# *HTML THEORY ASSIGNMENT: 3*

***Question 1: Explain the structure of an HTML table and the purpose of each of the following elements: <table>,<tr>,<th>,<td>,and <head>.***

***ANSWER:***

**1. <table>**

- **Purpose:** This is the container element that defines the entire table.
- **Example:**

  <table>

  <!-- table content goes here -->

  </table>

**2. <tr> (Table Row)**

- **Purpose:** Represents a row in the table. It contains one or more <th> or <td> elements.
- **Example:**

<tr>

<td>Data 1</td>

<td>Data 2</td>

</tr>

**3. <th> (Table Header)**

- **Purpose:** Defines a header cell in a table. Text in <th> is typically bold and centered by default. Used in the first row or column to label data.
- **Example:**
- <tr>
- <th>Name</th>

- <th>Age</th>

</tr>

**4. <td> (Table Data)**

- **Purpose:** Represents a standard data cell in a table. These hold the actual content/data for each row.
- **Example:**
- <tr>
- <td>Alice</td>
- <td>30</td>
- </tr>

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**5. <head>**

- **Note:** The <head> element **does not belong inside** a table.
- **Purpose in HTML (not in tables):** It is part of the overall HTML document structure, used to contain meta-information about the document (e.g., title, styles, scripts).
- **Correct Use Example:**

<html>

<head>

<title>My Page</title>

</head>

<body>

<!-- content here -->

</body>
</html>

- **Important:** If you meant <thead> instead of <head>, then:

- **<thead>** is used to group the header content in a table.
- Example:
- <table>
- <thead>
- <tr>
- <th>Name</th>
- <th>Age</th>
- </tr>
- </thead>
- <tbody>
- <tr>
- <td>Bob</td>
- <td>25</td>
- </tr>
- </tbody>
- </table>

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***Question 2: What is the difference between colspan and rowspan in tables? Provide examples.***

***ANSWER:*** Calspan and rowspan are attributes used in HTML tables to merge cells across columns or rows, respectively**.**

- **Difference Between Calspan and rowspan:**

| Attribute | Function | Description |
|---|---|---|
| colspan | Column Span | Merges multiple **columns** into a single cell (horizontal merge). |
| rowspan | Row Span | Merges multiple **rows** into a single cell (vertical merge). |

- **Example of Calspan:**

```
<table border="1">
 <tr>
  <th Calspan="2">Name</th>
 </tr>
 <tr>
  <td>First</td>
  <td>Last</td>
 </tr>
</table>
```

**Output:**

**Name**

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- The "Name" header spans across 2 columns.

- **Example of rowspan:**

```
<table border="1">
<tr>
<th rowspan="2">Name</th>
<td>First</td>
</tr>
<tr>
<td>Last</td>
</tr>
</table>
```

**Output:**

**Name**

---

- The "Name" cell spans across 2 rows.

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**Question 3: Why should tables be used sparingly for layout purposes? What is a better alternative?**

***ANSWER:*** Tables should be used sparingly for layout purposes because:

***1. Poor Accessibility***

- Screen readers and assistive technologies expect tables to present tabular data, not layout.
- Using tables for layout can confuse these tools, making it harder for visually impaired users to understand the content.

***2. Lack of Flexibility***

- Tables are rigid. They're not well-suited for responsive designs or adjusting to different screen sizes (e.g., mobile devices)**.**

- They make it harder to implement modern design principles like mobile-first or fluid layouts.

***3. Slower Load Times***

- Layout tables often contain extra HTML markup, increasing page size and slowing down rendering and performance***.***

***4. Maintenance Issues***

- Table-based layouts are harder to update and maintain.
- Simple changes (like moving an element) may require editing large sections of nested HTML.

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***Better Alternative: CSS (Cascading Style Sheets)***

CSS is the preferred method for creating page layouts because it:

- Separates content from presentation, improving readability and maintainability.
- Supports responsive design using techniques like Flexbox, Grid, and media queries.
- Is accessible, flexible, and efficient**.**

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