# TABLEAU

**Day 16**

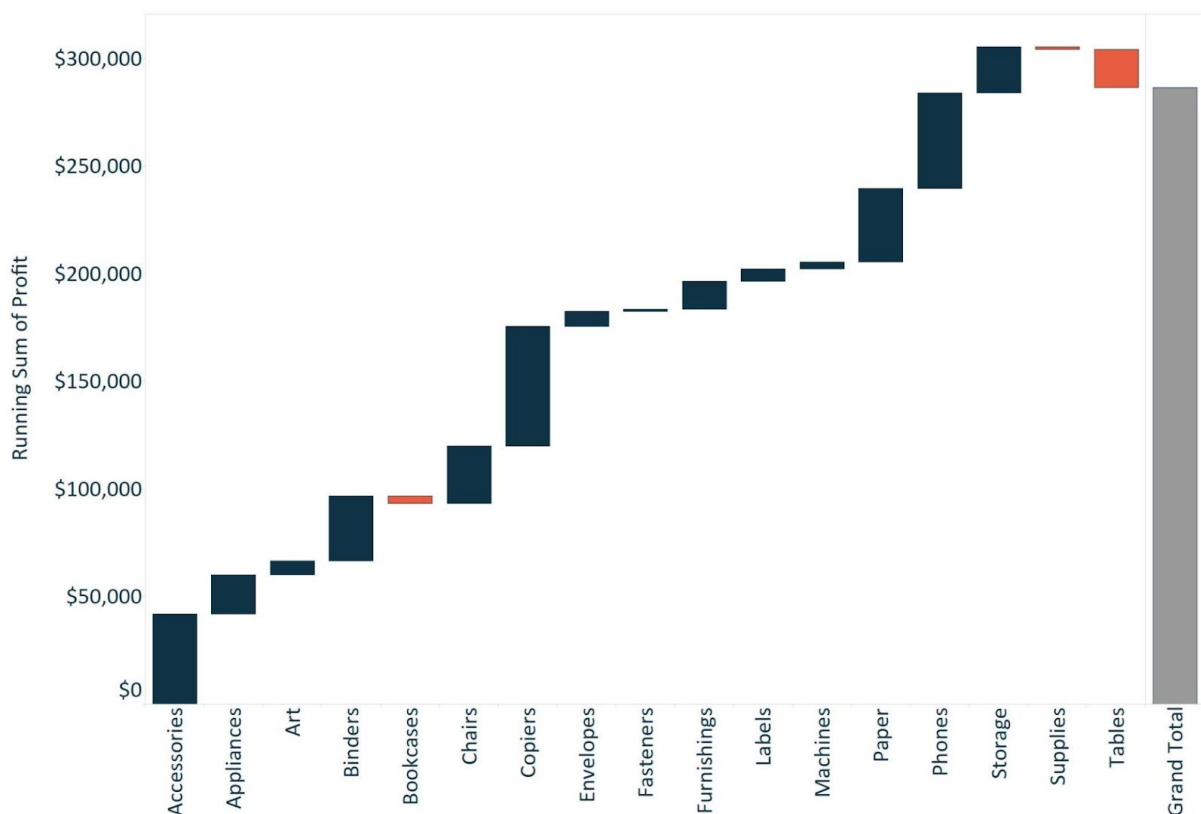**Prerequisites:** **Table calculation, Gantt chart**
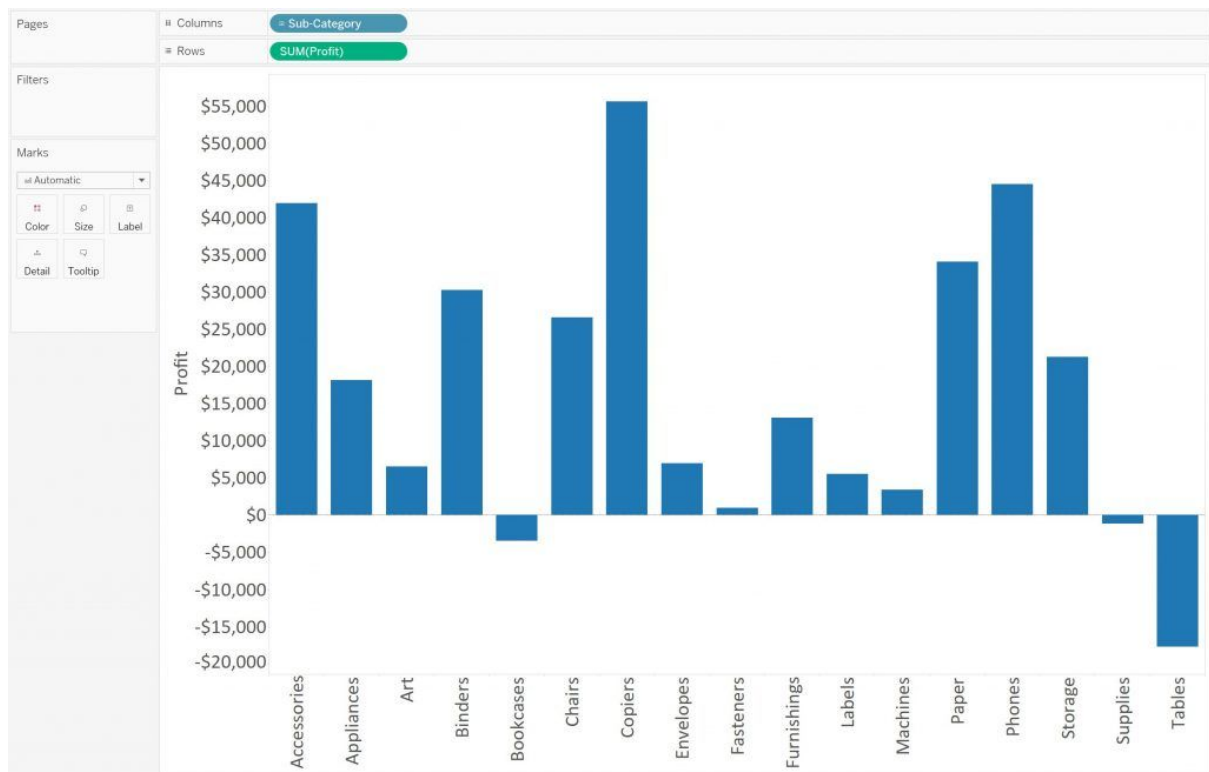
## Waterfall Chart

