Unit 6 Web Page Authoring using HTML

Structure:

6.1 Introduction

In previous unit, you have studied the concepts of inserting images, horizontal rules, text alignments and marquee tags. In this unit you will study most important HTML concepts like, creating tables, setting alignments for table, creating frames and what is form, form tags, input elements.

Some of the most important features of HTML pages include frames, tables, and forms. Each of these frames and tables are extremely significant in web design. It is impossible to create a navigation bar on website without using frames or tables in one form or another. A form is simply an area that can

contain form fields. Form fields are objects that allow the visitor to enter information. HTML provides different types of input fields.

Objectives:

After studying this unit, you should be able to:

- create a table
- setting the table width and height
- create frames
- create two rows and two column frames
- describe form
- explain form method and action attribute
- define types of input tags

6.2 Forms

Forms are used for several different purposes. Most often, they are used to gather contact information, preferences, opinions or any kind of user data.

Forms in HTML are made up of elements such as textboxes, checkboxes, and radio buttons. Collectively, the elements in a form are known as controls. A form begins with the **<form>** tag and ends with **</from>** tag. All of the forms controls are situated between them. Forms are a very importantpart of any web application; they allow the user to send information to an application running on the server.

6.2.1Elements of HTML forms

Forms are defined in html using the form elements. Form attributes includes the method attribute, which defines the type of HTTP request that is to be used (usually post for a form) and action attribute, which specifies a URL to identify which server component is to receive the data from the form.

- **Method**

The method attribute defines how to send form-data (the form-data is sent to the page specified in the action attribute). Here either of two values can be declared i.e., **GET or POST**. Method attribute selects the best possible way of transmitting data from the current form to the server. If **GET** is used, then the data from the current page is seen on the address bar of the web browser. On the other hand using **POST** causes transmission of data from current HTML form to server along with the body of request in encrypted form.

If method attribute is not declared, then GET method will be considered as default.

- **Action**

The action attribute defines where to send the form data when a form is submitted. It usually carries another html page or URL, where a program responsible for managing the data belong to current form reside i.e., whenever a user clicks the submit button, the current data gets directed to that program whose path is supplied as URL for further processing.

A simple form can have the following declaration
<form method="post" action="sample.html">

- **Input tag**

The majority of form controls are variants on a single element called input.

This is a unique situation in HTML in which items that have totally different appearance and method of operation are represented by distinct elements.

The <input> element is used to select user information. The input element has different aspects, some of which are very similar to one another, whereas others are totally different. Each variation of the input elements is specified by its type attribute.

- **Type Attribute**

Purpose of the HTML type attribute is to specify the content type of the associated element when used with **a, link, object, param, script, style elements**. When used with input element, the attribute specifies the type of the date it can accept. Whereas, when used with button element, the attribute can be used to define the type of work the associated button can perform (for whether it is to be used to submit a form, reset a form etc.).

<label>: It is a distinct HTML element that is used to link text or graphical descriptions to input components. In HTML, the <label> element is used to produce labels for form elements such as input fields, checkboxes, radio buttons, and dropdown menus.

<fieldset>:: In HTML, the <fieldset> element is used to together similar form elements that share a common purpose or behavior. It is frequently used in tandem with the <legend> element, which offers a title or description for the collection of form components contained within the <fieldset>.

<legend>: In HTML, the <legend> element is used to define a caption or title for a <fieldset> element. It includes a written description of the purpose or category of the form components contained within the <fieldset>.

<select>: On a web page, the <select> element in HTML is used to construct a drop-down list. It allows users to select one option from a drop-down menu of predefined possibilities.

<optgroup>: In HTML, the <optgroup> element is used to group related <option> items within a drop-down list formed with the <select> element. It enables you to organize and present options in a more organized and hierarchical manner.

<option>: The <option> element is used to create drop-down menus and is utilized in a variety of contexts, such as selecting preferences, categories, or any other choices with many possibilities.

<datalist>: The <datalist> element allows users to be suggested various values, but it does not operate like a regular drop-down list where the user may view all options at once and choose one. It instead offers a dynamic and interactive autocomplete experience.

<output>: The HTML <output> element is used to define the result of a computation or the output of a script. It is commonly used in conjunction with

JavaScript to display the result of a computation or any other dynamic information on a webpage.

The type attributes can be button, text, hidden, checkbox, radio, submit, reset, etc.

