Title: Introduction to HTML Lists, Forms, and Tables

Welcome to the class on HTML Lists, Forms, and Tables. This session aims to provide you with a comprehensive understanding of these essential HTML elements, empowering you to create structured and interactive web content.

HTML Lists

In HTML you can structure your content in a more readable and organized manner using lists. There are two types of lists such as

1. Ordered lists `<ol>` and,
2. Unordered lists `<ul>`

1. Ordered List

An ordered list is used to create a list of items that have a specific sequence or order. Each item in an ordered list is typically numbered, and the numbers usually increment in a sequential manner. Each list item is defined with the `<li>` (list item) element, this will be more clear further in this article.

An ordered list can store content in two ways as well:

1. Non-alphabetically ordered
2. Alphabetically ordered

1.1 Ordered List

In the following code you can clearly see that the output generated is not structured alphabetically but listed in an orderely fashion

Pseudocode

```
<!DOCTYPE html>
<html>
<head>
    <title>List Examples</title>
</head>
<body>
    <ol>
        <li>Banana</li>
        <li>Apple</li>
        <li>Strawberry</li>
    </ol>
```

```
    </body>
</html>
```

Output:

1. Banana
2. Apple
3. Strawberry

1.2. Alphabetical Ordered List

In order to structure list in alphabetical fashion we can use `type = "A"` between `<ol>` tags

Pseudocode

```
<!DOCTYPE html>
<html>
<head>
    <title>Alphabetical Ordered List</title>
</head>
<body>
    <h1>Alphabetical Ordered List Example</h1>

    <ol type = "A">
        <li>Banana</li>
        <li>Apple</li>
        <li>Strawberry</li>
    </ol>

</body>
</html>
```

Output:

A. Banana
B. Apple
C. Strawberry

2. Unordered List

Use `<ul>` tags for displaying a list with the help of symbols/shapes. In this case we're considering shapes.

Pseudocode

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

```
<head>
    <title>List Examples</title>
</head>
<body>
    <ul type = "circle">
        <li>Banana</li>
        <li>Apple</li>
        <li>Strawberry</li>
    </ul
</body>
</html>
```

Output:

○ Banana
○ Apple
○ Strawberry

Pseudocode

```
<!DOCTYPE html>
<html>
<head>
    <title>List Examples</title>
</head>
<body>
    <!-- Web Development Skills Roadmap -->
    <h2>Web Developer Learning Path</h2>
    <ul>
        <li>Frontend Foundations
            <ul>
                <li>HTML5 Structure</li>
                <li>CSS3 Styling</li>
                <li>Responsive Design</li>
            </ul>
        </li>
        <li>JavaScript Essentials
            <ul>
                <li>Basic Syntax</li>
                <li>DOM Manipulation</li>
                <li>Event Handling</li>
            </ul>
        </li>
    </ul>
</body>
</html>
```

Output:

Web Developer Learning Path

- Frontend Foundations
  - HTML5 Structure
  - CSS3 Styling
  - Responsive Design
- JavaScript Essentials
  - Basic Syntax
  - DOM Manipulation
  - Event Handling

Description List

A description list in HTML is a way to organize information in a structured manner, particularly useful for presenting terms and their corresponding descriptions. It consists of a list of term-description pairs, where each term is represented by a `<dt>` (definition term) element, and its corresponding description is represented by a `<dd>` (definition description) element.

Here's a basic example:

```html
<dl>
  <dt>HTML</dt>
  <dd>HyperText Markup Language</dd>

  <dt>CSS</dt>
  <dd>Cascading Style Sheets</dd>

  <dt>JavaScript</dt>
  <dd>A programming language for web development</dd>
</dl>
```

In this example:

- `<dl>` is the container element for the description list.
- `<dt>` represents the term or the name of the item being described.
- `<dd>` represents the description or definition of the term.

The `<dt>` and `<dd>` elements are usually used together within a `<dl>` element to provide a clear structure for defining terms and their corresponding descriptions. This structure is especially useful for glossaries, dictionaries, or any other content where defining terms is necessary.