A **waterfall** chart or **cascade** chart can be used for understanding or explaining the growth of a company, changes in revenue, or profit (positive profit or negative profit) between two time periods in the form of a waterfall.
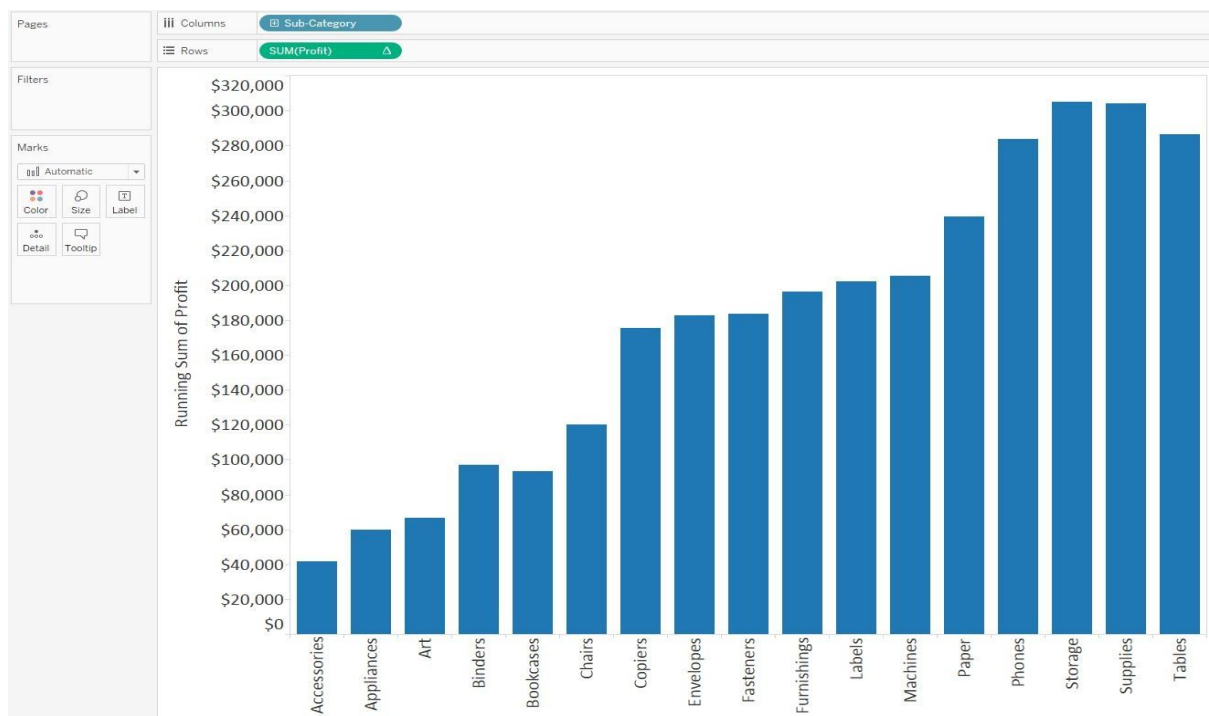