Table 6.1: Type Attributes

Type	Description
Button	A custom button with a defined function in HTML. It may be used to trigger an action <button type="button">Click Me!</button> defines a button field.
Checkbox	A small square which, when checked (filled), means “yes” and when empty, means “no”. Any number of check boxes can be selected simultaneously. <input type="checkbox" name="course" value="BCA">
Hidden	Information that is not displayed to the user, but is still transmitted along with the other form of information. <input type=="hidden" name="language" value="java">
Image	An image that functions as a submit button <input type="image" src="rose.gif " name="rose" >
Password	Identical to textbox except for the fact that it disguises the input<input type=="password" name="pwd> defines a password field.
Radio	A small circle, which, when checked (filled) means “yes” and when empty, means “no”. Radio buttons distinguished from check boxes by the fact that you cannot select more than one radio button in a group. <input type="radio" name="sex" value="female">
Textbox	A text box in which users type short information into a one line rectangle. <input type="text"> defines a one-line input field that a user can enter text.
Text area	A text area is two dimensional text fields, allowing the user to enter more than one line of text. Text areas can also supports text warping <textarea name=”feedback” form=”course”>enter feedback her </textarea>.
Reset	A button that clears all entries, a user has made in the form <input type="reset" value=reset> defines a reset button.
Submit	A button that causes the form information to be transmitted <input type="submit" value=submit> defines submit button.

Types of HTML Form Controls:

- Text input Controls: In HTML forms, text input controls are used to allow users to enter text-based information. These controls allow users to enter textual data such as names, email addresses, passwords, comments, and more. Text input controls in HTML are constructed by utilizing the <input> element with various type parameters to describe the type of text input requested.

- Select Box Controls: Select box controls, often known as drop-down lists, are used in HTML forms to display a list of options from which users can select one. These controls are made by combining the <select> and <option> elements to define the available options. The user can interact with the select box by clicking on it, which brings up a list of selection alternatives.

- File Select Boxes: In HTML, file pick boxes are form controls that enable users to select and upload files from their local devices to a web server. The type="file" attribute on the <input> element is used to construct the file input control.

- Hidden form Controls: In HTML, hidden form controls are input elements that are hidden from the user but are used to store or transport data between the client-side (webpage) and the server side. The type="hidden" attribute on the <input> element is used to generate these controls.

Tags: HTML tags are important building pieces that form the structure of a web page, allowing browsers to correctly comprehend and display the information. Each HTML element has a distinct function and directs the browser on how to format and present the information. Tags are surrounded by angle brackets (< >) and can have attributes that offer more information or change their behavior.

Web designers utilize HTML elements to construct headings, paragraphs, lists, images, links, forms, and other components that make up a website's layout and content.

Some of the tags of a Hyper Text Markup Language table.

- An HTML table is described by the <table> tag;
- Each table row is represented by the <tr> tag;
- The <th> tag specifies the table header;
- A <td> tag is used to identify each table data/cell;
- The text in <th> elements are bold and centered;
- The text in <td> elements are regular and left-aligned;

Construction of Basic Table:

The creation of a basic table is a fundamental idea in web design and is used to present tabular data on web pages in a clear and organized style. Tables should be used judiciously, and other layout strategies such as CSS flexbox or grid should be considered for more complicated designs, as tables can be less flexible for responsive layouts.

- Between the beginning tag <table> and the ending tag </table>, the definition of an HTML table should be written. The construction of rows and cells took place between these two tags.
- The row begins with the beginning row tag <tr>, and then each cell is created using the beginning cell tag <td>.


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- **Other Input attributes**

Value: this attribute specifies the initial value of the control. It is optional except when the type attribute has the value “radio” or “check box”.

Src: when the type attribute has the value “image”, this attribute specifies the location of the image.

Checked: when the type attribute has the value “radio” or “checkbox”, this Boolean attribute specifies that the button is on. User agent ignores this attribute for other controls.

Size: The initial size of the control. This value is in pixels unless the value of the type attribute is text or password, in which case, it is an integer number of characters.

Maxlength: When the type attribute has the value “text” or “password”, this attribute specifies the maximum number of characters the user may enter.

Example 1

```
<FORM action="http://smudde.edu/prog/adduser" method="post">
<LABEL for="name"> name: </LABEL>
  <INPUT type="text" id="name"><BR>
    <LABEL for="course">course: </LABEL>
          <INPUT type="text" id="course"><BR>
    <LABEL for="semester">semester </LABEL>
          <INPUT type="text" id="semester"><BR>
    <INPUT type="radio" name="semester" value="first semester"> first
semester<BR>
    <INPUT type="radio" name="semester" value="second semester">
second semester<BR>
<INPUT type="radio" name="semester" value="third semester"> third
semester<BR>
<LABEL for="subject">subject: </LABEL>
<input type="checkbox" name="web design" value="on"> Web Design
<input type="checkbox" name="OS" value="on"> OS
<input type="checkbox" name="DBMS" value="on"> DBMS
<br><textarea name= “feedback”>enter feedback her </textarea> <Br>
    <INPUT type="submit" value="Send"> <INPUT type="reset">
 </FORM>
```

