ACADEMIC TECHNOLOGY SUPPORT

Microsoft Office 2013 Excel Charts

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Before We Begin, Some Terminology

As we know, Excel cells can contain text, values, or formulas. In charting, Excel uses **data points**, which are the values that it finds in selected cells. Data points can be numbers that you enter or computed results of formulas. Cells containing text (see column A below) are often used to label pie slices or points on a chart axis.

A **data series** is a group of related data points. In the example below, you might decide to create a line chart with 3 data series (the data points in rows 3-5), in which case you’d have 3 data series. On the other hand, you might decide to create a pie chart with the data points in row F. Then you’d have only one data series, the data points in column F. The key thing to remember is that a data series is a group of related data points.

**Basics**

When you create a chart in Excel, you should be aware of two things: first, what you want your chart to look like: e.g., line, pie, or bar. Secondly, you want to make sure you know where your data are that you want to chart. What do I mean by this?

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Students Enrolled in Summer Classes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Departments</td>
<td>2009</td>
<td>2010</td>
<td>2011</td>
<td>2012</td>
<td>Total</td>
</tr>
<tr>
<td>3</td>
<td>English</td>
<td>401</td>
<td>496</td>
<td>515</td>
<td>650</td>
<td>2,062</td>
</tr>
<tr>
<td>4</td>
<td>Art</td>
<td>225</td>
<td>237</td>
<td>379</td>
<td>494</td>
<td>1,335</td>
</tr>
<tr>
<td>5</td>
<td>Business</td>
<td>451</td>
<td>650</td>
<td>662</td>
<td>701</td>
<td>2,464</td>
</tr>
</tbody>
</table>

Let’s suppose we want to create a line chart from the example above. The data that we want to use for the line chart are in cells B3:E5. We can also use the labels in column A, but if we include row 2 when we select the data, Excel would generate a strange-looking chart because Excel would assume that row 2 was another department like rows 3-5 (a 4th series), but it’s not. It’s a row containing text and labels.

**Charts**

**Types of Charts**

Excel is capable of creating many different types of charts, but the 3 primary types that we all see most often are line, bar, and pie charts. Note that Microsoft distinguishes between **bar** charts, which produce **horizontal** bars, versus **column** charts, which produce **vertical** bars. Typically, line charts are best suited for portraying changes in your data over some time period. Bar charts do a good job of comparing and contrasting the data represented by each bar. And finally, pie charts are used mostly for showing the proportion of parts to a.
whole. It’s always a good idea to begin your project with an idea of what type of chart you intend to produce. However, you may find that you change your mind as Excel shows you what your data will look like displayed in another type of chart.

Creating a Chart

The first step is to select the (correct!) data you intend to use in your chart. Then click on the Insert tab in the Ribbon. When you do that, you’ll notice a new button on the Ribbon, Recommended Charts.

To the right of this button are the familiar buttons from Excel 2010, i.e., column, line, pie, and so forth. If you click on Recommended Charts, it’ll open a dialog window called Insert Chart, and present you with several different types of charts that Excel recommends for the data you just selected. You don’t need to accept any of the examples here if you don’t want to, but we find that one of the examples is a line chart which is what we wanted, so we click on that example, and then click the OK button on the bottom of the dialog box.

Note that you don’t have to use the Recommended Charts button. If you know exactly what type of chart you want, just click on the appropriate button in the Charts group. Now we have a chart in the spreadsheet, and since the chart is selected (see the frame around it), we have the Chart Tools tab in the ribbon. At this point, the ribbon looks a little different from how it looks in Excel 2010 so let’s go over some of the changes.
First of all, there are now two tabs below Chart Tools, not three. There’s no Layout tab anymore. The options that appeared under the Layout tab have now largely been replaced by the Add Chart Element button on the far left area of the ribbon.

Note that the Change Chart Type button is still there, but it’s been moved to the right side of the ribbon. The Save As Template button is no longer on the ribbon, but it appears as an option when you right-click on a chart. The Switch Row/Column and Select Data buttons are still there, but they’ve been moved to the right side. The new Quick Layout button shows you a number of styles that you may want to consider with your chart.

Click the button, and move your cursor over the styles, and you’ll notice that your chart changes. If you like any of the changes, just click on it. Should you decide not to use any of the styles, just click away from the drop-down style list. The Quick Layout button is similar to Chart Layouts in Excel 2010, but 2010 didn’t have the ability to change your chart merely by moving the cursor over a style.

