

Incorporating Tables in Web Pages

OBJECTIVES

You will be able to:

- explain the advantages of HTML tables.
- describe alternatives to tables.
- list the standard table tags and their associated attributes.
- incorporate tables into HTML documents.
- create tables using cell, column and row attributes (cell alignment, table width, borders, cell padding and cell spacing).

Lesson 1: Incorporating Tables in Web Pages

This lesson teaches you how to construct HTML tables. You will learn to create tables with and without borders, modify border widths, create captions for tables, create table cells that span multiple columns and rows, add padding and spacing to cells, change column widths, change table width and height, set horizontal cell alignment, and change colors within tables.

What are tables?

Tables are useful for displaying information in an organized and visually appealing way. With the exception of some older versions, most browsers have the ability to display tables.

Tables provide an effective means of representing data and information in Web browsers that support tables, but can be visually unacceptable in browsers that don't support tables. Figure 1-1 illustrates a table displayed in Netscape 6.0, and Figure 1-2 displays a table in an older browser. As you can see, the table formatting information is lost in the second example, since this browser does not support the TABLE tag.

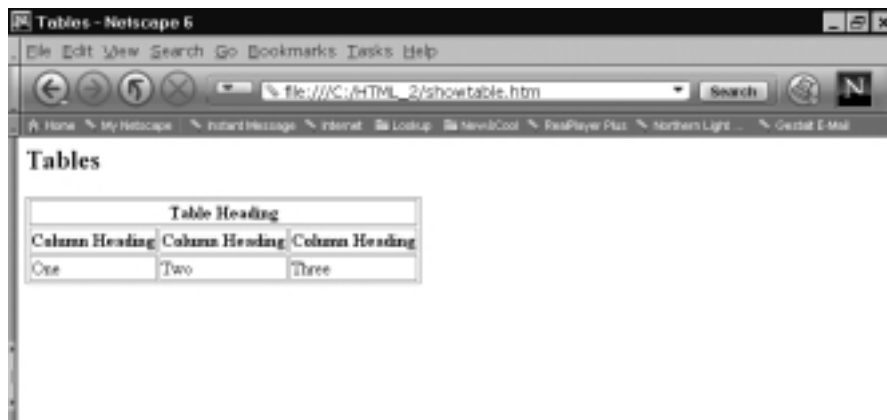


Figure 1-1: A Table in Netscape 6.0

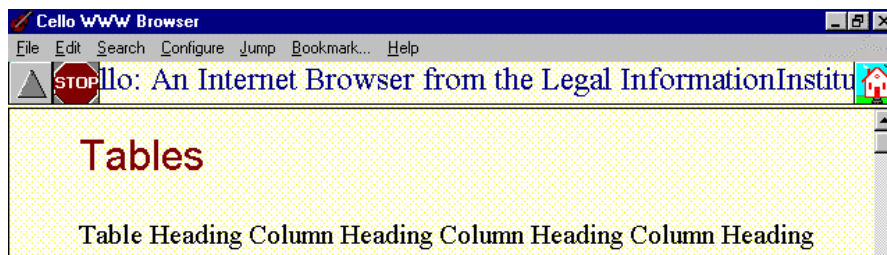


Figure 1-2: Browser That Does Not Support Tables

Alternatives to Tables

There are alternatives to using tables for displaying tabular data and information. They include representing the information in a format that can be used with Lists (ordered and unordered), and formatting plain text to appear as a table using the PREFORMATTED tag. The down side of the latter approach is that the text in the table must be displayed using a mono-spaced font (e.g. Courier or Monaco) instead of a proportional font, in which most text is displayed. Figure 1-3 illustrates these alternatives.



Figure 1-3: Alternative to Tables: Lists and Preformatted Text

Fortunately, most users are working with up-to-date browsers, and most web sites make frequent use of tables. Tables can dramatically increase the efficiency of the layout of the page, and deliver critical material in an easy-to-read format.

Table Tag and Attributes

A table consisting of simple rows and columns is relatively easy to create; however, some tables are constructed in a more complex arrangement and will require a more complex set of tags. HTML editor applications may simplify the creation of tables, but it is still important to understand the use of the table tag and its elements.

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A table is constructed from several elements that may include cells that contain data, a caption (optional), and heading cells (optional), as illustrated in Figure 1-4.

