TABLEAU

Day 26-27

Stacked Area Chart

There are two types of area chart:

1. Overlapping area chart
2. Stacked area chart

What is the major difference between the overlapping area chart and the stacked area chart?

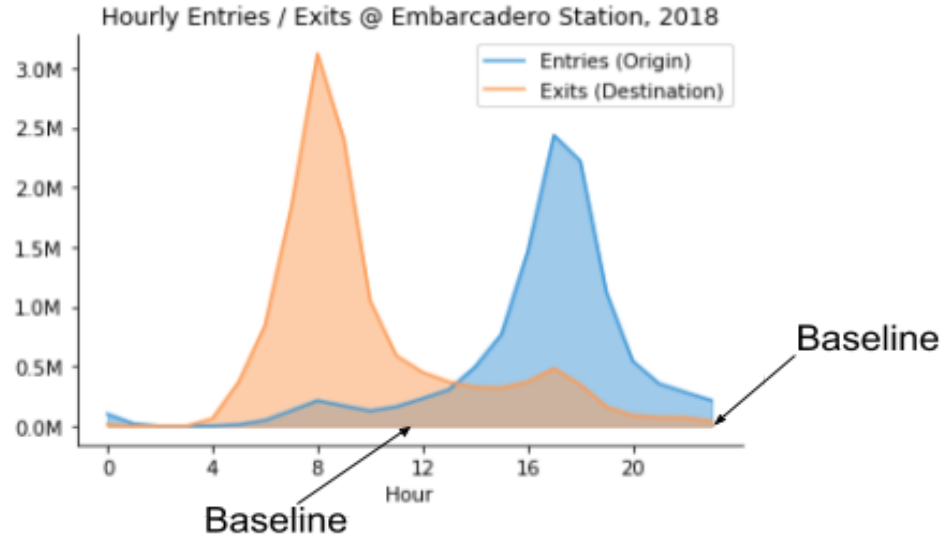


Fig: Visualization of an Overlapping Area Chart

There is a common zero baseline for all the lines drawn in the overlapping area chart. Each line was shaded from its vertical value to the baseline. All the lines are drawn at a single time.