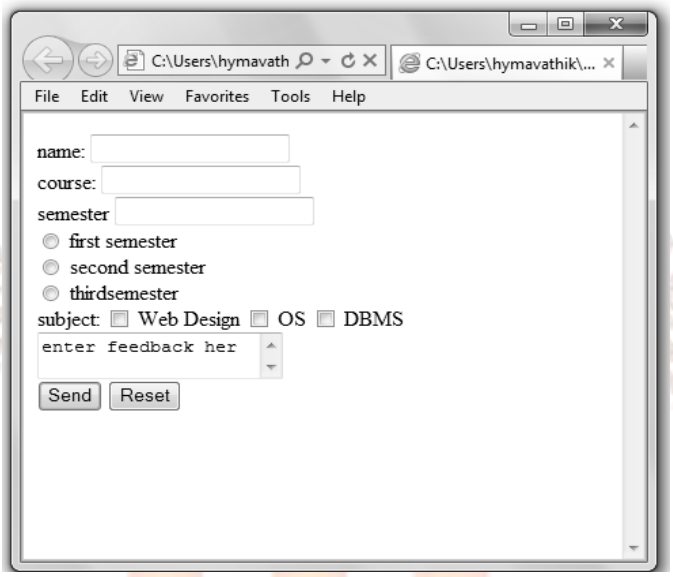

Figure 6.1: Web page for form example

In the above example we used the **<input>** element to create a button, the type of button you created is specified using the type attribute. The type attribute can take the following values:

Submit: This creates a button that automatically submits a form. In the above example we used value as send for the same.

Reset: This creates a button that automatically resets form controls to their initial values.

Button: This creates a button that is used to trigger a client-side script when the user clicks that button.

Radio buttons

Radio buttons are a popular form of interaction. You may have seen themon quizzes, questionnaires, and other web sites that give the user a multiple choice question.

Checkboxes

Checkboxes are used when more than one option is required to be selected.

6.2.2 CGI (Common Gateway Interface)

The creative and most popular use for forms is in combination with CGI (**C**ommon **G**ateway **I**nterface). When your form is submitted you need a

program that can receive the information. Such a programs sometimes referred to as CGI programs. In the CGI way of doing things, the data the user enters is sent to the web server, where a program processes the data and returns the results.

See below form example to illustrate how to incorporate CGI

Example 2

<Form action= “/cgi-bin/mycgi.pl”>
Course name<input type= “textbox” value= “BCA”>
<input type=submit value= “submit”>
</form>

Here's the sequence of actions when the user hits

<Form action= “/cgi-bin/mycgi.pl”>

Action: tells the browser where to send the data for processing.

<input type=submit value= “submit”>

Submit button: which is used to send form to the web browser

But what happens after the user press submit, see below figure to understand entire process clearly.

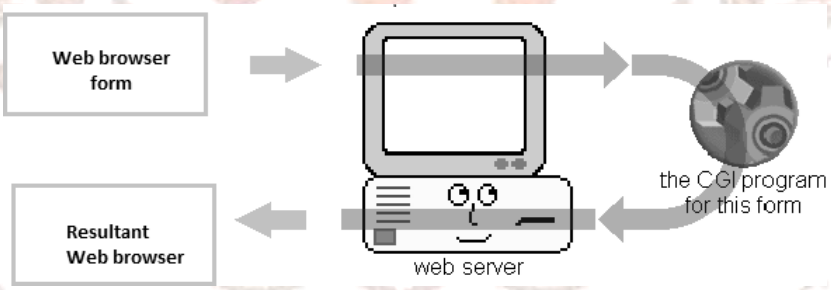

Figure 6.2: CGI web server process

1. When the user presses Submit, the browser sends the form data to the web server.
2. The web server launches the CGI program which was written to process this form.
3. The CGI program does whatever it does with the data. The program might consult a database, perform calculations on the data, use the datato add the user to a mailing list, whatever the programmer wants it to do. Whatever else the program does, it generates a web page using HTML so the user can see the results of submitting the form.

4. The CGI program passes the HTML back to the web server.
5. The web server passes the HTML back to the browser.

So there are three pieces to the CGI process: the form on your web page, the web server, and the CGI program.

One of the reasons CGI is so popular is that the CGI program can be written in just about any programming language: C, C++, Perl (the most popular language for CGI), Visual Basic, etc. CGI was designed to allow great flexibility in processing the form data, while still allowing the results to be returned as HTML (or other formats, but HTML is the most popular).