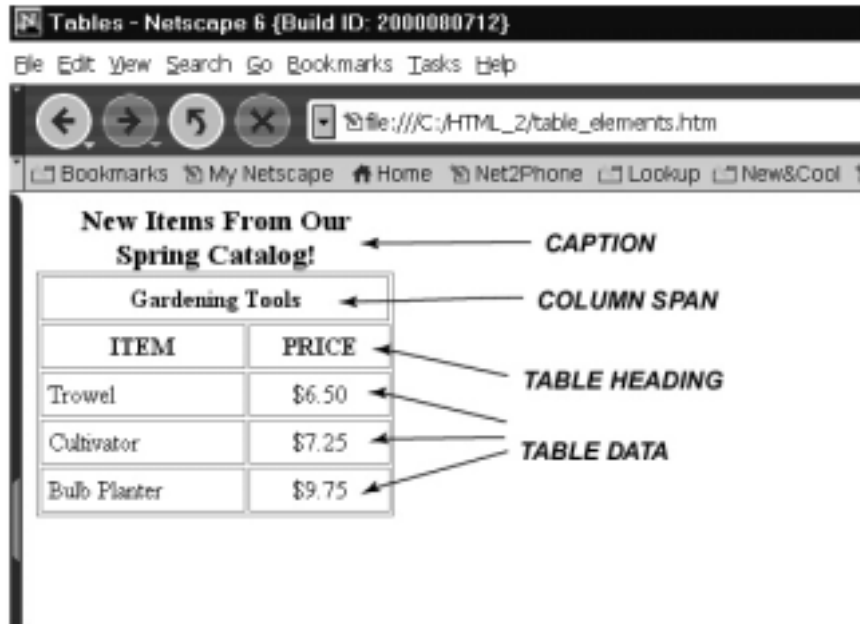


Figure 1-4: Elements of an HTML Table

The table tag, `<TABLE>`, is a closed tag that has several optional attributes. The table tag has two associated tags for creating rows and cells. You will begin by building a very simple table and add embellishment to it in later exercises.

Basic Table Tags

<i>Tag</i>	<i>Description</i>
<code><TABLE></code> and <code></TABLE></code>	Used to start and end the table structure.
<code><TR></code>	Indicates the beginning of each new row in the table.
<code><TD></code>	Begins each new cell of data, across the row.

It should be noted that the TABLE tag is a closed tag, i.e., `<TABLE></TABLE>`. The table ROW `<TR>` and table DATA `<TD>` tags generally do not require a closing tag, unless the table has another table nested within it.



Exercise 1-1: Creating a Table

In this exercise, you will learn how to construct a table. There are three basic elements necessary to create a table:

1. Create a new document using your text editor.

2. Enter the following HTML source code, noting the highlighted table tags:

```
<HTML>
<HEAD>
<TITLE> TABLES </TITLE>
</HEAD>
<BODY>

<TABLE>
<TR>
<TD>BULB<TD>BLOOMS<TD>HEIGHT
<TR>
<TD>Crocus<TD>Early Spring<TD>1-3”
<TR>
<TD>Tulip<TD>Mid Spring<TD>11-18”
<TR>
<TD>Iris<TD>Early Summer<TD>12-20”
</TABLE>

</BODY>
</HTML>
```

3. Save the file you just created and name it **table.htm**.
4. Switch to your Web browser and open the **table.htm** document.



Figure 1-5: Basic Table Structure

Table Borders and Spacing

There are several attributes for the TABLE tag that may be used to modify the table. These include the BORDER attribute that controls the width of the table border. The CELLPADDING attribute controls the space between the contents of each cell and the cell frame. The CELLSPACING controls the width of the cell frames. The values for the following attributes are measured in pixels.

<i>Attribute</i>	<i>Description</i>
BORDER	Use to specify the thickness of the shading around the outside of the table. The default is a zero width border.
CELLPADDING	Use to specify the amount of space within the cell borders.
CELLSPACING	Use to specify the amount of space between cells.



Exercise 1-2: Adding Border and Spacing Attributes

In this exercise, you will learn how to adjust the table border and spacing.

1. Return to the **table.htm** document in your text editor.
2. Modify the table tag with the attribute values shown:

```
<TABLE BORDER=3 CELLPADDING=9 CELLSPACING=6>
```

3. Save the changes.
4. Switch to your Web browser.
5. Reload the **table.htm** document in your Web browser.



Figure 1-6: Using Table Attributes

Cell Formatting

You can specify the format of the table cells to create table headings. The table HEADING tag `<TH>` will cause the cell data to display as bold and centered. Use the table HEADING tag *instead of* any table DATA tag `<TD>`.

To change the alignment of text in any cell or row, add the `ALIGN` attribute to either the table ROW tag `<TR ALIGN=xx>`, or the table DATA `<TD ALIGN=xx>` or HEADING tag `<TH ALIGN=xx>`. Alignment may take the value of `LEFT`, `RIGHT`, or `CENTER`. The alignment value for a cell will take precedence over the alignment for the row.



Exercise 1-3: Formatting the Cell Data

In this exercise, you will first format a table data cell with the TABLE HEADING tag. Then you will change the alignment of the contents using the `ALIGN` attribute.