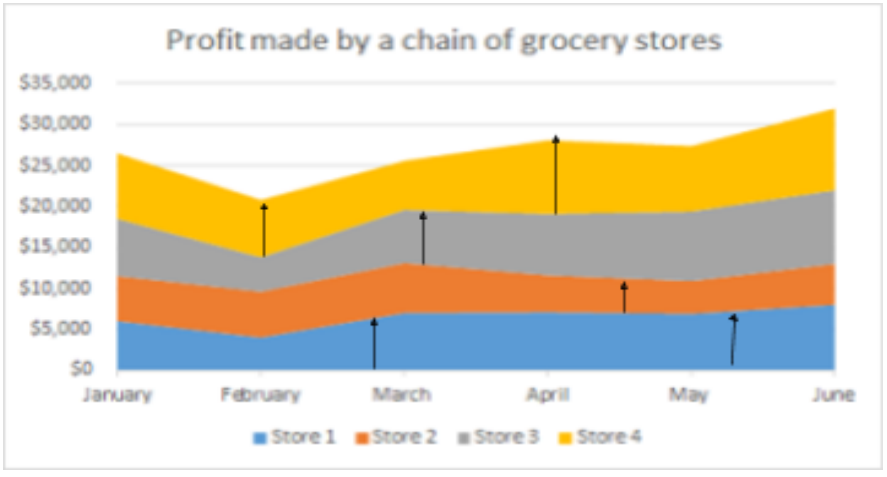
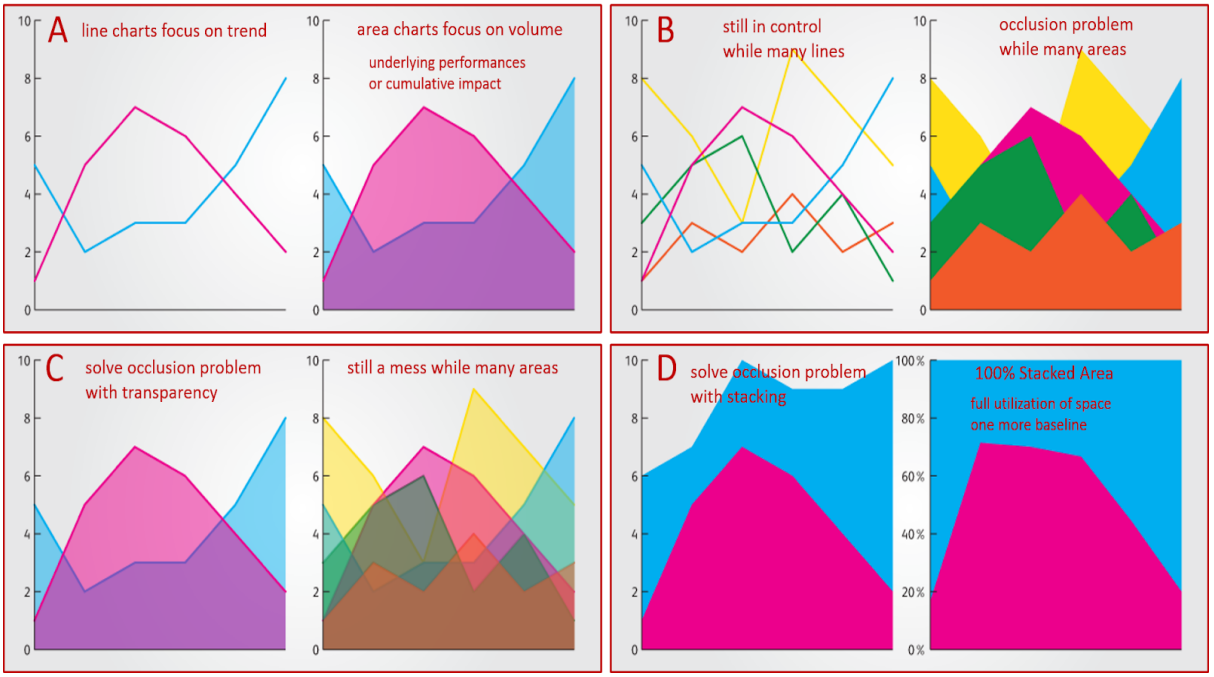


Fig: Visualization of a Stacked Area Chart

Here, the baseline is not common. For Store 1, Store 2, Store 3, and Store 4 the baselines are different. I have marked the arrows in every stack, the baseline starts in every case where the arrow starts.
The lines for each stack are drawn and shaded one at a time where the height of the previous graph serves as the purpose of baseline. In the stacked area chart, lines are plotted one at a time, with the height of the most recently-plotted group serving as a moving baseline. The fully-stacked height of the topmost line in a stacked area chart will correspond to the summing total across all groups.
For stacked area charts, some visualization tools require the columns to list not the individual contributions, but the cumulative contributions instead. In this case, the columns specify the line heights directly, and the contributions of each group are implied by the difference in values between columns.

MONTH	TRIALS	+ BASIC	+ PREMIUM
2017-19	144	1234	1378
2018-20	158	1395	1553
2019-05	165	1702	1867
2020-09	179	1809	1988

Overall summary for area charts and when to choose area charts over line charts:



Still, having confusion in where to use line chart vs area chart?

