HTML TABLE

Q1. Explain the structure of an HTML table and the purpose of each of the
following elements: <table>,<tr>,<th>,<td> and <thead>.
ANS. An HTML table is used to display data in a grid format rows and columns
making it easy to organize and compare information.

Purpose of elements :

<Table> - Table Container :-
	It defines the start and end of the table. All table-related elements <tr>
<th> <td> <thead> <tbody> must be inside it. Ex. <table> </table>

<Tr> - table row :-
	Defines a single row of cells in the table.Groups together table cells <th>
OR <td> horizontally.
	Ex. :-
	<tr>
	 <td>Row 1, Column 1</td>
	 <td>Row 1, Column 2</td>
	</tr>

<Th> - table head :-
    Defia header cell in a table.Usually appears in the first row or first column; the
text inside is bold and centered by default.
	Ex. :-
	 <tr>
	  <th>Name</th>
	  <th>Age</th>
	 </tr>

<Td> - table data :-
	Defines a regular cell in a table containing data.Holds actual table
content like text, images, links, etc..

Ex. :-
```
<tr>
    <td>John</td>
    td>25</td>
  </tr>
```

<Thead> - table head :-

Groups the header rows of the table.Helps organize and semantically separate the table's heading section from the main body.

Ex. :-
```
<thead>
    <tr>
      <th>name</th>
    </tr>
</thead>
```

Q2. What is the difference between colspan and rowspan in tables? Provide examples.

ANS.

Colspan :-

It merges cells horizontally. It is use when you want one cell to cover more than one column.

Ex. :-
```
<!DOCTYPE html>
  <html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width,
  initial-scale=1.0">
    <title>Colspan</title>
  </head>
  <body>
    <table border="1">
```

```
    <tr>
      <th colspan="2">Name</th>
      <th>Age</th>
    </tr>
    <tr>
      <td>John</td>
      <td>Smith</td>
      <td>25</td>
    </tr>
  </table>
  </body>
  </html>
```

Rowspan :-

Merges cells vertically (across rows).It is used when you want one cell to cover more than one row.

Ex. :-

```
    <!DOCTYPE html>
  <html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width,
  initial-scale=1.0">
    <title>Colspan</title>
  </head>
  <body>
  <table border="1">
    <tr>
      <th rowspan="2">Name</th>
      <th>Math</th>
      <th>Science</th>
    </tr>
    <tr>
      <th>History</th>
      <th>English</th>
    </tr>
  </table>
  </body>
```

</html>

Q3. : Why should tables be used sparingly for layout purposes? What is a better alternative?

ANS.   Tables should not be used much for webpage layouts because they were originally made to show data like rows and columns, not to design how a webpage looks. If we use tables for layout, a few problems come up:

1. Hard for disabled users – Screen readers (used by blind people) may read the page in a confusing way because they expect a table of data, not a design layout.

2. Not mobile-friendly – Tables don't easily shrink or rearrange for small screens, so the page can look messy on phones.

3. Difficult to edit – If you want to change the design later, you'll need to mess with the table structure, which can be frustrating and time-consuming.

Better alternative :-
   A much better way is to use CSS (Cascading Style Sheets).
With CSS, you can control how things look without messing up meaning. Tools like Flexbox and CSS Grid make it easy to build layouts that are responsive work well on phones, tablets, and computers and easy to update.