CS-1001L

Applications of Information and Communication Technologies Lab

Lab 02 – HTML Tables and Forms

OBJECTIVE(S)

- Learn about HTML Tables
- Learn about HTML Forms

HTML Tables

The HTML tables allow web authors to arrange data like text, images, links, other tables, etc. into rows and columns of cells.

The HTML tables are created using the <table> tag. The <tr> tag is used to create table rows and <td> tag is used to create data cells. The elements under <td> are regular and left aligned by default.

Table Heading

Table heading can be defined using <th> tag. This tag will be put to replace <td> tag. Headings, which are defined in <th> tag are centered and bold by default.

```
<table>
        <tr>
                <th> Heading 1 </th>
                <th> Heading 2 </th>
        </tr>
        <tr>
                <td> Data Entry 1 </td>
                <td> Data Entry 2 </td>
        </tr>
</table>
```

Example-1:

Lab2_Example1.html | Lab2_Example2.html | Lab2_Example3.html | Lab2_Example4.html

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
  "http://www.w3.org/TR/html4/loose.dtd">
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>HTML Table Example</title>
</head>
<body>
    <h3>Sample HTML Table</h3>
    <table border="1">
            <tr>
                <th>Header 1</th>
                <th>Header 2</th>
            </tr>
            <tr>
                <td>Row 1, Column 1</td>
                <td>Row 1, Column 2</td>
            </tr>
            <tr>
                <td>Row 2, Column 1</td>
                <td>Row 2, Column 2</td>
            </tr>
    </table>
</body>
</html>
```

Output:

Sample HTML Table

Header 1	Header 2
Row 1, Column 1	Row 1, Column 2
Row 2, Column 1	Row 2, Column 2

Attribute	Description
border	It is used to put a border across all the cells. **Example**: <table border="1"> **Values**: • 1 (or any positive number) for visible borders. • 0 (or omitted) for no borders.

cellpadding	It defines the space between the cell edges and the cell content. (inside the cell). **Example:** <table cellpadding="10"> **Values:** • Any positive number to define the space in pixels. • 0 (default) With Padding hello hello hello hello hello hello hello hello hello
cellspacing	It defines the space between the cells in a table (outside the cell). **Example**: <table cellspacing="30"> **Values**: • Any positive number for space between cells in pixels. • 2 (default) With Spacing hello hello hello hello hello hello hello hello hello
colspan	It is used to merge two or more columns into a single column or allows a cell to span across multiple columns. **Example**: <td colspan="2"> **Values**: • Any positive integer to define how many columns the cell spans. Name | Contact Information Ahmed | ahmed@dsu.edu.pk | 0300 55443311
rowspan	It is used to merge two or more rows into a single row or allows a cell to span across multiple rows. **Example**: <td rowspan="2"> **Values**: • Any positive integer to define how many rows the cell spans. Name | Age | Location 25 | Pakistan
height	It specifies table height in terms of pixels or percentage of available screen area. **Example**: <table height="200"> or <td height="50"> **Values**: • Any positive value, either in pixels or percentage (px, %).
width	It specifies table width in terms of pixels or percentage of available screen area.

	Example: <table width="80%"> or <td width="100px"> **Values**: • Can be a pixel value or percentage.
align	It specifies the horizontal alignment of the table or its content. **Example**: <table align="center"> **Values**: • left, center, or right.
valign	It specifies the vertical alignment of the content inside a table cell. **Example**: <td valign="top"> **Values**: • top, middle, bottom, or baseline.
bgcolor	It is used to sets the background color of the table or cells. **Example**: <table bgcolor="lightblue"> **Values**: • Any valid color name or hexadecimal value.

Example-2:

Lab2_Example2.html | Lab2_Example3.html | Lab2_Example4.html

```
1  <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
2    "http://www.w3.org/TR/html4/loose.dtd">
3  <html lang="en">
4  <head>
5      <meta charset="UTF-8">
6      <meta name="viewport" content="width=device-width, initial-scale=1.0">
7      <title>Student Marks Sheet</title>
8  </head>
9  <body>
10
11 <h2 align="center">Student Marks Sheet</h2>
12
13 <table border="1" cellpadding="10" cellspacing="2" width="80%" align="center">
14     <tr bgcolor="#e0e0e0">
15         <th colspan="4" height="50" valign="middle">Student Information</th>
16     </tr>
17     <tr>
18         <td colspan="2">Name: Ahmed</td>
19         <td colspan="2">Roll No: cs12345</td>
20     </tr>
21     <tr>
22         <td colspan="2">Class: BS-CS</td>
23         <td colspan="2">Semester: 1</td>
24     </tr>
```

