

Tutorial 1 – Introduction to Visualisation in Tableau

Introduction

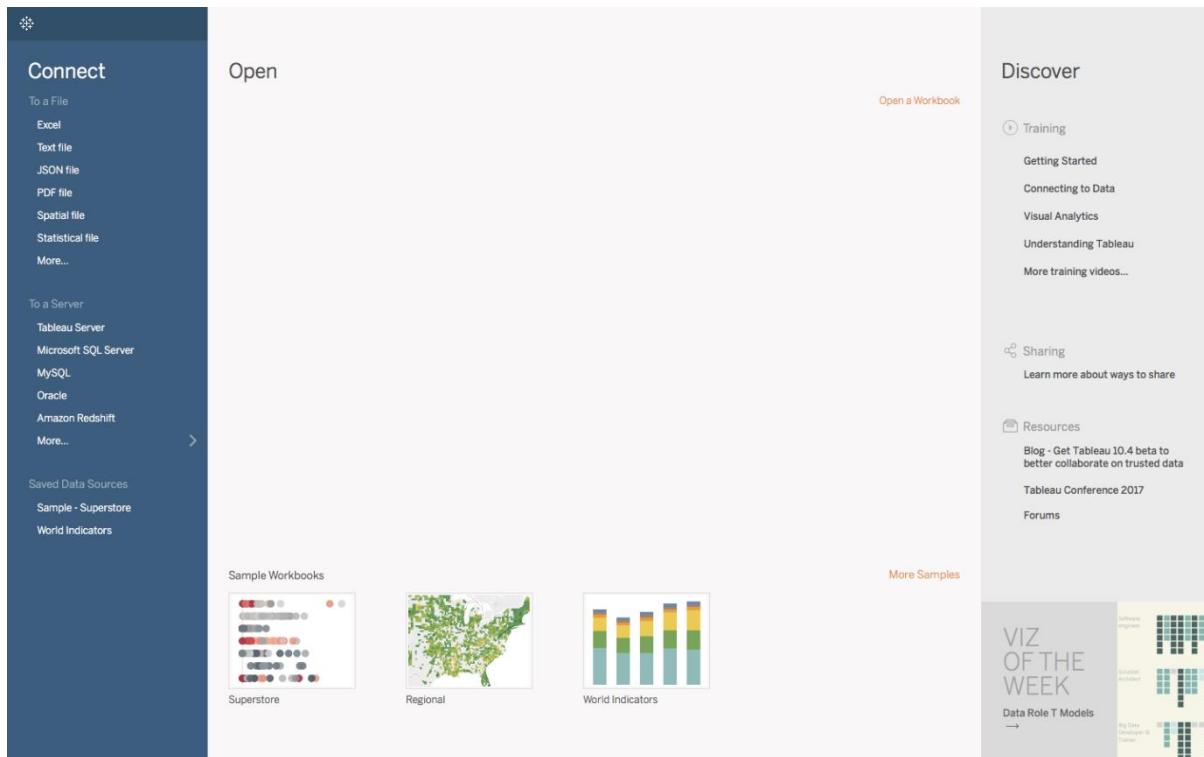
This Tutorial gives an overview of Tableau and walks through the steps to connect to a Data Source and create a Visualisation.

What is Tableau?

Tableau is a Data Visualisation tool that is widely used for Business Intelligence but is not limited to it. It helps create interactive graphs and charts in the form of dashboards and worksheets to gain business insights. And all of this is made possible with gestures as simple as drag and drop. The following table shows the various product offerings from Tableau.

	Key Features	Other Features	Operating System
Tableau Desktop	Creating Dashboards and Stories locally	Tableau Personal - limited data sources, non connectivity to Tableau Server Tableau Professional - Full enterprise capabilities	Windows, Mac
Tableau Public	A Massive, public, non commercial Tableau Server	All data published in public	-
Tableau Online	Creating Dashboards and Stories on the Cloud	Live Connections	-
Tableau Reader	View Dashboards and Sheets locally	Cannot modify workbooks or connect to the server	Windows, Mac
Tableau Server	Connect to Data sources and share Dashboards	Users can directly interact with Dashboards via browser	Windows

Connect to a Data Source



You should see a screen similar to the one above. This is where you import your data. As is visible, there are multiple formats that your data can be in. It can be in a flat file such as Excel, CSV or you can directly load it from data servers too.

You can see that Tableau itself offers some Sample Workbooks, with pre-drawn charts and graphs. I would suggest going through these later for further exploration.

Let us start with our Data – download the file **Sample-Superstore.xls** from Moodle. The data is that of a United States' Superstore which is deliberating over its expansion. It wishes to know the prospective regions of the country where it could and hence requires your help.

The first thing that you will obviously need to do is import the data onto Tableau. So quickly follow the below steps:

1. Since the data is in an Excel File, click on Excel and choose the Sample – Superstore.xls file to get :

Drag sheets here

2. You can see three sheets on the screen, but we are only going to be dealing with Orders here, so go ahead and drag the same on Drag sheets here :

#	Abc Orders Superstore Sales	F3	Abc Orders F4	Abc Orders F5	Abc Orders F6	Abc Orders F7	Abc Orders F8	Abc Orders F9	Abc Orders F10	Abc Orders F11	Abc Orders F12
null	21		null	null	null						
null	9994		null	null	null						
null	Order ID		null	null	Ship Mode	Customer ID	Customer Name	Segment	Country	City	State
7,981	CA-2011-103800	03/01/2013	07/01/2013	Standard Class	DP-13000	Darren Powers	Consumer	United States	Houston	Texas	77,0
740	CA-2011-112326	04/01/2013	08/01/2013	Standard Class	PO-19195	Phillina Ober	Home Office	United States	Naperville	Illinois	60,5
741	CA-2011-112326	04/01/2013	08/01/2013	Standard Class	PO-19195	Phillina Ober	Home Office	United States	Naperville	Illinois	60,5
742	CA-2011-112326	04/01/2013	08/01/2013	Standard Class	PO-19195	Phillina Ober	Home Office	United States	Naperville	Illinois	60,5
1,760	CA-2011-141817	05/01/2013	12/01/2013	Standard Class	MB-18085	Mick Brown	Consumer	United States	Philadelphia	Pennsylvania	19,1
5,328	CA-2011-130813	06/01/2013	08/01/2013	Second Class	LS-17230	Lycoris Saunders	Consumer	United States	Los Angeles	California	90,0
7,181	CA-2011-106054	06/01/2013	07/01/2013	First Class	JO-15145	Jack O'Briant	Corporate	United States	Athens	Georgia	30,0
7,475	CA-2011-167199	06/01/2013	10/01/2013	Standard Class	ME-17320	Maria Etezadi	Home Office	United States	Henderson	Kentucky	42,4
7,476	CA-2011-167199	06/01/2013	10/01/2013	Standard Class	ME-17320	Maria Etezadi	Home Office	United States	Henderson	Kentucky	42,4
7,477	CA-2011-167199	06/01/2013	10/01/2013	Standard Class	ME-17320	Maria Etezadi	Home Office	United States	Henderson	Kentucky	42,4

3. Note that the imported data looks a bit different for the first few rows. You see the option of Use Data Interpreter? Click on it to get the following clean view :

The screenshot shows the Tableau Data Interpreter interface. On the left, the 'Connections' pane shows 'Sample - Superstore Excel'. The 'Sheets' pane lists 'Orders', 'People', 'Returns', 'Orders A1:B3', and 'New Union'. A note indicates 'Cleaned with Data Interpreter' and 'Data Interpreter removed some data. [Review the results](#). (To undo changes, clear the check box.)'. The main area displays a clean dataset of 10,000 rows from the 'Orders' sheet. The data includes columns like Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, Country, and City. A tooltip 'Go to Worksheet' points to the 'Sheet 1' tab at the bottom.

#	Abc Orders Row ID	Abc Orders Order ID	Abc Orders Order Date	Abc Orders Ship Date	Abc Orders Ship Mode	Abc Orders Customer ID	Abc Orders Customer Name	Abc Orders Segment	Abc Orders Country	Abc Orders City
7,981	CA-2011-103800	03/01/2013	07/01/2013	Standard Class	DP-13000	Darren Powers	Consumer	United States	Houston	
740	CA-2011-112326	04/01/2013	08/01/2013	Standard Class	PO-19195	Phillina Ober	Home Office	United States	Naperville	
741	CA-2011-112326	04/01/2013	08/01/2013	Standard Class	PO-19195	Phillina Ober	Home Office	United States	Naperville	
742	CA-2011-112326	04/01/2013	08/01/2013	Standard Class	PO-19195	Phillina Ober	Home Office	United States	Naperville	
1,760	CA-2011-141817	05/01/2013	12/01/2013	Standard Class	MB-18085	Mick Brown	Consumer	United States	Philadelphia	
5,328	CA-2011-130813	06/01/2013	08/01/2013	Second Class	LS-17230	Lycoris Saunders	Consumer	United States	Los Angeles	
7,181	CA-2011-106054	06/01/2013	07/01/2013	First Class	JO-15145	Jack O'Briant	Corporate	United States	Athens	
7,475	CA-2011-167199	06/01/2013	10/01/2013	Standard Class	ME-17320	Maria Etezadi	Home Office	United States	Henderson	
7,476	CA-2011-167199	06/01/2013	10/01/2013	Standard Class	ME-17320	Maria Etezadi	Home Office	United States	Henderson	
7,477	CA-2011-167199	06/01/2013	10/01/2013	Standard Class	ME-17320	Maria Etezadi	Home Office	United States	Henderson	
7,478	CA-2011-167199	06/01/2013	10/01/2013	Standard Class	ME-17320	Maria Etezadi	Home Office	United States	Henderson	
7,479	CA-2011-167199	06/01/2013	10/01/2013	Standard Class	ME-17320	Maria Etezadi	Home Office	United States	Henderson	
7,480	CA-2011-167199	06/01/2013	10/01/2013	Standard Class	ME-17320	Maria Etezadi	Home Office	United States	Henderson	

If you open the Excel data file, you will see some metadata in it, i.e. information about data:

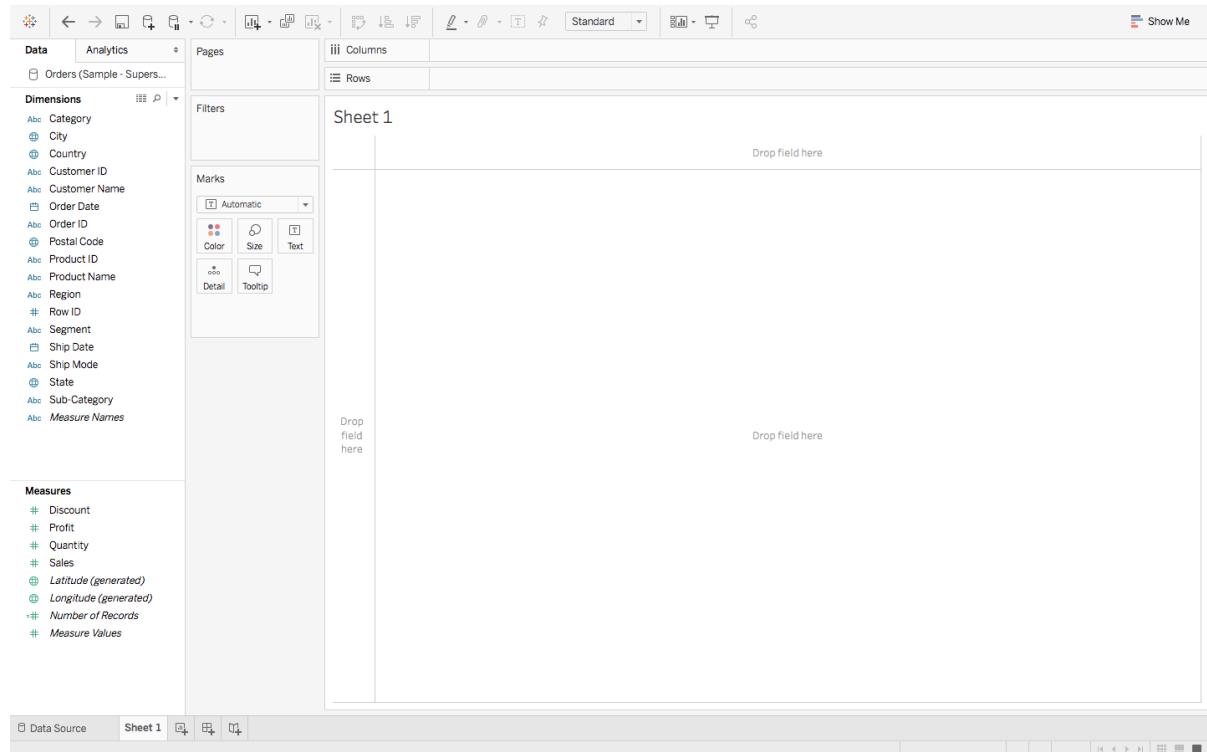
A	B
1	Data
2	Superstore Sales
3	21
	9994

Tableau imports the entire data file as is, but anticipating such discrepancies, explicitly provides a solution in the form of a Data Interpreter. If you wish to view the exact changes that it made, click on **Review the results**, and choose the **Orders** tab in the opened Excel sheet.

As it will show, it simply removed the erroneous data.

Data Visualisations

As soon as you had imported your dataset, next to the Data Source tab near the bottom of the screen, you immediately must have seen **Go to Worksheet**. A Worksheet is where you make all of your graphs, so click on that tab to reach the following screen:



Don't get overwhelmed by the various elements that you see here, we will cover them all one by one.

Let's start with **Dimensions** and **Measures**:

Dimension

Dimensions are the fields that you cannot aggregate.

They are generally string values, or Discrete values, and are mostly used as column or row headings.

E.g. CountryName, ProductName etc

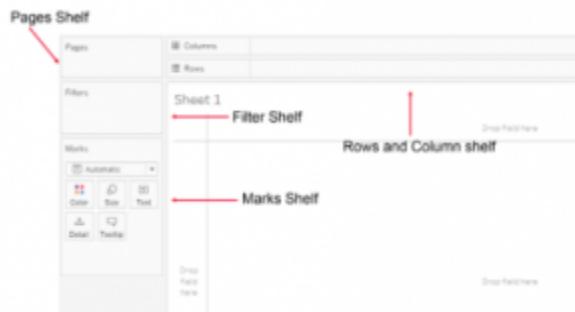
Measure

Measures, as the name suggests are the fields that you can measure or aggregate.

They are generally numerical values, or Continuous and are mostly used as plotting values.

E.g. CountryPopulation, ProductSales etc

Moving onto **Shelves**:



Visualisation in Tableau is possible through dragging and dropping Measures and Dimensions onto these different Shelves.

Rows and Columns: Represent the x and y – axis of your graphs / charts.

Filter: Filters help you view a strained version of your data. For example, instead of seeing the combined Sales of all the Categories, you can look at a specific one, such as just Furniture.

Pages: Pages work on the same principle as Filters, with the difference that you can actually see the changes as you shift between the Paged values. You can easily make one of your own using Pages.

Marks: The Marks property is used to control the mark types of your data. You may choose to represent your data using different shapes, sizes or text.

And finally there is **Show Me**, the brain of Tableau!



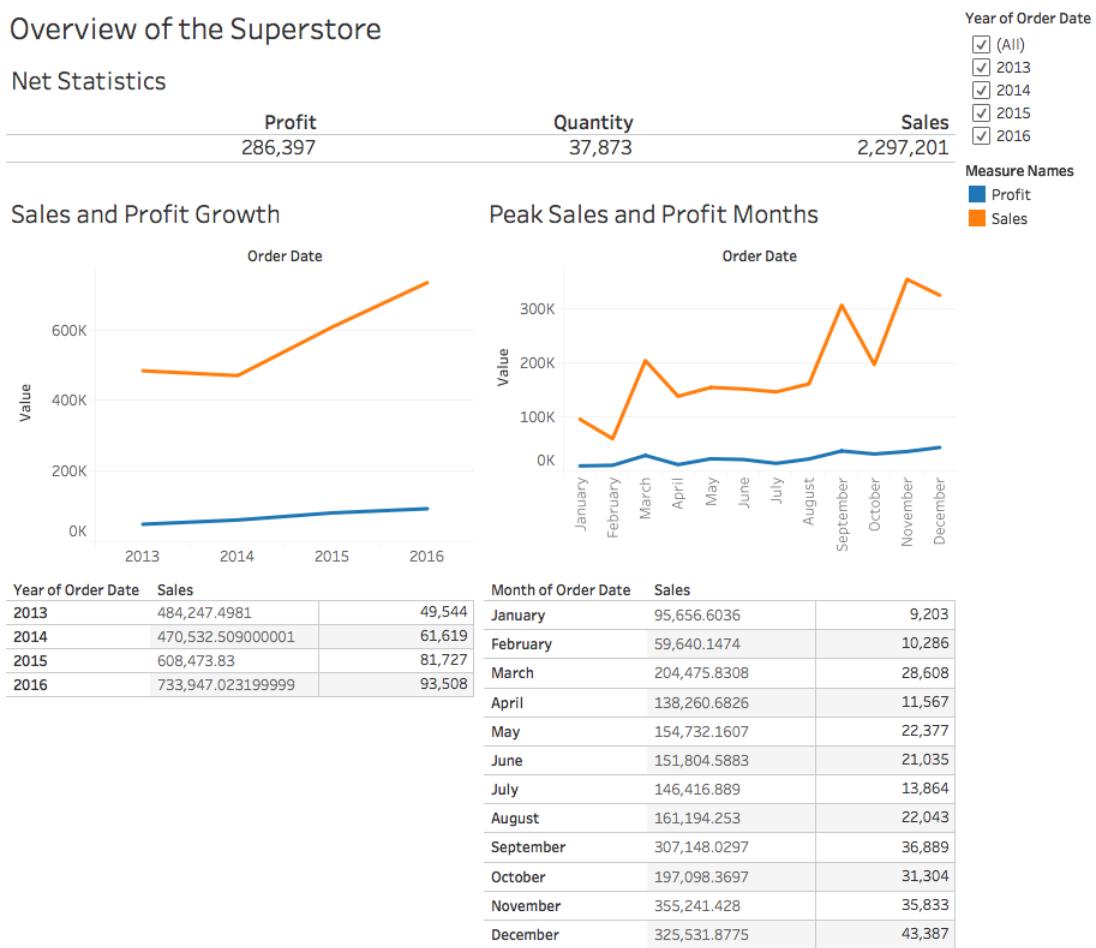
When you drag and drop fields onto the visualisation area, Tableau makes default graphs for you, as we shall see soon, but you can change these by referring to the Show Me option.

