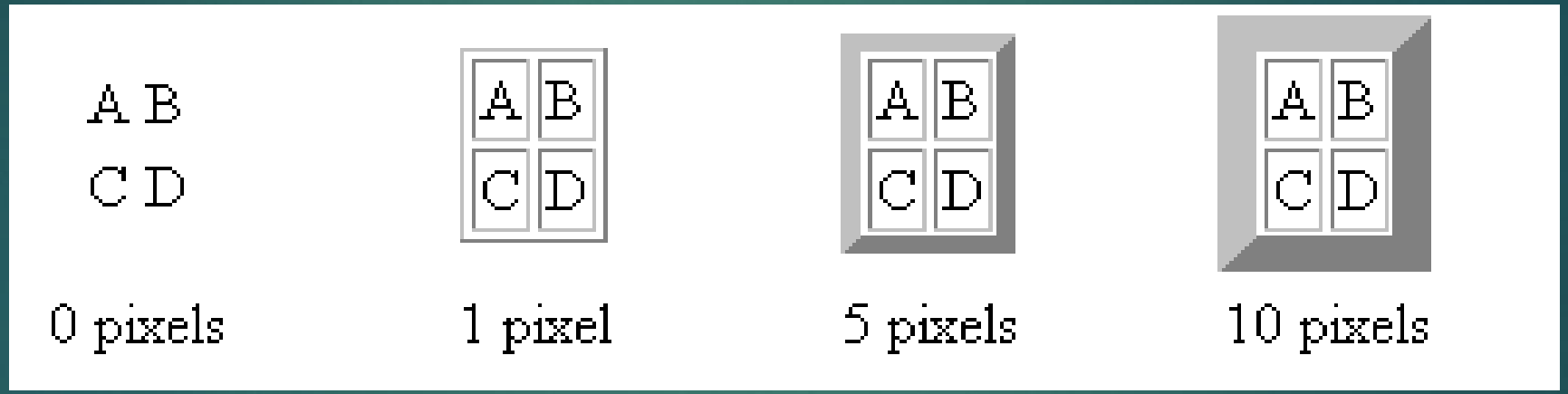
- You can modify the appearance of a table by adding:
  - gridlines
  - borders
  - background color
- HTML also provides tags and attributes to control the placement and size of a table.

Adding a Table Border

- By default, browsers display tables without table borders.
- A table border can be added using the border attribute to the **<table>** tag.
- The syntax for creating a table border is:
  <table border="value">
  - ***value*** is the width of the border in pixels
- The **size** attribute is optional; if you don't specify a size, the browser creates a table border 1 pixel wide.

Tables with Different Borders Values

This figure shows the effect on a table's border when the border size is varied.



Adding a 5-Pixel Border to a Table


```
<table border="5">
    <caption align="top"><b>Race Results</b></caption>
    <tr>
        <th>Group</th>
        <th>Runner</th>
        <th>Time</th>
        <th>Origin</th>
    </tr>
```

Only the outside border is affected by the border attribute; the internal gridlines are not affected.

Race Results

Group	Runner	Time	Origin
Men	1. Peter Teagan	2:12:34	San Antonio, Texas
Men	2. Kyle Wills	2:13:05	Billings, Montana
Men	3. Jason Wu	2:14:28	Cutler, Colorado
Women	1. Laura Blake	2:28:21	Park City, Colorado
Women	2. Kathy Lasker	2:30:11	Chicago, Illinois
Women	3. Lisa Peterson	2:31:14	Seattle, Washington

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>
```

Controlling Cell Spacing

- The **cellspacing** attribute controls the amount of space inserted between table cells.
- The syntax for specifying the cell space is:

```
<table cellspacing="value">
```

  - ***value*** is the width of the interior borders in pixels
  - the default cell spacing is 2 pixels

- Cell spacing refers to the space between the cells.

Defining Cell Padding

- To control the space between the table text and the cell borders, add the **cellpadding** attribute to the table tag.
- The syntax for this attribute is:

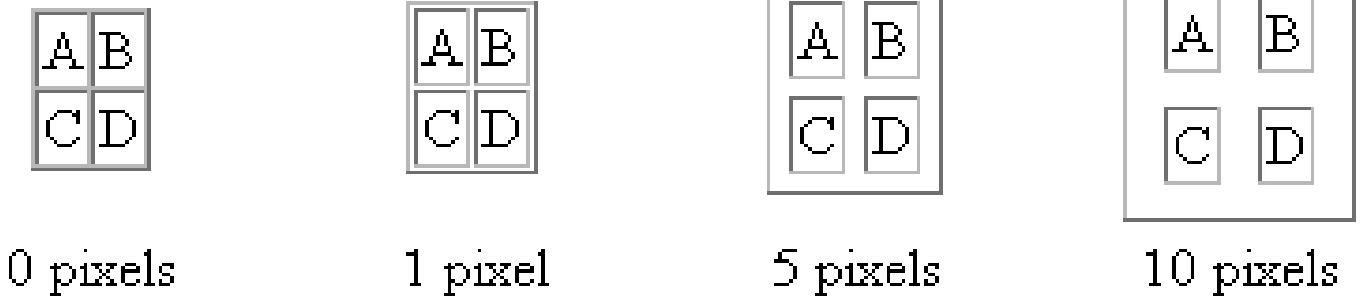
```
<table cellpadding="value">
```

  - ***value*** is the distance from the table text to the cell border, as measured in pixels
  - the default cell padding value is 1 pixel

- Cell padding refers to the space within the text and cell border.

Tables with Different Cell Spacing and Cell Padding Values

different cell spacing values



different cell padding values

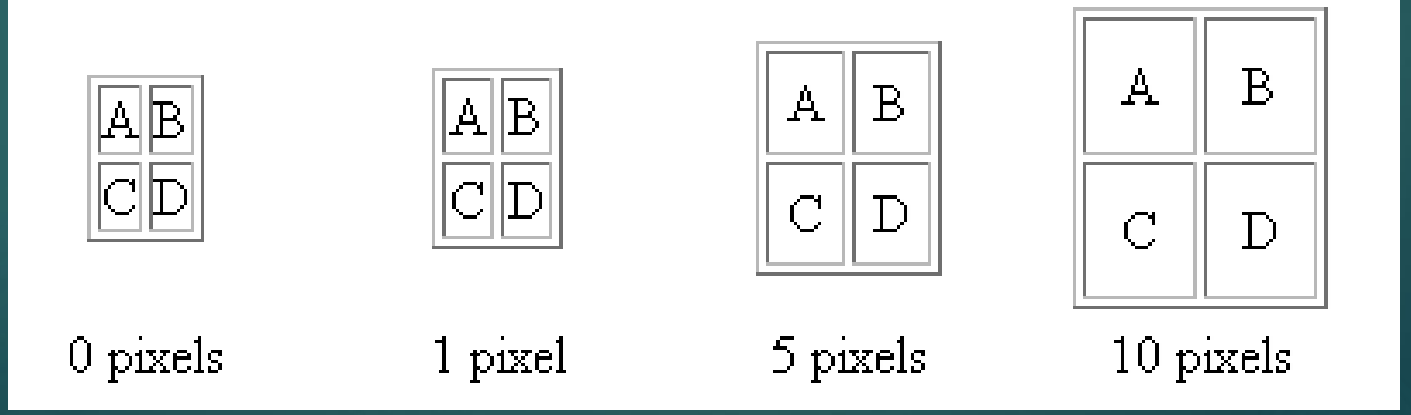


Table Frames and Rules

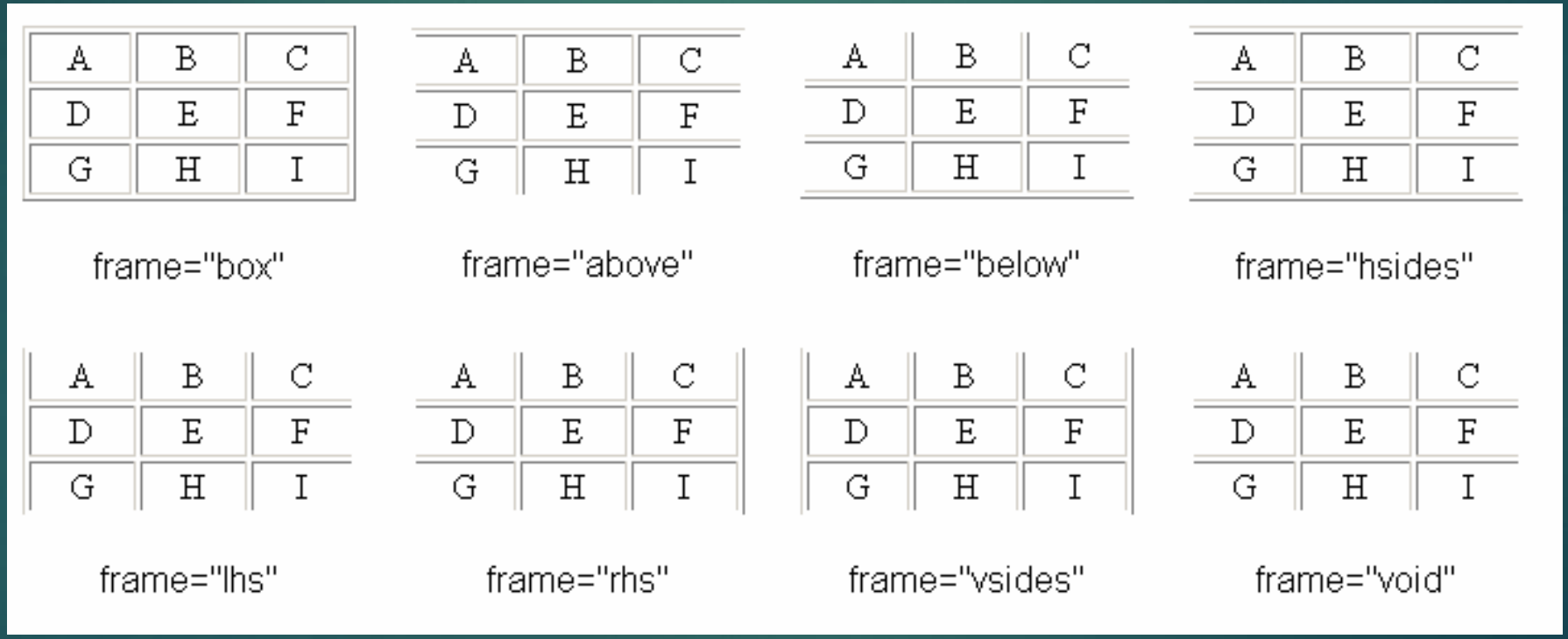
- Two additional table attributes introduced in HTML 4.0 are the **frames** and **rules** attributes.
- With the frame and rule attributes you can control how borders and gridlines are applied to the table.
- The **frames** attribute allows you to determine which sides of the table will have borders.
- The frame attribute syntax is: **`<table frame="type">`**
  - ***type*** is either "box" (the default), "**above**", "**below**", "**hsides**", "**vsides**", "**lhs**", "**rhs**", or "**void**"

Values of the Frame Attribute

FRAME VALUE	DESCRIPTION
BOX	Draws borders around all four sides
ABOVE	Draws only the top border
BELOW	Draws only the bottom border
HSIDES	Draws both the top and bottom borders (the horizontal sides)
LHS	Draws only the left-hand side
RHS	Draws only the right-hand side
VSIDES	Draws both the left and right borders (the vertical sides)
VOID	Does not draw borders on any of the four sides

Effect of Different Frame Values

This figure shows the effect of each of the frame values on the table grid.



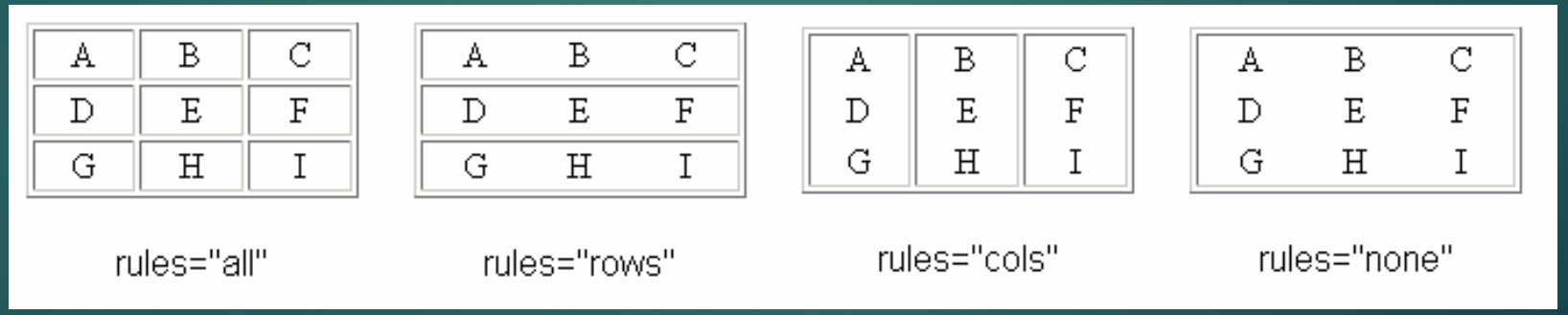
Creating Frames and Rules Continued

- The **rules** attribute lets you control how the table gridlines are drawn (not supported by Netscape)
- The syntax of the rules attribute is:

```
<table rules="type">
```

  - ***type*** is either "**all**", "**rows**", "**cols**", or "**none**"

the effect of each of the rules attribute values on a table



Working with Table and Cell Size

- The size of a table is determined by text it contains in its cells.
- By default, HTML places text on a single line.
- As you add text in a cell, the width of the column and table expands to the edge of the page.
  - once the page edge is reached, the browser reduces the size of the remaining columns to keep the text to a single line .
- You can insert line break, paragraph, or other tags within a cell.
- When the browser can no longer increase or decrease the size of the column and table it wraps the text to a second line.
- As more text is added, the height of the table expands to accommodate the additional text.
- But, you can manually define the size of the table and its cells.

Defining the Table Size

- The syntax for specifying the table size is:

```
<table width="size" height="size">
```

  - ***size*** is the width and height of the table as measured in pixels or as a percentage of the display area
- To create a table whose height is equal to the entire height of the display area, enter the attribute height="100%".

Setting the Width of the Table to 500 Pixels


```
<table border="5" width="500">
<caption align="top"><b> Sample</b></caption>
<tr>
<th>Group</th>
<th>runner</th>
</tr>
<tr>
<td>1</td>
<td>runner</td>
</tr>
<tr>
<td>2</td>
<td>run</td>
```

Sample

Group	runner
1	runner
2	run

Defining Cell and Column Sizes

- To set the width of an individual cell, add the **width** attribute to either the **<td>** or **<th>** tags.
- The syntax is: **width="value"**
  - ***value*** can be expressed in pixels or as a percentage of the table width
  - width value of 30% displays a cell that is 30% of the total width of table.
- The **height** attribute can also be used in the **<td>** or **<th>** tags to set the height of individual cells.
  - The height attribute is expressed either in pixels or as a percentage of the height of the table.
  - If you include more text than can be displayed within that height value you specify, the cell expands to display the additional text.

Defining Cell and Column Sizes

- Specifying a width for an individual cell does not guarantee that the cell will be that width when displayed in the browser.
  - the reason for this is that the cell is part of a column containing other cells.

Aligning a Table on the Web Page

- By default, a browser places a table on the left margin of a Web page, with surrounding text placed above and below the table.
- To align a table with the surrounding text, use the **align** attribute as follows: **`align="alignment"`**
  - ***alignment*** equals ***"left"***, ***"right"***, or ***"center"***
  - ***left*** or ***right*** alignment places the table on the margin of the Web page and wraps surrounding text to the side
  - ***center*** alignment places the table in the horizontal center of the page, but does not allow text to wrap around it.

Results of a Right-Aligned Table


```
<table border="5" cellspacing="0" cellpadding="4" width="500" align="right">
   <caption align="top"><b>Race Results</b></caption>
   <tr>
      <th width="50">Group</th>
      <th>Runner</th>
      <th>Time</th>
      <th>Origin</th>
   </tr>
```

Local Woman Wins Marathon

Park City native, **Laura Blake**, won the 27th Front Range Marathon over an elite field of the best long distance runners in the country. Laura's time of 2 hr. 28 min. 21 sec. was only 2 minutes off the women's course record set last year by Sarah Rawlings. Kathy Lasker and Lisa Peterson finished second and third, respectively. Laura's victory came on the heels of her performance at the NCAA Track and Field Championships, in which she placed second running for Colorado State.

In an exciting race, **Peter Teagan** of San Antonio, Texas, used a finishing kick to win the men's marathon for the second straight year, in a time of 2 hr. 12 min. 34 sec. Ahead for much of the race, Kyle Wills of Billings, Montana, finished second, when he could not match Teagan's finishing pace. Jason Wu of Cutler, Colorado, placed third in a very competitive field.

Race Results

Group	Runner	Time	Origin
Men	1. Peter Teagan	2:12:34	San Antonio, Texas
Men	2. Kyle Wills	2:13:05	Billings, Montana
Men	3. Jason Wu	2:14:28	Cutler, Colorado
Women	1. Laura Blake	2:28:21	Park City, Colorado
Women	2. Kathy Lasker	2:30:11	Chicago, Illinois
Women	3. Lisa Peterson	2:31:14	Seattle, Washington

This year's race through downtown Boulder boasted the largest field in the marathon's history, with over 9500 men and 6700 women competing. Race conditions were perfect with low humidity and temperatures that never exceeded 85°.

Aligning the Contents of a Table

- By default, cell text is placed in the middle of the cell, aligned with the cell's left edge.
- By using the **align** and **valign** attributes, you can specify the text's horizontal and vertical placement.

Values of the Align and Valign Attributes

align="left" valign="top"	align="left" valign="middle"	align="left" valign="bottom"
align="center" valign="top"	align="center" valign="middle"	align="center" valign="bottom"
align="right" valign="top"	align="right" valign="middle"	align="right" valign="bottom"

Spanning Rows and Columns

- To merge several cells into one, you need to create a **spanning cell**.
- A spanning cell is a cell that occupies more than one row or column in a table.
- Spanning cells are created by inserting the **rowspan** and **colspan** attribute in a **<td>** or **<th>** tag.
- The syntax for these attributes is: **rowspan="value" colspan="value"**
  - ***value*** is the number of rows or columns that the cell spans in the table

A Table Structure with a Row-Spanning Cell

four table cells in the first row

only three table cells are required for the second and third rows

```
<table>
   <tr>
      <td rowspan="3">1: This cell spans three rows</td>
      <td>2</td>
      <td>3</td>
      <td>4</td>
   </tr>
   <tr>
      <td>5</td>
      <td>6</td>
      <td>7</td>
   </tr>
   <tr>
      <td>8</td>
      <td>9</td>
      <td>10</td>
   </tr>
</table>
```

HTML code

1: This cell spans three rows	2	3	4
	5	6	7
	8	9	10

resulting table

Example of Spanning Cells

Today's Opinion Poll Question		Political Party		
		Democrat	Republican	Independent
"Do you favor or oppose increasing the minimum wage?"	Favor	70%	35%	55%
	Oppose	25%	60%	30%
	Unsure	5%	5%	15%

Applying a Background Color

- Table elements support the **bgcolor** attribute.
- To specify a background color for all of the cells in a table, all of the cells in a row, or for individual cells, by adding the bgcolor attribute to either the **<table>**, **<tr>**, **<td>**, or **<th>** tags as follows:

```
<table bgcolor="color">
<tr bgcolor="color">
<td bgcolor="color">
<th bgcolor="color">
```

  - ***color*** is either a color name or hexadecimal color value

The `bordercolor` Attribute

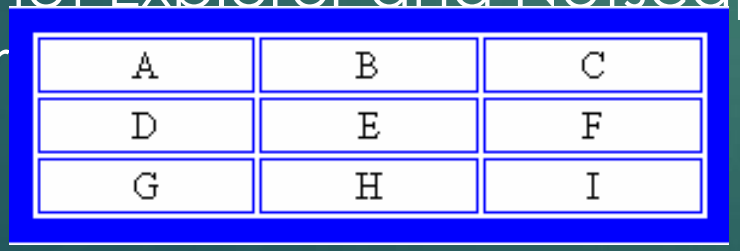
- By default, table borders are displayed in two shades of gray that create a three-dimensional effect.
- The syntax for the bordercolor attribute is:

```
<table bordercolor="color">
```

  - ***color*** is an HTML color name or hexadecimal color value

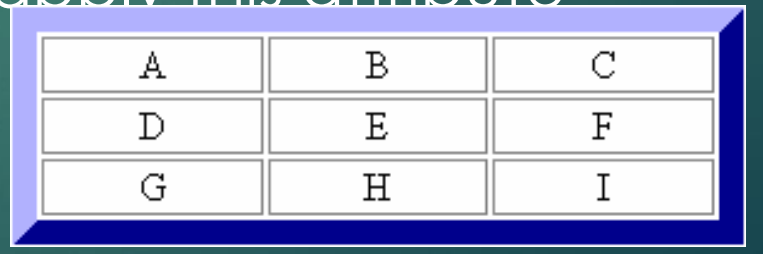
```
<table border="10"  bordercolor="blue">
```

- Internet Explorer and Netscape apply this attribute differ



A	B	C
D	E	F
G	H	I

Internet Explorer



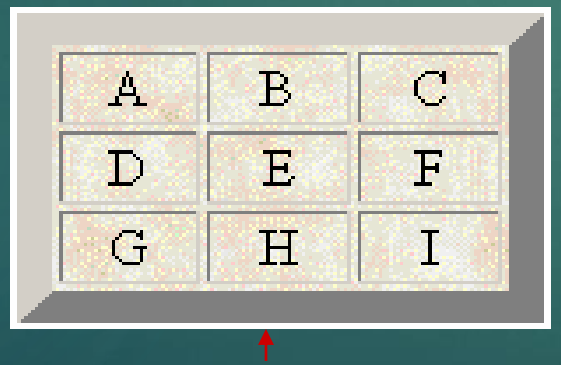
A	B	C
D	E	F
G	H	I

Netscape

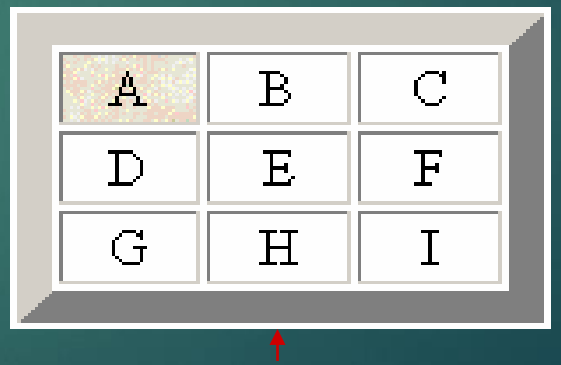
Applying a Table Background

- Add a background image to your tables using the **background** attribute.
- A background can be applied to the entire table or to a cell.

parch.jpg




```
<table background="parch.jpg">
```




```
<td background="parch.jpg">
```

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

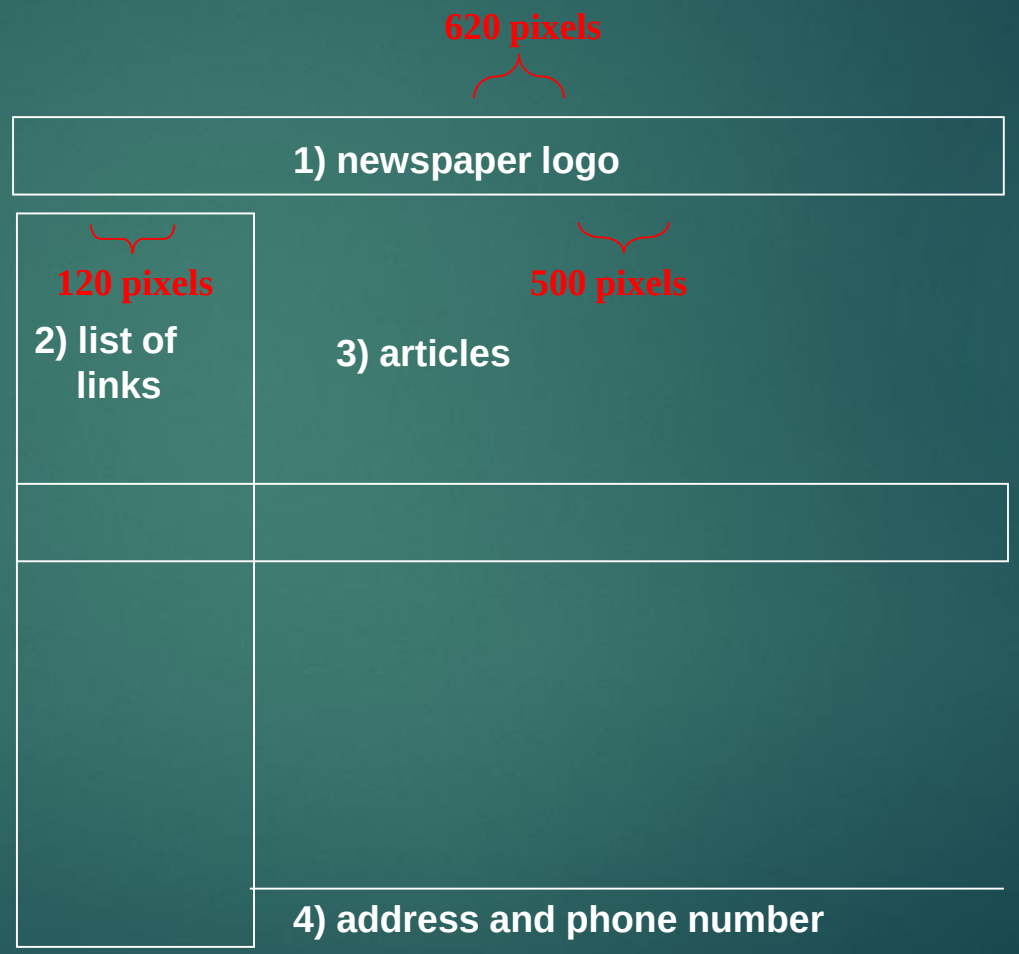
- You can also create a horizontal section consisting of one or more rows. This allows you to format the rows all at once
- To create a horizontal section, type <THEAD>, <TBODY>, or <TFOOT> before the first <TR> tag of the section
- Netscape does not support these tags

Designing a Page Layout with Tables

- HTML tables are most often used to define the layout of an entire Web page.
- If you want to design a page that displays text in newspaper style columns, or separates the page into distinct sections, you'll find tables an essential and useful tool.

Table Layout of a Web Page

a sample table layout of a Web page.



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

Specifying Table, Row, and Cell Colors

Race Results

Runner		Time	Origin
Men	1. Peter Teagan	2:12:34	San Antonio, Texas
	2. Kyle Wills	2:13:05	Billings, Montana
	3. Jason Wu	2:14:28	Cutler, Colorado
Women	1. Laura Blake	2:28:21	Park City, Colorado
	2. Kathy Lasker	2:30:11	Chicago, Illinois
	3. Lisa Peterson	2:31:14	Seattle, Washington

Specifying Table, Row, and Cell Colors

