HTML

Module 3

Lists , Tables and Forms

1. Lists

HTML lists are used to display related information in an easy-to-read and concise way as lists.

We can use three types of lists to represent different types of data in HTML:

1. Unordered List
2. Ordered List
3. Description List <dl>

Unordered Lists

An unordered list (`<ul>`) displays a list of items without any particular order. Items are usually displayed with bullet points. The unordered list is used to represent data in a list for which the order of items does not matter.

Example:

```
<ul>
  <li>Apple</li>
  <li>Orange</li>
  <li>Mango</li>
  <li>Banana</li>
</ul>
```

Browser Output:

- Apple
- Orange
- Mango
- Banana

Unordered Lists Marker

We use the CSS list-style-type property to change the marker that marks the list item. The valid options for markers are

Icon	Marker	Description
●	disc	sets the marker to a dot
○	circle	sets the marker to a hollow circle
☐	square	sets the marker to a filled black square
	none	removes the marker altogether

Ordered Lists:

The ordered list is used to represent data in a list for which the order of items has significance.

The <ol> tag is used to create ordered lists. Similar to unordered lists, each item in the ordered list must be a <li> tag. For example,

Example:

```
<h5>Largest Countries in the World</h5>
<ol>
 <li>Russia</li>
 <li>Canada</li>
 <li>USA</li>
 <li>China</li>
 <li>Brazil</li>
</ol>
```

Browser Output:

Largest Countries in the World

1. Russia
2. Canada
3. USA
4. China
5. Brazil

Description Lists:

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:

```
<h2>A Description List</h2>
<dl>
  <dt>Coffee</dt>
  <dd>- 500 gms</dd>
  <dt>Milk</dt>
  <dd>- 1 ltr Tetra Pack</dd>
</dl>
```

Browser Output:

A Description List

Coffee
    - 500 gms
Milk
    - 1 ltr Tetra Pack

Nested Lists

A nested list in HTML is a list that contains other lists within its list items. This creates a hierarchical structure, where each sublist is indented to visually represent its relationship to the parent list item. It's commonly used for organising and presenting information in a structured manner, enhancing readability and clarity of content.
Example:

```
<p>List of Indian States with thier capital</p>
<ol>
  <li>Delhi
    <ul>
      <li>NewDelhi</li>
    </ul>
  </li>
  <li>Haryana
    <ul>
```

```html
        <li>Chandigarh</li>
      </ul>
  </li>
  <li>Gujarat
    <ul>
        <li>Gandhinagar</li>
    </ul>
  </li>
  <li>Rajasthan
    <ul>
        <li>Jaipur</li>
    </ul>
  </li>
  <li>Maharashtra
    <ul>
        <li>Mumbai</li>
    </ul>
  </li>
  <li>Uttarpradesh
    <ul>
        <li>Lucknow</li></ul>
  </li>
</ol>
```

Browser Output:

List of Indian States with thier capital

1. Delhi
   - NewDelhi
2. Haryana
   - Chandigarh
3. Gujarat
   - Gandhinagar
4. Rajasthan
   - Jaipur
5. Maharashtra
   - Mumbai
6. Uttarpradesh
   - Lucknow

HTML Table:

HTML Tables allow us to present data in a organized way by providing row and column facility. Also offer a visual structure that aids in clarity and comprehension, making them a fundamental element in web development.

Creating tables in HTML involves several elements that define the structure and content. The primary tags used are <table>, <tr>, <td>, and <th>.

HTML <table> Tag: This tag is used to create the table that wrap the rows and columns within it.
HTML <tr> Tag: Stands for "table row" and is used to create a row within the table.
HTML <td> Tag: Represents "table data" and is used to create standard cells within a row.
HTML <th> Tag: Represents "table header" and is used to create header cells within a row.

