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SESSION:

Tableau I, II, III & IV

Assignment

## Table of Contents

1. Introduction	2
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2. Objective	2
3. Prerequisites	2
4. Associated Data Files	2
5. Problem Statement	2
6. Expected Output	

## 1. Introduction

This assignment will help you understand the concepts learned in the session.

### 1. Objective

This assignment will test your skills on the concepts of Tableau analytics.

### 1. Prerequisites

Not applicable.

### 1. Associated Data Files

Not applicable.

### 1. Problem Statement

#### Task 1:

1. Import the Super store excel data into MySQL and store the data across three tables orders, people and returns

Solution - Data downloaded into 3 sheets namely orders, people and returns filename – ‘Sample -Superstore.xls’.

Data tab – new query – from file –

The screenshot shows the Microsoft Excel interface with the 'Import Data' dialog box open. The 'File name:' dropdown is set to 'Sample - Superstore'. The 'Tools' dropdown has 'Import' selected. The main area displays the 'Orders' sheet from the 'Sample - Superstore' workbook. The sheet contains data for orders, including columns for Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, Country, City, and State. The data spans from row 5 to 25, showing various shipping modes like Standard Class and Second Class across different countries and cities.

The screenshot shows the Microsoft Excel interface with the 'Data' tab selected. The 'Navigator' pane is open, showing the 'Orders' sheet is currently selected. The main area displays the 'Orders' sheet from the 'Sample - Superstore' workbook. The sheet contains data for orders, including columns for Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, Country, City, and State. The data spans from row 1 to 25, showing various shipping modes like Standard Class and Second Class across different countries and cities. The 'Data' tab ribbon is visible at the top, and the status bar at the bottom shows the date and time as 12/21/2019 3:22 PM.

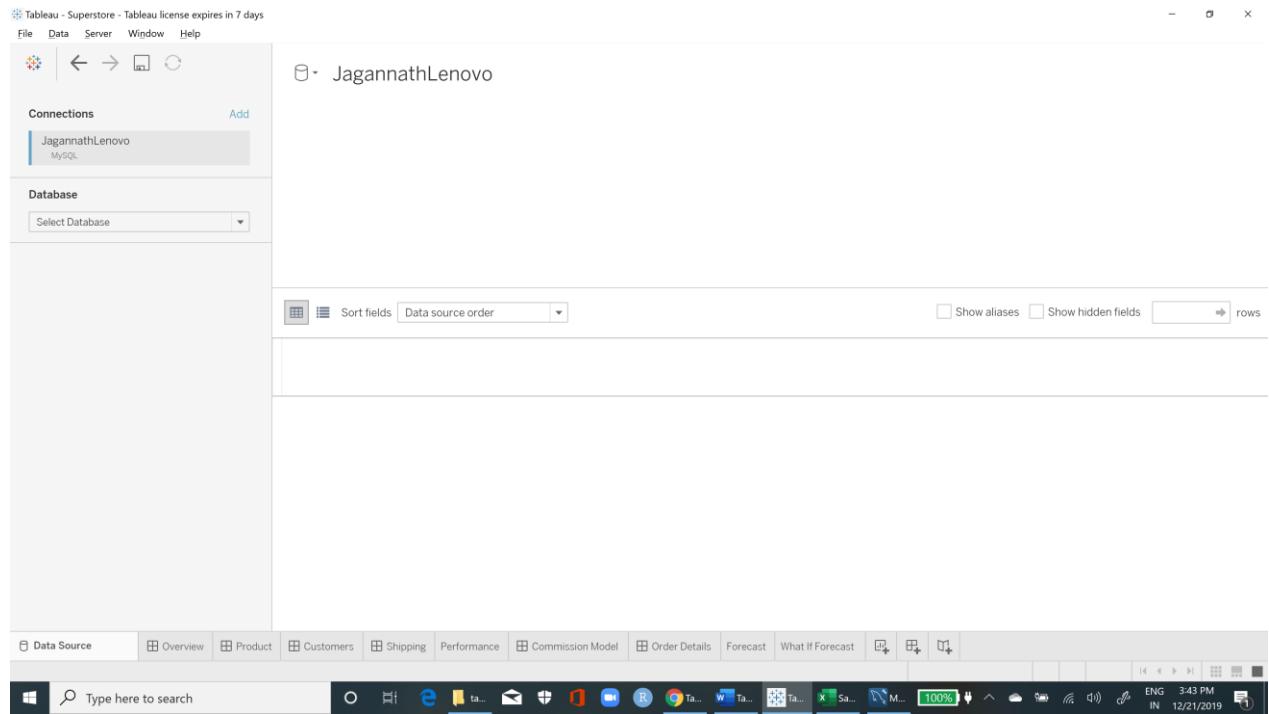
Screenshot of Microsoft Excel showing the 'Orders' sheet from the 'Sample - Superstore [Compatibility Mode] - Excel' workbook. The 'Data' tab is selected. The 'Orders' table is displayed with columns: Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, Country, City, State, Postal Code, Region, Product ID, Category, Sub-Category, Product Name, Sales, Quantity, Discount, Profit.

The status bar at the bottom shows: Accessibility: Unavailable, Type here to search, ENG IN 12/21/2019, 100%, 3:25 PM.

Screenshot of Microsoft Excel showing the 'Orders' sheet from the 'Sample - Superstore [Compatibility Mode] - Excel' workbook. The 'Design' tab is selected. The 'Orders' table is displayed with columns: Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, Country, City, State, Postal Code.

The status bar at the bottom shows: Accessibility: Unavailable, Type here to search, ENG IN 12/21/2019, 100%, 3:25 PM.