Self Assessment Questions

1. The_____attribute defines where to send the form data when a form is submitted.
2. CGI stands for_____.
3. Which of the following input type attribute is a small circle, when checked (filled) means “yes” and when empty, means “no”.
   a. Checkbox b) Radio button c) image d) submit button

6.3 Tables

So for you have designed web pages across using paragraphs and lists, some information lends itself best to being presented in tables. Table is nothing but a multidimensional data arrangement in rows and columns. The <table> tag is used to define table for HTML. When tables were introduced in HTML 3.2, they were commonly used to layout entire pages. With introduction of HTML 4 and later releases, new features were added to enable table to better perform their designed role. In this unit, you’ll learn tables, including definition of table in html, creating captions, rows andcolumns and data cells, adding color to table.

Before getting into HTML code to create a table, you should know the following table related terms.

i) The caption indicates what the table is about.
ii) The table headings label the rows, columns, or both.
iii) Table cells are the individual squares in the table. A cell contains normal table data or table heading.
iv) Table data is the values in the table itself. The combination of the table headings and data makes up the sum of the table.

6.3.1 Creating Rows and Columns

Now you've been introduced to the <Table> elements, those are rows and columns. Inside the **<table>...</table>** element, you define the actual contents to the table. Tables are specified in HTML row by row, and each row definition contains all the cells in that row. So, to create table, you start

with the top row and then each cell in turn, from left to right. Then you define a second row and its cells, and so on. The number of columns is calculated based on how many cells are there in each row. Each table row starts with the **<tr>** and ends with the closing**</tr>**

Your table can have as many rows and columns as you like, but you should make sure that each row has the same number of cells so that the columns line up.

The cells within each row are created using one of two elements

1. **<th>...</th>** elements are used for heading cells.
2. **<td>...</td>** elements are used for data cells, td stands for table data.

6.3.2 Creating Table

The <table> tag consist of elements like <tr>, <th> and <td> where <tr> is an element used to define a row element and <th> is used to define the table headings and <td> is used to define the table data.

Example 3

```
<table >
  <tr>
    <th>course name </th>
    <th>Semester</th>
  </tr>
  <tr>
    <td>BCA</td>
    <td> third semester</td>
  </tr>
</table>
```

There are two kinds of cells used in Table. They are Header cells and standard cells. The header cell contains the header information which is given by <th> element with a property where the text is bold and centered. The standard cells contain the data, defined using <td> element and they have a property of displaying the text in regular and left-aligned.

6.3.3 Attributes/elements of table

- **The <thead>, <tbody> and <tfoot> elements** : these define a table's header, border and footer respectively. In a complex table however, using them can add useful structure for the developers, and also for browsers.
- **The scope attribute:** the scope attribute can be used in the <th> element to tell screen readers that the th content is the title for column or a row
- **The summary attribute:** this attribute is used to define a summary of table contents

Example 4: to define a table using <thead> <tbody> and <tfoot>

```
<table>
 <thead>
  <tr>
   <th>Months</th>
   <th>income</th>
  </tr>
 </thead>
 <tbody>
  <tr>
   <td>march</td>
   <td>$20000</td>
  </tr>
  <tr>
   <td>April</td>
   <td>$16780</td>
  </tr>
 </tbody>
 <tfoot>
  <tr>
   <td>Sum</td>
   <td>$36780</td>
  </tr>
 </tfoot>
</table>
```

Assigning Background Colors

You can display a background color or background image behind a table. You can use the BGCOLOR attribute to set a background color behind the table.

<table bgcolor= "#ccffff" width=200>

All current browsers support the background color behind entire table body.

Setting Font Size and Colors

You can change the font size and color of content of a table cell by inserting a font element.

**<td> sales
agents</td>**

If you want to use the font element to change the size, color of text in a table, you have to set the element in every cell where you want it to take effect. Font elements located outside of a table have absolutely no effect on text inside the table.

Inserting an Image

Although table are an excellent way to control and display the content of a web document. To make a table load faster, provide the dimension ofgraphics images. In the following code, image named image1.jpg loads into table cell.

<Table>
<tr>
<td> <img width= “50” height= “50” src= “image1.jpg”></td>
</tr>
</table>

When specifying image dimensions, make sure the width and height attribute values match the actual width and height of image the browser is toplace within the cell.

Self Assessment Questions

4. Each table row starts with the_____tag.
5. TD stands for_____.

6.4 Table Formatting

6.4.1 Adding a Border

The border attribute specifies if a border should be displayed around the table cell. If you do not specify a border attribute, the table will be displayed

without borders. Sometimes this can be useful, but most of the time, you want the borders to show. By assigning value one to border attributes.

