

Tables

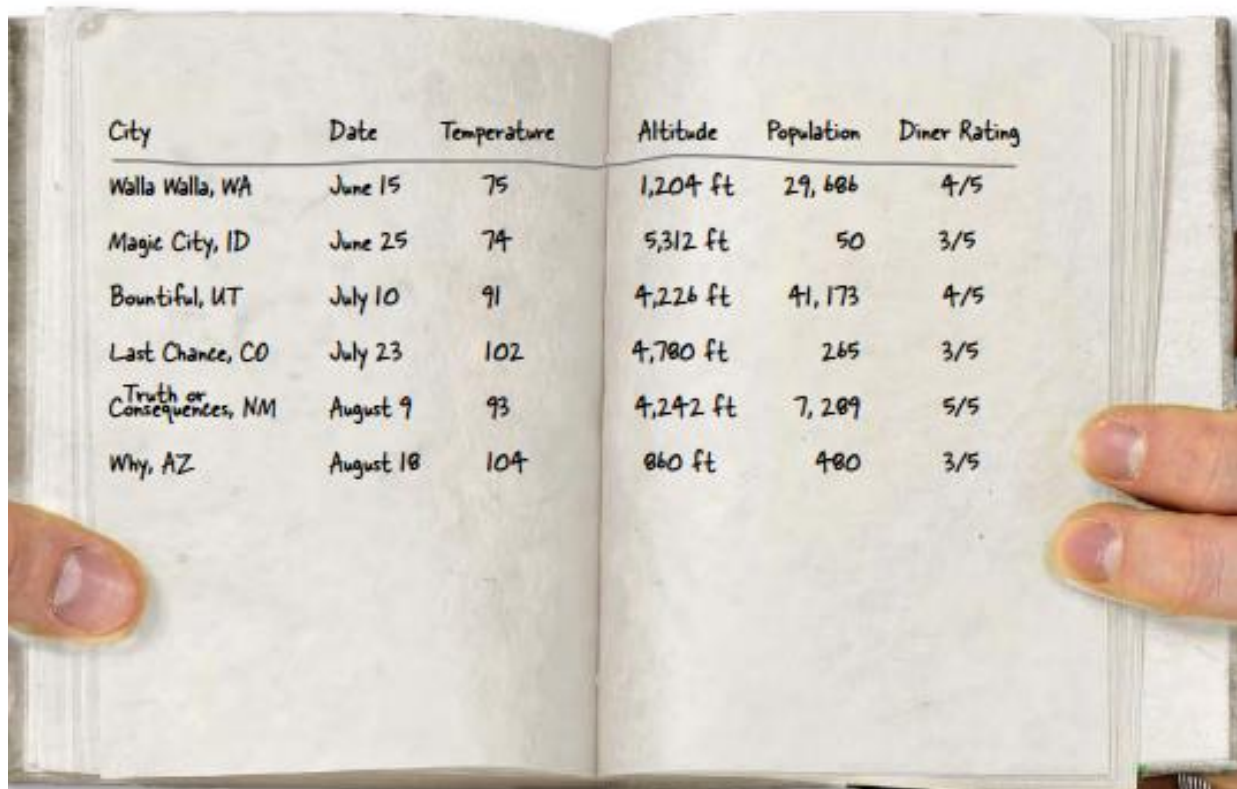
Website Development 1

Agenda

- What is a Table?
- Table syntax
- Rows and columns
- Grouping Rows
- Styling tables using nth-of-type

What is a table?

Sometimes you need to present tabular data, perhaps for inventory of products or a catalog of albums.



City	Date	Temperature	Altitude	Population	Diner Rating
Walla Walla, WA	June 15	75	1,204 ft	29,686	4/5
Magie City, ID	June 25	74	5,312 ft	50	3/5
Bountiful, UT	July 10	91	4,226 ft	41,173	4/5
Last Chance, CO	July 23	102	4,780 ft	265	3/5
Truth or Consequences, NM	August 9	93	4,242 ft	7,289	5/5
Why, AZ	August 18	104	860 ft	480	3/5

What is a table?

- The **<table>** element in HTML is used for displaying tabular data. You can think of it as a way to describe and display data that would make sense in spreadsheet software. Essentially: columns and rows.

What is a table?

We have columns...

And this row has headings.

And we have rows...

City	Date	Temp	Altitude	Population	Diner Rating
Walla Walla, WA	June 15th	75	1,204 ft	29,686	4/5
Magic City, ID	June 25th	74	5,312 ft	50	3/5
Bountiful, UT	July 10th	91	4,226 ft	41,173	4/5
Last Chance, CO	July 23rd	102	4,780 ft	265	3/5
Truth or Consequences, NM	August 8th	93	4,242 ft	7,289	5/5
Why, AZ	August 18th	104	860 ft	480	3/5

We call each piece of data a cell, or sometimes just table data.

The diagram shows a table with 6 columns and 6 rows. Handwritten annotations explain the components: 'We have columns...' points to the top row of the table; 'And this row has headings.' points to the first row; 'And we have rows...' points to the first column; and 'We call each piece of data a cell, or sometimes just table data.' points to a specific cell in the table. Arrows also connect the column headers to their respective data columns and the row headers to their respective data rows.

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Table syntax

- Tables in HTML are coded as a series of table rows that contain cells (which can contain data or heading information).
- The **<table>...</table>** tags surround the table element.
- Rows in the table are surrounded by **<tr>...</tr>** tags.
- Cells in the rows are enclosed in either **<td>...</td>** tags (for cells containing table data), or **<th>...</th>** tags (for cells containing heading information).
- The **<td>** and **<th>** cells have different default formatting, and they make a structural distinction between their contents (either data or heading information).