2. Connect Tableau Desktop to MySQL database  
Solution – Tableau connected to MySQL – username login password applied

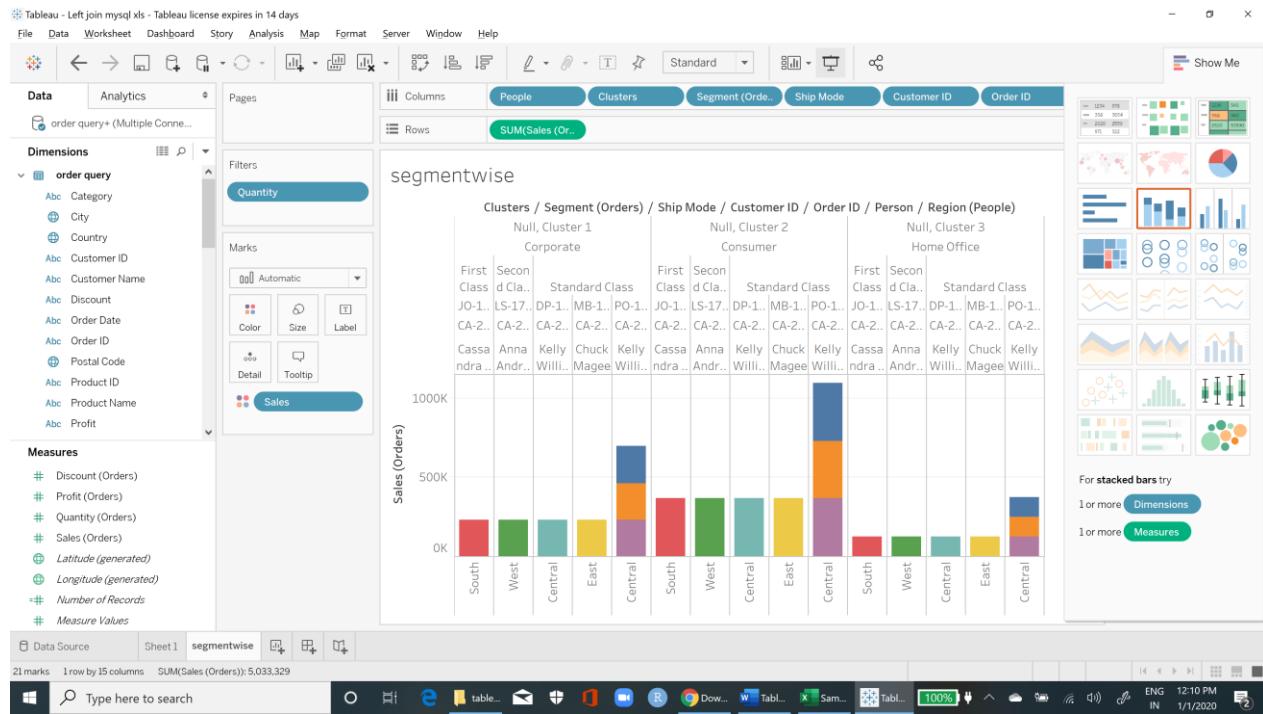


### 3. Import the joined data set of the aforesaid three tables through custom SQL

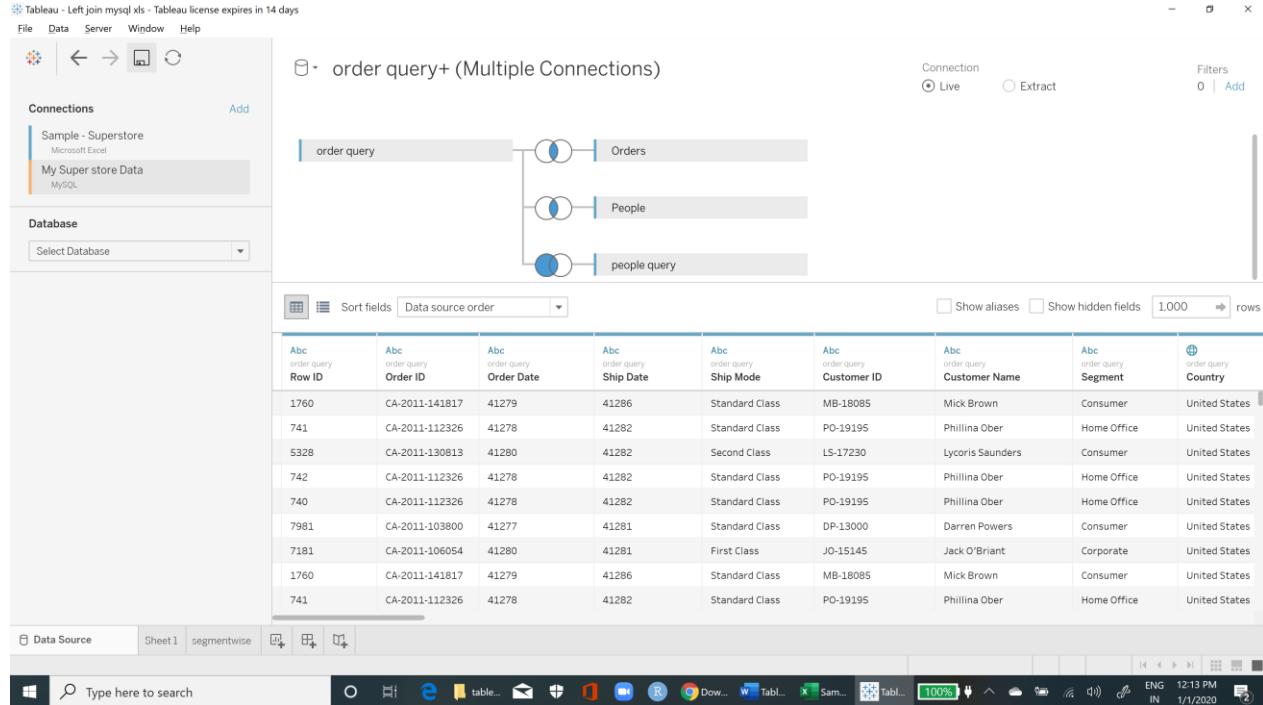
The screenshot shows the Tableau Data Source interface with a joined data set. The 'Connections' pane lists 'Sample - Superstore Microsoft Excel' and 'JagannathLenovo MySQL'. The main area displays a data flow diagram titled 'order query+ (Multiple Connections)' showing joins between 'order query', 'Orders', 'People', and 'people query'. Below the diagram is a table with 10 rows of data:

Abc order query Row ID	Abc order query Order ID	Abc order query Order Date	Abc order query Ship Date	Abc order query Ship Mode	Abc order query Customer ID	Abc order query Customer Name	Abc order query Segment	order query Country
1760	CA-2011-141817	41279	41286	Standard Class	MB-18085	Mick Brown	Consumer	United States
741	CA-2011-112326	41278	41282	Standard Class	PO-19195	Phillina Ober	Home Office	United States
5328	CA-2011-130813	41280	41282	Second Class	L5-17230	Lycoris Saunders	Consumer	United States
742	CA-2011-112326	41278	41282	Standard Class	PO-19195	Phillina Ober	Home Office	United States
740	CA-2011-112326	41278	41282	Standard Class	PO-19195	Phillina Ober	Home Office	United States
7981	CA-2011-103800	41277	41281	Standard Class	DP-13000	Darren Powers	Consumer	United States
7181	CA-2011-106054	41280	41281	First Class	JO-15145	Jack O'Briant	Corporate	United States
1760	CA-2011-141817	41279	41286	Standard Class	MB-18085	Mick Brown	Consumer	United States
741	CA-2011-112326	41278	41282	Standard Class	PO-19195	Phillina Ober	Home Office	United States

At the bottom, the toolbar and status bar are visible.



#### 4. Rename the data connection as 'my super store data'



#### 5. Create an extract out of the data connection

The screenshot shows the Tableau Data Source interface. A connection named "order query" is joined with a connection named "people query" via the "Orders" field. The resulting table has the following schema:

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	Country
1760	CA-2011-141817	41279	41286	Standard Class	MB-18085	Mick Brown	Consumer	United States
741	CA-2011-112326	41278	41282	Standard Class	PO-19195	Phillina Ober	Home Office	United States
5328	CA-2011-130813	41280	41282	Second Class	LS-17230	Lycoris Saunders	Consumer	United States
742	CA-2011-112326	41278	41282	Standard Class	PO-19195	Phillina Ober	Home Office	United States
740	CA-2011-112326	41278	41282	Standard Class	PO-19195	Phillina Ober	Home Office	United States
7981	CA-2011-103800	41277	41281	Standard Class	DP-13000	Darren Powers	Consumer	United States
7181	CA-2011-106054	41280	41281	First Class	JO-15145	Jack O'Briant	Corporate	United States
1760	CA-2011-141817	41279	41286	Standard Class	MB-18085	Mick Brown	Consumer	United States
741	CA-2011-112326	41278	41282	Standard Class	PO-19195	Phillina Ober	Home Office	United States

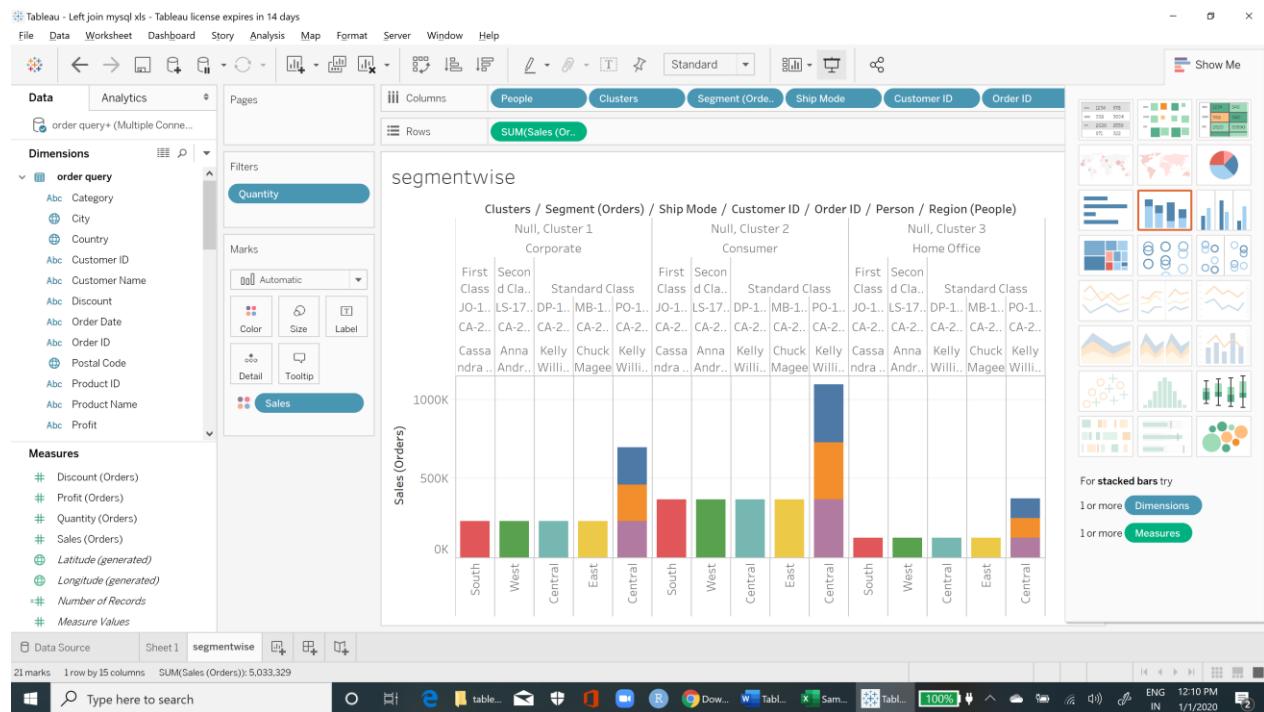
## 6. Save the workbook as Super store dashboard.twbx

Saved extract as superstore dashboard.twbx

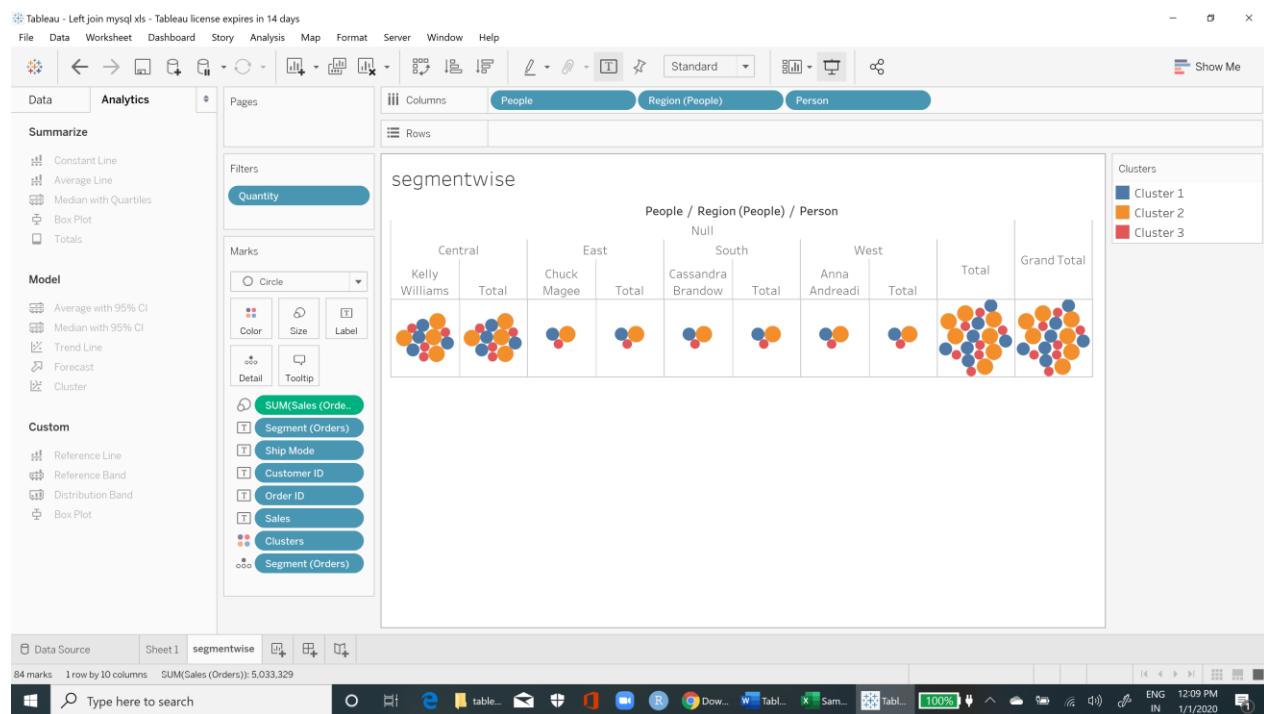
## Task 2:

### 1. Open the Super Store dashboard.twbx

### 2. Create a bar graph to show the Total Sales across customer segments for various regions



### 3. Segregate each region with different colors



### Task 3:

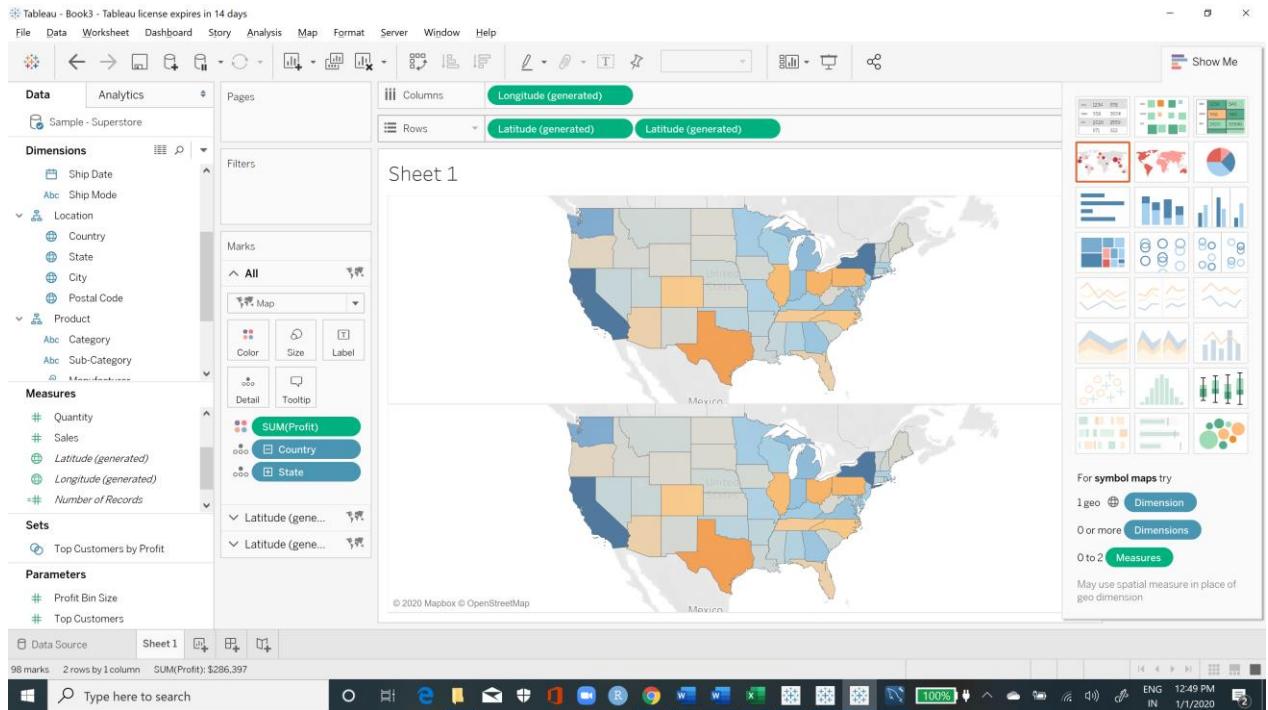
1. Create a Filled map by using the column State. Denote each state with different colors.
2. Show the State Name and Total Sales in the labels
3. Show the tooltip with State Name, Profit and Sales

The following steps provides step by step to complete the tasks. The last graph shows the tooltip with state name, profit and sales as per the requirement

1. In Tableau, open a new workbook and connect to the Sample-Superstore data source.
2. On the Data Source page, click **Sheet 1** to go to a new worksheet.
3. In the Data pane, under Dimensions, double-click **State**.  
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 **Colour** 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.
6. You should now have two identical map views.



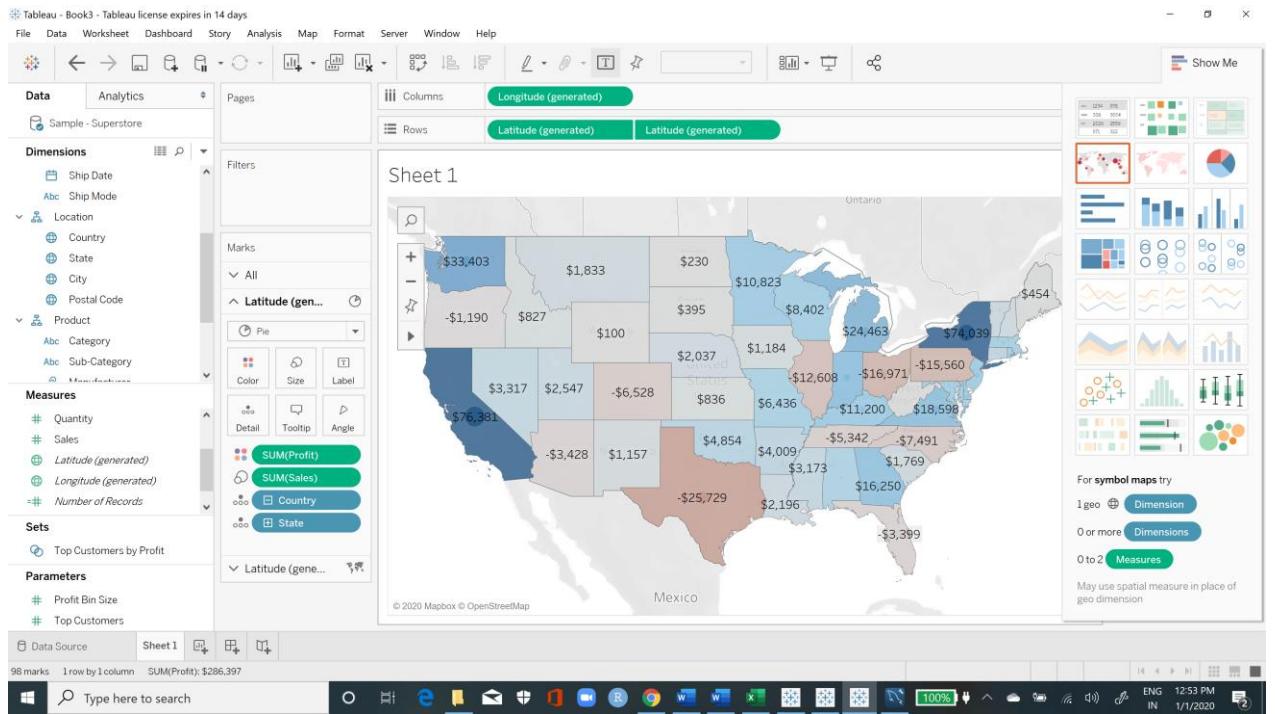
7. On the Rows shelf, right-click the second **Latitude** field and select **Dual Axis**.

The second map is now layered on top of the first map. There are now three drop-downs 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.

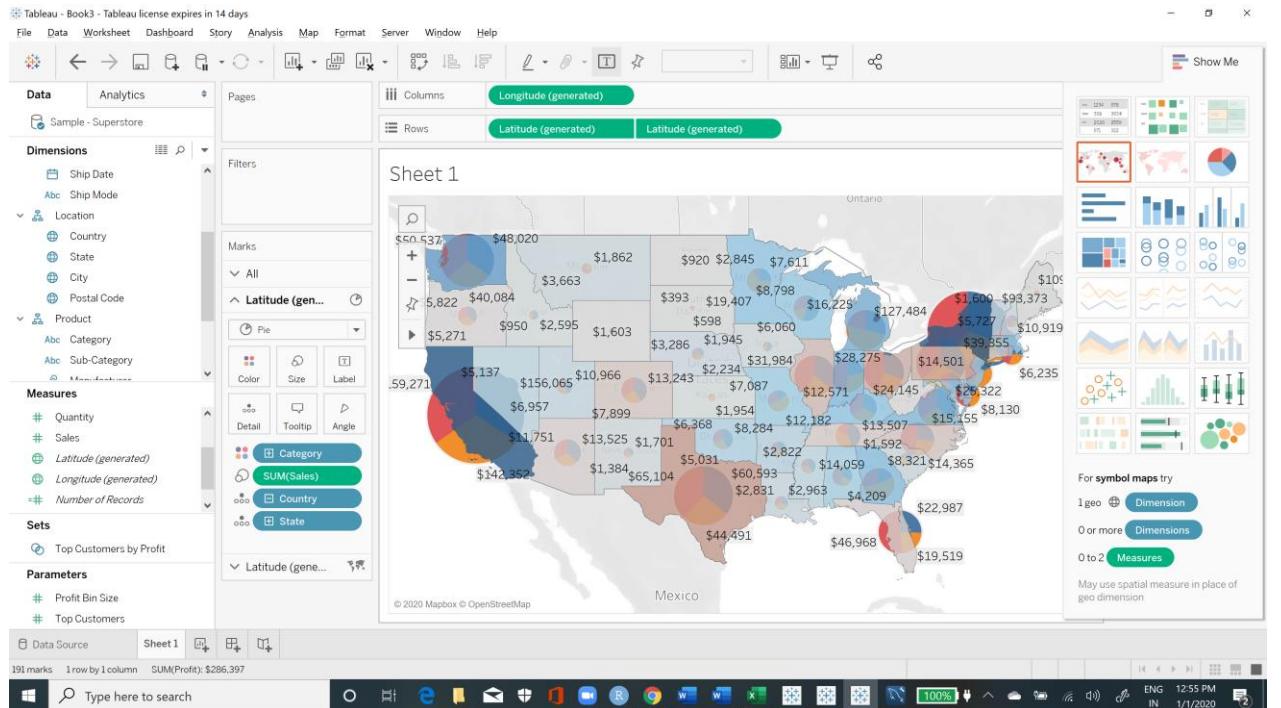
8. On the Marks card, click one of the **Latitude (generated)** tabs, and then click the Mark type drop-down and select the **Pie** mark type.
9. From Measures, drag **Sales** to **Size** on the Latitude (generated) Marks card you selected.



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

- From Dimensions, drag **Category** to **Colour** on the same Marks card.

