



KU BCA 502

Theory | Full Marks: 100 | Pass Marks: 45% | Credit: 4

# Web Technology



By  
**RIKI SUTRADHAR**

Assistant Professor,  
Department of B.C.A.,  
Jamshedpur Co-operative College,

Jamshedpur  
Email: ricky.sutradhar99@gmail.com  
Mobile: +91 - 7091502385



## Introduction to Markup Languages

*Tables: Introduction to HTML Tables, Table Tags, Alignment, Aligning Entire Table, Alignment within a Row, Alignment within a Cell, Attributes, Content Summary, Background Color, Adding a Caption, Setting the Width, Adding a Border, Spacing within a Cell, Spanning Multiple Rows or Columns, Table Sections and Column Properties, Table as a Design Tool.*

### Introduction to HTML Tables

HTML table displays data (like text, images, links, other tables, etc.) in tabular form, i.e., with the help of rows and columns. The HTML tables are created using the `<table>` tag in which the `<tr>` tag is used to create table rows and `<td>` tag is used to create table data (or, data cells). The elements under `<td>` are regular and left aligned by default.

#### Example:

```
<!DOCTYPE html>
<!--
    File: table1.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Program to display Paper Code with Paper Name using a HTML table with six rows and
two columns.
-->

<html>
<head>
    <title>A Simple HTML Table</title>
</head>

<body>
    <table border = "1"> <!-- <table> tag opens a table. The border is an attribute of <table> tag
and it is used to put a border across all the cells. If we do not need a border, then we can use border = "0". -->
```

```

<tr> <!-- <tr> tag inserts a table row. -->
    <td>Paper Code</td> <!-- <td> tag inserts a table data (or, data cell). -->
    <td>Paper Name</td>
</tr>
<tr>
    <td>KU BCA 501</td>
    <td>Electronic Commerce and Application</td>
</tr>
<tr>
    <td>KU BCA 502</td>
    <td>Web Technology</td>
</tr>
<tr>
    <td>KU BCA 503</td>
    <td>Computer Graphics and Multimedia</td>
</tr>
<tr>
    <td>Not Applicable</td>
    <td>Web Technology Lab</td>
</tr>
<tr>
    <td>Not Applicable</td>
    <td>Computer Graphics and Multimedia Lab</td>
</tr>
</table>
</body>
</html>

```

## Output:

Paper Code	Paper Name
KU BCA 501	Electronic Commerce and Application
KU BCA 502	Web Technology
KU BCA 503	Computer Graphics and Multimedia
Not Applicable	Web Technology Lab
Not Applicable	Computer Graphics and Multimedia Lab

## Table Tags

A HTML table include following tags –

Tag	Description
<table>	It is used to create HTML table.
<tr>	It is used to create table rows.

<th>	It is used to create table header cells.
<td>	It is used to create table data (or, data cells).
<caption>	It serves as a title or explanation for the table and it shows up at the top of the table.
<colgroup>	It specifies a group of one or more columns in a table for formatting.
<col>	It specifies column properties for each column within a <colgroup> element.
<thead>	It is used to enclose a group of rows in a table as a header.
<tbody>	It is used to encapsulate a set of table rows, indicating that they comprise the body of the table.
<tfooter>	It is used to enclose a group of rows in a table as a footer.

## Attributes

HTML attribute provide additional information about HTML elements. All HTML elements can have attribute. Attribute is always specified in the start tag. Attribute should always be applied with its name and value pair like *attribute\_name = “value”*. The attribute name and value pair is case sensitive, and it is recommended by W3C that it should be written in lowercase only. We can add multiple attributes in one HTML element, but need to give space between two attributes.

**Syntax:** <tag attribute\_name = “value”>content</tag>

**Example:** <td align = “right”>Paper Name</td>

## Alignment

It is possible to change the horizontal alignment of the entire table, the content within a row, and within a table cell. It is also possible to change the vertical alignment of the content within a table cell. This is done by ‘align’ attribute. This attribute is not supported by HTML5 and we should use CSS to align.

**Aligning Entire Table:** The ‘align’ attribute is used by <table> tag to specify the horizontal alignment of the entire table.

**Syntax:** <table align = “left | right | center”>content</table>

**Attribute Values:** There are three values of ‘align’ attribute for <table> tag.

- *left*: It horizontally aligns the table to the left with respect to the web page. It is a default value.

- *right*: It horizontally aligns the table to the right with respect to the web page.
- *center*: It horizontally aligns the table to the center with respect to the web page.