<table border = “1”>

Adding caption:

The caption of the table can be defined using **<caption>** tag by inserting it immediately after the <table> tag. It is a rule that if we want to use <caption> tag, it should appear after <table> tag.

Example 5

```
<table border= “1”>
  <caption>Monthly savings</caption>
  <tr>
    <th>Month</th>
    <th>Savings</th>
  </tr>
  <tr>
    <td>January</td>
    <td>1000</td>
  </tr>
<tr>
    <td>February </td>
    <td>500</td>
  </tr>
</table>
```

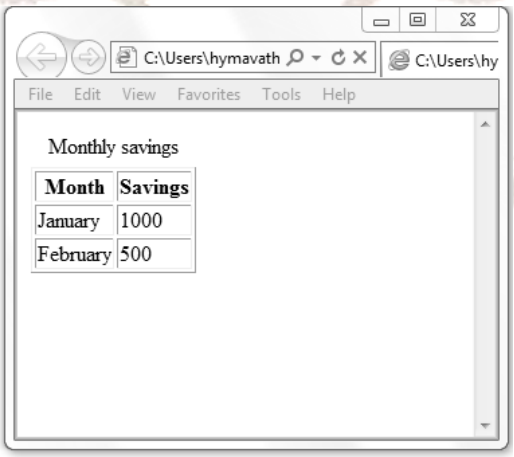

Figure 6.3: Web page for table example

6.4.2 Adding space and padding

To control spacing between the contents of a cell and its border HTML provides following two attributes.

Cellpadding: The cellpadding tag is used to create space between the text inside your table and the border surrounding that text.

Cellspacing: The cellspacing tag is to create space between different cells within your table.

Cell padding

In the table tag type cellpadding= “n”, where n is the number of pixels that should appear between the contents of cell and its border.

<table border= “1” cellpadding= “10”>

Cell spacing

In table tag, type cellspaccing= “n” where n is the number of pixels that should be appear between one cell border and the next.

<table border= “1” cellspacing= “5”>

The default value for cell padding is 1, the default value for cell spacing 2.

6.4.3 Setting table width and height

To control table dimensions, add a width and height attribute to table. You can specify table dimensions either using percentages (relative terms) or in absolute terms (using pixel counts).

<table width = “100%” height= “100%”>

The web browser, in turn, will change the dimensions of the table (and its cells). If you don’t want the web browser to change dimensions of table based on size of the application widow, set the table‘s height and width to fixed number of pixels.

For example: a table with 200 pixels wide and 100 pixels tall each time, write the table tag as follows

<table width= “200” height= “100”>

6.4.4 Aligning Cell Contents

Cell contents are aligned two ways, horizontally to the left and vertically in the middle.

Horizontal alignment

To align your table horizontally, use the align attribute with table element. You can use the align attribute with the <td> (cell) or <tr> (row) elements to align text with in the cell or row.

The values that can be used with align attribute in the <td> or <tr> elements are

right: aligns table or the cell contents against the right side

left: aligns table or the cell contents against the left side

center: center the table or cell contents. When applied to table, it centers the table, when applied to table cells it centers their contents.

justify: justifies cell contents in the middle (not widely supported)

char: aligns cell contents around a specific character (not widely supported)

Vertical alignment

You can vertically align cell contents by using the **valign attribute**. It can beused with the <tr> (cell) and <td> (row) elements.

The values that can be used with valign attributes are

top: vertically aligns cell contents to the top of the cell.

bottom: vertically aligns cell content to bottom of the cell.

middle: vertically centers the cell contents.

baseline: defines a baseline for all other cells in the same row, so alignment is same for all cells.

Setting column width

You can also apply the width attribute to individual cells <th> or <td> to indicate the width of columns in a table. Column width is useful when you want to have multiple columns of identical widths, regardless of their contents.

Table Caption: The caption tag is used to give a table, a title or a description. It appears at

the very top of the table.

Creating a Simple Table:

- The <table> tag contains an HTML table.
- Within the tag, <tr> tag includes and defines the rows.
- Within the <tr> tag, one or more <td> tags include which define the cell.

Code:
```
<table>
<tr>
    <td> Cell 1</td>
    <td> Cell 2</td>
</tr>
<tr>
    <td> Cell 3</td>
    <td> Cell 4</td>
</tr>
</table>
```

- The HTML table has no boundaries or shadings.
- According to the table's specification, the text appears exactly where it should be.