```
<table border="5" cellspacing="0" cellpadding="4" width="500" align="right" bgcolor="white">
   <caption align="top"><b>Race Results</b></caption>
   <tr bgcolor="yellow">
      <th colspan="2">Runner</th>
      <th>Time</th>
      <th>Origin</th>
   </tr>
   <tr>
      <td rowspan="3" valign="top" bgcolor="lightblue">Men</td>
      <td>1. Peter Teagan</td>
      <td align="right">2:12:34</td>
      <td>San Antonio, Texas</td>
   </tr>
   <tr>
      <td>2. Kyle Wills</td>
      <td align="right">2:13:05</td>
      <td>Billings, Montana</td>
   </tr>
   <tr>
      <td>3. Jason Wu</td>
      <td align="right">2:14:28</td>
      <td>Cutler, Colorado</td>
   </tr>
   <tr>
      <td rowspan="3" valign="top" bgcolor="lightgreen">Women</td>
      <td>1. Laura Blake</td>
      <td align="right">2:28:21</td>
      <td>Park City, Colorado</td>
   </tr>
   <tr>
      <td>2. Kathy Lasker</td>
      <td align="right">2:30:11</td>
      <td>Chicago, Illinois</td>
   </tr>
   <tr>
      <td>3. Lisa Peterson</td>
      <td align="right">2:31:14</td>
      <td>Seattle, Washington</td>
   </tr>
</table>
```

HTML 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.

HTML 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...

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

HTML <input> Element

- The <input> element is the most important form element.
- The <input> element can be displayed in several ways, depending on the **type** attribute.

Input Types

Type	Description
type=”button”	Display a button which can be clicked to perform an action from a script
type=”checkbox”	Display a check box
type=”file”	Display a browse button to locate and select a file
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
type=”submit”	Display a button which submits the form when clicked
type=”text”	Display a text box in which displays text entered by the user

Working with Text Boxes

- Text boxes are created using the **<input>** tag.
- The general syntax is:

<input type="text">

  - defines a one-line input field for **text input**

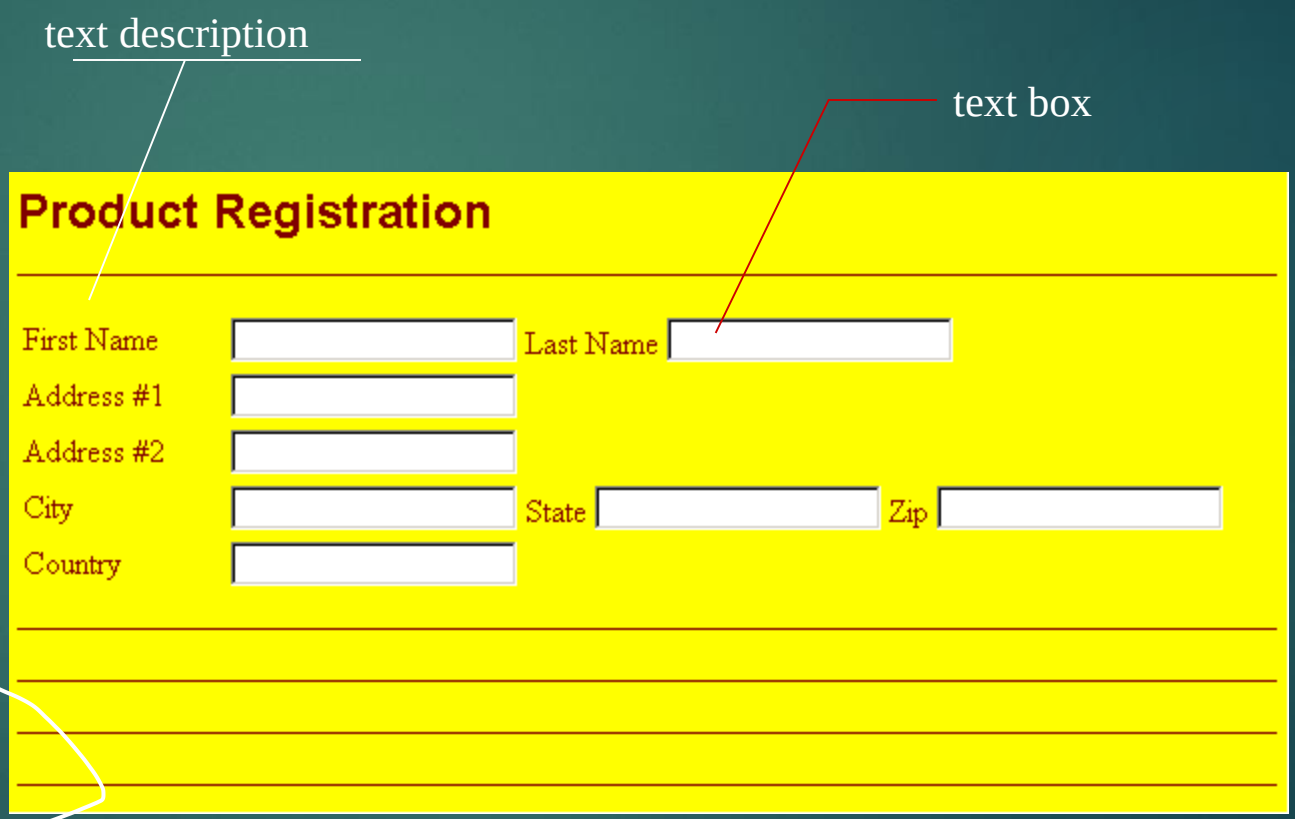
- Example:

```
<form>
  First name:<br>
  <input type="text" name="firstname"><br>
  Last name:<br>
  <input type="text" name="lastname">
</form>
```

Text Boxes on the Form

Text boxes are blank and do not contain any accompanying text, a text description needs to be inserted, such as "Last Name", adjacent to each box so that the user knows what to enter.

The default width of a text field is 20 characters.



Setting the Width of Text Boxes

- The **size** attribute specifies the visible width, in characters, of an <input> element.
- The general syntax is:

  <input type="text“ size=“number”>

  - **Number** Specifies the width of an <input> element, in characters. Default value is 20

Specify the Maximum Length for a Field

This figure shows an example of limiting the width of the zip code field to five characters.

```
<td>
   <input type="text" name="city" id="city" size="40">
   State
   <input type="text" name="state" id="state" size="3">
   Zip
   <input type="text" name="zip" id="zip" size="10" maxlength="5">
</td>
```

no more than 5
characters are allowed
in this text box

Setting a Default Value for a Field

- When the same value is entered into a field, it may make sense to define a default value for a field.
- Default values can save time and increase accuracy for users of a Web site.
- To define a default value, use the following syntax:

```
<input value="value">
```

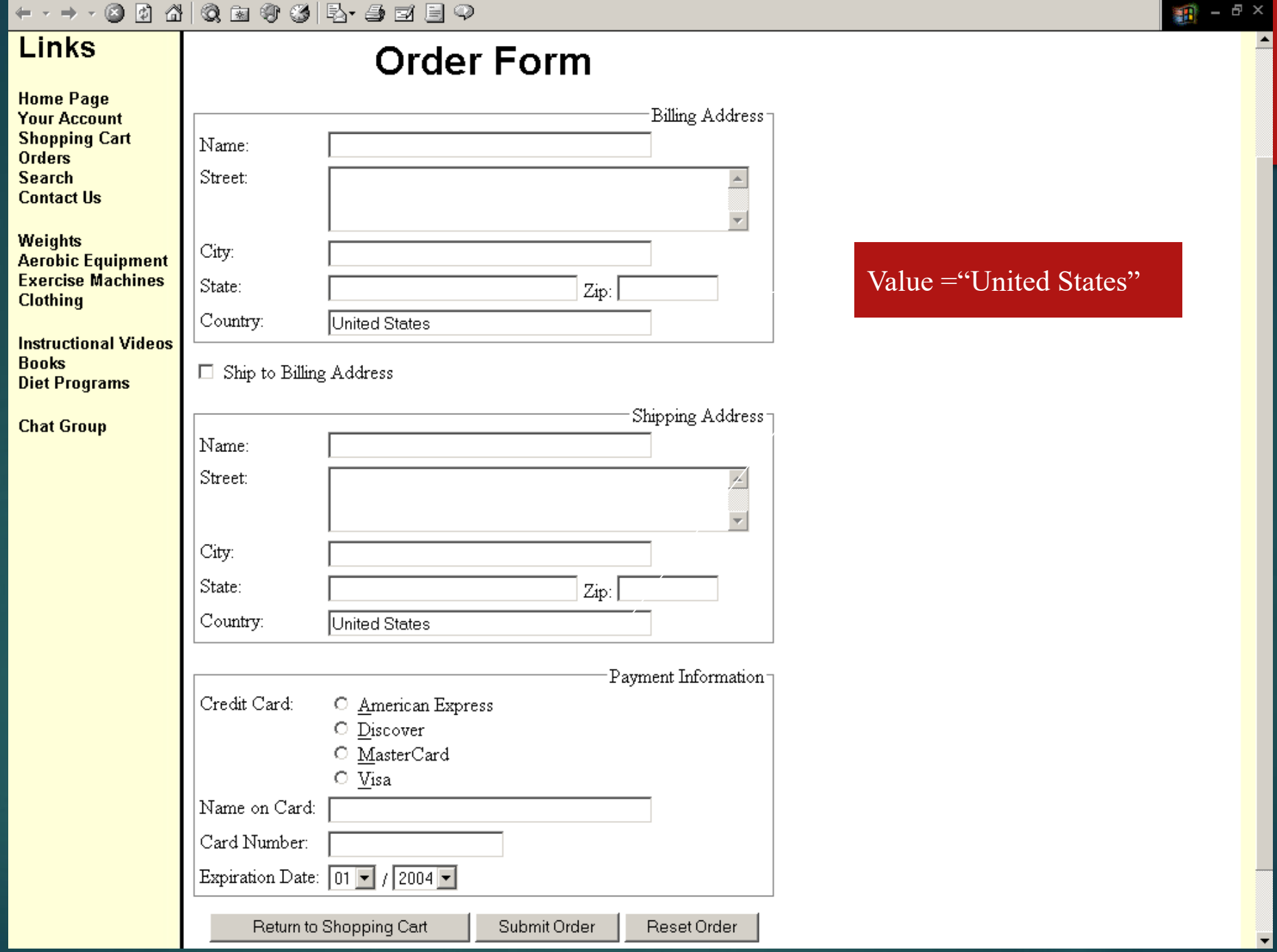
  - ***value*** is the default text or number that is displayed in the field

Defining a Default Value for a Field

If customers from countries other than the United States use this Web form,
they can remove the default value by selecting the text and pressing the Delete key.