**Example:**

```
<!DOCTYPE html>
<!--
    File: table2.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of aligning entire HTML table.
-->

<html>
    <head>
        <title>Aligning Entire HTML Table</title>
    </head>

    <body>
        <h2>Aligning Entire HTML Table</h2>
        <table border = "1" align = "right">
            <tr>
                <td>Paper Code</td>
                <td>Paper Name</td>
            </tr>
            <tr>
                <td>KU BCA 501</td>
                <td>Electronic Commerce and Application</td>
            </tr>
            <tr>
                <td>KU BCA 502</td>
                <td>Web Technology</td>
            </tr>
            <tr>
                <td>KU BCA 503</td>
                <td>Computer Graphics and Multimedia</td>
            </tr>
            <tr>
                <td>Not Applicable</td>
                <td>Web Technology Lab</td>
            </tr>
            <tr>
                <td>Not Applicable</td>
                <td>Computer Graphics and Multimedia Lab</td>
            </tr>
        </table>
```

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

## Output:

### Aligning Entire HTML Table

Paper Code	Paper Name
KU BCA 501	Electronic Commerce and Application
KU BCA 502	Web Technology
KU BCA 503	Computer Graphics and Multimedia
Not Applicable	Web Technology Lab
Not Applicable	Computer Graphics and Multimedia Lab

**Alignment within a Row:** The ‘align’ attribute is used by `<tr>` tag to specify the horizontal alignment of the content within a row of table.

**Syntax:** `<tr align = “left | right | center | justify | char”>content</tr>`

**Attribute Values:** There are three values of ‘align’ attribute for `<tr>` tag.

- *left*: It horizontally aligns the text of the row to the left.
- *right*: It horizontally aligns the text of the row to the right.
- *center*: It horizontally aligns the text of the row to the center. It is a default value.
- *justify*: It stretches the text of paragraph to set the width of all lines equal.
- *char*: It sets the text-align to a specific character and is not supported by Google Chrome, Microsoft Edge, Mozilla Firefox, Safari, and Opera.

## Example:

```
<!DOCTYPE html>  
<!--  
    File: table3.html  
    Author: Riki Sutradhar  
    Date: DD-MM-YYYY  
    Description: Example of alignment within a row of HTML table.  
-->  
  
<html>  
    <head>  
        <title>Alignment within a row of HTML table</title>  
    </head>  
  
    <body>
```

```

<h2>Alignment within a row of HTML table</h2>
<table border = "1" align = "center">
    <tr align = "center">
        <td>Paper Code</td>
        <td>Paper Name</td>
    </tr>
    <tr align = "left">
        <td>KU BCA 501</td>
        <td>Electronic Commerce and Application</td>
    </tr>
    <tr align = "right">
        <td>KU BCA 502</td>
        <td>Web Technology</td>
    </tr>
    <tr>
        <td>KU BCA 503</td>
        <td>Computer Graphics and Multimedia</td>
    </tr>
    <tr align = "justify">
        <td>Not Applicable</td>
        <td>Computer Graphics and Multimedia Lab: Video Display Devices, Refresh Cathode Ray Tubes, Raster-Scan and Random-Scan Systems, Input Devices, Hard-Copy Devices and Graphics Software.</td>
    </tr>
    <tr align = "char" char = ":">
        <td>Not Applicable</td>
        <td>Rs. 2500.00</td>
    </tr>
    <tr align = "char" char = ":">
        <td>Not Applicable</td>
        <td>Rs. 500.00</td>
    </tr>
</table>
</body>
</html>

```

## Output:

### Alignment within a row of HTML table

Paper Code	Paper Name
KU BCA 501	Electronic Commerce and Application
KU BCA 502	Web Technology
KU BCA 503	Computer Graphics and Multimedia
Not Applicable	Computer Graphics and Multimedia Lab: Video Display Devices, Refresh Cathode Ray Tubes, Raster-Scan and Random-Scan Systems, Input Devices, Hard-Copy Devices and Graphics Software.
Not Applicable	Rs. 2500.00
Not Applicable	Rs. 500.00

**Alignment within a Cell:** The ‘align’ attribute is used by <td> tag to specify the horizontal alignment of the content within a cell of table.

**Syntax:** <td align = “left | right | center | justify | char”>content</td>

**Attribute Values:** There are three values of ‘align’ attribute for <td> tag.

- *left*: It horizontally aligns the text of the cell to the left.
- *right*: It horizontally aligns the text of the cell to the right.
- *center*: It horizontally aligns the text of the cell to the center. It is a default value.
- *justify*: It stretches the text of paragraph to set the width of all lines equal.
- *char*: It sets the text-align to a specific character and is not supported by Google Chrome, Microsoft Edge, Mozilla Firefox, Safari, and Opera.