Note: Not every graph can be made with any combination of Dimensions or Measures. Each graph has its own conditions for the number and types of fields that can be used, which we shall discuss next.

Various Charts and Graphs

So far we have pretty much covered the requisite theoretical knowledge. Let's finally begin with some visualisations now.

We will look to get an overview of the Superstore Sales and Profit Statistics. That would include the Net Sales, the Net Profit and the growth of the two measures, to name a few. Here is a gist of what we will be making:

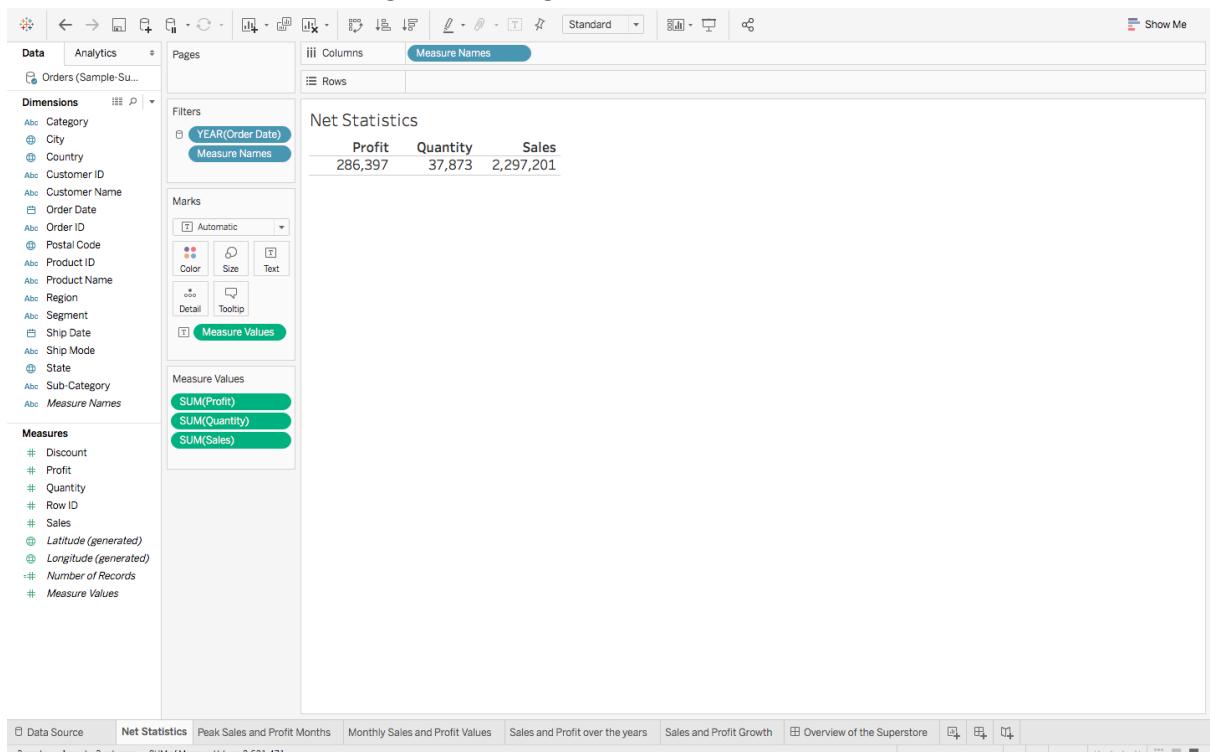


From what can be observed, the net Sales are on the rise, but the Profit is creeping up slowly. We can also quite clearly see the peak Sales Months, which could be attributed to various reasons. We can only know more as we explore more.

Before we start, there is one thing that I would like to recommend and that is you name your Worksheets as being done here. Since I will be referencing them back and forth throughout the article, it will be easier for you to follow.

Let's begin with the simplest visualisation, and that is displaying the **Net Statistics** numbers. Tableau, being as smart as it is, automatically computes such values under **Measure Names** and **Measure Values**. Follow these steps to make what is called a **Text Table**:

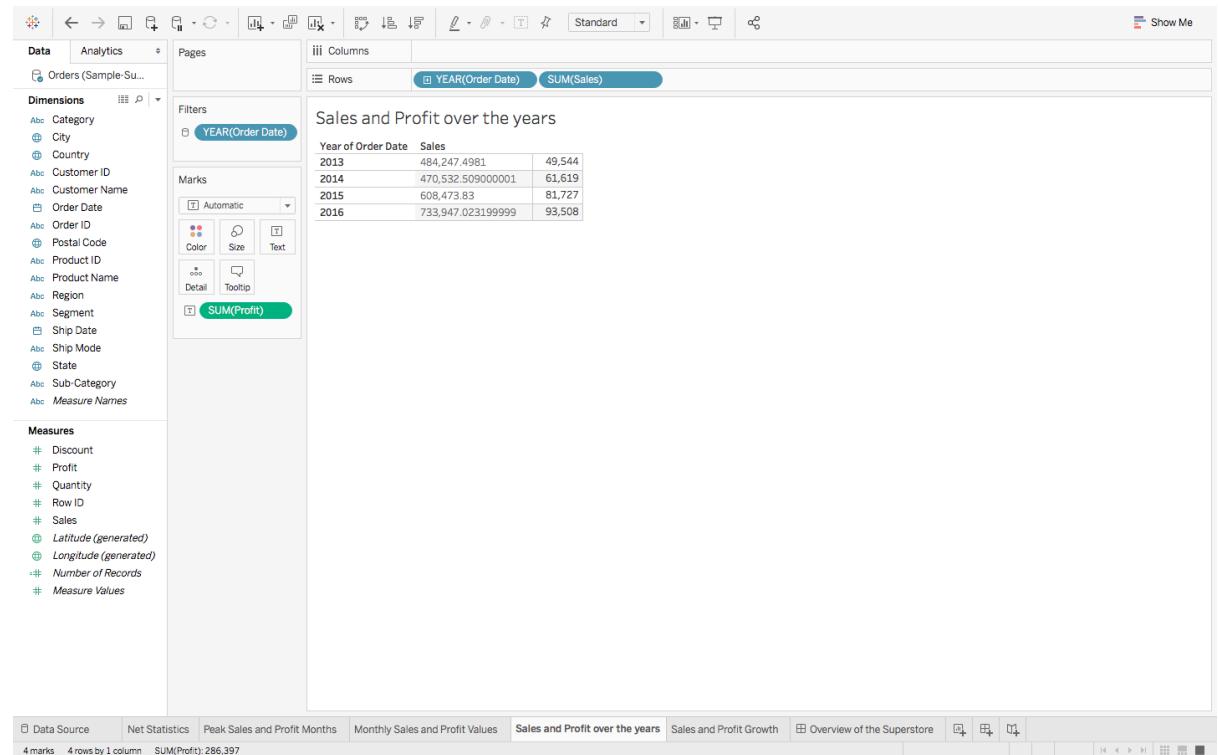
1. Drag **Measure Names** from Dimensions onto the central empty area so that you see a Text Table.
2. **Measure Names** will be displayed automatically onto Rows, so drag it from Rows to Columns.
3. Since we don't really need Measures like the Row ID, Discount etc., you can drag them off from below the Marks Pane, to get something like this:



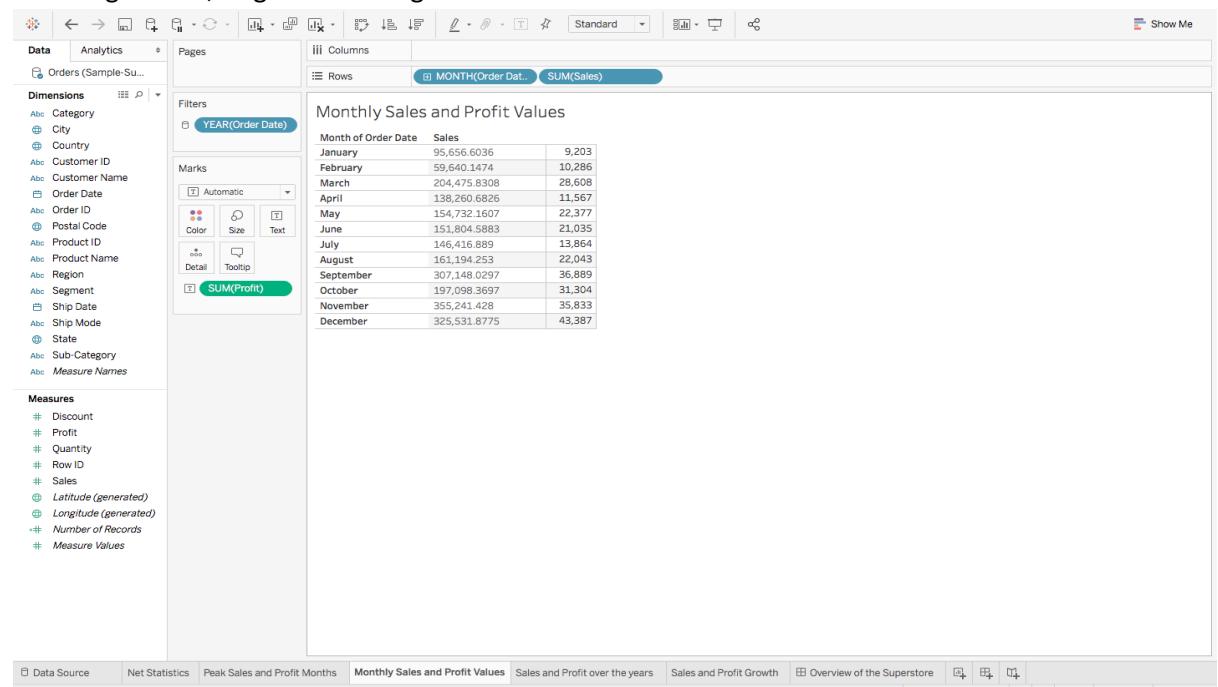
Note: Don't get confused by the different colours of the fields that you see. Just remember one small trick: Blue means **Discrete** and Green, **Continuous**.

So we have the net Sales and Profit values, let's delve a little deeper by getting the **Sales and Profit Values over the years**. Let's make another, but a more detailed, Text Table:

1. Drag **Order Date** from Dimensions and **Sales** from Measures to Rows.
2. Right click on the green **Sales Pill (under Measures)**, and select **Convert to Discrete**, in place of **Continuous**, since we want the explicit values and not the bar graphs.
3. Finally drag **Profit** on the 'abc' column to get:



4. Do the same thing for **Monthly Sales and Profit Values**, but this time change the format of **Order Date**, from **Year to Month**, by right clicking on **Order Date** in the **Rows**, and choosing **Month**, to get something like this:

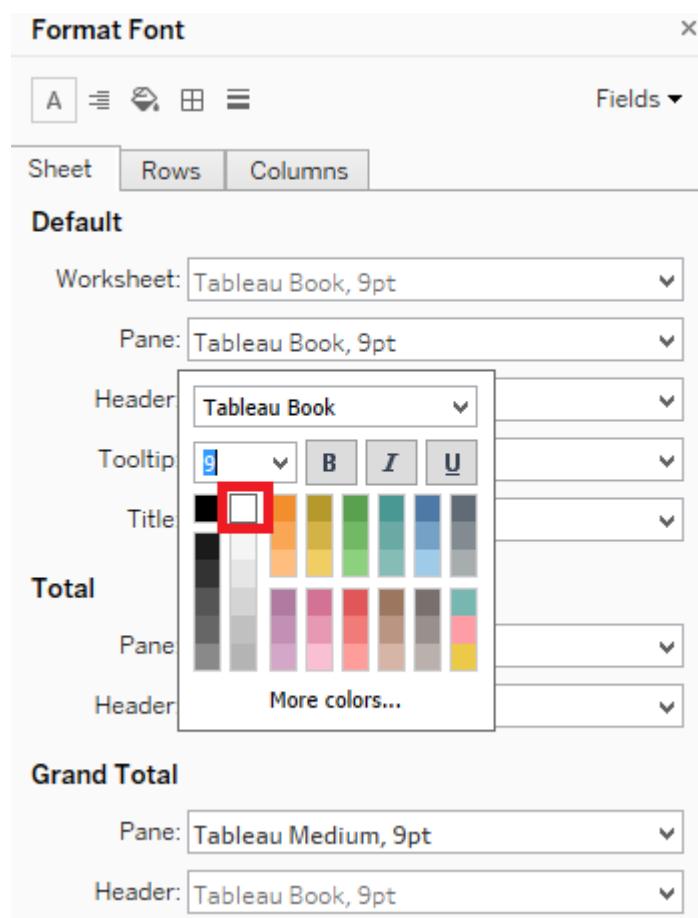


NOTE: To Remove the ABC column (placeholder) from below follow the following steps.

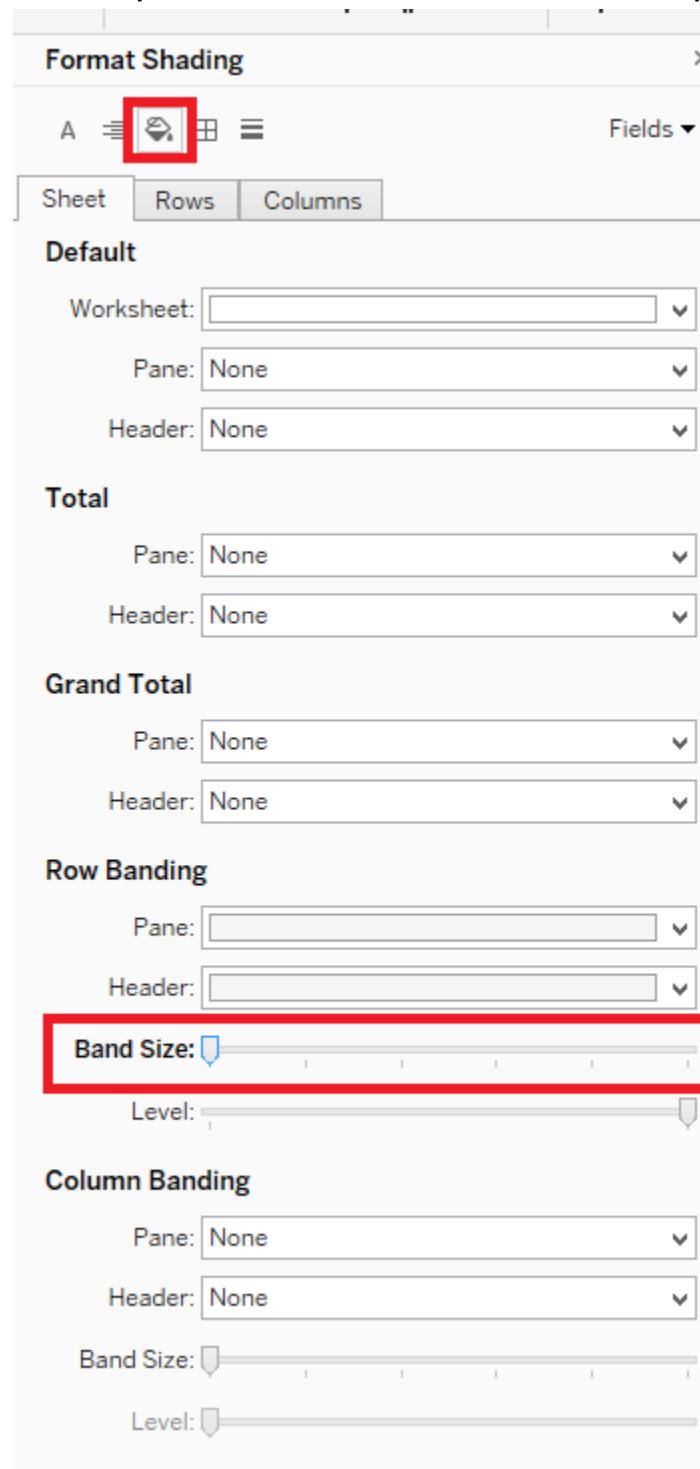
Monthly Sales and Profit Values

Month of O.. Sales		
January	95,656.6036	Abc
February	59,640.1474	Abc
March	204,475.8308	Abc
April	138,260.6826	Abc
May	154,732.1607	Abc
June	151,804.5883	Abc
July	146,416.889	Abc
August	161,194.253	Abc
September	307,148.0297	Abc
October	197,098.3697	Abc
November	355,241.428	Abc
December	325,531.8775	Abc

1. Right click on the column and select Format.
2. Select Pane below and select Automatic.

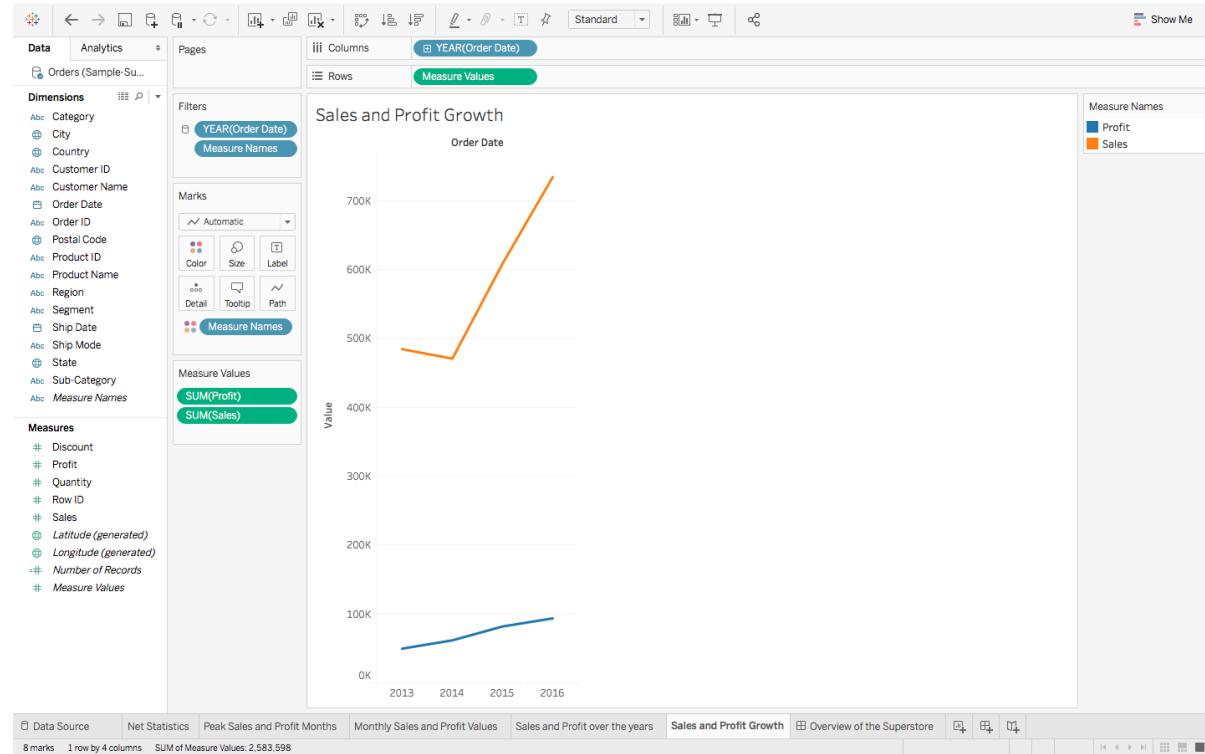


3. Select the paint can icon below and set the Band Size as per below.

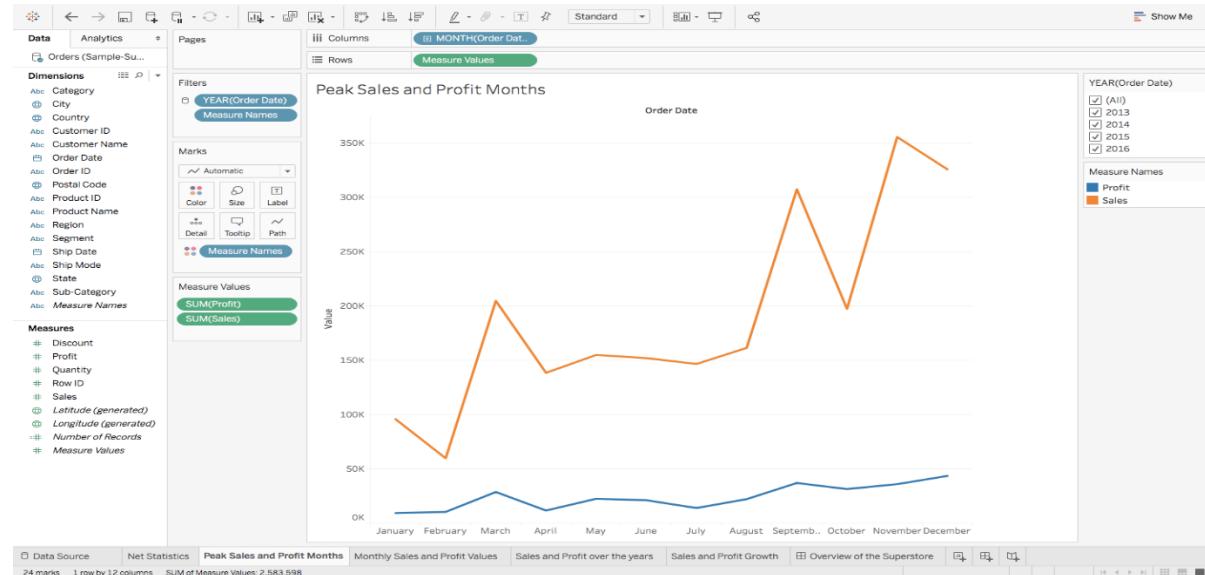


We have just covered the numeric part of the Dashboard, but that is not its selling point. It's the **Line Charts**. Let's quickly learn how to make one:

1. To create the chart of **Sales and Profit Growth**, drag **Order Date** over the **Columns**, **Sales** over **Rows** and then **Profit** over the formed **Sales** axis – so that you see an equals sign – to get the following :



2. Repeat the same to find the **Peak Sales and Profit Months**, but again change the format of **Order Date**, from Year to Month, and get:

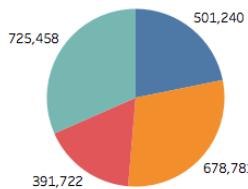


If you were to click on **Show Me**, you will see the different types of Line Charts that you can make, and if you were to hover over each of them, you will get to see their Dimension and Measure requirements too. In case you ever feel lost, I recommend referring to Show Me.

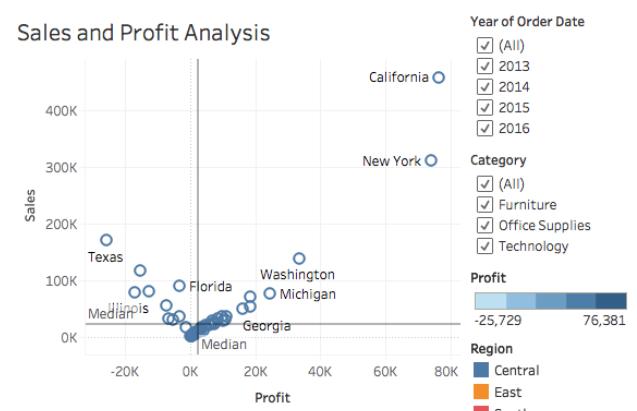
With the previous visualisations, we had gotten a brief overview of the Superstore. Let's dig a little deeper now. The next thing that I can think of exploring is the demographic of the Sales and Profit. What are the States that have the highest Sales Revenue, which ones are generating the maximum Profits:

Demographic Analysis

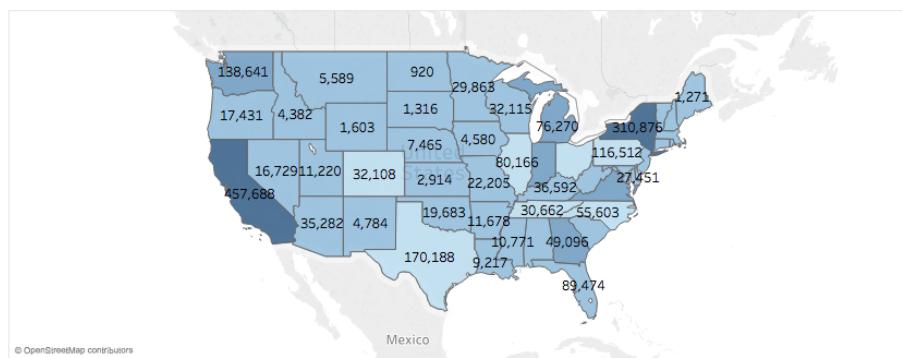
Region Sales



Sales and Profit Analysis

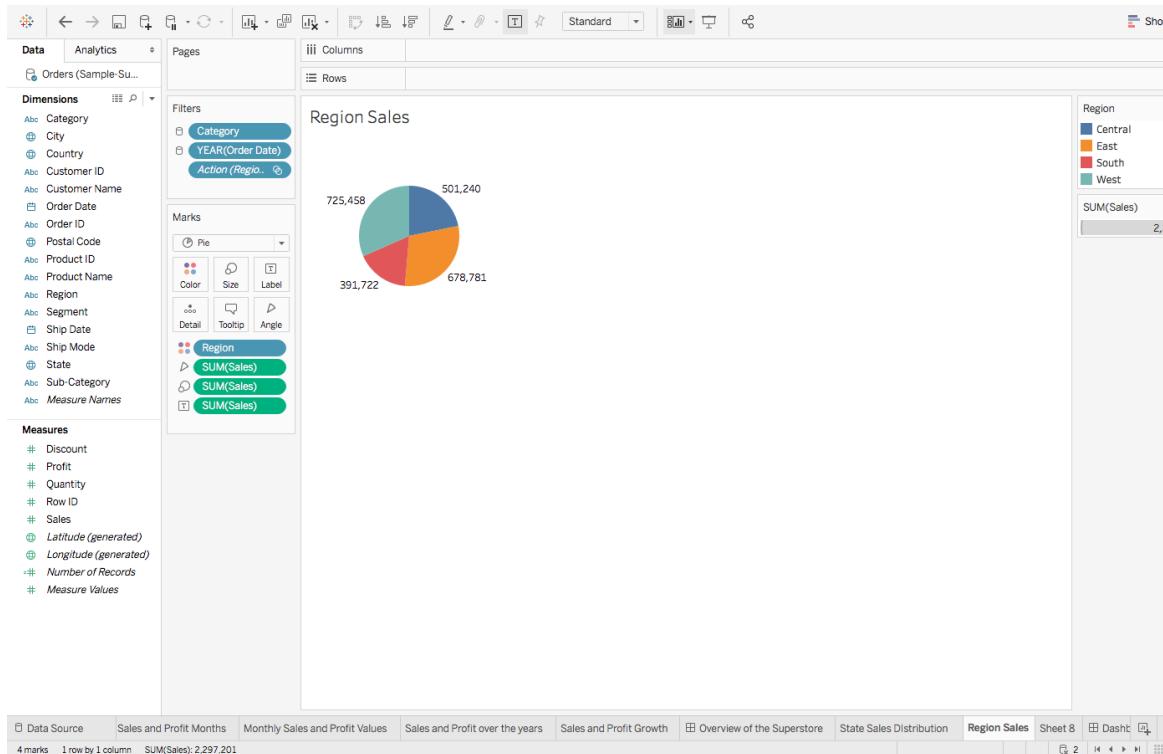


State Sales Distribution



Before discussing the **inferences**, let's first create the **Pie Chart of Region Sales**:

1. Drag **Regions** onto Rows and **Sales** onto Columns.
2. Go to **Show Me**, and select the **Pie Chart**.
3. And finally drag **Sales** over the **Label** in the **Marks Pane** to get:

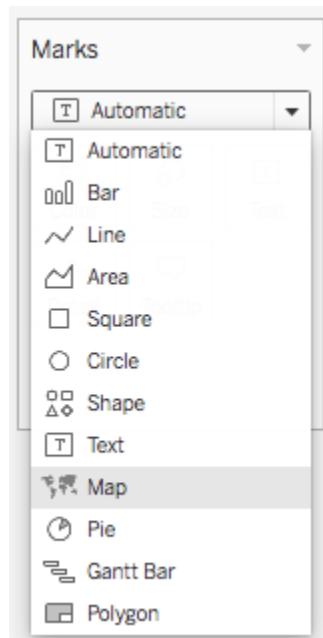


From the visual it's pretty evident that the two opposite ends, East and West are leading in the Sales game. Let's dissect this a bit more.

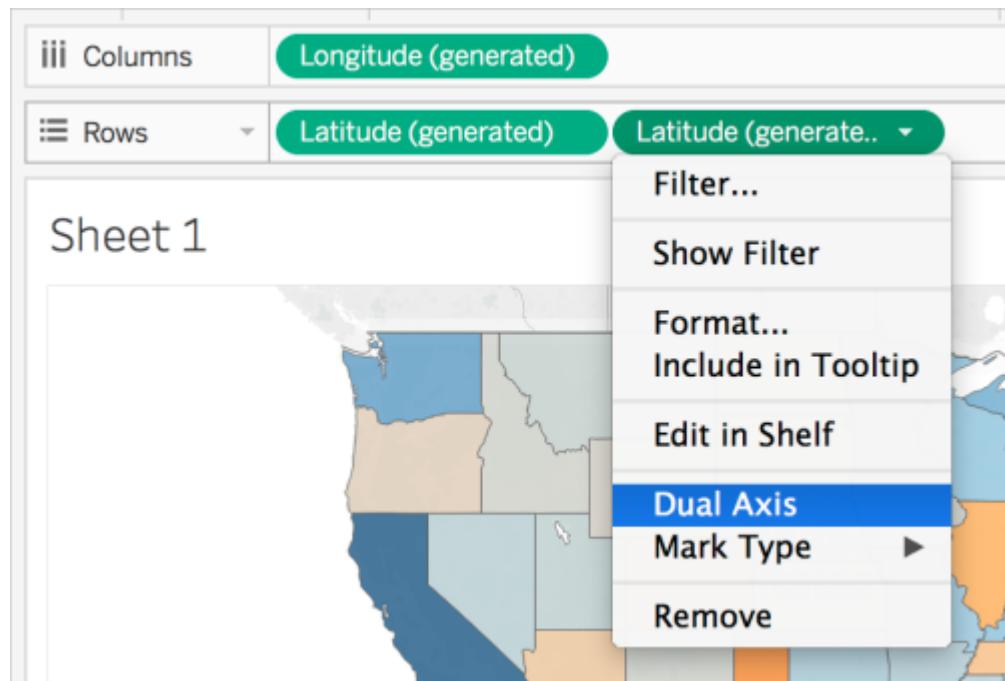
Note: Whenever you have some geographical data, it is always advisable to plot and see it on a Map to gain better insights.

So, we are now going to make the **Map Chart of State Sales Distribution**:

1. In Tableau, open a new Worksheet.
2. In the Data pane, under Dimensions, double-click State.
3. Tableau creates a symbol map, with a data point for each state in the Sample-Superstore data source.
4. On the Marks card, click the Mark-type drop-down and select the Map mark type.



5. From Measures, drag Profit to Color on the Marks card.
6. From Measures, drag Latitude (generated) to the Rows shelf, and place it to the right of the other Latitude field.



You should now have two identical map views.

7. On the Rows shelf, right-click the second Latitude field and select Dual Axis.

The second map is now layered on top of the first map. There are now three dropdowns on the Marks card: one for each map view, and one for both views (all).

These are three separate marks cards that you can use to control the visual detail for each of the map views.

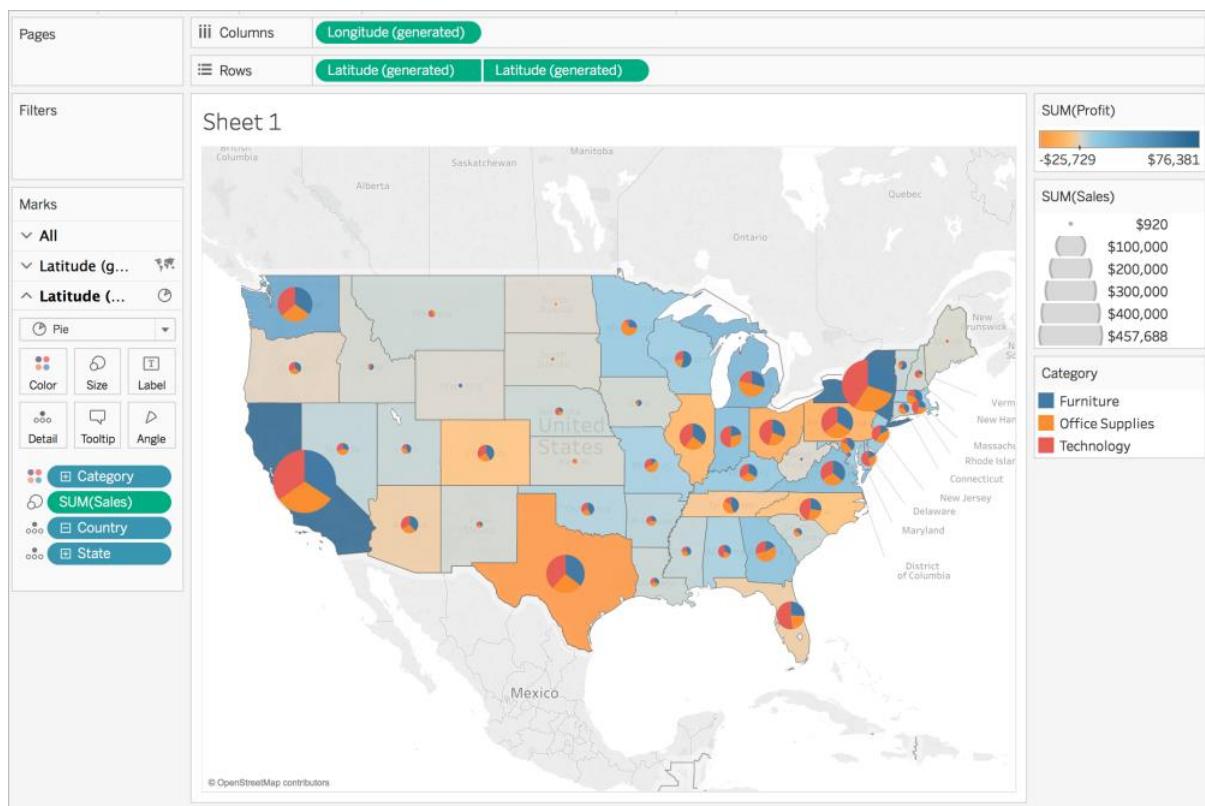
8. On the Marks card, click one of the **Latitude (generated)** tabs, and then click the Mark type drop-down and select the **Pie** mark type.
9. From Measures, drag **Sales** to **Size** on the Latitude (generated) Marks card you selected.

The Sum of sales for each state is shown as text.

10. From Dimensions, drag **Category** to **Color** on the same Marks card.

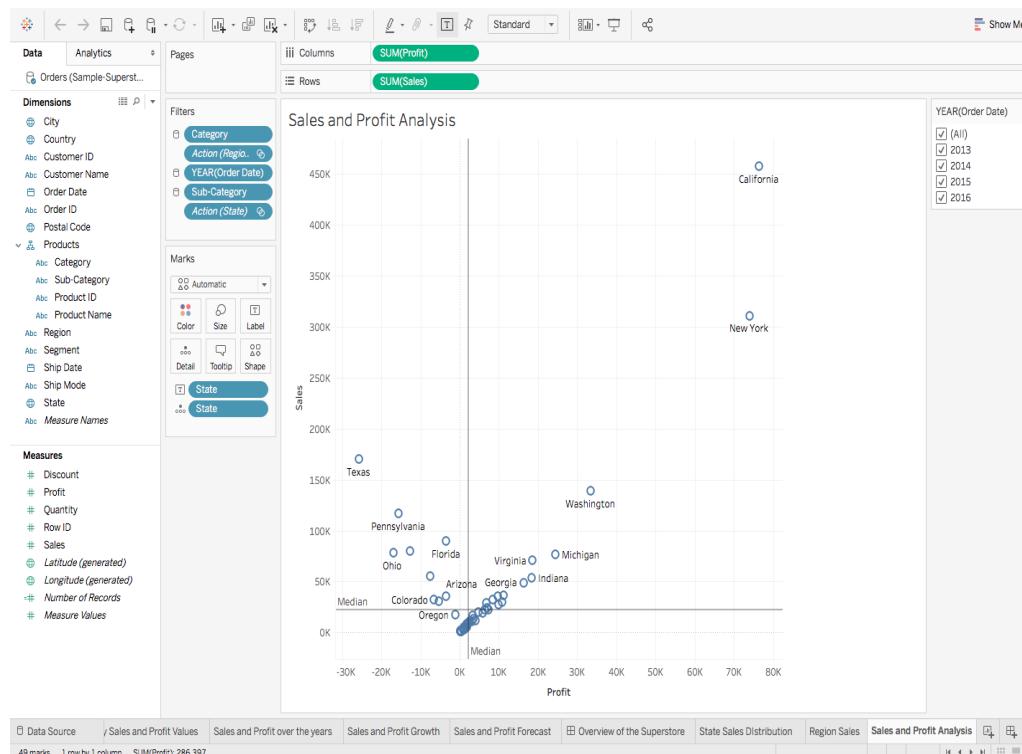
If the size of the pie charts is too small, click **Size** on the Marks card to adjust the size.

The map view now shows the sum of profit, as well as the sum of sales for each category, for each state.



And lastly, here are the steps for making the **Scatter Plot of Sales and Profit Analysis**:

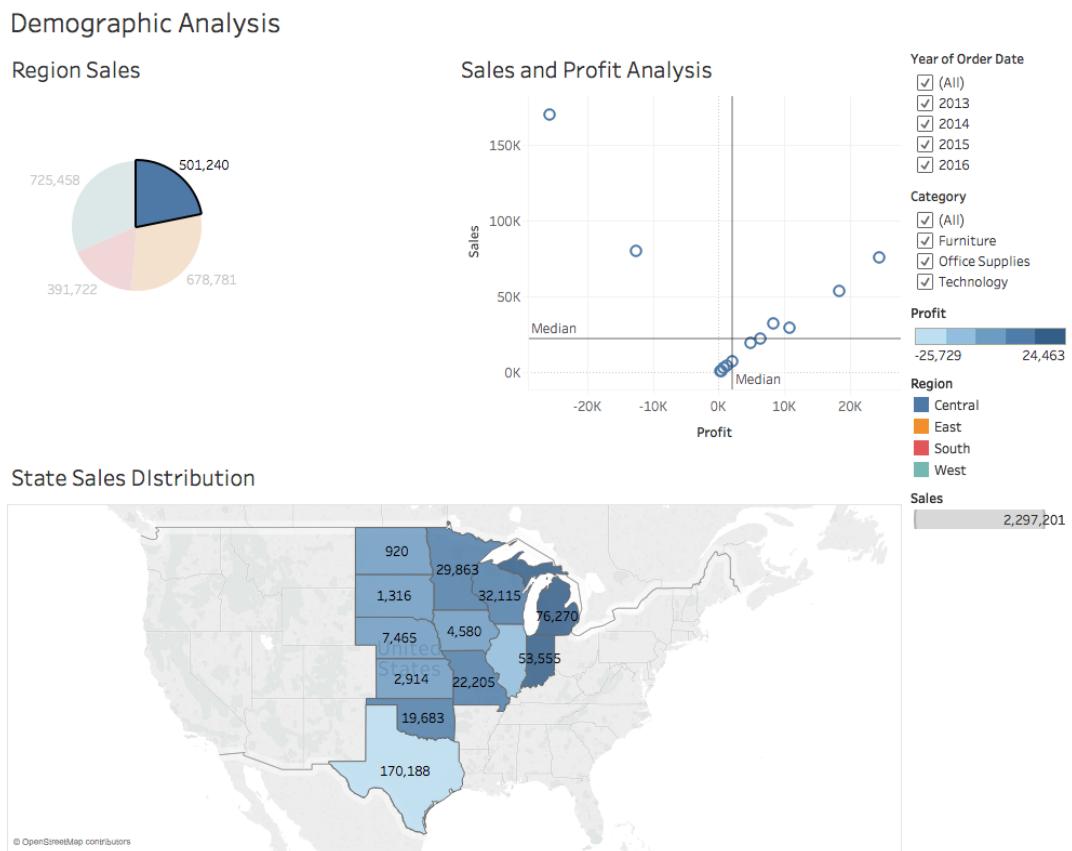
1. Drag **Sales** onto Rows, and **Profit** onto Columns. You will see one tiny circle, which actually represents the Total Sales and Profit Values.
2. To get more information, drag **States** onto the graph created, so that these circles / bubbles scatter to represent the individual States.
3. To better understand the central tendency of the data, we have also added a **Median** axis as Reference Line. This can be easily done by right clicking on the **Sales / Profit Axis** –> **Adding Reference Line** and choosing Median over the default Average Reference.
4. Finally for some more insight, drag **States** again, but this time onto **Label** in the Marks Pane, and get:



The findings from the Map chart become more prominent with the following Scatter plot inferences:

- The states in the top right, with high Sales and high Profits mean good business for the organisation.
- States with positive Sales and Profits, but near the two respective axis are the ones where there is some scope of improvement.
- Whereas the states that belong to the 2nd or 3rd quarter are the ones which are not generating much revenue.

One of the great things about Tableau is that it lets you interact with the visuals. Have a look at an example:



When we clicked on the Central Region, it highlighted and showed the Central States of US, along with their respective Sales and Profit scatter. Here we used the chart as a Filter itself which is a feature of a Dashboard. We shall learn how to make one at a later stage.

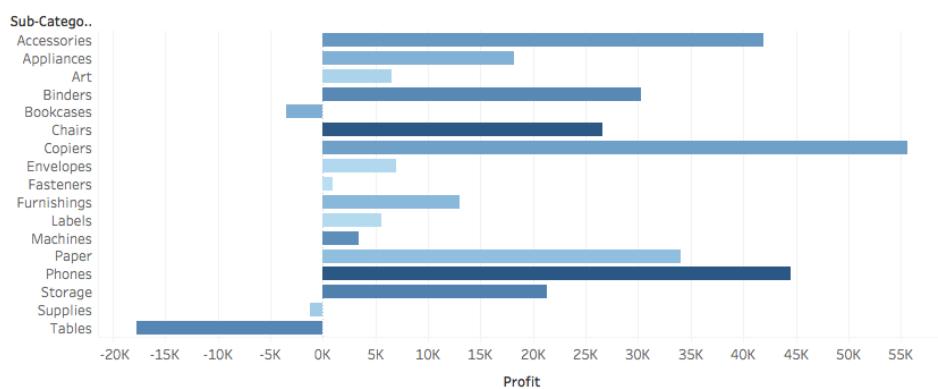
There is one pretty important analysis that we have yet to touch, and that is Product Statistics. High Sales could be easily attributed to the high cost of the products being sold. Also, when you are considering expansion, you will want to know the Sales distribution of the Products too:

Product Category Sales

Category	Year of Ord..	Order Date											
		January	February	March	April	May	June	July	August	Septem..	October	Novemb..	Decemb..
Furniture	2013	6,243	1,840	14,574	7,945	6,913	13,206	10,821	7,320	23,816	12,304	21,565	30,646
	2014	11,740	3,134	12,500	10,476	9,375	7,714	13,674	9,639	26,273	12,027	30,881	23,086
	2015	7,623	3,926	12,473	13,406	15,031	12,027	13,199	13,619	26,739	10,131	33,659	37,069
	2016	5,964	6,866	10,893	9,066	16,958	19,009	11,813	15,442	29,028	21,884	37,057	31,407
Office Supplies	2013	4,851	1,072	8,606	11,155	7,136	12,953	15,121	11,379	27,423	7,211	26,862	18,006
	2014	1,809	5,368	15,883	12,559	9,114	10,648	4,720	11,735	19,306	8,673	21,218	16,202
	2015	5,300	6,683	17,458	10,640	13,007	10,902	12,677	9,219	23,286	14,799	21,428	38,112
	2016	21,704	7,408	14,550	15,072	13,737	16,912	10,241	30,060	31,896	23,037	31,472	30,437
Technology	2013	3,143	1,609	32,511	9,195	9,600	8,436	8,004	9,210	30,538	11,938	30,201	20,893
	2014	4,625	3,449	10,344	11,161	11,643	6,435	10,371	15,525	19,017	10,705	23,874	35,632
	2015	5,620	12,259	21,255	15,203	28,653	16,502	12,564	10,427	22,883	31,533	27,105	22,057
	2016	17,035	6,027	33,429	12,383	13,567	17,061	23,210	17,619	26,943	32,856	49,919	21,985



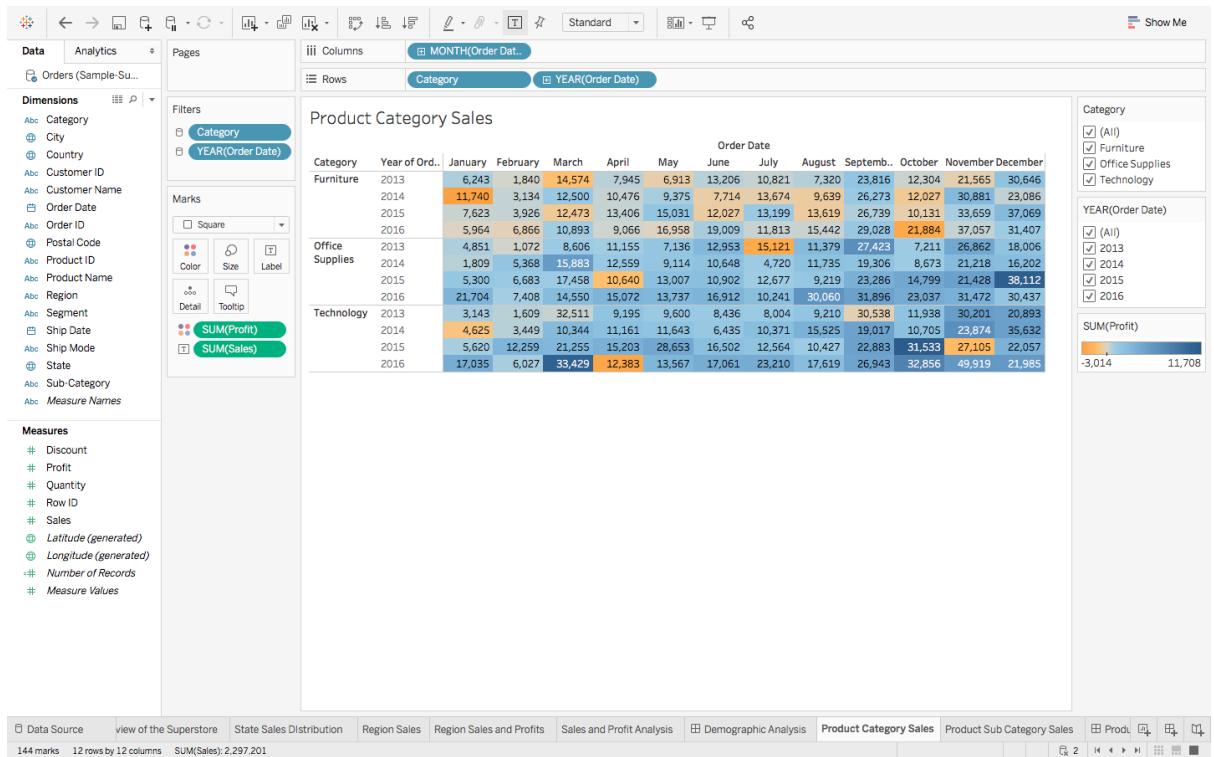
Product Sub Category Sales



Here we have visualised not just the Sales but also the Profits.

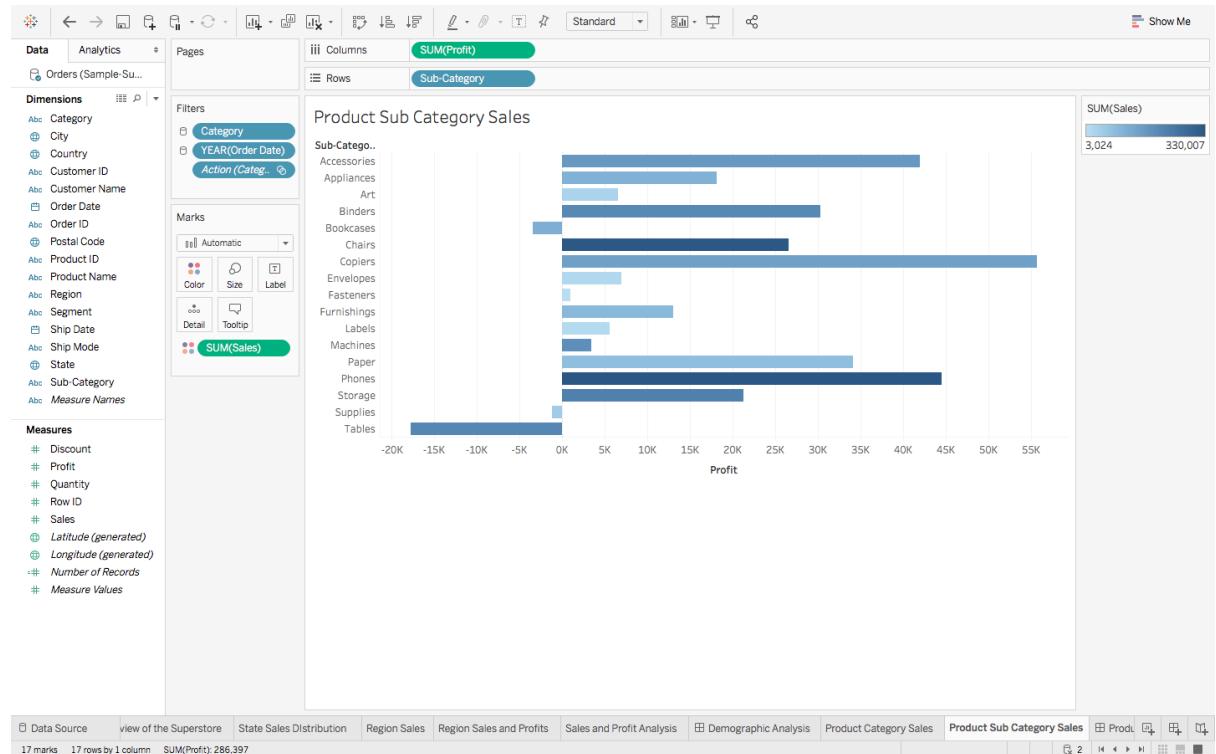
It's quite surprising to see Categories that have high Sales, generating negative profits, like Technology in November 2015, or Furniture in October 2016 and this is inferred from the first chart, which is also called a **Highlight Table**. As the name suggests, it highlights the relative proportion of the Measure Values of our data. So let's learn how to make one:

1. Drag **Category** and **Order Date (Year)** in Rows.
2. Drag **Order Date (Month)** over Columns, and **Sales** over the empty 'abc' fields
3. Select **Highlight Table** from Show Me, and drag **Order Date (Year)** back to Rows, in case it got re-shuffled.
4. Finally drag **Profits** over **Colour** in the **Marks Pane**, to get :



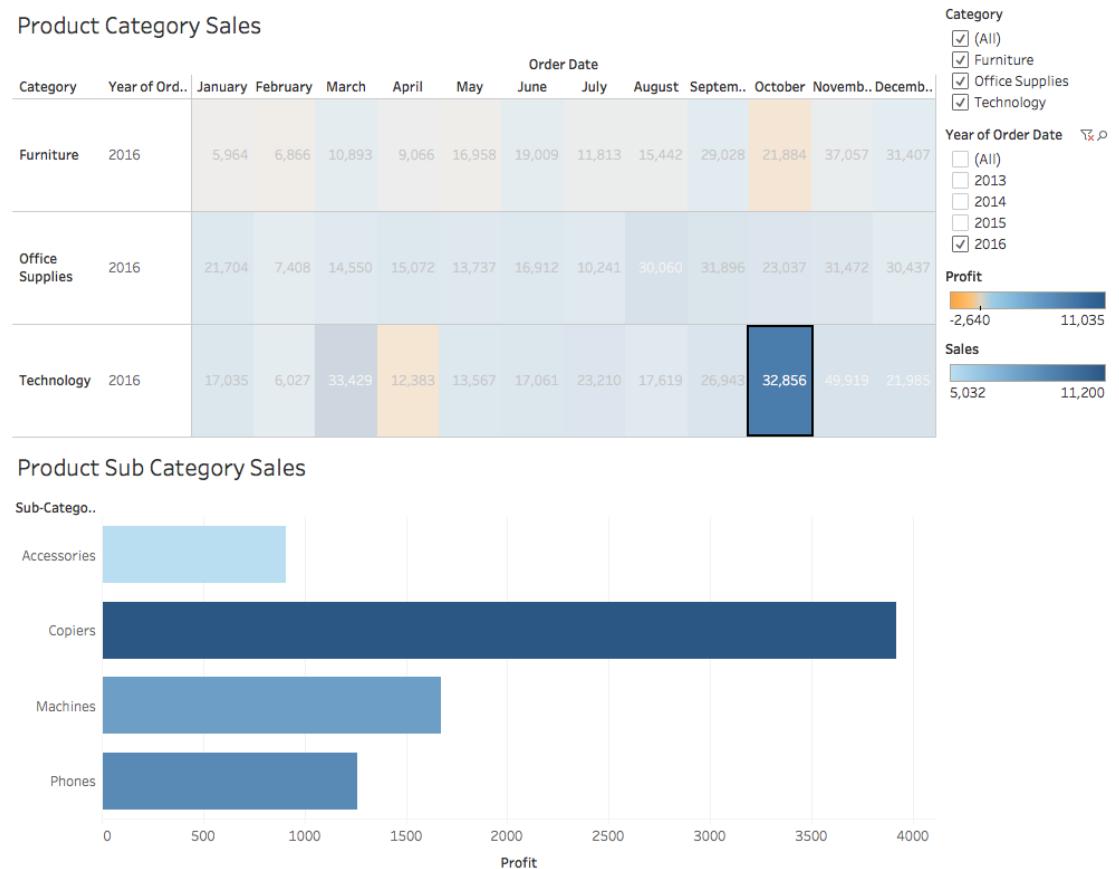
The Product Sub Category Sales is a Bar Chart, which is also quite easy to make:

1. Just drag **Sub – Category** over to the Rows
2. Drag **Profit** onto the Columns.
3. Go to Show Me and choose the **Horizontal Bars**
4. For some customisation, drag **Sales** over **Colour** in the Marks Pane to attain this final visualisation:



From the above graph, we are getting a good idea of the Net Sales and Profit margins of the various products. Notice that even though Tables' Sales are quite high on the scale, it's the only product with the least profit.

Now, just like before, consider an interaction with the visualisation:

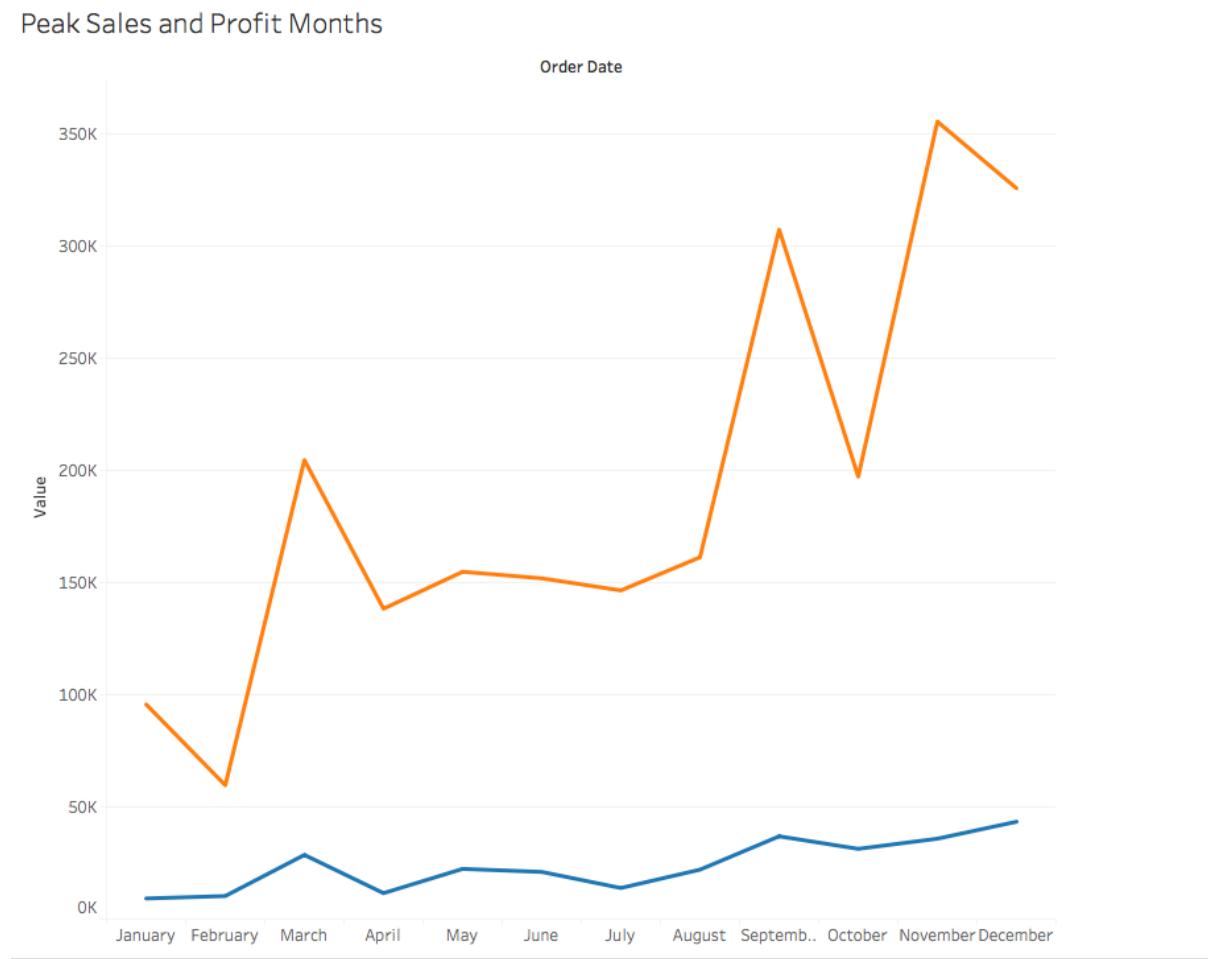


We are now able to view each Category's Products' Sales and Profits, at a low level granularity of Year and Month.

Filters

Till now we have only made simple charts that actually provide cumulative data that is combined data over the lifetime of the Superstore. To look at Sales of a particular Year, a Month, for a certain Product, or to basically view the distinct aspects of the data, Filters are the way to go.

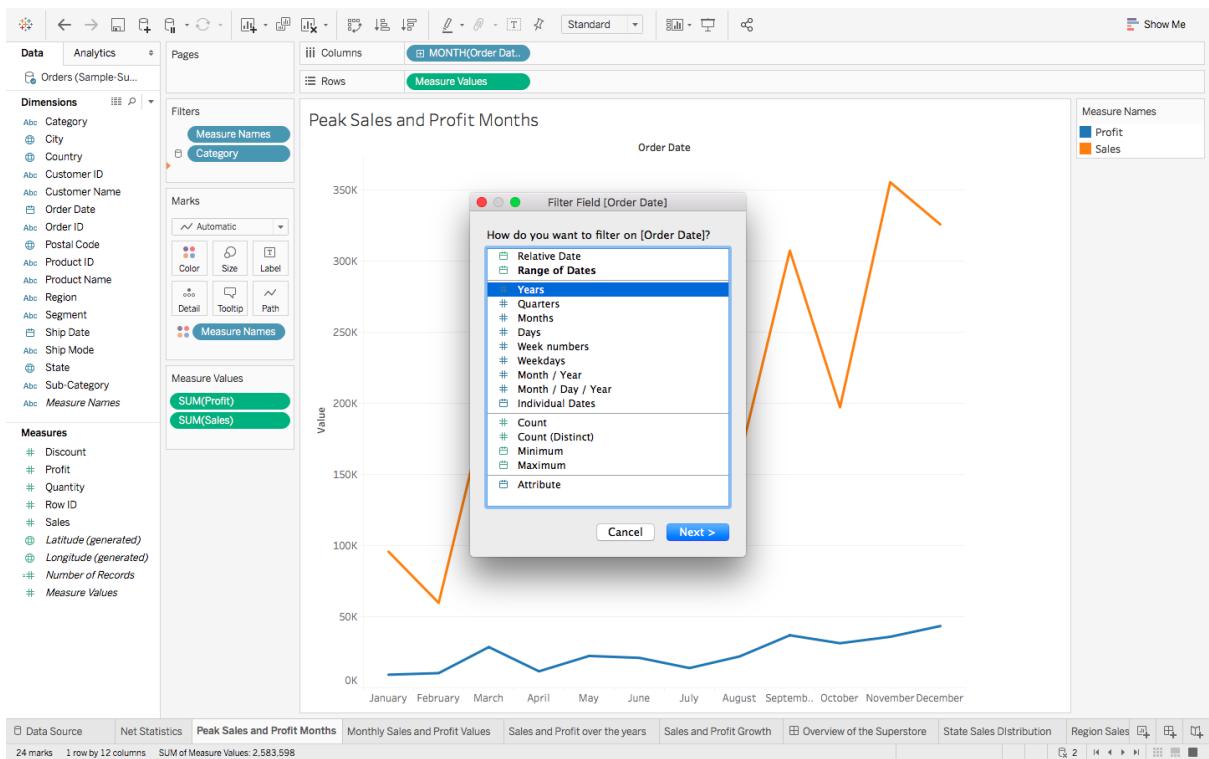
Let's head back to the first ever Chart that we had made, of **Peak Sales and Profit Months**:



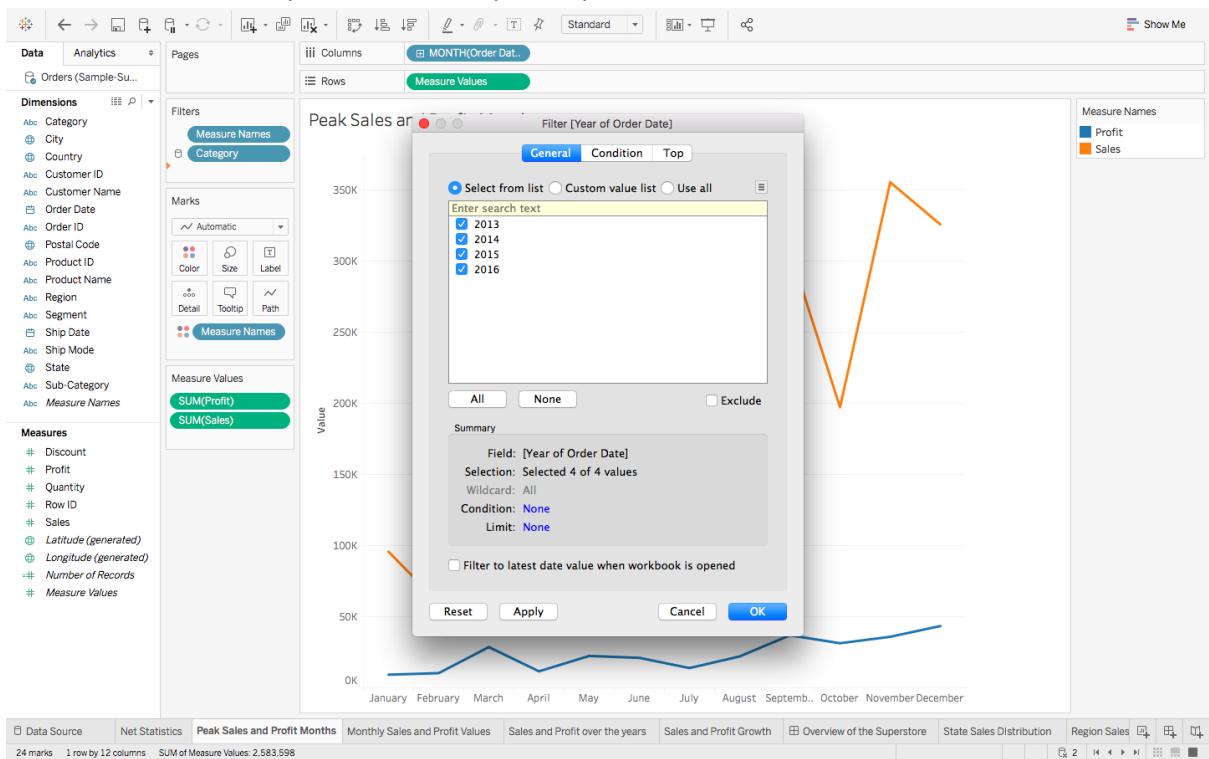
The visual here is an accumulation of all 4 years of data, for all Regions, States, Categories and Sub Categories.

The steps of turning any Dimension into a Filter are the same. Let's first experiment with the Order Date (formatted to Year) :

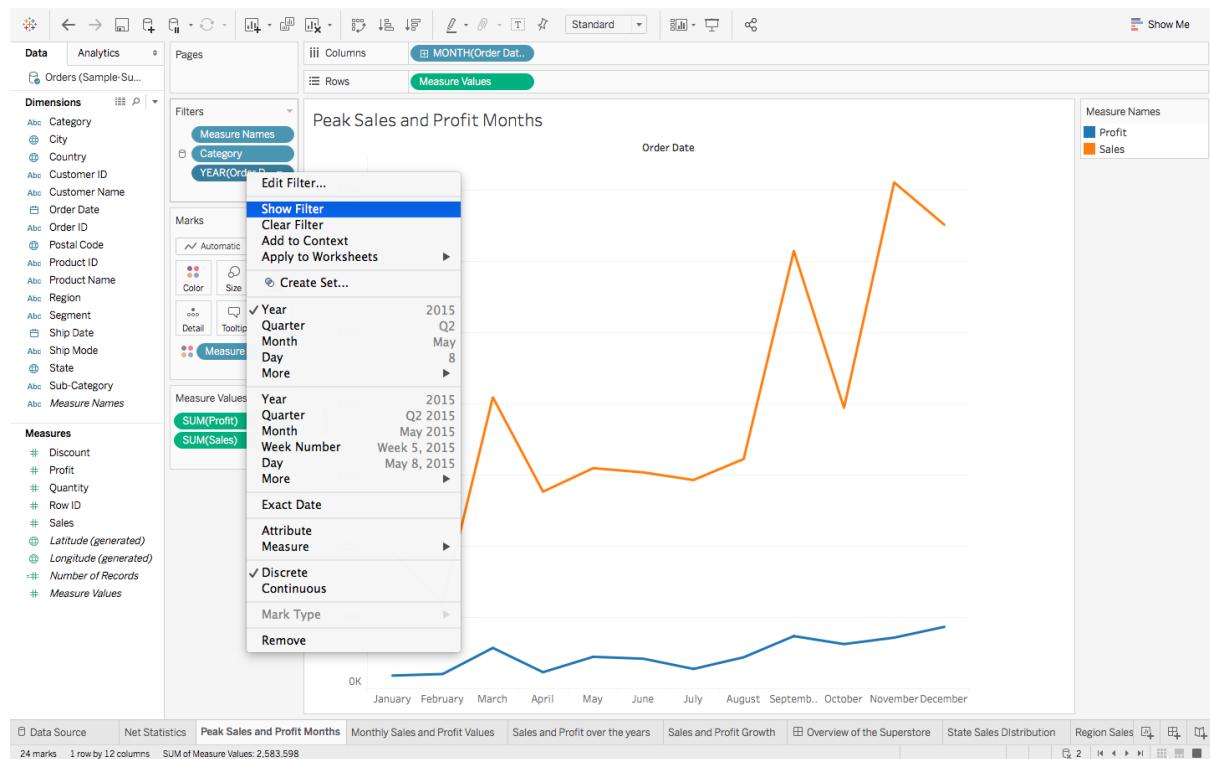
1. Drag the Dimension to the Filters' Shelf, to see the following pop up. Here we will be choosing Years :