Combining our knowledge of ordered and unordered list let's prepare a web development starter giude !!

Imagine you're creating a tutorial page for new web developers. Ordered lists are perfect for showing sequential instructions.

Pseudocode

```html
<!DOCTYPE html>
<html>
<head>
    <title>List Examples</title>
</head>
<body>
<!-- Tutorial: How to Create Your First Web Page -->
    <h1>Web Development Starter Guide</h1>
    <ol>
        <li>Set Up Your Development Environment
            <ul>
                <li>Download a code editor (like Visual Studio Code)</li>
                <li>Install a web browser (Chrome, Firefox, or Edge)</li>
            </ul>
        </li>
        <li>Create Your First HTML File
            <ul>
                <li>Open your code editor</li>
                <li>Create a new file named index.html</li>
                <li>Add basic HTML structure</li>
            </ul>
        </li>
        <li>Learn Basic HTML Tags
            <ul>
                <li>Practice with headings</li>
                <li>Create paragraphs</li>
                <li>Add links and images</li>
            </ul>
        </li>
    </ol>
</body>
</html>
```

Output:

Web Development Starter Guide

1. Set Up Your Development Environment
   - Download a code editor (like Visual Studio Code)
   - Install a web browser (Chrome, Firefox, or Edge)
2. Create Your First HTML File
   - Open your code editor
   - Create a new file named index.html
   - Add basic HTML structure
3. Learn Basic HTML Tags
   - Practice with headings
   - Create paragraphs
   - Add links and images

Feel free to explore further using below links:-

1. https://www.w3schools.com/html/html_lists.asp

2. https://developer.mozilla.org/en-US/docs/Web/HTML/Element/ol

3. https://developer.mozilla.org/en-US/docs/Web/HTML/Element/ul

4. https://developer.mozilla.org/en-US/docs/Web/HTML/Element/li

Tables in HTML

tables are used to organize and display data in a structured format. Tables consist of rows and columns, where each cell is capable of storing data in form of text, images, links, or other HTML elements. But in-order to create tables in HTML one needs to be familiar with certain tags and attributes used such as:

1. `<table>` : tag is used to define the beginning of a table 2. `<td>` : tag represents a table cell that contains data

2. `<tr>` : tag represents a table row

3. `<th>` : tag represents a table header and is used to label columns or provide additional information about the data

4. `<thead>` : tag is used to group the header content in a table. It typically contains one or more `<tr>` elements with `<th>` elements inside.

5. `<tbody>` : tag groups the body content of the table.

6. `<caption>` : tag is used to provide a title or caption for the table. It is placed immediately after the opening `<table>` tag.

7. **border attribute**: is used to specify the thickness of the border around the table and its cells.

Pseudocode

```
<!DOCTYPE html>
<html>
<head>
    <title>Table Examples</title>
</head>
<body>
    <table border style = "text-align: center;">
    <caption>Student's Marksheet</caption>
    <thead>
      <th>Student</th>
      <th>Roll No.</th>
      <th>Marks</th>
    </thead>
    <tbody>
      <tr>
         <td>1</td>
         <td>2016911</td>
         <td>98</td>
      </tr>
      <tr>
```

```
                <td>2</td>
                <td>2015911</td>
                <td>78</td>
            </tr>
        </tbody>
    </table>
</body>
</html>
```

Output:

Student's Marksheet

Student	Roll No.	Marks
1	2016911	98
2	2015911	78

Pseudocode

```
<!DOCTYPE html>
<html>
<head>
    <title>Table Examples</title>
</head>
<body>
<!-- Web Development Courses -->
    <table border="1">
        <caption>Web Development Course Offerings</caption>
        <thead>
            <tr>
                <th>Course Name</th>
                <th>Duration</th>
                <th>Difficulty Level</th>
            </tr>
        </thead>
        <tbody>
            <tr>
                <td>HTML Basics</td>
                <td>4 weeks</td>
                <td>Beginner</td>
            </tr>
            <tr>
                <td>CSS Styling</td>
                <td>6 weeks</td>
                <td>Intermediate</td>
            </tr>
            <tr>
                <td>JavaScript Fundamentals</td>
                <td>8 weeks</td>
                <td>Advanced Beginner</td>
            </tr>
        </tbody>
```