The ‘valign’ attribute is used by <td> tag to specify the vertical alignment of the content within a cell of table.

There are three values of ‘valign’ attribute for <td> tag., viz.

- *top*: It vertically aligns the text of the cell to the top.
- *bottom*: It vertically aligns the text of the cell to the bottom.
- *middle*: It vertically aligns the text of the cell to the middle. It is a default value.

### Example:

```
<!DOCTYPE html>
<!--
    File: table4.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of alignment within a cell of HTML table.
-->

<html>
    <head>
        <title>Alignment within a cell of HTML table</title>
    </head>

    <body>
        <h2>Alignment within a cell of HTML table</h2>
        <table border = “1” align = “center”>
```

```

<tr>
    <td align = "center">Paper Code</td>
    <td align = "left">Paper Name</td>
</tr>
<tr>
    <td align = "left">KU BCA 501</td>
    <td align = "right">Electronic Commerce and Application</td>
</tr>
<tr>
    <td align = "center">KU BCA 502</td>
    <td align = "right">Web Technology</td>
</tr>
<tr height = "40">
    <td valign = "top">KU BCA 503</td>
    <td valign = "middle">Computer Graphics and Multimedia</td>
</tr>
<tr height = "60">
    <td valign = "bottom">Not Applicable</td>
    <td align = "justify">Computer Graphics and Multimedia Lab: Video Display Devices, Refresh Cathode Ray Tubes, Raster-Scan and Random-Scan Systems, Input Devices, Hard-Copy Devices and Graphics Software.</td>
</tr>
<tr>
    <td>Not Applicable</td>
    <td align = "char" char = ".">Rs. 2500.00</td>
</tr>
<tr>
    <td>Not Applicable</td>
    <td align = "char" char = ".">Rs. 500.00</td>
</tr>
</table>
</body>
</html>

```

## Output:

Alignment within a cell of HTML table

Paper Code	Paper Name
KU BCA 501	Electronic Commerce and Application
KU BCA 502	Web Technology
KU BCA 503	Computer Graphics and Multimedia
Not Applicable	Computer Graphics and Multimedia Lab: Video Display Devices, Refresh Cathode Ray Tubes, Raster-Scan and Random-Scan Systems, Input Devices, Hard-Copy Devices and Graphics Software.
Not Applicable	Rs. 2500.00
Not Applicable	Rs. 500.00

## Content Summary

Summary attribute provides a brief overview of how data has been organized into a table or a brief explanation of how to navigate the table. The value of summary attribute is not displayed visually on the webpage. Speech devices use this attribute to make the table more accessible to users with visual impairments. This attribute is not supported by HTML5.

**Syntax:** <table summary = “value”>content</table>

**Example:**

```
<!DOCTYPE html>
<!--
    File: table5.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of HTML Summary Attribute with Table Tag.
-->

<html>
    <head>
        <title>HTML Summary Attribute</title>
    </head>

    <body>
        <h2>Example of HTML Summary Attribute with Table Tag</h2>
        <table border = “1” summary = “This is a table of Indian states with their capitals. First column describes state and the second column describe capital.”>
            <tr>
                <td>Jharkhand</td>
                <td>Ranchi</td>
            </tr>
            <tr>
                <td>Bihar</td>
                <td>Patna</td>
            </tr>
            <tr>
                <td>West Bengal</td>
                <td>Kolkata</td>
            </tr>
            <tr>
                <td>Odisha</td>
                <td>Bhubaneswar</td>
            </tr>
        </table>
    </body>
</html>
```

**Output:****Example of HTML Summary Attribute with Table Tag**

Jharkhand	Ranchi
Bihar	Patna
West Bengal	Kolkata
Odisha	Bhubaneswar

**Adding a Caption**

The `<caption>` tag serves as a title or explanation for the table and it shows up at the top of the table. This tag must be inserted immediately after the `<table>` tag. By default, `<caption>` tag will be center-aligned. The summary attribute may be used whether or not the table includes a `<caption>` tag. If both are used, the value of summary attribute should not duplicate the `<caption>` tag. The `<caption>` tag is not supported by HTML5.