Just as in Excel 2010, the new version has a Chart Styles group, but there’s a difference. In 2010, Chart Styles only changed the colors of the chart elements, such as lines or bars. In 2013, Chart Styles shows more subtle differences like placing the legend in different areas, adding data labels, etc. But if you want to experiment with different colors for your chart, there’s a new button called Change Colors right next to the Chart Styles group, and it will do that for you.

**Modifying a Chart**

So you’ve got your chart now, and you’re reasonably happy with its appearance, but you want to make a few changes to it. The title just says “Chart Title”, you’d like the legend to appear on the right, not underneath the
chart, and the X-axis labels are 1, 2, 3, and 4 rather than 2009 – 2012. To change the chart title, just click on it to select it. Now type whatever you want for a title in the Formula Bar, and press Enter.

To change the placement of the legend, click on the Add Chart Element button, select Legend, and choose Right.

Now you want to change the X-axis labels. To do that, click the Select Data button in the Ribbon. That opens a dialog box named Select Data Source. Click on the Edit button under Horizontal Axis Labels, then select cells B2:E2 in the chart.

Now our chart looks the way we want it to look!
Three New Icons

You’ll notice, with the chart selected, that Excel 2013 shows 3 new icons on the right-hand side of the chart you’ve created. These icons are, from top to bottom, Chart Elements, Chart Styles, and Chart Filters. The Chart Elements button allows you to quickly add or delete ‘elements’ of the chart, e.g., data labels. The Chart Styles button is much like the Chart Styles group in the Ribbon, in that hovering your cursor over an example will change some aspect of your charts’ appearance. There seem to be more styles here than in the Chart Styles group in the Ribbon, for some reason. If you find a style you like, just click on it to make the change permanent. Finally, the Chart Filters button allows you to remove data series or (x-axis) categories from your chart.

Something Brand New: The Format Task Pane

In previous versions of Excel, when you wanted to make changes to some aspect of a chart, you’d right-click on it to invoke the format dialog box. This is no longer the case. Now, when you right-click on a chart object, the Format Task Pane will appear, as seen below.

Notice that, in this example, we have Legend Options and Text Options. The Format Task Pane is completely context-sensitive, as the format dialog box was in 2010, so it’ll have a different appearance depending on what object you choose to modify.

Let’s say I wanted to modify the chart legend somehow, so I right-clicked on the legend. The Format Task Pane is therefore completely focused on all the possible options that we have for the chart legend. We see that Legend Options is currently highlighted, and it displays 3 icons. From left to right, they are: Fill, Effects, and “General Options”. The dialog box is currently displaying the options for general legend options (the rightmost choice) because it’s highlighted. It would display an entirely different set of options if Fill or Effects were selected. Here’s what Format Legend looks like when I select Text Options:
We see that with Text Options highlighted, we have 3 new icons. From left to right, they’re Text Fill, Text Effects, and Textbox. And it’s currently displaying the choices for the leftmost icon, Text Fill, because it’s the one that’s selected. If you’re not sure what the icons mean, just hover your cursor over them.

Overall, the Format Task Pane seems to be more intuitive, and overall a nice enhancement over the ubiquitous dialog boxes in Excel 2010.

**Combination Charts**

Combination charts are an interesting class of charts that deserve special mention. As the name implies, a combination chart is one that’s actually composed of at least two separate charts superimposed on one another. Here’s one created by noted author John Walkenbach, and used in several of his Excel books:

One of the interesting aspect of combination charts is that they have two separate y-axes. This is because in many charts the y-axis is used to measure some quantity, such as number of widgets sold.

So for example, if you want to have a chart to display number of widgets sold (shown as columns) over a period of months, and number of sales staff employed (shown as a line) you may need a combination chart
with one y-axis showing widgets sold and the other showing number of sales staff. Combination charts are especially useful in situations like the above in which the scale of two data series are quite different (thousands of widgets vs. dozens of employees, for example).

Excel 2010 required quite a few steps to produce a combination chart, but it’s very easy in 2013. As always, the first step is to select your data. Then click on the Insert tab, click on Recommended Charts, click on the All Charts tab, and select Combo from the list at the left.

Notice that Excel has already guessed that you might want a column chart for Average Temp, and a line chart for Precipitation. All you need to do now is click on the Secondary Axis checkbox next to Precip, and you’re done!