

SYED AWASE KHIRNI

TABLEAU : LEVELS OF DETAILS EXPRESSIONS

Level of Details Expressions

- Introduced in Tableau 9.0
- They provide a way to easily compute aggregations that are **not at the level of detail of the visualization**
- **Level of Detail/Granularity depends on dimensions placed in row, column, colour,size, label, path or detail shelves.**
- Why LOD expressions?
 - Finding no of orders each customer has made is relatively easy.
 - **How to identify the customers, who have made one, two or three orders?**
 - Number of customers/number of orders made.
- **LOD (Calculation) allows one to determine the levels of detail used in a calculation without actually using these dimensions in the view or visualization that one creates.**

Types of LOD Expression

FIXED

- Calculates the aggregation at the level of detail specified in the calculated field regardless of any dimensions in the view.

INCLUDE

- Calculate the aggregation at the level of detail specified by the dimensions included in the calculated field.
 - result in calculation of the aggregation at a lower level of detail than the view.

EXCLUDE

- Calculates the aggregation at the level of detail specified by the dimensions in the view, excluding any listed in the calculated field.
- Result in calculation of the aggregation at a higher level of detail than the view.

**Problem
Description:**

**How many customers placed how many
orders by region and product category?**

Data set used:

demo1/ Sample - Superstore Sales
(Excel).xlsx

FIXED LEVEL OF DETAIL EXPRESSION

Step 1

- create ComputeCustomerOrderFrequency calculated field to compute for each customer, what are the unique no of orders, by order id.

COLUMNS:

ROWS:

The screenshot shows the Tableau Data Editor interface. On the left, the 'Dimensions' and 'Measures' panes are visible. In the center, a floating window displays the calculated field code. The code is:
//for each customer, count the number of unique orders
{FIXED [Customer Name]:COUNTD([Order ID])}
Below the code, a message states 'The calculation is valid.' with 'Apply' and 'OK' buttons. The top navigation bar includes 'File', 'Data', 'Worksheet', 'Dashboard', 'Story', 'Analysis', 'Map', 'Format', 'Window', and 'Help'.

Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 2

- Convert the **ComputeCustomerOrderFrequency** to discrete value by dragging it to the dimension pane/shelf

COLUMNS:

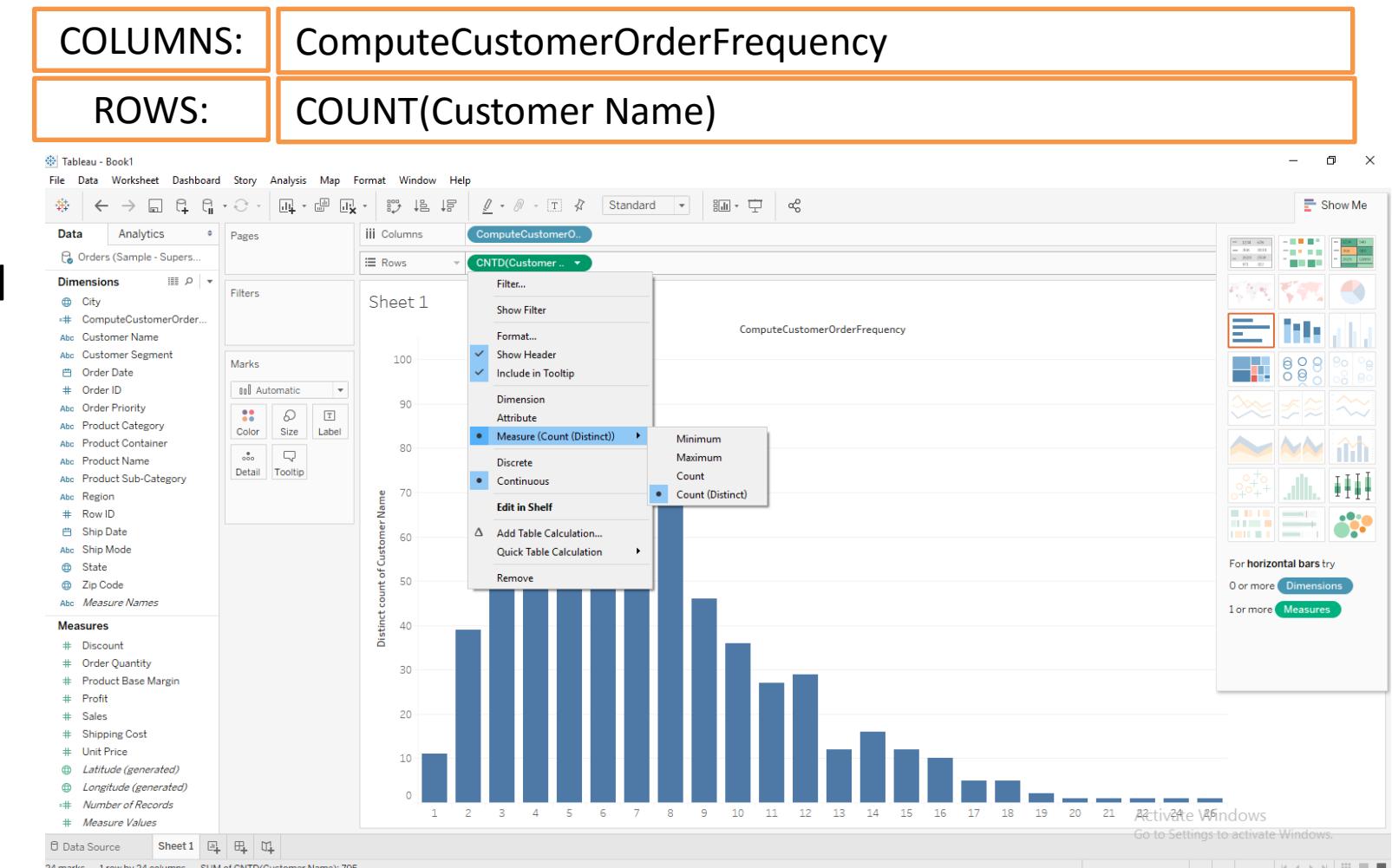
ROWS:

The screenshot shows the Tableau desktop interface. On the left, the 'Dimensions' shelf is open, listing various dimensions like City, Customer Name, and Order Date. The 'ComputeCustomerOrderFrequency' field is highlighted with a blue selection bar. The main workspace is titled 'Sheet 1' and contains three 'Drop field here' placeholder boxes. The top-left box is for columns, the top-right for rows, and the bottom box for other fields. The right side of the screen features the 'Show Me' card with various visualization options.

Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 3

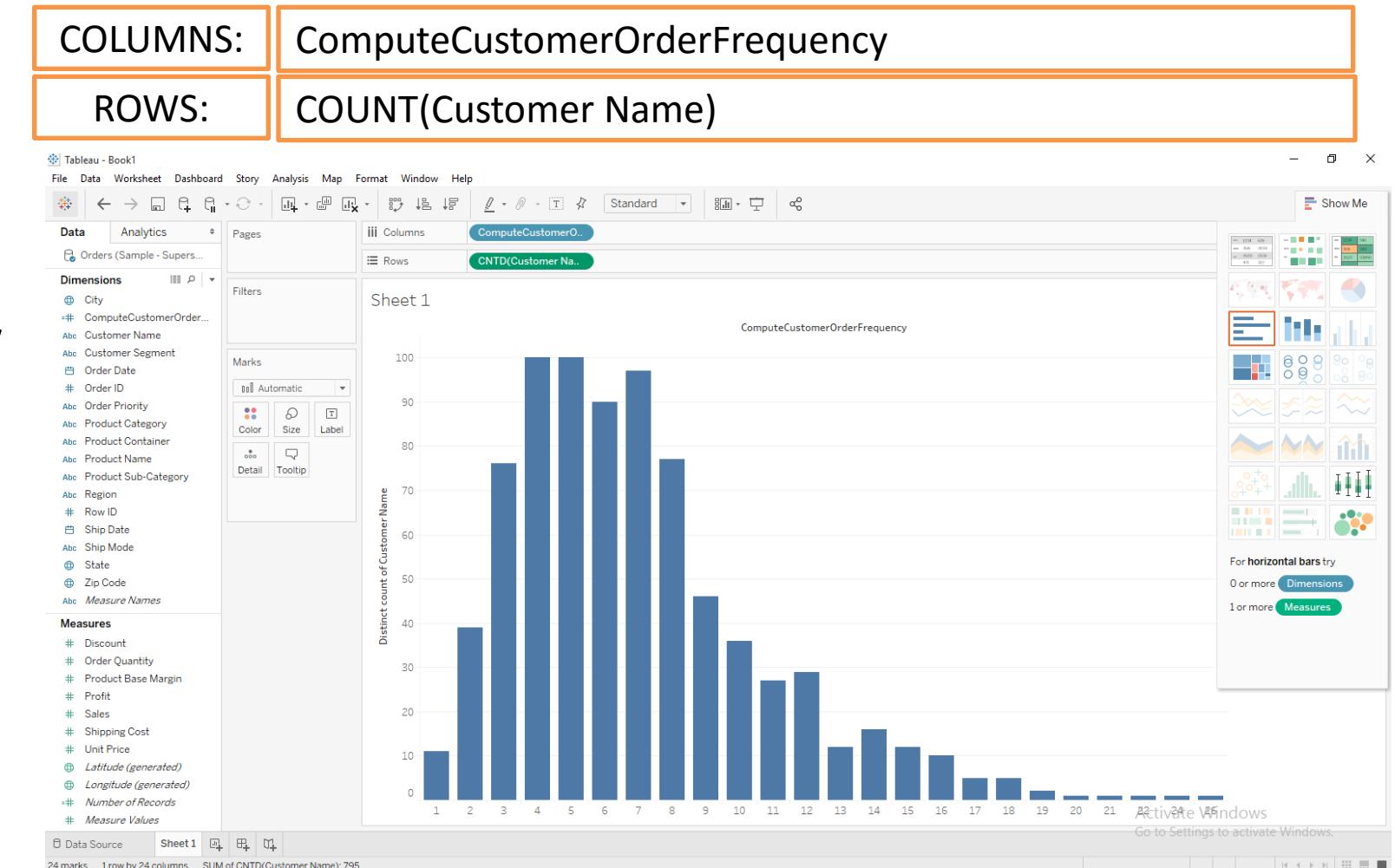
- plot
ComputeCustomerOrderFrequency vs
Count(CustomerName)



Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 4

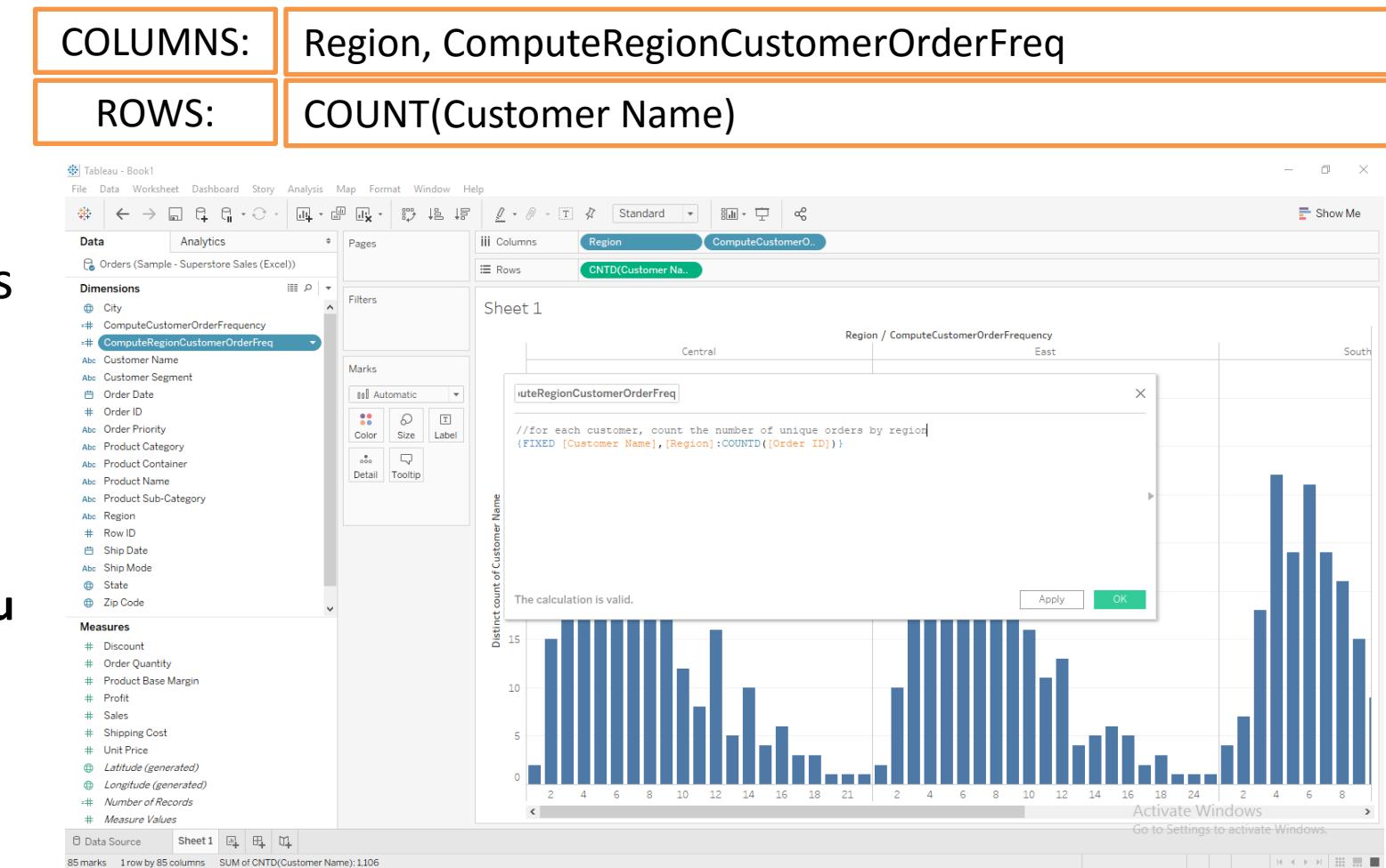
- This visualization answers the question for “**How many customers placed how many orders?**”



Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 5

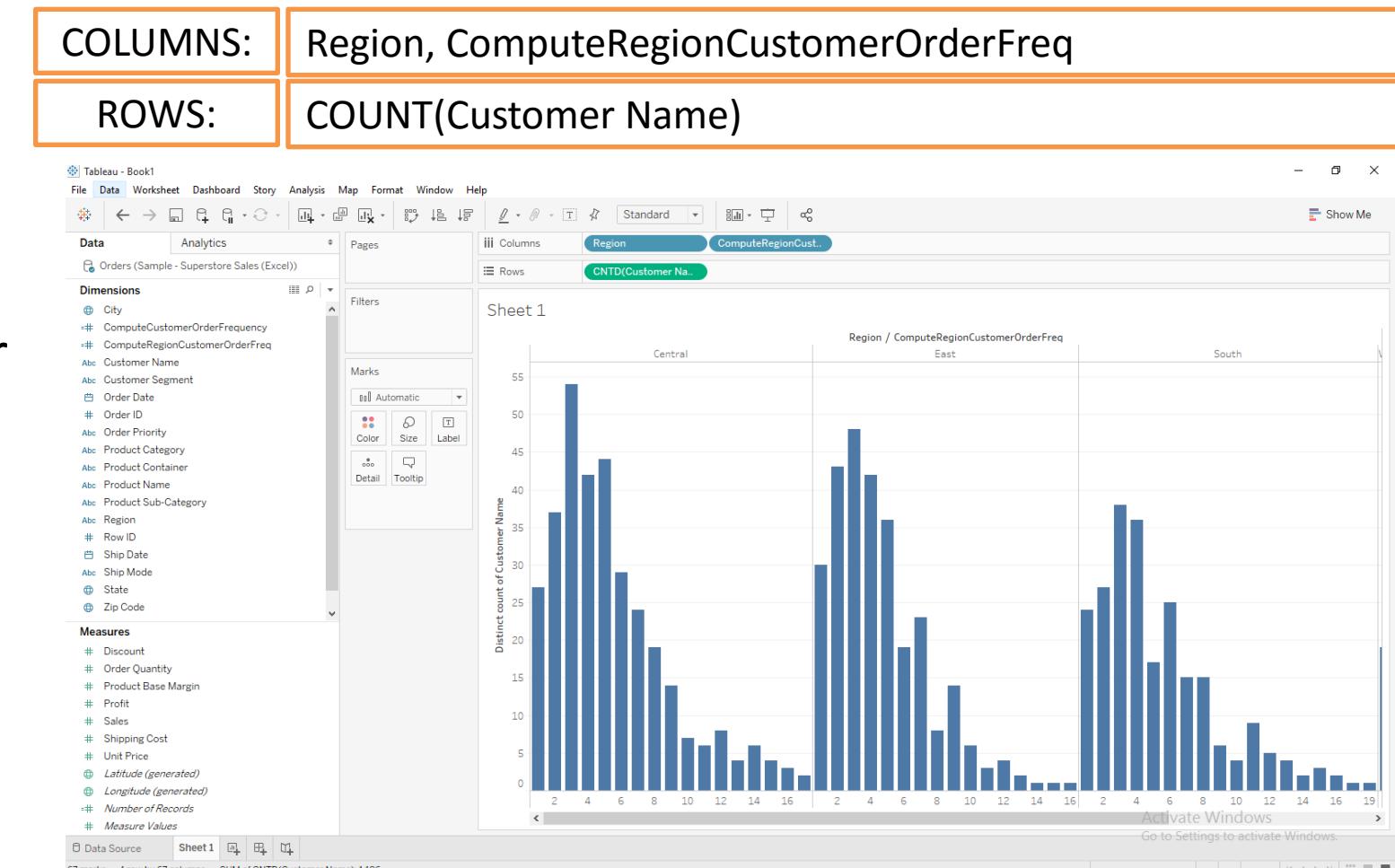
- Now, we would like to answer, how many customers placed how many orders by region?
 - let us add region to “columns” on the left of ComputeCustomerOrderFrequency



Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 6

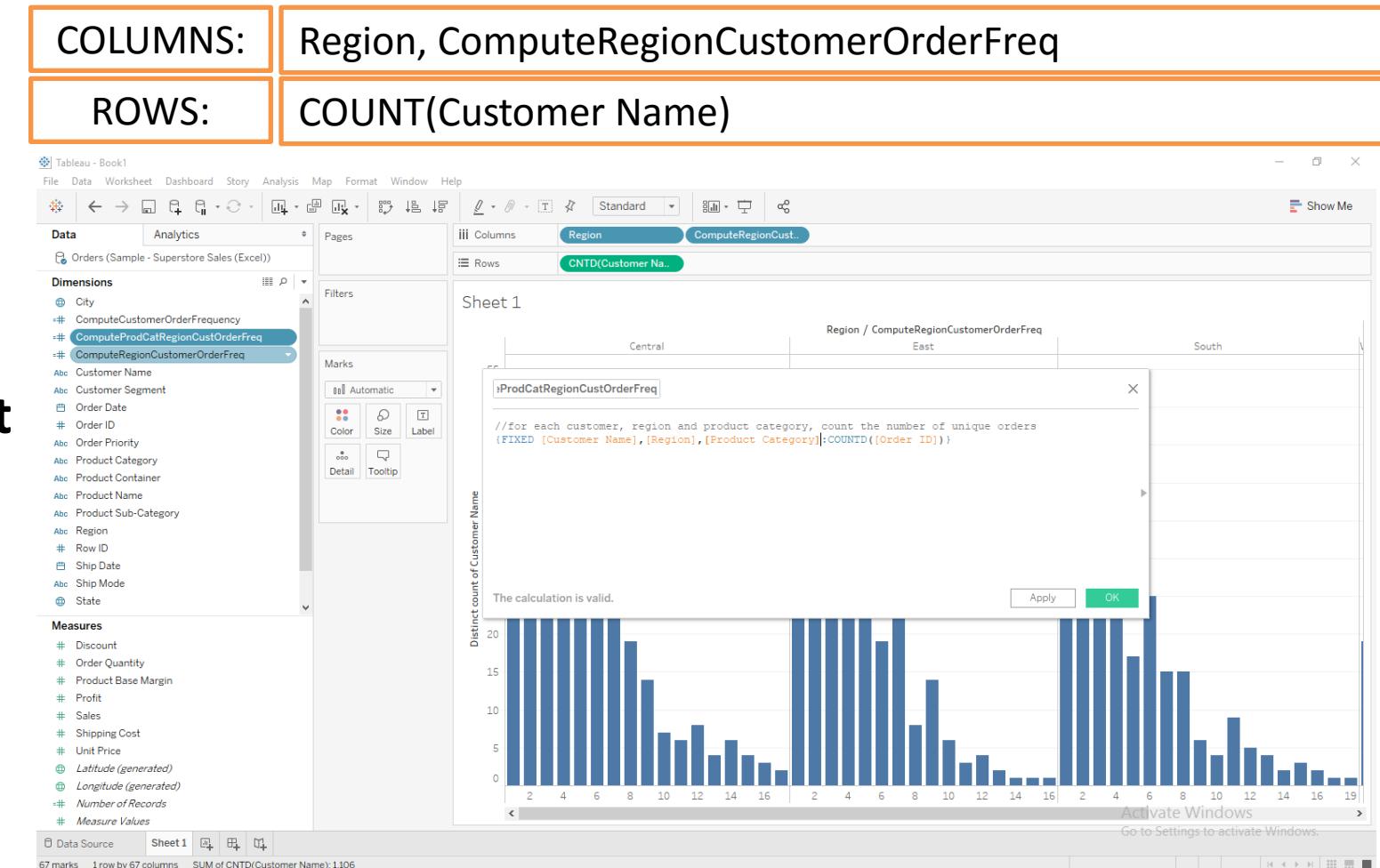
- Upon adding the new calculated field “ComputeRegionCustomerOrderFreq” we can now visualize the no of unique customers by region.



Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

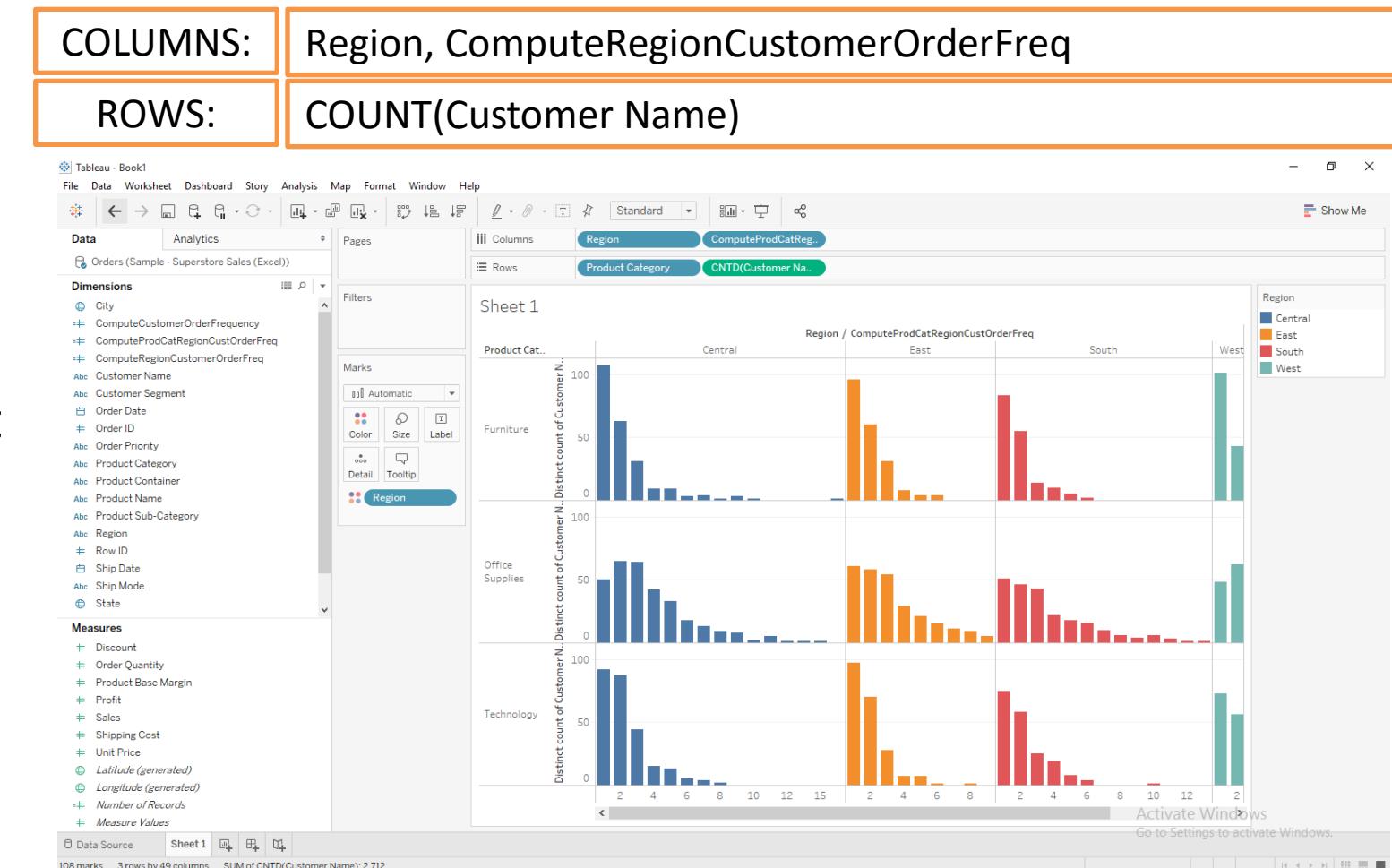
Step 7

- Now lets answer the question : **How many customers placed how many orders by region and product category?**



Step 8

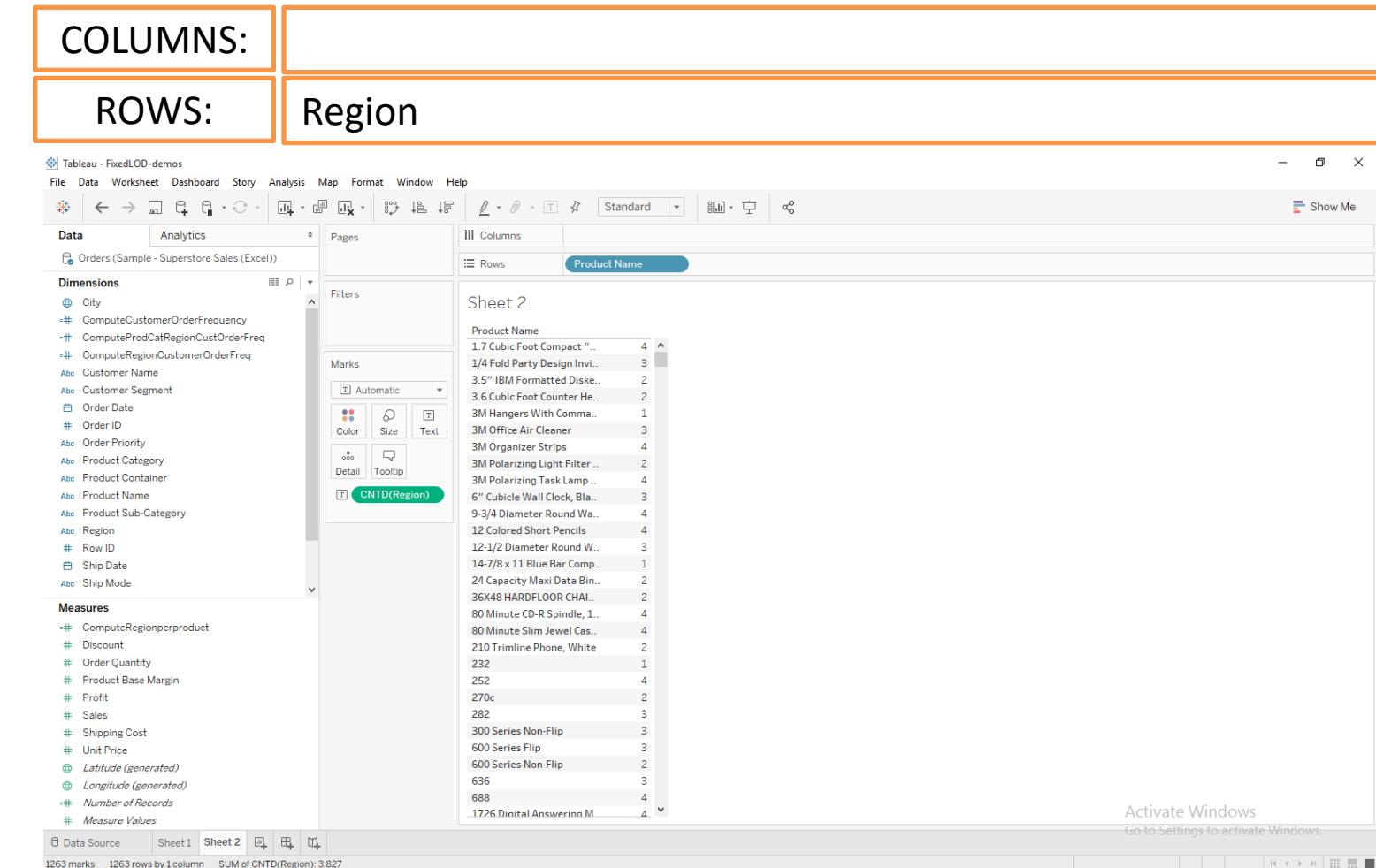
- Now lets answer the question : How many customers placed how many orders by region and product category?



Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 9

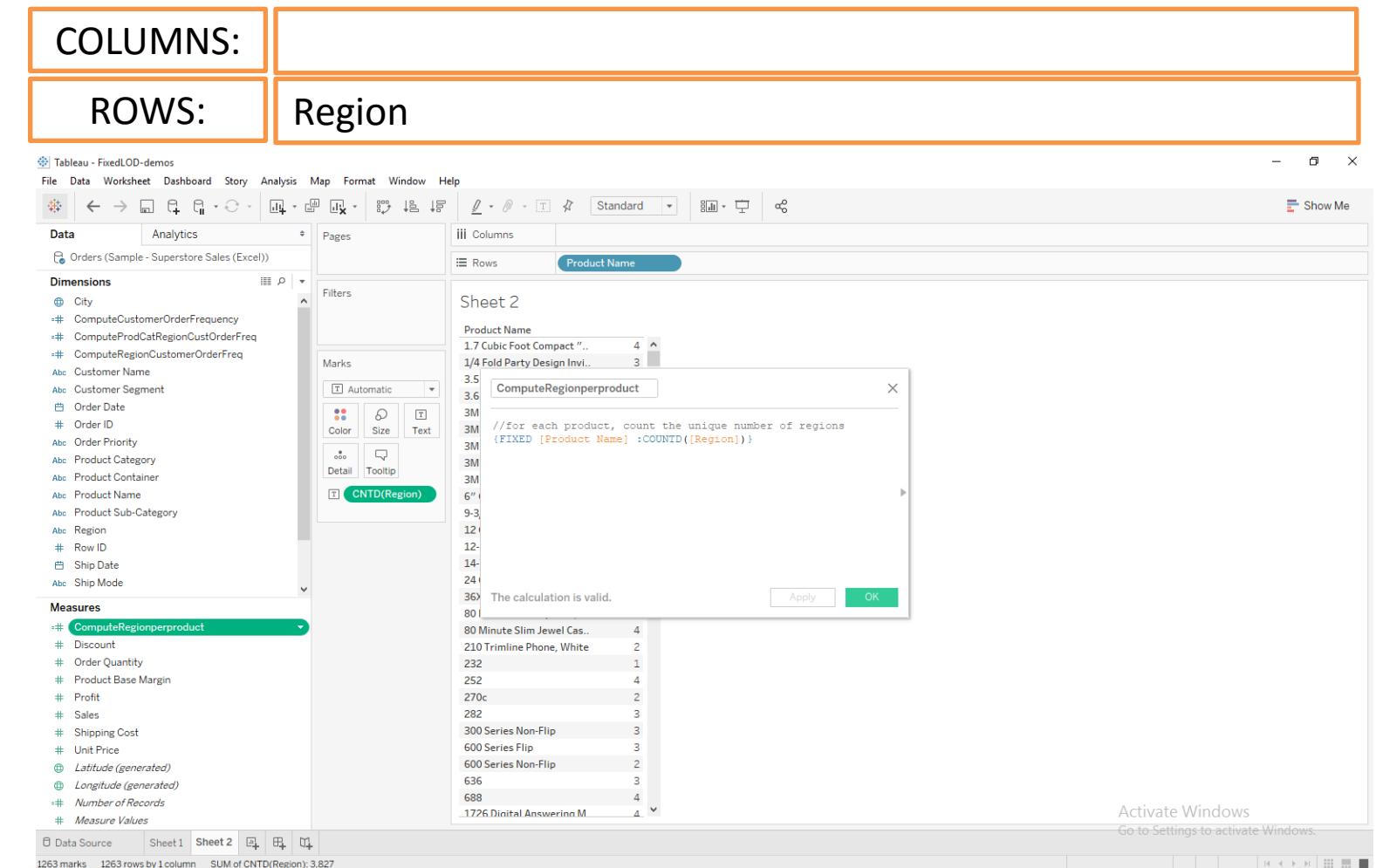
- Now lets answer the question : How many products sell in how many regions by year and quarter?



Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 10

- for each product name, count the unique no of regions.

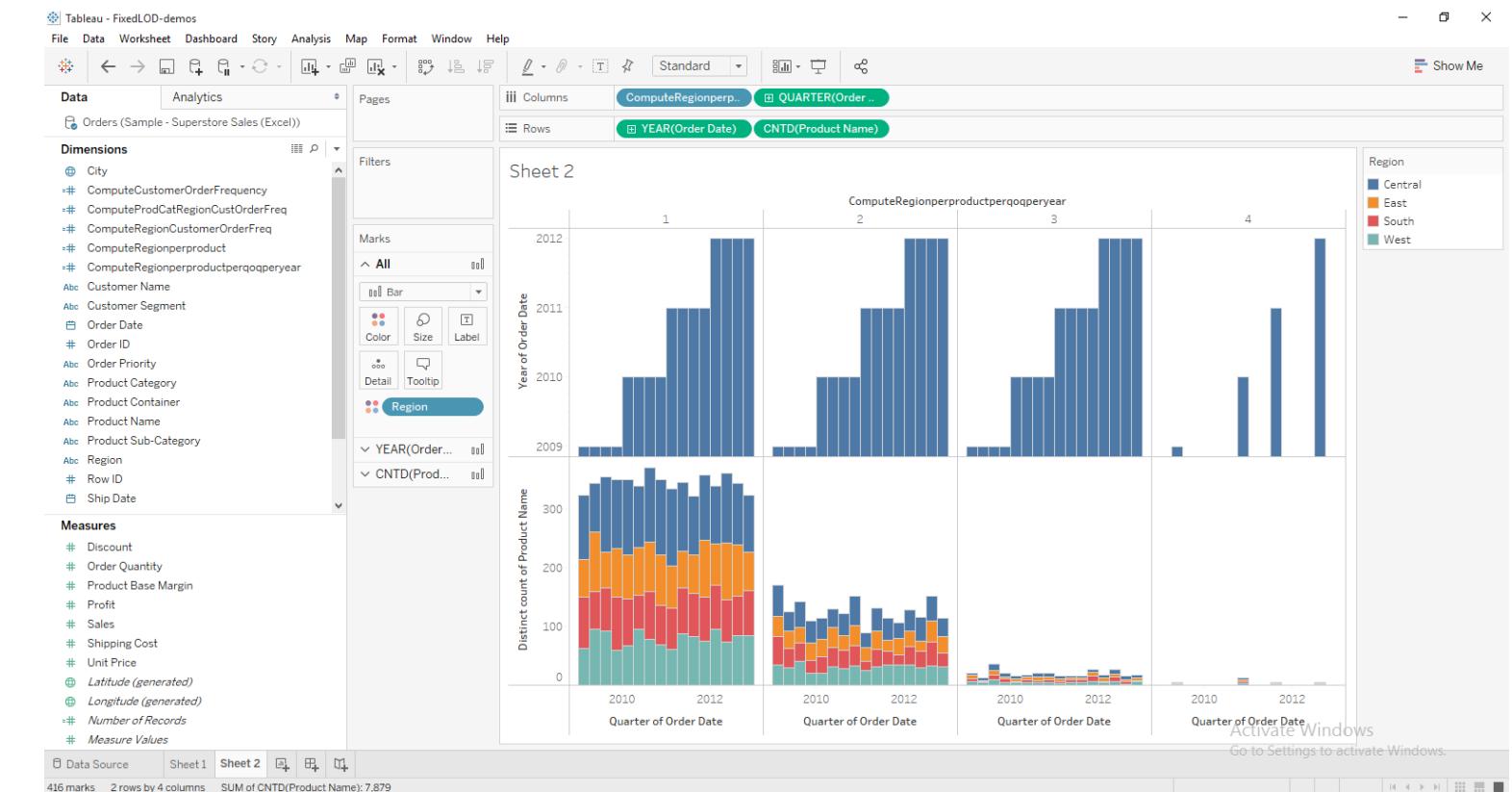


Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 11

- We have the final answer

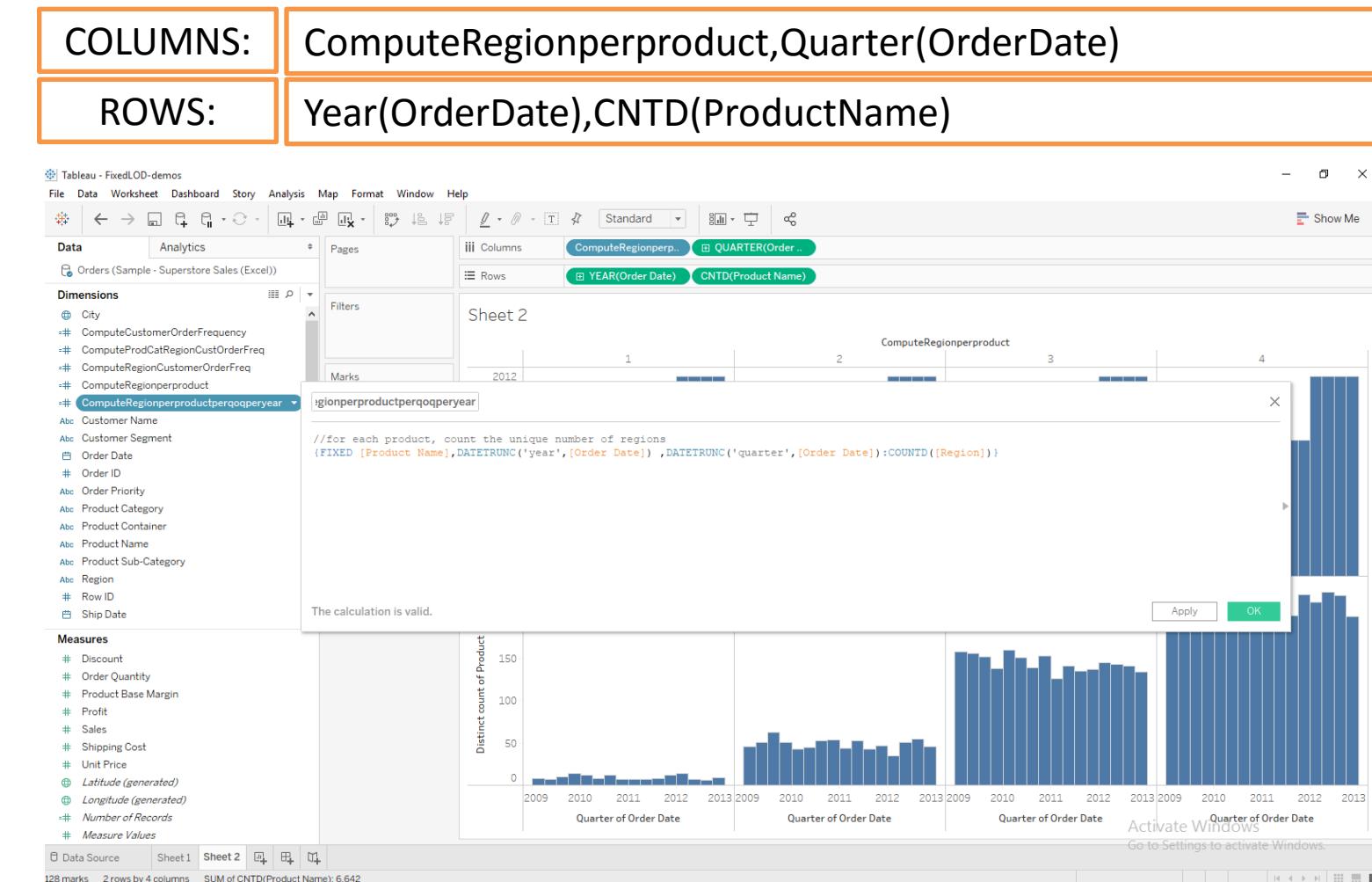
COLUMNS:	ComputeRegionperproduct,Quarter(OrderDate)
ROWS:	Year(OrderDate),CNTD(ProductName)



Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 12

- Duplicate ComputeRegionperproduct and create a new ComputeRegionperproductperqoqperyear as shown in the figure.



Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 12

- Now lets answer the question : Identify the total number of customers acquired by region by day?
- Create a calculated field : computeFirstOrderDatebyCustomer

COLUMNS:

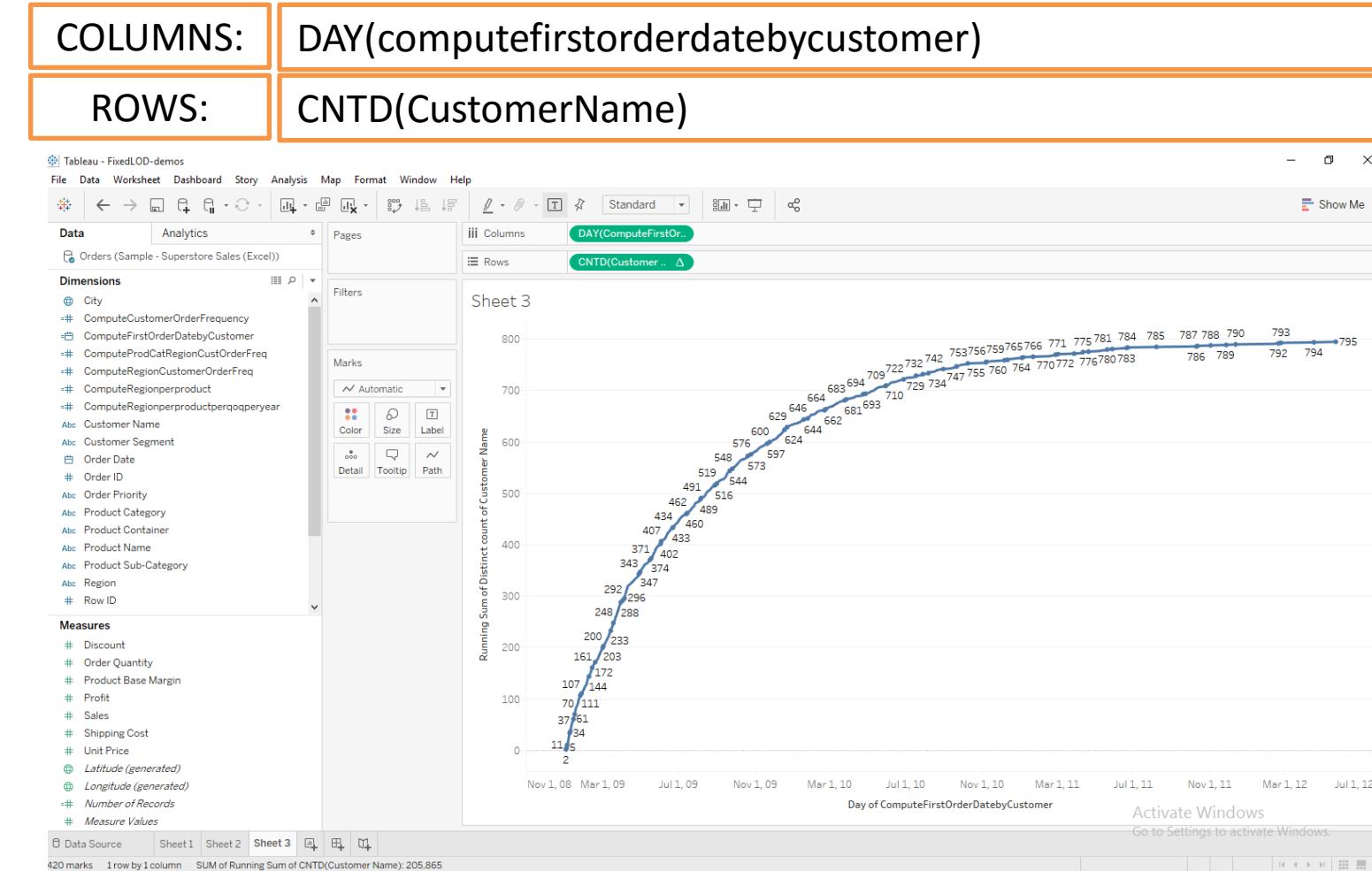
ROWS:

The screenshot shows the Tableau interface with the 'Data' shelf on the left containing various dimensions and measures. A calculated field named 'ComputeFirstOrderDatebyCustomer' is selected. A tooltip window is open, displaying the formula: `//for each customer, calculate the minimum order date {FIXED [Customer Name]: MIN([Order Date])}`. The tooltip also states 'The calculation is valid.' at the bottom.

Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Step 13

- Now lets answer the question : Identify the total number of customers acquired by region by day?
- Create a calculated field : computefirstorderdatebycustomer**
- To the rows apply **CTND(CustomerName)=> RunningTotal**



Data Source: demo1/ Sample - Superstore Sales (Excel).xlsx

Problem Description:

Data set used:	
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TABLEAU : ADVANCED CHART TYPES

Problem Description:

Data set used:	
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TABLEAU : DATA BLENDING

Problem Description:

Data set used:	
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TABLEAU : INTEGRATING R WITH TABLEAU

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TABLEAU : DASHBOARD CREATION

Problem Description:

To create a dashboard with maps and scatter plot explore the ecommerce data, mocked up using www.mockaroo.com. Identify the profit margin for all the states in United States.

Data set used:

www.mockaroo.com=> demo3/ tpri-ecommerce-orders.xlsx

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TABLEAU : DASHBOARD CREATION:SCENARIO 1

Step 1

- load the tpri-ecommerce-orders.xlsx file from demo3 folder.
- Let us select data and orderdetails worksheet and perform “innerjoin”

COLUMNS:

ROWS:

The screenshot shows the Tableau Data Source interface. A connection named "tpri-ecommerce-orders" has been established from an Excel file. Two worksheets are listed: "data" and "orderdetails". The "data" sheet is currently selected, displaying a preview of the data with columns: Order Id, Order Date, Customer Name, Customer Address, City, State, and Ship Date. The "orderdetails" sheet is also visible in the hierarchy. The interface includes standard Tableau navigation and filtering tools.

Order Id	Order Date	Customer Name	Customer Address	City	State	Ship Date
7df108ae-fcc6-4bda-a...	2014-08-02	Harwilll Guys	7 Dawn Alley	New York City	New York	7/30/2017
ac9e6f41-64a3-4156-...	2015-01-09	Mirella Bradfield	2 Fremont Road	Seattle	Washington	4/10/2017
7d563dae-ca7a-45bd-...	2014-08-16	Vernor McGillicuddy	83902 John Wall Cros...	Saint Louis	Missouri	1/10/2017
4ab89ee3-77ea-4b18-...	2014-10-20	Brittaney Spurier	5 Starling Plaza	Gaithersburg	Maryland	8/30/2017
0a75d1a4-8e48-4b58...	2015-04-12	Gerik Gaskal	885 Nobel Hill	Chicago	Illinois	6/23/2017
0db31d70-718b-4412...	2014-12-13	Cobbie Skerman	47993 Oxford Pass	Dallas	Texas	7/31/2017
0b14edd1-ccb-4863-...	2014-08-30	Brewer Dennick	2 School Park	Hartford	Connecticut	7/1/2017

Data Source: demo3/ tpri-ecommerce-orders.xlsx

Step 2

- load the tpri-ecommerce-orders.xlsx file from demo3 folder.
- Let us select data and orderdetails worksheet and perform “innerjoin”

COLMNS:
ROWS:

The screenshot shows the Tableau Data Source interface. A tooltip labeled "Go to Worksheet" points to the "orderdetails" worksheet tab. The data preview table has the following columns:

Order Id	Order Date	Customer Name	Customer Address	City	State	Ship Date	Ship Shi
7df108ae-fcc6-4bda-a...	2014-08-02	Harwilll Guys	7 Dawn Alley	New York City	New York	7/30/2017	F
ac9e6f41-64a3-4156-...	2015-01-09	Mirella Bradfield	2 Fremont Road	Seattle	Washington	4/10/2017	F
7d563dae-ca7a-45bd-...	2014-08-16	Vernor McGillicuddy	83902 John Wall Cros...	Saint Louis	Missouri	1/10/2017	E
4ab89ee3-77ea-4b18-...	2014-10-20	Brittaney Spurier	5 Starling Plaza	Gaithersburg	Maryland	8/30/2017	E
0a75d1a4-8e48-4b58...	2015-04-12	Gerik Gaskal	885 Nobel Hill	Chicago	Illinois	6/23/2017	F
0db31d70-718b-4412...	2014-12-13	Cobbie Skerman	47993 Oxford Pass	Dallas	Texas	7/31/2017	F
0b14edd1-ccb-4863-...	2014-08-30	Brewer Dennick	2 School Park	Hartford	Connecticut	7/1/2017	F

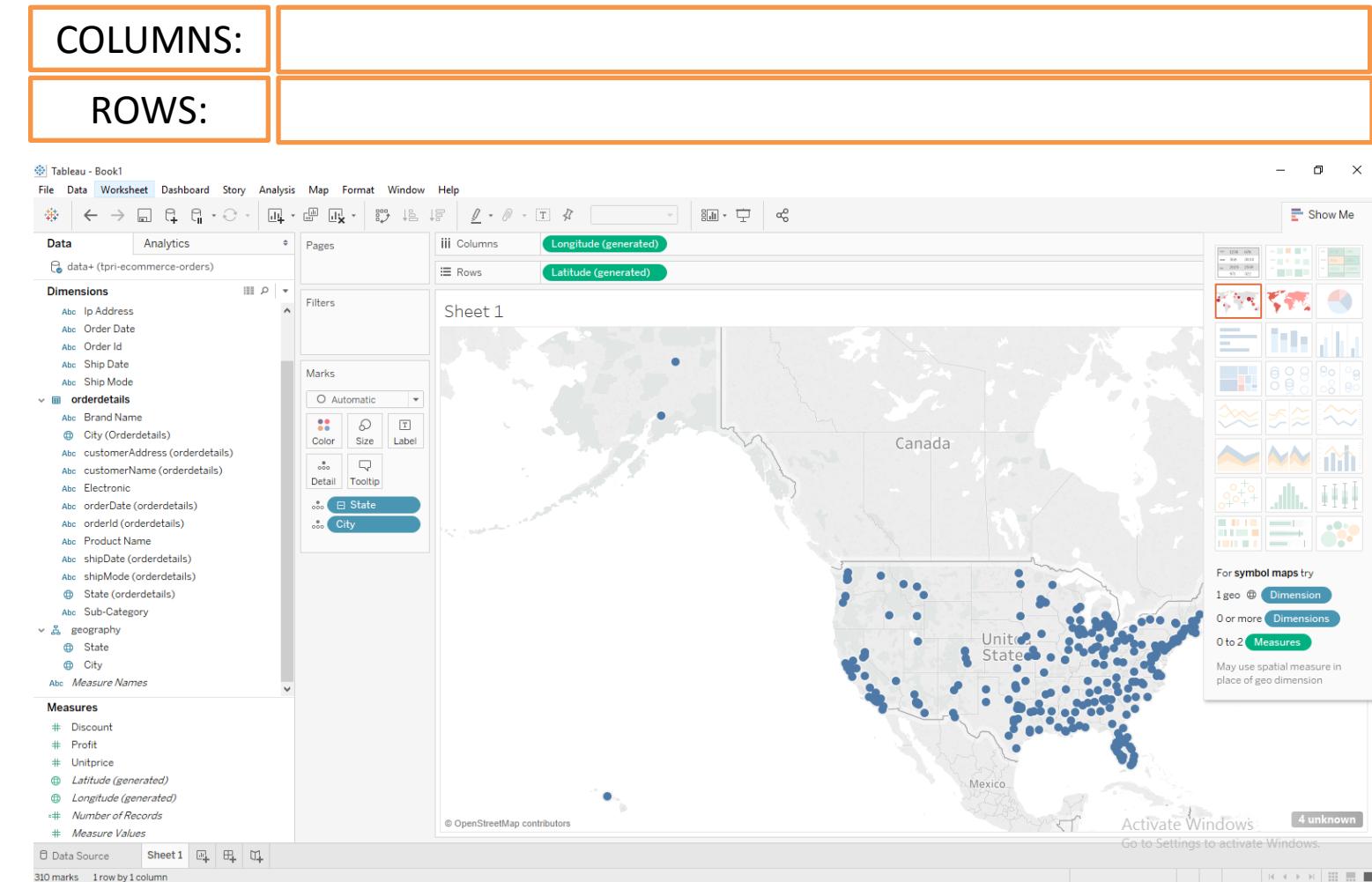
Data Source: demo3/ tpri-ecommerce-orders.xlsx

Map

- Applicable for postal codes, state abbreviations, country names or your own custom geocoding.
- Used to show geocoded data.
- Layering bubble charts on top of maps, to demonstrate the concentration of data and their varied size to understand relative data.

Step 3

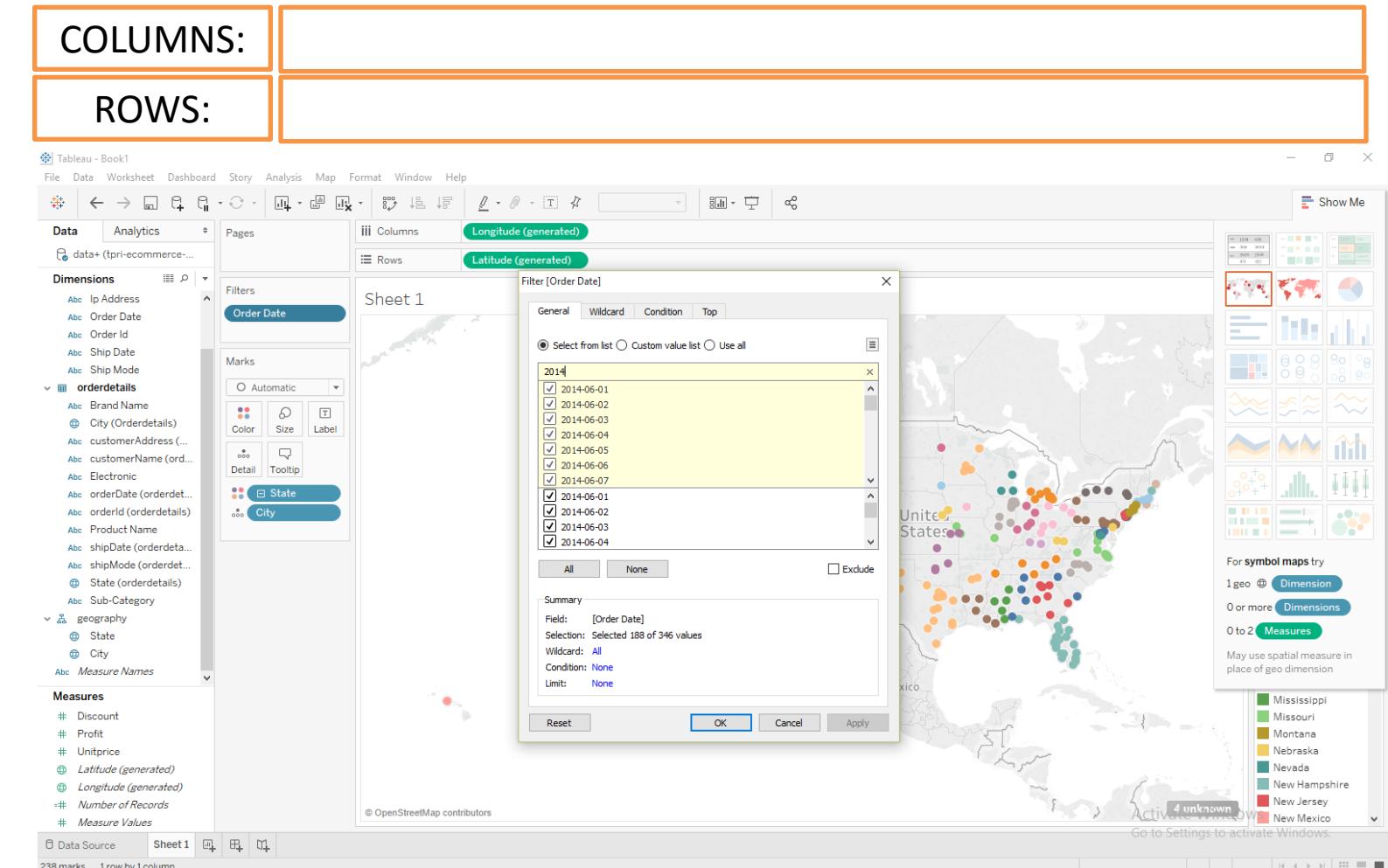
- Now, we shall create a geographical hierarchy, by selecting state and city.
- Upon dragging the state and city to canvas panel, tableau automatically generates map by using openstreetmap data.



Data Source: demo3/ tpri-ecommerce-orders.xlsx

Step 4

- let us now filter the data, based on orderDate for the year 2014.



Data Source: demo3/tpri-ecommerce-orders.xlsx

Step 5

- let us compute “ProfitMargin” for each state, as calculated field.

The screenshot shows the Tableau desktop interface with a map of the United States on the right. A context menu is open over the 'Profit' measure in the Measures shelf. The 'Create' option is selected, and 'Calculated Field...' is chosen. A dialog box titled 'ProfitMargin' contains the formula `Sum([Profit])/SUM([Unitprice])`. Below the formula, a message says 'The calculation is valid.' There are 'Apply' and 'OK' buttons at the bottom of the dialog. The top navigation bar shows 'Tableau - Book1' and various menu options like File, Data, Worksheet, Dashboard, Story, Analysis, Map, Format, Window, Help. The left sidebar displays dimensions and measures, with 'orderdetails' and 'geography' expanded. The 'Profit' measure is highlighted in green.

Data Source: demo3/ tpri-ecommerce-orders.xlsx

Step 5

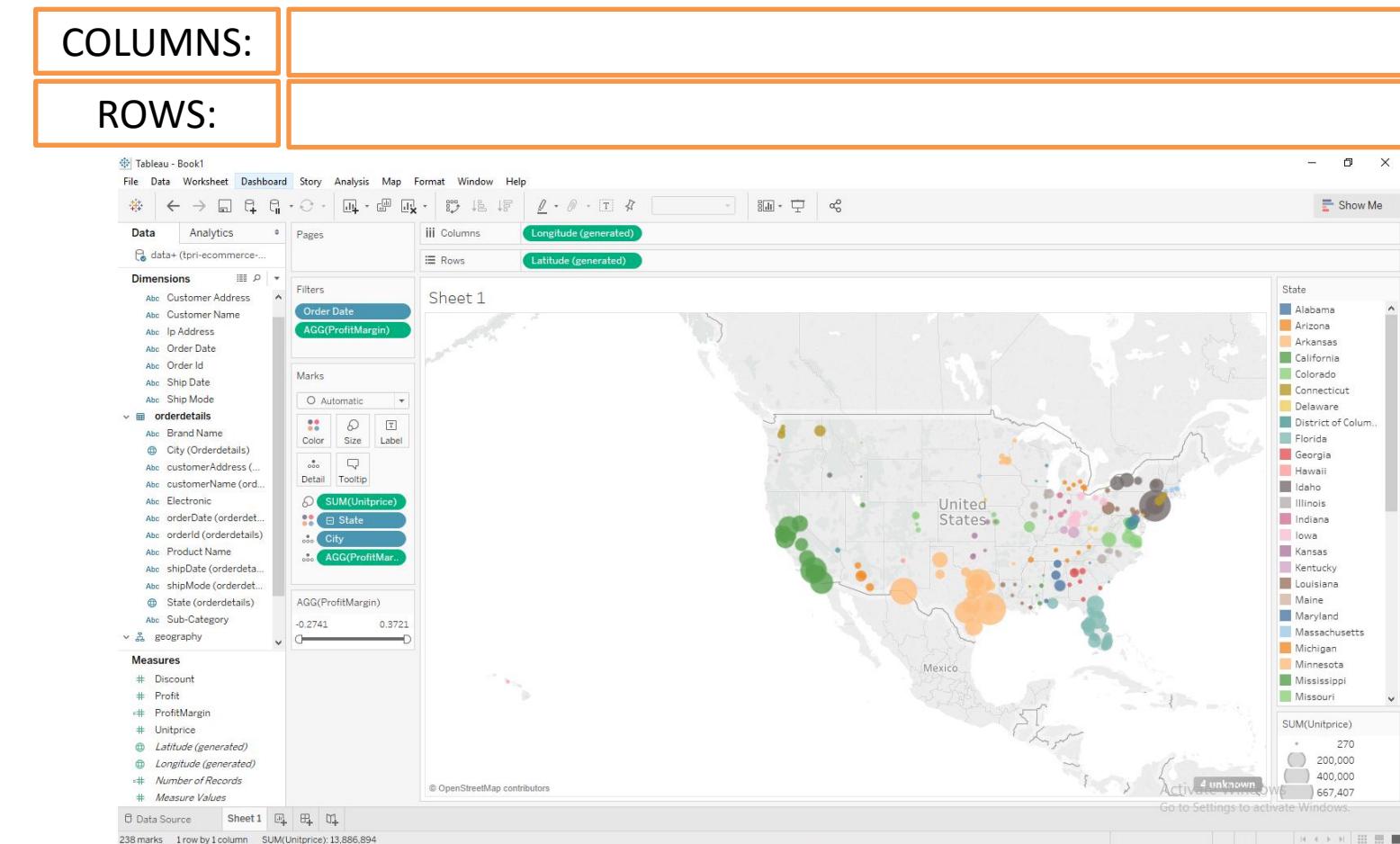
- let us compute “ProfitMargin” for each state, as calculated field.

The screenshot shows the Tableau desktop interface with a map of the United States. A context menu is open over a dimension named 'orderdetails'. The 'Create' option is selected, and 'Calculated Field...' is chosen. A dialog box titled 'ProfitMargin' contains the formula `Sum([Profit])/SUM([Unitprice])`. A message at the bottom of the dialog says 'The calculation is valid.' There are 'Apply' and 'OK' buttons at the bottom right of the dialog. The top navigation bar shows 'Tableau - Book1' and various menu options like File, Data, Worksheet, Dashboard, Story, Analysis, Map, Format, Window, Help. The left sidebar lists dimensions and measures, including 'Customer Address', 'Customer Name', 'Ip Address', 'Order Date', 'Order Id', 'Ship Date', 'Ship Mode', 'Brand Name', 'City (Orderdetails)', 'customerAddress (ord...)', 'customerName (ord...)', 'Electronic', 'orderDate (orderdet...)', 'orderId (orderdetails)', 'Product Name', 'shipDate (orderdet...)', 'shipMode (orderdet...)', 'State (orderdetails)', 'Sub-Category', 'Mississippi', 'Missouri', 'Montana', 'Nebraska', 'Nevada', 'New Hampshire', 'New Jersey', 'New Mexico', and measures like 'Discount', 'Profit', 'Unitprice', 'Latitude (generated)', 'Longitude (generated)', 'Number of Records', and 'Measure Values'. The bottom status bar indicates '238 marks 1 row by 1 column'.

Data Source: demo3/ tpri-ecommerce-orders.xlsx

Step 6

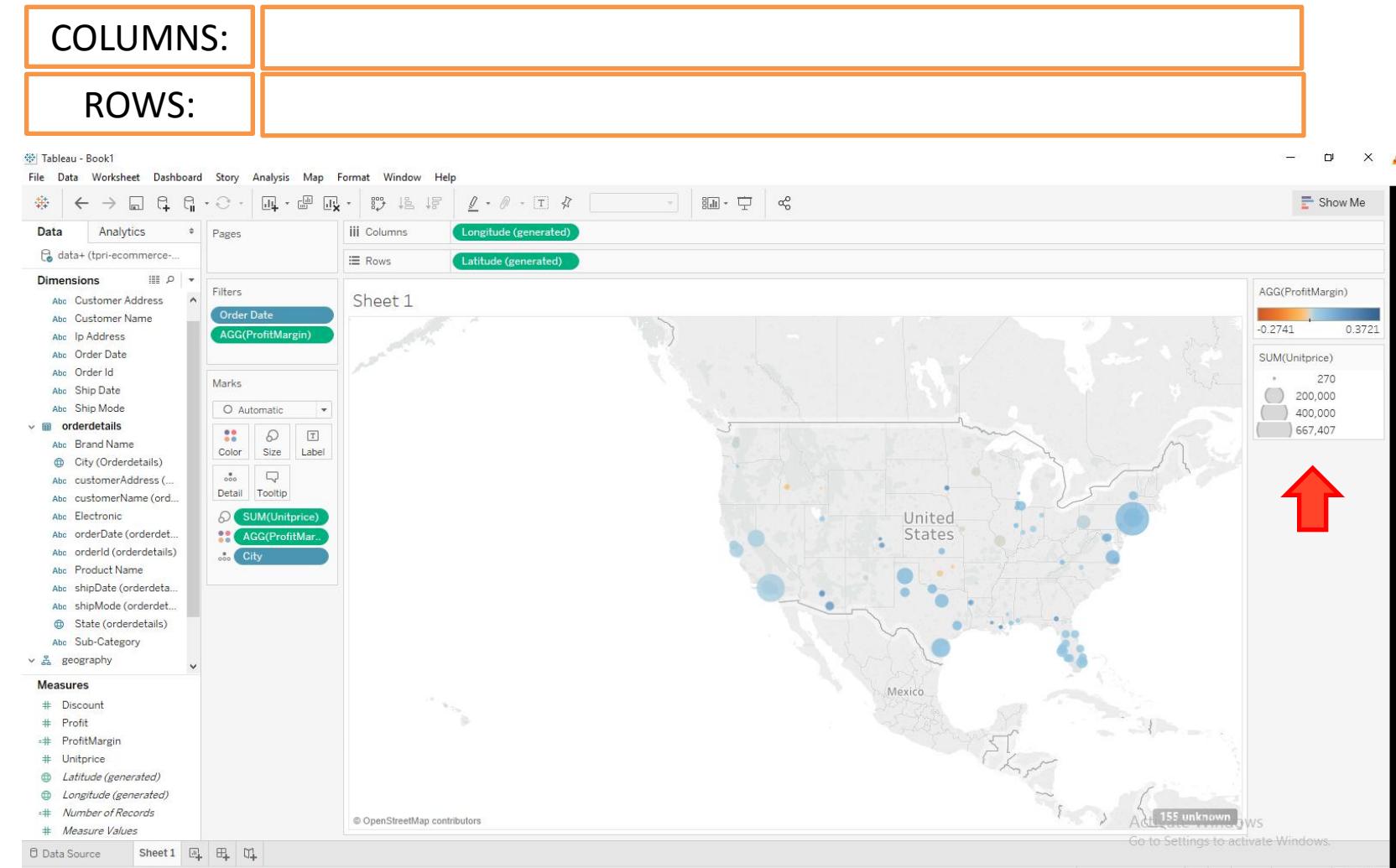
- let us drag the “unitprice” on to the **size marks** this will show different size orbs on the us map.



Data Source: demo3/ tpri-ecommerce-orders.xlsx

Step 7

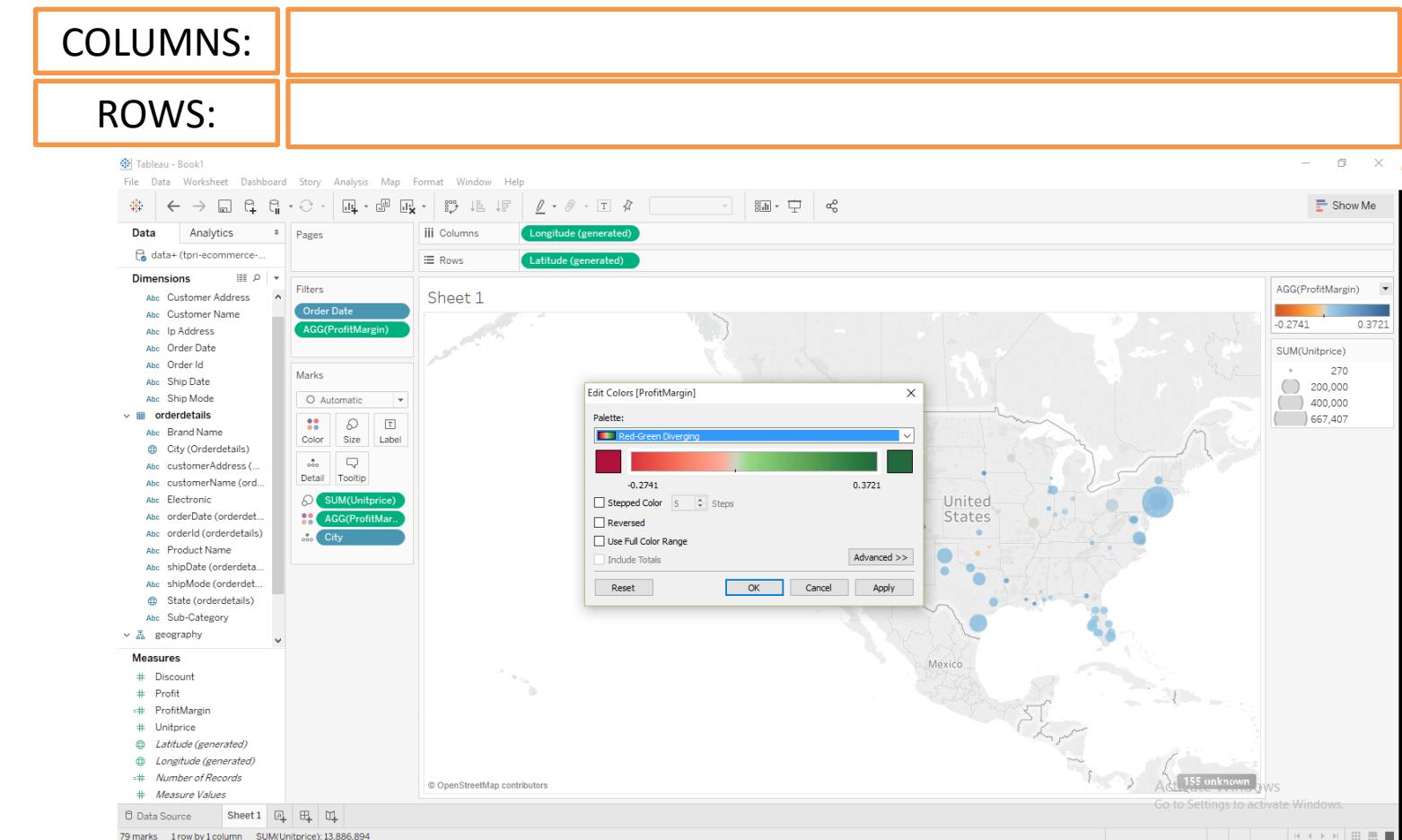
- Let us also add the measure(calculated value): “ProfitMargin” on to the color marks, this will display color filter with ranges as shown in the figure.



Data Source: demo3/ tpri-eCommerce-orders.xlsx

Step 8

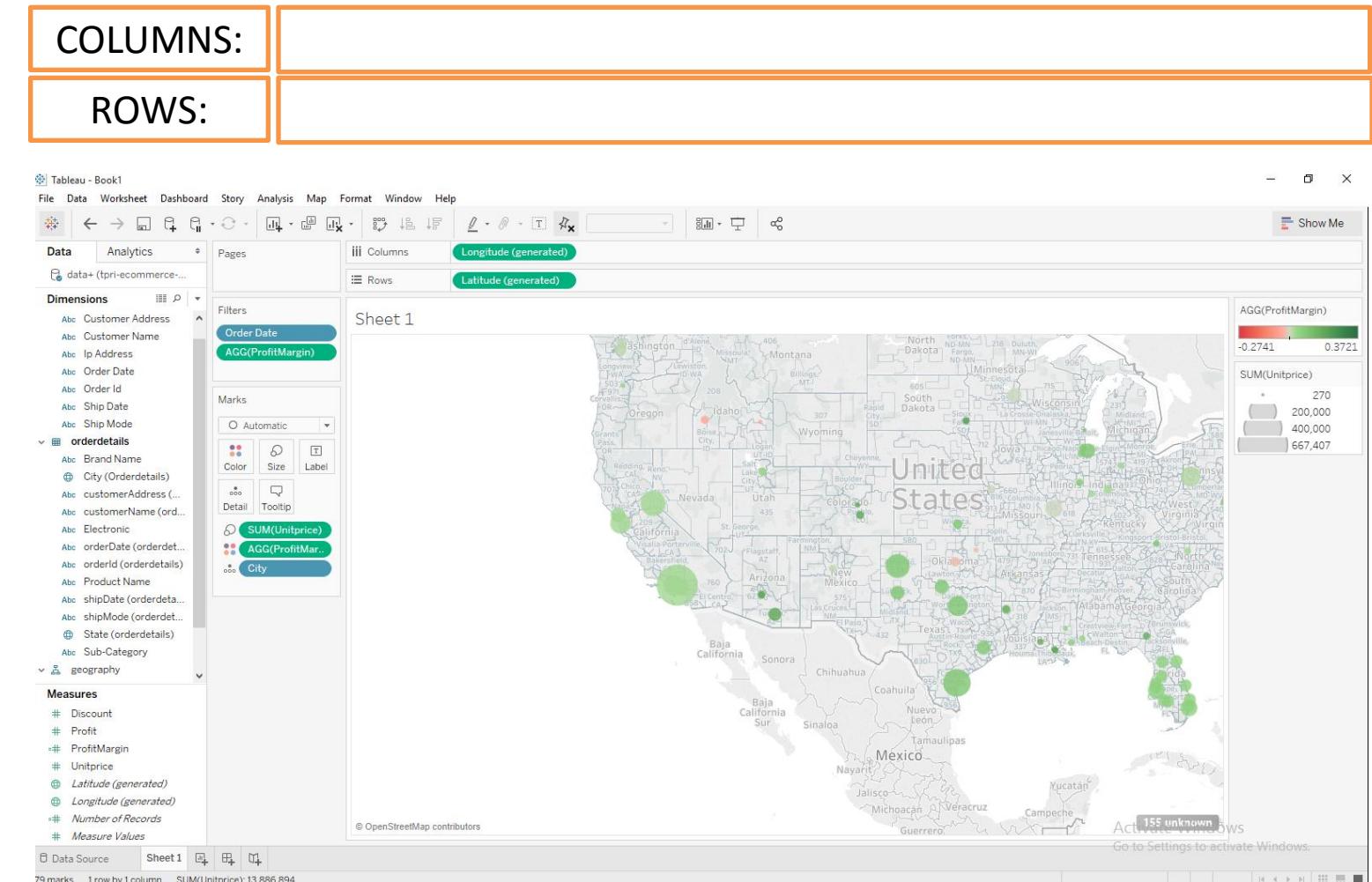
- Now let us define a custom color palette to the Aggregate(ProfitMargin)



Data Source: demo3/ tpri-ecommerce-orders.xlsx

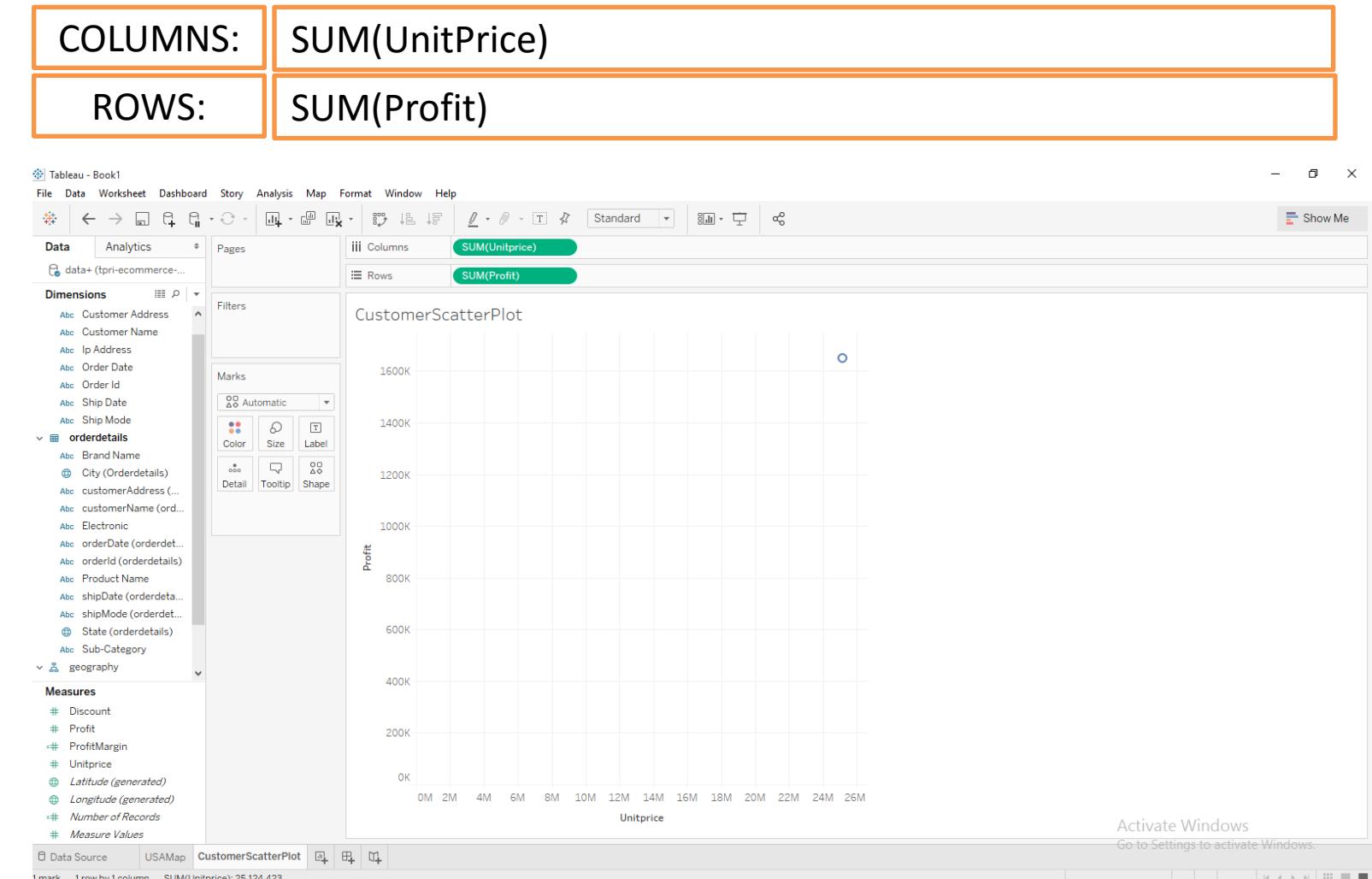
Step 8

- Upon applying the filter you can visualize the perspective, where it displays profitmargin orbs overlayed on the map.



Step 9

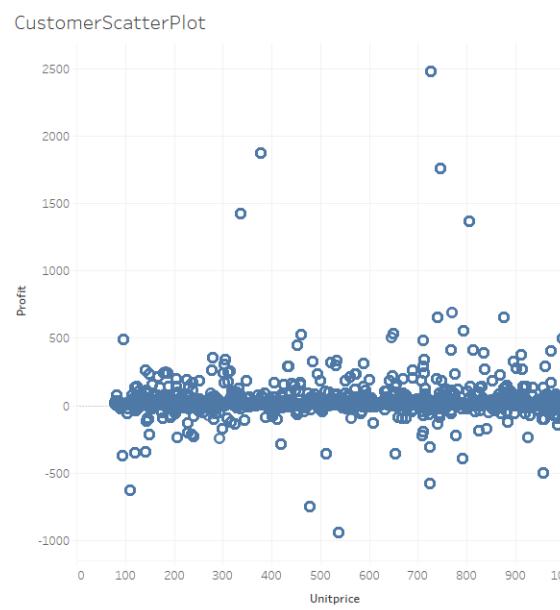
- Now let us visualize the Customer Sales against Profit made by creating a new worksheet.



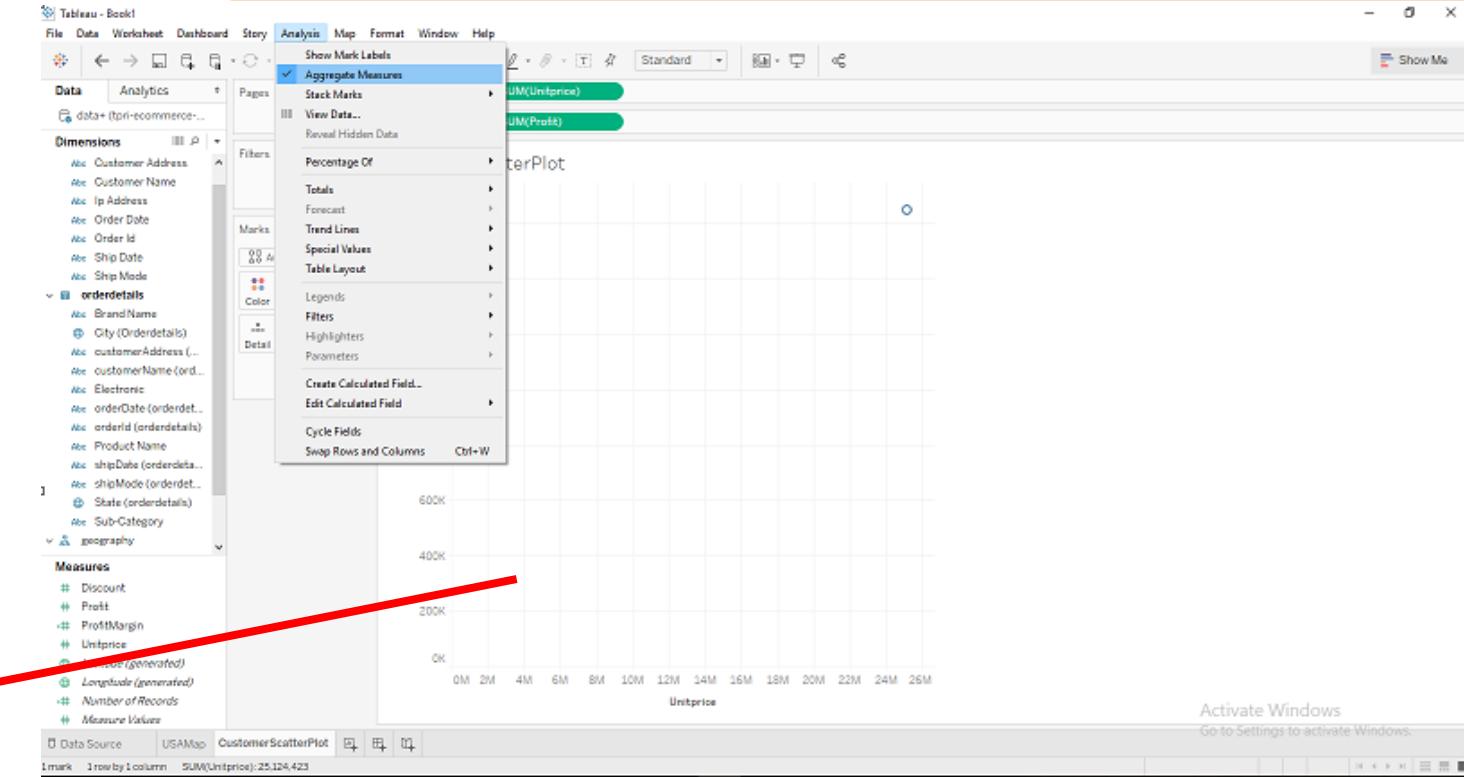
Data Source: demo3/tpri-ecommerce-orders.xlsx

Step 10

- let us untoggle from the aggregate measure perspective to display all the data points.



COLUMNS:	SUM(UnitPrice)
ROWS:	SUM(Profit)

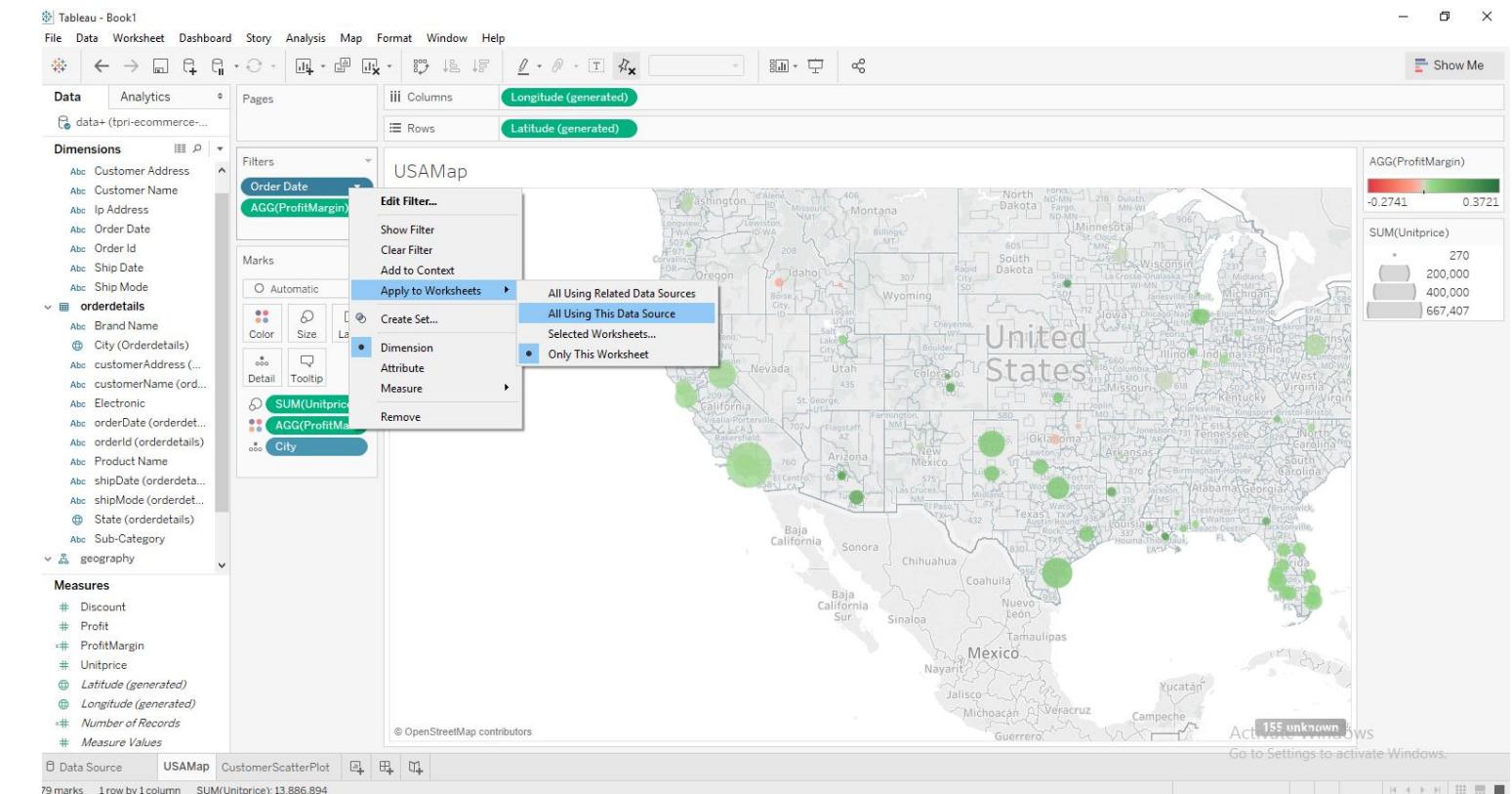


Data Source: demo3/ tpri-ecommerce-orders.xlsx

Step 11

- Now, we would like to apply the same filter across all the worksheets that are using the data source.
- Switch to the USAMap worksheet and select filter and apply “All Using This Data Source”

COLUMNS:	SUM(UnitPrice)
ROWS:	SUM(Profit)



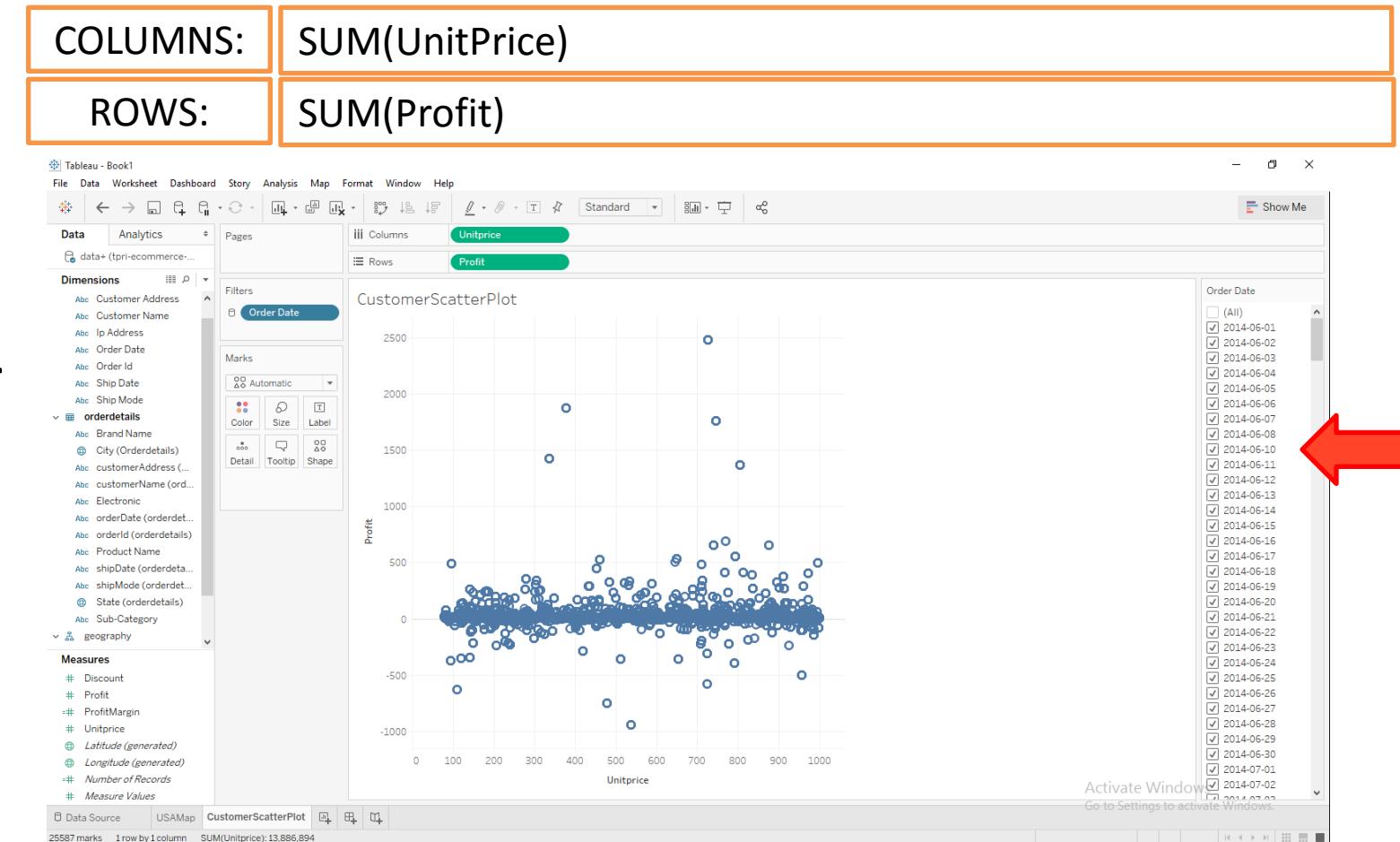
Data Source: demo3/ tpri-ecommerce-orders.xlsx

Scatter plot

- Used to demonstrate trends, concentrations and outliers that will direct users for further investigation/analysis.
- Used to investigate relationship between different variables.
- By adding a trend line the correlation among the data is clear.
- By incorporating filters, users can drill down into different perspectives and details to quickly identify patterns in the data.

Step 11

- You can see that “orderDate” filter being applied to the Customer ScatterPlot.

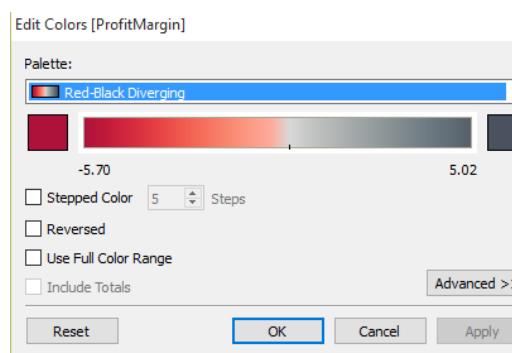
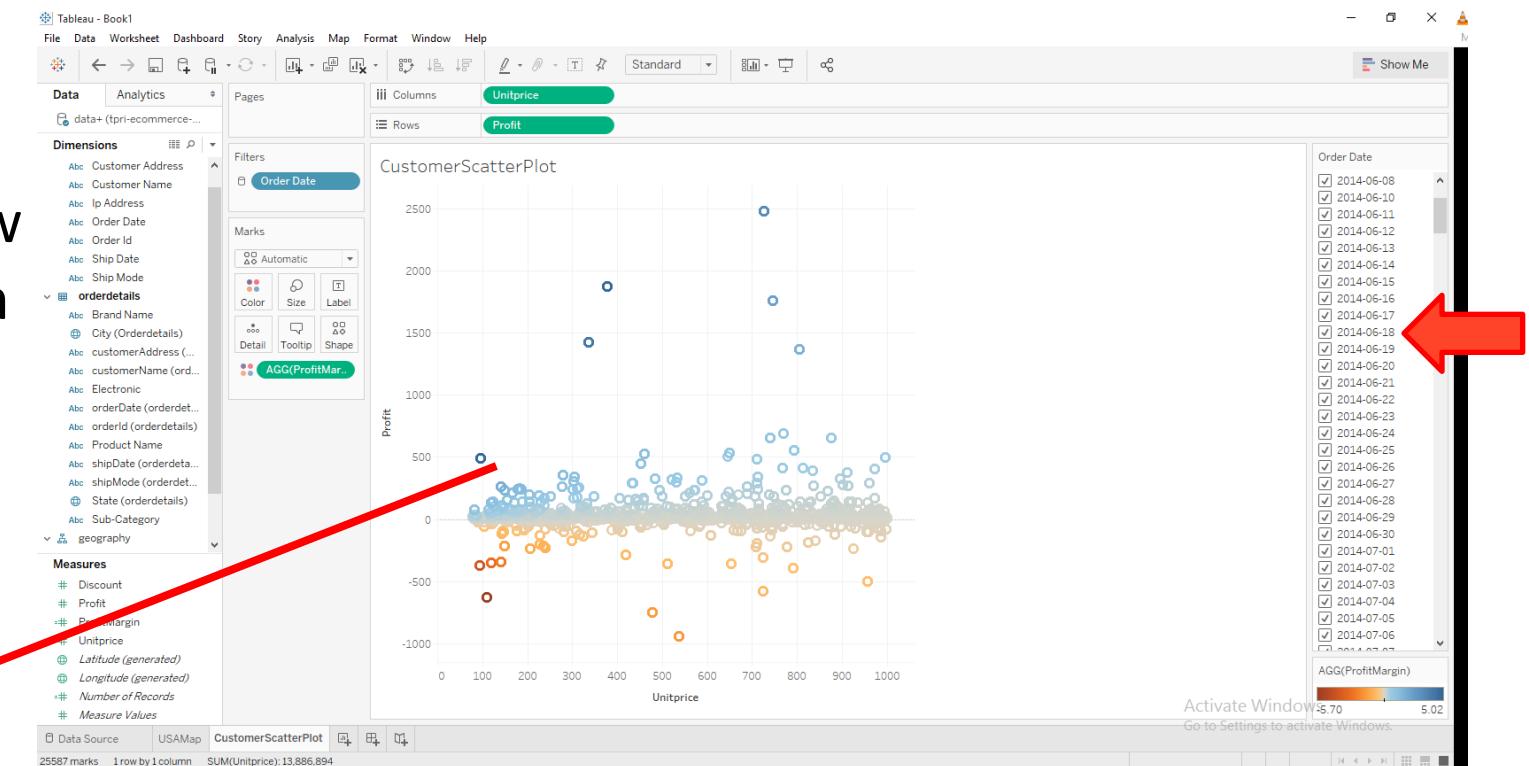


Data Source: demo3/ tpri-e-commerce-orders.xlsx

Step 11

- Now bring apply the “profitmargin” onto the color palette marks to visualize draw a new perspective as shown in the figure.

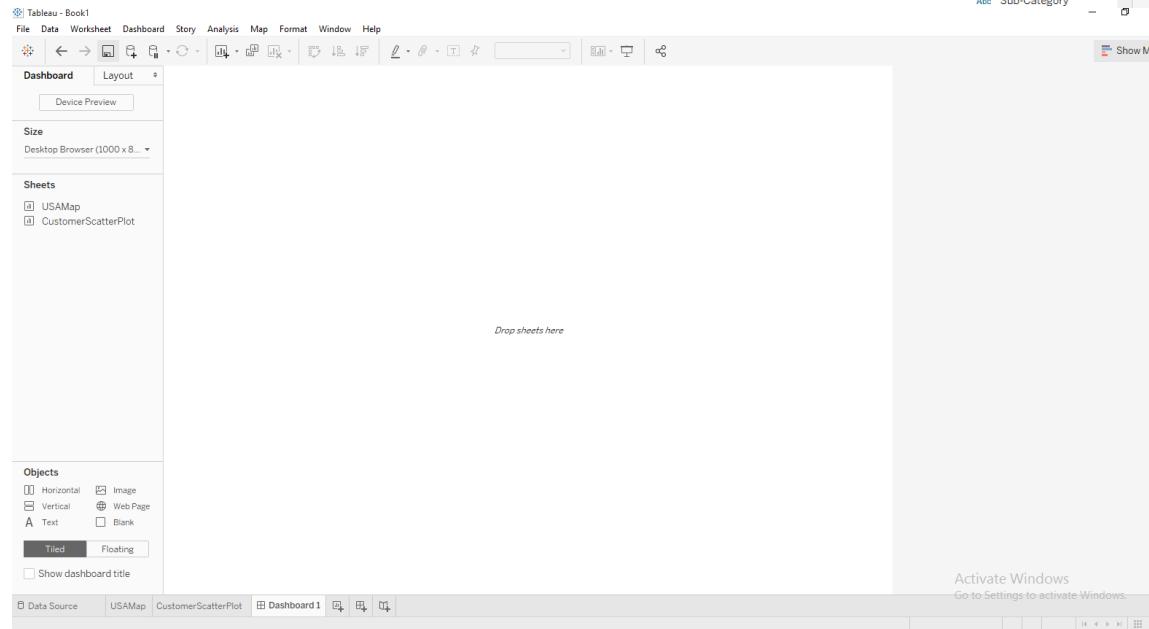
COLUMNS:	SUM(UnitPrice)
ROWS:	SUM(Profit)



Data Source: demo3/ tpri-e-commerce-orders.xlsx

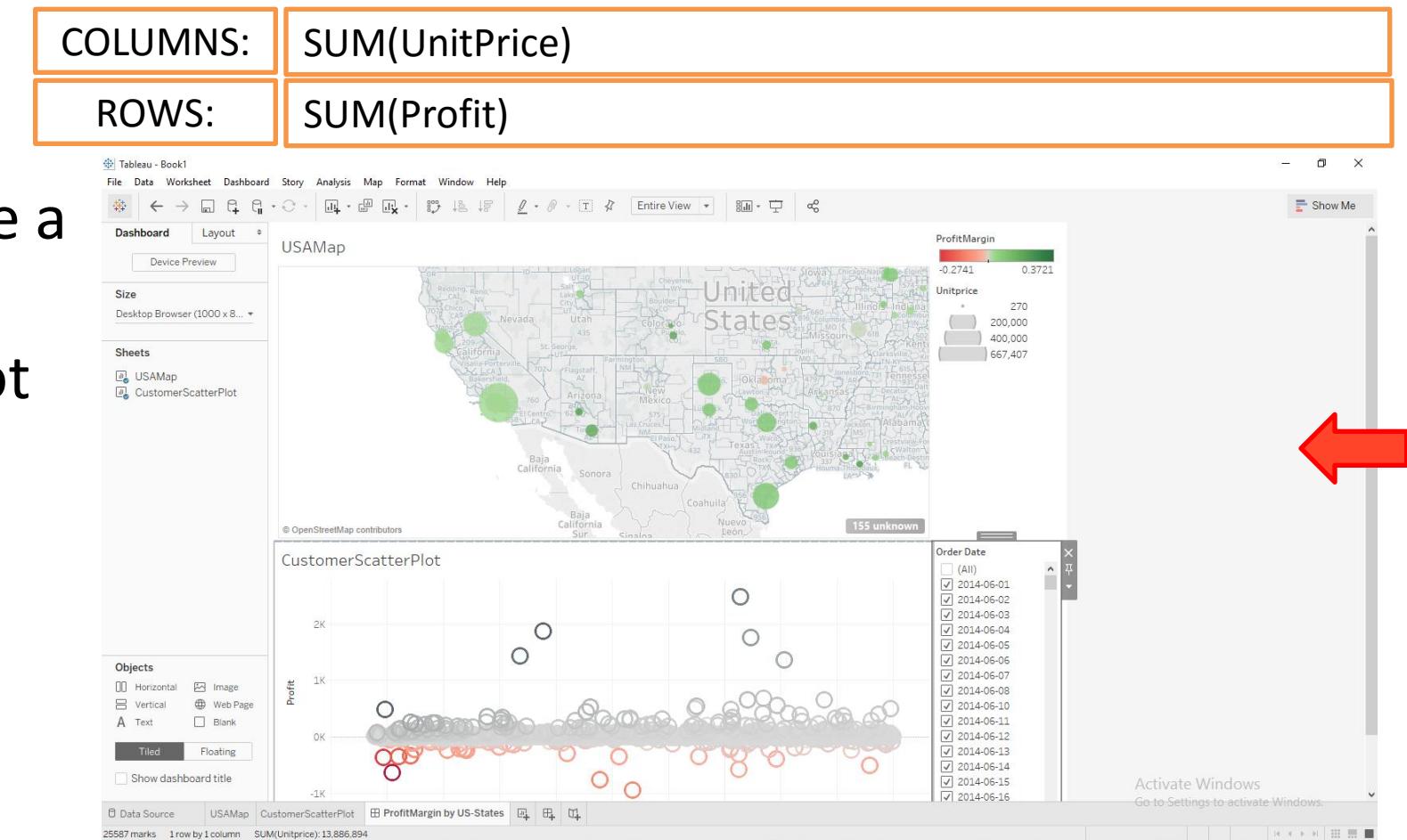
Step 12

- Creating a dashboard



Step 13

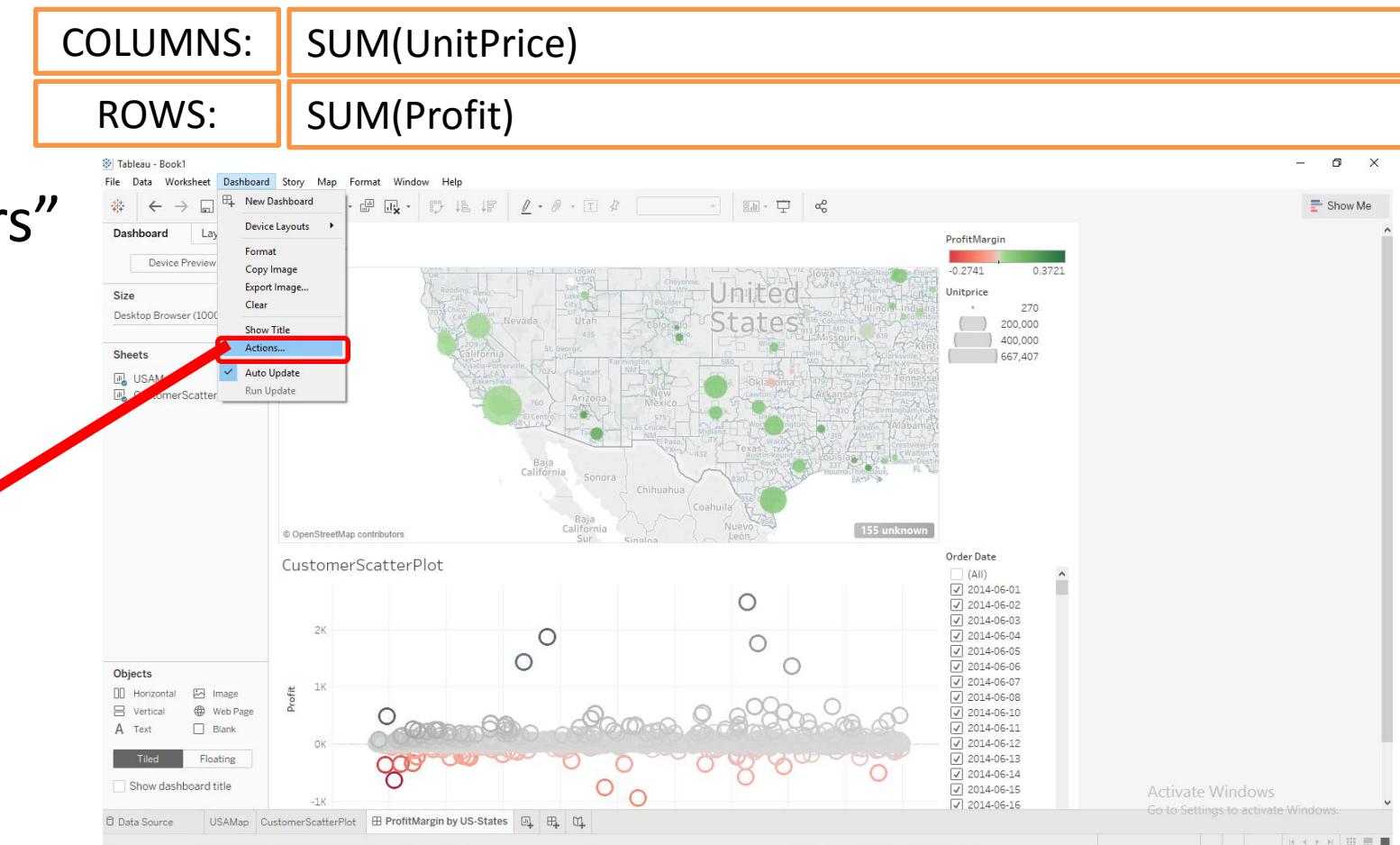
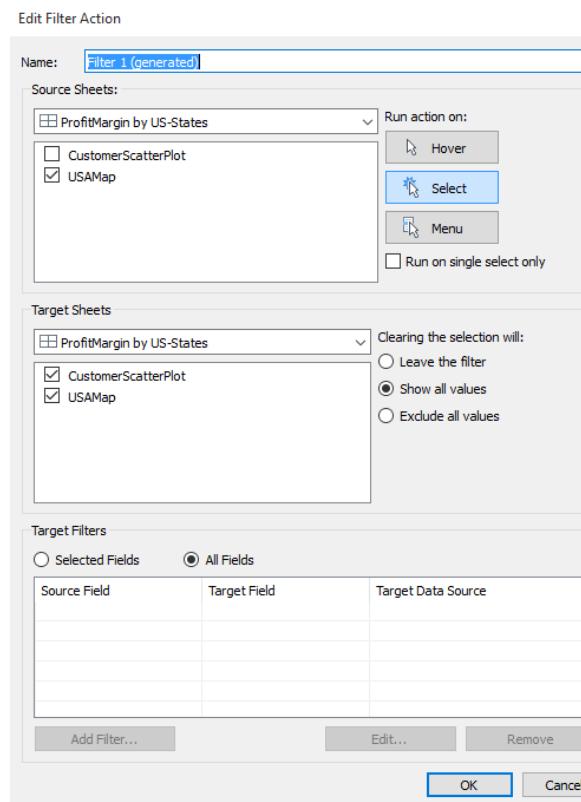
- Drag and drop to create a dashboard of USAMap and CustomerScatterPlot as shown in the figure.



Data Source: demo3/tpri-eCommerce-orders.xlsx

Step 14

- Let us add “action filters” to the dashboard.

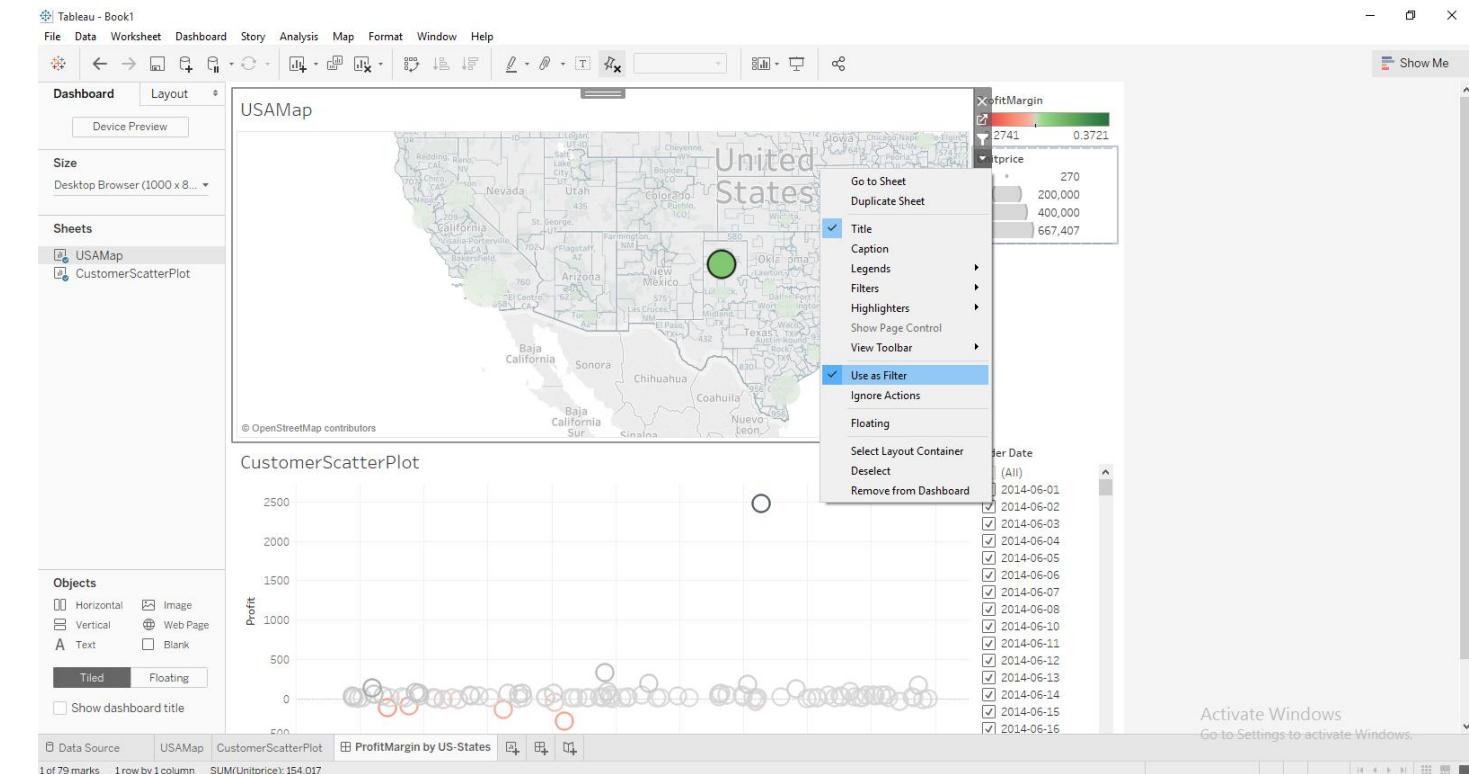


Data Source: demo3/ tpri-eCommerce-orders.xlsx

Step 15

- Let us add “action filters” to the dashboard.
- Alternatively, you can select the “USAmap” worksheet and select “use as filter” option, which would enable, filtering, linking and highlight based on user selection in the map.

COLUMNS:	SUM(UnitPrice)
ROWS:	SUM(Profit)



Data Source: demo3/ tpri-eCommerce-orders.xlsx

Step 16

- Upon “highlighting” action , users can highlight a specific selection.

The screenshot shows two overlapping dialog boxes from Tableau. The top dialog is titled 'Actions' and lists a single entry: 'Filter 1 (generated)' under 'Name', 'Select' under 'Run On', and 'ProfitMargin by US-States' under 'Source'. Below this list are buttons for 'Add Action >', 'Filter...', 'Highlight...', 'Edit...', and 'Remove'. A checkbox 'Show actions' is unchecked. The bottom dialog is titled 'Add Highlight Action' and has the following fields:

- Name:** 'Highlight1'
- Source Sheets:** 'ProfitMargin by US-States'
 - Run action on:** 'Hover' (checkbox checked), 'Select' (checkbox checked, highlighted in blue), 'Menu' (checkbox uncheckable)
 - Target Sheets:** 'ProfitMargin by US-States'
 - Target Highlighting:** 'Selected Fields' (radio button unselected), 'Dates and Times' (radio button unselected), 'All Fields' (radio button selected)
 - Target Fields:** 'City' (checkbox uncheckable)
- OK** and **Cancel** buttons at the bottom right.

Data Source: demo3/ tpri-eCommerce-orders.xlsx

Problem Description:	To create a dashboard depicting global economic trend analysis, with their gdp growth quarter on quarter and demonstrate the relationship of inflation, unemployment rate using action filters.
Data set used:	Demo2/GlobalEconomicDataSet.xlsx

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TABLEAU : DASHBOARD CREATION:SCENARIO 2

Step 1

- load the global economic dataset.xlsx into tableau.

COLUMNS:

ROWS:

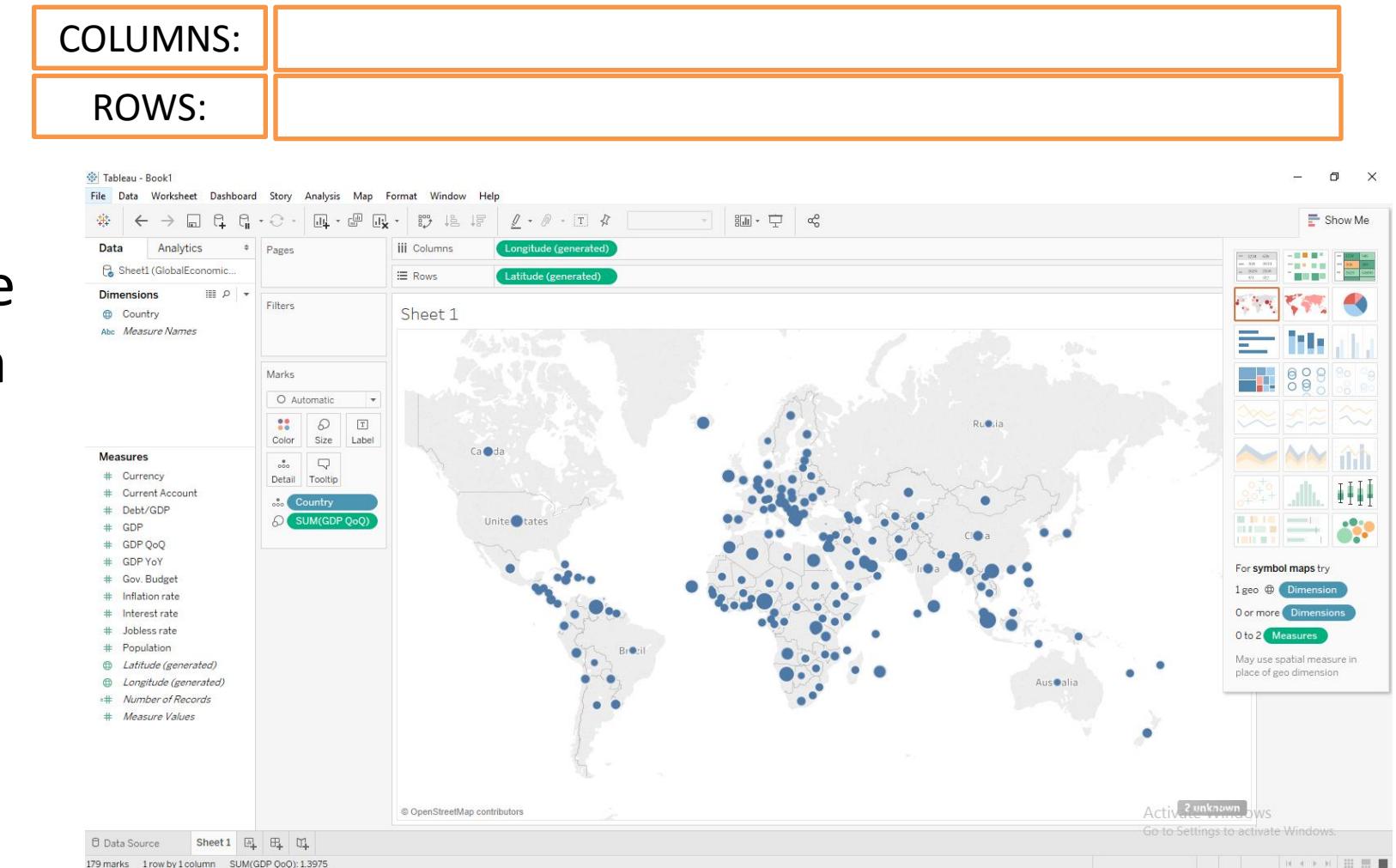
The screenshot shows the Tableau interface with the following details:

- Connections:** GlobalEconomicDataSet (Excel)
- Sheets:** Sheet1
- Data Preview:** A grid of 181 rows by 15 columns. The columns are labeled:
 - Country
 - GDP
 - GDP YoY
 - GDP QoQ
 - Interest rate
 - Inflation rate
 - Jobless rate
 - Gov. Budget
 - Debt/GDP
 - Current Account
 - Currency
 - Population
- Bottom Navigation:** Go to Worksheet, Data Source, Sheet 1 (highlighted), and other sheet icons.
- Status Bar:** Activate Windows, Go to Settings to activate Windows.

Data Source: demo2/ GlobalEconomicDataSet.xlsx

Step 2

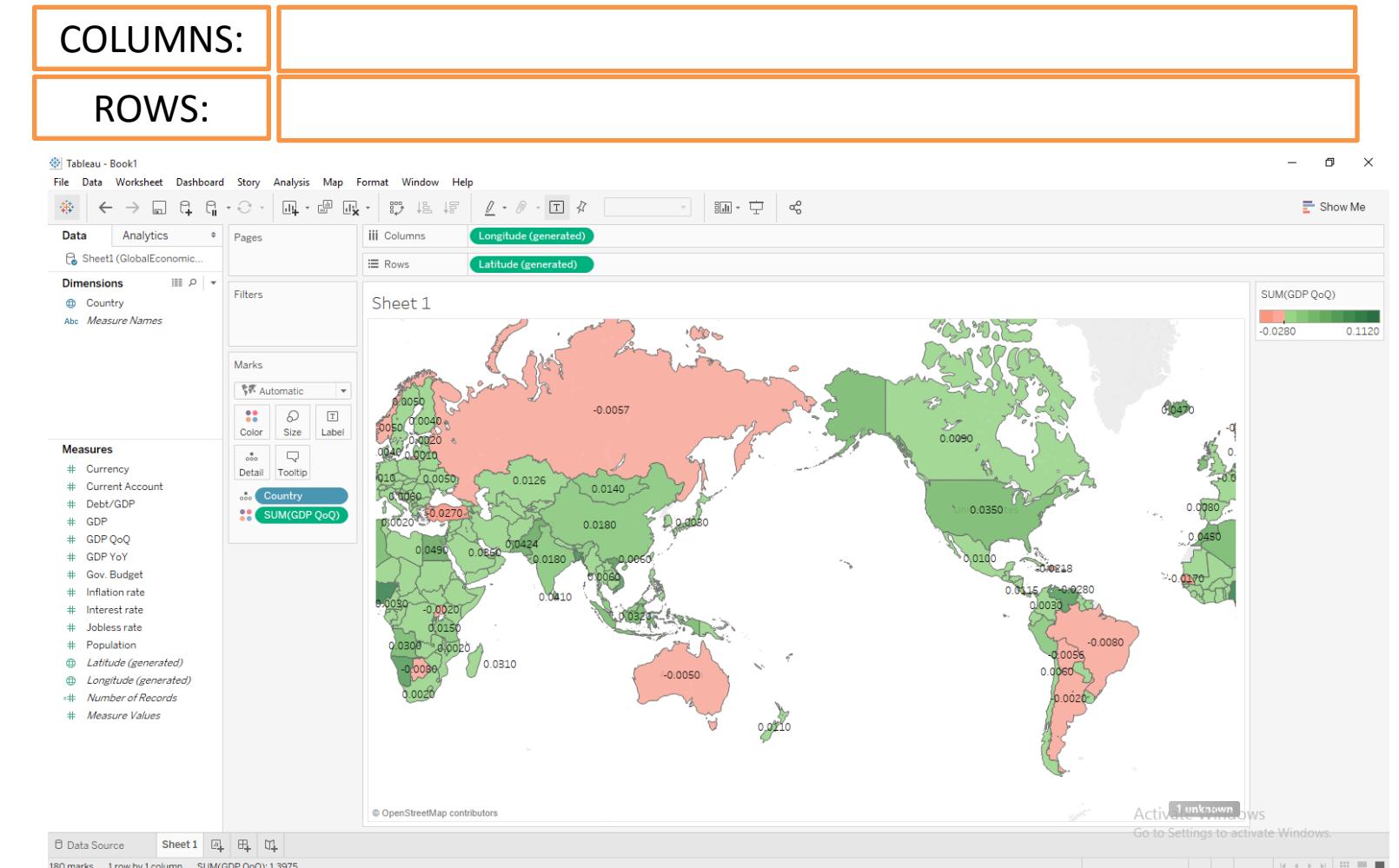
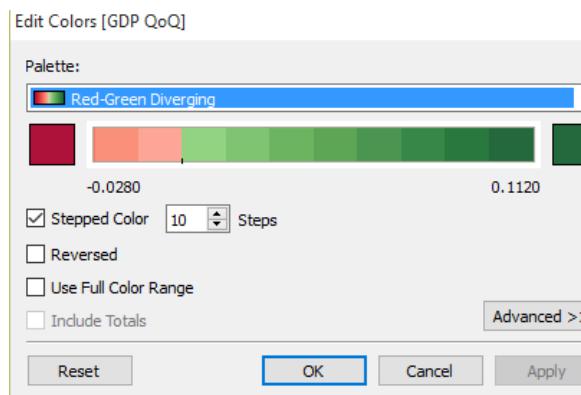
- Upon selecting country and gdpQoQ we get openstreetmap with orbs depicting the growth of gdp of a country.



Data Source: demo2/ GlobalEconomicDataSet.xlsx

Step 3

- Upon choosing an alternative perspective, we can depict the same spatial visualization using a heatmap.



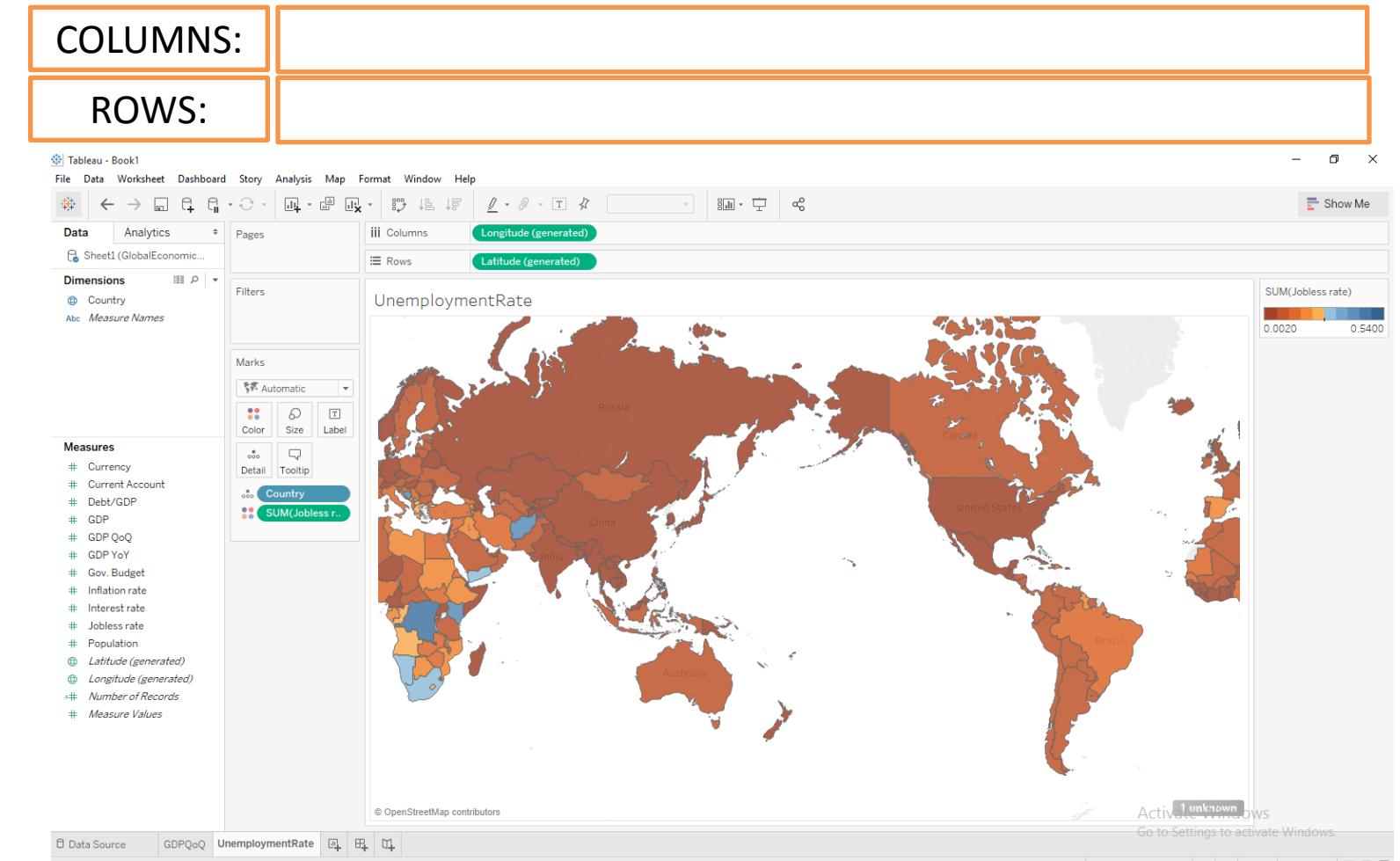
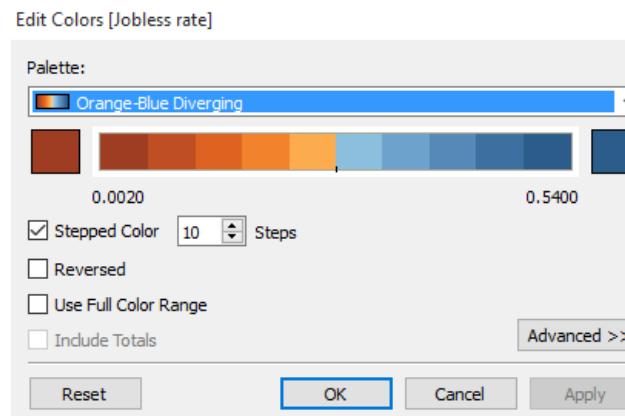
Data Source: demo2/ GlobalEconomicDataSet.xlsx

Step 4

- Similarly we create unemployment rate map

Please read terms of use for authorized access

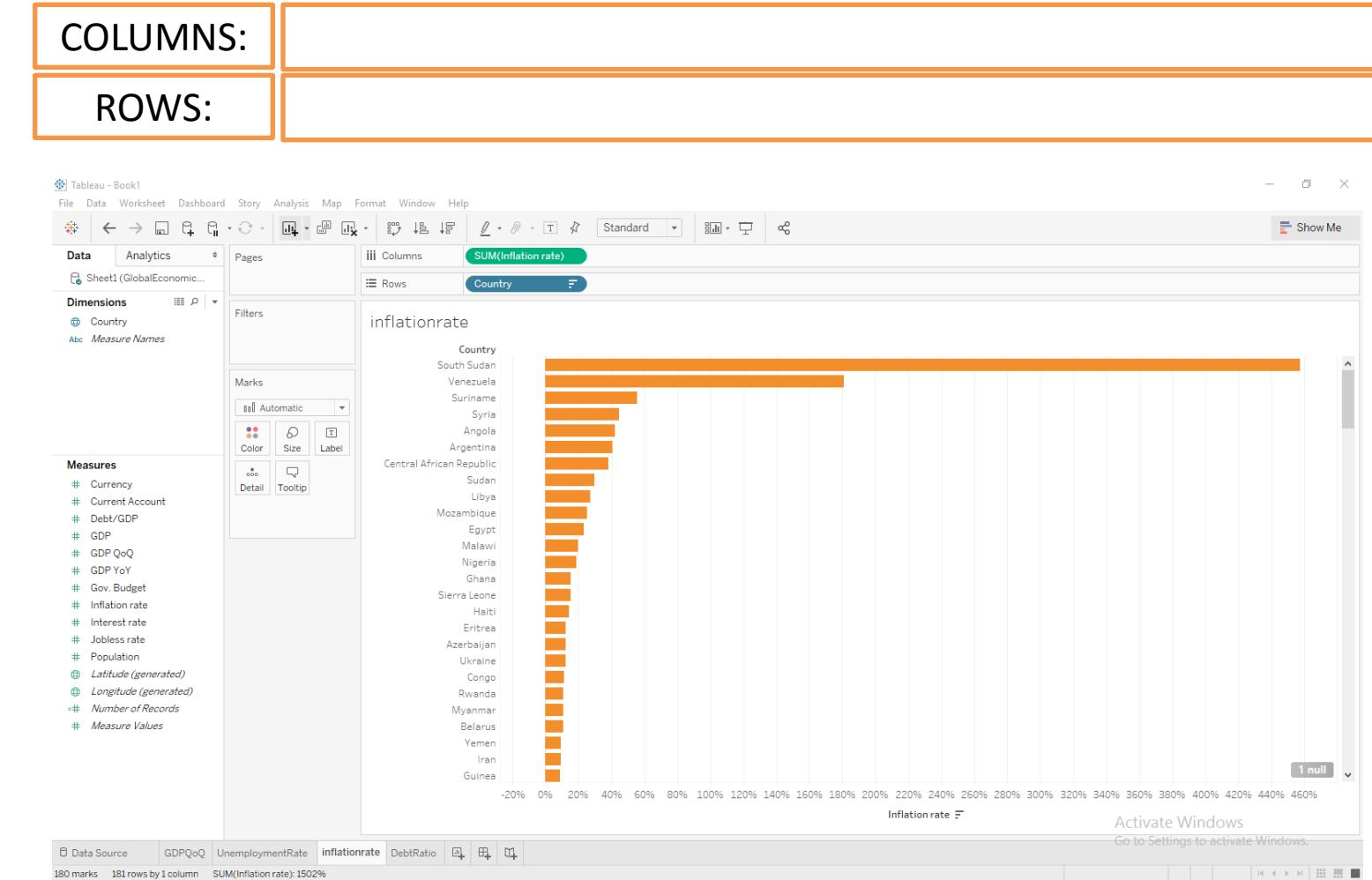
Original Series



Data Source: demo2/ GlobalEconomicDataSet.xlsx

Step 5

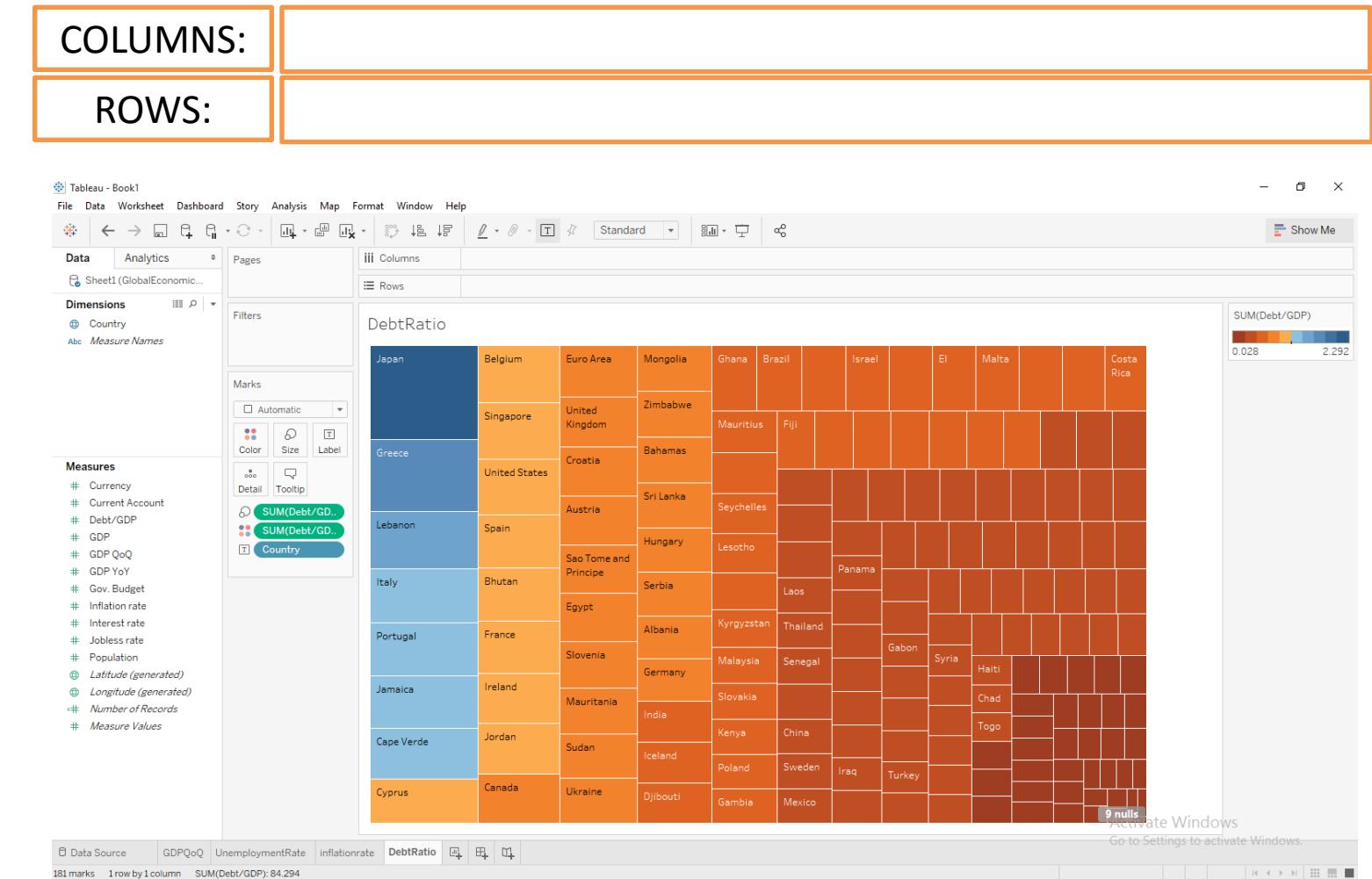
- Create an inflationrate plot for country and inflationrate as shown in the figure.



Data Source: demo2/ GlobalEconomicDataSet.xlsx

Step 6

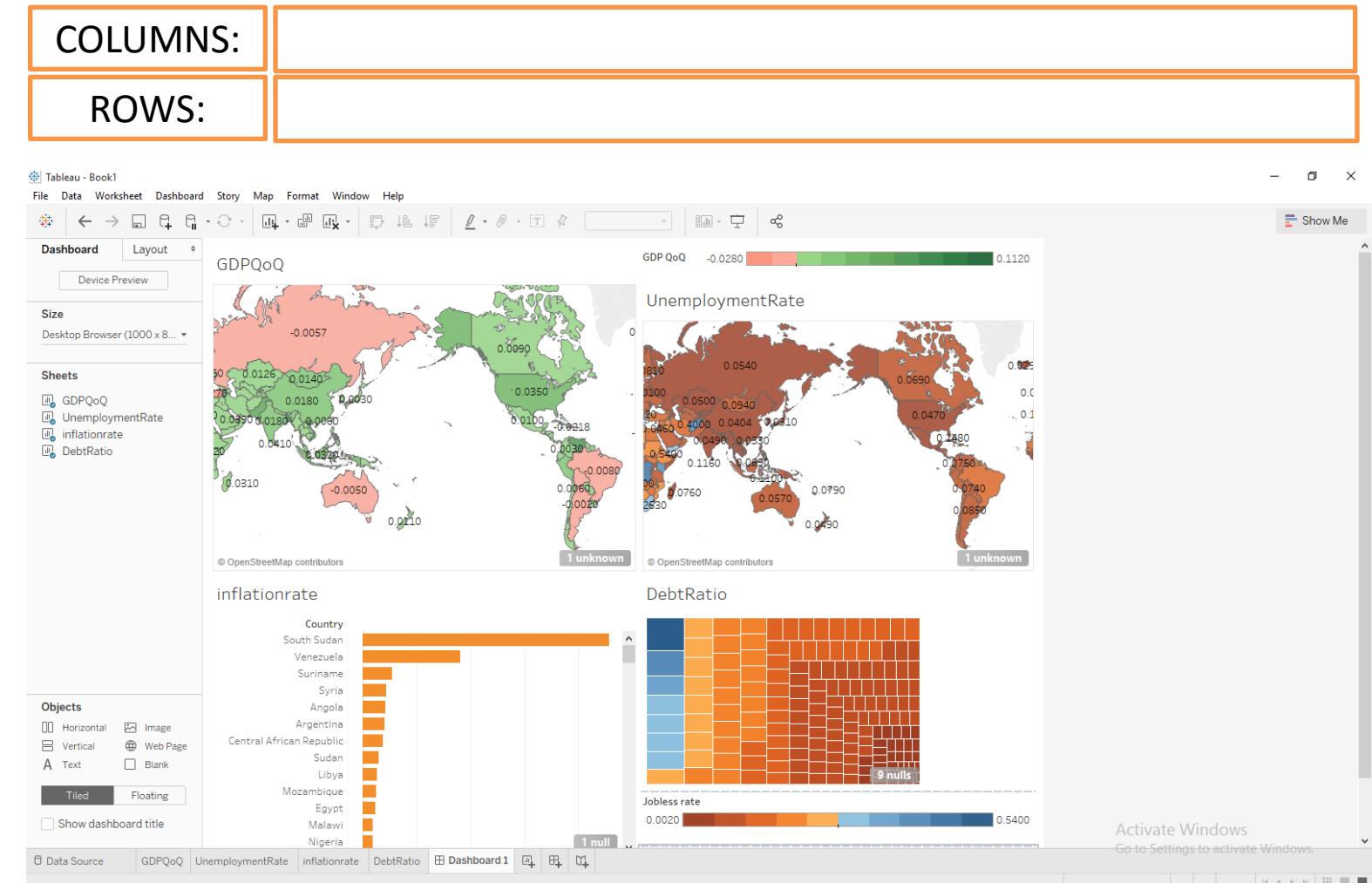
- Create a debtration treemap for each country.



Data Source: demo2/ GlobalEconomicDataSet.xlsx

Step 7

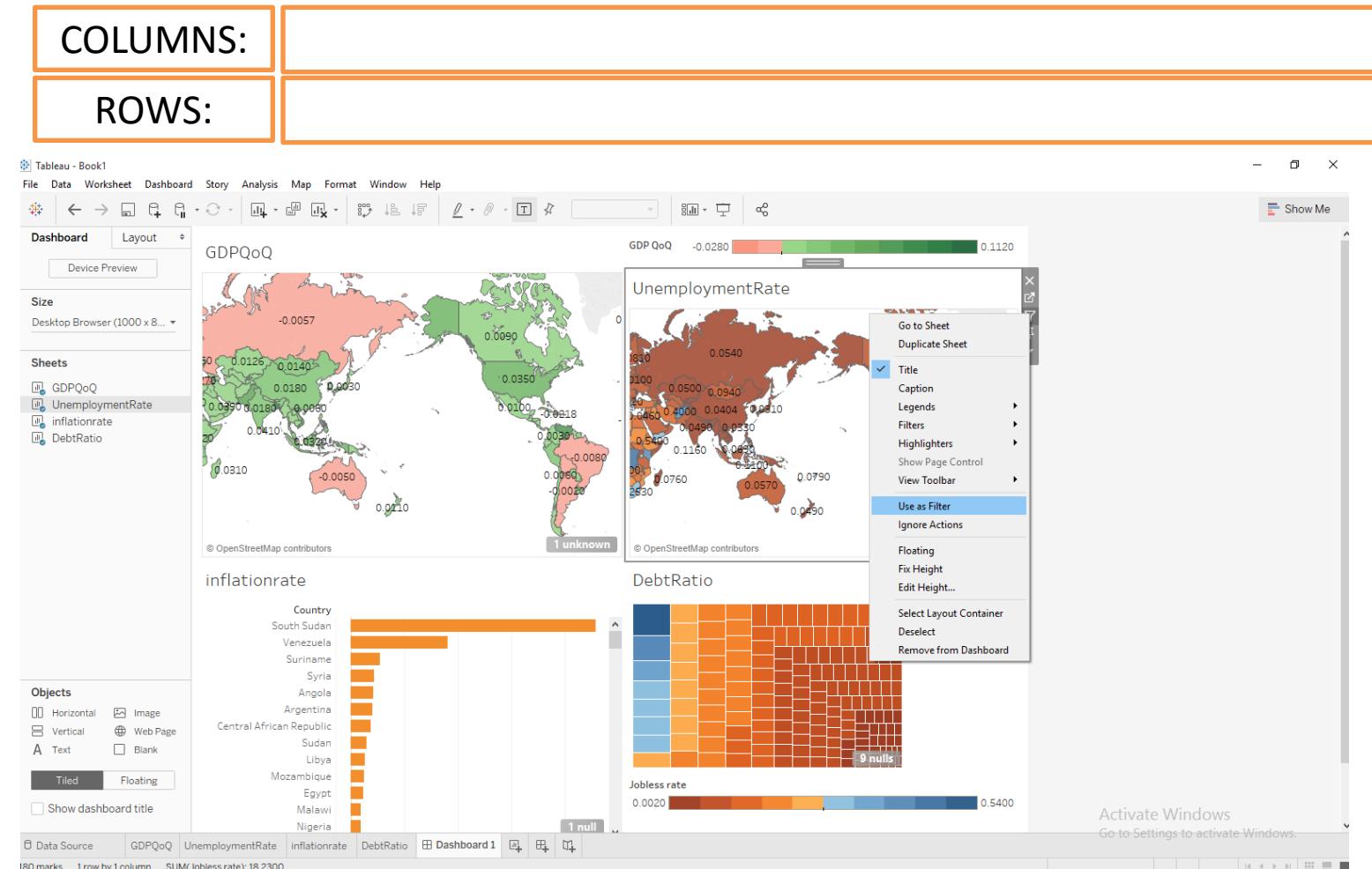
- Now create a dashboard and add all the worksheets to the dashboard as shown in the figure.



Data Source: demo2/ GlobalEconomicDataSet.xlsx

Step 8

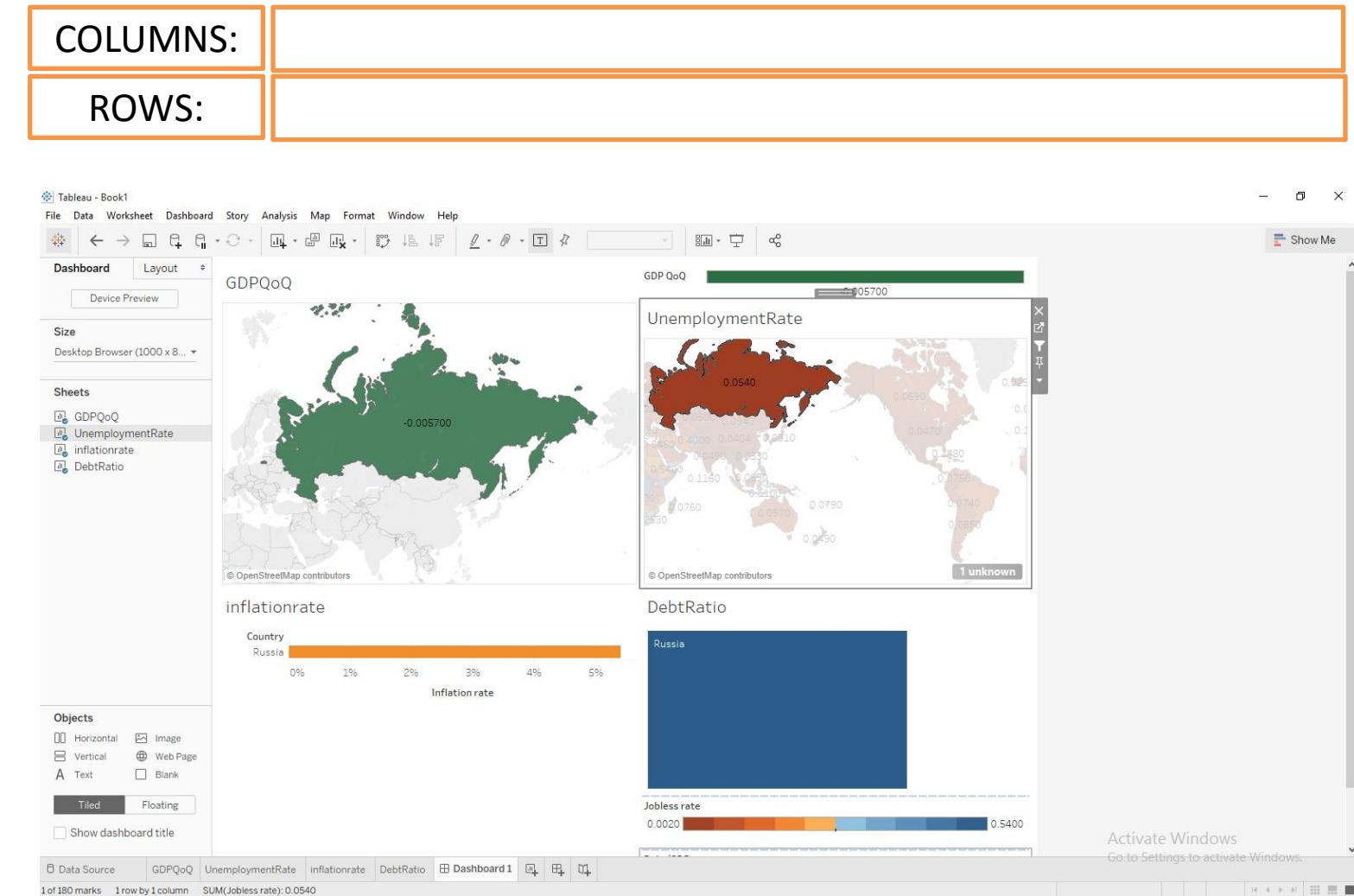
- Now let us add action filter to one of the maps, based on the selection of a specific geographic region/country, subsequent worksheets would reflect corresponding perspectives.



Data Source: demo2/ GlobalEconomicDataSet.xlsx

Step 9

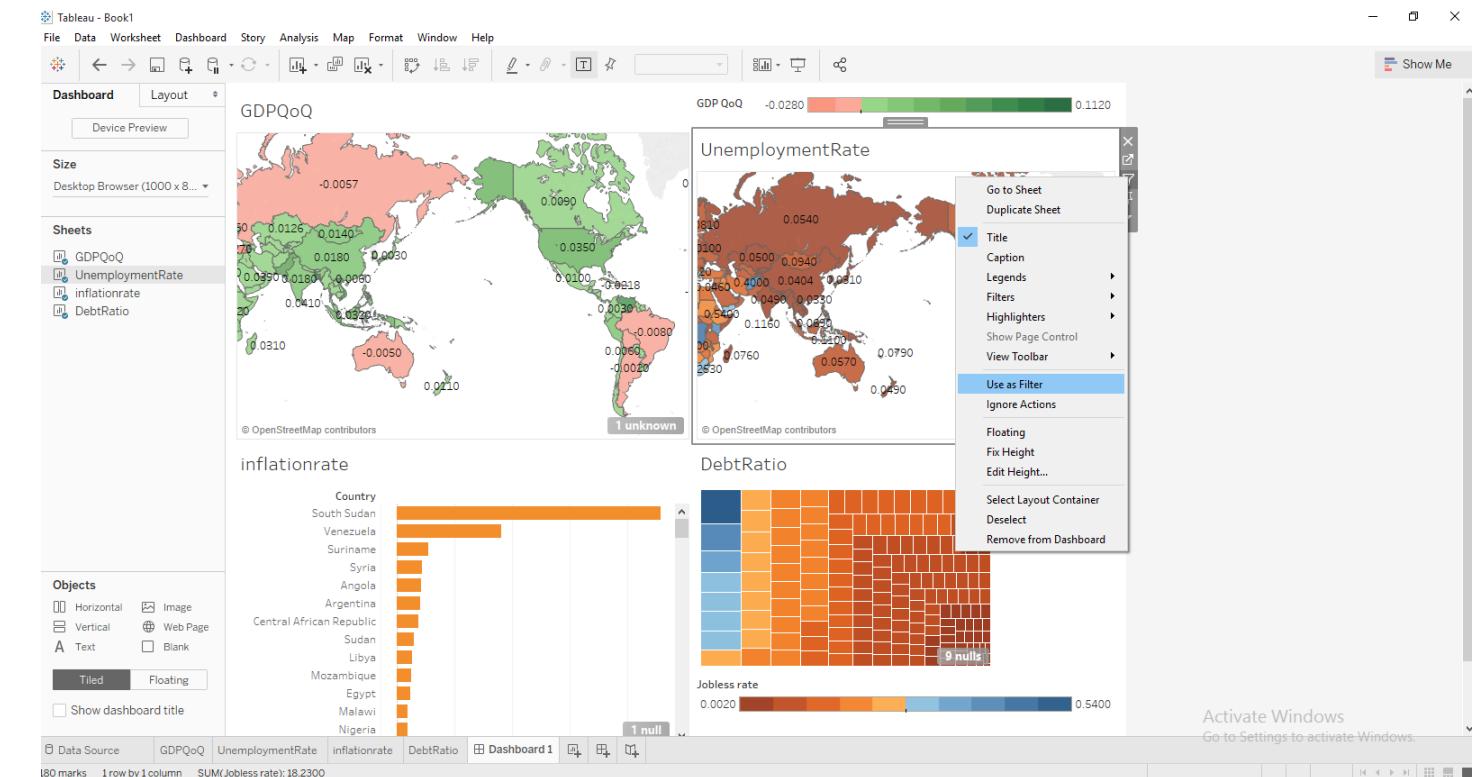
- We have successfully created a dashboard with action filters.



Data Source: demo2/ GlobalEconomicDataSet.xlsx

Step 10

- dashboard with all views.



Problem Description:

Analysis of Broadband internet usage. To answer the following questions:

1. **What is the average monthly, weekly and daily internet usage?**
2. **How does uploaded volume compare against downloaded volume on monthly, weekly and daily basis?**
3. **What is the usage pattern with respect to the day of the week?**
4. **What is the usage pattern with respect to the hour of the day?**

Data set used:

www.mockaroo.com=> demo3/ broadband-usage-data.xlsx

SYED AWASE KHIRNI

TABLEAU : DASHBOARD CREATION:SCENARIO 2

Problem Description:

Data set used:

TABLEAU

PLAY BOOK : CREATING A STORY BOARD USING TABLEAU

Problem Description:

Data set used:	Demo3/marketbasketanalysisdata.xlsx
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SYED AWASE KHIRNI

TABLEAU : MARKET BASKET ANALYSIS

Steps

Please read terms of use for authorized access

Original Series

- 1 • Use demo3/marketbasketanalysisdata.xlsx, load data to workbook
- 2 • Create a parameter – Base Product Type Parameter
- 3 • Create a calculation to count Products in an order –Compute Product Type Count
- 4 • Create a calculation to find other products in the same order – Computer Other Product Types
- 5 • Create a set for OrderID, to find the orders having more than one product
- 6

Step 1

- Load demo3/marketbasketanalysisdata.xlsx, To tableau workbook

COLUMNS:	
ROWS:	

The screenshot shows the Tableau Data Source interface. On the left, there's a sidebar with 'Connections' (marketbasketanalysisdata) and 'Sheets' (Order Details). The main area displays the 'Order Details' sheet with the following data:

Sales Order ID	Order Details Sales Order Detail ...	Product ID	Order Details Customer ID	Order Date	Due Date	Ship Date	Order Details Status	Order Details Name	Order Details Line Total	Order Details Order Qty
43659	11	712	676	7/1/2013	7/13/2013	7/8/2013	5	Caps	10.37	2
43659	1	776	676	7/1/2013	7/13/2013	7/8/2013	5	Mountain Bikes	2,024.99	1
43659	12	711	676	7/1/2013	7/13/2013	7/8/2013	5	Helmets	80.75	4
43659	10	709	676	7/1/2013	7/13/2013	7/8/2013	5	Socks	34.20	6
43659	9	716	676	7/1/2013	7/13/2013	7/8/2013	5	Jerseys	28.84	1
43659	8	714	676	7/1/2013	7/13/2013	7/8/2013	5	Jerseys	86.52	3
43659	2	777	676	7/1/2013	7/13/2013	7/8/2013	5	Mountain Bikes	6,074.98	3
43659	6	773	676	7/1/2013	7/13/2013	7/8/2013	5	Mountain Bikes	4,079.99	2
43659	5	772	676	7/1/2013	7/13/2013	7/8/2013	5	Mountain Bikes	2,039.99	1
43659	4	771	676	7/1/2013	7/13/2013	7/8/2013	5	Mountain Bikes	2,039.99	1
43659	3	778	676	7/1/2013	7/13/2013	7/8/2013	5	Mountain Bikes	2,024.99	1
43659	7	774	676	7/1/2013	7/13/2013	7/8/2013	5	Mountain Bikes	2,024.99	1

Data Source: demo3/marketbasketanalysisdata.xlsx

Step 2

- Rename “name” to ProductType in Dimensions and create Parameter:BaseProductTypeParameter

The screenshot shows the Tableau interface with the 'Data' tab selected. A 'Create Parameter' dialog box is open over a sheet titled 'Sheet 1'. The dialog box has the following details:

- Name: BaseProductTypeParameter
- Data type: String
- Current value: (empty)
- Display format: (empty)
- Allowable values: List (radio button selected)
- List of values table:

Value	Display As
(Click to add new value)	

A dropdown menu under 'Add from Field' is open, showing 'ProductType' as an option. The Tableau interface also shows a sidebar with dimensions like Customer ID, Due Date, Order Date, Product ID, and ProductType, and measures like Line Total, Order Qty, Status, Number of Records, and Measure Values.

Data Source: demo3/marketbasketanalysisdata.xlsx

Step 3

- BaseProductTypeParameter
- eter

COLUMNS:

ROWS:

Tableau - mba

File Data Worksheet Dashboard Story Analysis Map Format Window Help

Data Analytics

Order Details (marketba...)

Dimensions

- Customer ID
- Due Date
- Order Date
- Product ID
- ProductType
- Sales Order Detail ID
- Sales Order ID
- Ship Date

Marks

- Automatic
- Color
- Size
- Text
- Detail
- Tooltip

Measures

- Line Total
- Order Qty
- Status
- Number of Records
- Measure Values

Sheet 1

Create Parameter

Name: BaseProductTypeParameter

Properties

Data type: String

Current value: Bib-Shorts

Display format:

Allowable values: List All Range

Value	Display As
Bib-Shorts	Bib-Shorts
Bike Racks	Bike Racks
Bike Stands	Bike Stands
Bottles and Cages	Bottles and Cages
Bottom Brackets	Bottom Brackets
Brakes	Brakes
Caps	Caps
Chains	Chains
...	...

Add from Parameter

Add from Field

Paste from Clipboard

Clear All

OK Cancel

Show Me

Select or drag data

Use the Shift or Ctrl key to select multiple fields

Activate Windows

Go to Settings to activate Windows.

Data Source Sheet 1

Data Source: demo3/marketbasketanalysisdata.xlsx

Step 4

- Create calculated field :ComputeProductTypeCount

COLUMNS:

ROWS:

The screenshot shows the Tableau Data Editor interface. A modal dialog box is open, displaying the code for the calculated field:

```
IF([ProductType]=[BaseProductTypeParameter])
THEN 1
ELSE 0
END
```

The message "The calculation is valid." is displayed at the bottom of the modal. The background shows the Tableau interface with various dimensions, measures, and parameters listed on the left side.

Data Source: demo3/marketbasketanalysisdata.xlsx

Step 5

- Create calculated field :ComputeOtherProductType

The screenshot shows the Tableau Data Editor interface. In the top right, there are two orange-outlined boxes labeled 'COLUMNS:' and 'ROWS:'. Below them is a window titled 'Sheet 1' containing a calculated field definition:

```
ComputeOtherProductTypes
IF ([ProductType]<>[BaseProductTypeParameter])
THEN [ProductType]
ELSE 'N/A'
END
```

The message 'The calculation is valid.' is displayed at the bottom of the dialog. At the bottom right of the dialog are 'Apply' and 'OK' buttons. The background shows the Tableau interface with various tabs like File, Data, Analytics, and a sidebar with Dimensions, Measures, and Parameters.

Data Source: demo3/marketbasketanalysisdata.xlsx

Step 6

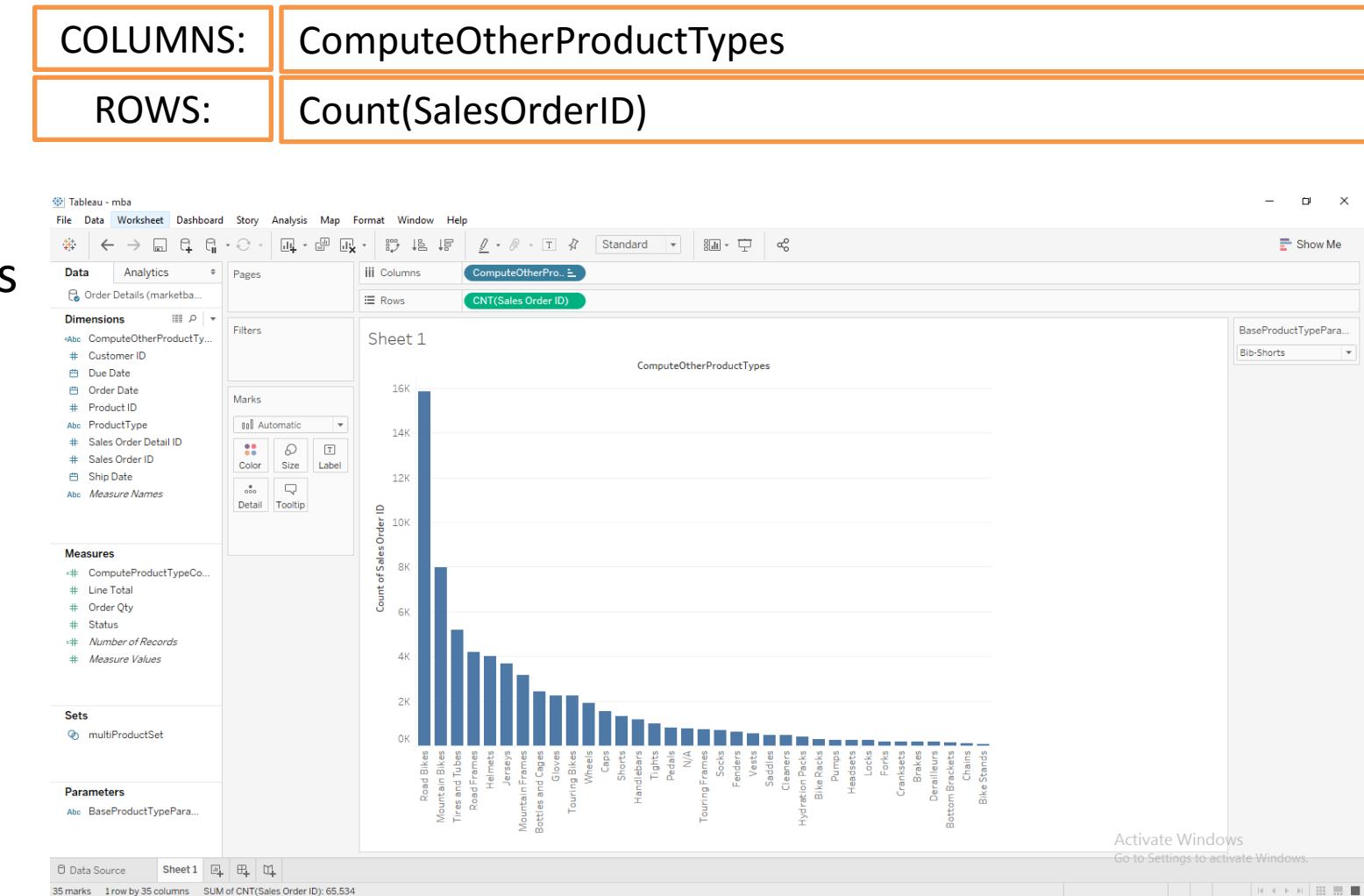
- Create a multiProductSet to identify products greater than or equal to 1.

The screenshot shows the Tableau interface with the 'Create Set' dialog box open. The dialog box is titled 'Create Set' and has three tabs: General, Condition, and Top. The 'General' tab is selected, showing a text input field named 'multiProductSet'. Below this, there are two options: 'None' (radio button) and 'By field:' (radio button, which is selected). Under 'By field:', a dropdown menu is set to 'ComputeProductTypeCount' and a dropdown menu next to it is set to 'Sum'. A comparison operator ' \geq ' is followed by the value '1'. There are also 'Range of Values' fields for 'Min:' and 'Max:' with a 'Load' button between them. The 'Top' tab is visible at the bottom right of the dialog box. The background shows the Tableau workspace with various data sources and filters.

Data Source: demo3/marketbasketanalysisdata.xlsx

Step 7

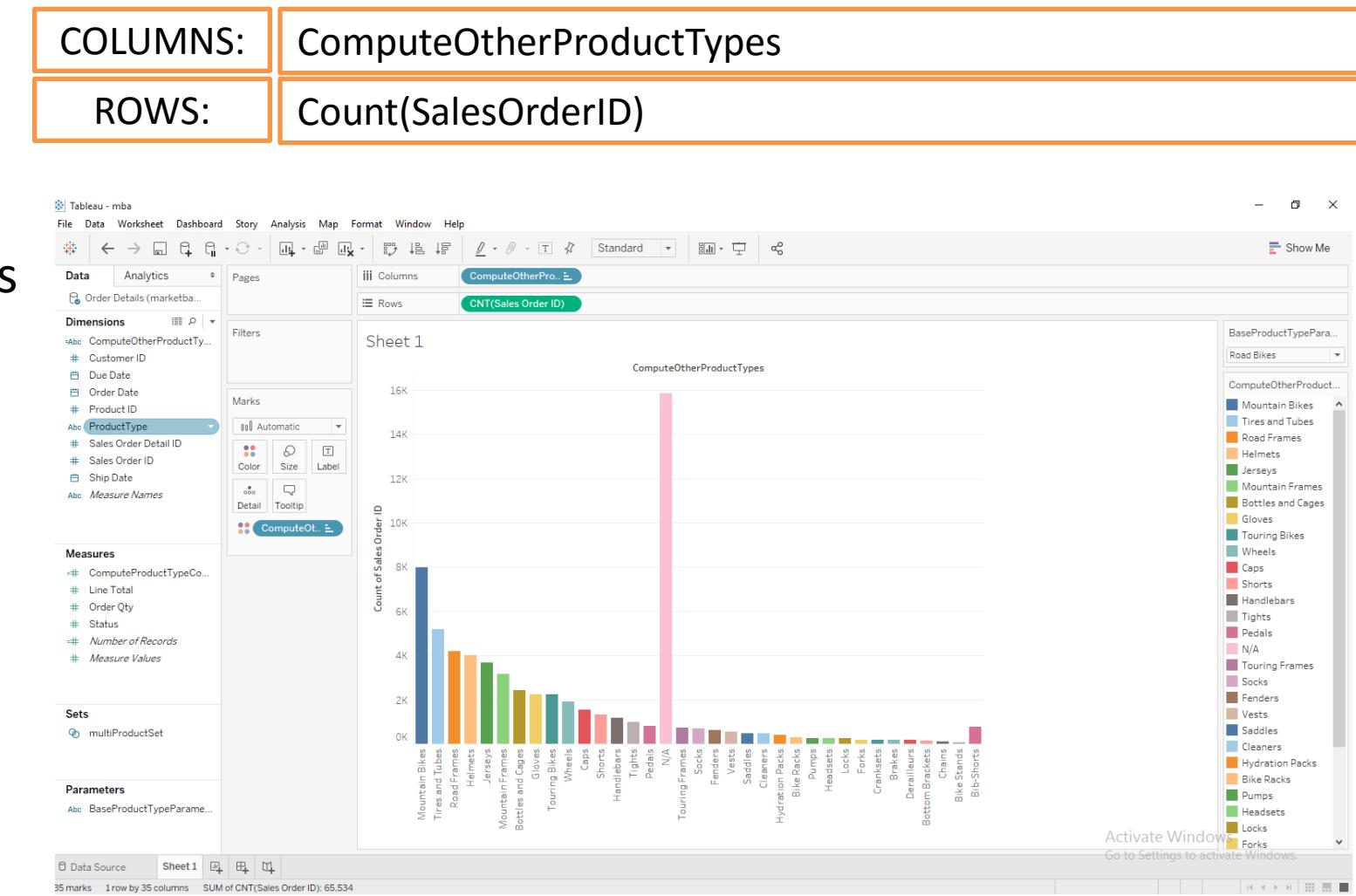
- plot ComputeOtherProductTypes vs Count(SalesOrderID) as shown in the figure.



Data Source: demo3/marketbasketanalysisdata.xlsx

Step 8

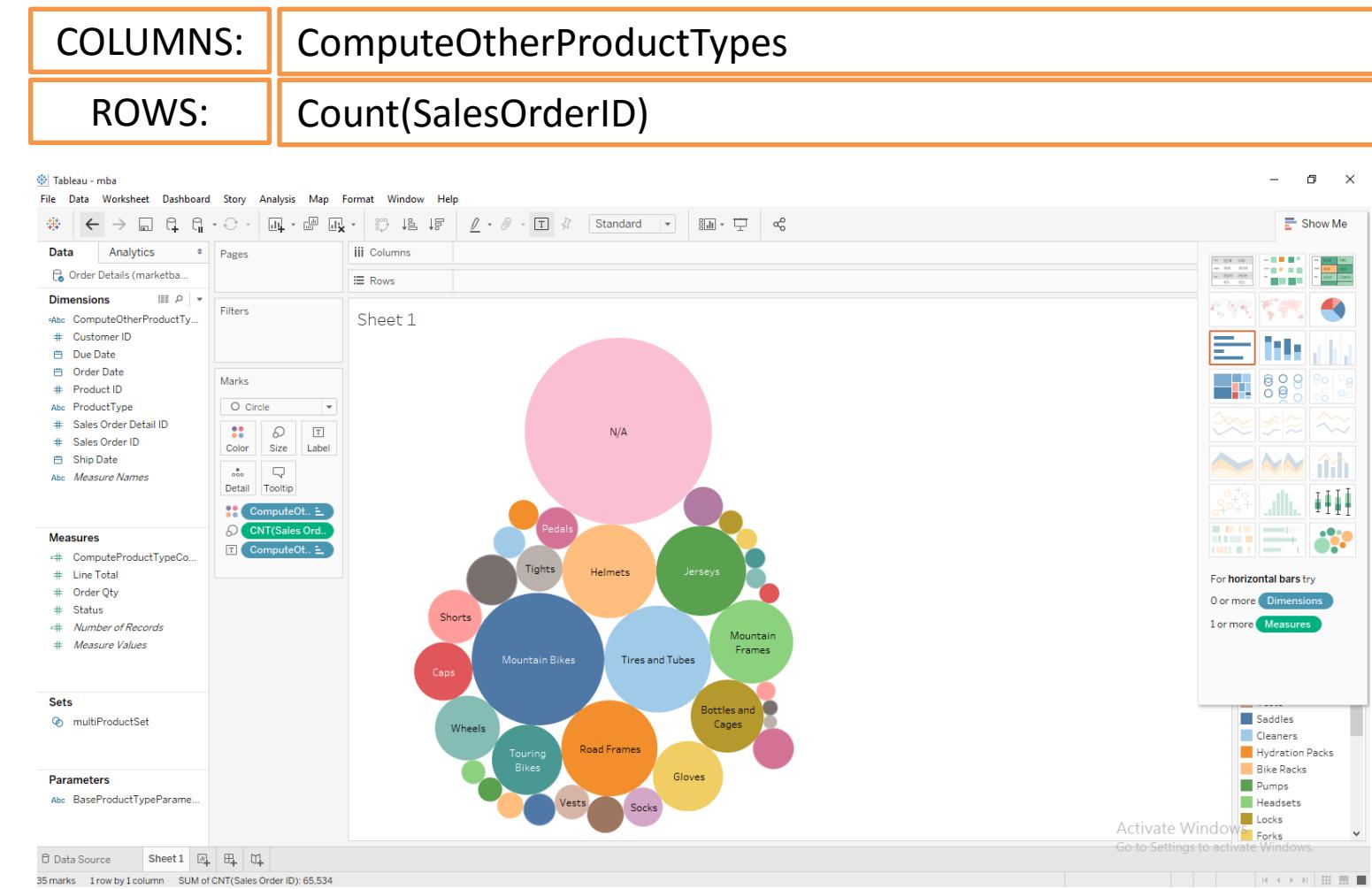
- plot ComputeOtherProductTypes vs Count(SalesOrderID) as shown in the figure.



Data Source: demo3/marketbasketanalysisdata.xlsx

Step 9

- choose a different perspective to visualize



Problem Description:

Data set used:	
----------------	--

SYED AWASE KHIRNI

TABLEAU : CHALLENGES

Problem Description:	It's Annual Compensation Review (ACR), TPRI Ecommerce division would like to identify it's top performing employee in each region, qualifying for a bonus. Find out employees who are eligible to get bonuses and compensation hike.
Data set used:	TPRI Ecommerce division, measures employee performance based on the total sales. Generated using www.mockaroo.com => demo3/tpri-ecommerce-sales-y2013.xlsx

SYED AWASE KHIRNI

TABLEAU : CHALLENGE 1

Mock your sales data using www.mockaroo.com

Data source saved as : [demo3/tpri-ecommerce-sales-y2013.xlsx](#)

The screenshot shows the Mockaroo data generator interface. A red bracket on the left side groups the first four fields: id, order_date, order_address, and sales_country. To the right of this bracket, the text "Mock your data To generate 1000 records in desired format" is displayed in red.

Field Name	Type	Options
id	Row Number	blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
order_date	Date	1/1/2013 to 31/12/2014 in yyyy-mm-dd blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
order_address	Street Address	blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
sales_country	Country	restrict countries... blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
sales_region	State	<input checked="" type="checkbox"/> generate only US locations restrict states... blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
sales_zipcode	Postal Code	blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
sales_person	Regular Expression	(Rizwan Rafiq Raqib Rayyan Simra Naira Amee) blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
brand	Regular Expression	(Allied Telesis Alpine Atari Brother I blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
product	Regular Expression	(Air conditioner Evaporative cooler Air blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
unit	Regular Expression	1 blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
unitprice	Number	min: 50 max: 1000 decimals: 0 blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>
noofUnitssold	Number	min: 1 max: 1000 decimals: 0 blank: 0 % <input type="button" value="fx"/> <input type="button" value="x"/>

Rows: Format: Line Ending: Include: header BOM

Mock your data
To generate 1000 records in desired format

Please read terms of use for authorized access

Original Series

Step 1

- load the tpri-e-commerce-sales-y2013.xlsx

COLUMNS:	
ROWS:	

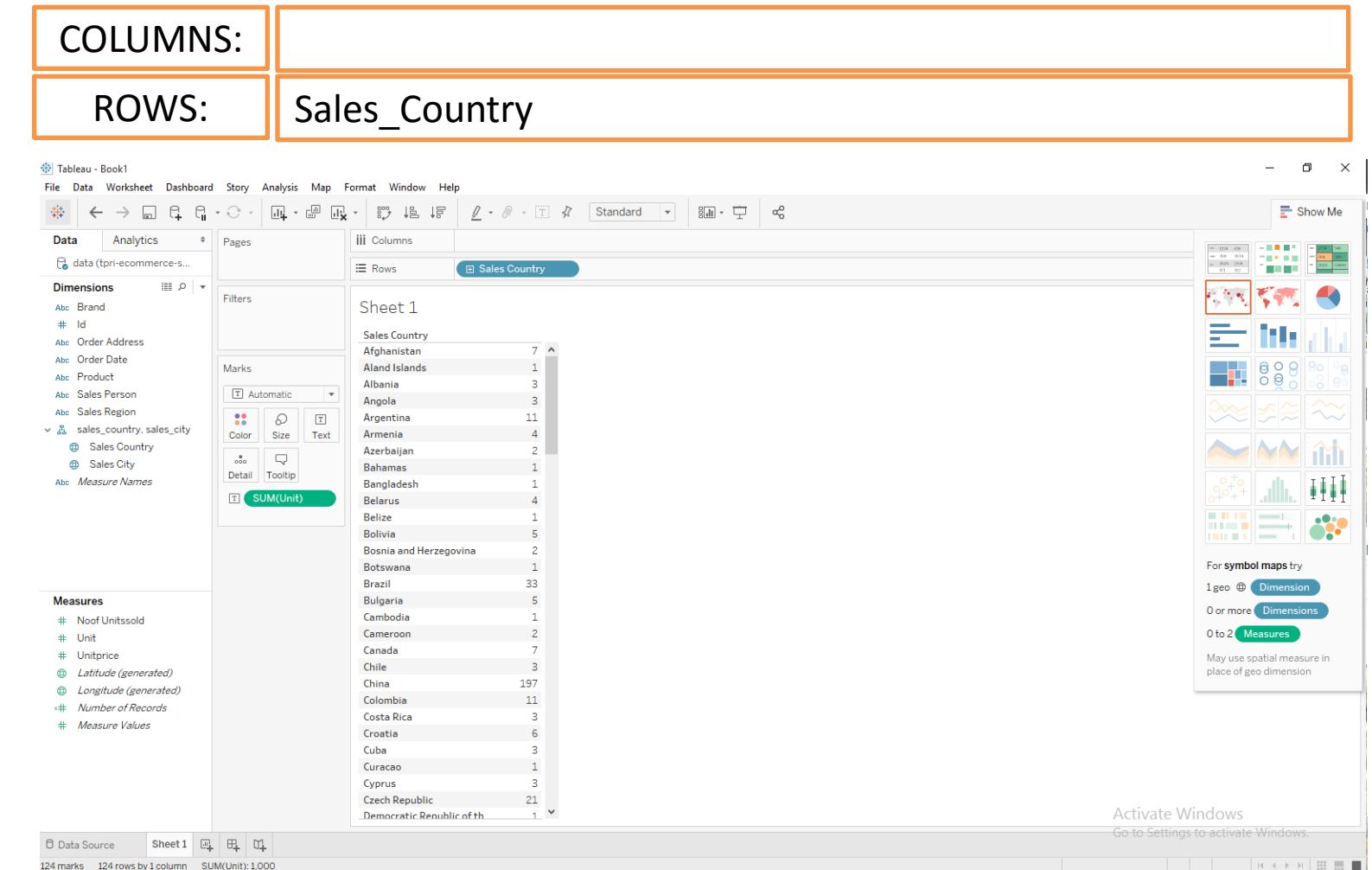
The screenshot shows the Tableau Data Source interface. On the left, there's a sidebar with 'Connections' (tpri-e-commerce-sales-y2013) and 'Sheets' (data, New Union). The main area displays a preview of the data with the following columns:

Order Address	Sales Country	Sales Region	Sales City	Sales Person	Brand	Product	Unit	Unitprice	Noof Unitssold
93 Autumn Leaf Place	Greece	null	Kamárai	Saif	Victor Victor Compan...	Water purifier	1	829	1
717 Bellfuss Park	Sierra Leone	null	Zimmi	Saif	Sony	Water cooker	1	703	281
5 Northridge Place	China	null	Shijiazhuang	Saif	Yaezu Vertex Standard	Window fan	1	213	761
810 Randy Way	Laos	null	Phonsavan	Saif	Yaezu Vertex Standard	Window fan	1	679	852
11975 Packers Hill	China	null	Lubel	Shahrukh	Victor Victor Compan...	Window fan	1	432	719
1 Mayfield Way	Brazil	null	Brejo Santo	Shahrukh	Yaezu Vertex Standard	Solar water heater	1	118	404
0697 Bonner Trail	Indonesia	null	Mangulewa	Saif	Yaezu Vertex Standard	Water cooker	1	242	515
0 Cardinal Junction	France	Île-de-France	Fresnes	Shahrukh	Toshiba	Solar water heater	1	724	803
60 Sycamore Point	Kiribati	null	Bonriki Village	Saif	Yaezu Vertex Standard	Solar water heater	1	145	333
531 Summit Circle	China	null	Hucun	Shahrukh	Yaezu Vertex Standard	Solar water heater	1	256	947

Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Step 2

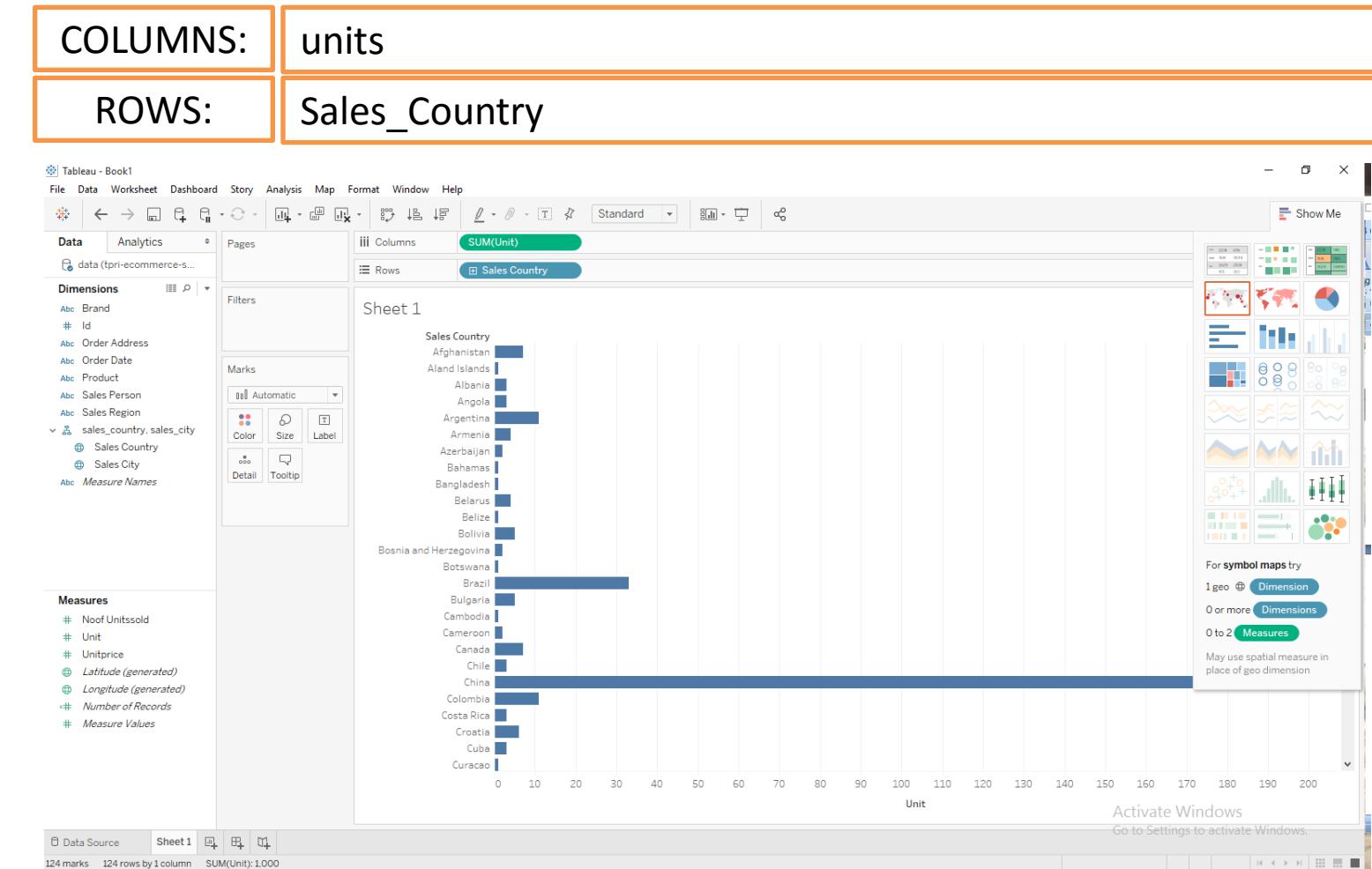
- load the ROWS:Sales_Country and drag the no of units sold by country.



Data Source: [demo3/tpri-eCommerce-sales-y2013.xlsx](#)

Step 3

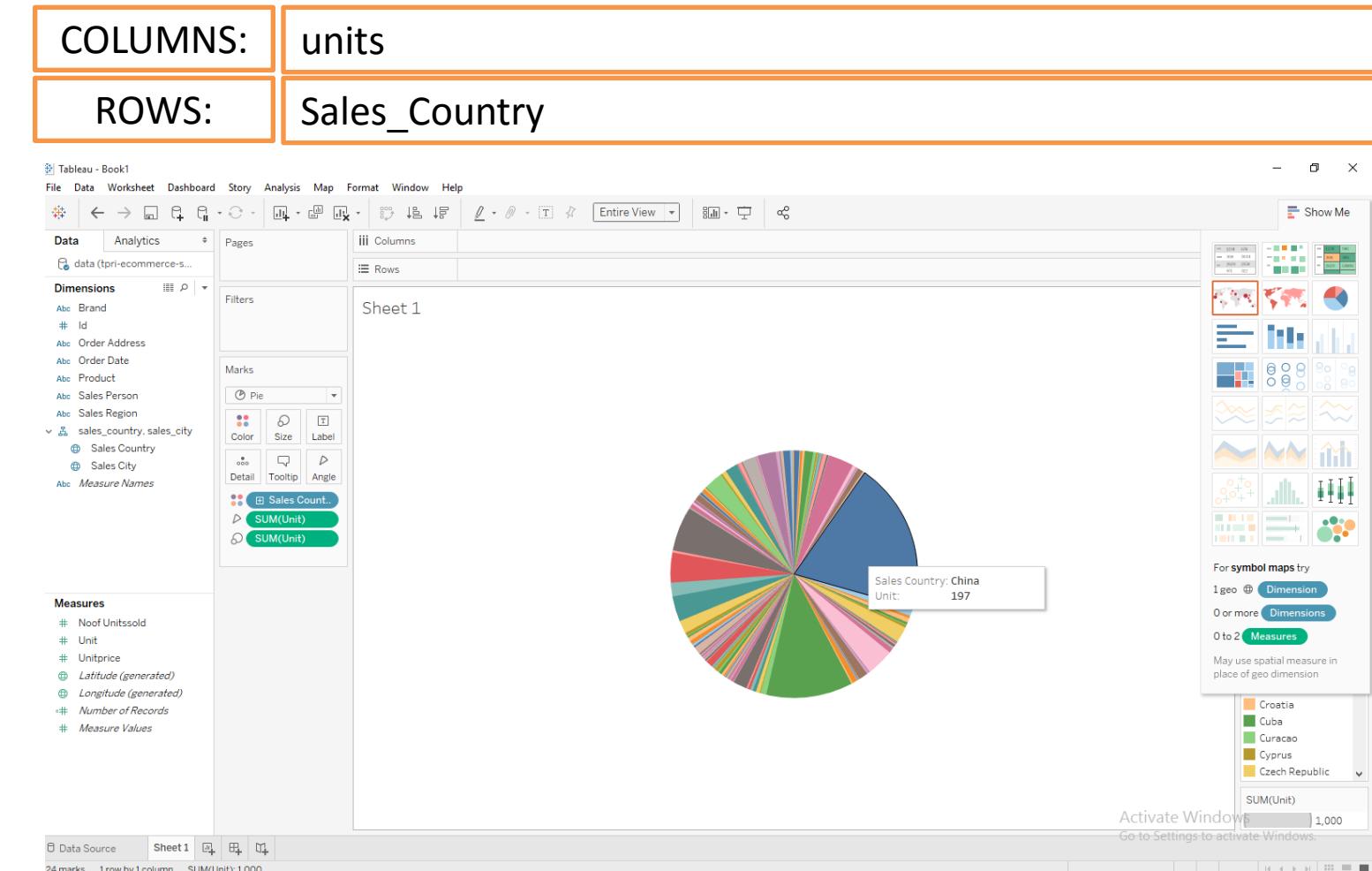
- Upon adding the Units to Columns dimension, Tableau automatically prompts bar chart visualization as shown in the figure



Data Source: [demo3/tpri-eCommerce-sales-y2013.xlsx](#)

Step 4

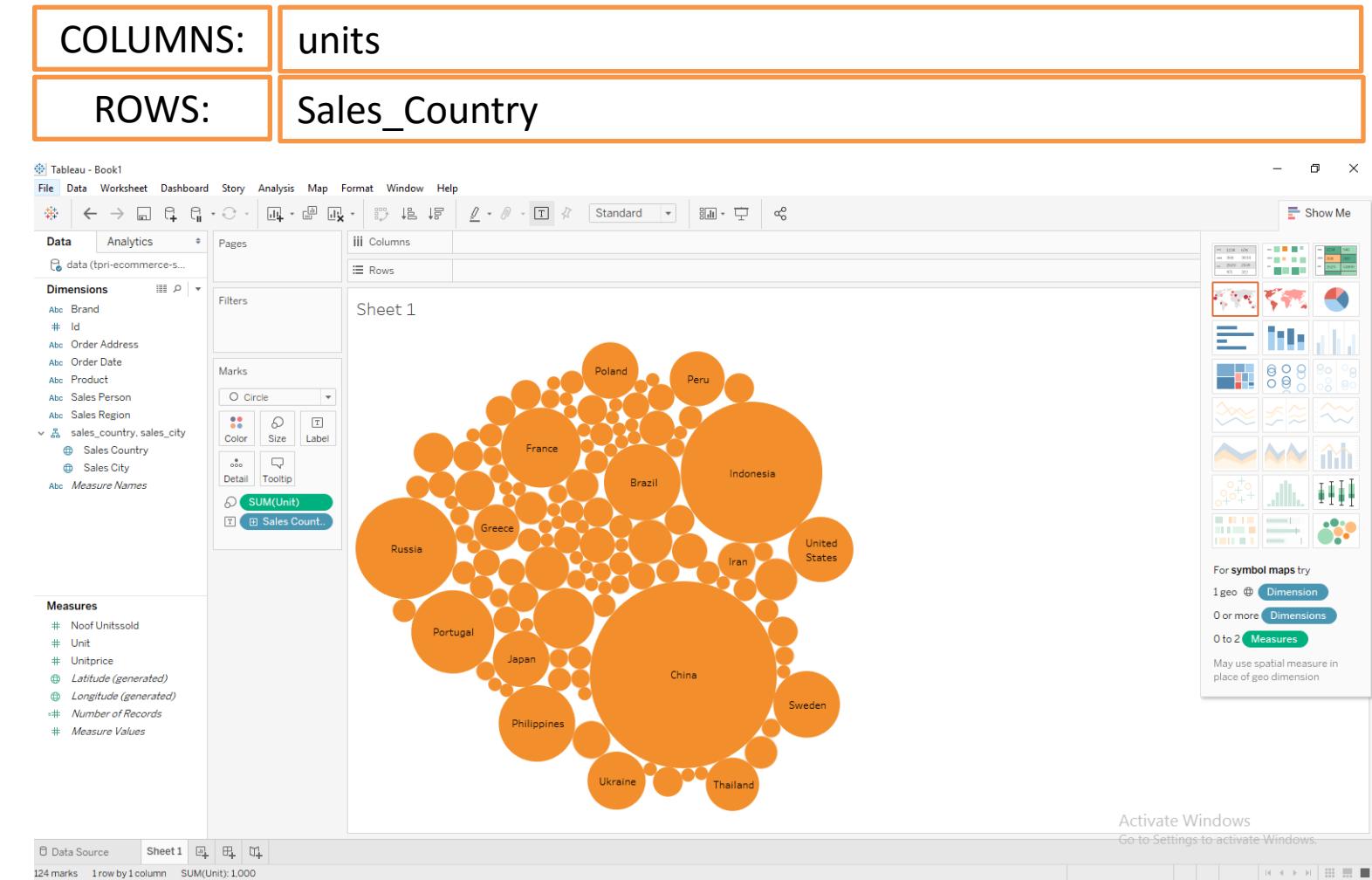
- we can switch to a new perspective using “show me” visualization tab to visualize the data in a pie chart.



Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Step 5

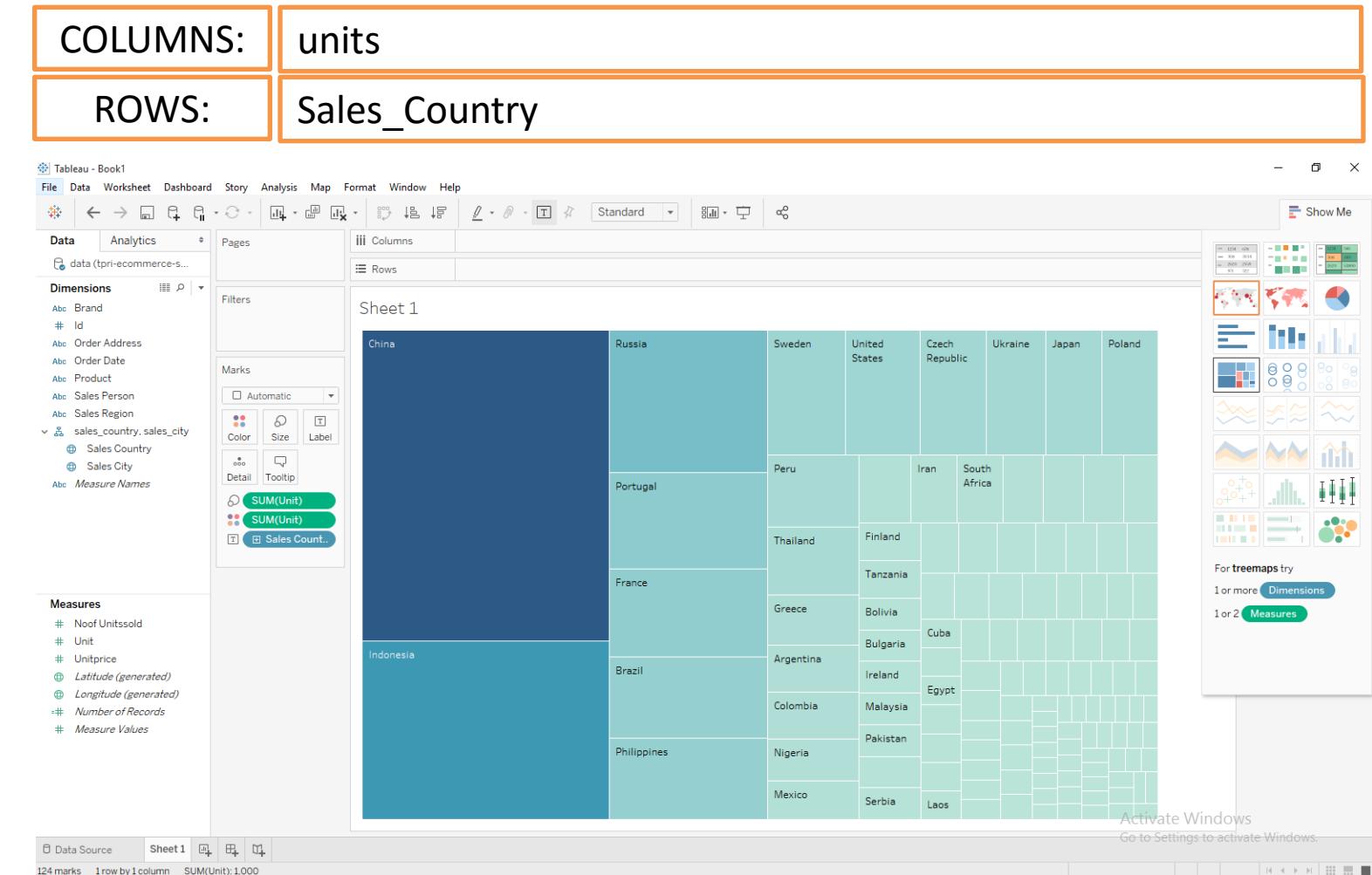
- we can switch to a new perspective using “show me” visualization tab to visualize the data in a bubble chart.



Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Step 6

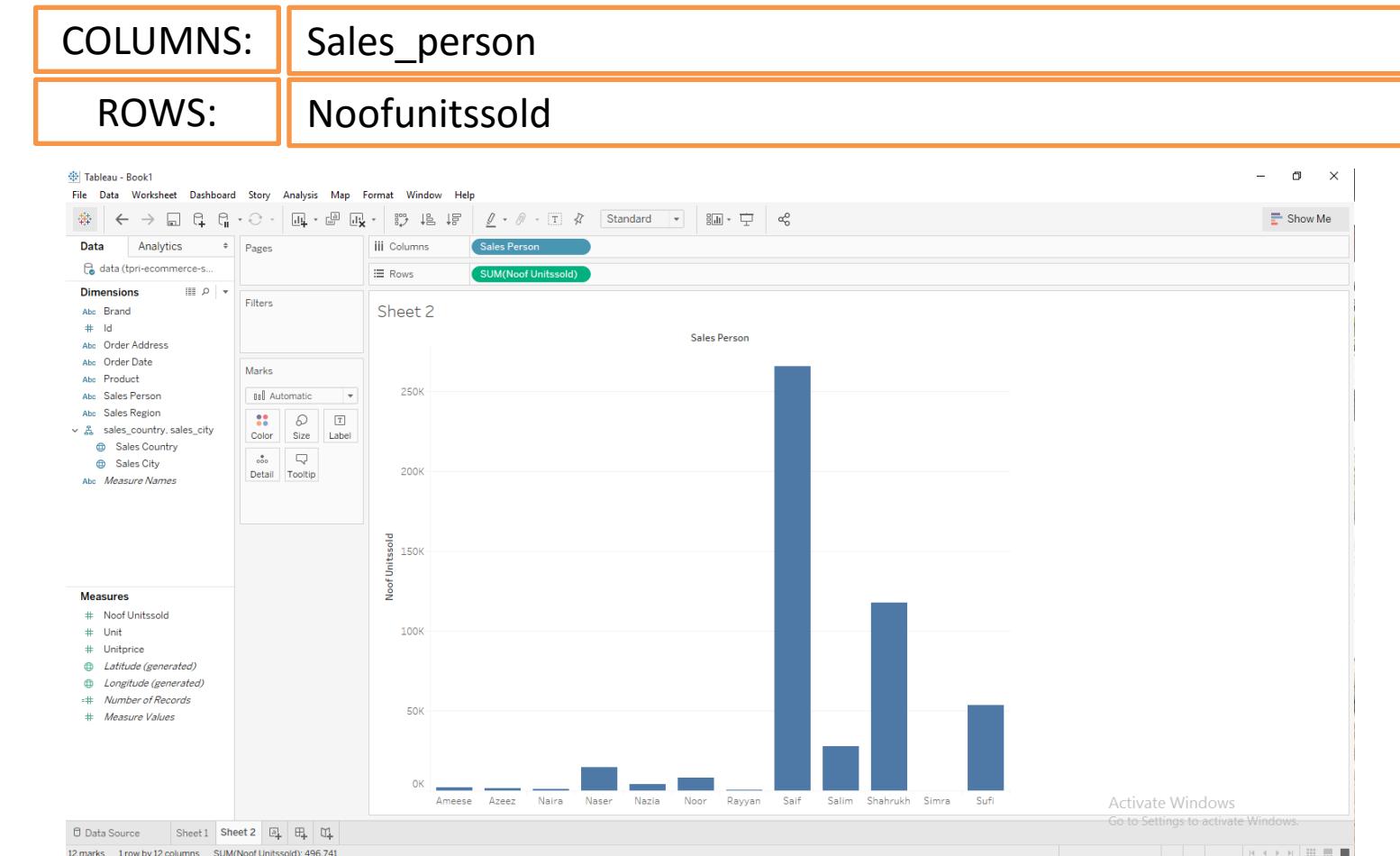
- we can switch to a new perspective using “show me” visualization tab to visualize the data in a tree map



Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Step 6

- create a new sheet, where we select columns: sales_person and rows: noofunitssold

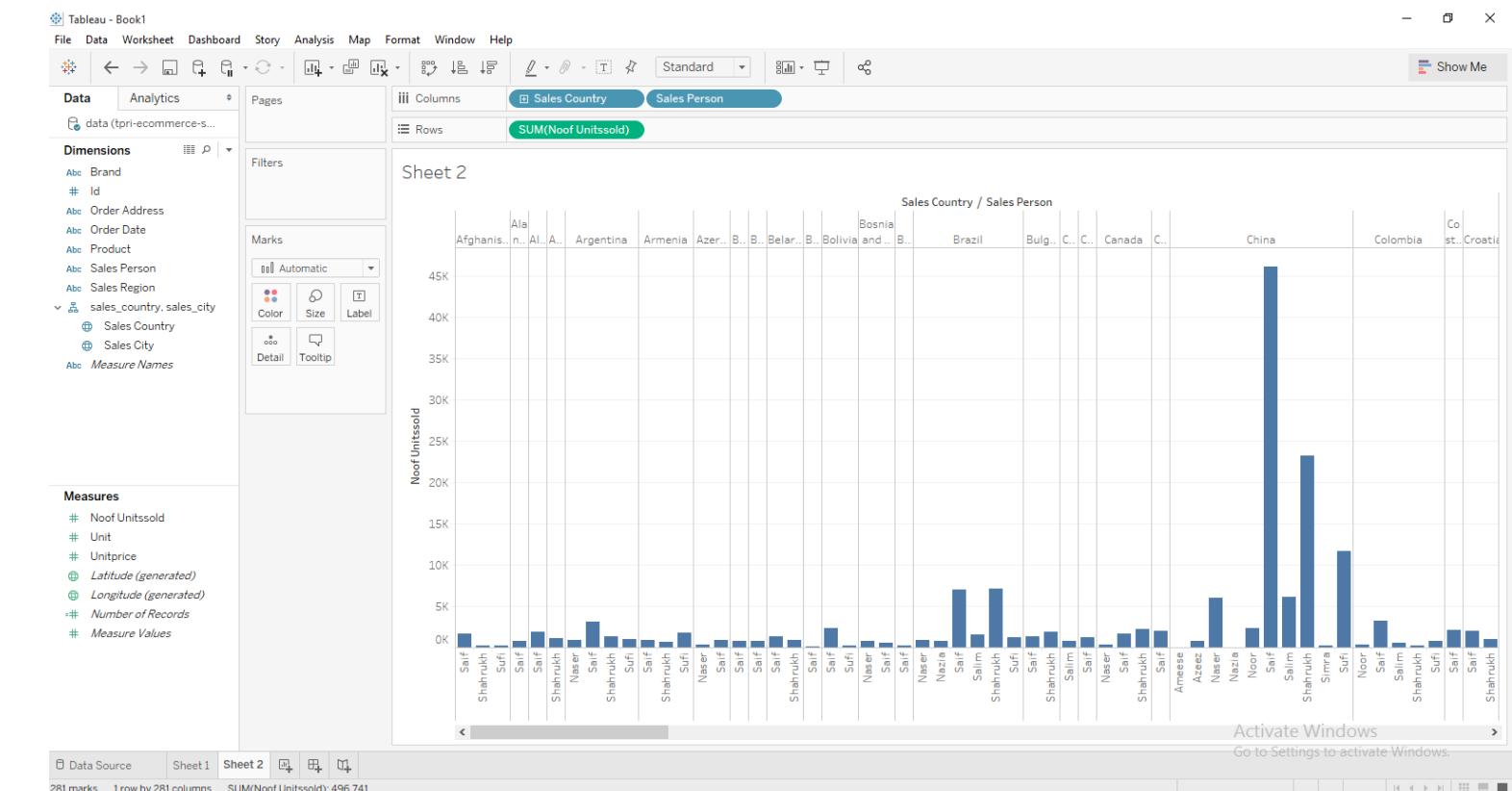


Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Step 7

- Now let us add sales_country dimension to the columns, to identify which sales person has sold most products by geography.