1. Return to the **table.htm** document in your text editor.
2. Replace the *first* set of `<TD>` tags with TABLE HEADING tags, as shown:

```
<TABLE BORDER=3 CELLPADDING=9 CELLSPACING=6>  
<TR>  
<TH>BULB<TH>BLOOMS<TH>HEIGHT
```

3. Set the last column aligned to the right:

```
<TR>  
<TD>Crocus<TD>Early Spring<TD ALIGN=right>1-3"
```

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```
<TR>
<TD>Tulip<TD>Mid Spring<TD ALIGN=right>11-18"
<TR>
<TD>Iris<TD>Early Summer<TD ALIGN=right>12-20"
</TABLE>
```

4. Save the changes and switch to your Web browser.
5. Reload the **table.htm** document in the browser.



Figure 1-7: Table Alignment Options

Table Captions

To add a caption to a table, place a CAPTION tag after the opening TABLE tag. You may also include an alignment attribute to place the caption below the table, or allow it to default in position above the table. The caption will always be centered across the width of the table, appearing outside the borders of the table.



Exercise 1-4: Adding a Table Caption

In this exercise, you will add a caption to the table.

1. Return to the **table.htm** document in your text editor.

2. Add a CAPTION tag to the table as shown:

```
<TABLE BORDER=3 CELLSPACING=6>  
<CAPTION ALIGN=bottom>Table 1: Blooming Times and Mature Plant  
Heights</CAPTION>
```

3. Save the HTML source file and switch to your Web browser.
4. Reload the **table.htm** document in your browser.



Figure 1-8: Table with Caption Aligned to the Bottom

What might you do to correct an inappropriate line break within the caption?

Table Width and Alignment

You can set the width of a table using an absolute value in pixels, or as a relative value based on the width of the browser window. The WIDTH attribute is added to the TABLE tag. You may also use the WIDTH attribute in TABLE HEADING or TABLE DATA tags to customize the column widths. In general, it is best to set these values as percentages of the table width rather than as absolute pixel values.

You may center a table using the <CENTER> tag. To center the table on the page, add a CENTER tag *before* the table. Be sure to close the CENTER tag at some point after the end of the table.



Exercise 1-5: Changing Table Width and Alignment on the Page

In this exercise, you will set the relative width of a table using the WIDTH attribute of the TABLE tag. You will also align the table using the <CENTER> tag.

1. Return to the **table.htm** document in your text editor.
2. Edit the source file as shown to increase the table width, and center it within the browser window.

```
<BODY>
```

```
<CENTER>
```

```
<TABLE BORDER=3 CELLPADDING=9 CELLSPACING=6 WIDTH=70%>
```

```
<CAPTION ALIGN=bottom>Table 1: Blooming times and  
size</CAPTION>
```

```
<TR>
```

```
<TH>BULB<TH>BLOOMS<TH>HEIGHT
```

```
<TR>
```

```
<TD>Crocus<TD>Early Spring<TD ALIGN=right>1-3"
```

```
<TR>
```

```
<TD>Tulip<TD>Mid Spring<TD ALIGN=right>11-18"
```

```
<TR>
```

```
<TD>Iris<TD>Early Summer<TD ALIGN=right>12-20"
```

```
</TABLE>
```

```
</CENTER>
```

```
</BODY>
```

3. Save the HTML source file and switch to your Web browser.
4. Reload the **table.htm** document in the browser.



Figure 1-9: Table Width and Alignment

Cells Spanning Multiple Columns

It is possible to create a cell that spans multiple columns. A column span is used to stretch data across two or more cells and is often used for table titles. The COLSPAN attribute is added to a TABLE DATA or TABLE HEADING tag. For each column that is spanned, another TABLE DATA or HEADING tag in that row is eliminated. If you fail to match up the number of cells declared or spanned per row, you will get unexpected results when your table is displayed.



Exercise 1-6: Creating Cells that Span Multiple Columns

In this exercise, you will use the COLSPAN attribute in a TABLE HEADING tag to create a cell that stretches across the entire table.

1. Return to the **table.htm** document in your text editor.
2. Add a new row. Add a title that spans all three columns:

```
<TABLE BORDER=3 CELLPADDING=9 CELLSPACING=6 WIDTH=70%>  
<CAPTION ALIGN=bottom>Table 1: Blooming Times and  
Mature Plant Heights</CAPTION>
```

```
<TR>  
<TH COLSPAN=3>Flowering Bulbs
```

```
<TR>  
<TH>BULB<TH>BLOOMS<TH>HEIGHT
```

3. Save the changes and switch to the browser.
4. Reload the **table.htm** document in the browser.



Figure 1-10: Using the Column Span Attribute

Cells Spanning Multiple Rows

You may also create a cell that spans multiple rows. As with a column span, a row span is used to stretch data vertically across two or more rows. The ROWSPAN attribute is added to a TABLE DATA or HEADING tag.



Exercise 1-7: Creating Cells that Span Multiple Rows

In this exercise, you will combine cells from multiple rows to create a larger cell.

1. Return to the **table.htm** document in your text editor.
2. Change the column span to COLSPAN=4 in the first row to accommodate the column you will add in the next step.