**Syntax:** `<caption>content</caption>`

**Example:**

```
<!DOCTYPE html>
<!--
    File: table6.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of Caption Tag.
-->

<html>
    <head>
        <title>HTML Caption Tag</title>
    </head>
    <body>
        <h2>Example of Caption Tag</h2>
        <table border = "1" summary = "This is a table of Indian states with their capitals. First column describes state and the second column describe capital.">
            <caption>Indian States with Their Capitals</caption>
            <tr>
                <td>Jharkhand</td>
                <td>Ranchi</td>
            </tr>
            <tr>
```

```

<td>Bihar</td>
<td>Patna</td>
</tr>
<tr>
<td>West Bengal</td>
<td>Kolkata</td>
</tr>
<tr>
<td>Odisha</td>
<td>Bhubaneswar</td>
</tr>
</table>
</body>
</html>

```

## Output:

### Example of Caption Tag

Indian States with Their  
Capitals

Jharkhand	Ranchi
Bihar	Patna
West Bengal	Kolkata
Odisha	Bhubaneswar

### Background Color

The ‘bgcolor’ attribute is used by `<table>`, `<tr>`, and `<td>` tags to specify the background color of the entire table, row, and cell respectively. We can also set a background image of entire table, and cells by using ‘background’ attribute. Cell colors override row colors which, in turn, override table background color. The ‘bgcolor’ attribute is not supported by HTML5 and we should use CSS to specify background color.

**Syntax:** `<table | tr | td bgcolor = “color_name | hex_number | rgb_number”> content </td | /tr | /table>`

`<table | td background = “image_path”>content</td | /table>`

**Attribute Values:** There are three values of ‘bgcolor’ attribute for `<table>`, `<tr>`, and `<td>` tags.

- *color\_name*: It sets the color by using the color name. For example, “red”.

- *hex\_number*: It sets the color by using the color HEX code. For example, “#0000ff”.
- *rgb\_number*: It sets the color by using the RGB code. For example, “RGB(0, 153, 0)”.

### **Example:**

```
<!DOCTYPE html>
<!--
    File: table7.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of bgcolor attribute for HTML table.
-->

<html>
    <head>
        <title>bgcolor attribute for HTML table</title>
    </head>

    <body>
        <h2>Example of bgcolor attribute for HTML table.</h2>
        <table border = "1" bgcolor = "palegreen">
            <caption>Filmography of Pankaj Tripathi</caption>
            <tr bgcolor = "salmon">
                <td>Year</td>
                <td>Title</td>
                <td>Role</td>
                <td>Notes</td>
            </tr>
            <tr>
                <td>2003</td>
                <td>Chigurida Kanasu</td>
                <td>Pankaj</td>
                <td>Uncredited role; Kannada film</td>
            </tr>
            <tr>
                <td>2009</td>
                <td>Pyaar Bina Chain Kahan Re</td>
                <td>Villain</td>
                <td>Bhojpuri film</td>
            </tr>
            <tr>
                <td>2016</td>
                <td>Mango Dreams</td>
                <td>Salim</td>
            </tr>
        </table>
    </body>
</html>
```

```

        <td>English film</td>
    </tr>
    <tr bgcolor = "chocolate"> <!-- Row color override the table color. -->
        <td>2021</td>
        <td>Mimi</td>
        <td>Bhanu</td>
        <td bgcolor = "yellow">Filmfare Award for Best Supporting Actor</td> <!--
Cell color override the row color. -->
    </tr>
</table>
</body>
</html>

```

## Output:

### Example of bgcolor attribute for HTML table.

Filmography of Pankaj Tripathi			
Year	Title	Role	Notes
2003	Chigurida Kanasu	Pankaj	Uncredited role; Kannada film
2009	Pyaar Bina Chain Kahan Re	Villain	Bhojpuri film
2016	Mango Dreams	Salim	English film
2021	Mimi	Bhanu	Filmfare Award for Best Supporting Actor

## Setting the Width and Height

The ‘width’ and ‘height’ attributes are used by `<table>`, `<tr>`, and `<td>` tags to adjust the width and height of the entire table, row, and cell respectively. If width and height attributes are not set, then it takes default width and height according to content. Notice that, adjusting the size of one cell in a row or column affects all the corresponding cells.

### Syntax:

```
<table | tr | td width | height = "pixels | %">content</td | /tr | /table>
```

**Attribute Values:** There are two values of ‘width’ and ‘height’ attributes for `<table>`, `<tr>`, and `<td>` tags.

- *pixels*: It sets the width and height of table, rows, and cells in terms of pixels.
- *%*: It sets the width and height of table, rows, and cells in terms of percentage relative to its parent element.