Example:

```
<table border="1">
  <tr>
    <th>Product</th>
    <th>Category</th>
    <th>Price</th>
  </tr>
  <tr>
```

```
      <td>Laptop</td>
      <td>Electronics</td>
      <td>$800</td>
    </tr>
    <tr>
      <td>Bookshelf</td>
      <td>Furniture</td>
      <td>$150</td>
    </tr>
    <tr>
      <td>Coffee Maker</td>
      <td>Appliances</td>
      <td>$50</td>
    </tr>
  </table>
```

Browser Output:

Product	Category	Price
Laptop	Electronics	$800
Bookshelf	Furniture	$150
Coffee Maker	Appliances	$50

Table headers and footers

The <thead> and <tfoot> tags are used to separate the table into header and footer, which becomes useful when we are dealing with tables having a large amount of data.

HTML <thead> tag: The <thead> tag in HTML is used to create a table header and usually appears after the <colgroup> or <caption> tags and it should appear before the <tbody> and <tfoot> tag.

Syntax:

```
  <thead>Table header content</thead>
```

HTML <tfoot> tag: The <tfoot> tag in HTML is used to create a table footer that appears after the <thead> tag and it can be declared before the <tbody> tag but the browser will read it as it has been declared after the <tbody> tag. It is been advised to use it after the <tbody> tag.

Syntax:

<tfoot>Table footer content</tfoot>

Example:

```html
<!DOCTYPE html>
<html>

<head>
        <meta charset="UTF-8">
        <meta name="viewpoint" content=
                "width=device-width, initial-scale=1.0">

        <style>
                thead,
                tfoot {
                        background-color: green;
                        color: white;
                }

                tr th {
                        background-color: green;
                        color: white;
                }

                td {
                        text-align: center;
                }
        </style>
</head>

<body>
        <table width="70%" height="170px"
                border cellspacing="0">

                <!-- thead tag specifies the header of
                        this table and starts here -->
                <thead>
                        <tr>
```

```html
                    <th>Items/Kg</th>
                    <th>Monday</th>
                    <th>Tuesday</th>
                    <th>Wednesday</th>
                    <th>Thursday</th>
                    <th>Friday</th>
            </tr>
    </thead>
    <!-- thead tag ends here -->

    <!-- tbody tag specifies the body of
            this table and starts here -->
    <tbody>
            <tr>
                    <th>Oranges</th>
                    <td>₹40</td>
                    <td>₹80</td>
                    <td>₹40</td>
                    <td>₹120</td>
                    <td>₹40</td>
            </tr>
            <tr>
                    <th>Mangoes</th>
                    <td>₹60</td>
                    <td>₹85</td>
                    <td>₹50</td>
                    <td>₹100</td>
                    <td>₹30</td>
            </tr>
            <tr>
                    <th>Apples</th>
                    <td>₹80</td>
                    <td>₹90</td>
                    <td>₹120</td>
                    <td>₹120</td>
                    <td>₹90</td>
            </tr>
    </tbody>
    <!-- tbody tag ends here -->

    <!-- tfoot tag specifies the footer of
            this table and starts here -->
    <tfoot>
```

```
                    <tr>
                        <th>Total</th>
                        <td>₹180</td>
                        <td>₹255</td>
                        <td>₹210</td>
                        <td>₹340</td>
                        <td>₹160</td>
                    </tr>
                </tfoot>
                <!-- tfoot tag ends here -->
        </table>
</body>

</html>
```

Browser Output:

Items/Kg	Monday	Tuesday	Wednesday	Thursday	Friday
Oranges	₹40	₹80	₹40	₹120	₹40
Mangoes	₹60	₹85	₹50	₹100	₹30
Apples	₹80	₹90	₹120	₹120	₹90
Total	₹180	₹255	₹210	₹340	₹160

HTML Table Colspan and Rowspan

In HTML, the rowspan attribute specifies how many rows a table cell should span, determining its vertical position. On the other hand, the colspan attribute specifies the number of columns a cell should span, determining its horizontal position.