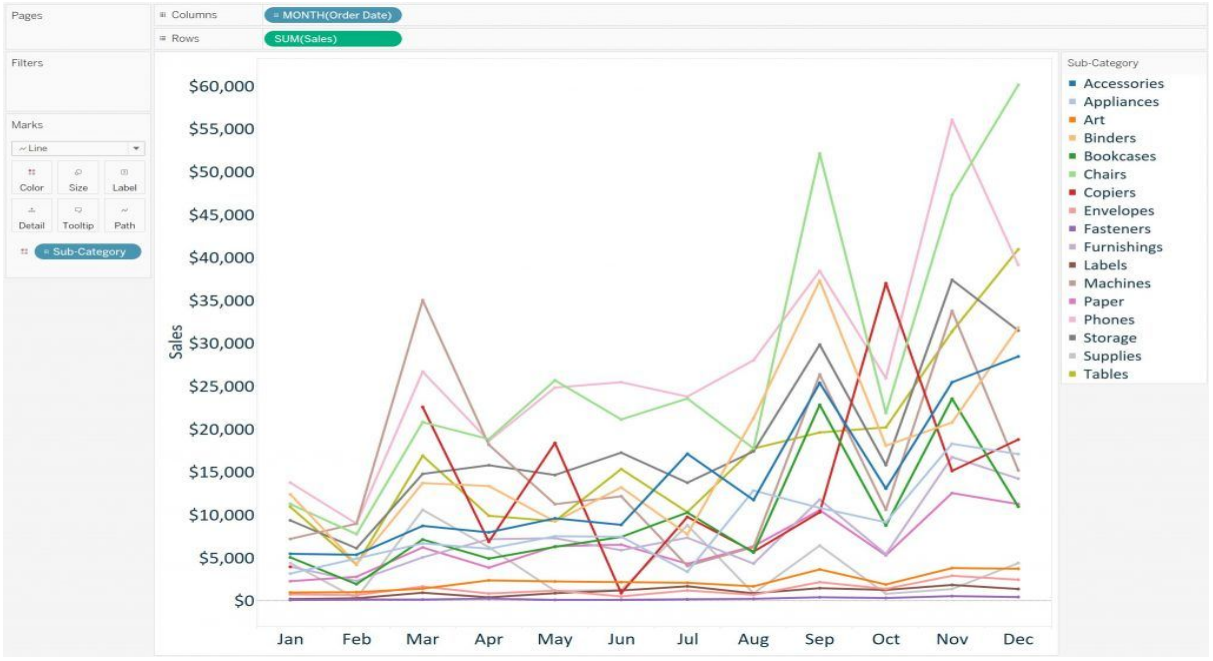


Fig: Line chart

Does it give you any insights?
Nay!

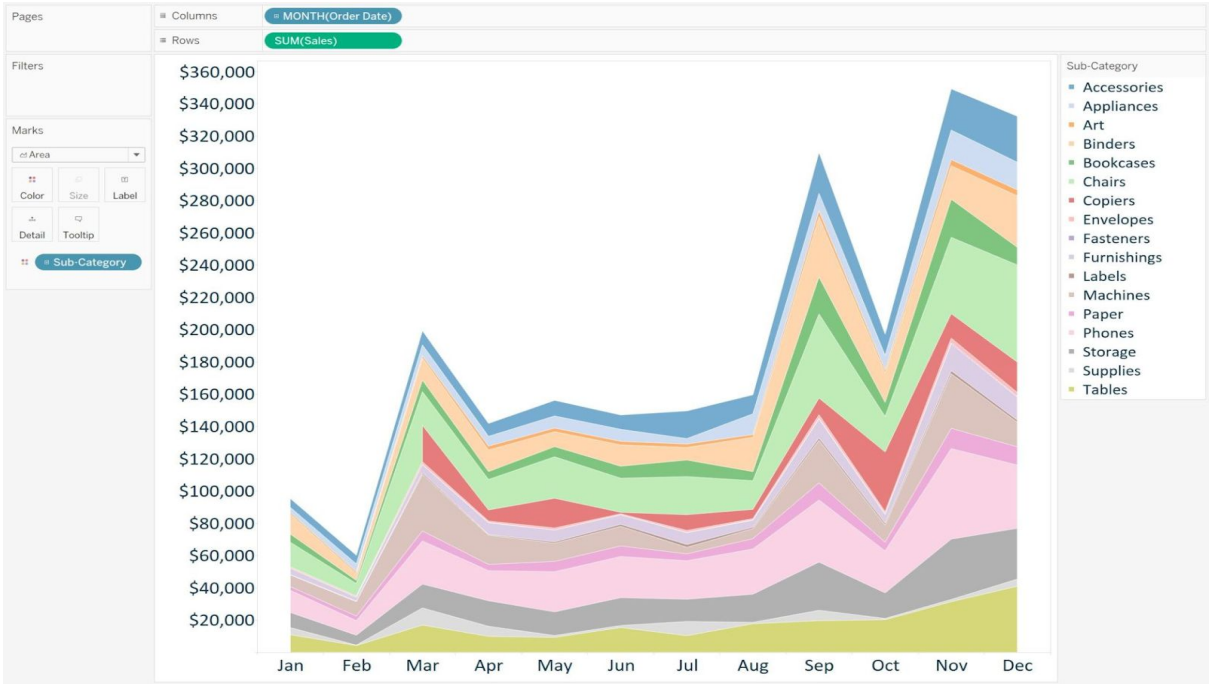


Fig: Stacked area chart

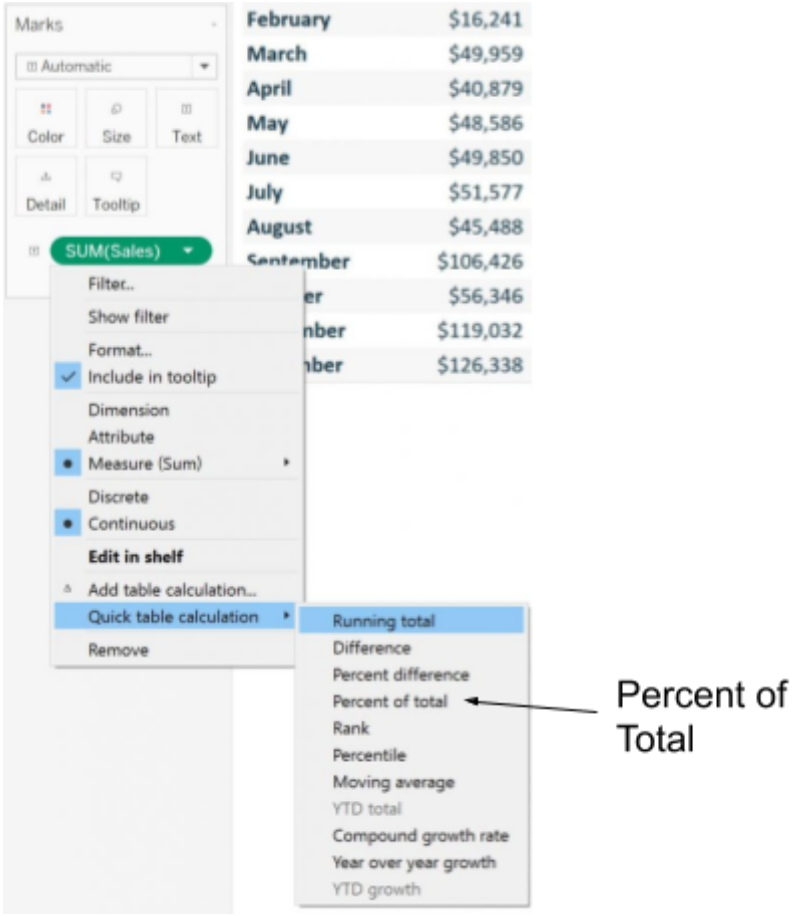
Much better! Isn't it?

When to use a stacked area chart?