## Example:

```

<!DOCTYPE html>
<!--
    File: table8.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of width and height attributes for HTML table.
-->

<html>
    <head>
        <title>width and height attributes for HTML table</title>
    </head>

    <body>
        <h2>Example of width and height attributes for HTML table.</h2>
        <table border = "1" width = "80%" height = "200"> <!--'width' attribute sets the width of
the table in terms of percentage relative to its parent element, which in this case is the <body> element. -->
            <caption>Indian States with Their Capitals</caption>
            <tr>
                <td>Jharkhand</td>
                <td>Ranchi</td>
            </tr>
            <tr>
                <td>Bihar</td>
                <td>Patna</td>
            </tr>
            <tr>
                <td>West Bengal</td>
                <td>Kolkata</td>
            </tr>
            <tr>
                <td>Odisha</td>
                <td>Bhubaneswar</td>
            </tr>
        </table>
    </body>
</html>

```

## Output:

### Example of width and height attributes for HTML table.

Indian States with Their Capitals	
Jharkhand	Ranchi
Bihar	Patna
West Bengal	Kolkata
Odisha	Bhubaneswar

## Adding a Border

The ‘border’ attribute is used by <table> tag to specify the border of a table. The ‘border’ attribute is not supported by HTML5.

**Syntax:** <table border = “1 | 0”>content</table>

**Attribute Values:** There are two values of ‘border’ attribute for <table> tag.

- *1*: It sets the border around the table cells.
- *0*: It removes (not set) the border around the table cells.

**Example:**

```
<!DOCTYPE html>
<!--
    File: table9.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of adding border of HTML table.
-->

<html>
    <head>
        <title>Adding Border of HTML Table</title>
    </head>

    <body>
        <table border = “1”>
            <tr>
                <td>Paper Code</td>
                <td>Paper Name</td>
            </tr>
            <tr>
                <td>KU BCA 501</td>
                <td>Electronic Commerce and Application</td>
            </tr>
            <tr>
                <td>KU BCA 502</td>
                <td>Web Technology</td>
            </tr>
            <tr>
                <td>KU BCA 503</td>
                <td>Computer Graphics and Multimedia</td>
            </tr>
            <tr>
```

```

        <td>Not Applicable</td>
        <td>Web Technology Lab</td>
    </tr>
    <tr>
        <td>Not Applicable</td>
        <td>Computer Graphics and Multimedia Lab</td>
    </tr>
</table>
</body>
</html>

```

## Output:

Paper Code	Paper Name
KU BCA 501	Electronic Commerce and Application
KU BCA 502	Web Technology
KU BCA 503	Computer Graphics and Multimedia
Not Applicable	Web Technology Lab
Not Applicable	Computer Graphics and Multimedia Lab

## Spacing within a Cell

Tables without adequate spacing in or around cells are difficult to read content. The ‘cellspacing’ attribute is used by `<table>` tag to specify the space between table cells. By default, the value of ‘cellspacing’ attribute is 2 pixels. The ‘cellpadding’ attribute is used by `<table>` tag to specify the space between the content of the cell and the cell wall. By default, the value of ‘cellpadding’ attribute is 0 pixel. The ‘cellspacing’ and ‘cellpadding’ attributes are not supported by HTML5.

**Syntax:** `<table cellspacing = “value” | cellpadding = “value”>content</table>`

## Example:

```

<!DOCTYPE html>
<!--
File: table10.html
Author: Riki Sutradhar
Date: DD-MM-YYYY
Description: Example of cellspacing and cellpadding attributes for HTML table.
-->

<html>
    <head>
        <title>cellspacing and cellpadding attributes for HTML table</title>

```

```

</head>

<body>
    <h2>Example of cellspacing and cellpadding attributes for HTML table.</h2>
    <table border = "1" cellspacing = "15" cellpadding = "15">
        <caption>Indian States with Their Capitals</caption>
        <tr>
            <td>Jharkhand</td>
            <td>Ranchi</td>
        </tr>
        <tr>
            <td>Bihar</td>
            <td>Patna</td>
        </tr>
        <tr>
            <td>West Bengal</td>
            <td>Kolkata</td>
        </tr>
        <tr>
            <td>Odisha</td>
            <td>Bhubaneswar</td>
        </tr>
    </table>
</body>
</html>

```

**Output:**

**Example of cellspacing and cellpadding attributes for HTML table.**

Indian States with Their Capitals	
Jharkhand	Ranchi
Bihar	Patna
West Bengal	Kolkata
Odisha	Bhubaneswar

## Spanning Multiple Rows or Columns

Cells within a HTML table can span multiple rows and multiple columns. By default, a cell has one row and one column. However, with the ‘rowspan’ attribute a cell can span more than one row, and with the ‘colspan’ attribute a cell can span more than one column.

