

This tutorial is going to teach you about stack plots. Now stack plots are plots that stack one on top of each other so that you can see how they relate to the totals.

So you can break down bar graphs or line charts into component pieces so that you can see those components more clearly. The problem is that sometimes these can be hard to interpret. So let's take a look.

Suppose that this company had spent certain number of millions of dollars over these five-year intervals. So in 1985, they spent \$10 million. In 1990, they spend a little bit less, et cetera, et cetera, et cetera.

It looks like they really proliferated their spending in the last 10 years or so. What a stack plot will allow us to do is see exactly where that spending breakdown occurred. So let's take a look. Suppose that most of their budget was done on operations and marketing. Operations, the day to day business of the company. And marketing, which is getting their name out there.

Now it looks like the green, operations, have grown a little bit over the years that the company's been in business. And maybe that's due to inflation. But if you look at the yellow pieces, it looks like the marketing budget has really proliferated over that same period of time. And so if the company is looking to cut costs, maybe they'll cut it from marketing because they can see that by the year 2010, marketing and operations are costing about the same amount.

You can also see that the marketing budget didn't really increase that much or decrease within this five year span. The yellow ribbons are about the same size in 2005 as they were in 2010. So this is some way to see the breakdown of what you have there. So this is a stack bar graph.

A stack line chart can be a little hard to interpret. For instance, suppose these are four different boutique stores that a company has. And they want to know how the New York business is doing and how the Los Angeles business is doing. It's hard to tell based on this graph whether the New York store is doing poorly because it's the bottom, or whether these are stacked on top of each other. If they are, then the Miami store is doing the worst because its difference is the least from the next lowest one.

It's hard to tell whether these are added values or individual values. Does the Miami store make \$250,000 on its own? Or is it a total of \$250,000 between the four stores and each of these are components? It's hard to tell.

You can make it a little clearer by making them ribbons instead. This is the same graph with ribbons. Here, you can see that in month number six, New York accounted for this much, LA accounted for this much, Chicago accounted for this much, and Miami accounted for that much. This makes it a little bit more clear that you're

talking about adding the values, as opposed to individual values, which this graph it's not clear that that's what you're doing.

So stack plots are used when two or more data sets are going to be shown on the same set of axes, or you want to break down one data set by their components. And we're interested in the sums.

Different colors typically are used to distinguish the components. On a line chart, we typically use ribbons instead of straight lines to indicate the size of the component. And that shows that we're talking about stacked up groups instead of simply just individual lines. And so we talked about stack bar graphs and stack line charts.

Good luck. And we'll see you next time.