```
25
26      <tr bgcolor="#e0e0e0">
27          <th>Subject</th>
28          <th>Max Marks</th>
29          <th>Marks Obtained</th>
30          <th>Grade</th>
31      </tr>
32
33      <tr>
34          <td>Calculus and Analytical Geometry</td>
35          <td align="center">100</td>
36          <td align="center">85</td>
37          <td align="center">A</td>
38      </tr>
39      <tr>
40          <td>Programming Fundamentals</td>
41          <td align="center">100</td>
42          <td align="center">88</td>
43          <td align="center">A</td>
44      </tr>
45      <tr>
46          <td>Applications of Information and Communication Technologies Lab</td>
47          <td align="center">100</td>
48          <td align="center">95</td>
49          <td align="center">A+</td>
50      </tr>
51      <tr>
52          <td>English Composition and Comprehension</td>
53          <td align="center">100</td>
54          <td align="center">92</td>
55          <td align="center">A+</td>
56      </tr>
57
58      <tr bgcolor="#e0e0e0">
59          <th colspan="4" height="50">Remarks</th>
60      </tr>
61      <tr>
62          <td colspan="4" height="50">Excellent performance in all subjects.</td>
63      </tr>
64
65      <tr bgcolor="#e0e0e0">
66          <th colspan="2">Total Marks</th>
67          <th colspan="2">355 / 400</th>
68      </tr>
69  </table>
70
71  </body>
72  </html>
```

Output:

Student Marks Sheet

Student Information			
Name: Ahmed		Roll No: cs12345	
Class: BS-CS		Semester: 1	
Subject	**Max Marks**	**Marks Obtained**	**Grade**
Calculus and Analytical Geometry	100	85	A
Programming Fundamentals	100	88	A
Applications of Information and Communication Technologies Lab	100	95	A+
English Composition and Comprehension	100	92	A+
Remarks			
Excellent performance in all subjects.			
Total Marks		**355 / 400**	

Task:
Create following table.

NAME	

Table 2.1

APRIL		

Table 2.2

HTML Forms

HTML Forms are required, when you want to collect some data from the site visitor. For example, during user registration you would like to collect information such as name, email address, credit card, etc.

A form will take input from the site visitor and then will post it to a back-end application. The back-end application will perform required processing on the passed data based on defined business logic inside the application.

There are various form elements available like text fields, textarea fields, drop-down menus, radio buttons, checkboxes, etc.

The HTML <form> tag is used to create an HTML form and it has following syntax:

```
<form>
    ...
    form elements
    ...
</form>
```

Attribute	Description
action	It is used to define the URL where the form data will be sent when the form is submitted. **Example:** <form action="/action-page.html">
method	It is used to specify the HTTP method to use when submitting the form. It can be either GET or POST. • **get:** Appends form data to the URL as query parameters. (default) • **post:** Sends form data in the HTTP request body (more secure for sensitive data). **Example:** <form action="/action-page.html" method="post">
target	It is used to display the response after the form is submitted. • _self: Opens the link in the same frame (default). • _blank: Opens the link in a new tab or window. • _parent: Opens the link in the parent frame. • _top: Opens the link in the full body of the window, breaking out of any frames. **Example:** <form target="_blank">
name	It is used to specify a name for the form. This name can be used to reference the form in JavaScript. **Example:** <form name="loginForm">

HTML Form Controls

There are different types of form controls that you can use to collect data using HTML form.

Text Input Controls

There are three types of text input used on forms.

Single-line text input controls

This control is used for items that require only one line of user input, such as search boxes or names. They are created using HTML <input> tag.

Example code

```
<form>
  First name: <input type = "text" name = "txtfirst_name" />
  <br>
  Last name: <input type = "text" name = "txtlast_name" />
</form>
```

Attribute	Description
Type	Indicates the type of input control. For text input control it will be set to text.
Name	Used to give a name to the control.
Value	This can be used to provide any default value inside the control.
id	This is used to provide a unique name to control/element.
maxlength	Allows to specify the width of the text-input control in terms of characters.
size	Allows to specify the maximum number of characters a user can enter into the text box.
required	Makes the text box **mandatory** to fill out before the form can be submitted.
pattern	It is used to define a regular expression pattern that the input value must match for the form to be submitted. Helpful for enforcing specific formats, like phone numbers or email patterns.
placeholder	It is used to displays hint text inside the text box to guide the user on what to enter. The placeholder text disappears when the user starts typing. **Example:** <input type="text" id="nic" name="nic" placeholder="12345-1234567-1" required>

Note: Same attributes can be used for other input controls as are used for Text input control.

Password input controls

This is also a single-line text input but it masks the character as soon as a user enters it. They are also created using HTML <input> tag but type attribute is set to password.

Example code