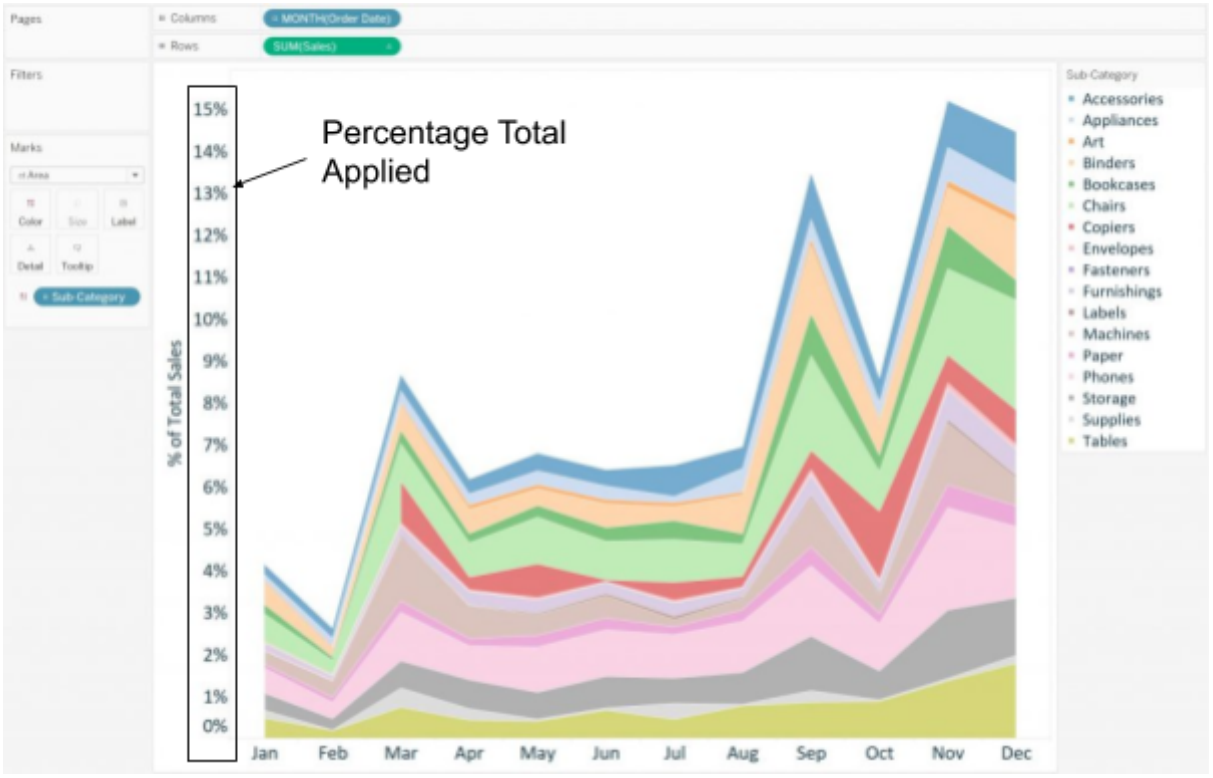
It is preferred to use stacked area charts when the total axis equals 100% and each individual dimension member is displayed as a percentage of the total. This can be achieved by adding a quick table calculation for ‘Percent of total’ to the measure being displayed.

How to create a stacked area chart?

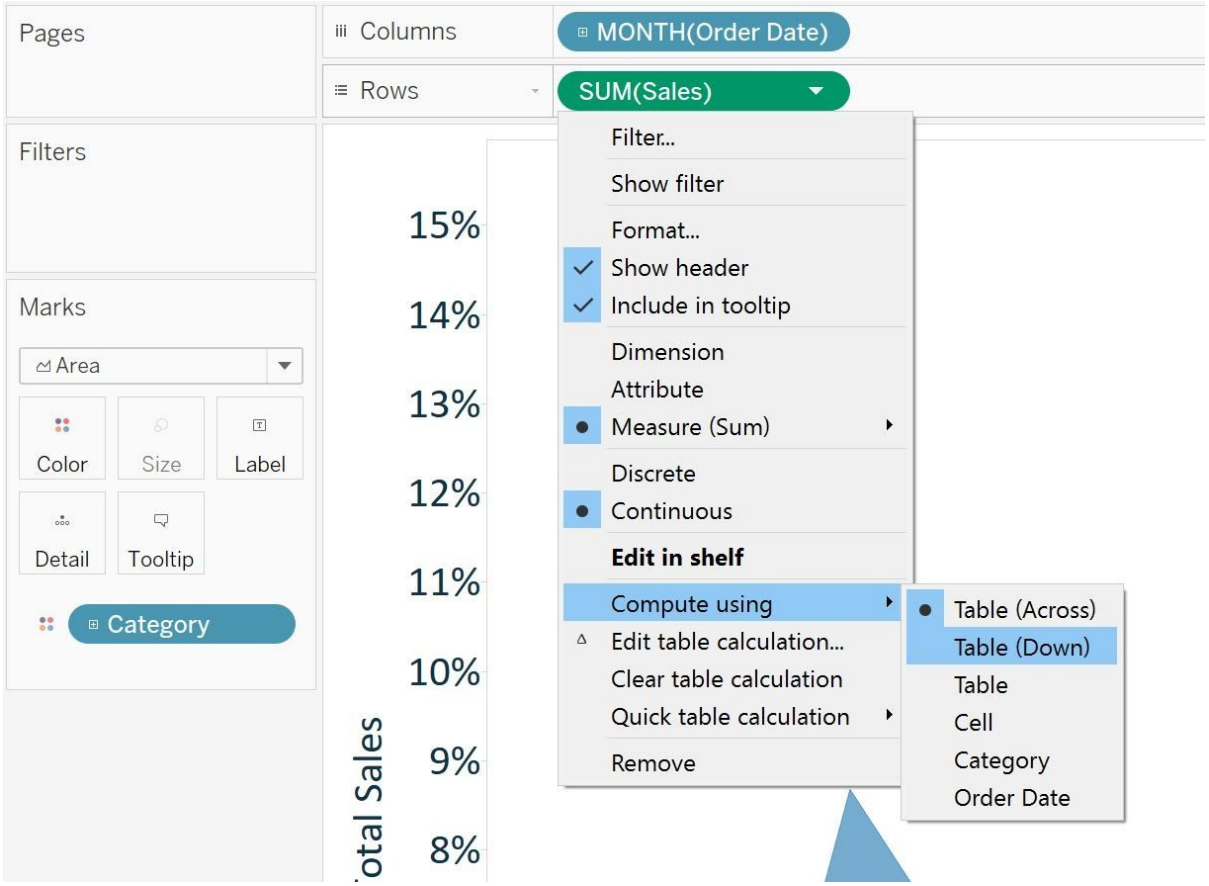
Step 1: Add dimensions and measures in columns and rows.
Step 2: Change the mark type from Automatic, which is currently set to Line, to Area.
Step 3: For understanding the chart better, you can change the total to percentage total. This can be done using a Quick Table Calculation in Tableau.