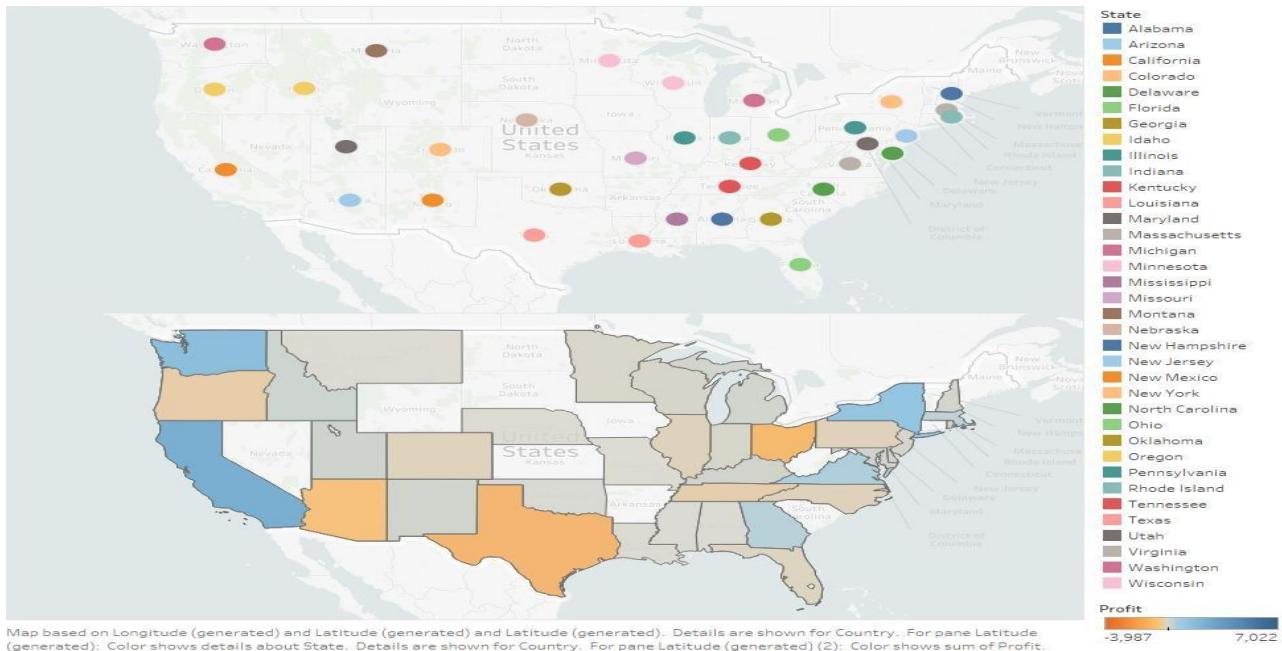
If the size of the pie charts is too small, click **Size** on the Marks card to adjust the size.



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

11. . Show the State Name and Total Sales in the labels
12. Show the tooltip with State Name, Profit and Sales
13. This provides the output as per the Assignment requirements.

Sheet 1

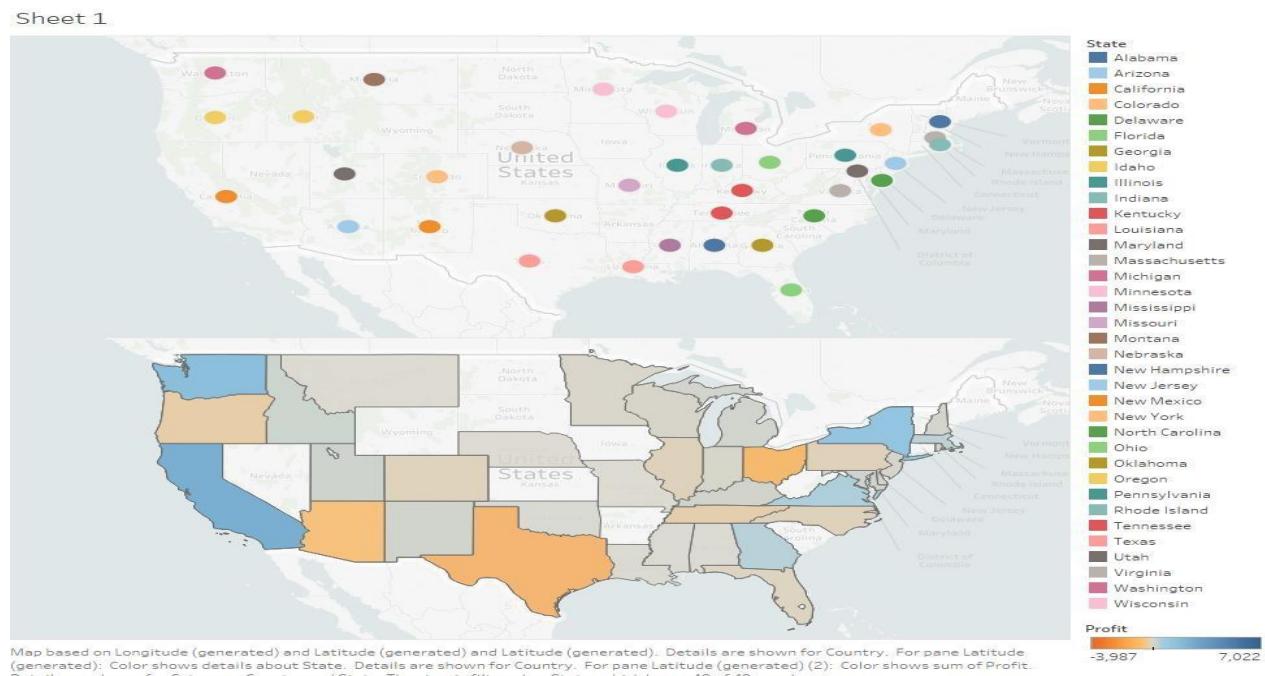
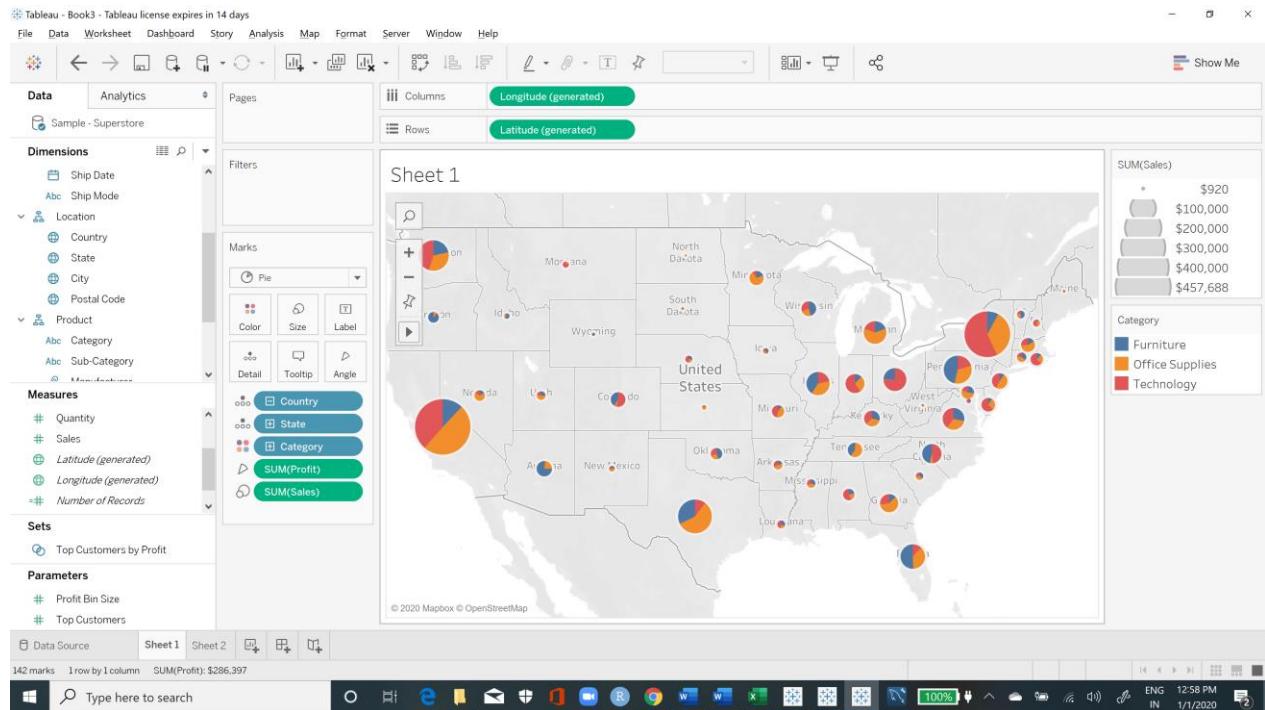


## Sheet 1 (2)



2. Show the State Name and Total Sales in the labels

3. Show the tooltip with State Name, Profit and Sales

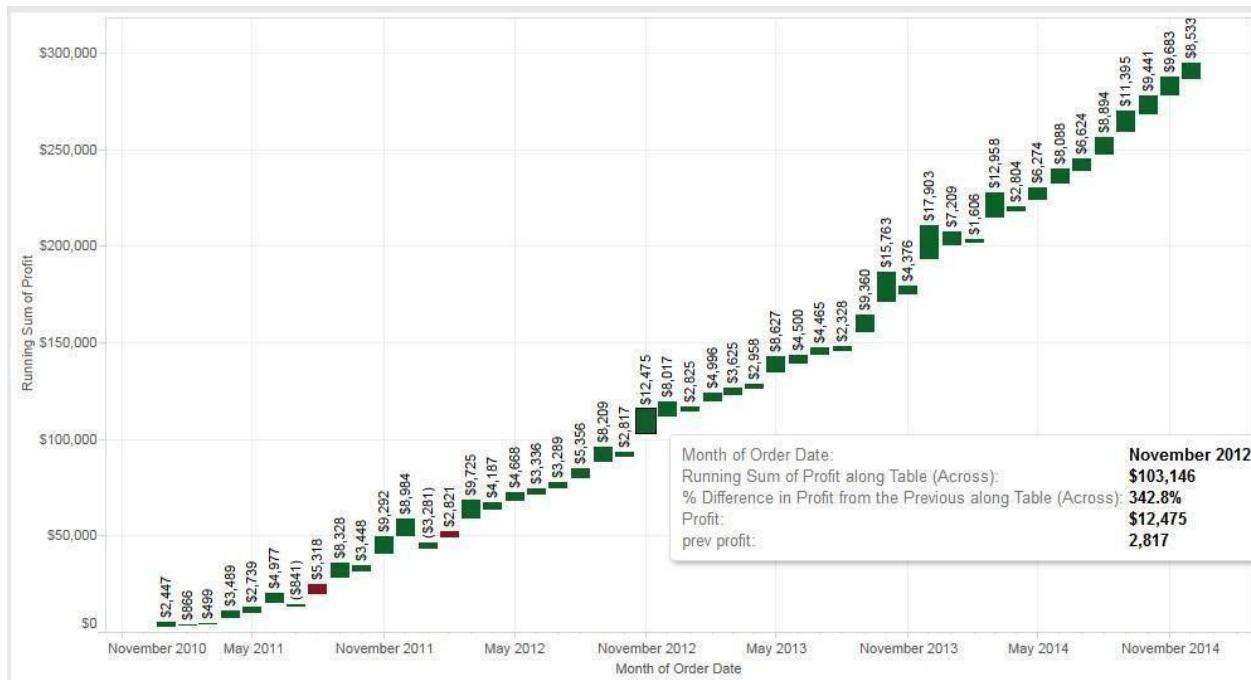


## Task 4:

1. Create a Waterfall chart which would show running total profit over a period of time.

2. The color of the mark should be red if the profit recorded for that Month is less than the profit recorded compared to the previous month, else Green

