1 Instructions for Creating Tables

As we have said earlier, each environment begins with a \begin{⋯} command and ends with an \end{⋯} command. For creating tables, there are two environments you should be aware of, the table environment and the tabular environment. First let’s look at the tabular environment. In its simplest form, the \begin command takes one argument, a series of letters chosen from ‘l’, ‘r’, and ‘c’, meaning that a column to be entered into the table should typeset its data as left-justified, right-justified, or centered, respectively. The following example exhibits a four column table, the first column of which is left-justified, and the other three right-justified. The TeX code is

\begin{tabular}{lrrr}
Name & pies & cakes & cans \\
Tom & 3 & 4 & 5 \\
Fred & 2 & 1 & 7 \\
Harry & 4 & 2 & 12 \\
\end{tabular}

Note that data for the columns are separated by ampersands (&) and each line is ended with \\\. If no blank lines or line breaks are included between the text and the table, when typeset this table appears in line in the text of the paragraph like this:

Name pies cakes cans
Tom 3 4 5
Fred 2 1 7
Harry 4 2 12

That is because with no blank line separating the table from the words, TeX’s algorithm simply treats it like a big letter in the sentence and puts it in the same paragraph. To separate it from the paragraph (that is, to treat it as its own paragraph), you would have to skip a line before and after it (recall, blank lines are used to separate paragraphs):

However, for most tables, it looks better to center them on the page. To do this, use the center environment.

We will do this in the next table, but first let us add lines between the table entries. To add lines between columns, simply insert a | between the column specifications ‘r’, ‘l’, or ‘c’. To add horizontal lines between the rows, add the command \hline wherever you would like the lines to appear. Note we have put double bars at the beginning and end of columns, as well as between the names and the data. Let us also introduce here the table environment. When the table is enclosed in this environment \LaTeX assigns a number to the table based on a name that you give it, and you can refer to the table by name anywhere else in the document. Also the table environment has a \caption command to give it a caption or title. The caption can be placed above or below the table. The argument ‘[h]’ after the \begin{table} command means to place it ‘here’ in the text, i.e. wherever it occurs in the \LaTeX file. Some alternatives to this are ‘[t]’ for top of page, and ‘[b]’ for bottom of page. (Note, if you add an exclamation point, e.g. ‘[!h]’, ‘[!t]’, or ‘[!b]’, you may better succeed in forcing \LaTeX to do what you want. For more information, see the \TeXFAQ on the \TeXHelp Page on the website.) Here is what our table now becomes, adding the lines, putting it in a table environment, and also centering it:

\begin{table}[h]
\center
\begin{tabular}{||l||r|r|r||}
\hline
Name & pies & cakes & cans \\
Tom & 3 & 4 & 5 \\
Fred & 2 & 1 & 7 \\
Harry & 4 & 2 & 12 \\
\hline
\end{tabular}
\caption{The Food People Will Bring to the Dessert}
\end{center}
\end{tabular}
The table now typesets like this:

Table 1: The Food People Will Bring to the Dessert

<table>
<thead>
<tr>
<th>Name</th>
<th>pies</th>
<th>cakes</th>
<th>cans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Fred</td>
<td>2</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Harry</td>
<td>4</td>
<td>2</td>
<td>12</td>
</tr>
</tbody>
</table>

One more thing that may be useful at this stage is the multicolumn command. Using this command, you can stretch a column across two or more columns of the table. For example:

\begin{center}
\begin{tabular}{||l||r|r|r||}
\hline
Name & \multicolumn{3}{c|}{Food} \\
\hline
& pies & cakes & cans \\
\hline
Tom & 3 & 4 & 5 \\
\hline
Fred & 2 & 1 & 7 \\
\hline
Harry & 4 & 2 & 12 \\
\hline
\end{tabular}
\end{center}

produces

<table>
<thead>
<tr>
<th>Name</th>
<th>Food</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pies</td>
</tr>
<tr>
<td>Tom</td>
<td>3</td>
</tr>
<tr>
<td>Fred</td>
<td>2</td>
</tr>
<tr>
<td>Harry</td>
<td>4</td>
</tr>
</tbody>
</table>

That should be enough to get started. There are a number of other options that you can read about in the Indian Primer (link on our website) or in the LaTeX manual (in the physics department commons). Note that the program MakeTable can create the table guts, by simply cutting and pasting from a spreadsheet, so you may not have to create many tables from scratch.