Example:

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta
      name="viewport"
      content="width=device-width,
                                          initial-scale=1.0"
    />
    <title>HTML Table with Rowspan and Colspan</title>
    <style>
      h1,
      h3 {
        text-align: center;
        color: rgb(13, 0, 128);
      }

      table {
        width: 100%;
        border: 1px solid #100808;
        border-collapse: collapse;
      }

      th,
      td {
        padding: 10px;
        border: 2px solid black;
      }
    </style>
  </head>

  <body>
    <h3>Table with Rowspan and Colspan</h3>
    <table>
      <thead>
        <tr>
          <th colspan="2">Name</th>
          <th>Class</th>
          <th>College</th>
        </tr>
```

```html
    </thead>
    <tbody>
     <tr>
       <td rowspan="2">Kabin</td>
       <td rowspan="2">Dipesh</td>
       <td>11</td>
       <td rowspan="2">Advanced COllege</td>
     </tr>
     <tr>
       <td>A</td>
     </tr>
     <tr>
       <td rowspan="2">Ramesh</td>
       <td rowspan="2">Sujan</td>
       <td>3</td>
       <td rowspan="2">Namdu School</td>
     </tr>
     <tr>
       <td>B</td>
     </tr>
     <tr>
       <td rowspan="2">Kaluram</td>
       <td rowspan="2">Ramchandra</td>
       <td>5</td>
       <td rowspan="2">TU</td>
     </tr>
     <tr>
       <td>A</td>
     </tr>
    </tbody>
   </table>
  </body>
</html>
```

Browser Output:

Table with Rowspan and Colspan

Name		Class	College
Kabin	Dipesh	11	Advanced COllege
		A	
Ramesh	Sujan	3	Namdu School
		B	
Kaluram	Ramchandra	5	TU
		A	

HTML Forms:

HTML forms are used to collect user input. They are created using the <form> element, which can include various form controls like inputs, text areas, and buttons.

1. Form Elements
<form>: The container for all form elements. It can include attributes like action (where to send the form data) and method (GET or POST).

<input>: The most common form control. It can take various types, including text, password, email, number, etc. Each type defines how the input should behave.

<label>: Provides a label for an input element. Using <label> improves accessibility and usability. It can be linked to an input by using the for attribute.

<textarea>: A multi-line text input, useful for longer text entries.

<select>: Creates a dropdown list. It can include multiple <option> elements to allow users to choose from a list.

2. Form Attributes
   ● action: Specifies the URL where the form data should be sent when submitted.

   ● method: Defines how to send form data. Common values are:

GET: Appends data to the URL (visible in the address bar).
POST: Sends data in the request body (not visible in the address bar).
name: Assigns a name to the form or input elements, used to reference them in scripts or when processing form data.

3. Input Types

HTML supports various input types to enhance user experience:

- text: A single-line text input.

- password: Similar to text, but hides the input characters.

- email: Validates the input as an email address format.

- number: Accepts numeric input, with optional attributes for min, max, and step values.

- radio: Allows a user to select one option from a set of choices.

- checkbox: Allows multiple selections from a set of options.

4. Button Elements

<button>: A flexible button that can contain text, images, or HTML. It can be used for submitting forms or triggering JavaScript.

<input type="submit">: A submit button that sends the form data to the server. It can be styled and labeled using the value attribute.

5. Form Validation
HTML5 introduces basic form validation without requiring JavaScript. This can include:

- Required fields: Using the required attribute on input elements ensures that users fill out necessary fields before submitting.

- Pattern matching: The pattern attribute can enforce a specific format for the input using regular expressions.

- Type validation: Specific input types (like email or number) automatically validate the input format.

- Min/Max: For numeric inputs, you can set min and max attributes to restrict the range of acceptable values.

Example of Basic Form in HTML:

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Basic Form Example</title>
</head>
```

```html
<body>

<form action="/submit" method="POST" name="myForm">
    <label for="name">Name:</label>
    <input type="text" id="name" name="name" required>

    <label for="email">Email:</label>
    <input type="email" id="email" name="email" required>

    <label for="password">Password:</label>
    <input type="password" id="password" name="password" required>

    <label for="age">Age:</label>
    <input type="number" id="age" name="age" min="0" max="120">

    <label>Favorite Color:</label>
    <input type="radio" id="red" name="color" value="red">
    <label for="red">Red</label>
    <input type="radio" id="blue" name="color" value="blue">
    <label for="blue">Blue</label>

    <label for="subscribe">Subscribe to newsletter:</label>
    <input type="checkbox" id="subscribe" name="subscribe">

    <button type="submit">Submit</button>
</form>

</body>
</html>
```

Browser Output: