

Web Development

BSc Applied Computing / Forensics / Entertainment Systems/ IOT

Produced
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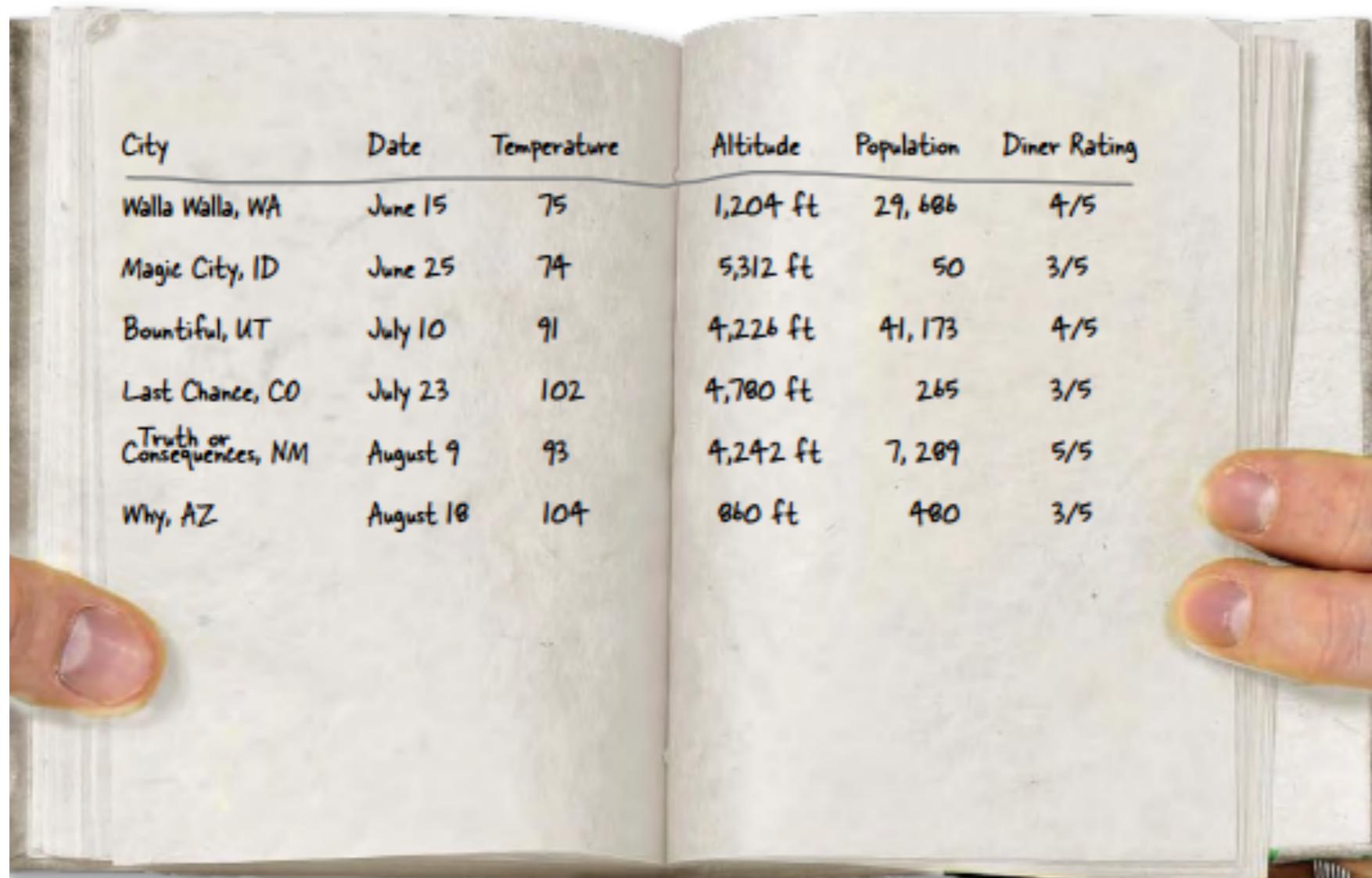
eLearning
support unit

HTML Tables & Forms

Web Development

HTML Tables

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

A photograph of an open notebook held by a person's hands. The left page contains a handwritten table with six columns: City, Date, Temperature, Altitude, Population, and Diner Rating. The right page is blank. The table data is as follows:

City	Date	Temperature	Altitude	Population	Diner Rating
Walla Walla, WA	June 15	75	1,204 ft	29,686	4/5
Magic 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

HTML Tables

The diagram illustrates the structure of an HTML table. A table is shown with columns for City, Date, Temp, Altitude, Population, and Diner Rating. Handwritten annotations explain the structure: 'We have columns...' points to the first few columns; 'And we have rows...' points to the first few rows; 'And this row has headings.' points to the top row; and 'We call each piece of data a cell, or sometimes just table data.' points to a specific cell in the table.

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 2nd	93	4,242 ft	7,289	5/5
Why, AZ	August 18th	104	860 ft	480	3/5

- You can create table-like layout using `<div>`'s and CSS but that is for layout purposes, and isn't related to content itself.
- HTML has a `<table>` element to take care of marking up tabular data.

HTML Tables

Rows Columns Headers

Each `<tr>` element forms a table row.

```
<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8">
    <style type="text/css">
        td, th {border: 1px solid black;}
    </style>
    <title>Testing Tony's Travels</title>
</head>
<body>
    <table>
        <tr>
            <th>City</th>
            <th>Date</th>
            <th>Temperature</th>
            <th>Altitude</th>
            <th>Population</th>
            <th>Diner Rating</th>
        </tr>
        <tr>
            <td>Walla Walla, WA</td>
            <td>June 15th</td>
            <td>75</td>
            <td>1,204 ft</td>
            <td>29,686</td>
            <td>4/5</td>
        </tr>
        <tr>
            <td>Magic City, ID</td>
            <td>June 25th</td>
            <td>74</td>
            <td>5,312 ft</td>
            <td>50</td>
            <td>3/5</td>
        </tr>
    </table>
</body>
</html>
```

This is just a small bit of CSS so we can see the structure of the table in the browser. Don't worry about this for now.

We use a `<table>` tag to start the table.

Here's the first row, which we start with a `<tr>`.

Each `<th>` element is a table heading for a column.

Notice that the table headings are listed one after each other. While these look like they might make up a column in the HTML, we are actually defining the entire table headings row. Look back at Tony's list to see how his headings map to these.

Here's the start of the second row, which is for the city Walla Walla.

Each `<td>` element holds one cell of the table, and each cell makes a separate column.

All these `<td>`s make up one row.

And here's the third row. Again, the `<td>` elements each hold one piece of table data.

HTML Tables

Here's how the browser displays the table HTML.

We've got three rows total, including the headings...

A screenshot of a web browser window titled "Testing Tony's Travels". The address bar shows "file:///chapter13/journal/table.html". The browser displays a table with six columns: City, Date, Temperature, Altitude, Population, and Diner Rating. There are two data rows: one for Walla Walla, WA (Date June 15th, Temp 75, Altitude 1,204 ft, Population 29,686, Rating 4/5) and one for Magic City, ID (Date June 25th, Temp 74, Altitude 5,312 ft, Population 50, Rating 3/5). The first row has bolded column headers. Handwritten annotations with arrows explain the structure: one arrow points from the heading text to the first row; another points from the row count text to the second row; a third points from the column count text to the first column of the second row; a fourth points from the "Each <td> is in its own cell..." text to the first cell of the second row; and a fifth points from the "...and each <th> is in a cell as well..." text to the first cell of the first row.

City	Date	Temperature	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

...and six columns, just what we expected.

Each <td> is in its own cell...

...and each <th> is in a cell as well. It looks like the browser displays headings in bold by default.

HTML Tables

You've seen four elements used to create a single table:

<table>

<tr>

<th>

<td>.

The <table> tag starts the whole thing off. When you want a table, start here.

<table>

<tr>

<tr>

<tr>

<tr>

<tr>

<tr>

Each <tr> element specifies a table row. So, all the table data that goes in a row is nested inside the <tr> element.

The <th> element contains one cell in the heading of your table. It must be inside a table row.

<th>Date</th>

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 9th	93	4,242 ft	7,289	5/5
Why, AZ	August 18th	104	860 ft	480	3/5

The </tr> tag ends a row of the table.

</tr>

</tr>

</tr>

</tr>

</tr>

</tr>

<td>August 9th</td>

The <td> element contains one data cell in your table. It must be inside a table row.

</table>

The </table> tag ends the table.

HTML Tables

Tables give you a way to specify tabular data in your HTML.

Tables consist of data cells within rows. Columns are implicitly defined within the rows.

The number of columns in your table will be the number of data cells you have in a row.

In general, tables are not meant to be used for presentation: that's the job of CSS

HTML Tables

Adding a caption – you can improve your table by adding a caption.

```
<table>
  <caption>
    The cities I visited on my Segway USA travels
  </caption>
  <tr>.....
</table>
```

The caption is displayed in the browser. By default, most browsers display this above the table. If you don't like the default location of the caption, you can use CSS to reposition it. Older browsers don't support repositioning the caption. Always put the caption at the top of the table in the HTML and use CSS to reposition it to the bottom if that's where you want it.

The caption is at the top of the table. It'll probably look better on the bottom.

A screenshot of a web browser window titled "Tony's Table". The address bar shows "file:///chapter13/journal/table.html". The table has a caption "The cities I visited on my Segway'n USA travels" above it. The table structure is as follows:

City	Date	Temperature	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 9th	93	4,242 ft	7,289	5/5
Why, AZ	August 18th	104	860 ft	480	3/5

We really need to add some padding to the table data cells, to make them easier to read...

...and a splash of orange to match Tony's site could really pull the whole thing together.

...and the border lines are really "heavy" visually. We could use much "lighter" borders in the table cells, although it would be nice to have a dark border around the whole table...

HTML Tables

```
table {  
    margin-left: 20px;  
    margin-right: 20px;  
    border: thin solid black;  
    caption-side: bottom;  
}
```

First, we'll style the table. We're going to add a margin on the left and right, and a thin, black border to the table.

```
td, th {  
    border: thin dotted gray;  
    padding: 5px;  
}
```

And we're going to move that caption to the bottom of the table.

```
caption {  
    font-style: italic;  
    padding-top: 8px;  
}
```

Let's also change the border on the table data cells to be a much lighter, dotted border in gray.

And let's add some padding to the data cells so there's some space between the data content and the border.

This rule styles the caption. We're changing the font-style to italic and adding some top padding.

HTML Tables

All the fonts are now sans-serif and a smaller size. We picked that up from the previous styles already in the file.

Now we've got a dark border and dotted lines.

And we've got some margin on the table and some padding in each table cell.

Those dotted lines are looking really busy and distracting, though. It doesn't help that they are duplicated between each pair of table cells.



Well I made it 1200 miles already, and I passed through some interesting places on the way:

City	Date	Temperature	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 9th	93	4,242 ft	7,289	5/5
Why, AZ	August 18th	104	860 ft	480	3/5

The cities I visited on my Segway'n USA travels

July 14, 2012

I saw some Burma Shave style signs on the side of the road today:

*Passing cars,
When you can't see,
May get you,
A glimpse,
Of eternity.*

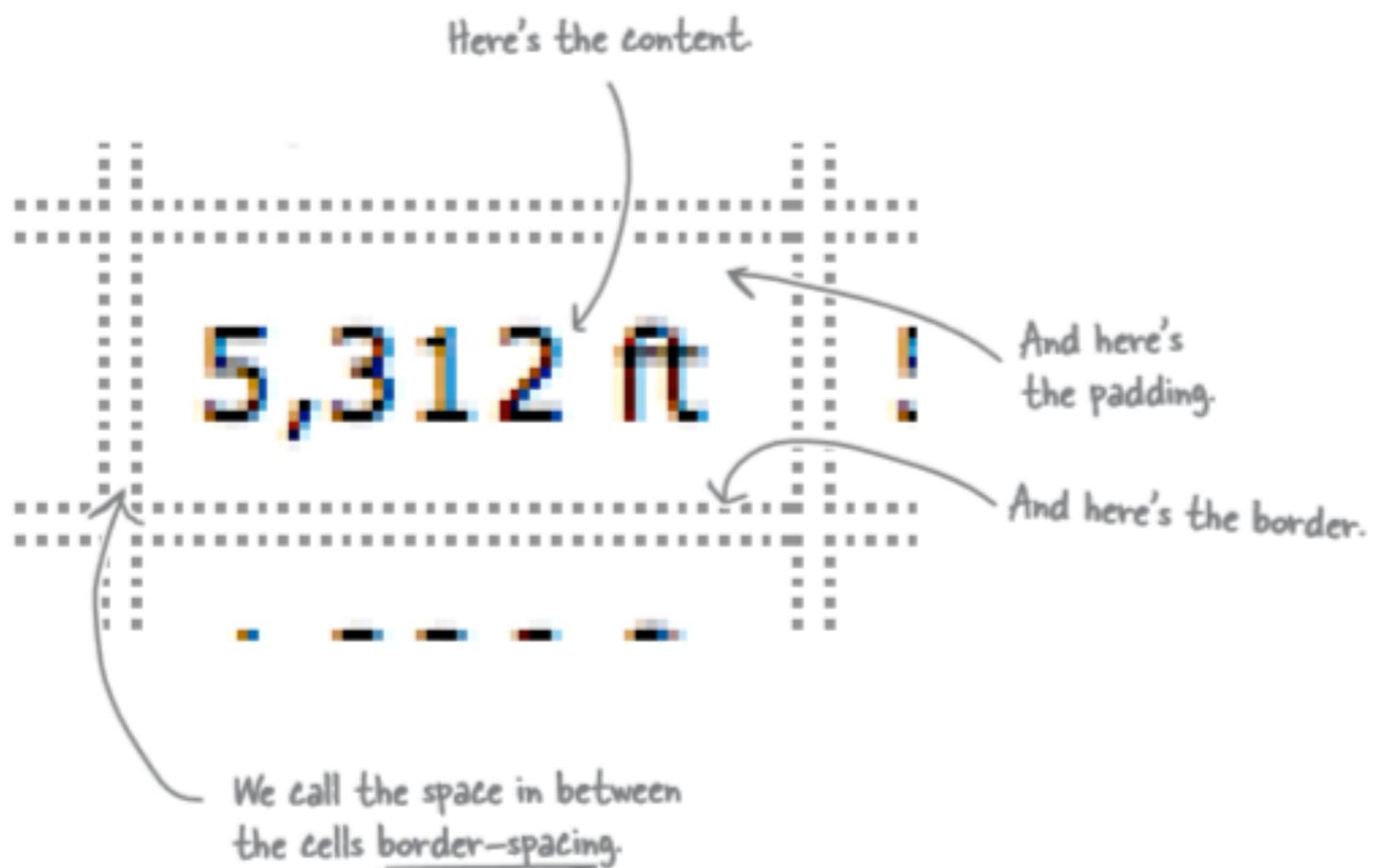
I definitely won't be passing any cars.

HTML Tables

Table cells look like they just use the box.. They've got padding and a border.

Do they also have margin?

This is just like the border-spacing property we used in the CSS table display layout for Starbuzz.



So instead of a margin, we have a border-spacing property, which is defined over the entire table. In other words, you can't set the "margin" of an individual table cell; rather, you set a common spacing around all cells.

HTML Tables

We would like to have just one border around each table cell.

There is a way to solve the double border issue we can set the border-collapse property.

This means there is no border spacing between cells. It combines two borders beside each other into one border. This “collapses” two borders into one.

```
table {  
    margin-left: 20px;  
    margin-right: 20px;  
    border: thin solid black;  
    caption-side: bottom;  
    border-collapse: collapse;  
}
```



Styling HTML Tables

E.g. example you may want date, temperature, and diner rating to be centre-aligned. Perhaps right alignment on the altitude and population.

You could define two classes, one for centre-aligned and one for right-aligned. Then just use the `text-align` property in each. Then add the appropriate class to the correct `<td>` elements.

HTML tables

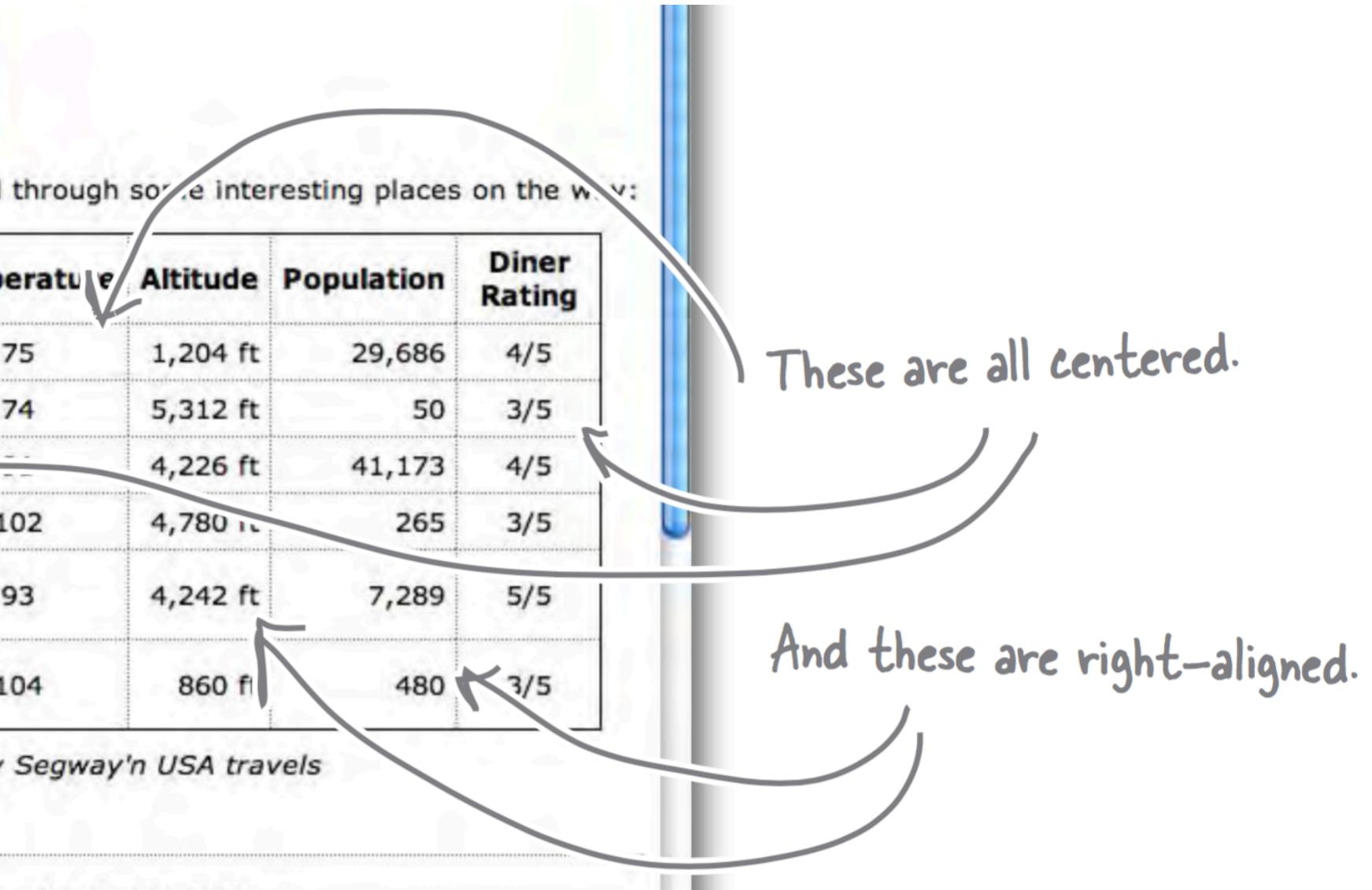


Well I made it 1200 miles already, and I passed through some interesting places on the way:

City	Date	Temperature	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	72	4,226 ft	41,173	4/5
Last Chance, CO	July 23rd	102	4,780 ft	265	3/5
Truth or Consequences, NM	August 9th	93	4,242 ft	7,289	5/5
Why, AZ	August 18th	104	860 ft	480	3/5

The cities I visited on my Segway'n USA travels

July 14, 2012



HTML tables

City	Date	Temperature	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 9th	93	4,242 ft	7,289	5/5
Why, AZ	August 18th	104	860 ft	480	3/5

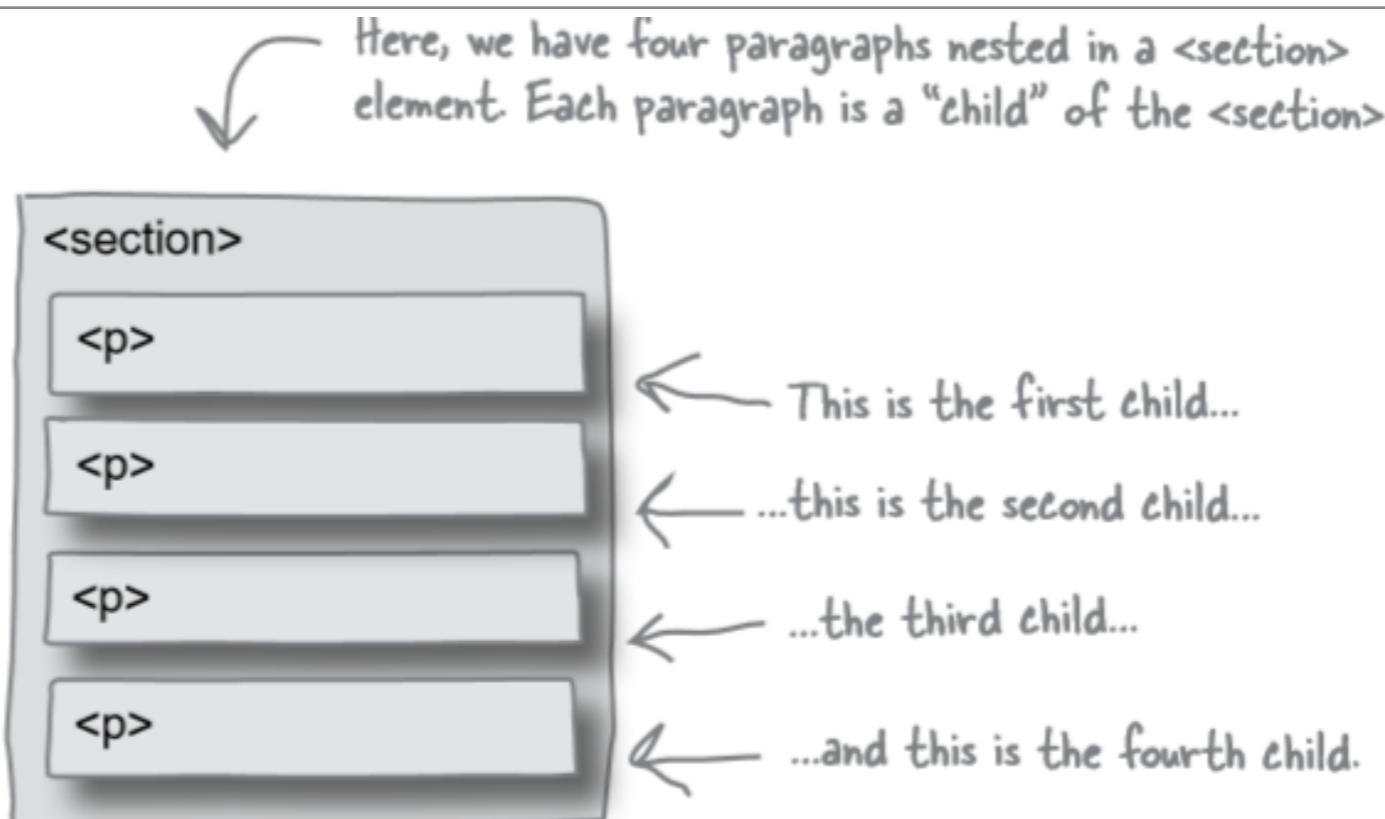
The cities I visited on my Segway'n USA travels

- Style the header to have one background color and then alternate rows to have another color.
- You can do this by placing the appropriate class name into every other <tr>

HTML tables

- Instead of placing the class name into every other <tr> we can use another more advanced CSS method.
- pseudo-classes is used to style elements based on their state, you may have seen the (a:hover pseudo-class).
- For this example we can use the nth-child pseudo-class.
- We can write a CSS rule to colour the even nth-child elements for the table row.

HTML tables



Let's say you want to select the even paragraphs (that is, paragraphs 2 and 4) so they have a red background color, and the odd paragraphs so they have a green background color. You do that like this:

```
p:nth-child(even) {
  background-color: red; ← Paragraphs 2 and 4 will be red...
}
p:nth-child(odd) {
  background-color: green; ← ...and paragraphs 1 and 3 will be green.
}
```

HTML tables

- Sometimes tables have varying size cells. This is possible to define in HTML

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	4,700 ft	265	3/5
Truth or Consequences, NM	August 9th	93	4,242 ft	7,289	5/5
	August 27th	98			4/5
Why, AZ	August 18th	104	860 ft	480	3/5

These cells span two rows.

While the date, temp, and diner rating cells take up just one.

HTML tables

- We use the attribute rowspan to define those cells that span more than one row.

```
<tr>
  <td rowspan="2">Truth or Consequences, NM</td>
  <td class="center">August 9th</td>
  <td class="center">93</td>
  <td rowspan="2" class="right">4,242 ft</td>
  <td rowspan="2" class="right">7,289</td>
  <td class="center">5/5</td>
</tr>
<tr>
  <td class="center">August 27th</td>
  <td class="center">98</td>
  <td class="center">4/5</td>
</tr>
```

Here are the two table rows that have the New Mexico data.

The city is not needed because of the rowspan.

For the data cells that don't change on the second visit (city, altitude, and population), we add a rowspan attribute indicating that the table data spans two rows.

Same with altitude and population

Then in the second row, we specify just the columns we need (date, temp, and a new rating).

HTML tables

- What about displaying two values in one cell?

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 9th	93	4,242 ft	7,289	5/5				
	August 27th	98			<table border="1"><tr><td>Tess</td><td>5/5</td></tr><tr><td>Tony</td><td>4/5</td></tr></table>	Tess	5/5	Tony	4/5
Tess	5/5								
Tony	4/5								
Why, AZ	August 18th	104	860 ft	480	3/5				

It looks like a table within a table, we can do this by placing a `<table>` inside a `<td>`



Why not put both their ratings in the table? That way, we get more accurate information.

HTML tables

```
<tr>
  <td class="center">August 27th</td>
  <td class="center">98</td>
  <td>
    —4/5
    <table>
      <tr>
        <th>Tess</th>
        <td>5/5</td>
      </tr>
      <tr>
        <th>Tony</th>
        <td>4/5</td>
      </tr>
    </table>
  </td>
</tr>
```

First, delete the old rating
that represented Tony's rating...

...and put a table in its place. This table holds
two diner ratings: one for Tess and one for
Tony. We're using table headings for their
names, and data cells for their ratings.

City	Date	Temperature	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				
	August 9th	93			5/5				
Truth or Consequences, NM	August 27th	98	4,242 ft	7,289	<table border="1"> <tr> <td>Tess</td> <td>5/5</td> </tr> <tr> <td>Tony</td> <td>4/5</td> </tr> </table>	Tess	5/5	Tony	4/5
Tess	5/5								
Tony	4/5								
Why, AZ	August 18th	104	860 ft	480	3/5				

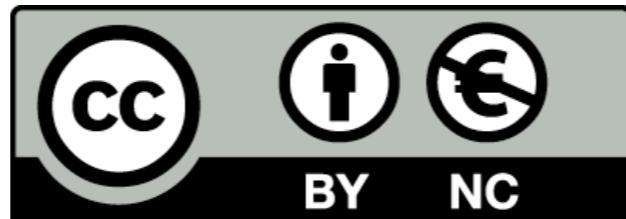
The cities I visited on my Segway'n USA travels

You can target just the `<th>` elements in the nested table using a descendant selector. Add a new rule to your CSS that uses the “`table table th`” selector to change the background color of the nested table headers to white:

```
table table th {
    background-color: white;
}
```

Ideally we don't want the `<th>` for Tess and Tony to have the orange background colour.

This rule reads, for any table header in a table nested within another table give it a background colour white.



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