```
<TH COLSPAN=4>Flowering Bulbs
```

3. Add a new <TH> cell with a ROWSPAN=4 to the second row. Add an image to the new cell.

```
<TR>  
<TH>BULB<TH>BLOOMS<TH>HEIGHT<TH ROWSPAN=4>  
<IMG SRC="lily.jpg">
```

Any text or image can be placed in a table cell.

4. Save the changes, switch to the Web browser, and reload the **table.htm** document.



Figure 1-11: Using a Row Span

Table Height and Vertical Alignment

Just as you can increase the width of a table, you can also increase its height. Within the table tag, include an attribute of HEIGHT and specify an absolute value in pixels or a percentage of the screen height. The VALIGN attribute may be added to any table row, data or table header tag to set the vertical alignment of the data. The VALIGN attribute can take a value of TOP or BOTTOM, in addition to the default value of MIDDLE. It will only take effect if there is extra vertical space within the row.



Exercise 1-8: Changing Table Height and Alignment

In this exercise, you will set the height of a table using the HEIGHT attribute of the TABLE tag. You will then use the VALIGN attribute to align the text vertically.

1. Return to the **table.htm** document in your text editor.

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2. Add the HEIGHT and VALIGN attributes to the source code as shown:

```
<TABLE BORDER=3 CELLPADDING=9 CELLSPACING=6 WIDTH=70%  
HEIGHT=350>
```

```
<CAPTION ALIGN=bottom>Table 1: Blooming Times and Plant  
Sizes</CAPTION>
```

```
<TR VALIGN=top>  
<TH COLSPAN=4>Flowering Bulbs
```

```
<TR VALIGN=bottom>  
<TH>BULB<TH>BLOOMS<TH>HEIGHT<TH ROWSPAN=4>  
<IMG SRC="lily.jpg">
```

3. Save the changes and switch to the Web browser.
4. Reload the **table.htm** document in your browser.



Figure 1-12: Table Height and Vertical Alignment

5. If you wish, remove the table HEIGHT attribute to return the table to its default height.

Table Cell Color

You may define the background color of individual cells in a table using the BGCOLOR attribute, in much the same way you define body background color. The BGCOLOR attribute is simply included in the TABLE, TR, TH or TD tags. Colors defined for individual cells have precedence over colors defined in the row or table tags.



Exercise 1-9: Color in Table Cells

In this exercise, you will add color to table cells.

1. Return to the **table.htm** document in your text editor.
2. Add the BGCOLOR attribute to the TABLE tag and the TABLE HEADING as shown.

```
<TABLE BORDER=3 CELLSPACING=6 WIDTH=75%  
HEIGHT=100% BGCOLOR=silver>  
<CAPTION ALIGN=bottom>Table 1: Blooming Times and Plant  
Sizes</CAPTION>  
<TR VALIGN=top>  
<TH COLSPAN=4>Flowering Bulbs  
<TR VALIGN=bottom>  
<TH>BULB<TH>BLOOMS<TH>HEIGHT<TH ROWSPAN=4  
BGCOLOR=black><IMG SRC="lily.jpg">
```

3. Save the changes and switch to the Web browser.
4. Reload the **tables.htm** document in your browser.



Figure 1-13: Table and Cell Background Color

With Microsoft Internet Explorer 3.0, and Netscape version 4.0 and higher, it is possible to put images in the background. If the images have transparent areas, the page background will show through. This effect is accomplished with the BACKGROUND attribute.

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The BACKGROUND attribute can be placed in the TABLE tag or TR tag to provide a background for the entire table or row. It may be included in a TH or TD tag to provide a background for individual cells. Older browsers will ignore this attribute. An example of the tag with a BACKGROUND attribute is shown below, as well as the result as displayed in the browser.

<TH COLSPAN=4 BACKGROUND="floral.gif"> Flowering Bulbs



Figure 1-14: Table and Cell Background Color

Although there are many attributes and options available for creating tables, remember that it is advisable to start with a basic table structure first. Formats and enhancements can be applied once the table has been created.

Tables, typically without borders, are frequently used to accomplish page layout designs that would otherwise not be possible. In the next book of this series, *Building Web Pages with HTML, Part 3*, additional table options, such as nested tables and the table head and table foot, are covered.

Review

In this lesson, you learned how to construct HTML tables using standard HTML tags and attributes. You learned to create tables with and without borders, modify border widths, create captions for tables, create table cells that span multiple columns and rows, add padding and spacing to cells, change column widths, change table width and height, set horizontal cell alignment, and use HTML tags within table cells.