Output:

Cell 1 Cell 2
Cell 3 Cell 4

Creating a Table:

- A table is created using the HTML <table> tag;
- A table row is created using the HTML <tr> tag;

- A table header is described by the <th> tag;
- Each cell in a table is described by the <td> tag;

Example: **A simple HTML table:**

```
<!DOCTYPE html>
<html>
<head>
<title>Simple HTML Table</title>
</head>
 <body>
<h2>Basic HTML table</h2>
<table style="width:100%"> <tr>
<th>First name</th>
<th>Last name</th>
 </tr>
```

<!DOCTYPE html>: This is the document type declaration, indicating that the document is an HTML5 document.

<html>: The root element of an HTML document. All the content of the webpage is contained within this element.

<body>: The body element contains all the visible content of the webpage, such as text, images, and other elements.

<h2>Basic HTML table</h2>: This is a level 2 heading (h2) that displays the text "Basic HTML table". Headings are used to define the structure and hierarchy of the content on a webpage.

<table style="width:100%">: This creates an HTML table element. The "style" attribute is used to apply inline CSS styles, and in this case, it sets the table width to 100% of its container (the width of the webpage).

<tr>: This stands for "table row" and defines a row in the table.

<th>First name<\th>: This stands for "table header" and defines a header cell in the table. The text "First name" will be displayed in this header cell.

<th>Last name<\th>: Another table header cell is created, and it will display the text "Last name".

</tr>: This closes the table row, defining the end of the row.

Example: A simple HTML table.

```
<tr>
<td>Joseph</td>
<td>Windsor</td>
</tr>
<tr>
<td>Mary</td>
<td>Cooper</td>
```

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

<tr>: This is another table row element, defining a new row in the table.
<td>Joseph</td>: This is a table data cell (td) containing the text "Joseph".
<td>Windsor</td>: This is another table data cell containing the text "Windsor".
</tr>: This closes the second table row.
<tr>: This starts a new table row (third row).
<td>Mary</td>: This is a table data cell containing the text "Mary". Similar to the first row
<td>Cooper</td>: This is another table data cell containing the text "Cooper".
</tr>: This closes the third table row.

Example: The following table will be created. This is the table that will be constructed. In Order To learn formatting, we will use this table as our example.

Basic HTML Table

First name	**Last name**
Joseph	Windsor
Mary	Cooper

Table Borders: In HTML, the property 'border' is used to give a table a border;
Syntax:

```
table, th, td
 {
border: 1px solid black;}
```

The 'border' is a property in Hyper Text Markup Language that is used to give a table a border.

Full Width Table:

Add 'width: 100 percent' to the table element to create a table that spans the entire screen

Syntax:

```
table {
   width: 100%;
}
```

Collapsed Borders: Use the 'border-collapse' property to create a table with a single border.
Syntax:

```
table {
  border-collapse: collapse;
}
```

- Table borders may be collapsed into a single border using the border-collapse property.
- To create a shared border across adjacent cells, collapse is utilized.

Single Border:

- Just use the 'border' property if you only want a single border around the table
- Syntax:

```
table {
border: 1px solid black;
}
```

Using the CSS property border, create a table border. Set the table's border as well as the th and td borders.

Table Padding:

- The 'padding' property is used to control the amount of space between a table's border and its content.
- Syntax:

```
th, td {
padding: 15px;
}
```

Horizontal Dividers:

- The 'border-bottom' property is used to add only horizontal lines to a table.
- Syntax:

```
th, td {
border-bottom: 1px solid #ddd
}
```

Striped Tables:

- Using the 'nth-child()' selector to apply a background colour to all even or odd table rows to make the table zebra striped.
- Syntax:

```
tr:nth-child(even) {background-colour: #f2f2f2;}
```

Table Color:

- The background color value is set to blue in the example.
- The result shows that the colour of the table backdrop has been changed to blue.
- Use the 'bgcolor' attribute to set the table colour.
- Syntax:

```
<table bgcolor = "blue">
```

Border Spacing:

- To specify the space between the cells, use the 'border-spacing' property;

- Syntax:

```
table {
   border-spacing: 5px;
}
```

Example:

```
<!DOCTYPE html>
<html>
   <head>
    <title>HTML horizontal  Frames </title>
  </head>
  <frameset rows = "10%,70%,20%">
    <frame name = "top" src = "/html/top_frame21.htm" />
    <frame name = "main" src = "/html/main_frame22.htm" />
    <frame name = "bottom" src = "/html/bottom_frame23.htm" />
      <noframes>
      <body> You cannot use frames in your browser. </body>
    </noframes>

  </frameset>
  </html>
```

- The term frameset describes a collection of frames in the browser window. The tables are arranged in rows and columns, just as the window is separated into frames.
- The example creates three horizontal frames.

6.4.5 Spanning Columns & Spanning Rows

To arrange your table elements in web page, spanning is one of the flexible alternative. Spanning enables you to stretch items across multiple cells.

If you need to merge several cells into one, you can use row or column spanning. You can span rows or columns anywhere in a table. Generally, row and column spanning is used to create headings in table. The **colspan** attribute of the <th> or <td> tag sets a number of columns spanned by a cell. The **rowspan** attribute of the <th> or <td> tag sets a number of rows spanned by cell.

<tr valign="bottom"><th rowspan="2" width=80>

<td colspan=”3” width=30>

Nowrap: It prevents the cell's words from wrapping. When used properly, "nowrap" is a useful technique in web design. It allows designers to keep the correct text arrangement and avoid disruptive line breaks within certain components, improving the visual aesthetics and usability of the web page. However, it should be used selectively and with care for responsive design principles to offer an optimal user experience across multiple devices and screen sizes.

6.5 Frames

Frames are used to split the browser window into multiple frames and each frame contains a separate HTML document. A collection of frames in the browser window is known as a frameset.

The window is divided up into frames in a similar pattern to the way tables are organized into rows and columns. Similarly the simple frameset might divide the screen into two rows, while complex frameset could use several rows and columns.

The <frame> tag and attributes

The <frame> can appear within the <frameset> tag. The src attribute can be used to specify the document which should appear within the frame.

```
<frame src = “sample.html” >
```

If the src attribute is not mentioned, then the browser displays empty frame. Scroll bars will appear if the contents will not fit the frame means that scroll bars are implicitly included. If scrolling has to be set regardless of the implicit inclusion regardless of the content of the frame, use **scrolling** attribute with a **yes** value. If a <frame> tag includes a **name** attribute, the content of its associated frame can be changed by the selection of a link in some other frame that specifies that name.

The <frameset> tag and attributes

The browser layout is divided into frames using <frameset> tag. In HTML file either a <frameset> tag will be used or <body> will be used, can’t use both. Each frameset defines a set of rows or columns. If you define frames by using rows then horizontal frames are created. If you define frame by using columns then vertical frames are created.

Percentage dimensions and Relative dimensions

The rows and cols attributes are used in the frameset to divide the browser window. Either one attribute can be used or both can be used. The rows attribute specifies the number of rows of frames that will reside in thewindow. There are three styles of values for rows: numbers, percentages, and

asterisks (relative size is specified with an asterisk).

Normally, two or more values, parted by commas, are given in a quoted string. When a number is used as a value, it specifies the height of one row in pixels. A percentage is given as a number followed immediately bypercent sign. When used, a percent value specifies the percentage of the total browser window height that a row should occupy. When an asterisk is used, it indicates the remainder of the window height.

Examples:

<frameset rows = “200, 300, 400”>
<frameset rows = “22%, 33%, 45%”>
<frameset rows = “22%, 33%, *”>

The **cols** attribute is very much similar to the rows attribute, except that it specifies the number of columns of frames. For example, the following tag specifies that the window is to have six frames in three equal-height rows and two columns.

<frameset rows = “33%, 33%, 33%” cols = “25%, *”>

Table 6.2: Attributes for frame

Attribute	Value	Description
name	name	Specifies the name of frame
scrolling	Yes No	Specifies that whether frameset contains scroll bar or not
frameborder	0 1	Specifies that whether or not to display border around frame
norseize	noresize	Adding this values will cause that particular frameset is not resizable

Example 6

```
<html>
<frameset cols =  “50%,*” frameborder= “1”>
<frameset rows =  “50%, 50%”>
  <frame src =" EX1.HTML" />
   <frame src =" EX2.HTML" />
</frameset>
<frameset cols =  “50%, 50%”>
      <frame src = “ EX1.HTML” scrolling= “yes” />
     <frame src = “EX2.HTML” />
```

```
  </frameset>
</frameset>
</html>
```

This example creates totally 4 frames. First 2 vertical frames will be created. Within first vertical frame two horizontal frames will be created. Within second vertical frame two vertical frames will be created.

Creating two rows Frames

Before design the page you have to choose how to divide the page. You can also use different percentages depending upon how you want the page and rows and columns to be.

Example 4: frame that contains two rows

```
<html>
<frameset  rows= “60%, 40%”>
<frame src= “sample1.html”>
<frame src= “sample2.htm”>
</frameset>
</html>
```

There are two rows in this example. The first row is 60 percent wide. The second frame or row will contains reaming part (40 percent) of page.