## How to create a waterfall chart?

We will be visualizing how each Sub-Category in the Sample – Superstore dataset is contributing to total profit:

**Step 1:** To start a waterfall chart in Tableau, create a vertical bar chart showing the measure, Profit, by the dimension, Sub-Category.
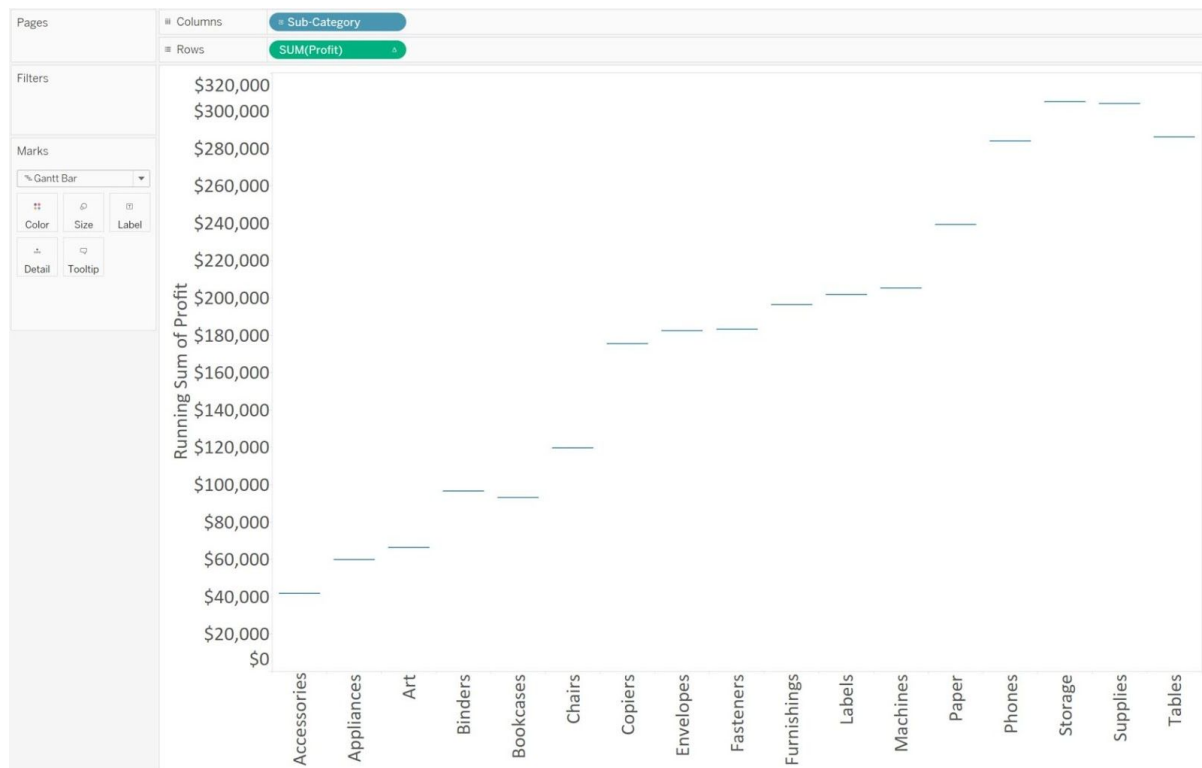
**Step 2:** Add a table calculation to the Profit measure so that it calculates a 'Running total' on 'Table (Across)'. After adding the quick table calculation, the chart looks like this.



**Step 3:**

**Step 3:** At this point we see how the running total has cumulated across our different sub-categories, it is not easy to determine the positive or negative contribution of each individual dimension member. To make this easier, we will convert this bar chart showing running total to a waterfall chart with a couple of additional steps. First, change the mark type from 'Automatic', which is currently bar, to the 'Gantt Bar' mark type.



**Step 4:** Now, we need the tops or bottoms of each bar to line up at the same points on the Y-axis. To accomplish this, we have to size the Gantt bars by something in order to extend them. While your first instinct may be to size the Gantt bars by the Profit measure or even the Profit measure on the view which includes a table calculation for running total, there is a trick involved with this step to get the desired effect.
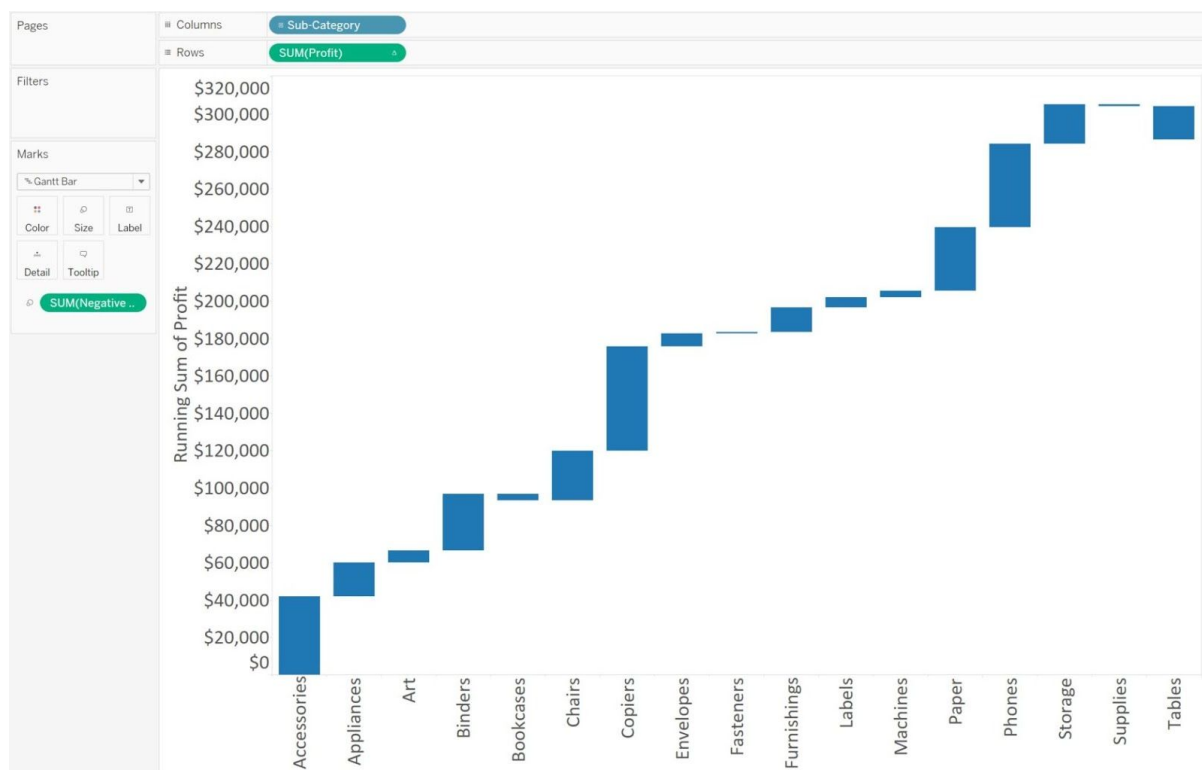
In order to get the Gantt bars for each dimension member to properly line up, we first, have to create a new calculated field that takes the measure in the waterfall chart multiplied by negative one. This example is using the Profit measure, so I will create a new calculated field that equals –[Profit].

**Step 5:** Once this calculated field has been created, this is the measure that we drag to the Size Marks Card to create the waterfall effect.

At this point, we have an effective waterfall chart, but there are a few things we can do to polish the final product as shown at the beginning of this post:

- Cleaned up the axis formatting.
- Colored the Gantt bars by Profit by dragging the Profit measure to the Color Marks Card; this created the black and orange color coding which represents positive and negative values, respectively.
- Added a total to the far right side of the visualization by navigating to Analysis > Totals in the top navigation and choosing "Show Row Grand Totals".

Lastly, we may choose to sort the dimension members by the sequence in which they were introduced or their values by ascending or descending order.

**Also see, Build a waterfall chart by Anthony B. Smoak on Youtube:**
**https://www.youtube.com/watch?v=q_4Y0-6xsUk**