3. Adjust the tooltip to show as given in the picture below.



## 1. Expected Output

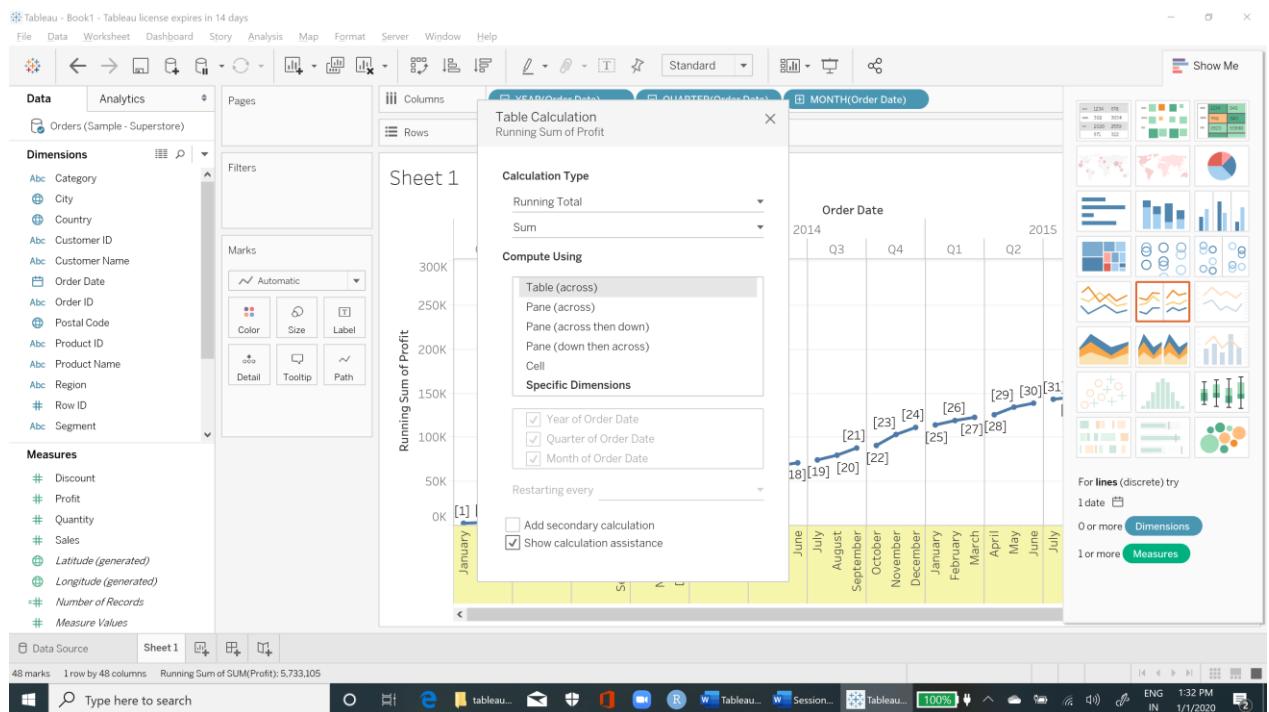
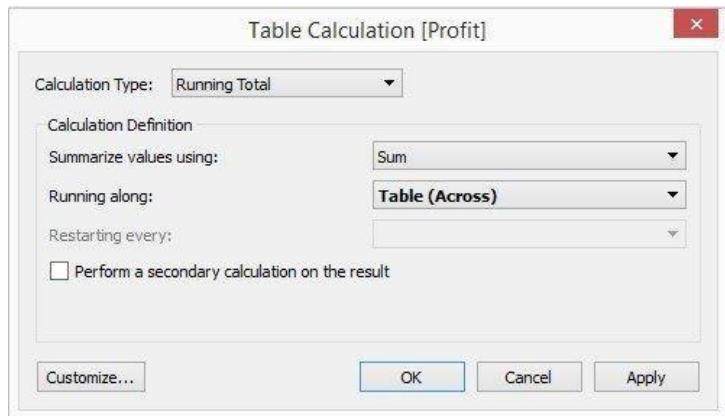
Solution report with commands, explanation of commands, and screenshots of the output should be submitted in .pdf format on GitHub the same GitHub should expected to submit on student dashboard. This assignment contains 800 marks and will be evaluated within 14 days of submission.

### Solution

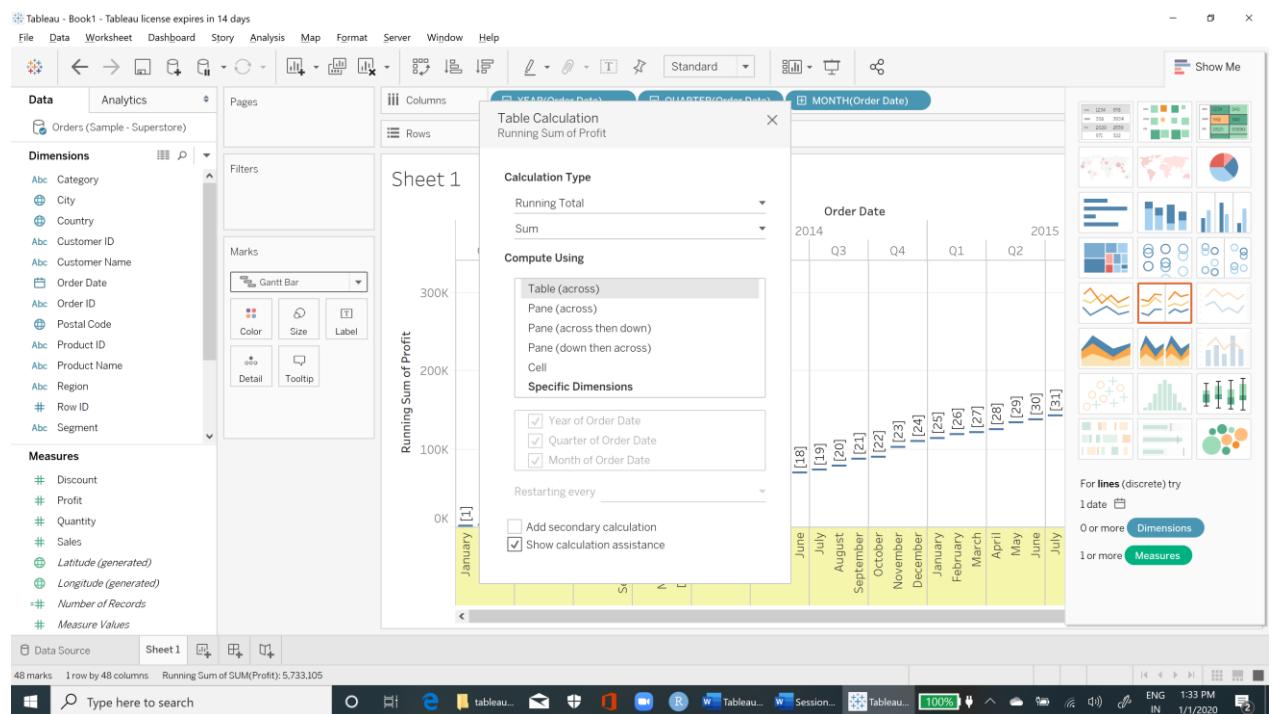
Waterfall charts are powerful visuals for your data dashboard because they effectively display the cumulative effect of sequential positive and negative values. Building waterfall charts in Tableau requires a few specific steps. 1) Connect to the “Sample – Superstore Subset (Excel)” excel file (2014 – 2017) given as link by AcadGild 2) Drag the Orders worksheet into the Drag Sheets Here section and select the orange Go to Worksheet button. 3) Drag a dimension (order data(month)) to the Columns Shelf and

(profit (sum profit)) measure to the Rows Shelf. 4) Right-click on the Month field on the Columns Shelf to convert it to “Discrete”.