```
<form>
  User ID : <input type = "text" name = "txtuser_id" />
  <br>
  Password: <input type = "password" name = "txtpassword" />
</form>
```

Multiple-Line Text Input Controls

This is used when the user is required to give details that may be longer than a single sentence. Multi-line input controls are created using HTML <textarea> tag.

Example code:

```
<form>
  Description : <br>
  <textarea rows = "5" cols = "50" name = "txtdescription">
    Enter description here...
  </textarea>
</form>
```

Attribute	Description
rows	Indicates the number of rows of text area box.
cols	Indicates the number of columns of text area box.

Checkbox Control

Checkboxes are used when more than one option is required to be selected. They are also created using HTML <input> tag but type attribute is set to checkbox.

Example code

```
 <form>
  <input type = "checkbox" name = "chkmaths" value = "Math"> Maths
  <input type = "checkbox" name = "chkphysics" value = "Physics"> Physics
</form>
```

Attribute	Description
Value	The value that will be used if the checkbox is selected.
Checked	Set to checked if you want to select it by default.

Radio Button Control

Radio buttons are used when out of many options, just one option is required to be selected. They are also created using HTML <input> tag but type attribute is set to radio.

Example code

```
<form>
  <input type = "radio" name = "rdgender" value = "Male"> Male
  <input type = "radio" name = "rdgender" value = "Female"> Female
</form>
```

Select Box Control

A select box, also called drop down box which provides option to list down various options in the form of drop down list, from where a user can select one or more options.

Example code

```
<form>
        <select name = "drpCity">
                <option value = "" selected>Select any city</option>
                <option value = "Karachi">Karachi</option>
                <option value = "Lahore">Lahore</option>
        </select>
</form>
```

Following is the list of important attributes of <select> tag.

Attribute	Description
Size	It is used to controls the number of visible options in the dropdown list without scrolling. This attribute is commonly used with multiple to show several options at once.

Multiple	It is used to allow users to select multiple options in the dropdown list. When this attribute is present, the dropdown becomes a list box, enabling multiple selections by holding down the Ctrl (or Command on Mac) key.
required	Makes the dropdown a mandatory field in the form, ensuring that users must select an option before submitting.

Following is the list of important attributes of <option> tag.

Attribute	Description
Value	The value that will be used if an option in the select box is selected.
Selected	Specifies that this option should be the initially selected value when the page loads.

File Upload Box

If you want to allow a user to upload a file to your web site, you will need to use a file upload box, also known as a file select box. This is also created using the <input> element but type attribute is set to file.

Example code

```
<form>
  <input type = "file" name = "fileupload" accept = "image/*" />
</form>
```

Attribute	Description
accept	It is used to accept the types of files to upload on the server. For example **accept="image/*", accept=".pdf,.doc,.docx",** or specific MIME types (e.g., **accept="application/pdf")**
multiple	It is used to allow users to select **multiple files** at once by holding down the Ctrl (Windows) or Command (Mac) key.

Button Controls

There are various ways in HTML to create clickable buttons. You can also create a clickable button using <input> tag by setting its type attribute to button.

```
<form>
  <input type = "submit" name = "submit" value = "Submit" />
```

```
    <input type = "reset" name = "reset" value = "Reset" />
    <input type = "image" name = "imagebutton" src = "submit.png" />
  </form>
```

Types of buttons	Description
Submit	It is used to submit form data to a server. When user click on submit button, it triggers the form submission process.
Reset	It is used to clear all user input within the form, resetting fields to their initial values. It can be useful when users need an easy way to undo their inputs.
Button	This is a general-purpose button that doesn't have a default action (like submitting a form or resetting). It is used to trigger a client-side script when the user clicks that button.

Following is the list of important attributes of button control.

Attribute	Description
value	It is used to sets the displayed text on the button.
name	It is used to assign a name to the button, which is useful when processing form data.
disabled	It is used to disables the button, making it non-clickable and grayed out.

Fieldset element

The <fieldset> element is used to group related elements in a form, creating logical sections that enhance form organization and readability. It is especially useful in forms with many fields, as it groups similar fields together, like "Personal Information" or "Contact Details," making the form more intuitive.

The <legend> element in <fieldset> provides a title for the fieldset, describing its purpose (e.g., "Personal Information"). Appears at the top of the border by default, providing context to the grouped fields.

Example code

```
<fieldset>
  <legend>Subscribe to the Newsletter</legend>
```

```
  <input type="email" name="email">
  <input type = "button" name = "ok" value = "OK" />
 </fieldset>
</form>
```

Label element

A <label> element is used to provide a descriptive label for form elements. Labels help screen readers understand and announce the purpose of form controls, making the form more accessible to visually impaired users. Linked Input <input type="text" id="fieldID"> creates the input field that the label is associated with.