### Syntax:

```
<td rowspan = "value">content</td>
<td colspan = "value">content</td>
```

### Example:

```
<!DOCTYPE html>
<!--
    File: table11.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of colspan and rowspan attributes for HTML table.
-->

<html>
    <head>
        <title>colspan and rowspan attributes for HTML table</title>
    </head>

    <body>
        <h2>Example of colspan Attribute for HTML Table.</h2>
        <table border = "1">
            <tr>
                <td colspan = "2">Low Level Language</td>
                <td colspan = "3">High Level Language</td>
            </tr>
            <tr>
                <td>Machine Language (1GL)</td>
                <td>Assembly Language (2GL)</td>
                <td>Procedural–Oriented Language (3GL)</td>
                <td>Problem–Oriented Language (4GL)</td>
                <td>Natural Language (5GL)</td>
            </tr>
        </table>

        <h2>Example of rowspan Attribute for HTML Table.</h2>
        <table border = "1">
            <tr>
                <td rowspan = "2">Low Level Language</td>
                <td>Machine Language (1GL)</td>
```

```

</tr>
<tr>
    <td>Assembly Language (2GL)</td>
</tr>
<tr>
    <td rowspan = "3">High Level Language</td>
    <td>Procedural–Oriented Language (3GL)</td>
</tr>
<tr>
    <td>Problem–Oriented Language (4GL)</td>
</tr>
<tr>
    <td>Natural Language (5GL)</td>
</tr>
</table>
</body>
</html>

```

## **Output:**

### **Example of colspan Attribute for HTML Table.**

Low Level Language	High Level Language			
Machine Language (1GL)	Assembly Language (2GL)	Procedural–Oriented Language (3GL)	Problem–Oriented Language (4GL)	Natural Language (5GL)

### **Example of rowspan Attribute for HTML Table.**

Low Level Language	Machine Language (1GL)
	Assembly Language (2GL)
High Level Language	Procedural–Oriented Language (3GL)
	Problem–Oriented Language (4GL)
	Natural Language (5GL)

## **Table Sections and Column Properties**

The World Wide Web Consortium (W3C) has included several table related elements that enable us to split tables into logical sections.

The World Wide Web Consortium (W3C) was founded in 1994 by Tim Berners-Lee after he left the European Organization for Nuclear Research (CERN, French pronunciation as ‘sɛʁn’; Conseil européen pour la recherche nucléaire) in October 1994. It was founded at the Massachusetts Institute of Technology (MIT) Laboratory for Computer Science with support from the European Commission, and the Defense Advanced Research Projects Agency, which had pioneered the ARPANET, one of the predecessors to the Internet. The consortium is made up of member organizations that maintain full-time staff working together in the development of standards for the World Wide Web. As of 5 March 2023, W3C had 462 members.

**Table Sections:** The `<thead>`, `<tbody>`, and `<tfoot>` container tags denote the start of a table header, body, and footer respectively. By separating the different sections of the table, we can control row and column attributes for each section of the table. Web browsers can use these tags to enable scrolling of the table body independently of the header and footer. Also, when printing a large table that spans multiple pages, these tags can enable the table header and footer to be printed at the top and bottom of each page.

- `<thead>` Tag: It is used to enclose a group of rows in a table as a header. The `<thead>` tag makes the content bold and horizontally aligns to the center. We should use `<th>` tag instead of `<td>` tag within the `<thead>` element.
- `<tbody>` Tag: It is used to encapsulate a set of table rows, indicating that they comprise the body of the table.
- `<tfoot>` Tag: It is used to enclose a group of rows in a table as a footer. The `<tfoot>` tag makes the content bold and horizontally aligns to the center.