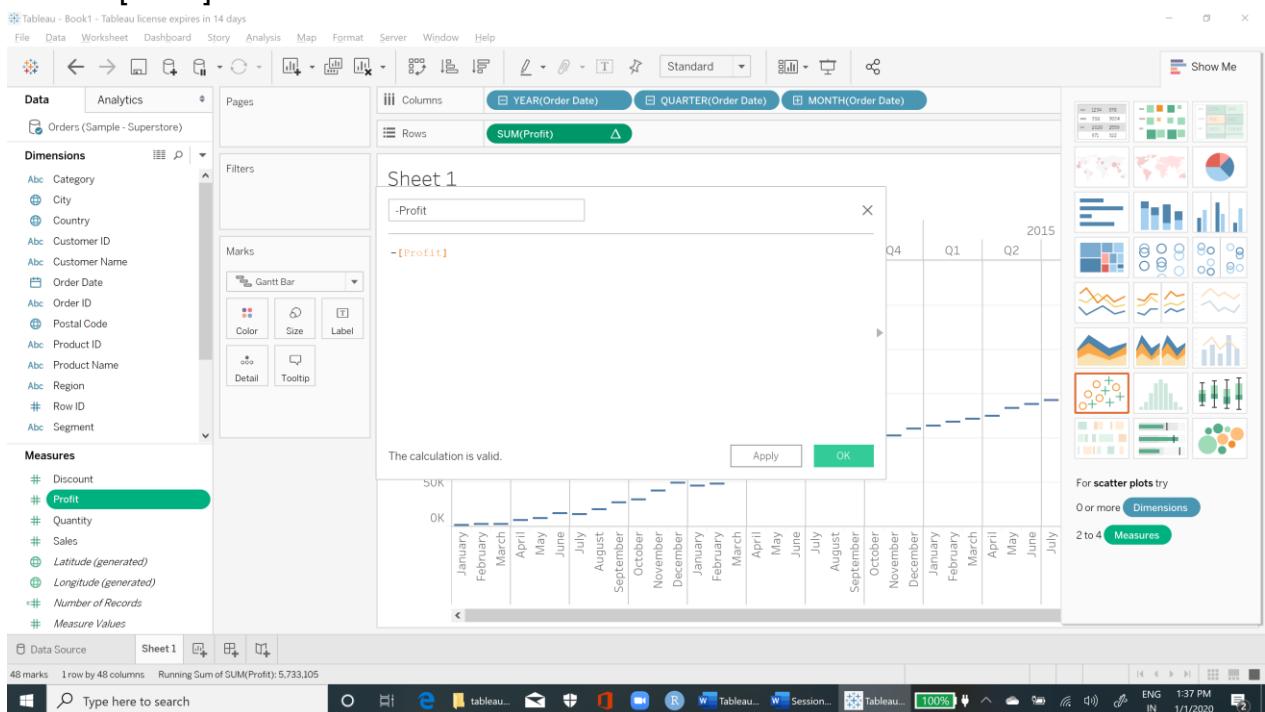
- 5) Add a Running Sum of Total Table Calculation to the measure on the rows shelf. To do this, right-click on the Profit pill,
- 6) select Add Table Calculation, and add the table calculation:

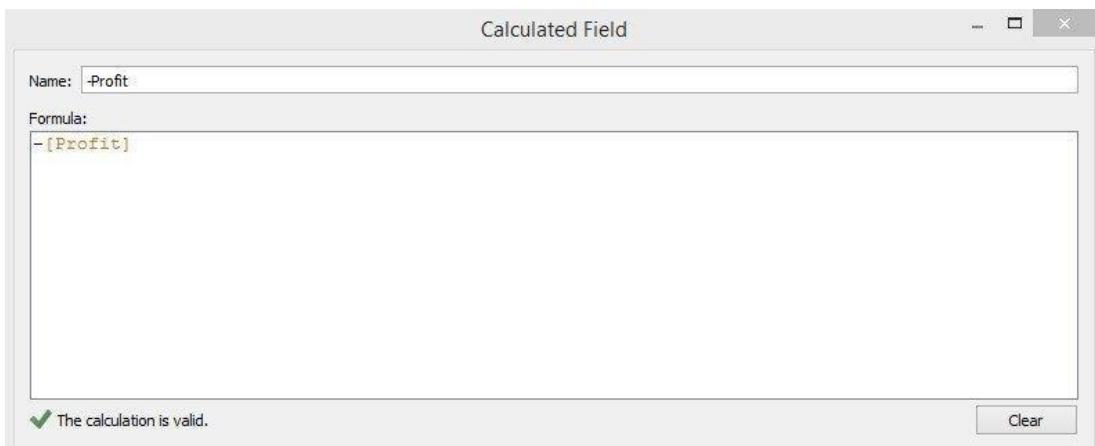


- 6) Change the mark type from Automatic to Gantt Bar in the Marks Card.

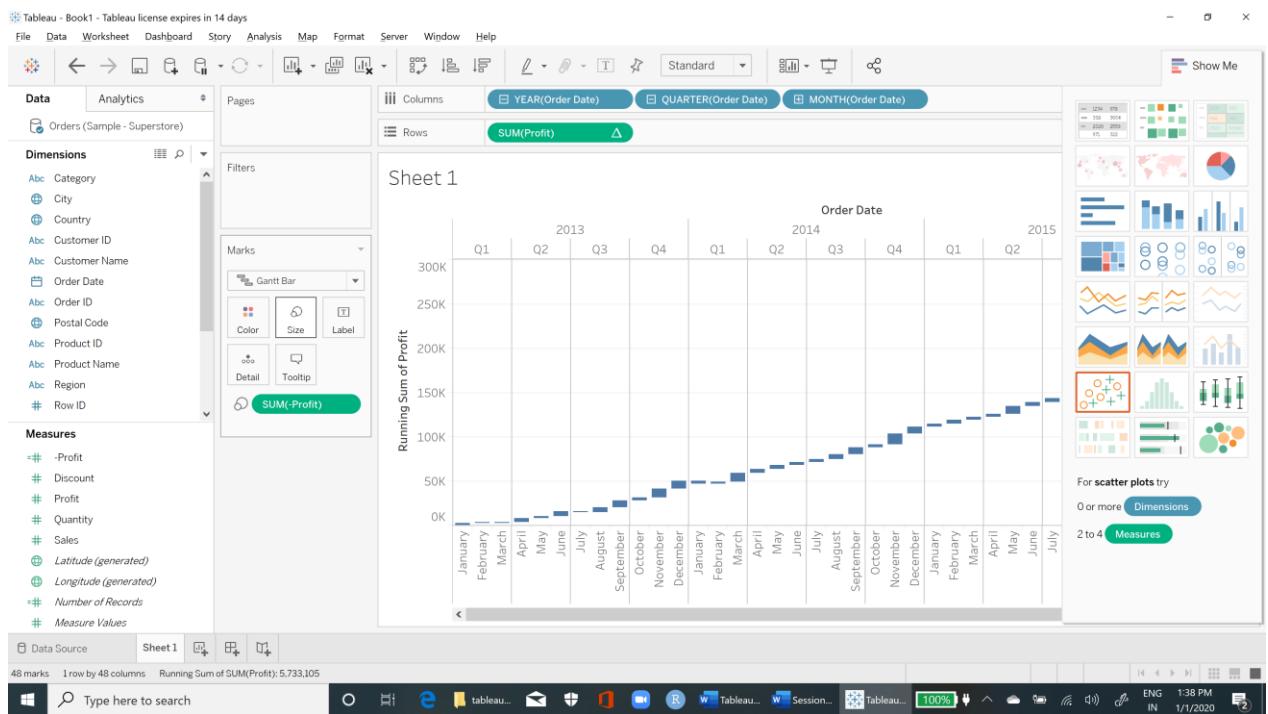


- 7) Create a calculated field named “-Profit” and write the following formula: -  
[Profit]

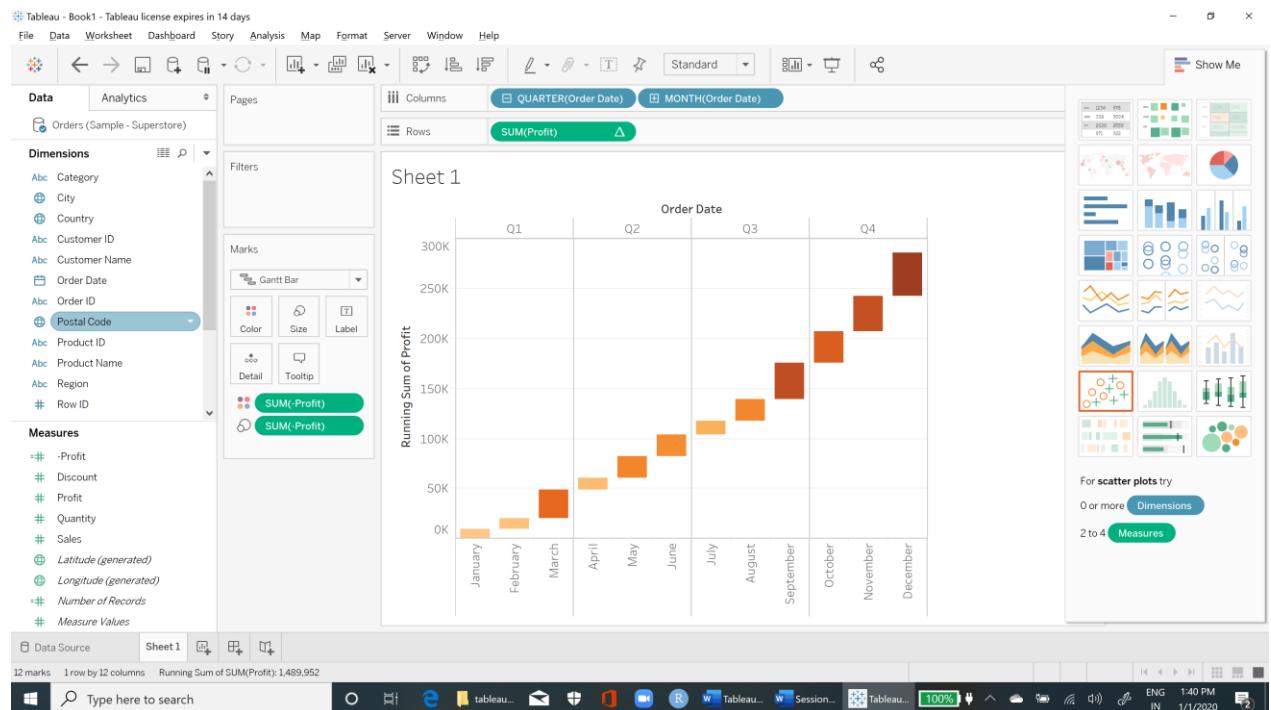
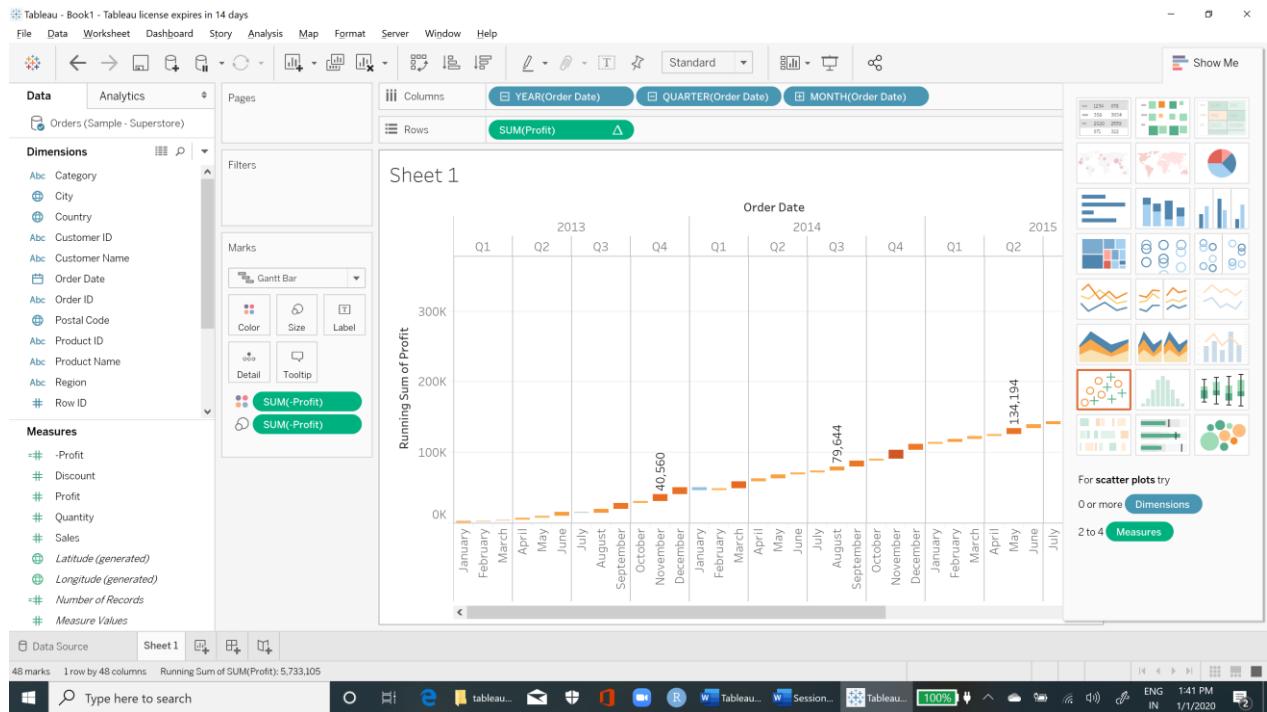