```
<form>
        <label for="Fname">Enter First name</label>
        <input type="text" id="Fname" name="txtFname">
</form>
```

Attribute	Description
for	Links the label to a specific input element using the input's id.

Example-3:

Lab2_Example3.html

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
  "http://www.w3.org/TR/html4/loose.dtd">
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Student Marks Sheet</title>
</head>
<body>

<h2 align="center">Student Registration</h2>
  <form action="action-page.html" method="post" target="_blank" name="userRegistration">
    <p>
        First name: <input type = "text" name = "first_name" maxlength="5" Size="10"/>
        Last name: <input type = "text" name = "last_name" />
    </p>
    <p>
        User ID : <input type = "text" name = "user_id" />
        Password: <input type = "password" name = "password" />
    </p>
```

```
            Description : </p>
            <p>
            <textarea rows = "5" cols = "50" name = "description">
               Enter description here...
            </textarea>
        </p>
        <p>
            <input type = "checkbox" name = "maths" value = "on"> Maths
            <input type = "checkbox" name = "physics" value = "on"> Physics
        </p>
        <p>
            <input type = "radio" name = "gender" value = "Male"> Male
            <input type = "radio" name = "gender" value = "Female"> Female
        </p>
        <p> City
            <select name = "dropdown">
               <option value = "" selected>Select any city</option>
               <option value = "Karachi">Karachi</option>
               <option value = "Lahore">Lahore</option>
            </select>
        </p>
    <p>
        <input type = "file" name = "fileupload" accept = "image/*" />
    </p>
    <p>
        <input type = "submit" name = "submit" value = "Submit" />
        <input type = "reset" name = "reset"  value = "Reset" />
    </p>
    <p>
        <input type = "image" name = "imagebutton" src = "submit.gif" alt="submit button"/>
    </p>
    <p>
        <fieldset>
            <legend>Subscribe to the Newsletter</legend>
            <input type="email" name="email">
            <input type = "button" name = "ok" value = "OK" />
        </fieldset>
    </p>
</form>
</body>
</html>
```

Using Special Characters in HTML

Symbol	Entity Name	Entity Number	Displays As
©	©	&#169;	©
®	®	&#174;	®
™	™	&#8482;	™
<	<	&#60;	<
>	>	&#62;	>
(space)			☐ (visible space)

Validation Note

To validate any HTML page, you can use the **Standard Markup Validation Service**, which checks whether your HTML code complies with the official web standards of **HTML5**.
Official Validator: https://validator.w3.org/

During validation using the W3C Markup Validation Service, the page may display warnings such as *"Almost standards mode doctype"* or *"Use CSS instead."* These messages appear because this exercise uses **HTML 4.01 Transitional** attributes (e.g., align, border, cellpadding) that are considered **obsolete in HTML5**. These attributes are intentionally used here to demonstrate **table and form properties without CSS**.

LAB ASSIGNMENT

1. Create a Webpage that contains the following table and use all the tags and attributes of HTML Tables.

<table>
<tr><th></th><th>Monday</th><th>Tuesday</th><th>Wednesday</th><th>Thursday</th><th>Friday</th></tr>
<tr><td>10:00 – 11:00</td><td>AICT LAB</td><td>DLD</td><td rowspan="2">DLD LAB</td><td colspan="2" rowspan="2">SEMINAR</td></tr>
<tr><td>11:00 – 12:00</td><td>OOP</td><td>PF</td></tr>
<tr><td>12:00 – 13:00</td><td rowspan="2">PF</td><td rowspan="2">IICT</td><td rowspan="2"></td><td>PF</td><td>OOP</td></tr>
<tr><td>13:00 – 14:00</td><td>PF</td><td>DLD</td><td>AICT</td></tr>
</table>

2. Create an HTML form that asks the user for the following information:

   - **Full Name**: Text input field.
   - **Age**: Number input field.
   - **Gender**: Radio buttons for Male and Female.
   - **Email**: Email input field.
   - **Phone Number**: Phone input field.
   - **Favorite Subjects**: Use checkboxes for subjects like Maths, Physics, and Chemistry.
   - **City**: Use a dropdown.
   - **Profile Picture**: Use a file input to allow users to upload an image.
   - **Submit**: A button to submit the form.

Reference:

W3Schools-HTML tutorial

SUBMISSION GUIDELINES

Requirement	Details
File Name	`Problem1.html, Problem2.html`
Upload Location	Under the respective lab submission section on **LMS**
Formatting	Ensure code is properly indented and commented
Plagiarism Policy	100% deduction (zero marks) for copied or duplicated work