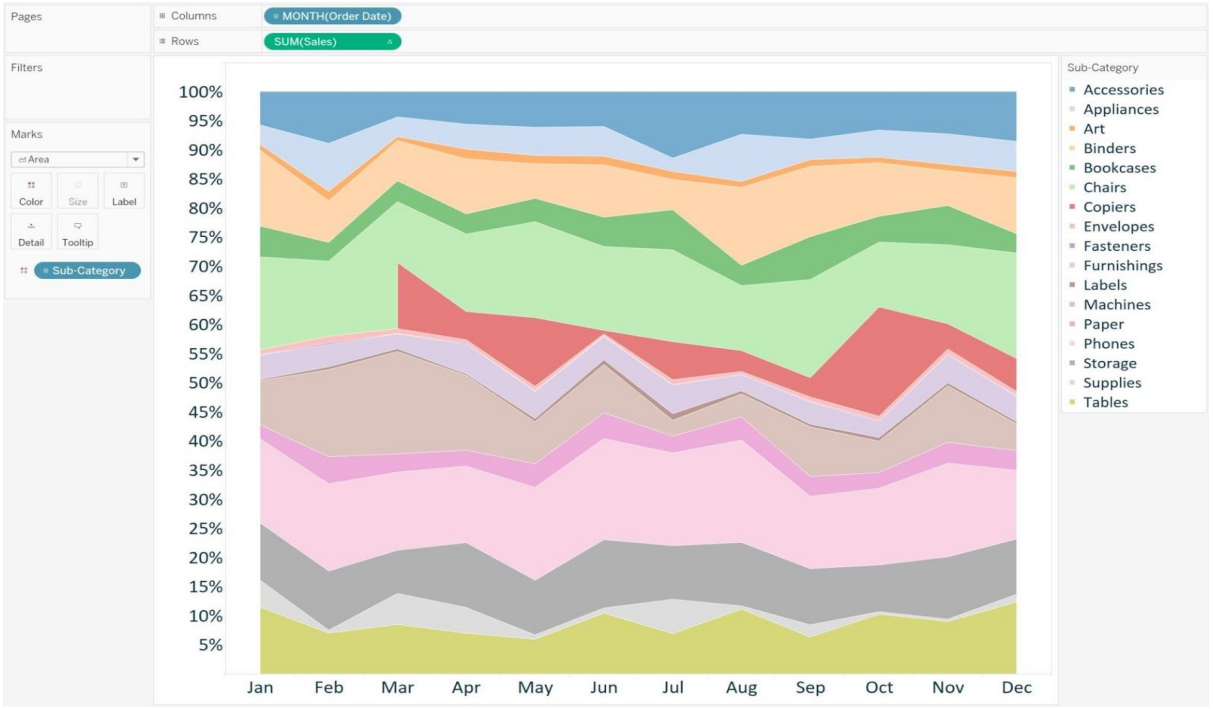
After the Table Calculation was applied, the chart will be like:



With this view, the trends look exactly the same, but the axis is being displayed as a percent of total instead of the raw revenue values. To change the view so that the axis totals 100% and the areas represent each dimension member's contribution to each month's total, the table calculation needs to be changed to compute using Table (Down). This is changed by clicking on the measure with the table calculation for percent of the total, now designated with a delta symbol, hovering over 'Compute using', and choosing 'Table (Down)':



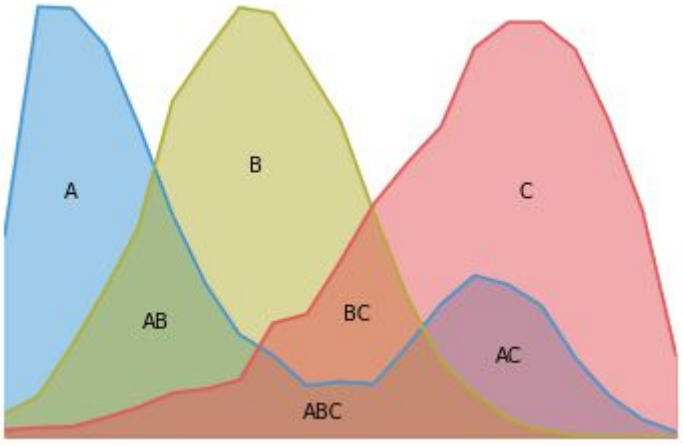
The view looks as follows after changing the direction of the table calculation, making it easier to see the monthly contribution for each individual dimension member:



Unless the slice is on the top or the bottom, it can still be challenging to evaluate the trends for individual dimension members with a great deal of precision.

Best practices for creating an area chart:

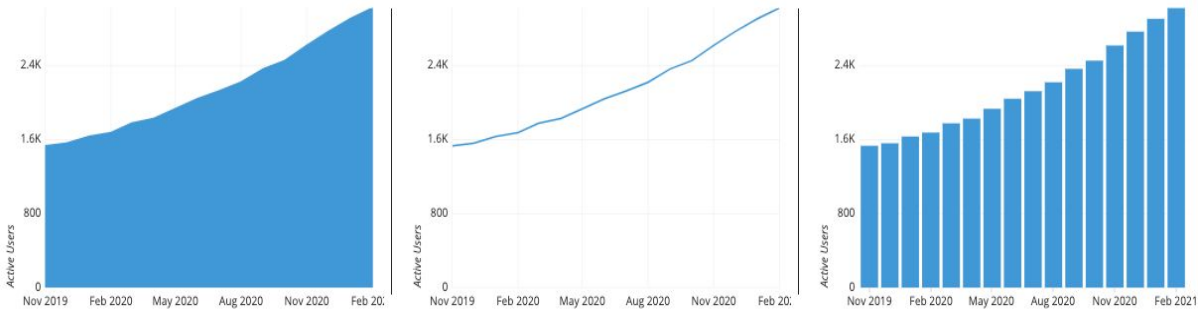
- Include a zero baseline
- Limit the number of series in an overlapping area chart



- Consider the order of lines in a stacked area chart. While the total shape of the plot will be the same regardless of the order in which groups' lines are plotted, reading the visualization can be supported through a good choice of line order. A good rule of thumb is to put the largest or most stable groups at the bottom, with the most variable or smallest groups last and on top.

Common misuses:

- Using an area chart for plotting single series
  For getting a proper visualization in a single series, a bar chart is preferred.



Happy learning, happy coding!