Table syntax

- Here is the HTML code for a simple table, with the resulting table shown below it:

```
<table>
  <tr><th>Heading 1</th><th>Heading 2</th><th>Heading 3</th></tr>
  <tr><td>one</td><td>two</td><td>three</td></tr>
  <tr><td>four</td><td>five</td><td>six</td></tr>
</table>
```

Heading 1	Heading 2	Heading 3
one	two	three
four	five	six

Table syntax

- A basic table (like the simple table example) has no border or any styling.
- To add a border, we do so through CSS. We add a border to the `<table>`, `<th>` and `<td>` elements.

```
table, th, td {  
    border:solid black 1px;  
}
```

Heading 1	Heading 2	Heading 3
one	two	three
four	five	six

Table syntax

- If you want no space between the cells then you can set the **border-collapse** property to **collapse**. Note that the default is **separate**.
- If you do wish to leave space between the cells then set the **border-collapse** property to **separate** as stated above and you can also set the **border-spacing** property to increase or decrease the space (default is 2px).

Table syntax

- We should also specify a table width property as a table will only take up as much space as the data requires.
- To center the table, the table must have a width set, and then you must set the left and right margins of the table to auto.

```
table {  
    width:50%;  
    margin:0 auto;  
    border-collapse:collapse;  
}
```

Heading 1	Heading 2	Heading 3
one	two	three
four	five	six

Table syntax

- There is another basic element of the table which is optional. This is the `<caption>` element.

```
<caption>Simple Table Example</caption>
```

Heading 1	Heading 2	Heading 3
one	two	three
four	five	six

- As you can see the caption is rendered before (top side) the table. To change this to after (bottom side) of the table, we add the **caption-side** property.

```
caption-side:bottom;
```

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Rows and columns

- You can merge multiple cells together to create cells that span multiple rows or multiple columns.
- We can use **colspan** to make a cell span multiple columns.
- We can use **rowspan** to make a cell span multiple rows.

colspan

- To make a cell span multiple columns, add the attribute **colspan="n"** (where *n* is the number of columns to span) to the **<td>** (or **<th>**) tag of that cell.
- The total number of cells has to be the same in all rows, where any cells that span *n* columns are counted as *n* cells.

colspan

```
<table>
  <tr>
    <td>1</td><td>2</td><td>3</td><td>4</td>
  </tr>
  <tr>
    <td colspan="3">under 123</td>
    <td>under 4</td>
  </tr>
</table>
```

1	2	3	4
under 123			under 4

rowspan

- To make a cell span multiple rows, add the attribute **rowspan="n"** (where *n* is the number of rows to span) to the **<td>** (or **<th>**) tag of that cell.
- Notice that there are only two cells specified for row 2. This is because cell three is taking up the space where cell "six" would have been. You have to ensure that the cell count comes out the same for all rows (you include any cell from a previous row that spans into another row as part of that row's cell count).

rowspan

```
<table>
  <tr>
    <td>one</td><td>two</td>
    <td rowspan="2">This cell <br>
                          spans two rows</td>
  </tr>
  <tr>
    <td>four</td><td>five</td>
  </tr>
  <tr>
    <td>six</td><td>seven</td>
    <td>eight</td>
  </tr>
</table>
```

one	two	This cell spans two rows
four	five	
six	seven	eight

Controlling Word Wrap Within Cells

- A browser may choose to wrap the text in your table cells while it is adjusting the content to fit the column widths. If you find that your text is breaking between words you would rather see stay together, you can prevent the wrapping in a couple ways.
 1. You can put non-breaking spaces between words that you do not want to wrap. This will force the browser to leave the column containing that text content wider, since it won't be able to break those words apart.
 2. You can use the CSS **white-space:nowrap** declaration applied to a cell or its content (a paragraph or span, for example) to prevent wrapping of that text.

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Grouping Rows

- You can group together rows and split a table into a header, footer, and body by organising rows into ***thead***, ***tfoot***, and ***tbody*** elements.
- Grouping rows can also provide a handy block to latch CSS on to, for example, if you wanted to change the background colour of a block of rows in a table.
- You can have more than one ***tbody*** elements but only one ***thead*** and ***tfoot*** elements.

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nth-of-type

- The nth-of-type selector finds every nth element of a specific type using either keywords or a formula.
- **Keywords**
 - :nth-of-type(odd)
 - :nth-of-type(even)
 - :first-of-type
 - :last-of-type
 - :hover

nth-of-type

```
td:nth-of-type(even) {  
  background-color: #ddf;  
}
```

This	That	The other	Lunch	Lunch
Ladybird	Locust	Lunch	Lunch	Lunch
Ladybird	Locust	Lunch	Lunch	Lunch
Ladybird	Locust	Lunch	Lunch	Lunch
Ladybird	Locust	Lunch	Lunch	Lunch

nth-of-type

Formula

- The *nth-of-type* selector can use formulas instead of keywords. The formula is $an + b$, where b is the offset, and a is a multiple.
 - `tr:nth-of-type(n)` // Each row
 - `tr:nth-of-type(2)` // Second row
 - `tr:nth-of-type(2n)` // Every second row
 - `tr:nth-of-type(n+2)` // Every row starting at the second

nth-of-type

Formula

- `tr:nth-of-type(-n+2)` // First 2 rows
- `tr:nth-last-of-type(2)` // Second last row
- `tr:nth-last-of-type(-n+2)` // Last 2 rows

nth-of-type

```
td:nth-of-type(-n+2) {  
  background-color: #ddf;  
}
```

This	That	The other	Lunch	Lunch
Ladybird	Locust	Lunch	Lunch	Lunch
Ladybird	Locust	Lunch	Lunch	Lunch
Ladybird	Locust	Lunch	Lunch	Lunch
Ladybird	Locust	Lunch	Lunch	Lunch