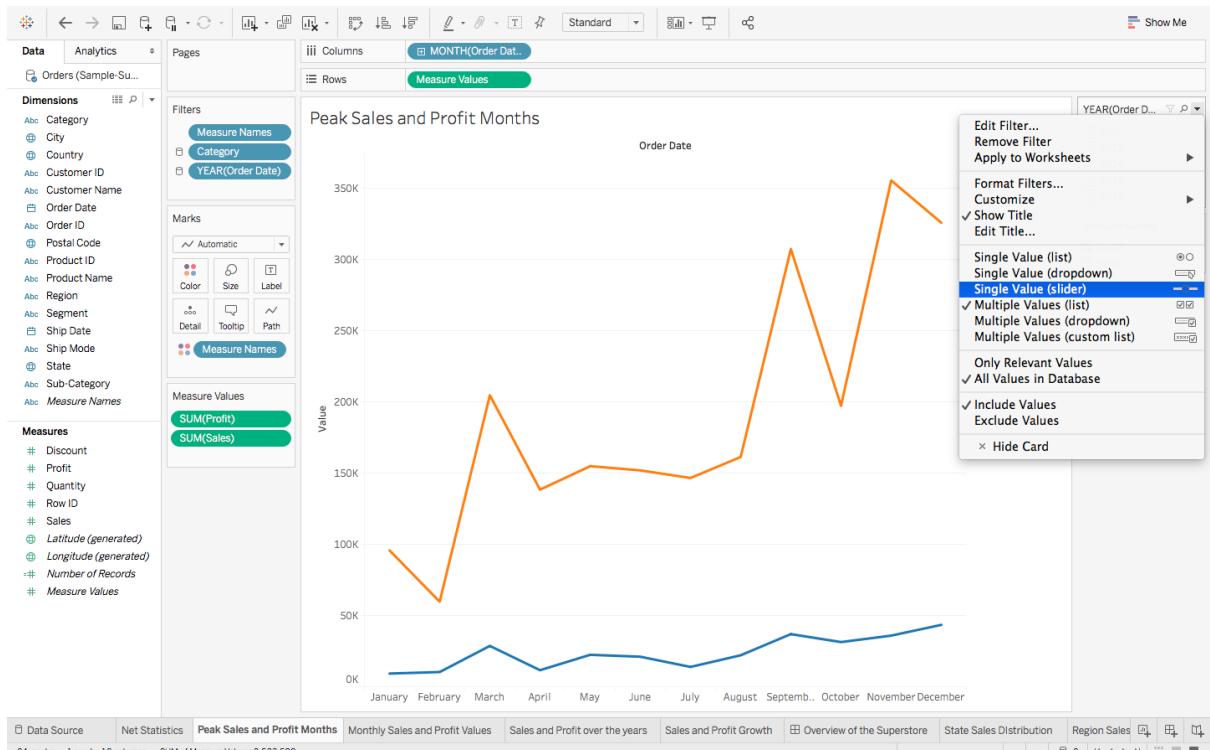
2. Choose the values that you want to be a part of your Filter:



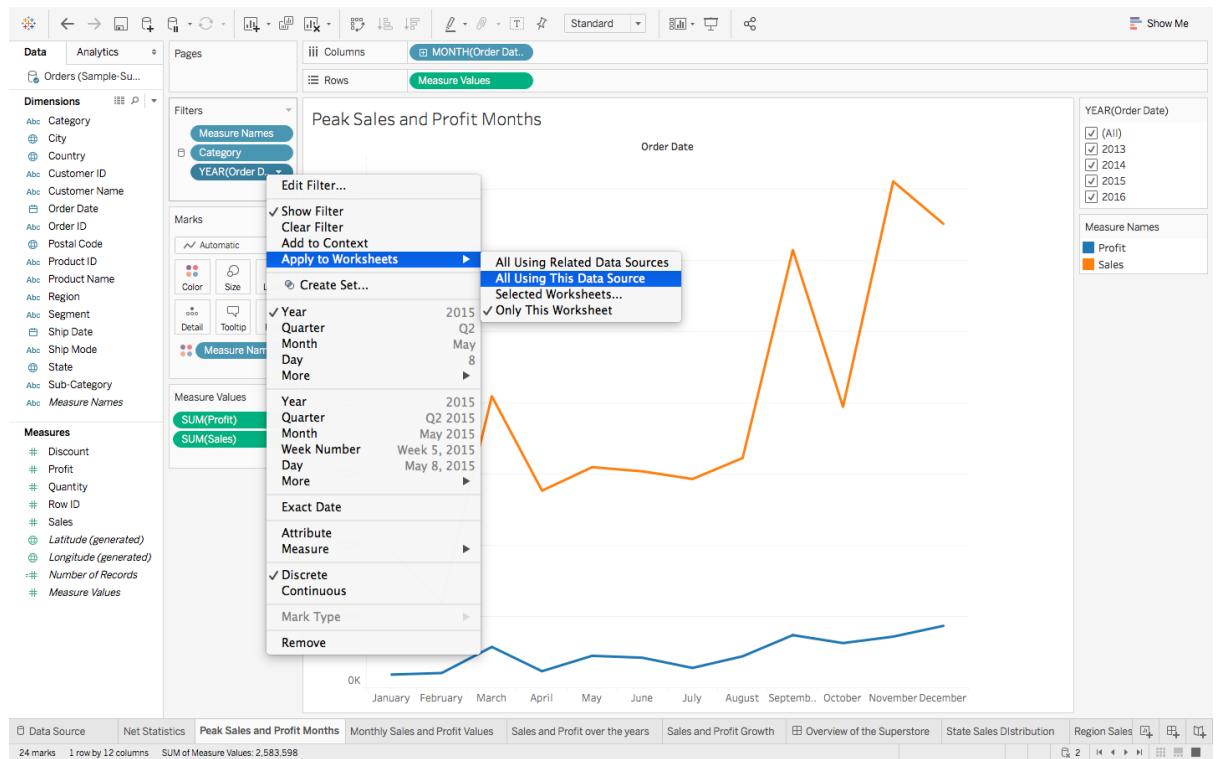
3. Right click on the newly generated Filter, and then choose Show Filter :



4. You can also change the format of your Filter, for example whether you wish for a Dropdown list, a Slider, a Single Value List, etc. :



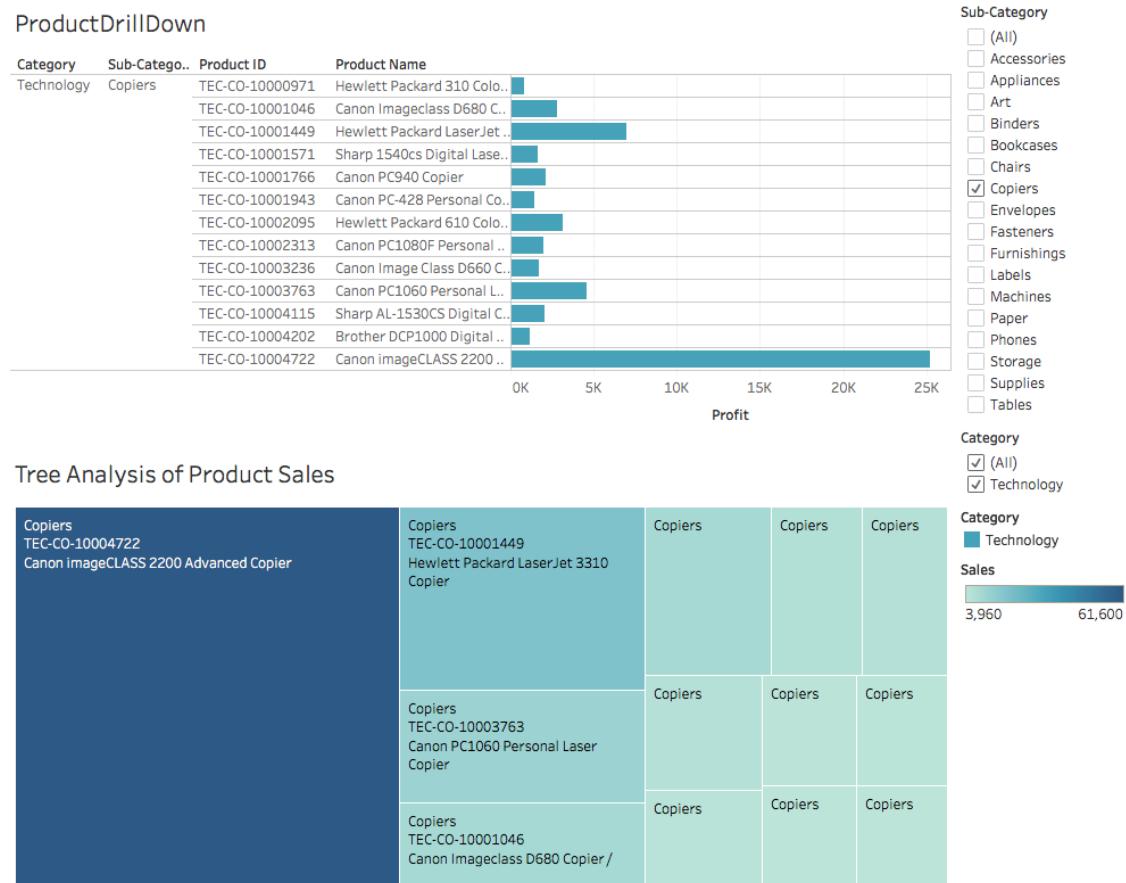
5. If you feel that some of your filters can be applied to other sheets as well, then rather than repeating the steps, you can simply Apply the Filter to all other relevant Worksheets :



Drill Down and Drill Up

By now you must have gotten some picture of the way our Data is built. We have Category as the main Field, divided into Sub – Category, which is further distinguished into the various Product IDs and their corresponding Product Names.

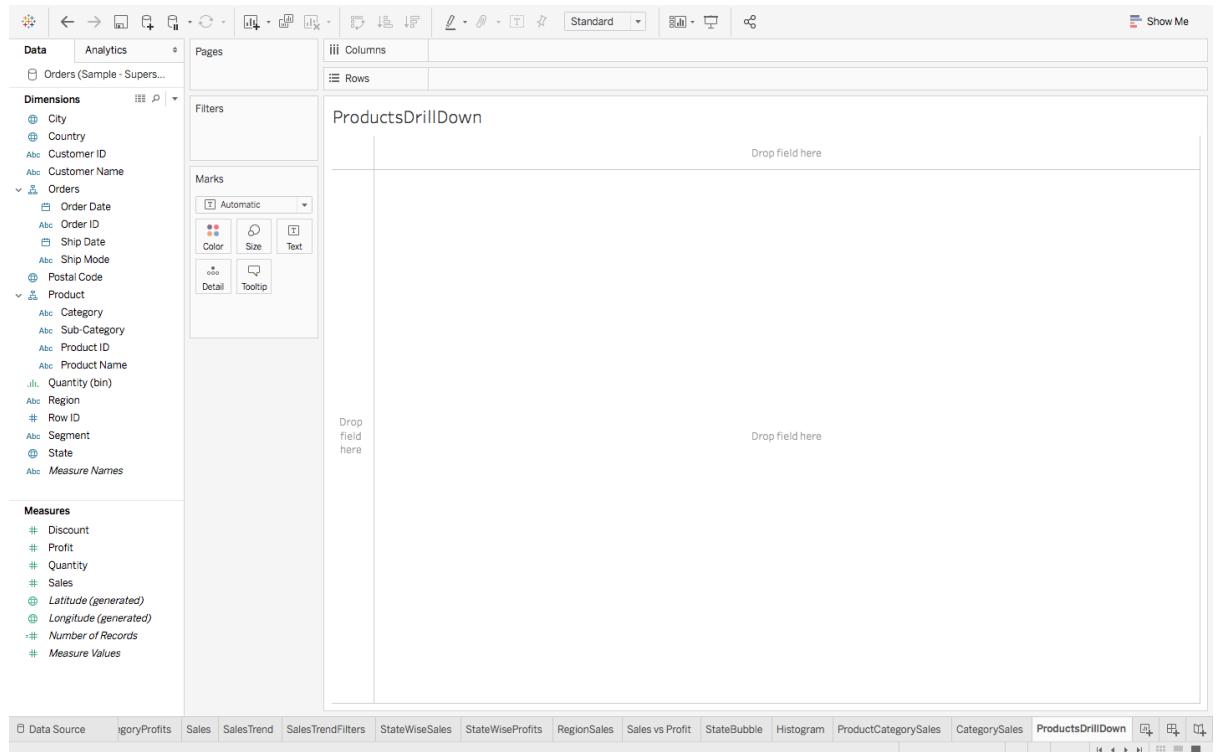
This concept of breaking down our data to reach the absolute depth is called Drilling Down:



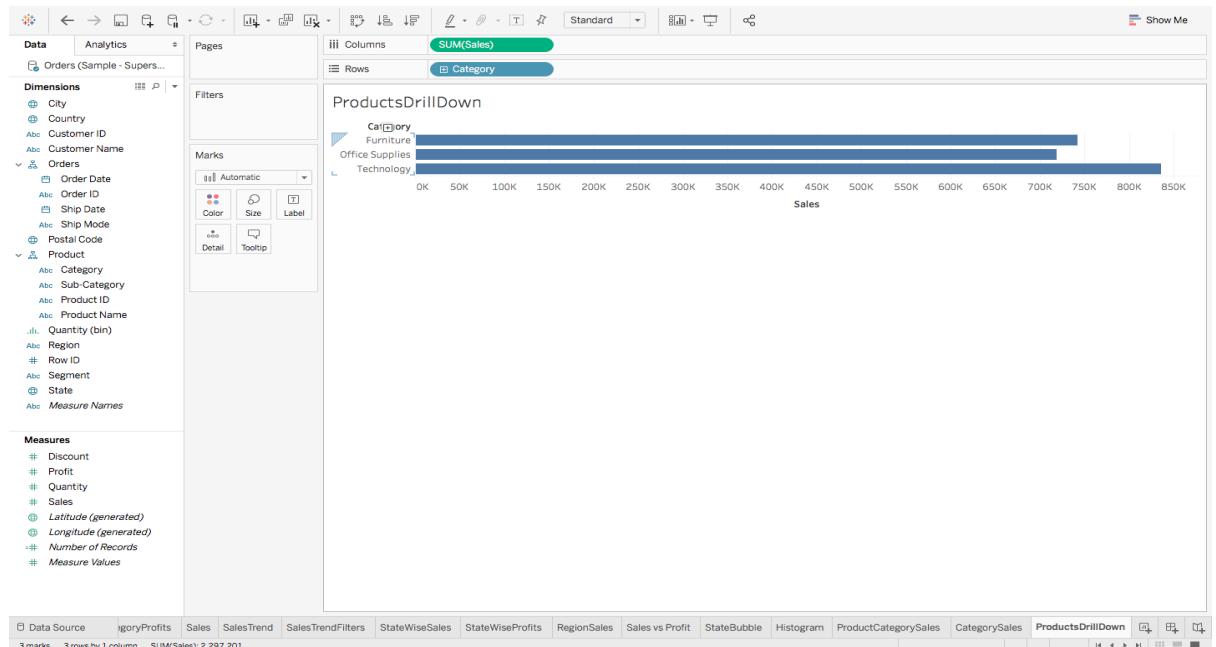
Similarly you can drill down from **Order Date** to Order ID to Ship Date to **Ship Mode**. This is also referred to as making a **Hierarchy** of data.

Let's consider the **ProductDrillDown** first, which is really a **Bar Graph**:

1. First you need to group the Dimensions you want in a single Hierarchy. So, drag **Sub - Category** from Dimensions **on top of Category** in the Dimensions itself, and change the Name of the hierarchy to **Product**.
2. Now drag **Product ID** and **Product Name** over this **Product** Hierarchy
3. Do the same for Order Hierarchy to get :



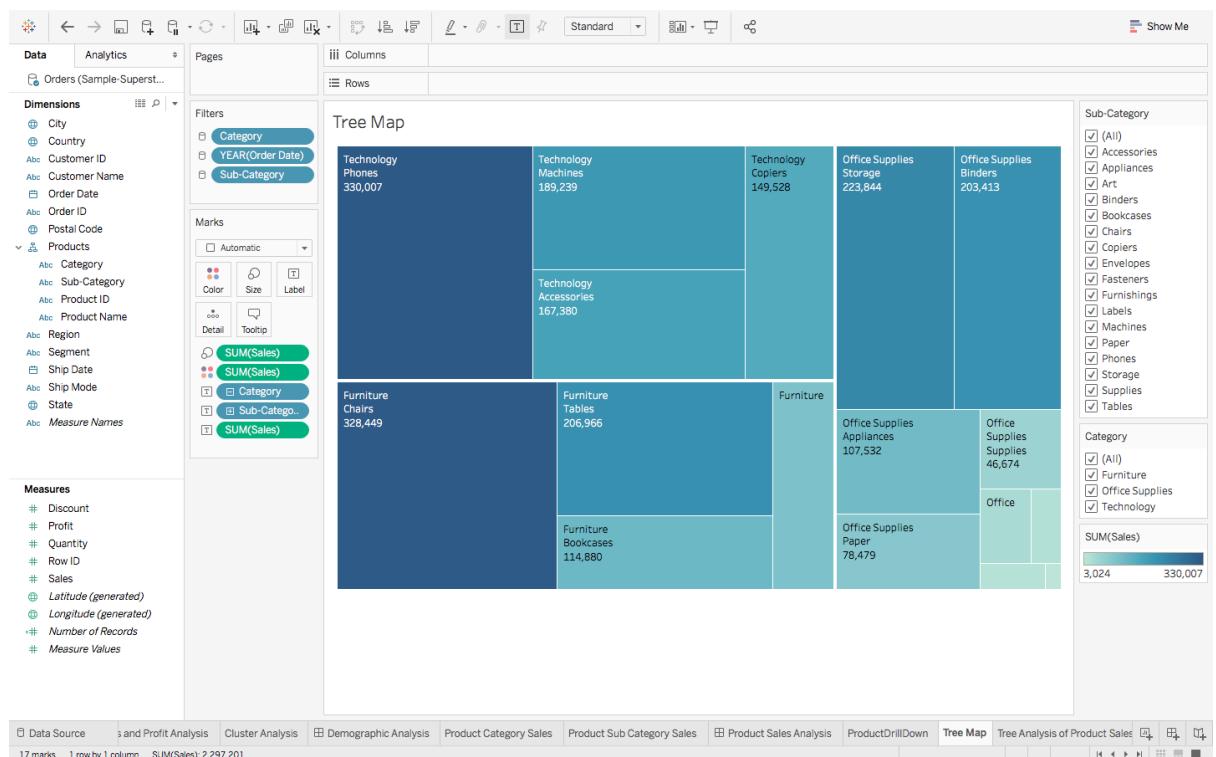
4. To finally plot your data, drag the Product Hierarchy onto Rows and Sales onto Columns, and get:



This was just a simple Bar Graph, but if you hover over the **Category** axis, you will see a small plus sign. Click on it to get a granulated version of your data. Do the same for the other generated axis as well to get to the absolute depth.