Creating two columns Frames

Example 7: frame that contains two columns

```
<html>
<frameset  cols= “70%, 30%”>
<frame src= “sample1.html”>
<frame src= “sample2.html”>
</frameset>
</html>
```

There are two columns in this example. The first frame or column is 70 percent wide. The second frame or column will contains reaming part of page.

Creating two rows and second row contains two columns Example 8: frame that contains two rows and the second row contains twocolumns.

```
<html>
<frameset rows= “50%,*”>
```

```
    <frame src= “row1top.html”>
    <frameset cols= “50%,*”>
        <frame src= “row2col1.html”>
        <frame src= “row2col2.html”>
    </frameset>
</frameset>
</html>
```

There are two rows and second row contains two columns in this example. The first row is 50 percent wide. The second row will contains reaming part. Here the second row contains two column frames. The first column 50 percent wide and the second column will contain reaming 50% by using the tag <frameset cols= “50 %,*”>

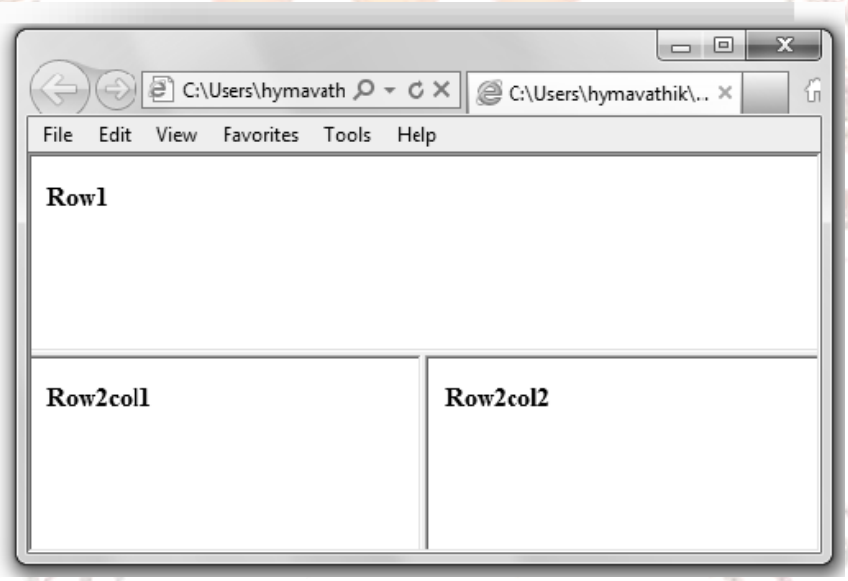

Figure 6.2: Web page for frame example

Self Assessment Questions

6. To control table dimensions, add a____and___attribute totable.
7. enables you to stretch items across multiple cells.
8. A collection of frames in the browser window is known as a____.
9. In HTML file either a <frameset> tag will be used or <body> will beused, can’t use both. (True/False)

6.6 Summary

- Tables are defined with the <table> tag.
- A table is divided into rows (with the <tr> tag), and each row is divided into data cells (with the <td> tag). td stands for "table data," and holds the content of a data cell.
- 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.
- An HTML form on a web page allows a user to enter data that is sent to a server for processing.
- An HTML form can contain input elements like text fields, checkboxes, radio-buttons, submit buttons and more.
- The <input> element is used to select user information.
- HTML tags create the visual representation of the form, while the CGI program work out (or processes) the information contained within the form.

6.7 Terminal Questions

1. Design a table by using the following:
   a) Border b) caption c) cell spacing d) background color
2. Define the four main attributes for frame?
3. Explain form elements method and action?
4. Create a form using different types of input elements?

6.8 Answers

Self Assessment Questions

1. Action
2. Common Gateway Interface
3. B) Radio button
4. <tr>
5. Table Data
6. Width and height

7. Spanning
8. Frameset
9. True

Terminal Questions

1. <Table> tag is used to create a table. To insert a border for table use <border> tag, for inserting caption use <caption> tag and there are different settings available for table. For more details refer to section 6.2 & 6.3.
2. Frame attributes includes name, scrolling, border and noresize. Formore details refer to table 6.2 attribute for frame.
3. Forms are defined in html using the form elements. Form attributes includes method and action. For more details refer section 6.2.
4. In example fig 6.1 a form is created by using input elements button, text, checkbox, radio, submit, reset, etc. likewise you can create a form by using all input elements. For more details refer section 6.2.

6.9 References

- E. Castro, *HTML 4 the World Wide Web*, fourth edition.
- Steven Holzer, *HTML black book*, Dreamtech press.
- Gray B. Shelly, Denise M. Woods, William J.dorin, *HTML comprehensive concepts and techniques*.