**Syntax:**

```
<thead>content</thead>
<tbody>content</tbody>
<tfoot>content</tfoot>
```

**Example:**

```
<!DOCTYPE html>
<!--
    File: table12.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of thead, tbody, and tfoot tags for HTML table.
-->

<html>
    <head>
        <title>thead, tbody, and tfoot Tags for HTML Table</title>
    </head>
    <body>
        <h2>Example of thead, tbody, and tfoot Tags for HTML Table.</h2>
        <table border = "1">
            <thead>
                <tr>
                    <th>Year</th>
                    <th>Title</th>
```

```

<th>Role</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>Chigurida Kanasu</td>
<td>Pankaj</td>
<td>Uncredited role; Kannada film</td>
</tr>
<tr>
<td>2009</td>
<td>Pyaar Bina Chain Kahan Re</td>
<td>Villain</td>
<td>Bhojpuri film</td>
</tr>
<tr>
<td>2016</td>
<td>Mango Dreams</td>
<td>Salim</td>
<td>English film</td>
</tr>
<tr>
<td>2021</td>
<td>Mimi</td>
<td>Bhanu</td>
<td>Filmfare Award for Best Supporting Actor</td>
</tr>
</tbody>
<tfoot>
<tr>
<th colspan = "4">Total 4 Records Found.</th>
</tr>
</tfoot>
</table>
</body>
</html>

```

## Output:

### Example of thead, tbody, and tfoot Tags for HTML Table.

Year	Title	Role	Notes
2003	Chigurida Kanasu	Pankaj	Uncredited role; Kannada film
2009	Pyaar Bina Chain Kahan Re	Villain	Bhojpuri film
2016	Mango Dreams	Salim	English film
2021	Mimi	Bhanu	Filmfare Award for Best Supporting Actor
<b>Total 4 Records Found.</b>			

**Column Properties:** The <colgroup> and <col> tags specifies column properties of HTML table.

(i) **<colgroup> Tag:** The <colgroup> tag specifies a group of one or more columns in a table for formatting. This tag is useful for applying styles to entire columns, instead of repeating the styles for each cell, for each row. This tag must be a child of a <table> tag, after <caption> tag and before <thead>, <tbody>, <tfoot>, and <tr> tags.

The <col> tag is sometimes used within the <colgroup> tag to define different properties of a column. Most of the attributes of <colgroup> tag are not supported in HTML5.

**Syntax:**

```
<colgroup>
    <col></col>
    <col></col>
    ...
</colgroup>
```

}      <col> tags are optional.

**Attributes:** Some of the attributes of the <colgroup> tag are listed below.

- *align*: It is used to align the text or content in the group of columns. The values of the ‘align’ attribute are left, right, center, justify, and char.
- *char*: It is used to align the character in a column group and the value of this attribute is the character.
- *charoff*: It is used to sets the number of characters that will be aligned from the character specified by the ‘char’ attribute. The value of this attribute is in numeric form.
- *span*: It is used to specify the number of columns that have <colgroup> tag. The value of this attribute is in numeric form.
- *valign*: It specifies the vertical alignment of content in a <colgroup> tag. The values of the ‘valign’ attribute are top, middle, bottom, and baseline.
- *width*: It defines the width of a column group. The values of this attribute are in terms of pixels and in terms of percentage relative to its parent element.

## **Example:**

```
<!DOCTYPE html>
<!--
    File: table13.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of colgroup tag for HTML table.
-->

<html>
    <head>
        <title>colgroup Tag for HTML Table</title>
    </head>

    <body>
        <h2>Example of colgroup Tag for HTML Table.</h2>
        <table border = "1">
            <colgroup span = "2" bgcolor = "yellow"></colgroup>
            <tr>
                <td>Year</td>
                <td>Title</td>
                <td>Role</td>
                <td>Notes</td>
            </tr>
            <tr>
                <td>2003</td>
                <td>Chigurida Kanasu</td>
                <td>Pankaj</td>
                <td>Uncredited role; Kannada film</td>
            </tr>
            <tr>
                <td>2009</td>
                <td>Pyaar Bina Chain Kahan Re</td>
                <td>Villain</td>
                <td>Bhojpuri film</td>
            </tr>
            <tr>
                <td>2016</td>
                <td>Mango Dreams</td>
                <td>Salim</td>
                <td>English film</td>
            </tr>
            <tr>
                <td>2021</td>
                <td>Mimi</td>
                <td>Bhanu</td>
                <td>Filmfare Award for Best Supporting Actor</td>
            </tr>
        </table>
    </body>
</html>
```

```

</tr>

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

```

**Output:**

### Example of colgroup Tag for HTML Table.

Year	Title	Role	Notes
2003	Chigurida Kanasu	Pankaj	Uncredited role; Kannada film
2009	Pyaar Bina Chain Kahan Re	Villain	Bhojpuri film
2016	Mango Dreams	Salim	English film
2021	Mimi	Bhanu	Filmfare Award for Best Supporting Actor

(ii) **<col> Tag:** The <col> tag specifies column properties for each column within a <colgroup> element. <col> tag is useful for applying styles to entire columns, instead of repeating the styles for each cell, for each row. Most of the attributes of <col> tag are not supported in HTML5.

**Syntax:** <col attribute\_name = “value”></col>

**Attributes:** Some of the attributes of the <col> tag are listed below.

- *align*: It is used to align the text or content in the group of columns. The values of the ‘align’ attribute are left, right, center, justify, and char.
- *char*: It is used to align the character in a column group and the value of this attribute is the character.
- *charoff*: It is used to sets the number of characters that will be aligned from the character specified by the ‘char’ attribute. The value of this attribute is in numeric form.
- *span*: It is used to specify the number of columns that have <colgroup> tag. The value of this attribute is in numeric form.
- *width*: It defines the width of a column group. The values of this attribute are in terms of pixels and in terms of percentage relative to its parent element.
- *style*: It is used to define the CSS to modify the column’s properties.

## Example:

```
<!DOCTYPE html>
<!--
    File: table14.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of col tag for HTML table.
-->

<html>
    <head>
        <title>col Tag for HTML Table</title>
    </head>

    <body>
        <h2>Example of col Tag for HTML Table.</h2>
        <table border = "1">
            <colgroup>
                <col span = "2" bgcolor = "lightblue"></col>
                <col span = "2" bgcolor = "lightgreen"></col>
            </colgroup>
            <tr>
                <td>Year</td>
                <td>Title</td>
                <td>Role</td>
                <td>Notes</td>
            </tr>
            <tr>
                <td>2003</td>
                <td>Chigurida Kanasu</td>
                <td>Pankaj</td>
                <td>Uncredited role; Kannada film</td>
            </tr>
            <tr>
                <td>2009</td>
                <td>Pyaar Bina Chain Kahan Re</td>
                <td>Villain</td>
                <td>Bhojpuri film</td>
            </tr>
            <tr>
                <td>2016</td>
                <td>Mango Dreams</td>
                <td>Salim</td>
                <td>English film</td>
            </tr>
            <tr>
                <td>2021</td>
```

```

        <td>Mimi</td>
        <td>Bhanu</td>
        <td>Filmfare Award for Best Supporting Actor</td>
    </tr>

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

```

### Output:

#### Example of col Tag for HTML Table.

Year	Title	Role	Notes
2003	Chigurida Kanasu	Pankaj	Uncredited role; Kannada film
2009	Pyaar Bina Chain Kahan Re	Villain	Bhojpuri film
2016	Mango Dreams	Salim	English film
2021	Mimi	Bhanu	Filmfare Award for Best Supporting Actor

#### Table as a Design Tool

A website layout is very important to give better look to our website. It takes considerable time to design a website's layout with great look and feel. We can create a good layout using simple HTML tables.

The HTML tables are created using the `<table>` tag in which the `<tr>` tag is used to create table rows and `<td>` tag is used to create table data (or, data cells). Inside these cells, we can add contents other than normal text like image, link, list, tables etc.

### Example:

```

<!DOCTYPE html>
<!--
    File: table15.html
    Author: Riki Sutradhar
    Date: DD-MM-YYYY
    Description: Example of website layout using HTML table.
-->

<html>
    <head>
        <title>Example of Website Layout Using HTML Table</title>
    </head>

```

```

<body>
    <h2 align = "center">Example of Website Layout Using HTML Table</h2>
    <table border = "2" bordercolor = "blue" width = "98%" align = "center">
        <tr>
            <td height = "55" align = "center" colspan = "3">WEBSITE LOGO AND
NAME</td>
        </tr>
        <tr>
            <td width = "15%" align = "center">MENU</td>
            <td width = "70%" height = "400" align = "center">We Can write our main
content here</td>
            <td width = "15%" align = "center">ADVERTISEMENT</td>
        </tr>
        <tr>
            <td height = "55" align = "center" colspan = "3">FOOTER</td>
        </tr>
    </table>
</body>
</html>

```

## Output:

**Example of Website Layout Using HTML Table**

WEBSITE LOGO AND NAME		
MENU	We Can write our main content here	ADVERTISEMENT
FOOTER		

HTML tables should be used for tabular data; this is what they are designed for. Unfortunately, a lot of programmer used to use HTML tables to layout websites. Now-a-days, all modern websites are using CSS and JavaScript based framework to come up with responsive and dynamic websites.

