

Introduction to

HTML

Web Design - Hands-on CSS

Lesson

FOUR

What will we  
**cover** in this  
lesson?

# Lesson 4: Table markup

What are tables?

<table> element

<tr> element

<td> element

<th> element

SUMMARY attribute

<caption> element

<thead> element

<tfoot> element

<tbody> element

<col> element

<colgroup> element

What is needed?

Open the  
exercise folder

Open the folder called  
“start” and then open the file  
called “**lesson04.htm**” using  
some sort of HTML editor.

**Note:**

What are tables?

The HTML table allows authors to **arrange data into rows and columns of cells**. This is often referred to as “tabular data”.



If the information would make sense **laid out in a spreadsheet**, it is almost certainly tabular data.


The HTML table **should not be used** to help authors control the layout of web documents.

We can create data tables  
**using a range of elements**  
including tables (<table>),  
table rows (<tr>) and table  
cells (<td>).

Step 1:

<table> element

The **<table> element**  
represents the table itself.  
The element requires a start  
and end tag.

A code editor window with a light gray title bar and a vertical scrollbar on the right. The window contains two lines of blue text: <table> and </table>.

```
<table>  
</table>
```

# Exercise

Let's add the table  
element...

<table>

Col1 header

Col2 header

Row 1 - Cell 1

Row 1 - Cell 2

Row 2 - Cell 1

Row 2 - Cell 2

</table>

Step 2:

<tr> element



The **<tr> element** represents a table row.

```
<table>  
  <tr>  
  <tr>  
  </tr>  
</table>
```

# Exercise

Let's add some table rows...

```
<table>
```

```
  <tr>
```

```
Col1 header
```

```
Col2 header
```

```
  </tr>
```

```
  <tr>
```

```
Row 1 - Cell 1
```

```
Row 1 - Cell 2
```

```
  </tr>
```

```
  <tr>
```

```
Row 2 - Cell 1
```

```
Row 2 - Cell 2
```

```
  </tr>
```

```
</table>
```

Step 3:

<td> element

The **<td> element**  
represents a table cell -  
used to contain table data.

```
<table>
  <tr>
    <td></td>
    <td></td>
  </tr>
</table>
```

# Exercise

Let's add some table cells...

```
<table>
  <tr>
Col1 header
Col2 header
  </tr>
  <tr>
    <td>Row 1 - Cell 1</td>
    <td>Row 1 - Cell 2</td>
  </tr>
  <tr>
    <td>Row 2 - Cell 1</td>
    <td>Row 2 - Cell 2</td>
  </tr>
</table>
```

Step 4:

`<th>` element



The **<th> element** represent a header cell - used to container header information that describes column and row information.

A screenshot of a code editor window with a light gray border and a white background. The text is in a blue monospace font. On the right side of the window, there are standard window controls: a close button (a small rectangle) at the top, and a vertical scrollbar with a blue handle and a small upward-pointing arrow below it.

```
<th>Col1 header</th>
```

	June	July
Sydney	row 1 cell 2	row 1 cell 3
Melbourne	row 2 cell 2	row 2 cell 3
Brisbane	row 3 cell 2	row 3 cell 3
Perth	row 4 cell 2	row 4 cell 3

These header cells are also **used by assistive devices** to describe the contents of the table.

A screenshot of a code editor window with a light gray border and a white background. The text is in a blue monospaced font. On the right side of the window, there are standard window controls: a close button (a small rectangle) at the top, and a vertical scrollbar with a blue slider and a small upward-pointing arrow below it.

```
<th>Col1 header</th>
```

# Exercise

Let's add some table headers...

```
<table>
  <tr>
    <th>Col1  header</th>
    <th>Col2  header</th>
  </tr>
  <tr>
    <td>Row 1  -  Cell  1</td>
    <td>Row 1  -  Cell  2</td>
  </tr>
  <tr>
    <td>Row 2  -  Cell  1</td>
    <td>Row 2  -  Cell  2</td>
  </tr>
</table>
```

Note:

SUMMARY

attribute

The **SUMMARY** attribute provides a summary of the contents of the table for assistive technologies.

A screenshot of a code editor window with a light gray border and a white background. The text is color-coded: the opening tag <table is blue, the attribute summary= is purple, the value "Summary of table" is green, and the closing tag > is blue. On the right side of the window, there is a vertical scrollbar with a blue handle and a small upward-pointing arrow.

```
<table summary="Summary of table">
```

The SUMMARY attribute is now **considered obsolete** (should not be used) in HTML5.



There are a range of solutions for providing a summary of the table. One solution would be to provide the summary as a **simple paragraph of text associated with the table.**

Step 5:

<caption> element

The **<caption> element** provides a caption, or a short description for the table.

A code editor window with a light gray border and a white background. The text is in a monospaced font. The code is: `<caption>Table caption here</caption>`

```
<caption>Table caption here</caption>
```

The <caption> element must be inserted **immediately after** the <table> start tag.

A code editor window with a light gray border and a white background. It contains two lines of HTML code in a blue monospaced font. The first line is <table> and the second line is <caption>Table caption here</caption>. The window has a standard macOS-style title bar with a red, yellow, and green button on the right side.

```
<table>  
  <caption>Table caption here</caption>
```

# Exercise

Let's add a caption...

```
<table>
  <caption>Table caption here</caption>
  <tr>
    <th>Col1 header</th>
    <th>Col2 header</th>
  </tr>
  <tr>
    <td>Row 1 - Cell 1</td>
    <td>Row 1 - Cell 2</td>
  </tr>
  <tr>
    <td>Row 2 - Cell 1</td>
    <td>Row 2 - Cell 2</td>
  </tr>
</table>
```

Step 6:

<thead> element

The contents of a data table can be **broken into three separate areas**: The table header (<thead>), table body (<tbody>) and table footer (<tfoot>).



The **<thead> element** is used to group the header content inside a data table.

```
<thead>
  <tr>
    <th>Col1  header</th>
    <th>Col2  header</th>
  </tr>
</thead>
```

The **<thead> element** must have one or more <tr> elements inside.

```
<thead>
  <tr>
    <th>Col1  header</th>
    <th>Col2  header</th>
  </tr>
</thead>
```

The <thead> element **must be placed inside a <table> element.**

```
<table>
  <thead>
    <tr>
      <th>Col1  header</th>
      <th>Col2  header</th>
    </tr>
  </thead>
```

It must be placed **directly after the <table> start tag** or after the <caption> element, if present.

```
<table>
  <caption>Table caption here</caption>
  <thead>
    <tr>
      <th>Col1 header</th>
      <th>Col2 header</th>
```

The `<thead>` element must **come before** any `<tbody>`, `<tfoot>` or `<tr>` elements.

```
<table>
  <thead>
</thead>
  <tfoot>
</tfoot>
  <tbody>
  </tbody>
</table>
```

Some browsers allow you to **scroll the table header content** separately to the table body content.

When printing a table that spans more than one page, the table header will be **printed at the top of each page** for reference.

# Exercise

Let's wrap a table header  
around our first row...



```
<table>
  <caption>Table caption here</caption>
  <thead>
    <tr>
      <th>Col1 header</th>
      <th>Col2 header</th>
    </tr>
  </thead>
  <tr>
    <td>Row 1 - Cell 1</td>
    <td>Row 1 - Cell 2</td>
  </tr>
  <tr>
    <td>Row 2 - Cell 1</td>
    <td>Row 2 - Cell 2</td>
  </tr>
```

Step 7:

<tfoot> element

The **<tfoot> element** is used to group the footer content inside a data table.

```
<tfoot>
  <tr>
    <th>Col1  header</th>
    <th>Col2  header</th>
  </tr>
</tfoot>
```

The **<tfoot> element** must have one or more **<tr>** elements inside.

```
<thead>
  <tr>
    <th>Col1  header</th>
    <th>Col2  header</th>
  </tr>
</thead>
```

The `<tfoot>` element **must be placed inside a `<table>` element.**

```
<table>
  <thead>
</thead>
  <tfoot>
</tfoot>
```

It must be **placed after** any  
<caption> or <thead>.

```
<table>
  <caption>Table caption here</caption>
  <thead>
</thead>
  <tfoot>
</tfoot>
  <tbody>
</tbody>
</table>
```

It must **come before** any  
<tbody> or <tr> elements.

```
<table>
  <caption>Table caption here</caption>
  <thead>
</thead>
  <tfoot>
</tfoot>
  <tbody>
</tbody>
</table>
```

The `<tfoot>` is **only needed if the table is long**, and an additional reference at the bottom of the table would be helpful (ie. avoid having to scroll to the top of the table).



When printing a table that spans more than one page, the table footer will be **printed at the bottom of each page** for reference.

# Exercise

Let's create a new table footer...

```
<table>
  <caption>Table caption here</caption>
  <thead>
    <tr>
      <th>Col1 header</th>
      <th>Col2 header</th>
    </tr>
  </thead>
  <tfoot>
    <tr>
      <th>Col1 header</th>
      <th>Col2 header</th>
    </tr>
  </tfoot>
  <tr>
    <td>Row 1 - Cell 1</td>
    <td>Row 1 - Cell 2</td>
```

Step 8:

<tbody> element

The **<tbody> element** is used to group the body content inside a data table.

```
<tbody>
  <tr>
    <td>Row 1 - Cell 1</td>
    <td>Row 1 - Cell 2</td>
  </tr>
</tbody>
```

The **<tbody> element** must have one or more **<tr>** elements inside.

```
<tbody>
  <tr>
    <td>Row 1 - Cell 1</td>
    <td>Row 1 - Cell 2</td>
  </tr>
</tbody>
```

