

Lesson 7: Creating Tables

OBJECTIVES

You will be able to:

- specify basic table attributes.
- add table captions.
- create rows and columns.

HTML table tags and attributes provide Web page designers with formatting options for many types of information, not just the facts and figures we find in many printed tables. Because nearly any HTML element can be placed in a table cell, tables can provide a shell for presenting visual elements and text in a clear, pleasing layout. It is sometimes helpful to think of a table as a way to organize a web page, regardless of the page content..



*A **table** is a collection of numbers, words, or graphics arranged in related rows and columns.*

Each row and column consists of one or more *cells*.



Cells are areas formed by the intersection of a row and a column.

Figure 7-1 displays a table listing tour prices, from the Surf 'n Turf Web site.

Cycling Tour Schedule		
— DATES	LOCATION	PRICE
June 1 - June 18	Paris, France	\$1200 per person
July 1 - July 18	Paris, France	\$1200 per person
July 20 - August 8	Paris, France	\$1200 per person

Figure 7-1: HTML Table—Surf 'n Turf Web Site

The following table shows the basic HTML table elements. The <TABLE> element is set apart because it provides a context for the others. Outside of the <TABLE> tags, the other tags would not be recognized by servers or browsers.

<i>Table</i>	<TABLE> . . . </TABLE>	Defines the table. All other table tags are placed inside this pair.
<i>Table caption</i>	<CAPTION> . . . </CAPTION>	Defines a caption, which may be above or below the table.
<i>Table row</i>	<TR> . . . </TR>	Defines a row in the table, starting from the left edge.
<i>Table cells</i>	<TH> . . . </TH> <TD> . . . </TD>	Defines a block of space within a row. Cells may be table header (TH) or table data (TD) cells.

The <TABLE> tag and its member elements can accept a large number of attributes. It takes some engineering to create successful tables in HTML, because there are few defaults and many possibilities for customizing the table and its components. Some Web page designers recommend using a table editor or an HTML editor with a good table wizard, but you can certainly create tables in Notepad or any other plain text editor.

Because you have to translate HTML tags and attributes into spatial relationships as you build a table, it is a good idea to sketch out your table or to follow the model of an existing table design. Many Web sites include examples of good table design, along with the source code used to create it.

In this lesson, you will format basic table attributes, add table captions, and create rows and columns.

Formatting Basic Table Attributes

The `<TABLE>` tag and its ending `</TABLE>` tag enclose all the elements of a table. Like most Web page components, the `<TABLE>` tags are included within the `<BODY>` tags of your HTML documents.

The `<TABLE>` tag can contain any of the attributes defined in the following table:

Attribute	Definition
<i>ALIGN</i>	Positions a table within the browser window. Accepts the values LEFT and RIGHT.
<i>BACKGROUND</i>	Allows you to add a background image to the table, in much the way you add a background image to a Web page (Internet Explorer only).
<i>BGCOLOR</i>	Adds background color to a table. Accepts RGB color values and standard color names.
<i>BORDER</i>	Adds borders around a table. Border widths are specified in pixels. By default, no borders display, but it is a good idea to add <code>BORDER=0</code> to be sure.
<i>BORDERCOLOR</i>	Shades the main portion of a border. Accepts RGB color values and standard color names. (Internet Explorer only)
<i>BORDERCOLORLIGHT</i>	Sets the highlight color of a border. Accepts RGB color values and standard color names. (Internet Explorer only)
<i>BORDERCOLORDARK</i>	Sets the shadow color of a border. Accepts RGB color values and standard color names. (Internet Explorer only)
<i>CELLPADDING</i>	Controls the amount of space between the cell content and the cell border. One pixel is the default setting.
<i>CELLSPACING</i>	Controls the amount of space between adjacent cells in a table (above, below, and on each side of each cell).
<i>HSPACE</i>	Adds space to the left and right of a table. Zero is the default setting.
<i>COLS</i>	Value is the number of columns in the table. For long tables, gives the browser "advance notice," thereby permitting faster display.

<i>VALIGN</i>	Sets the vertical alignment within all cells of a table. Accepts the values TOP and BOTTOM. The default is to vertically center elements within each cell.
<i>VSPACE</i>	Adds space above or below a table. Zero is the default setting.
<i>WIDTH</i>	Defines the width of a table, in pixels or percentage of browser window width. The default is to display a table only as wide as necessary to show all of the table information.

In the following exercises, you will use the <TABLE> tag, define table alignment and width, and add borders to tables.

Using the <TABLE> Tag

The <TABLE> tag sets the parameters of a table. All table elements, such as rows, cells, and table captions, must appear between the opening and ending <TABLE> tags.

Many table parameters are set by adding attributes to the opening <TABLE> tag, rather than to individual rows or cells. Any attributes you assign within the <TABLE> tag affect the entire table.

Learning Lab

In this exercise, you will use the <TABLE> tag.

1. In Notepad, create a standard HTML document titled *Creating Tables*.
2. Click after the <BODY> tag, press **<Enter>**, then type **<TABLE>**.

Designates the start of a table.

Press **<Enter>** three times, then type **</TABLE>**.

Indicates the end of the table.

You are now ready to add attributes to your table structure.

Assigning Table Alignment and Width Attributes

Several events occur by default when a browser encounters the <TABLE> tag: The browser:

- Breaks the current line of text.

- Aligns the table in accordance with the current alignment of the document body text (left, right, or centered).
- Displays the table at the width necessary to show the elements between the <TABLE> tags.
- Restarts the body text below the table.

To override the browser's default alignment and width settings, you use the ALIGN and WIDTH attributes within the <TABLE> tag.

Note: The decision to run text around a table should be based on the content, purpose, and design of your information. If you want your table to interrupt the text, you can use empty cells to fill out its width or place a picture next to the table.

The ALIGN attribute enables you to align your tables and flow text around them, just as it does with images. The ALIGN attribute accepts these values:

<i>ALIGN=LEFT</i>	Table displays at left, text flows around table on right.
<i>ALIGN=RIGHT</i>	Table displays at right, text flows around table on left.
<i>ALIGN=CENTER</i>	Table displays in center; text wraps on either side. This attribute is supported in all newer browsers.

To center a table, you can also place the <TABLE> tags within <CENTER> and </CENTER> tags. The table will be centered, but body text will not flow around it. Another way to center a table and flow text around it is with the following expression:

```
<DIV ALIGN=CENTER><TABLE> . . . </TABLE></DIV>
```

The WIDTH attribute overrides the default width set by most browsers, which is to show a table only as wide as necessary. WIDTH accepts either integers or percentages, as in the following examples:

```
<TABLE WIDTH=300>
```

Displays a table 300 pixels wide, including borders.

```
<TABLE WIDTH="75%">
```

Displays a table 75 percent as wide as the browser window, including borders.

```
<TABLE WIDTH="100%">
```

Displays the table at full screen width.

When you want a table to appear as a certain proportion of a Web page, use a percentage value for the table width. To present a table that won't change with a user's browser window size, assign a width in pixels, but be aware that the browser resolution will still affect the table appearance.

Learning Lab

In this exercise, you will assign table alignment and width attributes.

1. In the `<TABLE>` tag, click after the word *TABLE*, press `<Space>`, then type `ALIGN=RIGHT`.

Aligns the table to the right margin, and indicates that body text will flow to the left of the table.

2. Press `<Space>`, then type `WIDTH=400`.

Indicates that the table will always appear 400 pixels wide, regardless of the size of the user's browser window.

Adding Borders to Tables

You can set table borders of different thickness by using the `BORDER` attribute within the `<TABLE>` tag. The `BORDER` attribute accepts integer values to designate the width of the borders in pixels. By default, tables are displayed without borders.

Learning Lab

In this exercise, you will add borders to a table.

1. Place your cursor immediately after `WIDTH=400`, press `<Space>`, then type `BORDER=2`.

Adds a 2-pixel border around the table.

2. Save the document as `C:\My Documents\HTML2\Table1.htm`.

Your HTML source code should appear as shown in Figure 7-2.

```
<HTML>
<HEAD>
<TITLE>Creating Tables</TITLE>
</HEAD>

<BODY>

<TABLE ALIGN=RIGHT WIDTH=400 BORDER=2>

</TABLE>

</BODY>
</HTML>
```

Figure 7-2: Formatting Basic Table Attributes—Source Code

Adding Table Captions

You use the `<CAPTION>` and its accompanying `</CAPTION>` tag to create a caption that introduces the table's contents. The `<CAPTION>` tag set can appear anywhere within the `<TABLE>` tags, but Web designers usually place it immediately after the opening `<TABLE>` tag.

The `<CAPTION>` tag set can contain most HTML elements, including images, text, and text formatting features, such as bold, italic, or heading sizes. By default, table caption text is displayed above a table and centered, but you can position it below the table if you like, or even at the right or left.

Note: If you place a caption at the bottom of the table, be sure that it can be found easily by viewers with smaller browser window settings or large font settings. If the viewer needs to scroll to find the caption, the caption will not serve to introduce the table content.

Netscape and Internet Explorer handle table caption alignment differently. Netscape recognizes TOP and BOTTOM as values for the ALIGN attribute. Internet Explorer recognizes ALIGN=TOP and ALIGN=BOTTOM, also, but it also accepts combinations like this one:

```
<CAPTION ALIGN=LEFT VALIGN=BOTTOM> . . . </CAPTION>
```

The VALIGN attribute accepts TOP and BOTTOM as values.

Figure 7-3 shows a table caption with ALIGN=LEFT VALIGN=BOTTOM settings as it appears in Internet Explorer. In Netscape, the caption would appear as it does in Figure 7-1, centered and top-aligned.

DATES	LOCATION	PRICE
June 1 - June 18	Paris, France	\$1200 per person
July 1 - July 18	Paris, France	\$1200 per person
July 20 - August 8	Paris, France	\$1200 per person

Cycling Tour Schedule

Figure 7-3: Table Caption Alignment—Internet Explorer

Learning Lab

In this exercise, you will add a table caption that can be recognized by both Netscape and Internet Explorer.

1. In Notepad, open *Table2.htm*, click in the area below the opening table tag, then type **<CAPTION** .

Begins the opening caption tag.

2. Press **<Space>** , then type **ALIGN=BOTTOM** .

Completes the opening caption tag, indicating to place the caption below the table.

3. Type **<I> This is my first table.</I>** .

Specifies the caption text and to italicize the caption.

4. Type **</CAPTION>** .

Completes the table caption.

Your table caption should appear as follows:

```
<CAPTION ALIGN=BOTTOM><I>This is my first table.</I></CAPTION>
```

Creating Rows and Columns

Now that you have assigned some table attributes and placed your table caption, you are ready to create rows, columns, and cells.

To create a row within a table, you use the `<TR>` and `</TR>` tag set. You repeat the set for each row of the table. To create data cells within a row, you use the `<TD>` and `</TD>` tags between each `<TR>` tag set.

In HTML, tables are built by starting with rows, and then defining cells within the rows. The basic format for creating a table with a single row containing three data cells is as follows:

```

<TR>
<TD>Cell 1</TD>
<TD>Cell 2</TD>
<TD>Cell 3</TD>
</TR>

```

Cells can contain almost anything you might put into the body of an HTML document, such as text, images, and forms. Table cells expand automatically to fit their contents.

Table formatting offers many alignment options, which can seem confusing until you have used them several times. In addition, Netscape and Internet Explorer use different alignment defaults, so it is best to use tags and attributes even if it seems that a default would achieve the same result.

You can use the following table as a reference for table formatting. *IE* stands for Internet Explorer; *NN* stands for Netscape Navigator. Both browsers default to `VALIGN=TOP` for the contents of a cell

<i>Element</i>	<i>Tag Pair</i>	<i>Default Horizontal Alignment</i>	<i>Alignment Options</i>
Row	<code><TR>...</TR></code>	IE: <code>ALIGN=LEFT</code> NN: <code>ALIGN=CENTER</code>	<code>ALIGN=LEFT, RIGHT, CENTER</code> <code>VALIGN=TOP, CENTER, BOTTOM, BASELINE</code>
Table Header Cell	<code><TH>...</TH></code>	IE: <code>ALIGN=LEFT</code> NN: <code>ALIGN=CENTER</code>	<code>ALIGN=LEFT, RIGHT, CENTER</code> <code>VALIGN=TOP, CENTER, BOTTOM, BASELINE</code>
Table Data Cell	<code><TD>...</TD></code>	IE: <code>ALIGN=LEFT</code> NN: <code>ALIGN=CENTER</code>	<code>ALIGN=LEFT, RIGHT, CENTER</code> <code>VALIGN=TOP, CENTER, BOTTOM, BASELINE</code>

Note: Internet Explorer also accepts `BACKGROUND`, `BGCOLOR`, `BORDERCOLOR`, `BORDERCOLORLIGHT`, and `BORDERCOLORDARK` attributes in `<TD>` tags. These tags enhance table cell borders, giving cells and cell contents a 3-D-like effect.

Learning Lab

In this exercise, you will create rows and cells.

1. In Notepad, click below the table caption source code, then type `<TR ALIGN=CENTER>`.

Places the opening row tag, indicates to center data horizontally within each cell in the row, and accepts the default vertical alignment.

2. Press `<Enter>`, then type `<TD>`.

Designates the first cell in the row.

3. Type **Row 1, Cell 1** .

Places text within the cell.

4. Type **</TD>** , then press **<Enter>** .

Completes the first cell in the row.

5. Type **<TD>Row 1, Cell 2</TD>** , then press **<Enter>** .

Creates and fills the second cell in the row.

6. Type **<TD>Row 1, Cell 3</TD>** , press **<Enter>** , then type **</TR>** .

Creates and fills the third cell in the row, then closes the row.

7. Press **<Enter>** , type **<TR ALIGN=CENTER>** , then press **<Enter>** .

Begins a second row.

8. Type `<TD>Row 2, Cell 1</TD>`, then press `<Enter>`.

Creates and fills the first cell in the second row.

9. Type `<TD></TD>`, then press `<Enter>`.

Creates an empty cell in the second row of the table.

10. Type `<TD>Row 2, Cell 3</TD>`, then press `<Enter>`.

Creates and fills the third cell in the second row of the table.

11. Type `<TD>Row 2, Cell 4</TD>`, then press `<Enter>`.

Adds a fourth cell to the second row, which will result in the creation of a fourth column for the entire table.

12. Type `</TR>`, then press `<Enter>`.

Completes the second row.

13. Type `<TR ALIGN=CENTER>`, then press `<Enter>`.

Begins a third row.

14. Type `<TD>Row 3, Cell 1</TD>`, press `<Enter>`, then type `</TR>`.

Creates and fills the first cell in row three, then closes the row.

Your source code should look like Figure 7-4

```

<HTML>
<HEAD>
<TITLE>Creating Tables</TITLE>
</HEAD>

<BODY>

<TABLE ALIGN=RIGHT WIDTH=400 BORDER=2>
<CAPTION ALIGN=BOTTOM><I>This is my first table</I>.</CAPTION>

<TR ALIGN=CENTER>
  <TD>Row 1, Cell 1</TD>
  <TD>Row 1, Cell 2<</TD>
  <TD>Row 1, Cell 3<</TD>
</TR>

<TR ALIGN=CENTER>
  <TD>Row 2, Cell 1</TD>
  <TD></TD>
  <TD>Row 2, Cell 3</TD>
  <TD>Row 2, Cell 4</TD>
</TR>

<TR ALIGN=CENTER>
  <TD>Row 3, Cell 1</TD>
</TR>

</TABLE>

</BODY>
</HTML>

```

Figure 7-4: Creating Rows and Columns—Source Code

15. Save the document as *C:\My Documents\HTML2\Table3.htm*, then view the document in your browser.

Saves, then displays the document as shown in Figure 7-5.

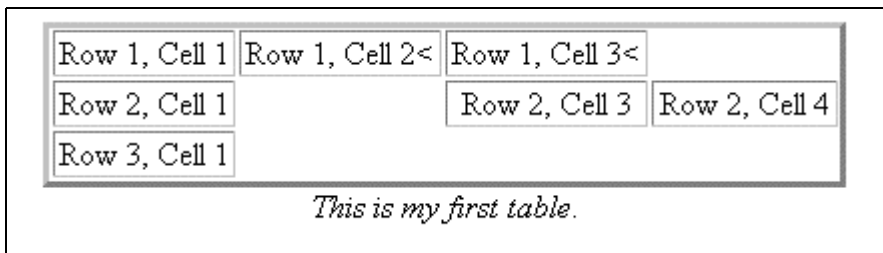


Figure 7-5: Creating Rows and Columns—Browser

Notice that the browser automatically created empty cells to complete Row 3 of the table.

Skills Challenge

Challenge Lab

Complete the following exercise:

1. In Notepad, create an HTML document titled *Practice Table* with a table frame indicating the table will display centered and 90 percent as wide as the user's browser window.

Hint: To center a table, you can use the `ALIGN=CENTER` attribute and value within the `<TABLE>` tags. For older browsers, use the `<CENTER>` and `</CENTER>` tag set outside the `<TABLE>` tags instead.

2. Add a 3-pixel border to the table.
3. Add a caption titled: *This is a practice table.*
4. Italicize the caption text, and position the caption below the table.
5. Create three rows of four columns each, containing the following letters centered within each cell:

A	B	C	D
A		C	
	B	C	D

Your source code should look like Figure 7-6.

```
<HTML>
<HEAD>
<TITLE>Practice Table</TITLE>
</HEAD>

<BODY>
<TABLE ALIGN=CENTER WIDTH="90%" BORDER=3>
<CAPTION ALIGN=BOTTOM><I>This is a practice table.</I></CAPTION>

<TR ALIGN=CENTER>
  <TD>A</TD>
  <TD>B</TD>
  <TD>C</TD>
  <TD>D</TD>
</TR>
<TR ALIGN=CENTER>
  <TD>A</TD>
  <TD></TD>
  <TD>C</TD>
</TR>
<TR ALIGN=CENTER>
  <TD></TD>
  <TD>B</TD>
  <TD>C</TD>
  <TD>D</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

Figure 7-6: Practice Table Source Code

- 6. Save the document as *C:\My Documents\HTML2\Practice Table.htm*, then view the document in your browser.

The document should look like Figure 7-7.

A	B	C	D
A		C	
	B	C	D

This is a practice table.

Figure 7-7: Practice Table—Browser

Assessment Questions

Part 1

In your browser, open the file named *C:\My Documents\Assess7.htm* to display the tic-tac-toe board. You are playing the Xs and can make the winning move. Change the source code to make yourself a winner, then display your winning play in your browser.

Part 2

Match the description in column 1 with the code, term, or attribute in column 2. Write the letter of the answer in the space provided.

___ 1 Code you must enter to create empty "filler" cells in a table.	a. Zero
___ 2 Default border width for a table	b. WIDTH=750
___ 3 Add this attribute and value to make a caption appear at the left of a table in Internet Explorer	c. None
___ 4 Defines a cell in a table.	d.<TR ALIGN= <i>n</i> >
___ 5 Defines the alignment of a row.	e.<CAPTION> </CAPTION>
___ 6 Defines the width of a table in pixels	f. <TD> . . . </TD>
___ 7 Must be included after the <TABLE> code but before any cells can be defined.	g. TR>
___ 8 Add this attribute and value to the <TABLE> tag to make text flow to the left of a table.	h. ALIGN=RIGHT
___ 9 Sets width of a table to three-quarters of the width of the browser window	i. ALIGN=:LEFT
___ 10 Marks text to be placed at the top or bottom of a table to describe its content.	j. WIDTH="75%"

Assessment Answers

Part 1

Place an X between the third set of <TD> tags in the third row of the table.

The result looks like this:

X	○	
	X	○
		X

Part 2

Match the description in column 1 with the code, term, or attribute in column 2. Write the letter of the answer in the space provided.

1. c.
2. a.
3. i.
4. f.
5. d.
6. b.
7. g.
8. h.
9. j.
10. e.

How To

How To

To format a basic table, define values for the basic <TABLE> attributes:

- **ALIGN** to position the table to the right, left, or center of the browser window.
- **BORDER** to set the width of a border around the table.
- **WIDTH** to set the total width of the table in pixels or percentage of browser window.

To insert a line of explanatory text at the top or bottom of the table, use the <CAPTION> ... </CAPTION> tags

To define rows and columns, use this basic tag set:

```
<TABLE>
<TR>
<TD>Cell 1</TD>
<TD>Cell 2</TD>
<TD>Cell 3</TD>
</TR>
</TABLE>
```

To add more rows and columns, repeat the same tag set:

```
<TABLE>
<TR>
<TD>Cell 4</TD>
<TD>Cell 5</TD>
<TD>Cell 6</TD>
</TR>
</TABLE>
```