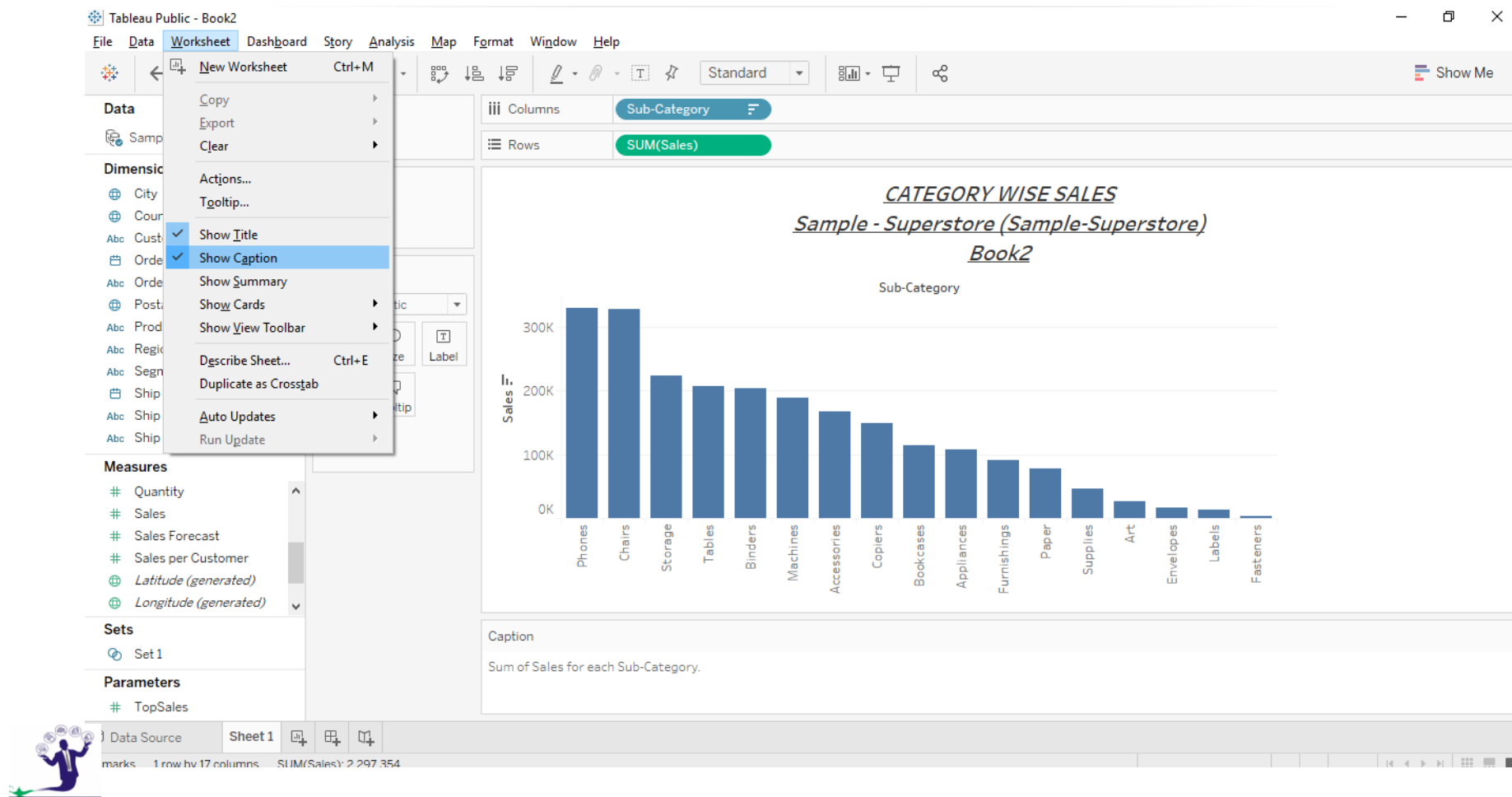


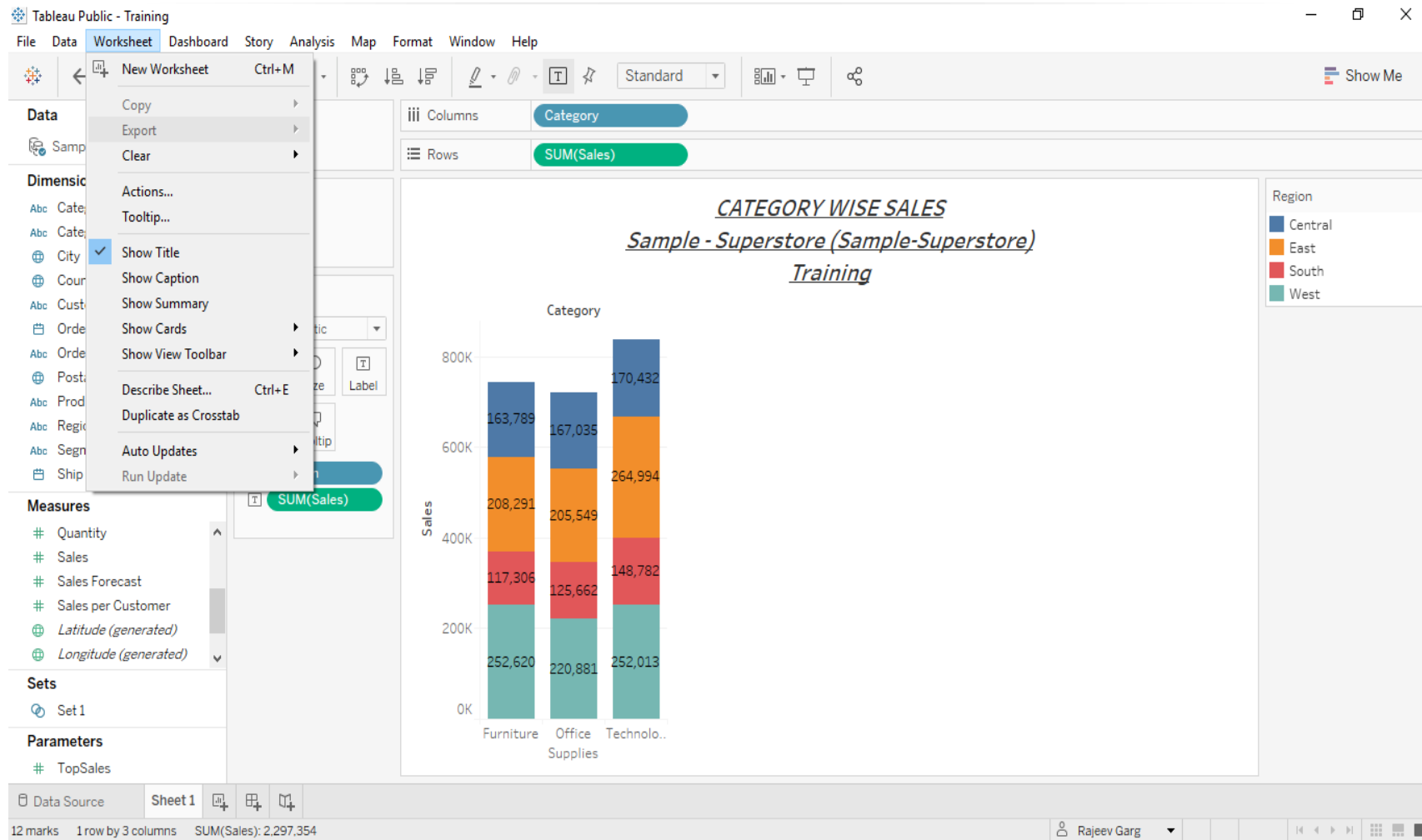
Titles & Captions

By Default Tableau displays the sheet name as the chart title. We can edit this and provide more appropriate title. Also Tableau allows us the format these titles by using simple formatting options.



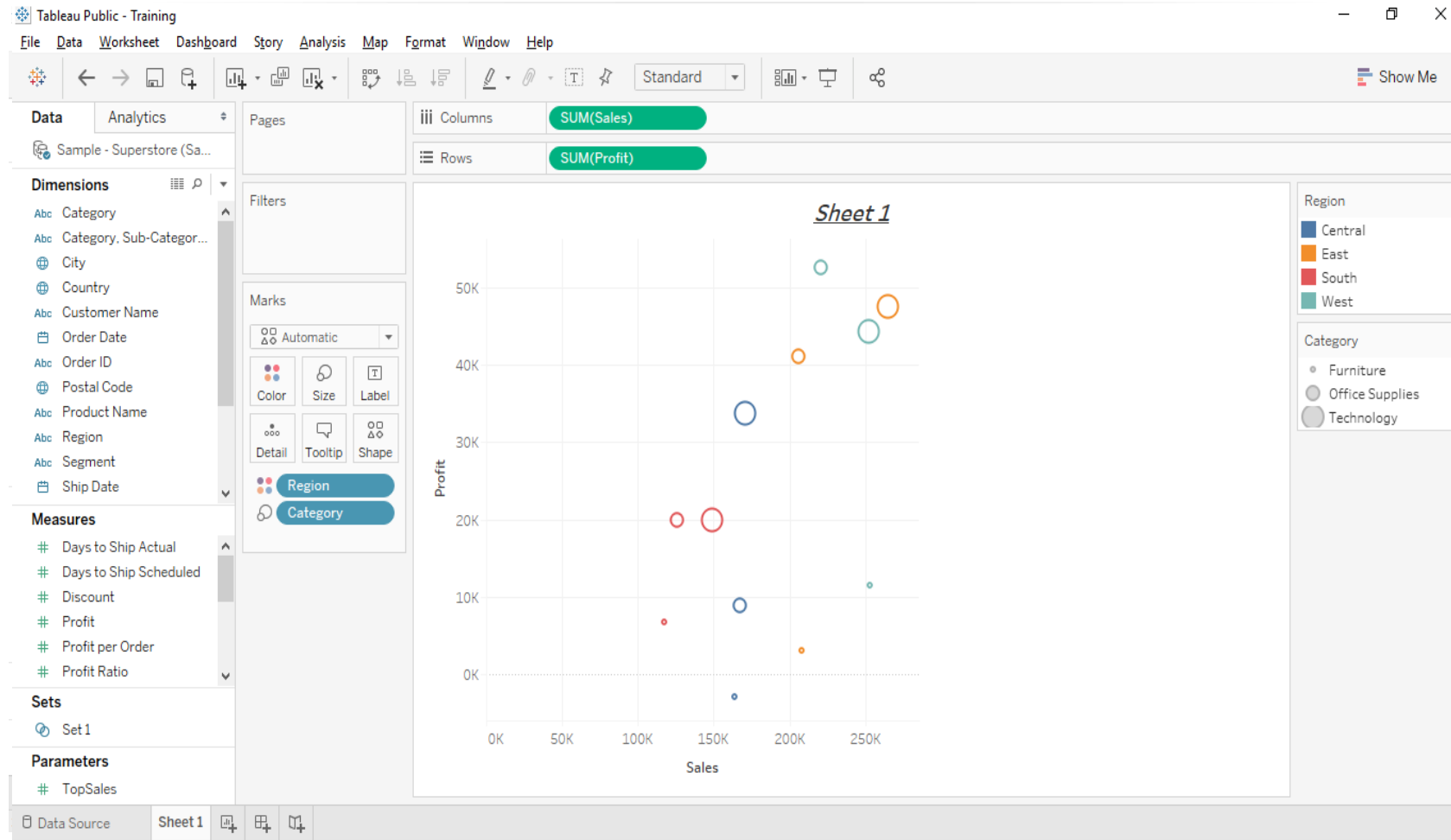
Exporting Data

Tableau data can be exported to various destinations like PDF, Excel, PowerPoint, Access, word, etc.



Granularity

Granularity means breaking down the data.



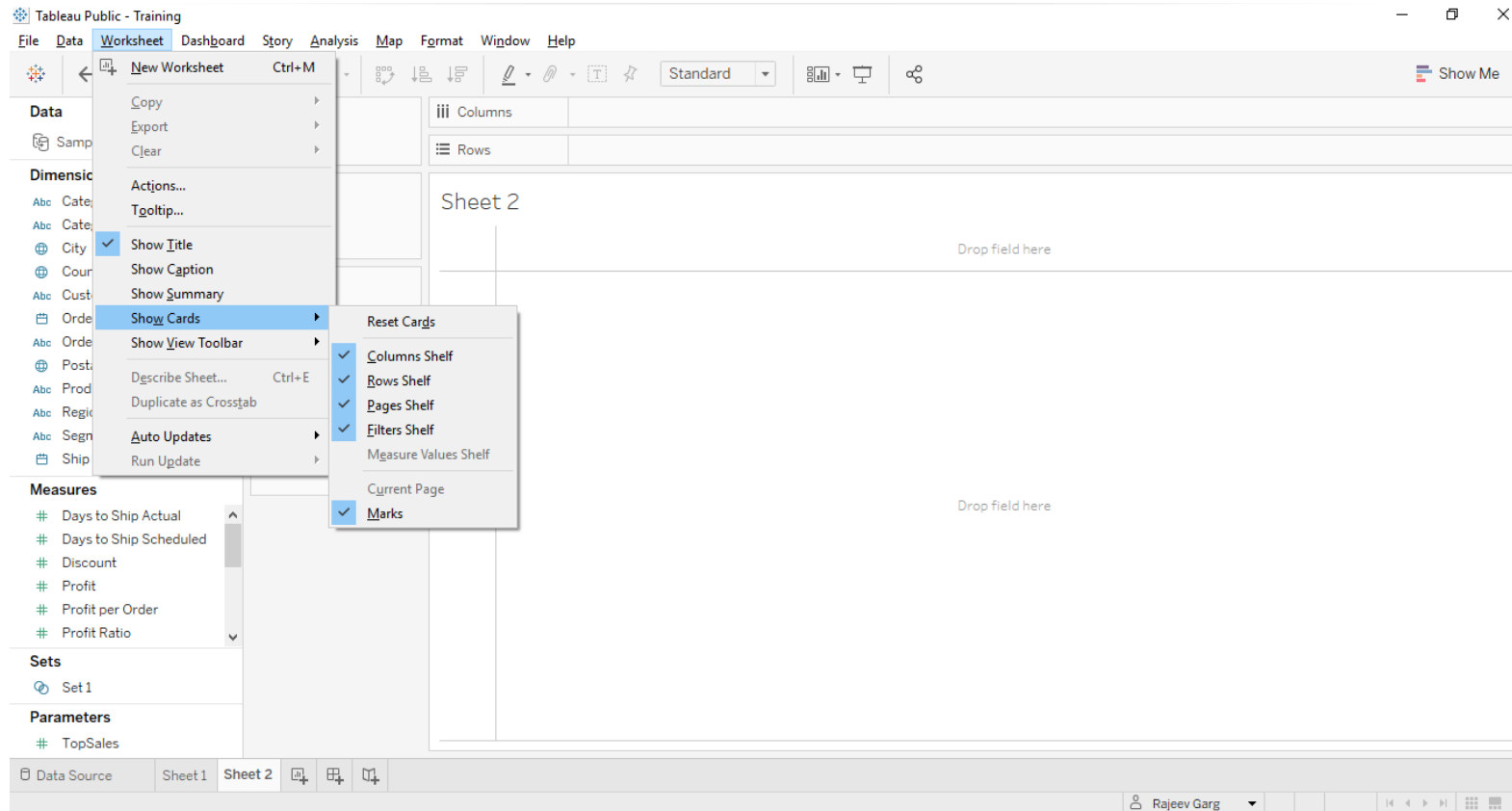
Cards & Shelf

The various sections of Tableau worksheet are known as cards.

Marks Card, Page Card, Filter Card, Row Card, Column Card.

The place in front of column & row card is known as Shelf.

These cards can be manipulated through Worksheet menu.



Managing Metadata

Managing metadata means :

1. Hiding a Field
2. Renaming a Field
3. Creating Hierarchies / Auto Hierarchies
4. Create folder – easier navigation through fields.
5. Creating a Calculated field



ASSIGNMENT



Display Sales on the Basis of Region, Category, Subcategory.
Should be Interactive on Region with Dynamic Title & Caption.

All the fields related to customer should be in the Customer folder & product related fields in Products folder

Segment wise monthly cost on the basis of shipping date

Display sales value using a combined field for Region, Segment Category



Joins

Joins allows us to analyze the data from more than one source.

Types of joins:

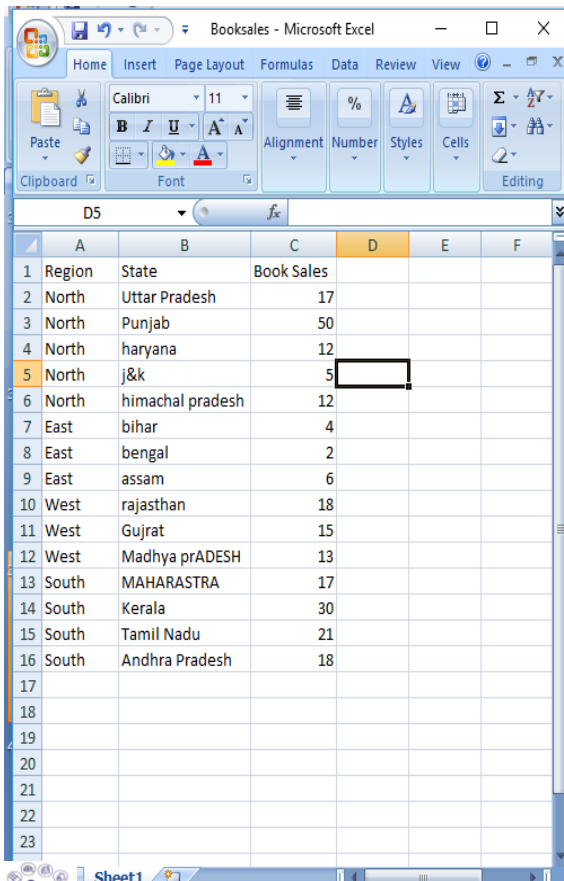
1. Inner Join
2. Left Join
3. Right Join
4. Full Join

Cross Database Join: Getting the data from different data sources.



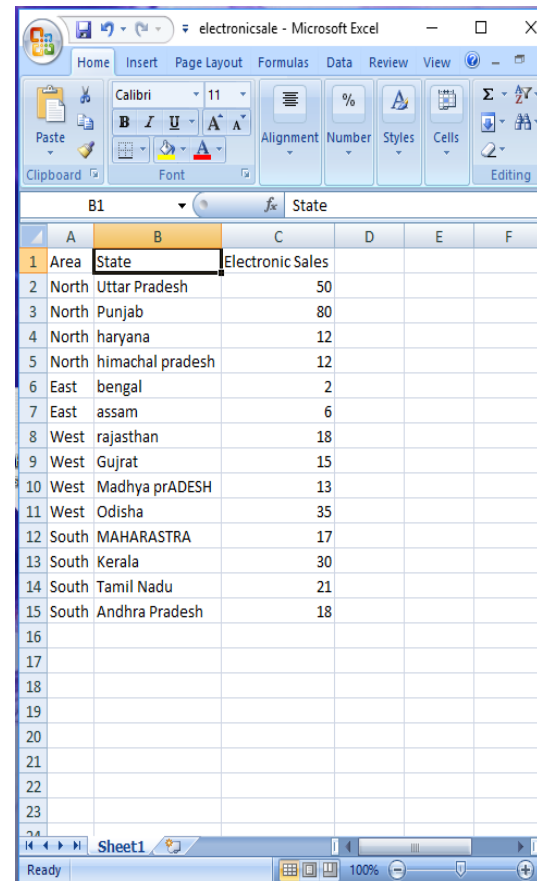
Data Blending

Like Joins data blending, allows us to analyze the data from more than one source and it gives more advanced options.



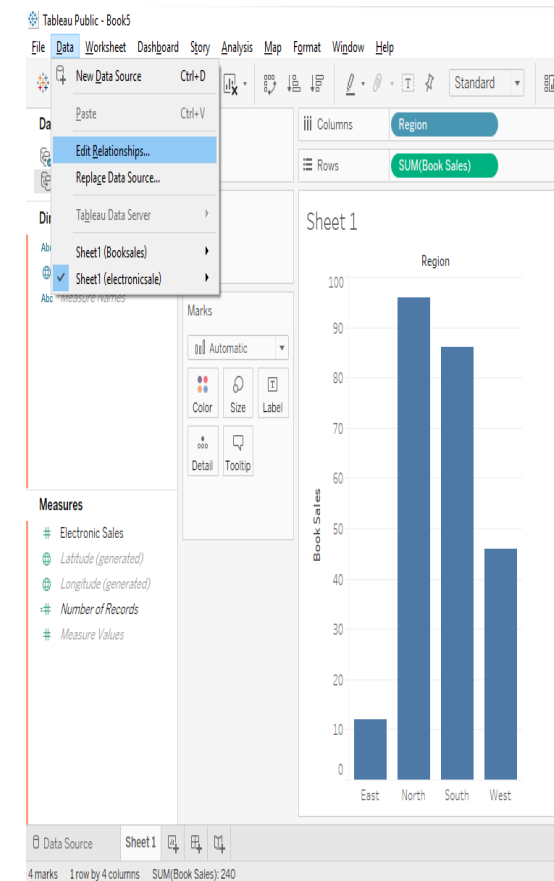
Booksales - Microsoft Excel

	A	B	C	D	E	F
1	Region	State	Book Sales			
2	North	Uttar Pradesh	17			
3	North	Punjab	50			
4	North	haryana	12			
5	North	j&k	5			
6	North	himachal pradesh	12			
7	East	bihar	4			
8	East	bengal	2			
9	East	assam	6			
10	West	rajasthan	18			
11	West	Gujrat	15			
12	West	Madhya prADESH	13			
13	South	MAHARASTRA	17			
14	South	Kerala	30			
15	South	Tamil Nadu	21			
16	South	Andhra Pradesh	18			



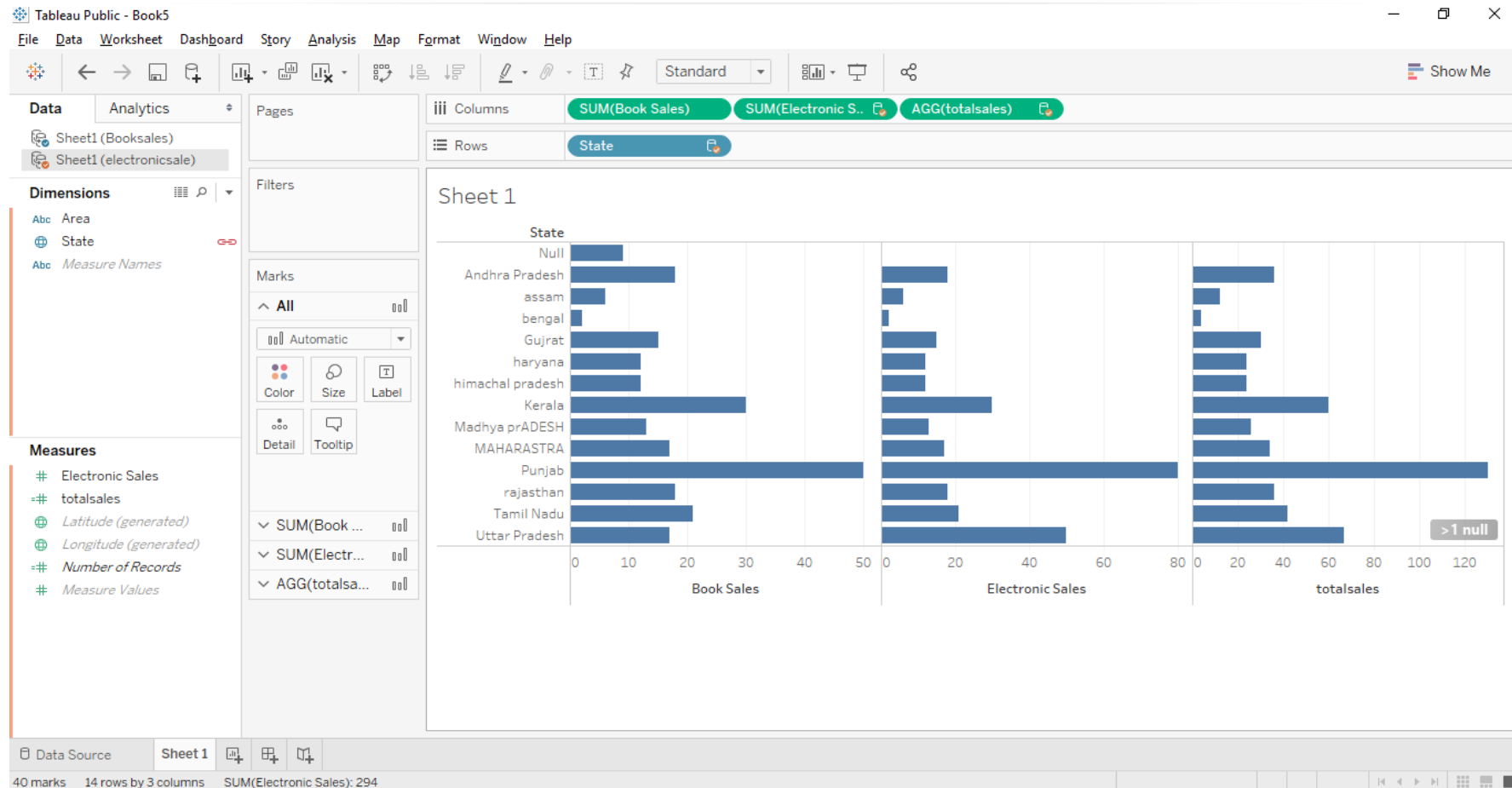
electronicsale - Microsoft Excel

	A	B	C	D	E	F
1	Area	State	Electronic Sales			
2	North	Uttar Pradesh	50			
3	North	Punjab	80			
4	North	haryana	12			
5	North	himachal pradesh	12			
6	East	bengal	2			
7	East	assam	6			
8	West	rajasthan	18			
9	West	Gujrat	15			
10	West	Madhya prADESH	13			
11	West	Odisha	35			
12	South	MAHARASTRA	17			
13	South	Kerala	30			
14	South	Tamil Nadu	21			
15	South	Andhra Pradesh	18			



Data Blending Calculations

We can also create calculated fields using data blending.



ASSIGNMENT



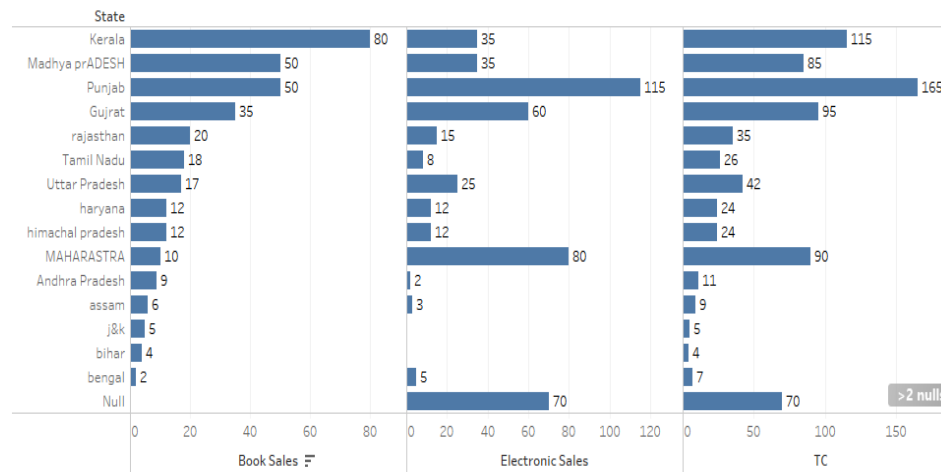
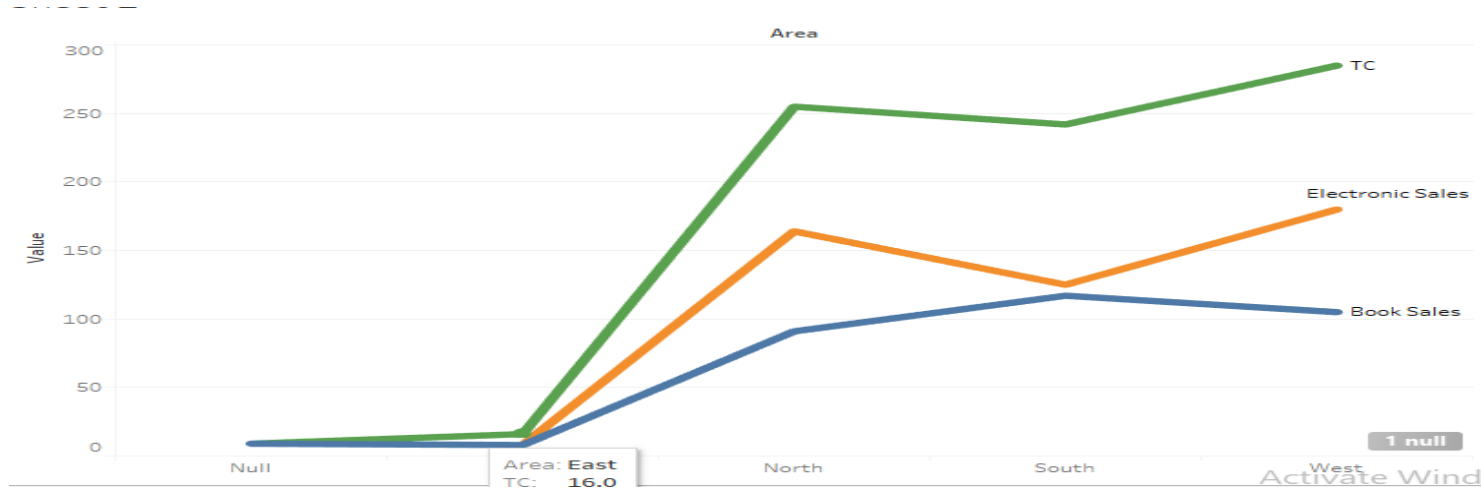
Use Inner Join to join electronic & books data source and in the Tabular format display electric, book & total sales on the basis of Region & State.

Use Full Join to join electronic & books sheets and create a line graph to display Area wise Electronic ,Book & Total sales in same plot area.

Blend the data from electronic & books data source and display Electronic ,Book & Total sales on the basis of state.



ASSIGNMENT



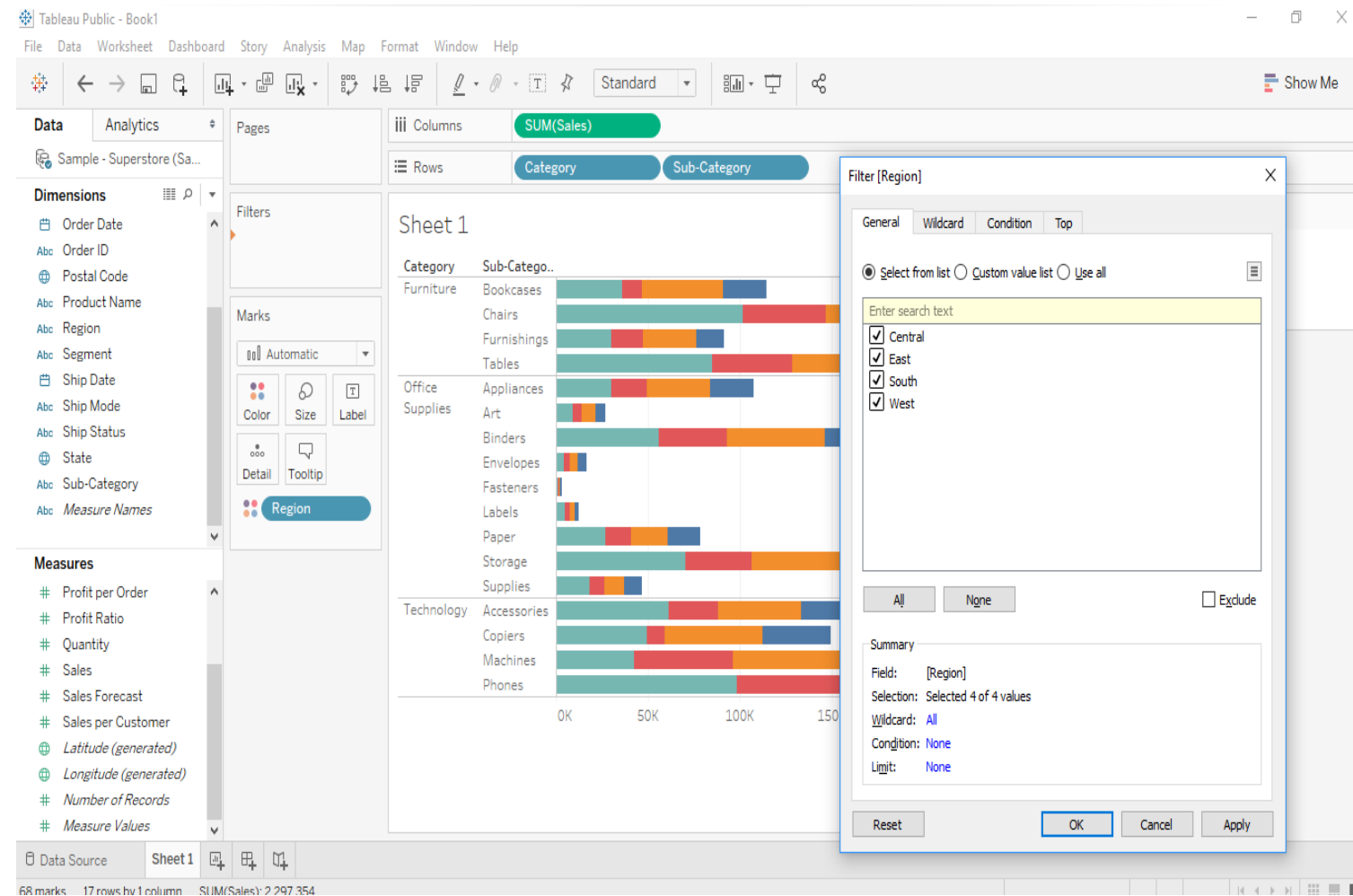
Region	State	Book Sales	Electronic Sales	TC
East	assam	6.0	3.0	9.0
	bengal	2.0	5.0	7.0
North	haryana	12.0	12.0	24.0
	himachal pradesh	12.0	12.0	24.0
	Punjab	50.0	115.0	165.0
	Uttar Pradesh	17.0	25.0	42.0
South	Andhra Pradesh	9.0	2.0	11.0
	Kerala	80.0	35.0	115.0
	MAHARASTRA	10.0	80.0	90.0
	Tamil Nadu	18.0	8.0	26.0
West	Gujrat	35.0	60.0	95.0
	Madhya prADESH	50.0	35.0	85.0
	rajasthan	20.0	15.0	35.0



Filtering Charts

Filters are used to filter the graphical view by four options:

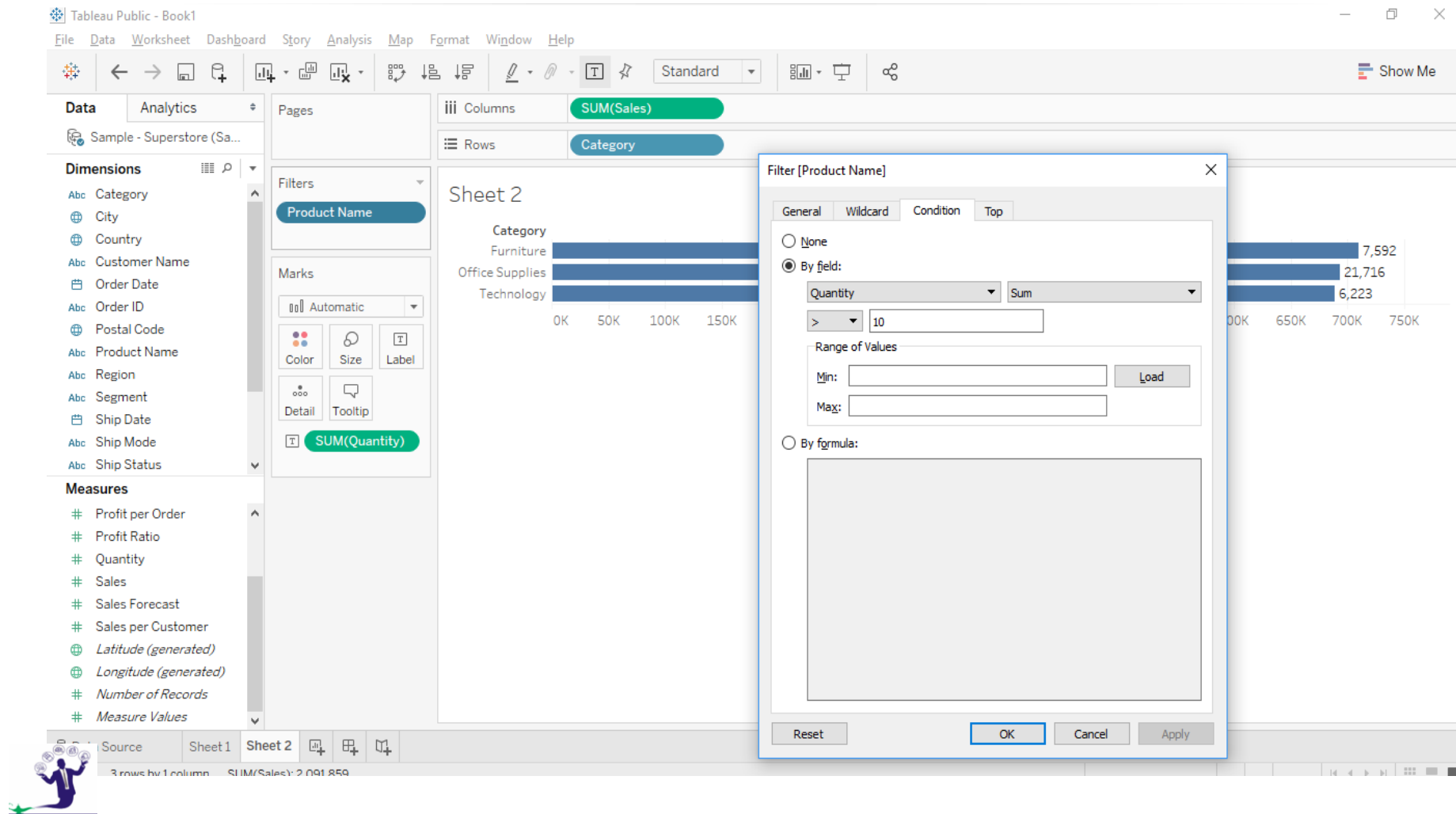
- General
- Wildcard
- Condition
- Top



Filtering Charts

Filtering using condition tab.

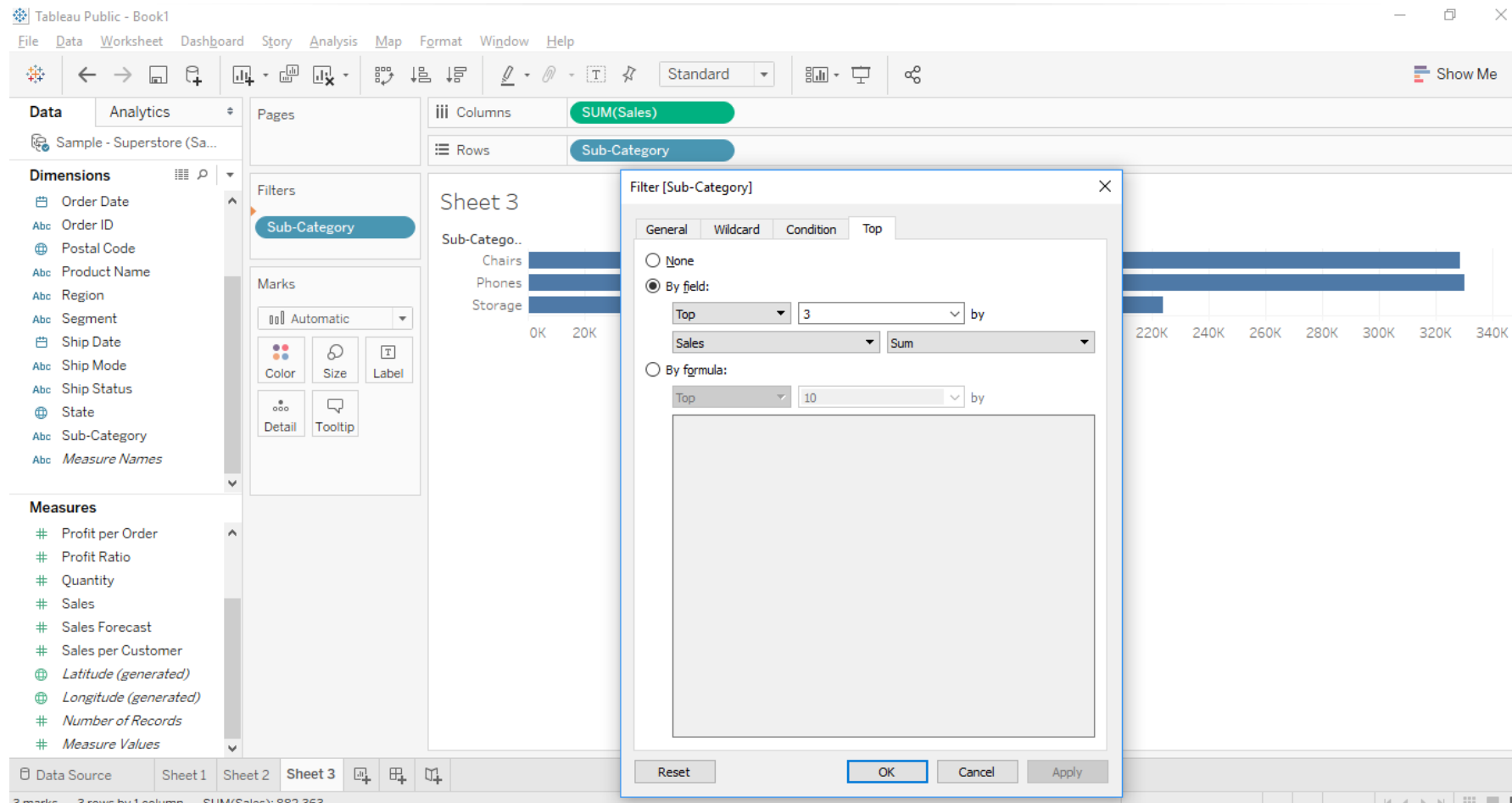
Eg: Total sales of the products where quantity sold is greater than 10.



Filtering Charts

Filtering using Top tab.

Eg: Category wise Top / Bottom sales.



Filtering Dates

Tableau allows us to filter the data based on dates, months, quarters, years..

The screenshot displays the Tableau Public interface with a worksheet titled 'Sheet 4'. The data source is 'Sample - Superstore (Sa...'. The Columns shelf contains 'YEAR(Order Date)' and the Rows shelf contains 'Category' and 'SUM(Sales)'. The 'Order Date' field is placed in the Filters shelf. A dialog box titled 'Filter [Order Date]' is open, showing the 'Starting date' tab. The 'Relative dates' section is selected, showing the date range '1/1/2016 to 12/31/2018'. The 'Years' tab is selected, and the 'Last 3 years' option is chosen. The 'Anchor relative to Today' checkbox is unchecked, and the 'Include null values' checkbox is also unchecked. The 'OK' button is highlighted.

Tableau Public - Book1

File Data Worksheet Dashboard Story Analysis Map Format Window Help

Standard

Analytics

Sample - Superstore (Sa...)

Dimensions

- Category
- City
- Country
- Customer Name
- Order Date
- Order ID
- Postal Code
- Product Name
- Region
- Segment
- Ship Date
- Ship Mode

Measures

- Profit Ratio
- Quantity
- Sales
- Sales Forecast
- Sales per Customer
- Latitude (generated)
- Longitude (generated)
- Number of Records
- Measure Values

Parameters

- Parameter 1

Columns: YEAR(Order Date)

Rows: Category, SUM(Sales)

Filters: Order Date

Sheet 4

Category: Furniture, Office Supplies, Technology

Order Date: 2016, 2017

Filter [Order Date]

Relative dates Range of dates Starting date Ending date Special

Relative dates 1/1/2016 to 12/31/2018

Years Quarters Months Weeks Days

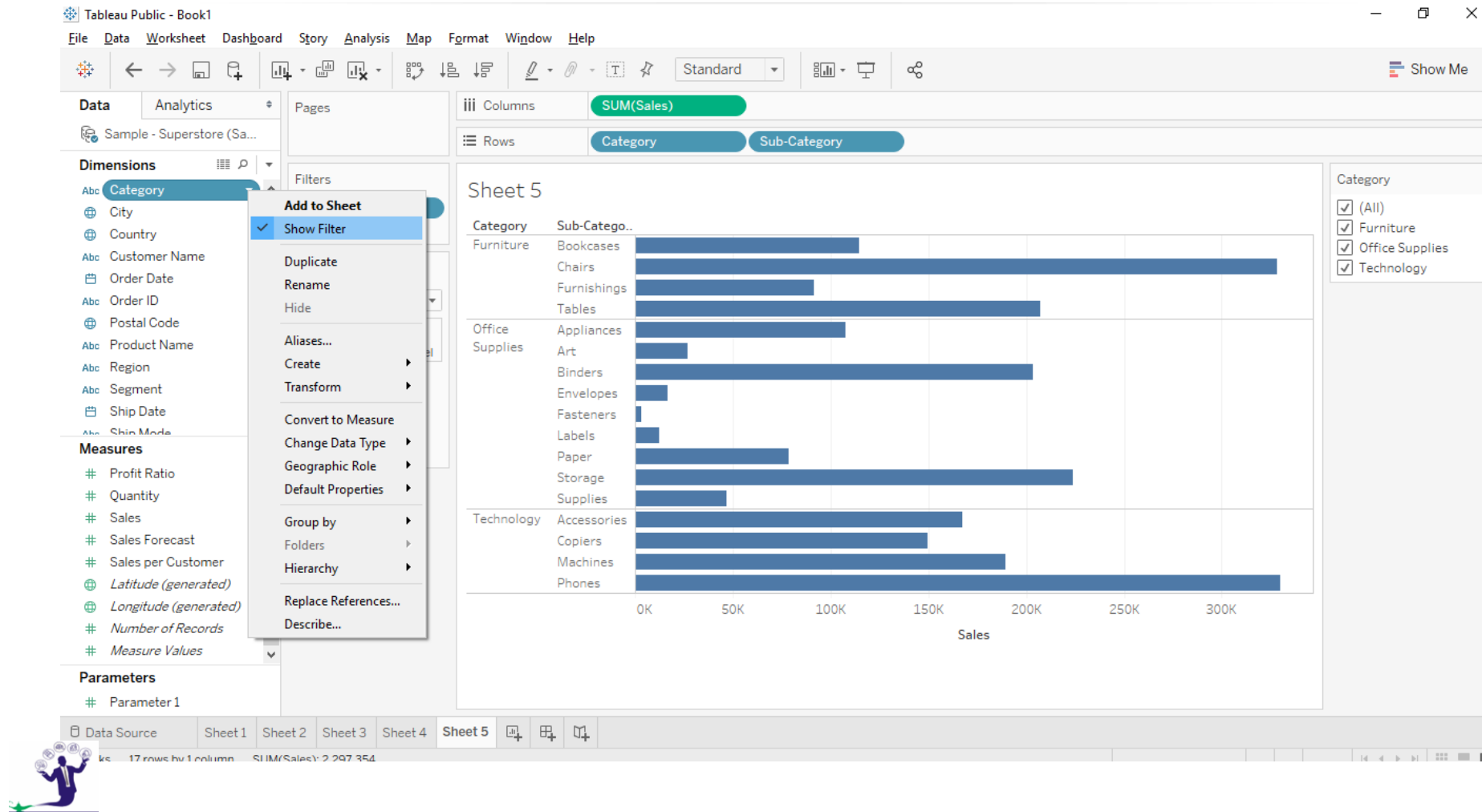
Previous year Last 3 years This year Next 3 years Next year Year to date

Anchor relative to Today Include null values

Reset OK Cancel Apply

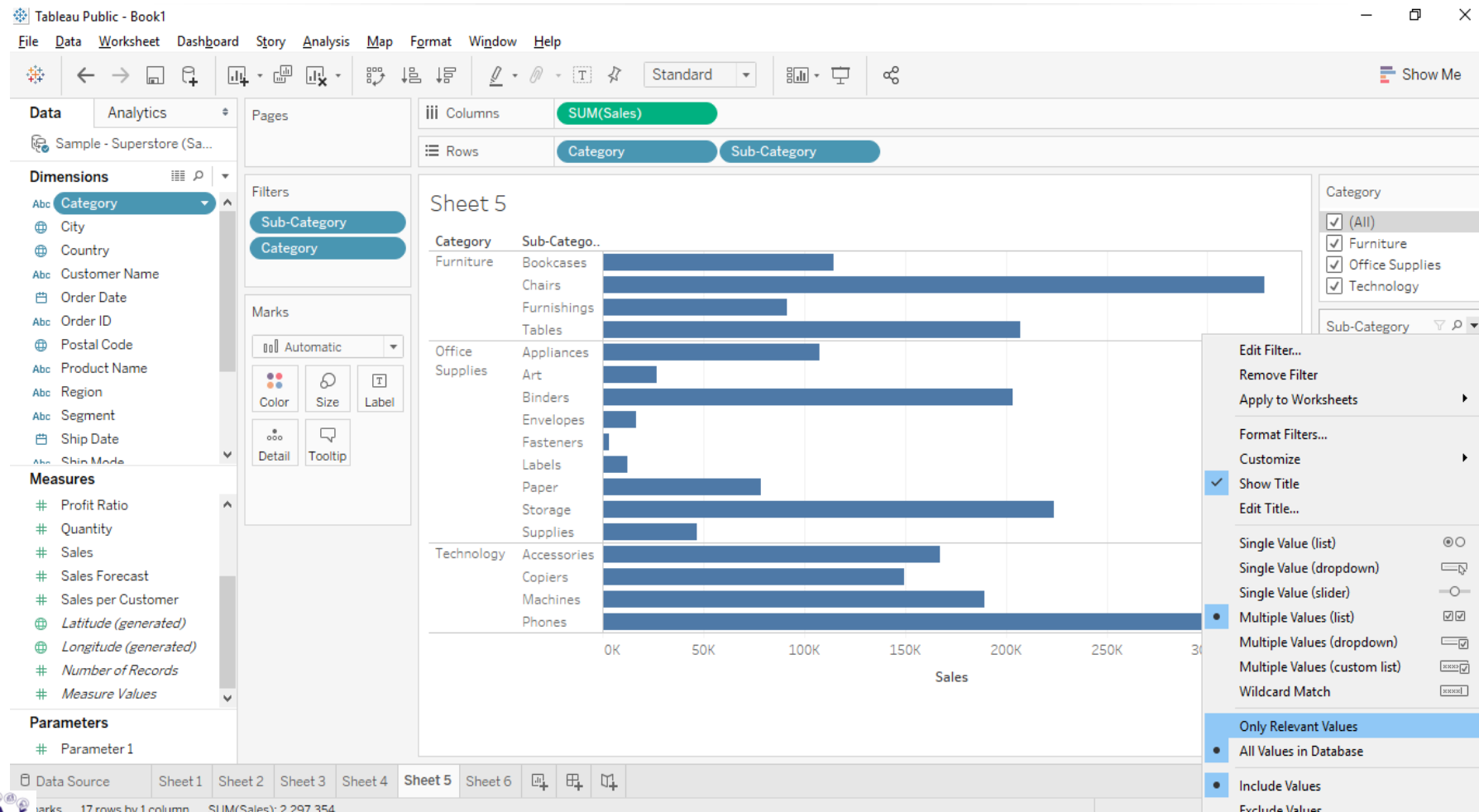
Interactive Filters

Interactive filters allows us to update the graph at runtime.



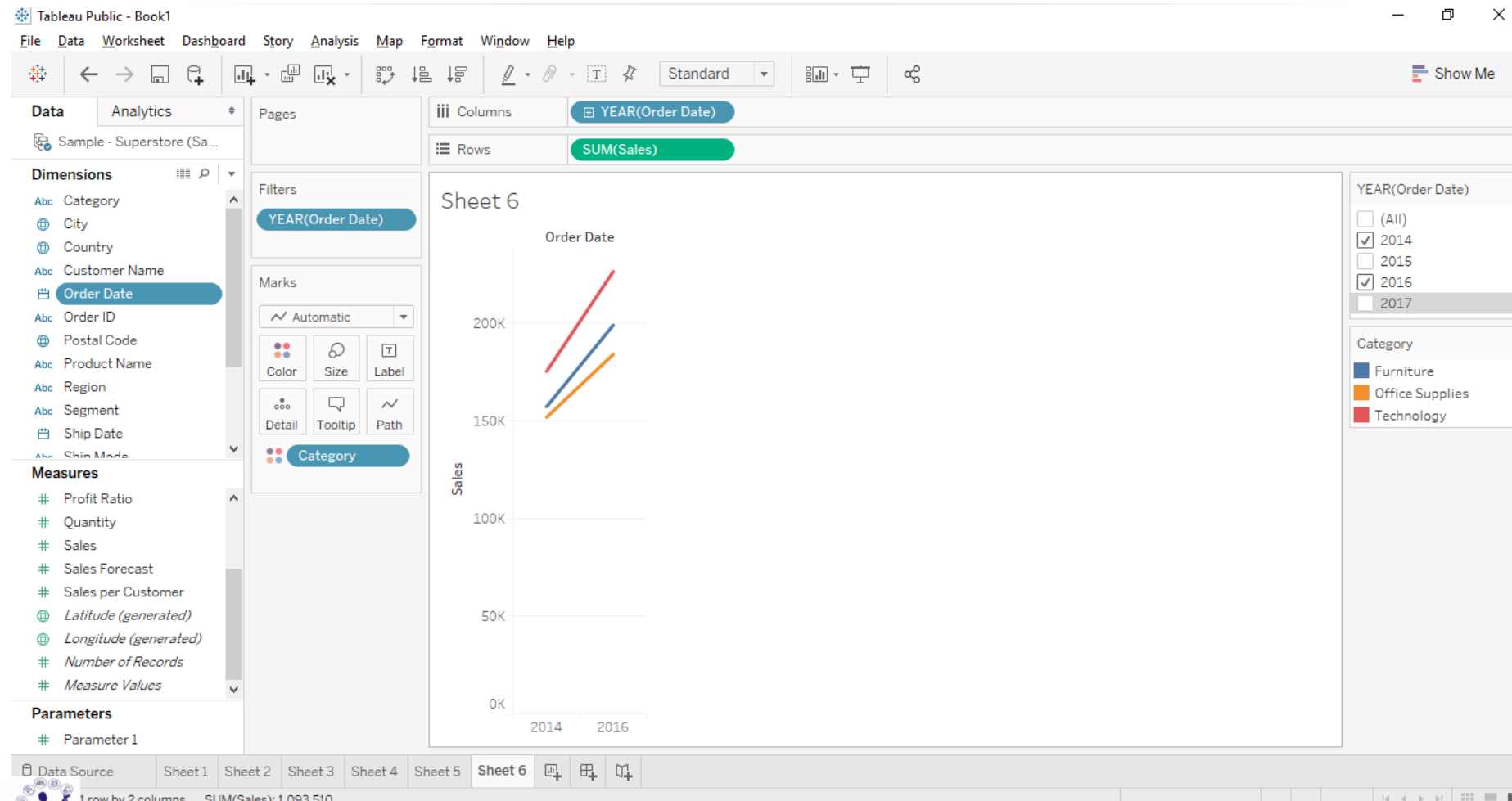
Advance Interactive Filters

Advance Interactive filters also referred to as dependent filters.



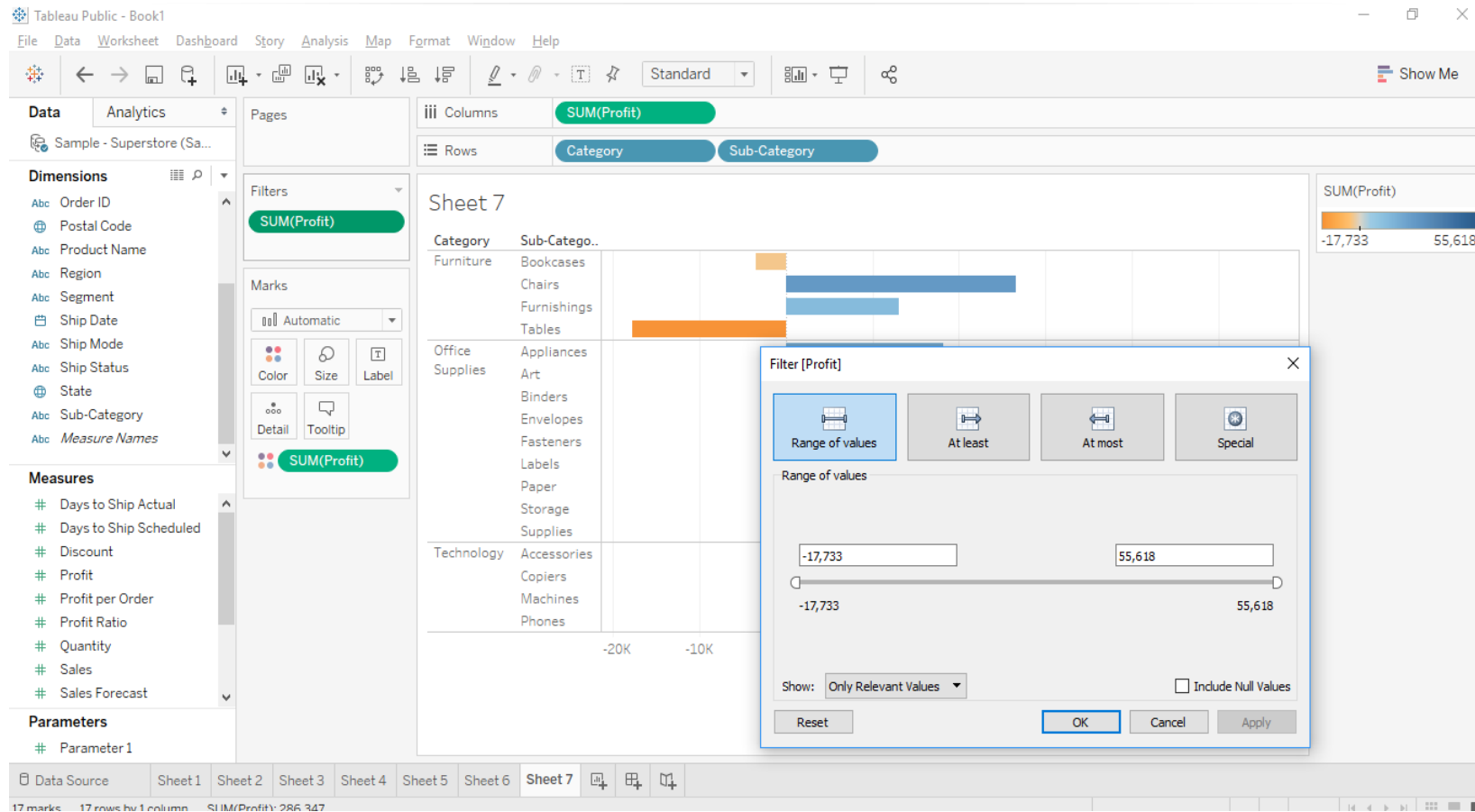
Interactive Date Filters

We can also use interactive filters with date fields.



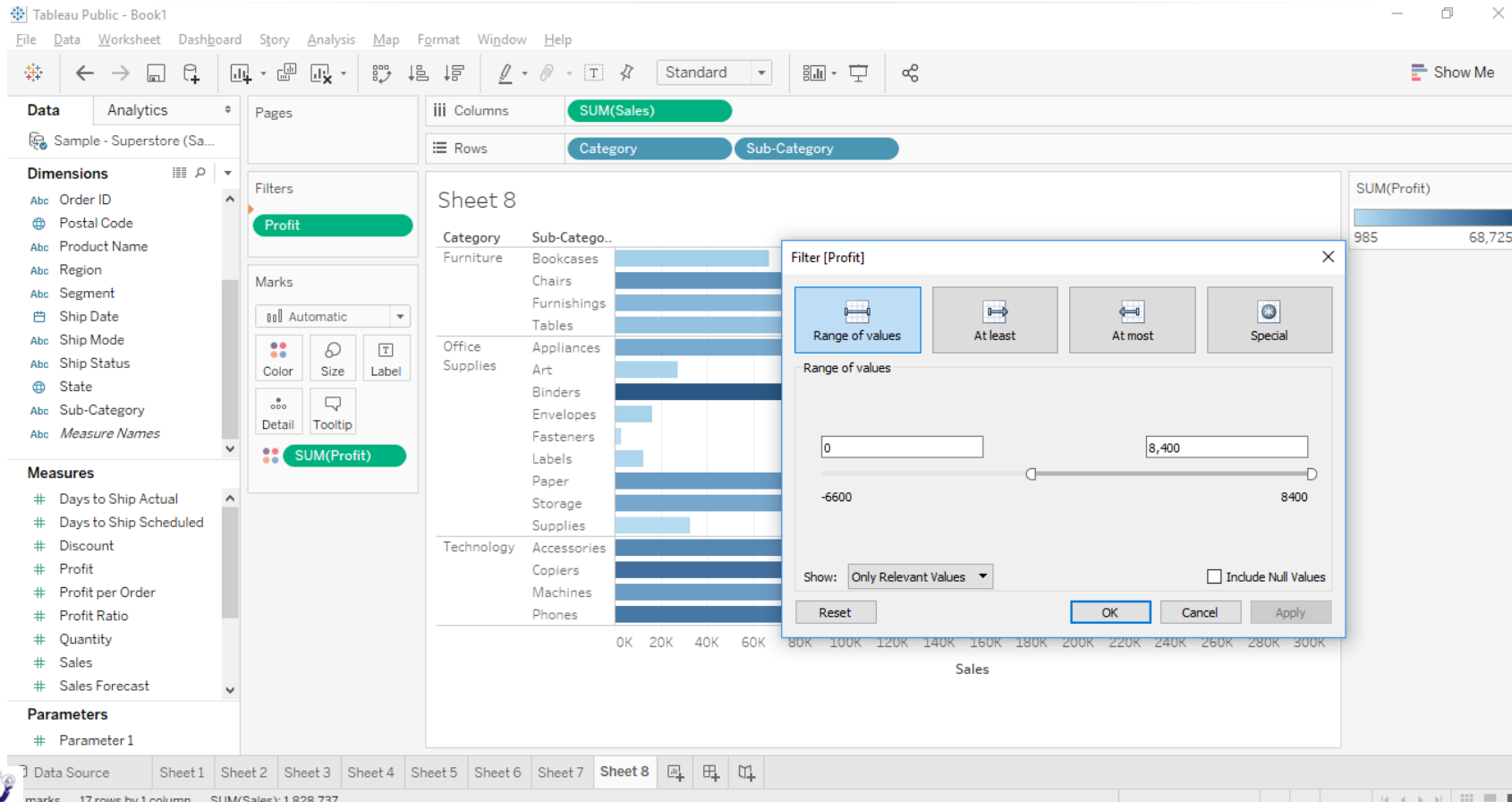
Where Filters

Summary Level Filters Eg: Analyzing the sales on the basis of profit i.e. showing only those categories where **the total profit** is positive.



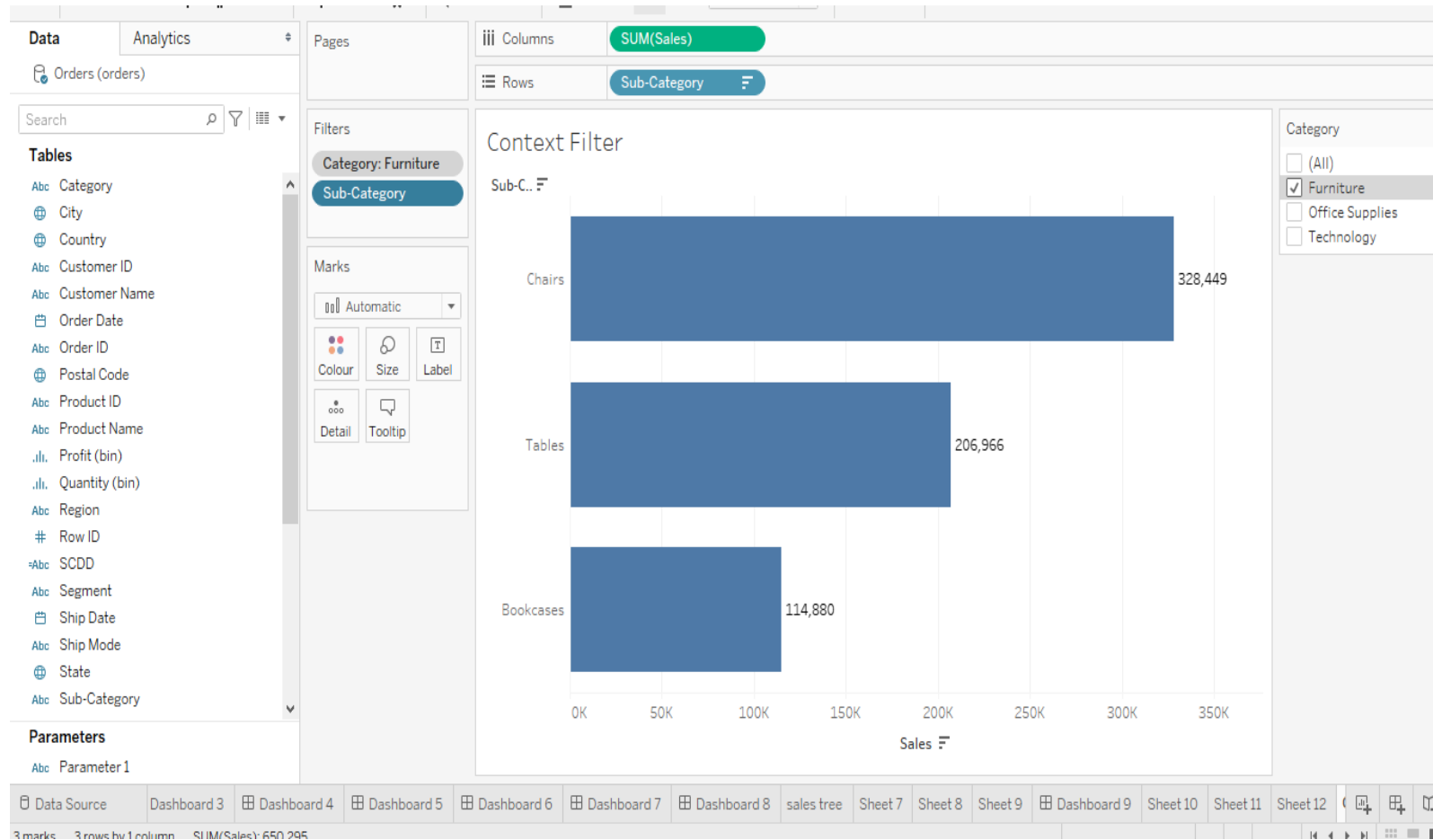
Where Filters

Record Level Filters Eg: Analyzing the sales on the basis of profit i.e. showing only those categories where **the profit** is positive.



Context Filter

The filters are independent to each other. If we want that the second filter to process on the records returned by the first filter, the second filter is known as dependent filters because they process only the data that passes through the context filter.



Data Source Filters

Data source filter will filter the data from the data source i.e. It will impact all the sheets created from the respective data .

The screenshot displays the Tableau Public interface with a bar chart titled 'Region' showing sales for 'Central' and 'South' regions. The 'Columns' shelf contains 'Region' and the 'Rows' shelf contains 'SUM(Sales)'. A context menu is open over the 'Data' pane, with 'Edit Data Source Filters...' selected. An 'Add Filter' dialog box is also open, showing a list of fields to select for filtering. The 'Edit Data Source Filters' dialog box is also visible, showing a table with 'Filter' and 'Details' columns.

Data Source Filters

Filter	Details

Add Filter

Select a field:

- Category
- City
- Country
- Customer Name
- Days to Ship Actual
- Days to Ship Scheduled
- Discount
- Order Date
- Order ID
- Postal Code
- Product Name
- Profit
- Profit per Order
- Profit Ratio
- Quantity
- Region
- Sales
- Sales Forecast
- Sales per Customer
- Segment
- Ship Date



Ways to Filter

Filter by Self – Drag & Drop the desired pill in the filter self and set the options.

Interactive Filters – Click on the desired pill, from the drop down list select Show Filter.

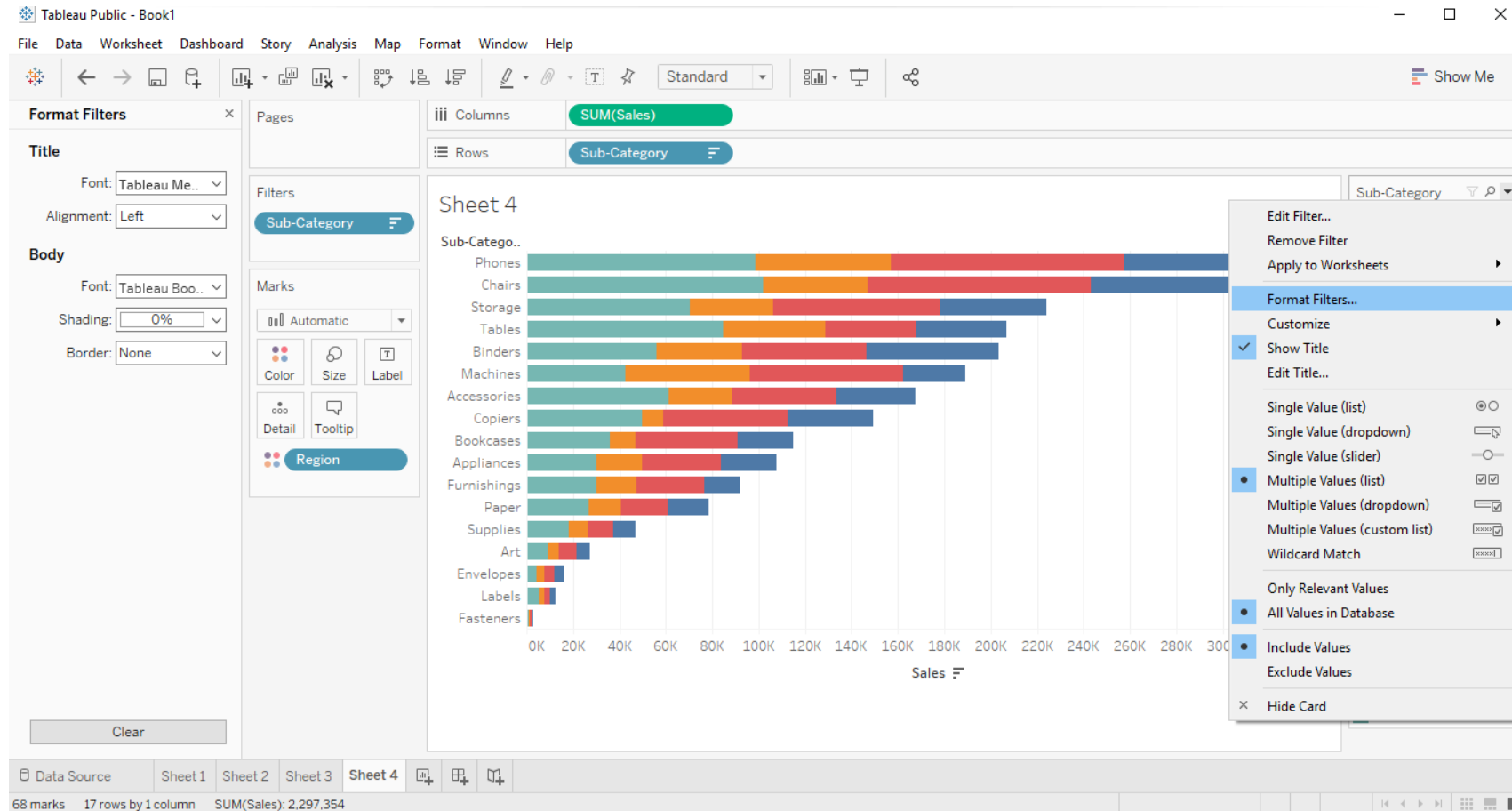
Headers – In the Graph double click on the header, to filter for that header.

Legends – Click on the legend and select the Keep Only option.



Formatting Filter

In filters click on the drop down arrow and select format filters to get the filter formatting options.



ASSIGNMENT



Create a Bar chart to display top 10 profit making subcategories along with the categories.

Chart to display only those Sub Categories & categories where the revenue is 200K to 250K.

Display month wise profit of each category . Should be interactive on the basis of year. Use a slider as filter.

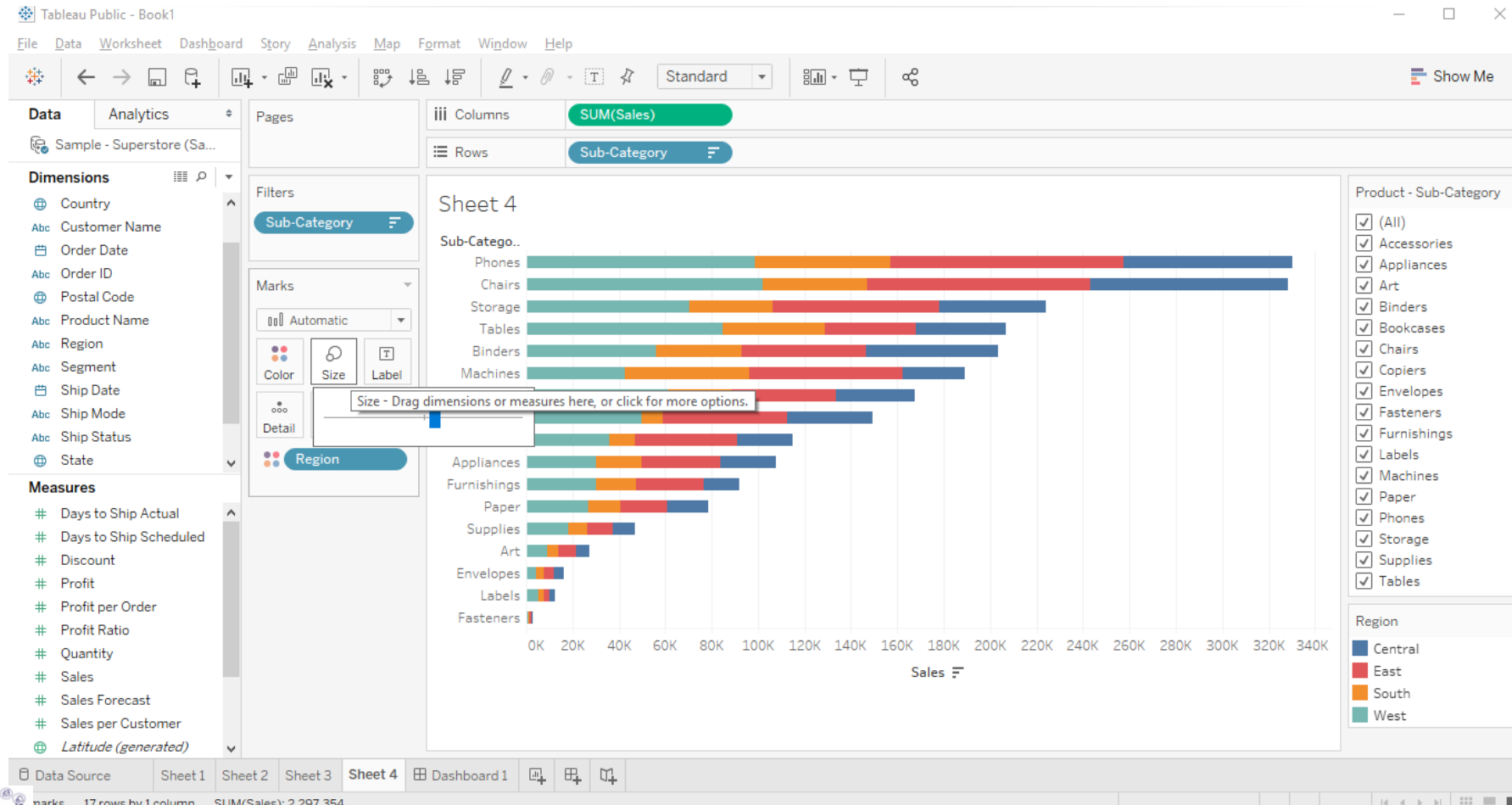
Create a bar chart to represent category & subcategory wise sales, where the revenue is more than 200K and profit is more than 20K.

Using the data source filter update all the above charts only for Technology category.



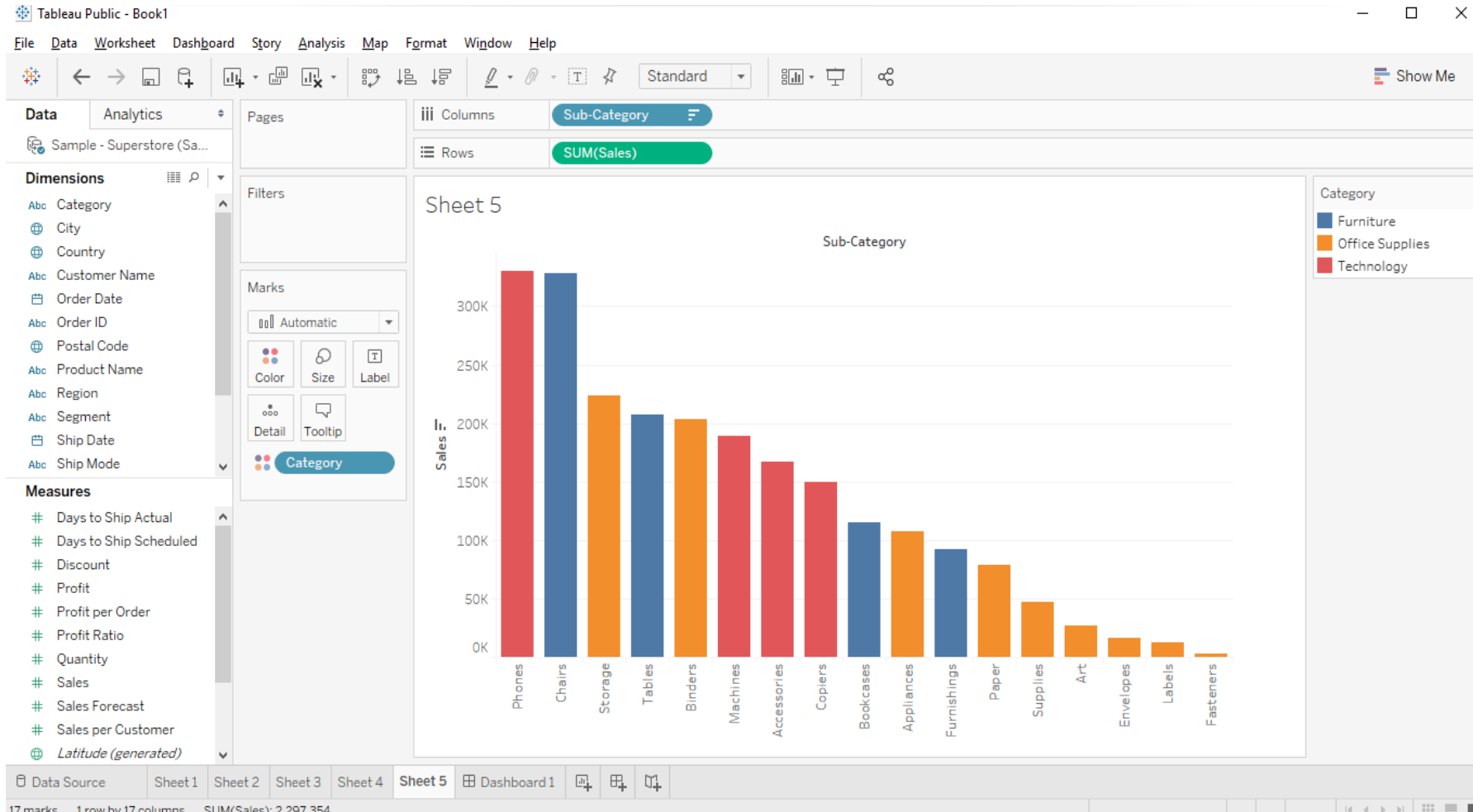
Manipulating Graph Size

The Size option in the Marks card allow us to alter the size of the graph.



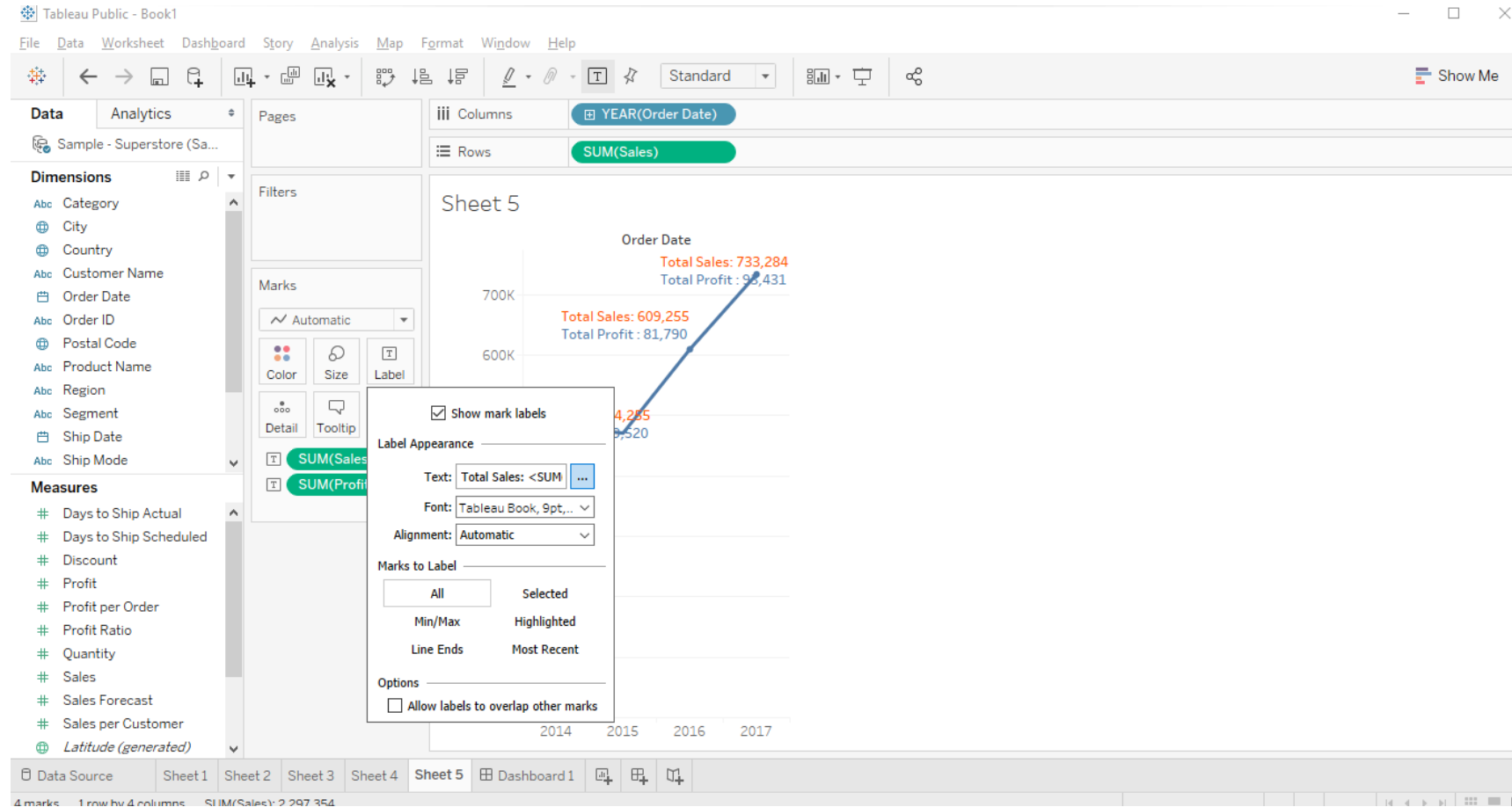
Manipulating Colors

Colors help us to further classify the data.



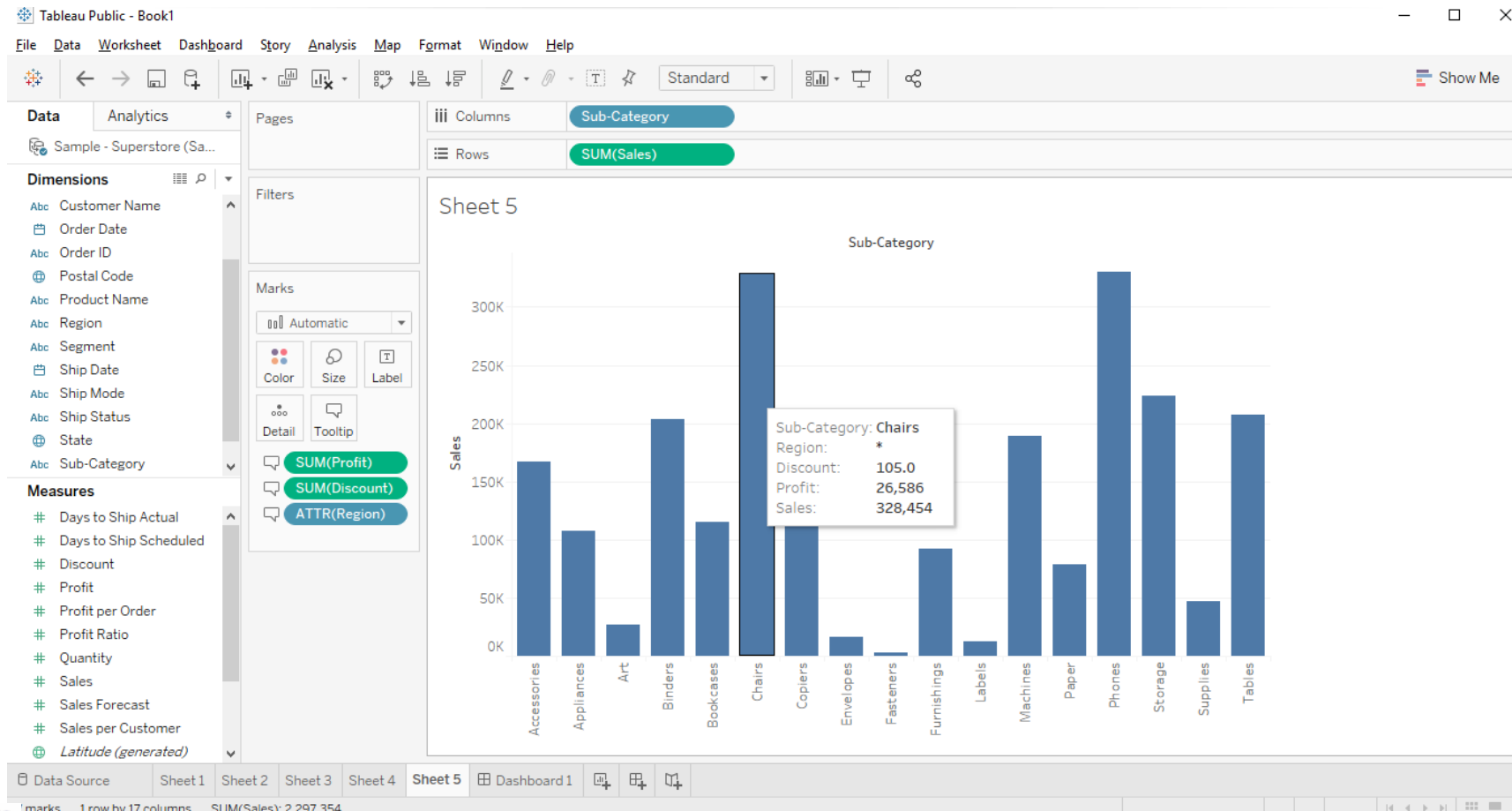
Displaying Text/Labels

Labels help us to show the exact data value.



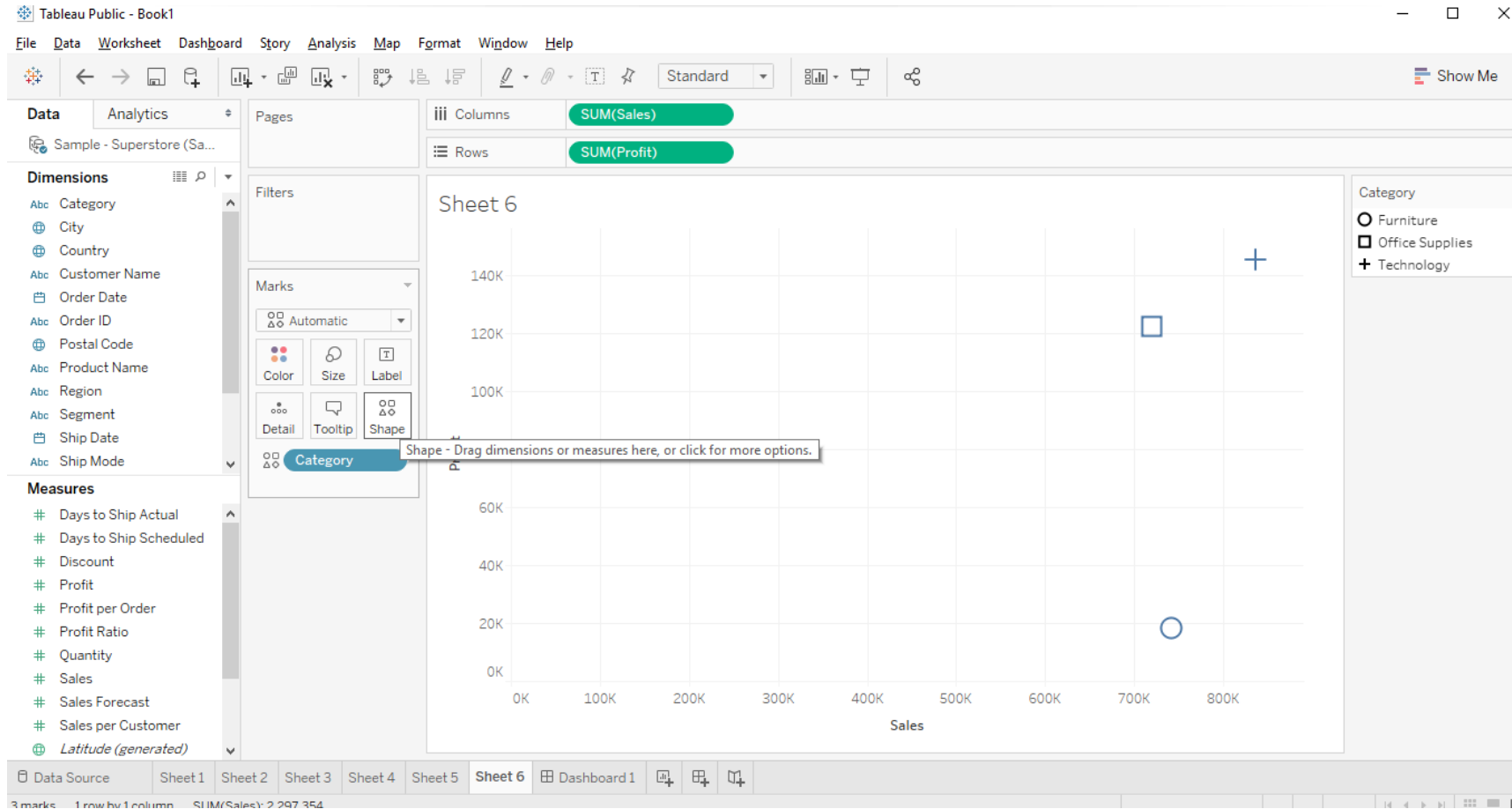
Getting Tooltip

When we click on any data point we get a small box known as tooltip. We can add any measure or dimension in the tooltip.



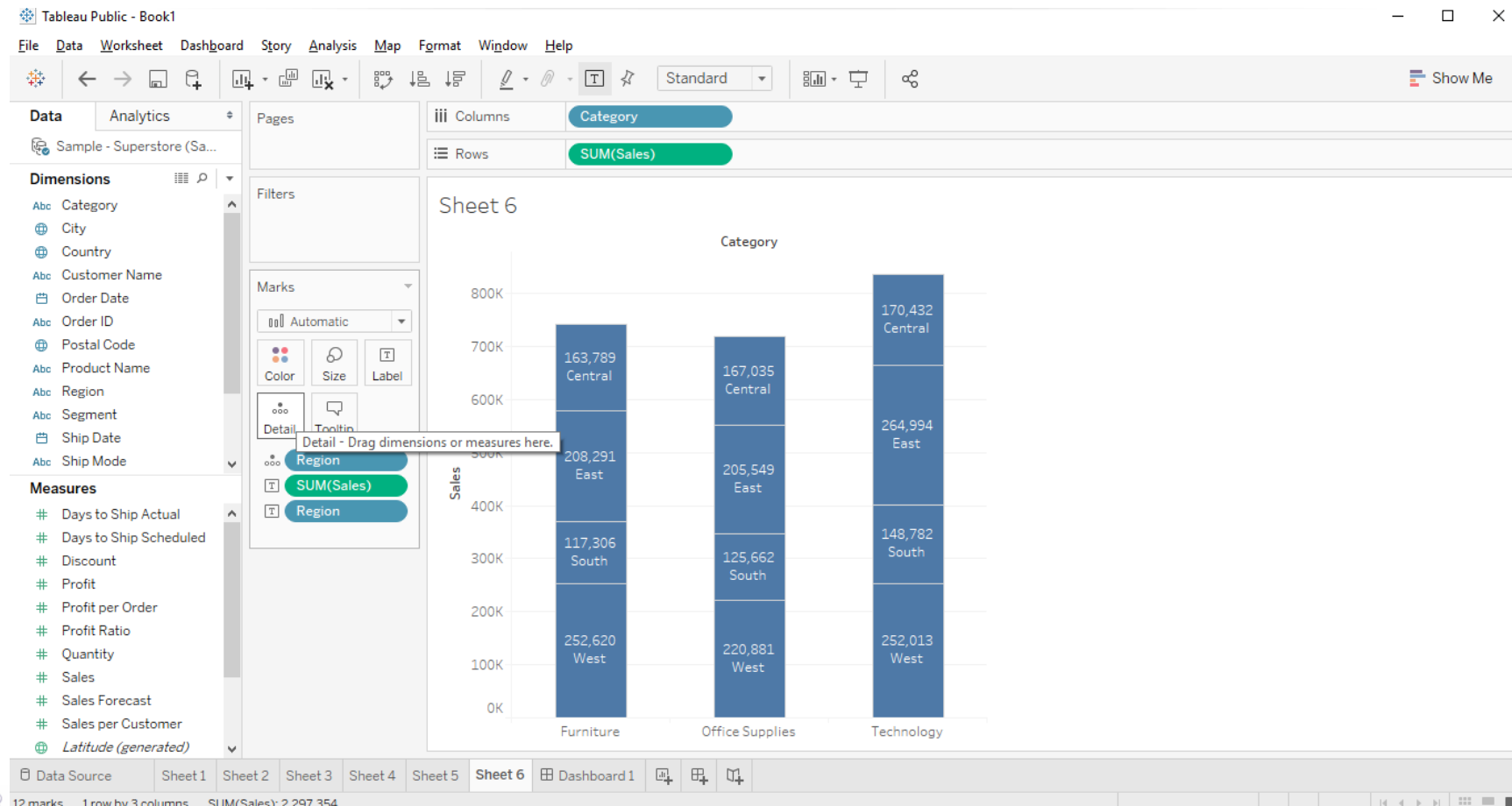
Assigning Shapes

Tableau also allows us to use default or customized shapes in charts.



Displaying Details

The Detail mark is similar to the colors mark. Colors creates the section in various colors, however, detail creates the section in same color.



ASSIGNMENT



Create a bar chart to represent region wise profit. The Bars should also display category, sales & profit value.
Display sub category wise quantity sold & average profit using bar chart.



Formatting Data

Tableau also allows us to format the data in various ways. We can change Font, Alignment, Sheet Colors & Borders

The screenshot shows the Tableau Public interface with the 'Format' menu open. The menu options include: Dashboard..., Story..., Workbook..., Font... (highlighted), Alignment..., Shading..., Borders..., Lines..., Reference Lines..., Drop Lines..., Annotations..., Title and Caption..., Field Labels..., Legends..., Filters..., Highlighters..., Parameters..., Cell Size, Copy Formatting, Paste Formatting, and Clear Worksheet Formatting.

The 'Format Font' pane on the left shows settings for the 'Tableau Boo...' worksheet. The 'Default' section includes Worksheet, Pane, Header, and Tooltip settings. The 'Total' section includes Pane and Header settings. The 'Grand Total' section includes Pane and Header settings.

The data table displayed in the main view is as follows:

	Region			
	East	South	West	Grand Tot..
	45,038	27,281	61,120	167,401
	34,191	19,525	30,240	107,538
	7,498	4,662	9,214	27,137
	53,501	37,033	55,967	203,428
	43,819	10,900	36,007	114,879
	96,263	45,177	101,786	328,454
	53,220	9,300	49,750	149,530
	4,375	3,344	4,120	16,477
	821	504	923	3,024
	29,067	17,310	30,072	91,705
	2,608	2,358	5,087	12,507
	66,108	53,890	42,445	189,243
	20,174	14,146	26,664	78,475
	100,628	58,311	98,698	330,047
	71,618	35,770	70,540	223,862
	10,763	8,320	18,126	46,679
Tables	39,152	39,142	43,919	206,968
Grand Total	501,256	678,834	391,750	2,297,354



Calculations

We can create calculated fields in Tableau. As in Excel it also provides us various function like sum, max, min, ceiling, floor etc...

The screenshot shows the Tableau Public interface with the 'Create' menu open, highlighting 'Calculated Field...'. The main view displays a table with columns 'Min Sales' and 'Sales' for different product categories. A dialog box titled 'Calculation1' is open, showing the formula `MIN([Sales])` and a confirmation message 'The calculation is valid.'.

Min Sales	Sales
1	167,401.00
0	107,538.00

Calculation1

`MIN([Sales])`

The calculation is valid.

Apply OK



Calculations

String Functions: Most of the string functions we use in Excel are available in Tableau. Left, Right, Upper, Lower, Len, etc...

The screenshot displays the Tableau Public interface with the 'Sample - Superstore (Sales)' data source. The 'Dimensions' pane on the left lists various fields, with 'Order ID' selected. A right-click context menu is open over 'Order ID', showing options like 'Add to Sheet', 'Duplicate', 'Rename', 'Hide', 'Aliases...', 'Create', 'Transform', 'Convert to Measure', 'Change Data Type', 'Geographic Role', 'Default Properties', 'Group by', 'Folders', 'Hierarchy', 'Replace References...', and 'Describe...'. The 'Transform' option is highlighted, and a sub-menu is visible with 'Split' and 'Custom Split...'. The 'Custom Split' dialog box is open, asking 'How should this data be split?'. It shows 'Use the separator' as '-' and 'Split off' as 'First' with a value of '1' and the unit 'columns'. The 'OK' button is highlighted. The background shows the Tableau workspace with 'Sheet 11' and a 'Drop field here' prompt.

Calculations

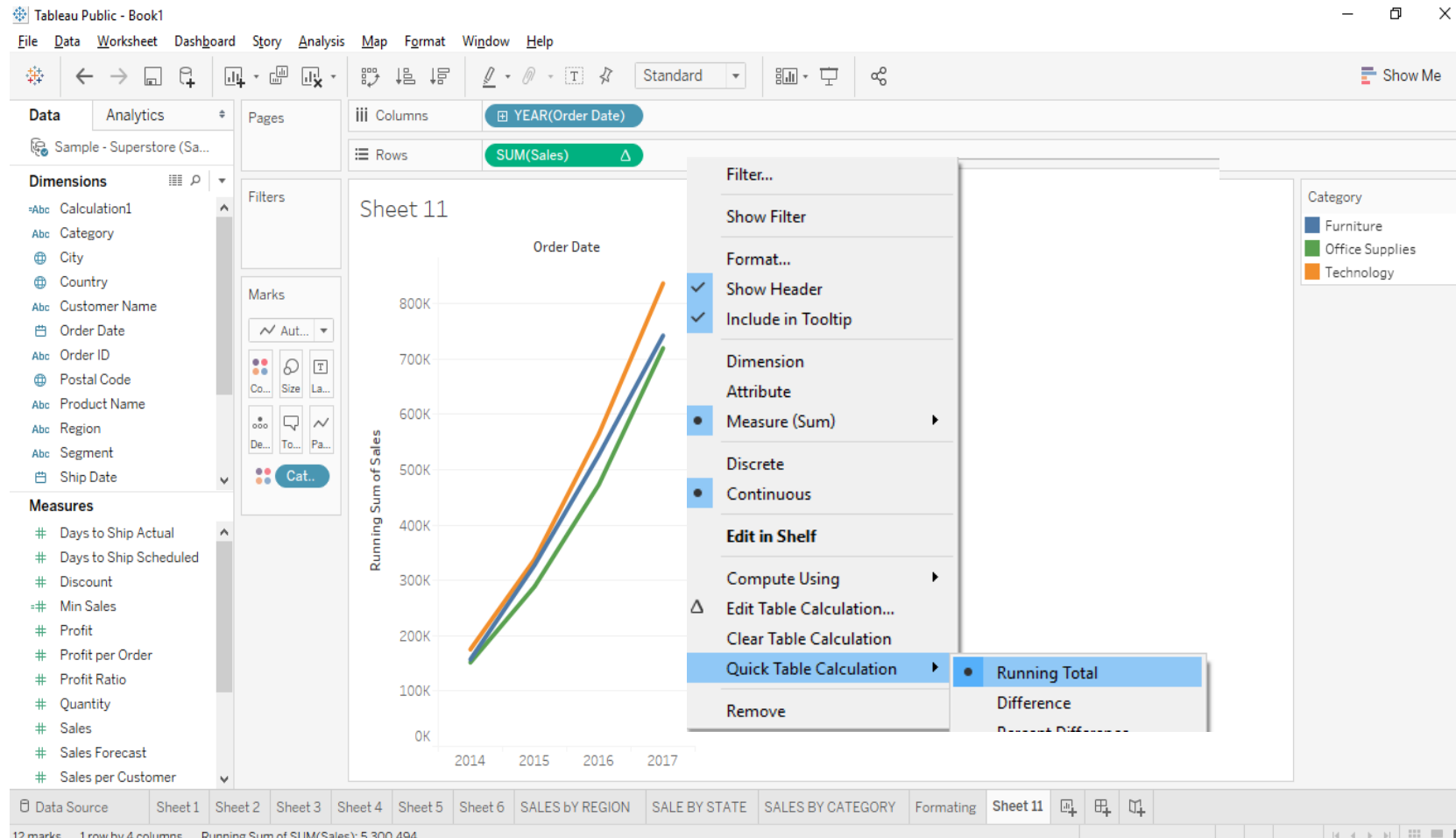
Table Calculations (Percentage of Total): These are the calculations we do on the output received.

The screenshot shows the Tableau Public interface. The 'Columns' shelf contains 'Sub-Category'. The 'Rows' shelf is empty. The 'Marks' card is set to 'Automatic'. The 'Dimensions' pane on the left lists fields like Order Date, Order ID, Postal Code, Product Name, Region, Segment, Ship Date, Ship Mode, Ship Status, State, Sub-Category, and Measure Names. The 'Measures' pane lists various calculations including Days to Ship Actual, Days to Ship Scheduled, Discount, Min Sales, Profit, Profit per Order, Profit Ratio, Quantity, Sales, Sales Forecast, and Sales per Customer. A context menu is open over the 'Measures' pane, showing options like Filter..., Show Filter, Format..., Include in Tooltip, Dimension, Attribute, Measure (Sum), Discrete, Continuous, Edit in Shelf, Compute Using, Edit Table Calculation..., Clear Table Calculation, and Quick Table Calculation. The 'Quick Table Calculation' submenu is open, showing options like Running Total, Difference, Percent Difference, Percent of Total (selected), Rank, Percentile, Moving Average, YTD Total, and Compound Growth Rate. The main view displays a table titled 'Sheet 11' with columns 'Sub-Catego...' and '% of Total Sales'. The table lists various sub-categories and their corresponding percentages of total sales.

Sub-Catego...	% of Total Sales
Accessories	7.29%
Appliances	4.68%
Art	1.18%
Binders	8.85%
Bookcases	5.00%
Chairs	14.30%
Copiers	6.51%
Envelopes	0.72%
Fasteners	0.13%
Furnishings	3.99%
Labels	0.54%
Machines	8.24%
Paper	3.42%
Phones	14.37%
Storage	9.74%
Running Total	2.03%
Difference	9.01%
Percent Difference	100.00%
Percent of Total	
Rank	
Percentile	
Moving Average	
YTD Total	
Compound Growth Rate	

Calculations

Table Calculations (Running Total): These are the calculations we do on the output received.



Calculations

Table Calculations (Percentage Difference) : Gives the percentage difference between previous & current value

The screenshot displays the Tableau Desktop interface. The main view is a table titled "PER DIFF" showing the percentage difference in sales by month for the year 2014. The table has three columns: "Year of Order Date", "Month of Order Date", and "% Difference in Sales from...". The data is filtered for the year 2014. The interface includes a menu bar at the top, a toolbar with various icons, and a sidebar on the left with sections for "Data", "Tables", and "Parameters". The "Tables" section lists various fields like "Segment", "Ship Date", "Ship Mode", "State", "Sub-Category", "Measure Names", "AvgSal", "BOT5", "COST", "Discount", "IND", "KPI", "LAS", "OrdCount", "PERDIFF", "POSIS", "POSITION", "Profit", "Quantity", and "Sales". The "Parameters" section lists "P1". The "Marks" card shows "Automatic" as the mark type, with "Measure Values" selected. The "Columns" shelf contains "Measure Names", and the "Rows" shelf contains "YEAR(Order Date)" and "MONTH(Order Date)". The "Filters" shelf contains "YEAR(Order Date): 2014" and "Measure Names". The "Measure Values" card shows "SUM(Sales)" and "SUM(Sales)" with a triangle icon. The "PER DIFF" table shows the following data:

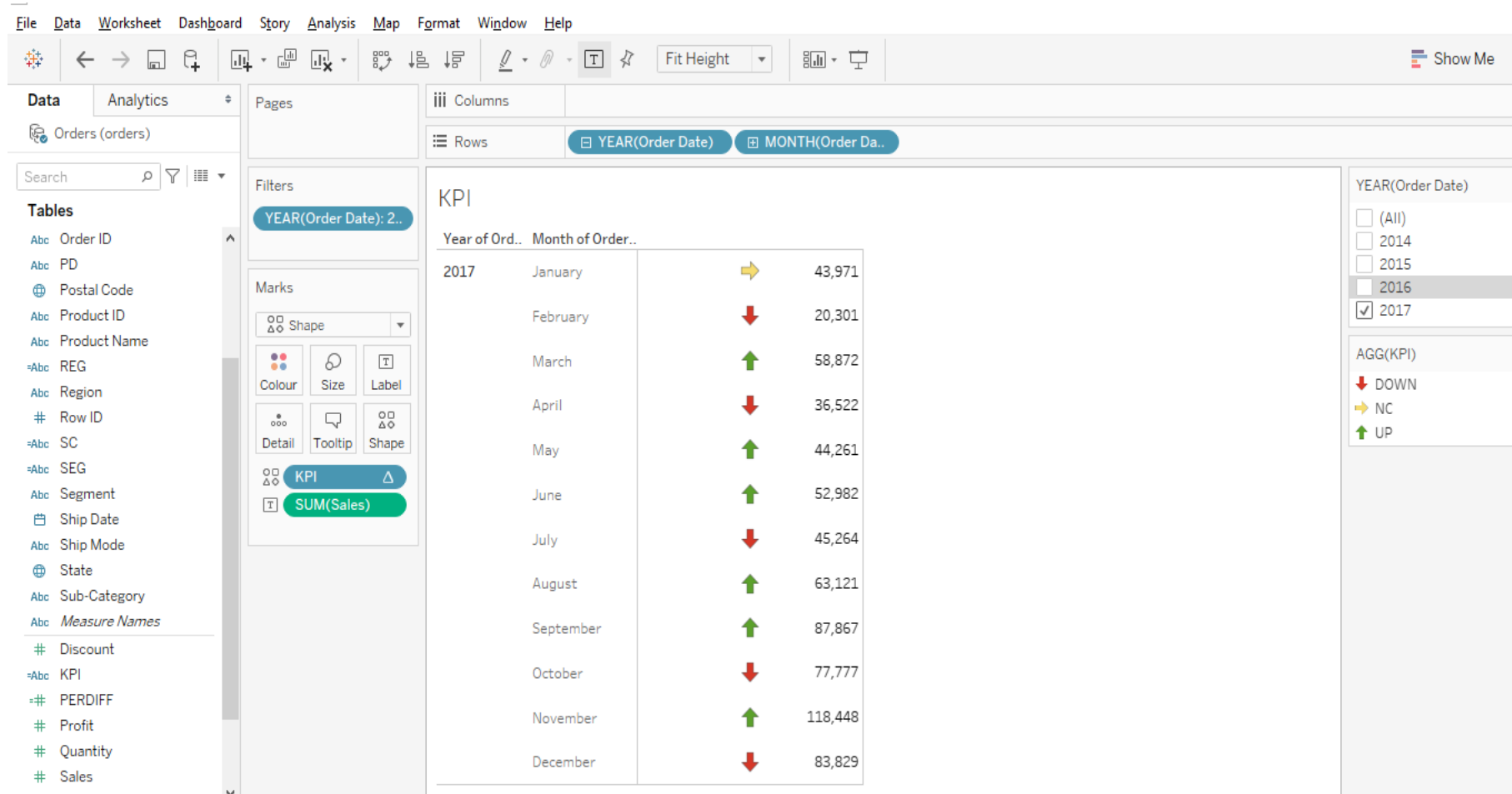
Year of Order Date	Month of Order Date	Sales	% Difference in Sales from...
2014	January	14,237	
	February	4,520	-68.25%
	March	55,691	1,132.13%
	April	28,295	-49.19%
	May	23,648	-16.42%
	June	34,595	46.29%
	July	33,946	-1.88%
	August	27,909	-17.78%
	September	81,777	193.01%
	October	31,453	-61.54%
	November	78,629	149.98%
	December	69,546	-11.55%

The right sidebar shows the "YEAR(Order Date)" filter with a list of years: (All), 2014 (checked), 2015, 2016, and 2017.



Calculations

KPI (Key Performance Indicators) : highlight the trend of the value.



Calculations

Compute Using: It is the advance feature of quick table calculations.

