Additional Notes: HTML Tables

A very common task in HTML is structuring tabular data, and it has a number of elements and attributes for just this purpose. Coupled with a little CSS for styling, HTML makes it easy to display tables of information on the web such as your school lesson plan, the timetable at your local swimming pool, or statistics about your favorite dinosaurs or football team. This module takes you through all you need to know about structuring tabular data using HTML.

Covered In this Section

What is a table?

A table is a structured set of data made up of rows and columns (**tabular data**). A table allows you to quickly and easily look up values that indicate some kind of connection between different types of data, for example a person and their age, or a day of the week, or the timetable for a local swimming pool. Tabular data makes visual representation between rows and columns making looking up information easy, e.g. the table below for NASA's Planetary Fact Sheet

Data about the planets of our solar system (Source: Nasa's Planetary Fact Sheet - Metric).

	Name	Mass (10^{24}kg)	Diameter (km)	Density (kg/m^3)	Gravity (m/s^2)	Length of day (hours)	Distance from Sun (10^6km)	Mean temperature (°C)	Number of moons	Note
	Mercury	0.330	4,879	5427	3.7	4222.6	57.9	167	0	Closest t Sun
ial s	Venus	4.87	12,104	5243	8.9	2802.0	108.2	464	0	
	Earth	5.97	12,756	5514	9.8	24.0	149.6	15	1	Our wor
	Mars	0.642	6,792	3933	3.7	24.7	227.9	-65	2	The red planet
Gas iants	Jupiter	1898	142,984	1326	23.1	9.9	778.6	-110	67	The larg planet
	Saturn	568	120,536	687	9.0	10.7	1433.5	-140	62	
Ice iants	Uranus	86.8	51,118	1271	8.7	17.2	2872.5	-195	27	
	Neptune	102	49,528	1638	11.0	16.1	4495.1	-200	14	
nets	Pluto	0.0146	2,370	2095	0.7	153.3	5906.4	-225	5	Declassi as a plan 2006, bu this rem controve

▼ Code for Above:

▼ HTML:

```
<table>
  <caption>
    Data about the planets of our solar system (Source:
    <a href="https://nssdc.gsfc.nasa.gov/planetary/factshe
      >Nasa's Planetary Fact Sheet - Metric</a
    >).
  </caption>
  <thead>
    <tr>
      <td colspan="2"></td>
      <th scope="col">Name</th>
```

```
      <th scope="col">Mass (10<sup>24</sup>kg)</th>
      <th scope="col">Diameter (km)</th>
      <th scope="col">Density (kg/m<sup>3</sup>)</th>
      <th scope="col">Gravity (m/s<sup>2</sup>)</th>
      <th scope="col">Length of day (hours)</th>
      <th scope="col">Distance from Sun (10<sup>6</sup>km)
      <th scope="col">Mean temperature (°C)</th>
      <th scope="col">Number of moons</th>
      <th scope="col">Notes</th>
    </tr>
  </thead>
  <tbody>
    <tr>
      <th colspan="2" rowspan="4" scope="rowgroup">Terrest
      <th scope="row">Mercury</th>
      <td>0.330</td>
      <td>4,879</td>
      <td>5427</td>
      <td>3.7</td>
      <td>4222.6</td>
      <td>57.9</td>
      <td>167</td>
      <td>0</td>
      <td>Closest to the Sun</td>
    </tr>
    <tr>
      <th scope="row">Venus</th>
      <td>4.87</td>
      <td>12,104</td>
      <td>5243</td>
      <td>8.9</td>
      <td>2802.0</td>
      <td>108.2</td>
      <td>464</td>
      <td>0</td>
      <td></td>
```

```
    </tr>
    <tr>
      <th scope="row">Earth</th>
      <td>5.97</td>
      <td>12,756</td>
      <td>5514</td>
      <td>9.8</td>
      <td>24.0</td>
      <td>149.6</td>
      <td>15</td>
      <td>1</td>
      <td>Our world</td>
    </tr>
    <tr>
      <th scope="row">Mars</th>
      <td>0.642</td>
      <td>6,792</td>
      <td>3933</td>
      <td>3.7</td>
      <td>24.7</td>
      <td>227.9</td>
      <td>-65</td>
      <td>2</td>
      <td>The red planet</td>
    </tr>
    <tr>
      <th rowspan="4" scope="rowgroup">Jovian planets</th>
      <th rowspan="2" scope="rowgroup">Gas giants</th>
      <th scope="row">Jupiter</th>
      <td>1898</td>
      <td>142,984</td>
      <td>1326</td>
      <td>23.1</td>
      <td>9.9</td>
      <td>778.6</td>
      <td>-110</td>
```

```
      <td>67</td>
      <td>The largest planet</td>
    </tr>
    <tr>
      <th scope="row">Saturn</th>
      <td>568</td>
      <td>120,536</td>
      <td>687</td>
      <td>9.0</td>
      <td>10.7</td>
      <td>1433.5</td>
      <td>-140</td>
      <td>62</td>
      <td></td>
    </tr>
    <tr>
      <th rowspan="2" scope="rowgroup">Ice giants</th>
      <th scope="row">Uranus</th>
      <td>86.8</td>
      <td>51,118</td>
      <td>1271</td>
      <td>8.7</td>
      <td>17.2</td>
      <td>2872.5</td>
      <td>-195</td>
      <td>27</td>
      <td></td>
    </tr>
    <tr>
      <th scope="row">Neptune</th>
      <td>102</td>
      <td>49,528</td>
      <td>1638</td>
      <td>11.0</td>
      <td>16.1</td>
      <td>4495.1</td>
```

```
      <td>-200</td>
      <td>14</td>
      <td></td>
    </tr>
    <tr>
      <th colspan="2" scope="rowgroup">Dwarf planets</th>
      <th scope="row">Pluto</th>
      <td>0.0146</td>
      <td>2,370</td>
      <td>2095</td>
      <td>0.7</td>
      <td>153.3</td>
      <td>5906.4</td>
      <td>-225</td>
      <td>5</td>
      <td>
        Declassified as a planet in 2006, but this
        <a
          href="https://www.usatoday.com/story/tech/2014/1
          >remains controversial</a
        >.
      </td>
    </tr>
  </tbody>
</table>
```

▼ CSS:

```
table {
  border-collapse: collapse;
  border: 2px solid black;
}

th,
td {
```

```
  padding: 5px;
  border: 1px solid black;
}
```

Table Styling

The table above has minimal CSS styling applied, more significant styling can create better looking tables

We won't focus on CSS in this module, but we have provided a minimal CSS stylesheet for you to use that will make your tables more readable than the default you get without any styling. You can find the stylesheet here, and you can also find an HTML template that applies the stylesheet — these together will give you a good starting point for experimenting with HTML tables.

▼ blank-template.html

```
<!DOCTYPE html>
<html lang="en-US">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width">
    <title>Table template</title>
    <link href="minimal-table.css" rel="stylesheet" type="tex
  </head>

  <body>
    <h1>Table template</h1>
  </body>
</html>
```

▼ minimal-table.css

```css
html {
    font-family: sans-serif;
  }

  table {
    border-collapse: collapse;
    border: 2px solid rgb(200,200,200);
    letter-spacing: 1px;
    font-size: 0.8rem;
  }

  td, th {
    border: 1px solid rgb(190,190,190);
    padding: 10px 20px;
  }

  th {
    background-color: rgb(235,235,235);
  }

  td {
    text-align: center;
  }

  tr:nth-child(even) td {
    background-color: rgb(250,250,250);
  }

  tr:nth-child(odd) td {
    background-color: rgb(245,245,245);
  }

  caption {
```

```
    padding: 10px;
  }
```

The CSS stylings are applied to any html file that contains the above template through the `<link>` element in the HTML `<head>` section.

```
<link href="minimal-table.css" rel="stylesheet" type="text/css">
```

`href="minimal-table.css"`: This specifies the path to the CSS file. Since the files are in the same directory, the filename alone is enough. If the CSS file were in a different location, you'd need to specify the path relative to the HTML file or a full URL.

`rel="stylesheet"`: This attribute specifies the relationship between the current document and the linked file. In this case, it tells the browser that the linked file is a stylesheet that should be used to style the current HTML document.

`type="text/css"`: This attribute specifies the MIME type of the linked file. For CSS files, the MIME type is `text/css`. This attribute is not strictly necessary in HTML5, as browsers will default to assuming the correct type for standard stylesheets.

Active Learning: Creating your first table

1. The content of every table is enclosed by these two tags: `<table></table>`. Add these inside the body of your HTML.
2. The smallest container inside a table is a table cell, which is created by a `<td>` element ('td' stands for 'table data'). Add the following inside your table tags:

   HTMLCopy to Clipboard

   ```
   <td>Hi, I'm your first cell.</td>
   ```

3. If we want a row of four cells, we need to copy these tags three times. Update the contents of your table to look like so:

HTMLCopy to Clipboard

```
<td>Hi, I'm your first cell.</td><td>I'm your second cell.
</td><td>I'm your third cell.</td><td>I'm your fourth cel
l.</td>
```

As you will see, the cells are not placed underneath each other, rather they are automatically aligned with each other on the same row. Each `<td>` element creates a single cell and together they make up the first row. Every cell we add makes the row grow longer.

To stop this row from growing and start placing subsequent cells on a second row, we need to use the `<tr>` element ('tr' stands for 'table row'). Let's investigate this now.

1. Place the four cells you've already created inside `<tr>` tags, like so:

   HTMLCopy to Clipboard

   ```
   <tr><td>Hi, I'm your first cell.</td><td>I'm your second c
   ell.</td><td>I'm your third cell.</td><td>I'm your fourth
   cell.</td></tr>
   ```

2. Now you've made one row, have a go at making one or two more — each row needs to be wrapped in an additional `<tr>` element, with each cell contained in a `<td>`.

Table Headers: Dogs-table:

- Elements that are headers are represented by `<th>`

▼ Dogs-table with headers denotation

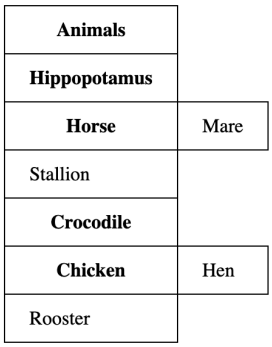
```
<!DOCTYPE html>
<html lang="en-US">
  <head>
    <meta charset="utf-8">
```

```
    <meta name="viewport" content="width=device-width">
    <title>Dogs table</title>
    <link href="minimal-table.css" rel="stylesheet" type="tex
  </head>
  <body>
    <h1>Dogs Table</h1>

    <table>
      <tr>
        <th> </th>
        <th>Knocky</th>
        <th>Flor</th>
        <th>Ella</th>
        <th>Juan</th>
      </tr>
      <tr>
        <th>Breed</th>
        <td>Jack Russell</td>
        <td>Poodle</td>
        <td>Streetdog</td>
        <td>Cocker Spaniel</td>
      </tr>
      <tr>
        <th>Age</th>
        <td>16</td>
        <td>9</td>
        <td>10</td>
        <td>5</td>
      </tr>
      <tr>
        <th>Owner</th>
        <td>Mother-in-law</td>
        <td>Me</td>
        <td>Me</td>
        <td>Sister-in-law</td>
      </tr>
```

```
      <tr>
        <th>Eating Habits</th>
        <td>Eats everyone's leftovers</td>
        <td>Nibbles at food</td>
        <td>Hearty eater</td>
        <td>Will eat till he explodes</td>
      </tr>
    </table>


  </body>
</html>
```

Colspan / rowspan:

- When we want the table row heading to span multiple columns, allowing our tables to look cleaner from this:



- Fortunately, table headers and cells have the `colspan` and `rowspan` attributes, which allow us to do just those things. Both accept a unitless number value, which equals the number of rows or columns you want spanned. For example, `colspan="2"` makes a cell span two columns.

Animals table

<table>
<tr><th colspan="2">Animals</th></tr>
<tr><th colspan="2">Hippopotamus</th></tr>
<tr><th rowspan="2">Horse</th><td>Mare</td></tr>
<tr><td>Stallion</td></tr>
<tr><th colspan="2">Crocodile</th></tr>
<tr><th rowspan="2">Chicken</th><td>Hen</td></tr>
<tr><td>Rooster</td></tr>
</table>

▼ Code:

```
<!DOCTYPE html>
<html lang="en-US">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width">
    <title>Animals table</title>
    <link href="minimal-table.css" rel="stylesheet" type="tex
  </head>
  <body>
    <h1>Animals table</h1>

    <table>
      <tr>
        <th colspan="2">Animals</th>
      </tr>
      <tr>
        <th colspan="2">Hippopotamus</th>
      </tr>
      <tr>
        <th rowspan="2">Horse</th>
        <td>Mare</td>
```

```
      </tr>
      <tr>
        <td>Stallion</td>
      </tr>
      <tr>
        <th colspan="2">Crocodile</th>
      </tr>
      <tr>
        <th rowspan="2">Chicken</th>
        <td>Hen</td>
      </tr>
      <tr>
        <td>Rooster</td>
      </tr>
    </table>
  </body>
</html>
```

Providing common styling to columns:

- HTML has a method of defining styling information for an entire column of data all in one place — the `<col>` and `<colgroup>` elements.
- **Note:** Styling columns like this is limited to a few properties: `border`, `background`, `width`, and `visibility`. To set other properties you'll have to either style every `<td>` or `<th>` in the column, or use a complex selector such as `:nth-child`.