```
<tr>
   <td width="100">
      Country
   </td>
   <td>
      <input type="text" name="country" id="country" size="40" value="United States">
   </td>
</tr>
```

default value



Value =“United States”

Radio Button

- 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.
- Radio buttons let a user select ONE of a limited number of choices
- Example:

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

The Submit Button

- <input type="submit"> defines a button for **submitting** the form data to a **form-handler**.
- The form-handler is typically a server page with a script for processing input data.
- The form-handler is specified in the form's **action** attribute.

Example


```
<form action="/server_page.php">
Name:<br>
<input type="text" name="name" ><br>
Password:<br>
<input type="text" name=“password"><br>
<input type="submit" value="Submit">
</form>
<p>If you click the "Submit" button, the form-data will be sent to a page
    called "/server_page.php".</p>
```

The Action Attribute

- The action attribute defines the action to be performed when the form is submitted.
- Normally, the form data is sent to a web page on the server when the user clicks on the submit button.
- In the example above, the form data is sent to a page on the server called "/server_page.php". This page contains a server-side script that handles the form data
- Exmple:

  <form **action="/server_page.php**">
- If the action attribute is omitted, the action is set to the current page.

The Target Attribute

- To make the form result open in a new browser tab, use the value "_blank“
- The target attribute specifies if the submitted result will open in a new browser tab, a frame, or in the current window.
- The default value is "_self" which means the form will be submitted in the current window.
- Example:

  <form action="/action_page.php" **target="_blank"**>

The Method Attribute

- The method attribute specifies the HTTP method (**GET** or **POST**) to be used when submitting the form data:

  <form action="/server_page.php" **method="get"**>

Or

  <form action="/server_page.php" **method="post"**>

When to Use GET?

- The default method when submitting form data is GET.
- However, when GET is used, the submitted form data will be **visible in the page address field**

Points on GET

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

When to Use POST?

- Always use POST if the form data contains sensitive or personal information. The POST method does not display the submitted form data in the page address field.
- Points on POST:
  - POST has no size limitations, and can be used to send large amounts of data.
  - Form submissions with POST cannot be bookmarked

Input Type Password

- <input type="password"> defines a **password field**

Input Type Reset

- <input type="reset"> defines a **reset button** that will reset all form values to their default values
- If you change the input values and then click the "Reset" button, the form-data will be reset to the default values.

Input Type Checkbox

- <input type="checkbox"> defines a **checkbox**.
- Checkboxes let a user select ZERO or MORE options of a limited number of choices.

- <input type="button"> defines a **button**

Input Type Image

- The <input type="image"> element is a replaced element (an element whose content isn't generated or directly managed by the CSS layer), behaving in much the same way as a regular <img> element, but with the capabilities of a submit button.

Input Type File

- Define a file-select field
- The <input type="file"> defines a file-select field and a "Browse" button for file uploads.
- To define a file-select field that allows multiple files to be selected, add the "multiple" attribute.

HTML Input Attributes

- The Value Attribute:
  - The value attribute specifies the initial value for an input field
- The readonly Attribute
  - The readonly attribute specifies that the input field is read only (cannot be changed)
- The disabled Attribute
  - The disabled attribute specifies that the input field is disabled.
  - A disabled input field is unusable and un-clickable, and its value will not be sent when submitting the form

HTML Form Element

- The <select> Element
  - The <select> element defines a **drop-down list**
  - The <option> elements defines an option that can be selected.
  - By default, the first item in the drop-down list is selected.
  - To define a pre-selected option, add the selected attribute to the option:

```
<option value="fiat" selected>Fiat</option>
```

  - Use the size attribute to specify the number of visible values

```
<select name="cars" size="3">
```

  - Use the multiple attribute to allow the user to select more than one value

```
<select name="cars" size="4" multiple>
```

HTML Form Element

- The <textarea> Element
  - The <textarea> element defines a multi-line input field (**a text area**)
  - The rows attribute specifies the visible number of lines in a text area.
  - The cols attribute specifies the visible width of a text area.

Fieldset and Legend

- The <fieldset> tag is used to group related elements in a form. It draws a box around the related elements.
- The <legend> tag defines a caption for the <fieldset> element.
- Example:
- <fieldset>
- <legend>Personalia:</legend>
- Name: <input type="text">
- Email: <input type="text">
- Date of birth: <input type="text">
- </fieldset>

Introduction to XHTML

- XHTML stands for Extensible Hypertext Markup Language
- XHTML is aimed to replace HTML
- XHTML is almost identical to HTML 4.01
- XHTML is stricter and cleaner version of HTML
- XML is a markup language designed for describing data
- XHTML is a Bridge between HTML and XML

Introduction to XHTML

- XHTML elements must be properly **nested.**
- XHTML elements must always be **closed.**
- XHTML elements must be in **lowercase.**
- Attribute names must be in **lower case.**
- Attribute values must be **quoted.**

Introduction to XHTML

- DOCTYPE declaration of XHTML:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

This is what the <html> element looked like in XHTML:

```
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en">
```

Here is a typical XHTML <head> section:

```
<head>
<meta http-equiv="Content-type" content="text/html; charset=UTF-8"
/>
<title>My First XHTML Page</title>
<link rel="stylesheet" type="text/css" href="style.css" />
</head>
```

The DTD specifies the rules for the markup language, so that the browsers render the content correctly.

Introduction to XHTML

- XHTML elements must be properly nested

  ** bold and italic   is wrong**

  ** bold and italic   is correct**
- XHTML documents must be well-formed

  <html>

  <head>……..</head>

  <body>……..</body>

  </html>
- If an HTML tag is not a container, close it like this :
- **
, <hr />, **

META tag

- Metadata is data (information) about data.
- The <meta> tag provides metadata about the HTML document. Metadata will not be displayed on the page, but will be machine parsable.
- Metadata is included in the head section of web page
- Meta elements are typically used to specify page description, keywords, author of the document, last modified, and other metadata.
- The metadata can be used by browsers (how to display content or reload page), search engines (keywords), or other web services.
- It can be included in both HTML and XHTML to describe the actual documents rather than the document's content.

META tag

META tag:

```
<html>
    <head>
        <title> My Web Page </title>
        <meta name =“author” content=“K J sharma”/>
        <meta name =“description” content=“This page is related to information of faculties of bvm”/>
    </head>
</html>
```

META tag

META tag:

```
<html>
    <head>
        <title> My Web Page </title>
        <meta http-equiv =“expires” content=“Mon,20 Jul 2021 16:00:00 ”/>
        <meta http-equiv="refresh" content=“3;URL='http://google.com/'" />
    </head>
</html>
```

META tag

- META tag (Memory Cache):
- Web browsers can cache pages for quick reviewing without having to request them again and re-download the document.
- Each page has a TTL (Time To Leave) . Usually 30 days, when the browser cache has been cleared or the allotted memory is all used up.
- Browser can be stopped from caching a page. If it supports the meta elements http-equiv attribute.
- For this we have to set value pragma to http-equiv attribute and no-cache value to the content attribute.
- <meta http-equiv =“pragma” content=“no-cache”/>

Character Entities

- Some characters are reserved in HTML.
- If you use the less than (<) or greater than (>) signs in your text, the browser might mix them with tags.
- Character entities are used to display reserved characters in HTML.
- A character entity looks like this:
- *&entity_name;*
- OR
- *&#entity_number;*

Some Useful HTML Character Entities

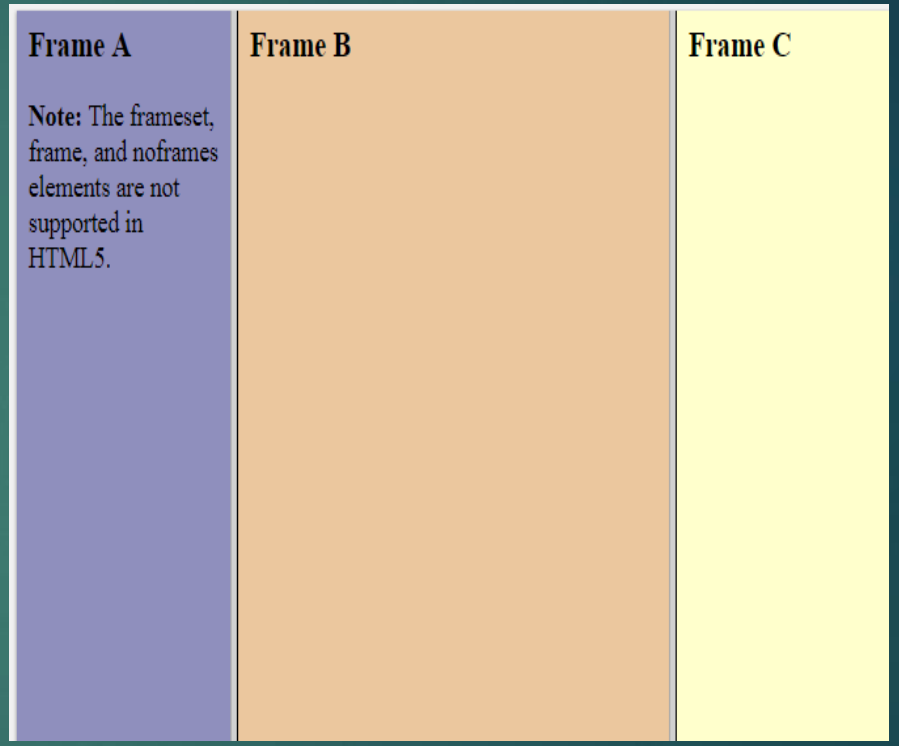
	non-breaking space		
>	greater than	>	>
"	double quotation mark	"	"
¢	cent	¢	¢
¥	yen	¥	¥
©	copyright	©	©

Frameset in HTML

- Frameset
  - The <frameset> tag is not supported in HTML5.
  - Use to define a frameset.
  - The <frameset> element holds one or more <frame> elements. Each <frame> element can hold a separate document.
  - The <frameset> element specifies HOW MANY columns or rows there will be in the frameset, and HOW MUCH percentage/pixels of space will occupy each of them.

Frameset in HTML


```
<!DOCTYPE html>
<html>
<frameset cols="25%,*,25%">
        <frame src="frame_a.htm">
    <frame src="frame_b.htm">
    <frame src="frame_c.htm">
</frameset>
</html>
```



Introduction to HTML5

- HTML5 is the newest version of HTML, only recently gaining partial support by the makers of web browsers.
- It incorporates all features from earlier versions of HTML, including the stricter XHTML.
- It is still a work in progress. No browsers have full HTML5 support.
- New features are based on HTML, CSS, DOM(Document Object Model), and JavaScript.

Goals of HTML5

- Support all existing web pages. With HTML5, there is no requirement to go back and revise older websites.
- Reduce the need for external plugins and scripts to show website content.
- Make the rendering of web content universal and independent of the device being used.
- Enhanced form controls and attributes
- Built-in audio and video support(without plugins)

First Look at HTML5

- The DOCTYPE declaration of XHTML

  <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"

  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

- In HTML5, there is just one possible DOCTYPE declaration and it is simpler:

  <!DOCTYPE html>

  The DOCTYPE tells the browser which type and version of document to expect.

First Look at HTML5

- This is what the <html> element looked like in XHTML:
  - <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
- Again, HTML5 simplifies this line:
  - <html lang="en">
- The lang attribute in the <html> element declares which language the page content is in.
- Each of the world's major languages has a two-character code ,e.g. Spanish= "es", French="fr" ,German="de" ,Chinese="zh" ,Arabic="ar".

HTML5 Basic Elements

- <header>:used to define a header for section or document
- <footer>:used to define a footer for section or document
- <article>:used to define a article
- <Header, nav and footer are notsection>:used to define a section within document
- <nav>:used to define a navigation links
- doing fancy things like the other new HTML5 elements, but these elements are primarily designed to make the web structure more meaningful both for browsers and humans.

HTML5 Elements: Video


```
<!DOCTYPE HTML>
<html>
    <body>
      <video src="movie.ogg“ width="320“ height="240” controls="controls">
            Your browser support the video tag.
      </video>
    </body>
</html>
```

- The above example uses an Oggfile, and will work in Firefox, Opera and Chrome.

HTML5 Elements: Video

Attribute	Value	Description
audio	muted	Defining the default state of the the audio. Currently, only "muted" is allowed
autoplay	autoplay	If present, then the video will start playing as soon as it is ready
controls	controls	If present, controls will be displayed, such as a play button
height	*pixels*	Sets the height of the video player
loop	loop	If present, the video will start over again, every time it is finished
poster	*url*	Specifies the URL of an image representing the video
preload	preload	If present, the video will be loaded at page load, and ready to run. Ignored if "autoplay" is present
src	*url*	The URL of the video to play
width	*pixels*	Sets the width of the video player

HTML5 Elements: Audio


```
<!DOCTYPEHTML>
<html>
    <body>
     <audio controls="controls">
     <source src="song.ogg“ type="audio/ogg"/>
     <source src="song.mp3"type="audio/mp3"/>
          Your browser support the audio element.
     </audio>
    </body>
</html>
```

HTML5 Elements: Audio

Attribute	Value	Description
autoplay	autoplay	Specifies that the audio will start playing as soon as it is ready.
controls	controls	Specifies that controls will be displayed, such as a play button.
loop	loop	Specifies that the audio will start playing again (looping) when it reaches the end
preload	preload	Specifies that the audio will be loaded at page load, and ready to run. Ignored if autoplay is present.
src	*url*	Specifies the URL of the audio to play

HTML5 Elements: Input Types

HTML5 has several new input types for forms.

- Email
- url
- Number
- Range
- Date pickers (date, month, week, time, datetime-local)
- color

HTML5 Elements: Input Attributes

HTML5 has several new input attributes for forms.

- Required
- Autofocus
- min, max, step
- Pattern
- readonly