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

Output:

Web Development Course Offerings		
Course Name	**Duration**	**Difficulty Level**
HTML Basics	4 weeks	Beginner
CSS Styling	6 weeks	Intermediate
JavaScript Fundamentals	8 weeks	Advanced Beginner

Feel free to explore further using below links:-

1. https://www.w3schools.com/html/html_tables.asp
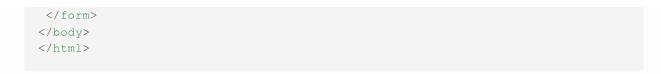2. https://developer.mozilla.org/en-US/docs/Web/HTML/Element/table

HTML Forms

Just like any other forms are used to collect information, in context of HTML it collects user input on a web page. They allow users to enter data, make selections, and submit that information to a server for processing. HTML forms are created using a combination of form-related tags and input elements such as

1. `<form>` : tag defines the beginning of a form and contains the elements that make up the form, such as text fields, checkboxes, and buttons.
2. `<input>` : The `<input>` tag is used to create various types of form input fields. The type attribute specifies the type of input field to be displayed. Common type values include:
   - **text:** Creates a single-line text input.
   - **password:** Creates a password input field (text is masked for security).
   - **checkbox:** Creates a checkbox for binary (true/false) choices.
   - **radio:** Creates a radio button for selecting one option from a group.
   - **submit:** Creates a submit button to send the form data.
   - **button:** Creates a generic button.
   - **file:** Allows users to upload files.
   - **date, email, number, and more:** Various input types for specific data formats.
3. `<label>` : tag is used to associate a label with a form element, making the form more accessible and user-friendly. The for attribute of the `<label>` tag should match the id attribute of the form element it labels.

4. `<select>` : tag creates a dropdown list, allowing users to select one option from a list of choices. It contains one or more `<option>` elements.

5. `<option>` : tag defines an individual item in a `<select>` dropdown list. The value attribute specifies the value that will be sent to the server when the form is submitted.

6. `<button>` : acts as an input element in HTML and is used for various purposes in a form including the submission of a form. We have different types of input elements as well such as checkboxes `<input type = "checkbox">` , radio buttons `<input type = "radio">` , and other input elements as needed to gather user input

Pseudocode

```html
<!DOCTYPE html>
<html>
<head>
    <title>Form Examples</title>
</head>
<body>
    <form>
        <label>Name</label>
        <input type = "text">

        <label>Email</label>
        <input type = "email">

        <label>Phone</label>
        <input type = "number" maxlength = "10">

        <label>age</label>
        <input type = "number" min = "1" max = "100">

        <label>Birthday</label>
        <input type = "date" min = "1905 - 06 - 18" max = "2002 - 06 - 10">

        <p>Food</p>
        <label>Apple</label>
        <input type = "checkbox">
        <label>Orange</label>
        <input type = "checkbox">
        <label>Banana</label>
        <input type = "checkbox">

        <p>Gender</p>
        <label>Male</label>
        <input name='gender' value='male' type = "radio">
        <label>Female</label>
        <input name='gender' value='female' type = "radio">

        <label>Eyecolor</label>
        <select>
            <option>Blue</option>
            <option>Black</option>
            <option>Red</option>
        </select>
```

```
    </form>
  </body>
</html>
```

Output:

Name [   ] Email [   ] Phone [   ] age [   ] Birthday [dd-mm-yyyy 📅]

Food

Apple ☐ Orange ☐ Banana ☐

Gender

Male ○ Female ○ Eyecolor [Blue ⌄]

Feel free to explore further using below links:-

1. https://www.w3schools.com/html/html_forms.asp

2. https://developer.mozilla.org/en-US/docs/Web/HTML/Element/form

Further Reading

Table Accessibility:

- *Using Captions and Summaries:* Explore the use of `<caption>` and `<summary>` for better accessibility.
- *Incorporating Header and Data Cells:* Understand the importance of distinguishing between header and data cells in tables.