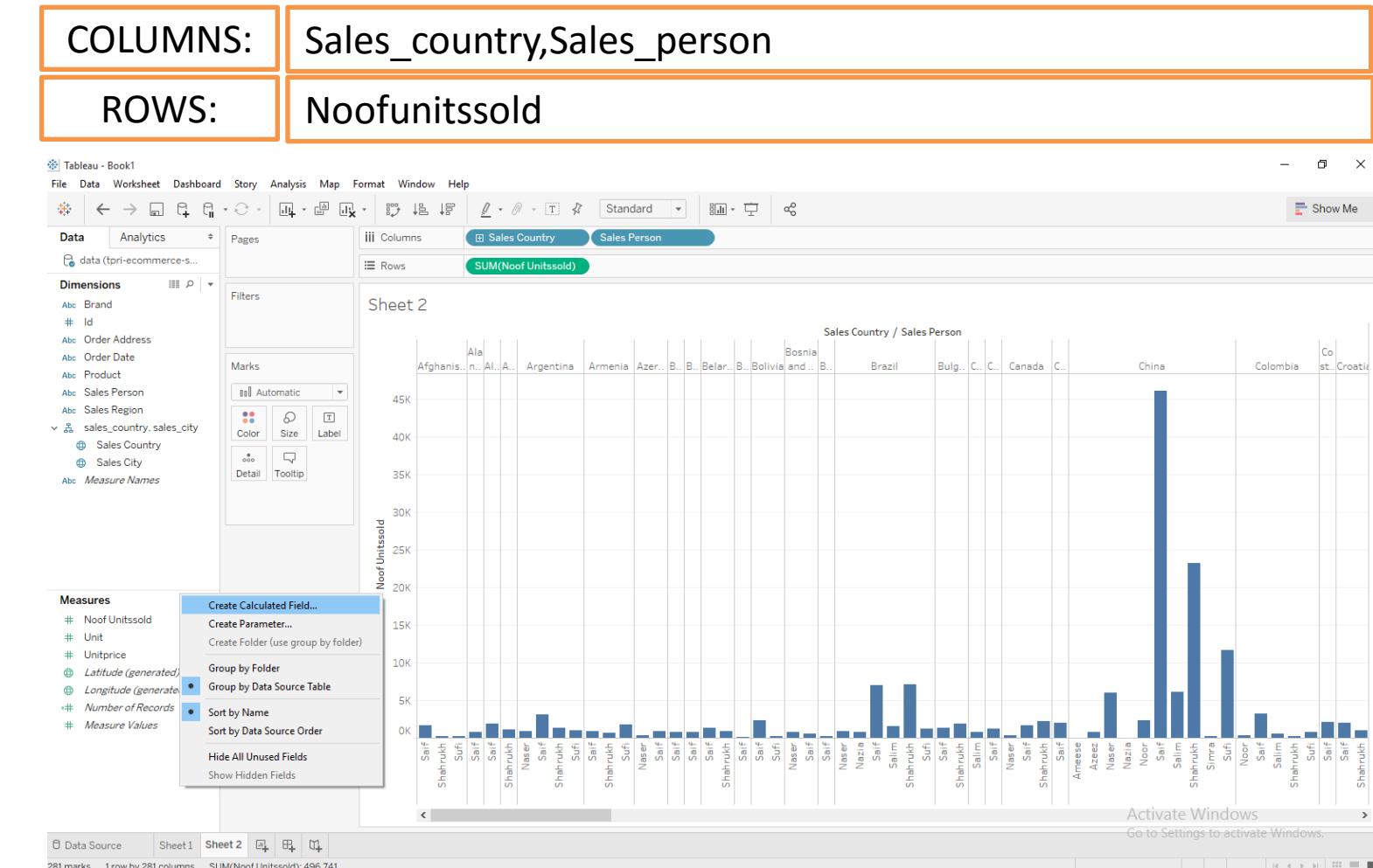
COLUMNS:	Sales_country,Sales_person
ROWS:	Noofunitssold



Data Source: [demo3/tpri-ecommerce-sales-y2013.xlsx](#)

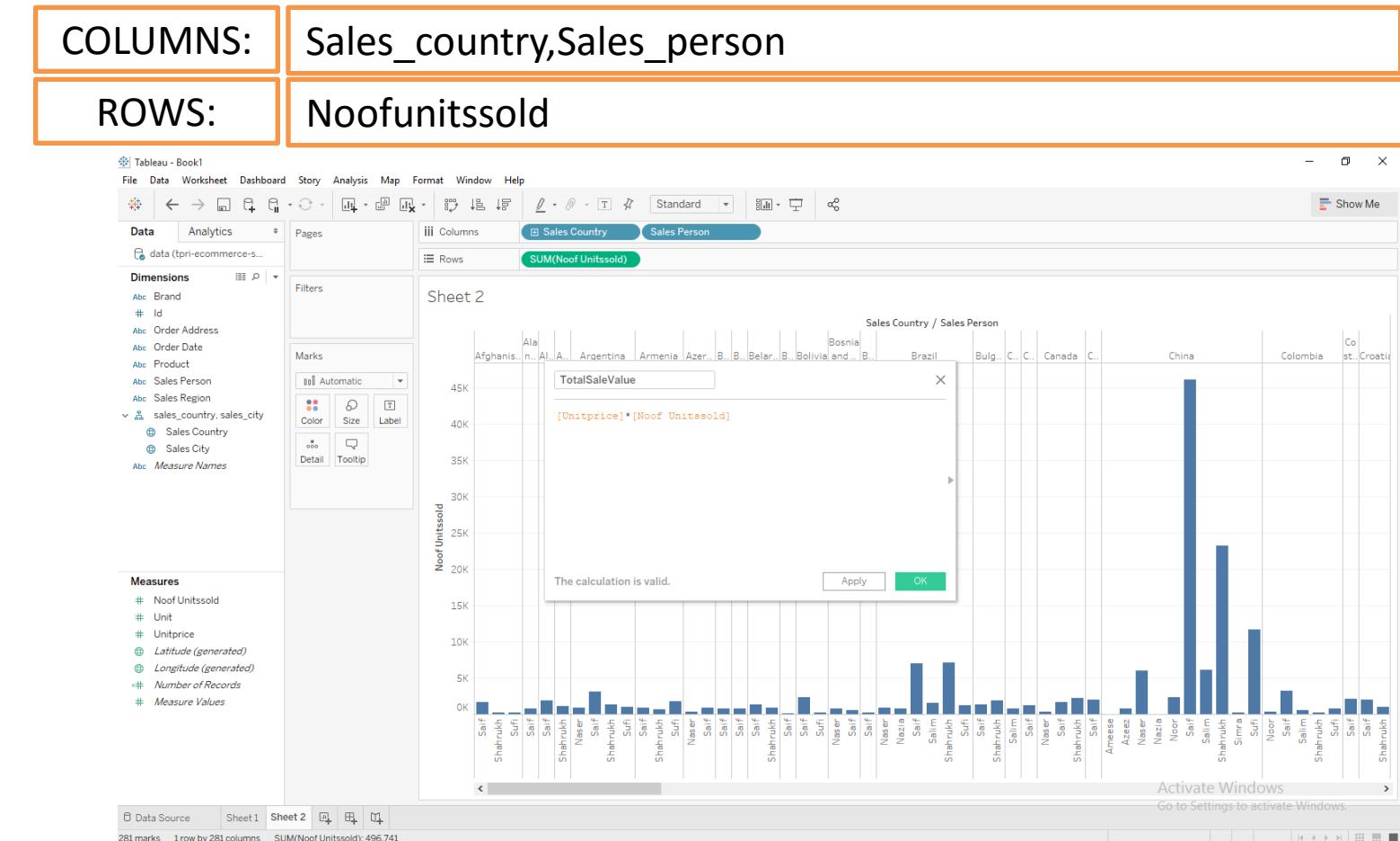
Step 8

- create “calculated field” for computing the total_sale_value



Step 9

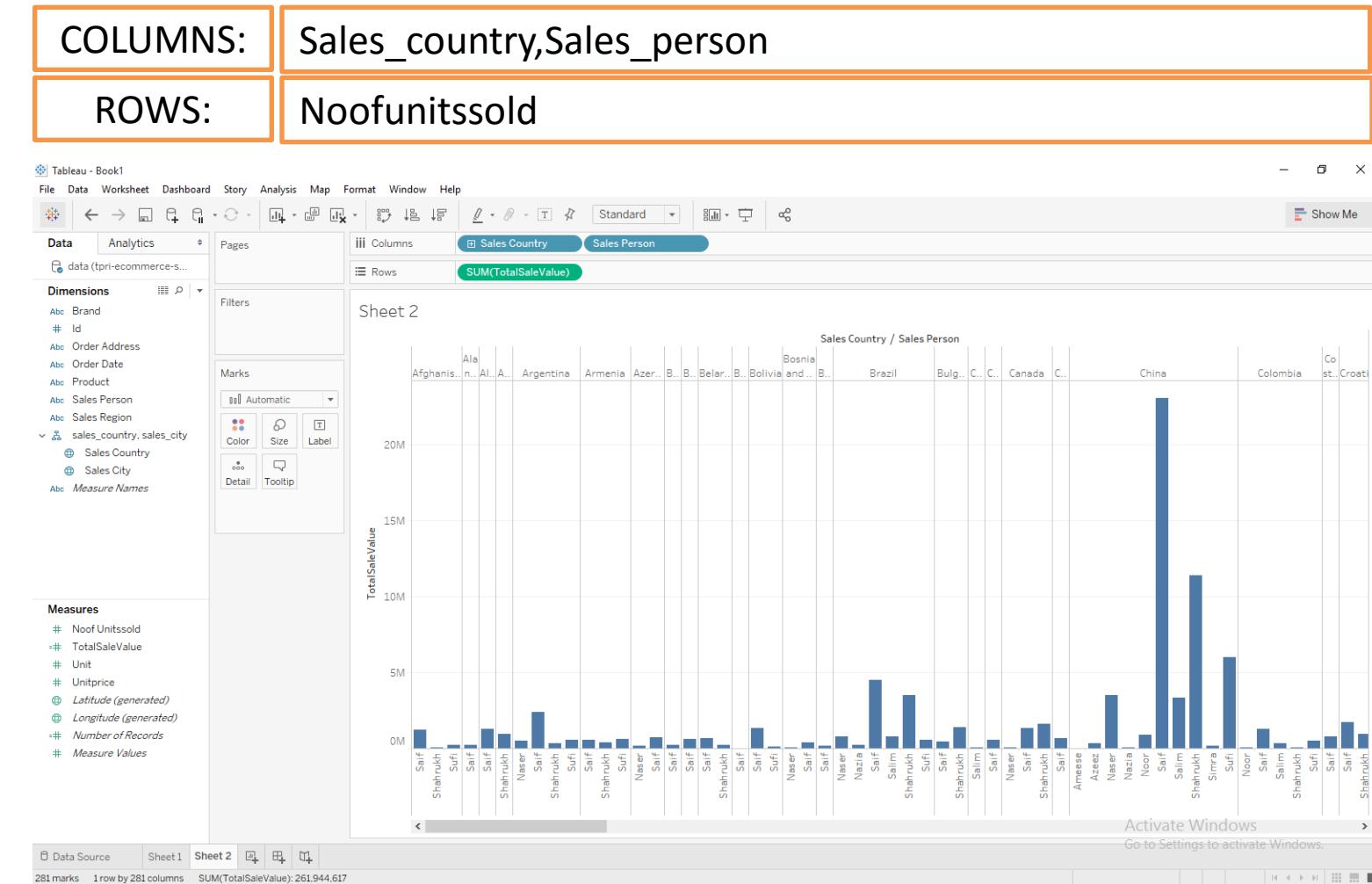
- create “calculated field” for computing the `total_sale_value = [unitprice]*[noofunitssold]`



Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Step 10

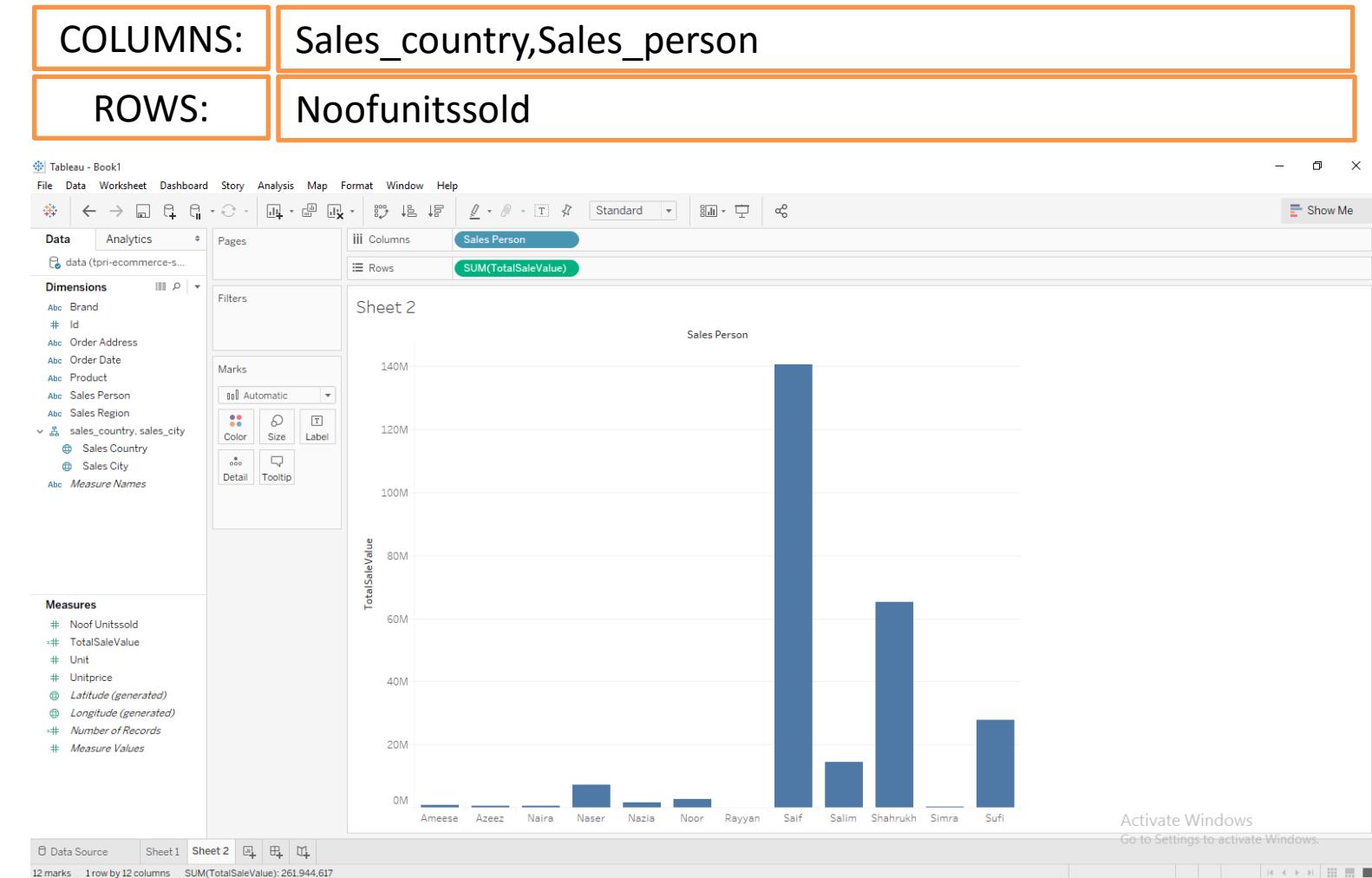
- Now lets view the total sales value against sales_country+sales_person.
- Now we have top 3 sales_person by country.



Data Source: [demo3/tpri-ecommerce-sales-y2013.xlsx](#)

Step 11

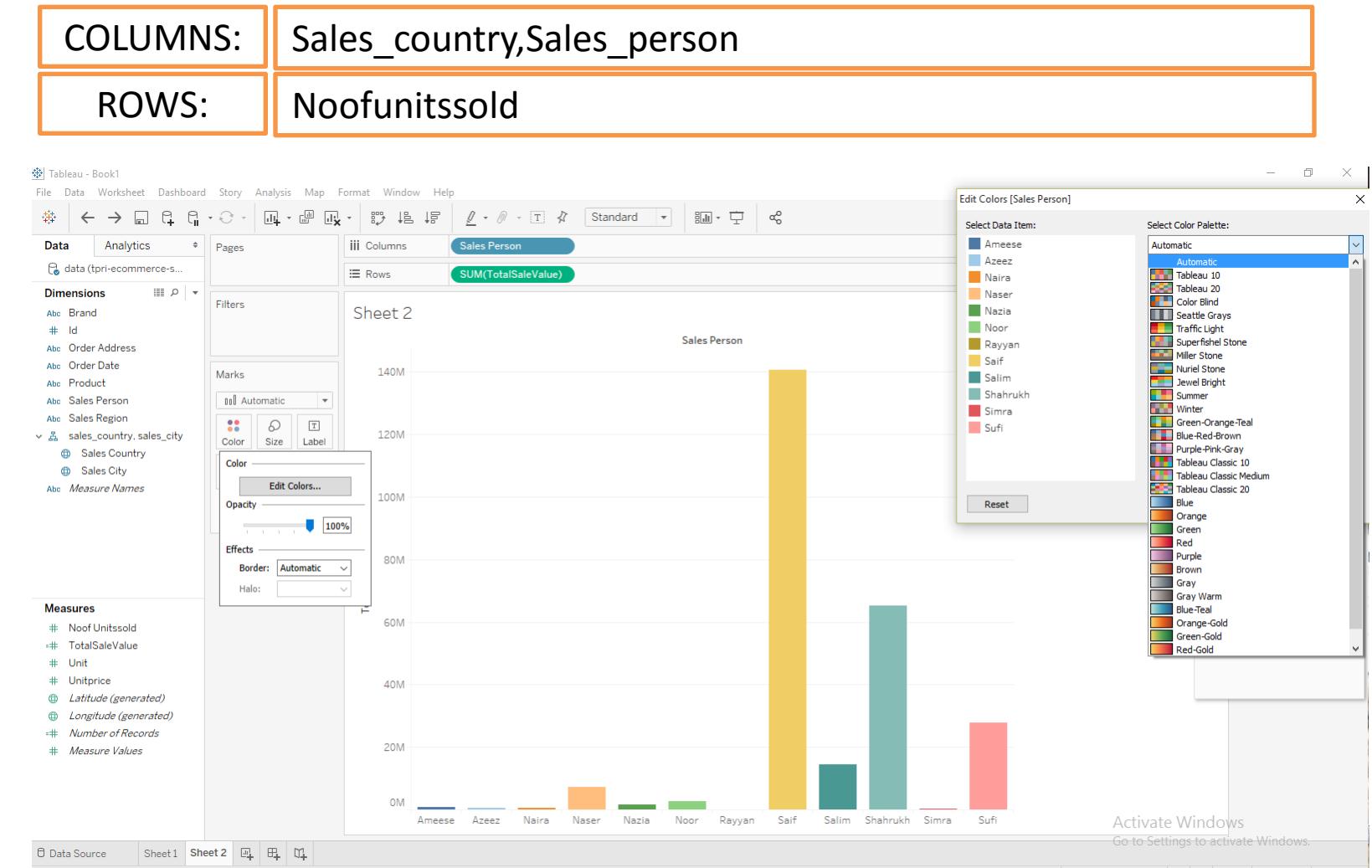
- We would like to identify overall total sales value generated by the sales person, irrespective of the geographic region.



Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Step 12

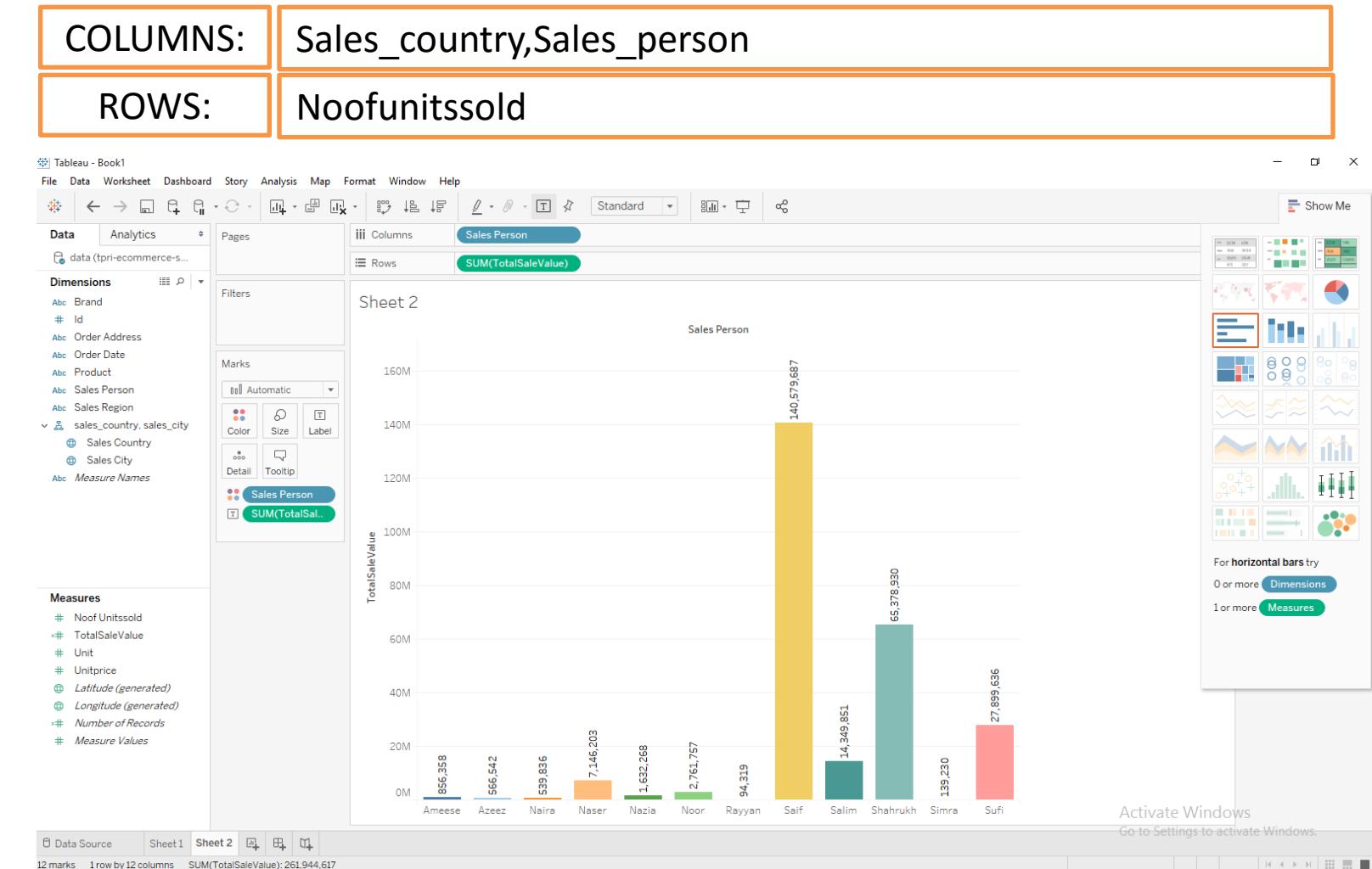
- Codifying your data by **color** to differentiate by the variable “sales_person”



Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Step 13

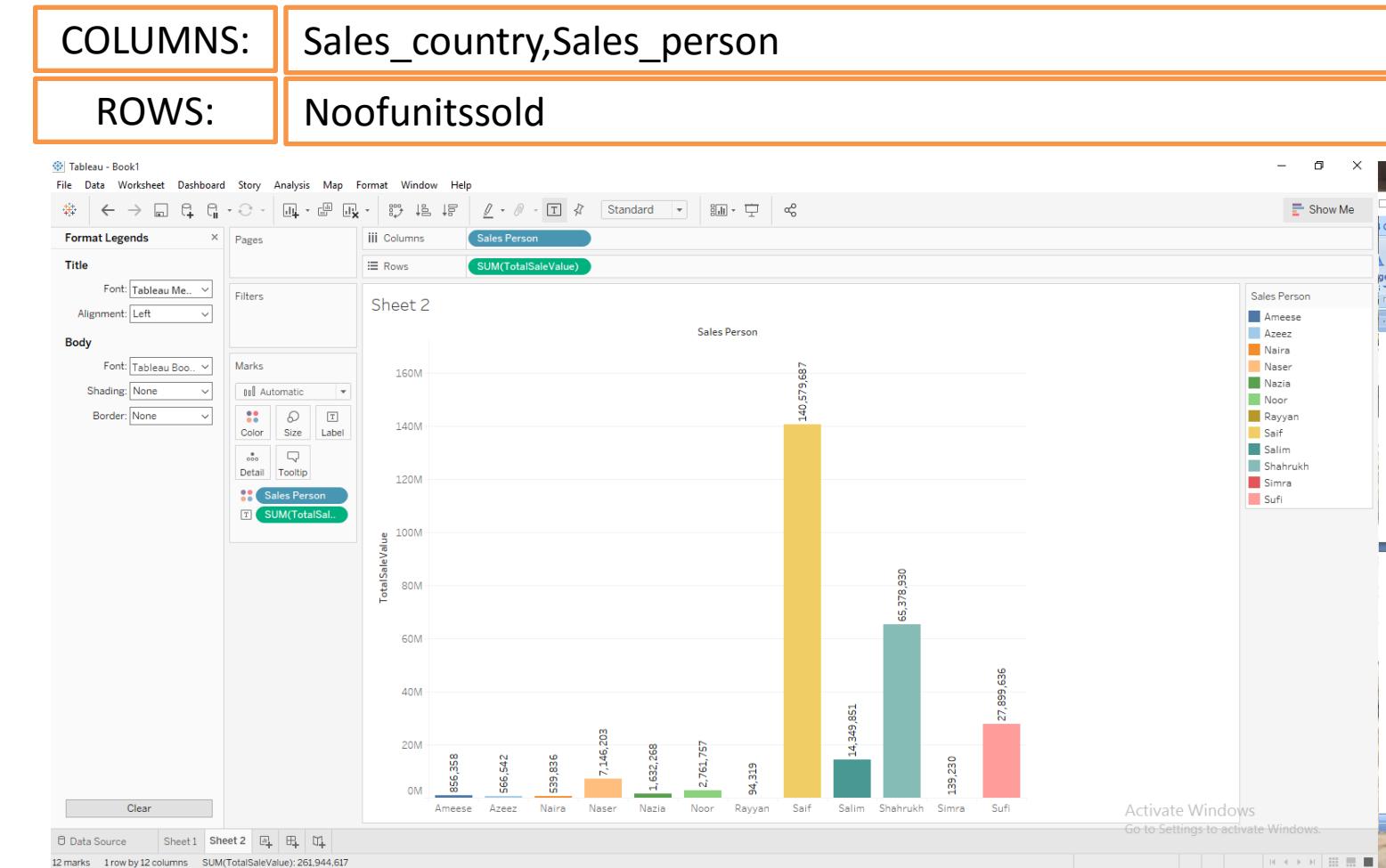
- Now drag TotalSaleValue to label Marker panel



Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Step 14

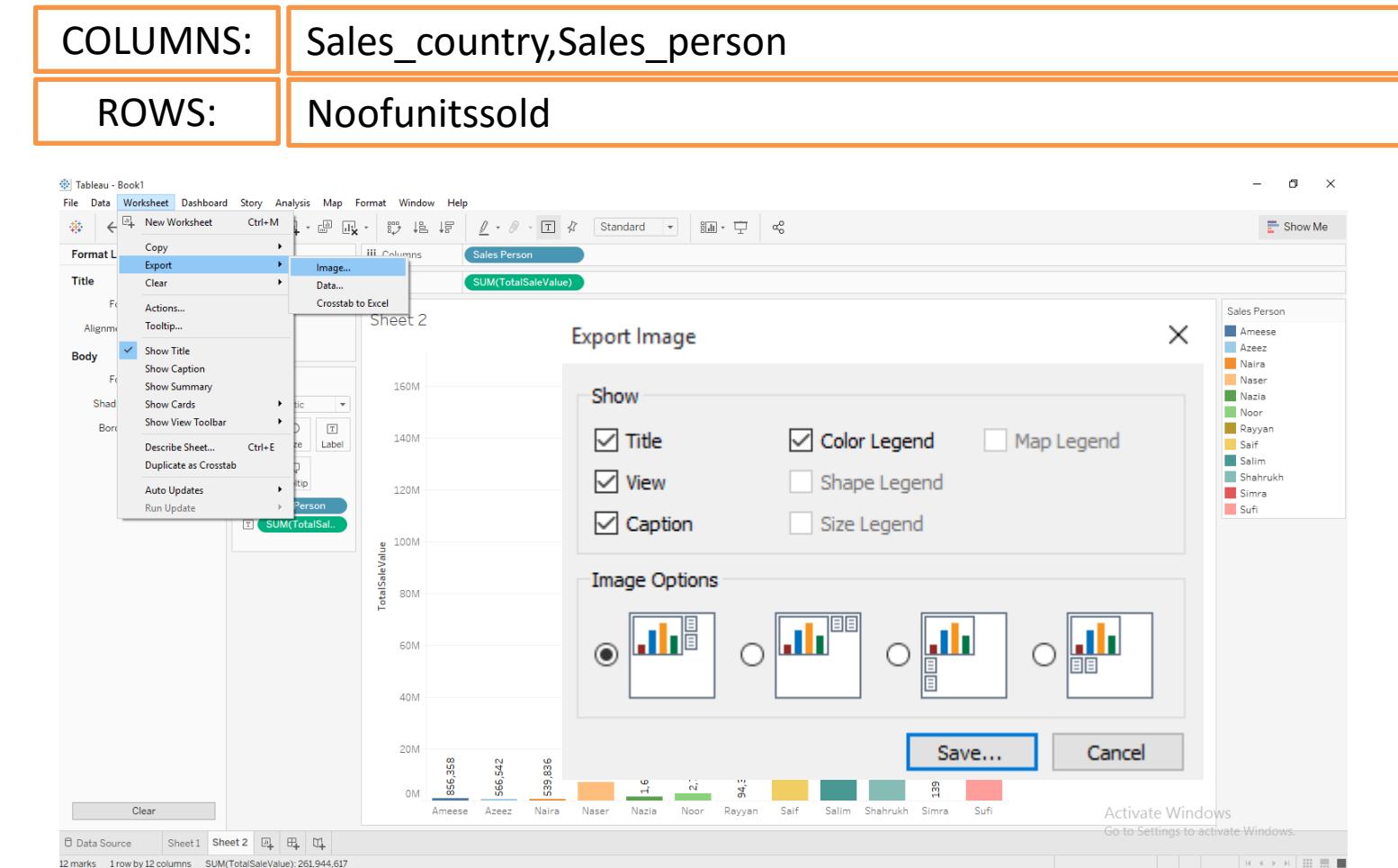
- Visualization with legend.
- The top 5 sales persons who receive bonus are
 1. Saif
 2. Shahrugh
 3. Sufi
 4. Salim
 5. Naser



Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Step 15

- Exporting the visualization as an image.



Data Source: [demo3/tpri-e-commerce-sales-y2013.xlsx](#)

Problem Description:

Analysis of Broadband internet usage. To answer the following questions:

1. **What is the average monthly, weekly and daily internet usage?**
2. **How does uploaded volume compare against downloaded volume on monthly, weekly and daily basis?**
3. **What is the usage pattern with respect to the day of the week?**
4. **What is the usage pattern with respect to the hour of the day?**

Data set used:

www.mockaroo.com=> demo3/ broadband-usage-data.xlsx

SYED AWASE KHIRNI

TABLEAU : CHALLENGE