The `<tbody>` element **must be placed inside a `<table>` element.**

```
<table>
  <thead>
</thead>
  <tfoot>
</tfoot>
  <tbody>
</tfoot>
```

It must be **placed after** any  
<caption>, <thead> or  
<tfoot> elements.

```
<table>
  <caption>Table caption here</caption>
  <thead>
</thead>
  <tfoot>
</tfoot>
  <tbody>
</tbody>
```



There can be **more than one** `<tbody>` element inside a single table.

```
<tfoot>
</tfoot>
<tbody>
</tbody>
<tbody>
</tbody>
</table>
```

# Exercise

Let's wrap a table body  
around our content rows...

```
<tr>
    <th>Col1  header</th>
    <th>Col2  header</th>
</tr>
</tfoot>
<tbody>
    <tr>
        <td>Row 1  -  Cell  1</td>
        <td>Row 1  -  Cell  2</td>
    </tr>
    <tr>
        <td>Row  2  -  Cell  1</td>
        <td>Row  2  -  Cell  2</td>
    </tr>
</tbody>
</table>
```


Step 9:

<col> element

HTML tables are laid out in rows and cells. Even though these cells appear in column form, **there is no structural column element.**

The **<col> element** does not group columns structurally. However, it does allow us to define attributes to all the cells in one or more columns.

header 1	header 2	header 3
row 1 cell 1	row 1 cell 2	row 1 cell 3
row 2 cell 1	row 2 cell 2	row 2 cell 3
row 3 cell 1	row 3 cell 2	row 3 cell 3
row 4 cell 1	row 4 cell 2	row 4 cell 3



**<col> allows us to  
define attributes for all  
cells in the column**

This means we could set the background color or text alignment for a column of cells, **without having to style each cell individually.**



The `<col>` must be **after the optional `<caption>`** and before the optional `<thead>`.

```
<table>
  <caption>Table caption here</caption>
  <col>
  <col>
  <thead>
    <tr>
```

The `<col>` element is a **void element** so does not require a closing tag.

A screenshot of a code editor window with a light gray border and a white background. The window contains two lines of blue text, each being the HTML tag <col>. The window has a standard macOS-style title bar with a red, yellow, and green button on the top right, and a vertical scrollbar on the right side.

```
<col>  
<col>
```

In order to identify specific `<col>` elements, **classes may need to be applied** to each `<col>`.

```
<table>
  <caption>Table caption here</caption>
  <col class="col1">
  <col class="col2">
  <thead>
    <tr>
```

We could then use **a CSS rule** like this to apply a background-color to all cells within the column.

A screenshot of a code editor window with a light gray border and a white background. The code is written in a monospaced font. The selector '.col1' is in black, the opening curly brace '{' is in black, 'background-color:' is in purple, 'yellow;' is in green, and the closing curly brace '}' is in black. The window has a standard macOS-style title bar with a red, yellow, and green button on the right side.

```
.col1 { background-color: yellow; }
```

# Exercise

Let's add some cols to our table...

```
<table>
  <caption>Table caption here</caption>
  <col class="col1">
  <col class="col2">
  <thead>
    <tr>
      <th>Col1 header</th>
      <th>Col2 header</th>
    </tr>
  </thead>
  <tfoot>
    <tr>
      <th>Col1 header</th>
      <th>Col2 header</th>
    </tr>
  </tfoot>
```

Step 10:

<colgroup> element

The **<colgroup> element** is used to group sets of <col> elements.

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



The `<colgroup>` element allows you to **set attributes for a number of `<cols>`** without having to set them on each individual `<col>`.

The `<colgroup>` must be **after the `<caption>`** and before the `<thead>`.

```
<table>
  <caption>Table caption here</caption>
  <colgroup>
    <col class="col1">
    <col class="col2">
  </colgroup>
  <thead>
```

You can use **more than one** `<colgroup>` element.

```
<colgroup class="colgroup1">
  <col class="col1">
  <col class="col2">
</colgroup>
<colgroup class="colgroup2">
  <col class="col3">
</colgroup>
<colgroup class="colgroup3">
  <col class="col4">
</colgroup>
```

# Exercise

Let's add a colgroup...

```
<table>
  <caption>Table caption here</caption>
  <colgroup class="colgroup1">
    <col class="col1">
    <col class="col2">
  </colgroup>
  <thead>
    <tr>
      <th>Col1 header</th>
      <th>Col2 header</th>
    </tr>
  </thead>
  <tfoot>
    <tr>
      <th>Col1 header</th>
      <th>Col2 header</th>
```

**Note:**  
what is needed?

In many cases, **you do not need to include `<col>` or `<colgroup>` elements.** Even the `<caption>` element may not be needed if there is enough context associated with the table.

However, **all tables should include `<th>` elements** to help identify the cells.



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