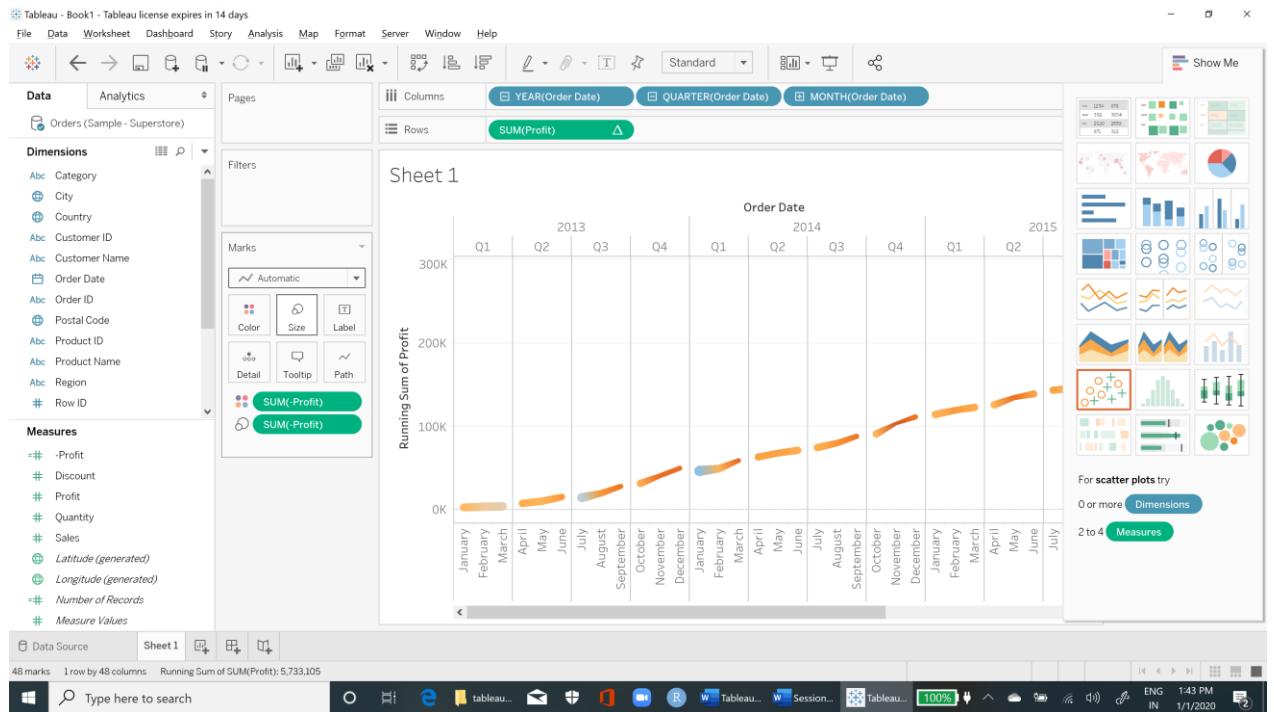


- 8) Drag the new measure “- Profit” to the size tab on the Marks Card.  
Positive values will therefore extend our bar upwards and negative values will extend the bar downwards.

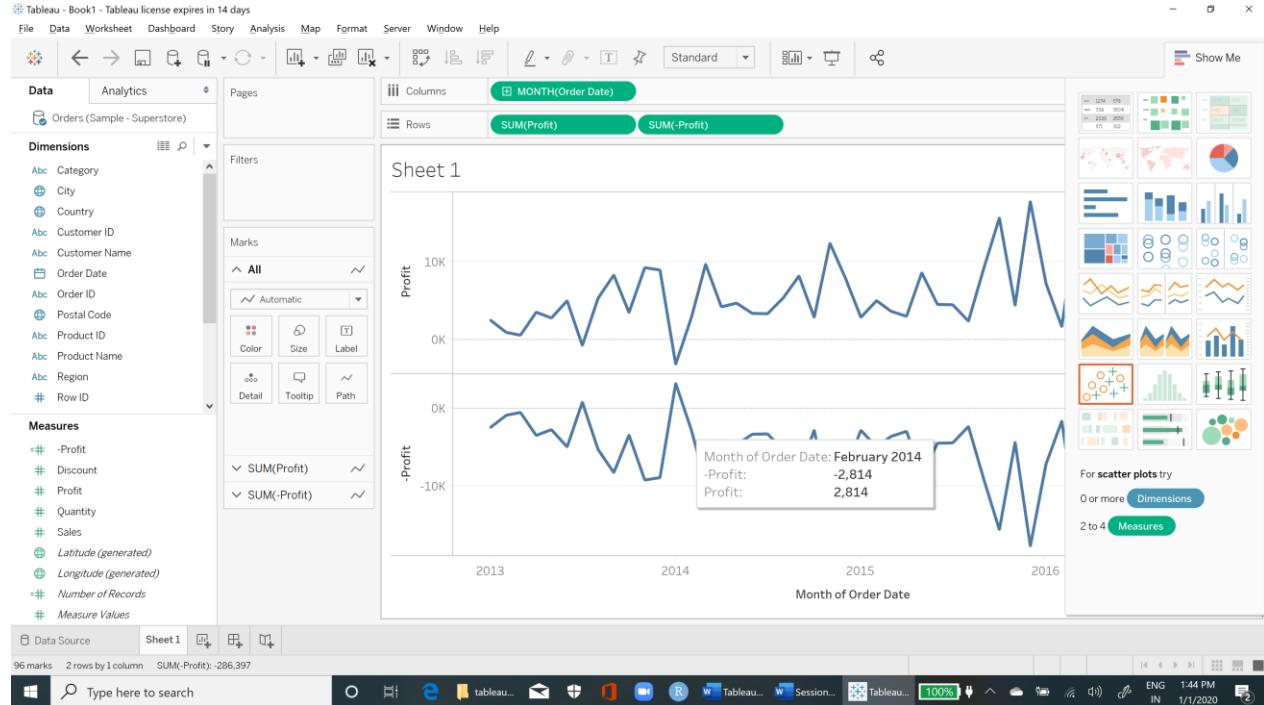


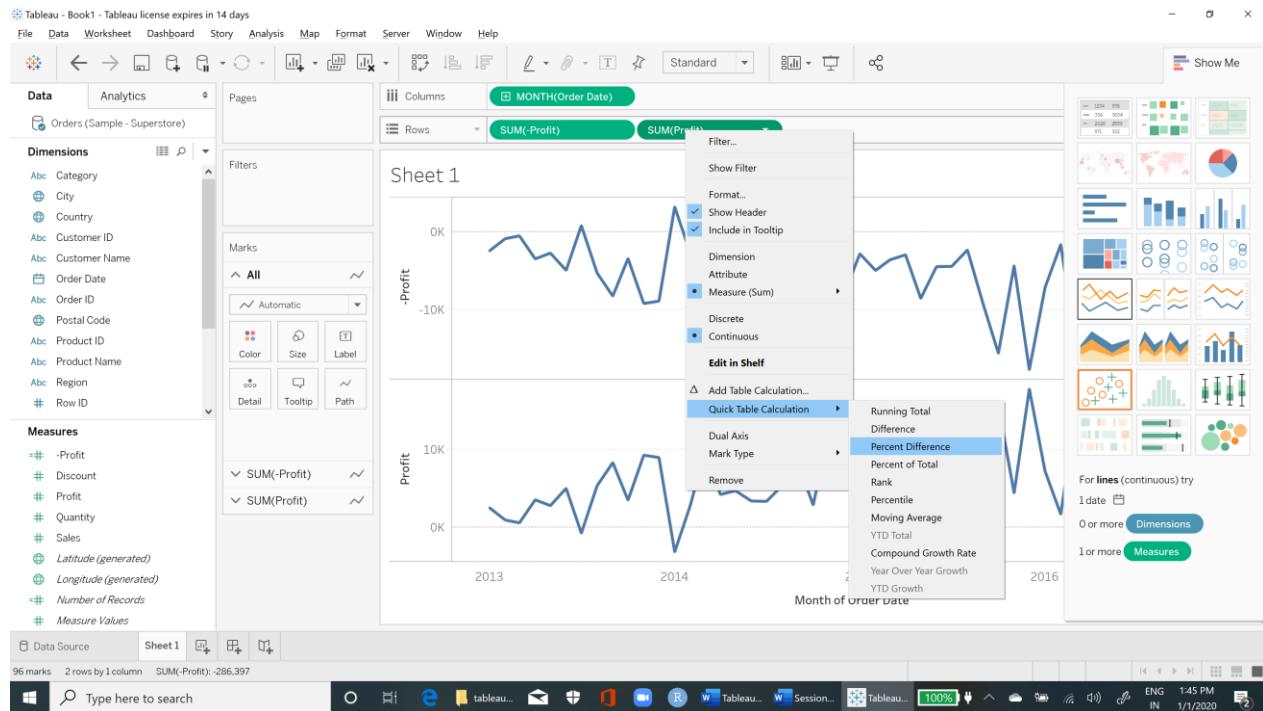
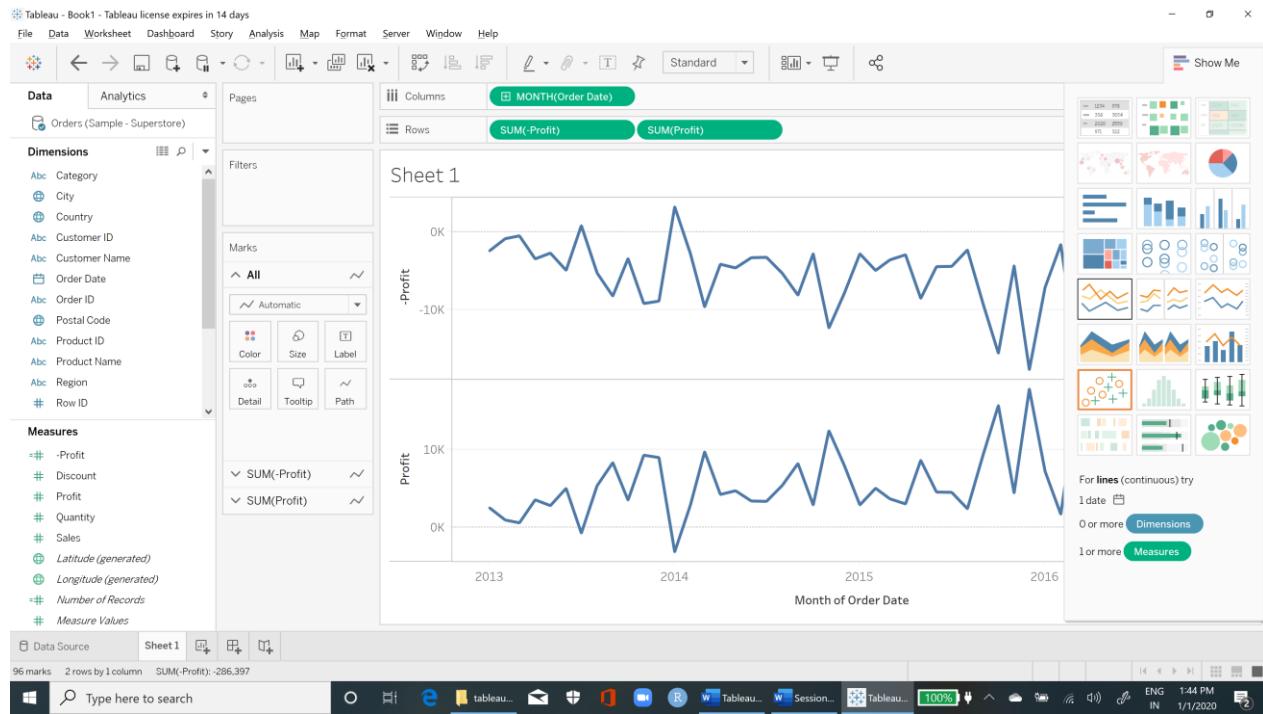
- 9) Add the Profit measure to the color tab on the marks card and edit the colors and change the color palette to be two stepped. Now, we have a working waterfall chart showing growth and contraction in profit from one quarter to the next. 10) All the graph details obtained are provided as screen shot for easy reference

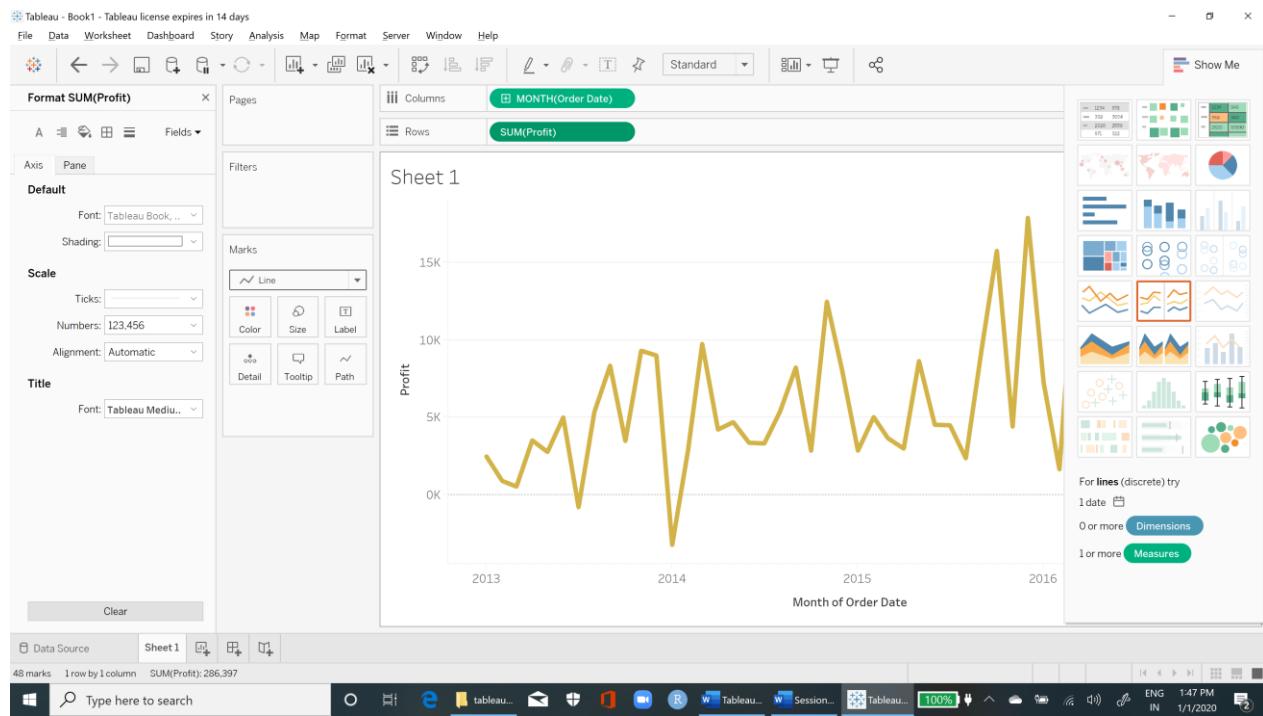
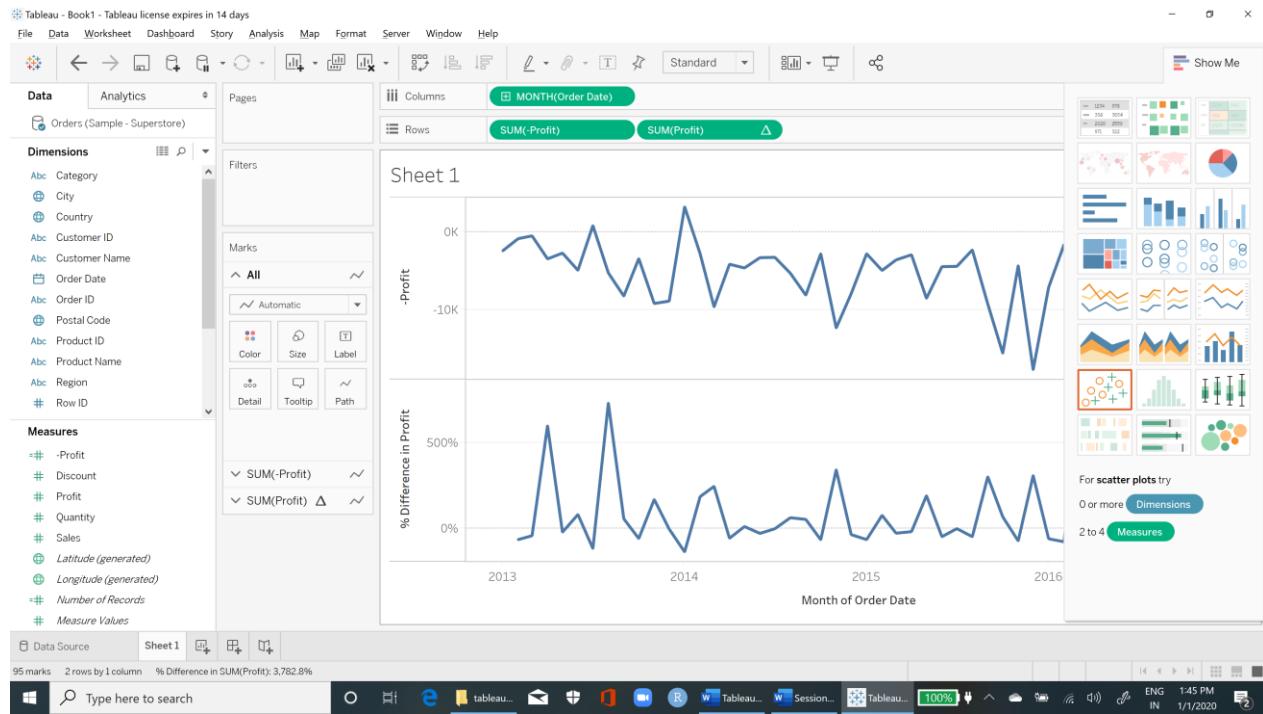




## Cleared table calculation







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