The **Tree Analysis of Product Sales** is a **Tree Map**, which is a great way of representing Drilled Down data, and is quite easy to make :

5. Following the drill down from **Step 4**, simply go to Show Me and select the **Tree Map** chart to get the following:



So far you have analysed the present scenario, but for expansion consideration, let's try and analyse the future too.

With the following Dashboard, you can not only see the **Trends over the Sales Months**, but also a **Forecast over the Years** too. And both of them tell a different story altogether:

Trends and Forecasts

Analysing Sales Trend



Sales and Profit Forecast



Cluster Analysis

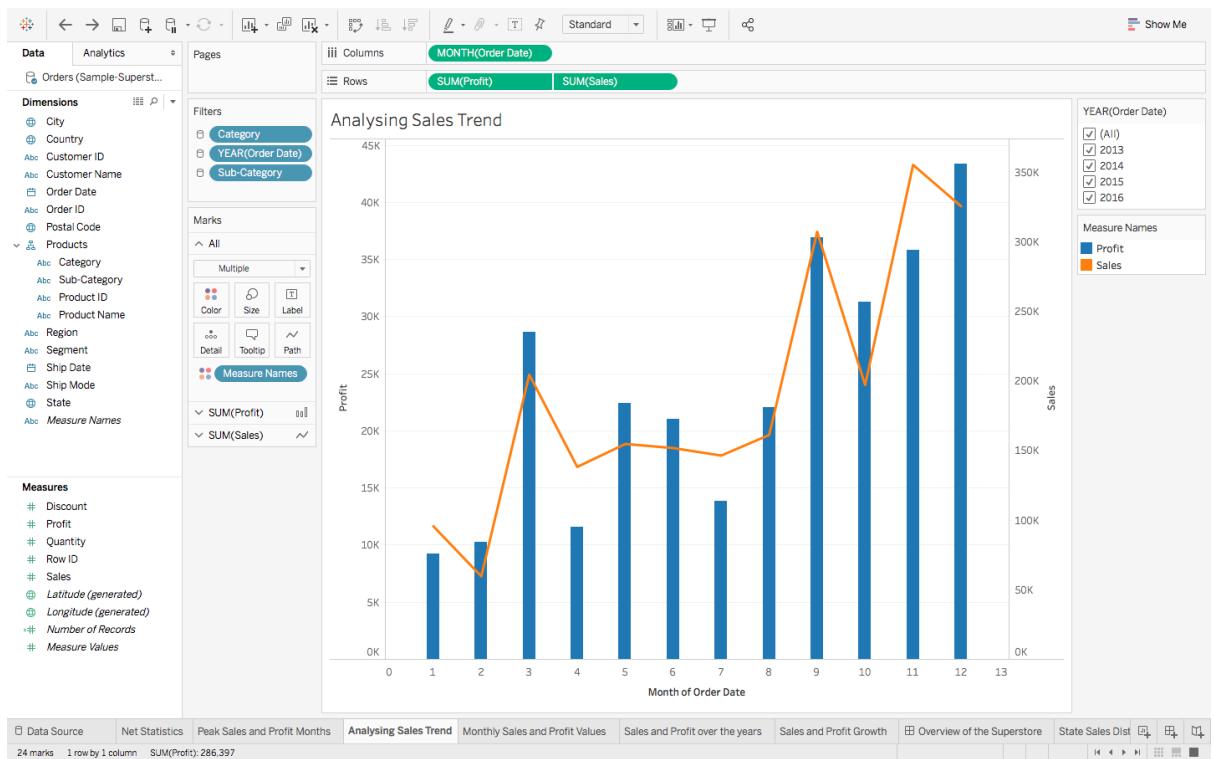


Although the Sales of the Superstore are increasing over the months of a Year, the future in general looks a bit bleak. The sales seem to become constant for the next 3 years, but fortunately for the Superstore, the Profit is increasing steadily. Let's get to making the above now.

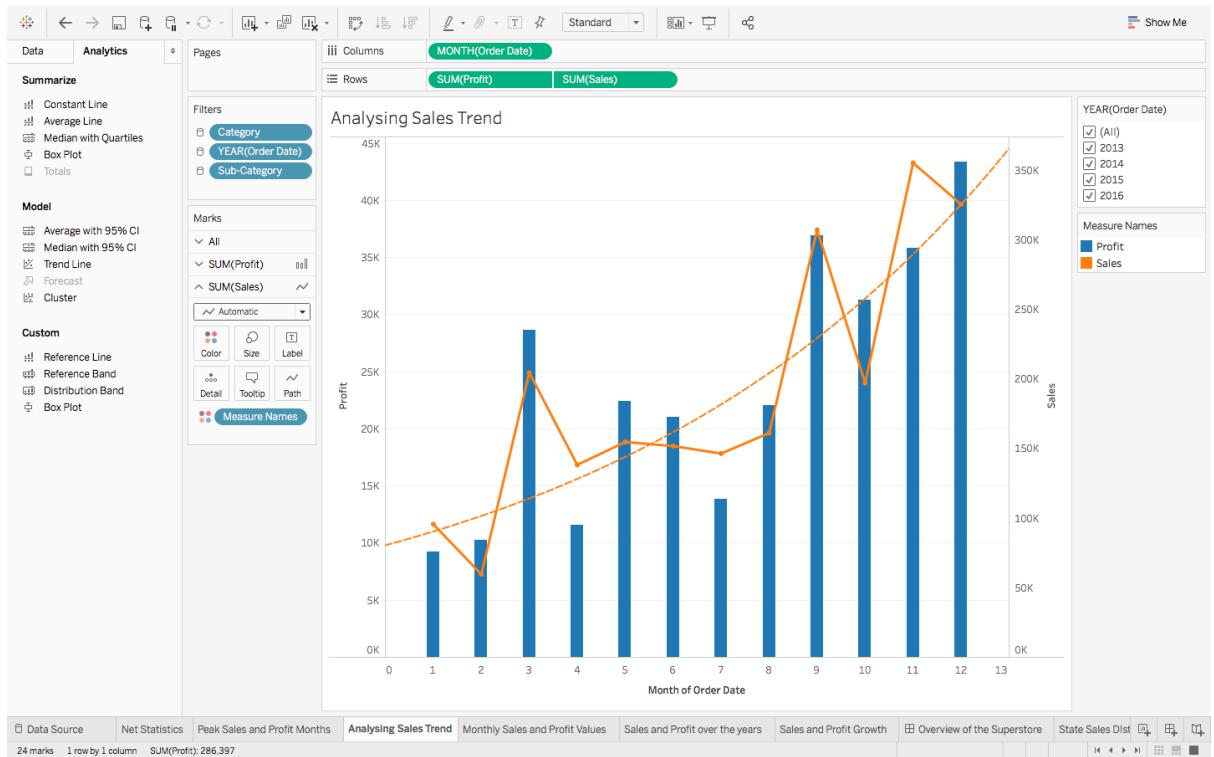
Trend Line

Traverse back to the **Peak Sales and Profit Month** Chart and follow these steps to make a Trend Line of your own:

1. Go to **Show Me** and choose the **Dual Combination** chart, to get this chart:



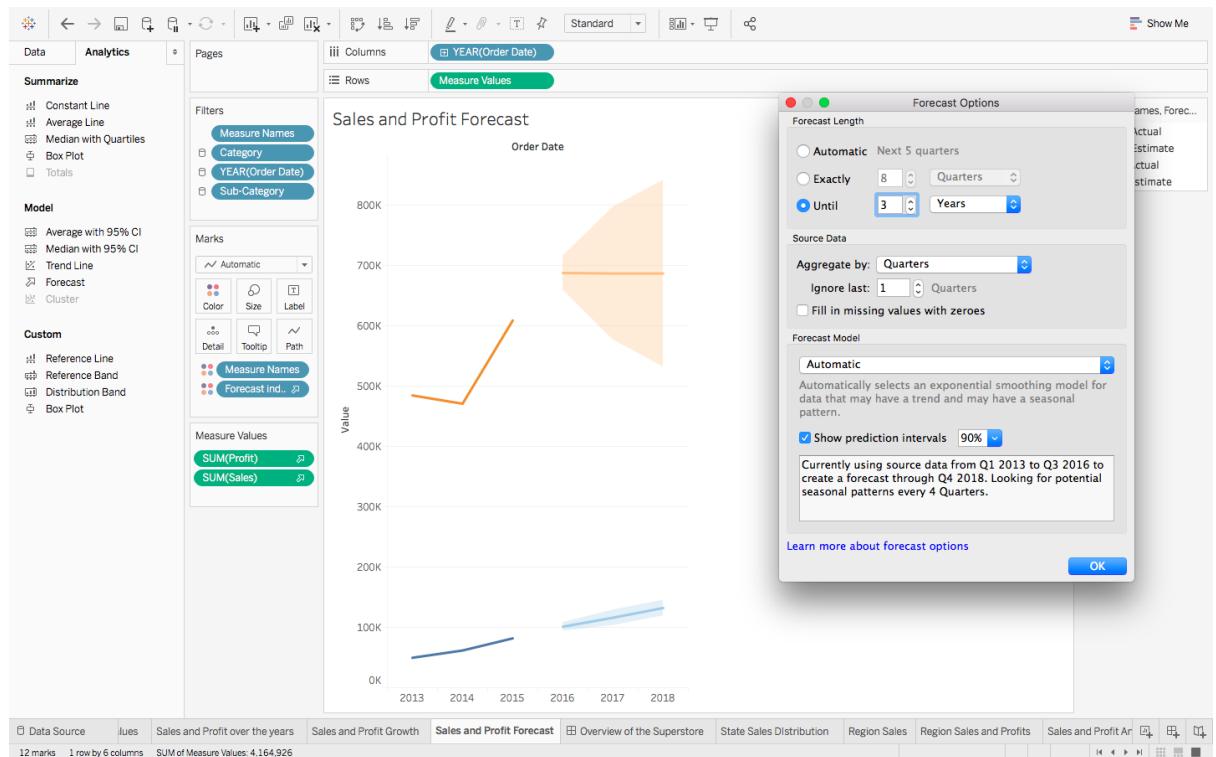
2. To get the Trend Line, go to Analytics, and simply drag Trend Line over the chart, to get:



Forecasting

For **forecasting**, we are going to deal with the Sales and Profit Growth chart. The construction is similar to that of Trend Lines, but with a small change. The steps are :

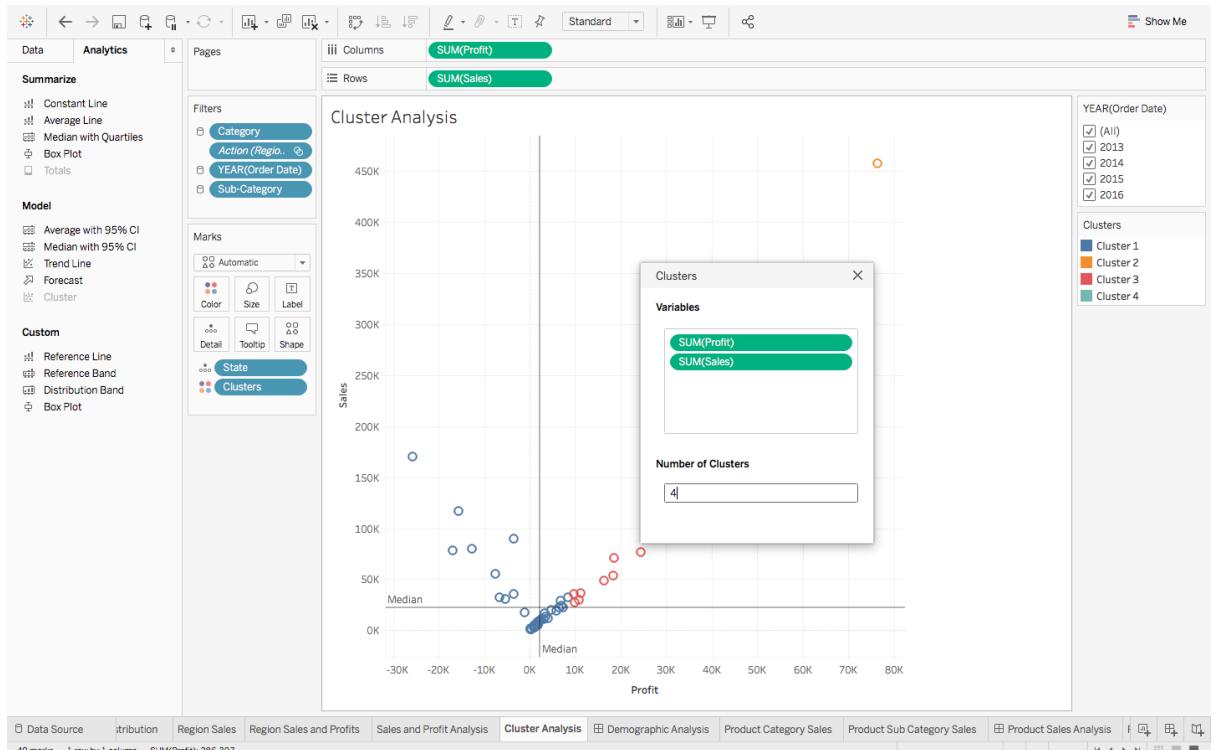
1. Drag **Forecast** over the chart.
2. You can also change the time frame of the Forecast, by right clicking on the Forecast Area and opting for **Forecast Options**, after which you can make your customisations.



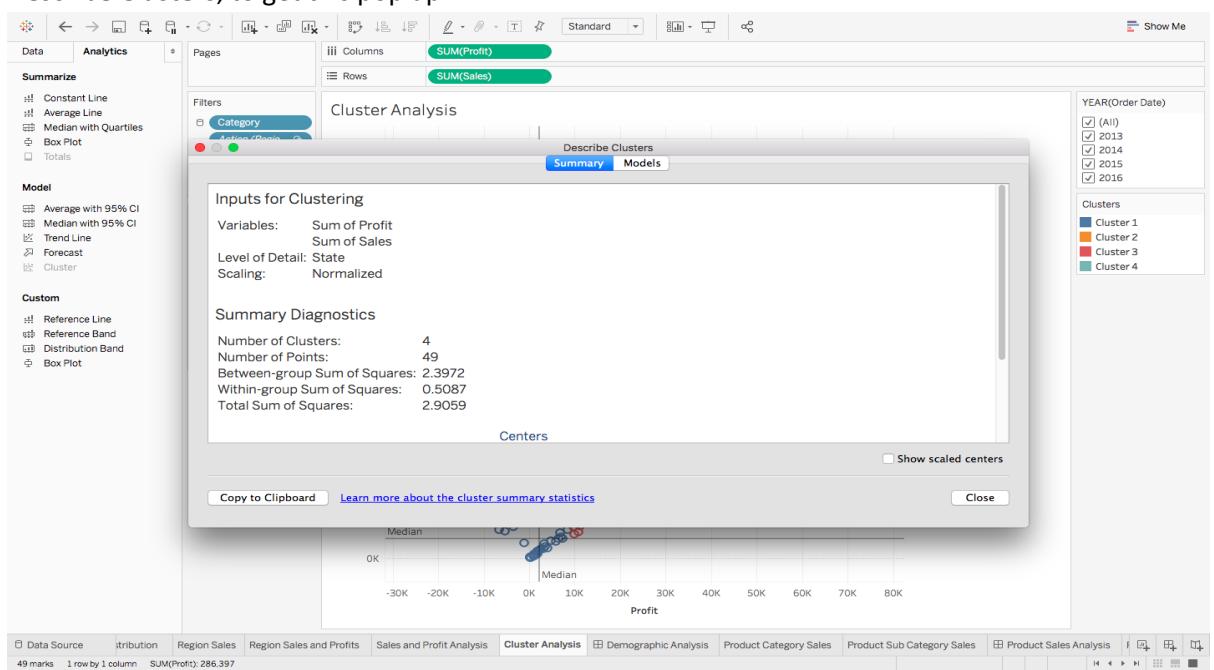
Clusters

Let's head back to the **Sales and Profit Analysis** chart that we had made. Remember the detailed inference that we had generated from it? We are just going to make that a bit more prominent now, using Clusters. To make them:

1. Go to **Analytics** and choose **Clusters**.
2. You can format the Cluster formation as per your wishes. Here we are clustering based on the **Sum of Sales and Profit**, choosing the **number of clusters to be 4**:



3. To view the Cluster information, right click on **Clusters** in the **Marks Pane**, and select **Describe Clusters**, to get this pop up :



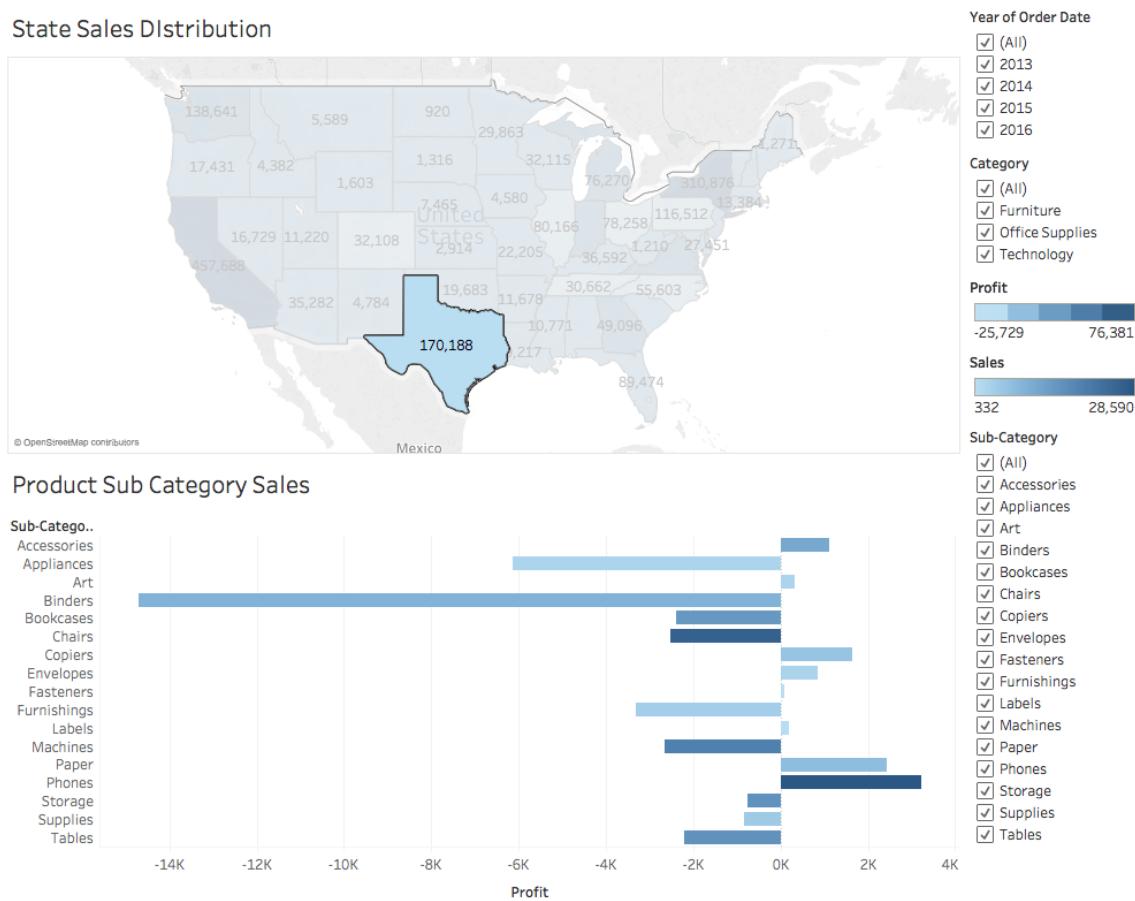
Dashboard

I am sure by now you must have gotten a pretty good idea of what a Dashboard is, having seen it plenty of times all throughout this Tutorial.

If not, well then a Dashboard is simply a means of combining Worksheets together so that they convey some message. Without much further ado, let's get right to it!

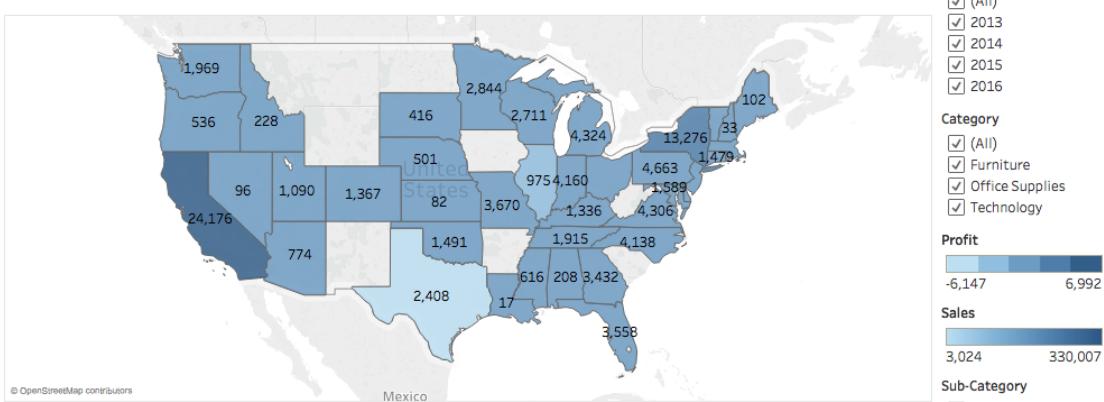
Consider the State **Sales Distribution Map** chart and **Product Sub Categories**.

What if you wanted to know the various Sales margin of each Product within separate States? We had observed that Texas was one of the States with the lowest Profits. By looking at the following Dashboard, you will see that the reason is it's not managing to generate Profits in majority of the Products:

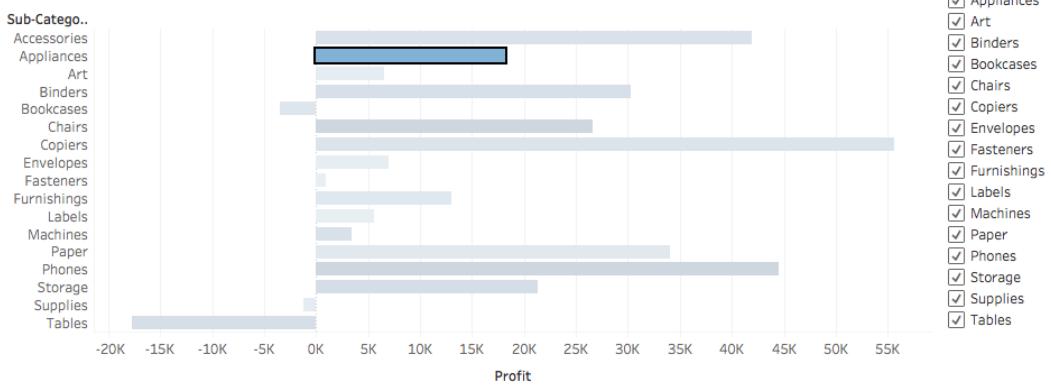


Now consider the state wise Sales distribution of a Sub – Category:

State Sales Distribution



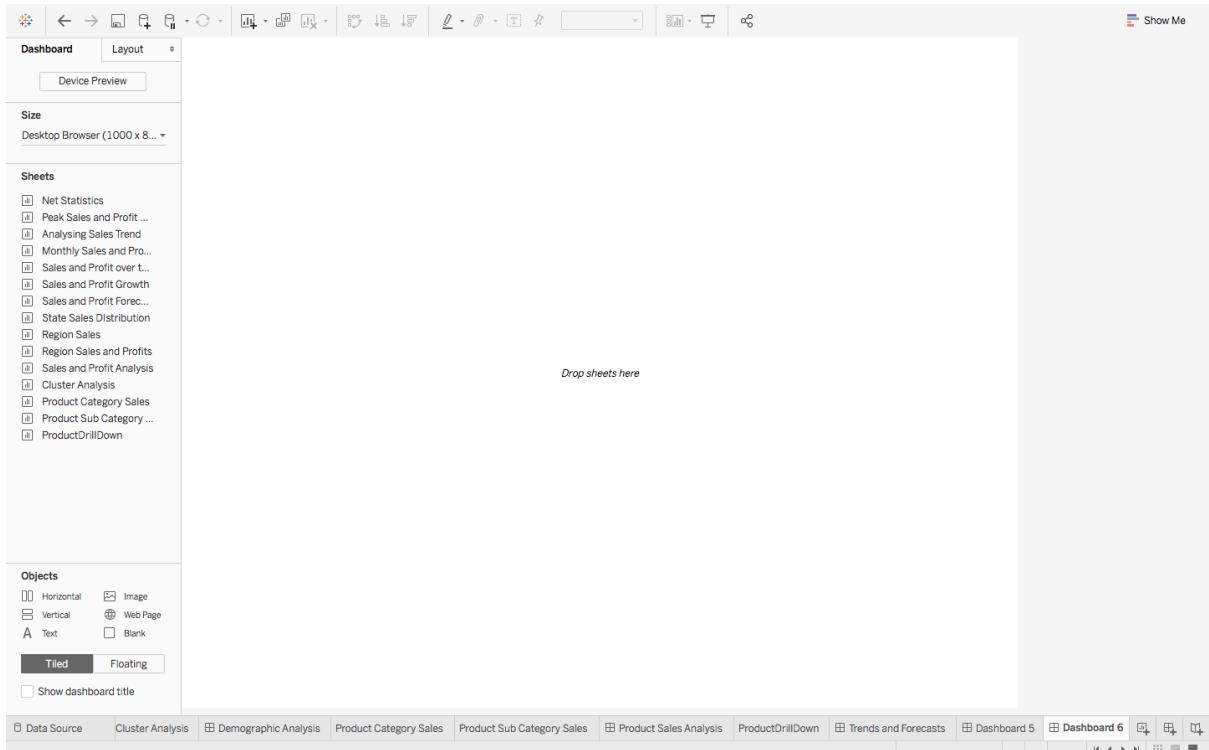
Product Sub Category Sales



The above beautifully shows the distribution of **Appliances** over the country, where California seems to be the major Profit contributor.

Making such a Dashboard is actually quite easy. Let's see how:

1. This time instead of creating a New Worksheet, we are going to create a new Dashboard. Click on the **window like icon** next to the 'New Worksheet' icon in the bottom pane to get the following :

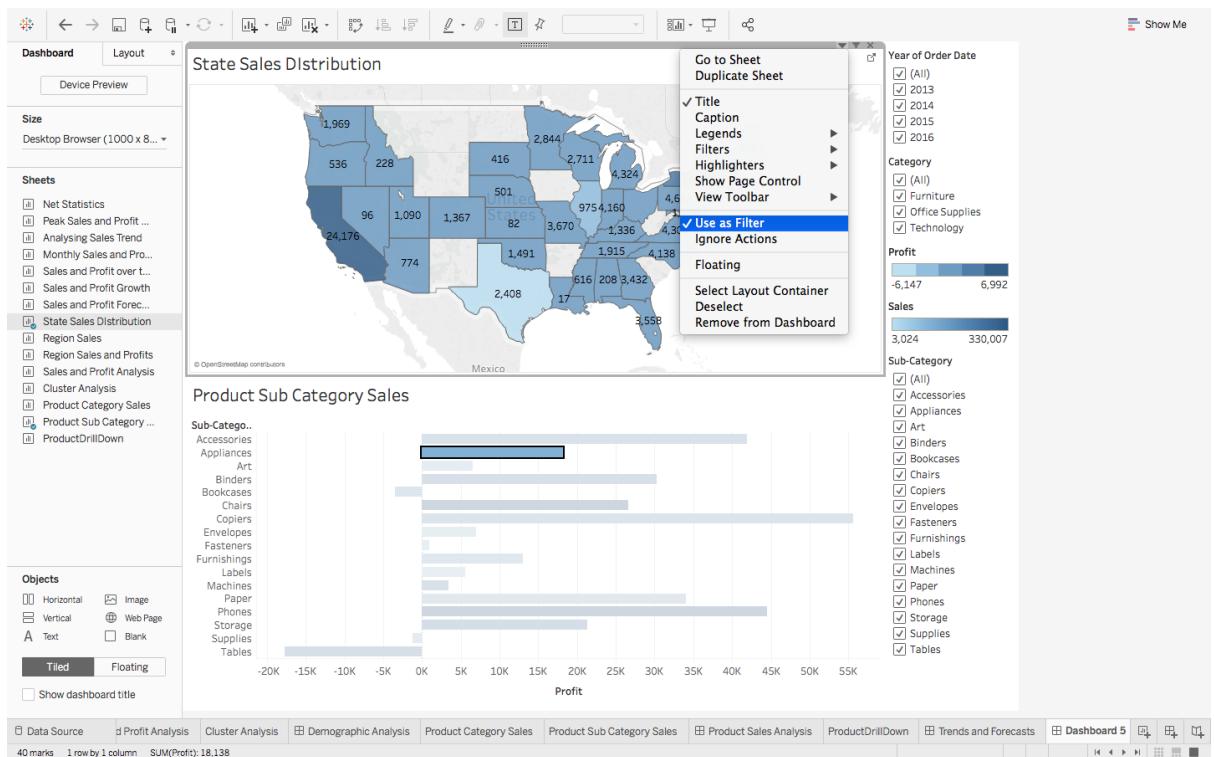


2. See the multiple Worksheets that we had made till now over on the left? All that we have to do to make a Dashboard is drag these sheets from the pane to the empty area '**Drop sheets here**'.
3. So to make the previously displayed Dashboard, simply drag State Sales Distribution and Product Sub Category Sales. The Dashboard will automatically make space available for both of them.

Note: Even after the creation of the Dashboards, you can still edit your Worksheets, and the same changes shall be reflected here.

If you were to click on the States or the Products after creating your first ever Dashboard, you won't observe any change. Because for such visuals, we first have to convert the Charts themselves into filters.

4. Simply click on the small Down Arrow on each chart you wish to turn into a Filter, and select **Use as Filter**:

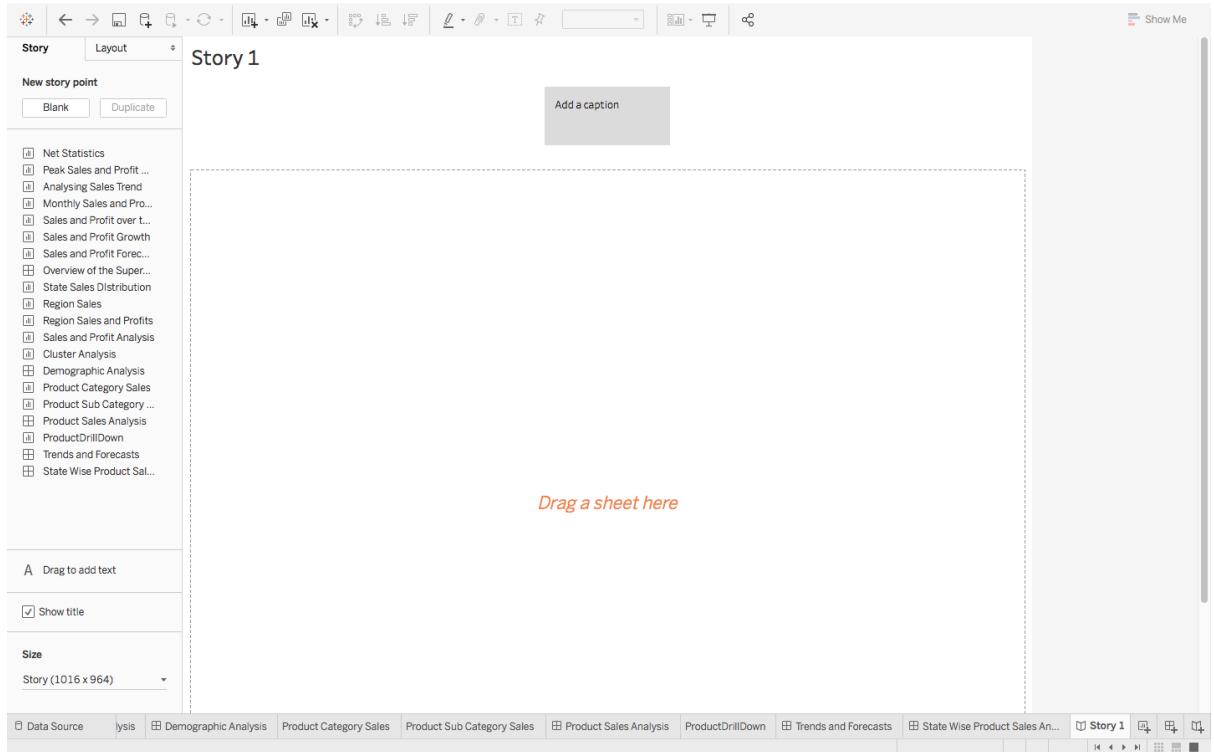


Note: While making Dashboards, it is preferred to use your charts as Filters, rather than cluttering up the view with custom ones.

Story - Bringing it all together

Just like Dashboards were a way to combine the Worksheets, a Story is where you combine all the dashboards, and if need be individual Sheets as well, to convey, as the name suggests – a Story.

1. Just like before, you simply drag your Worksheets and Dashboards onto the empty space:



So let's combine all those Dashboards that we had made into what could perhaps make a decent presentation for a beginner. Do ensure to **Add a Caption** to all of your Dashboards, to convey your message clearly:

