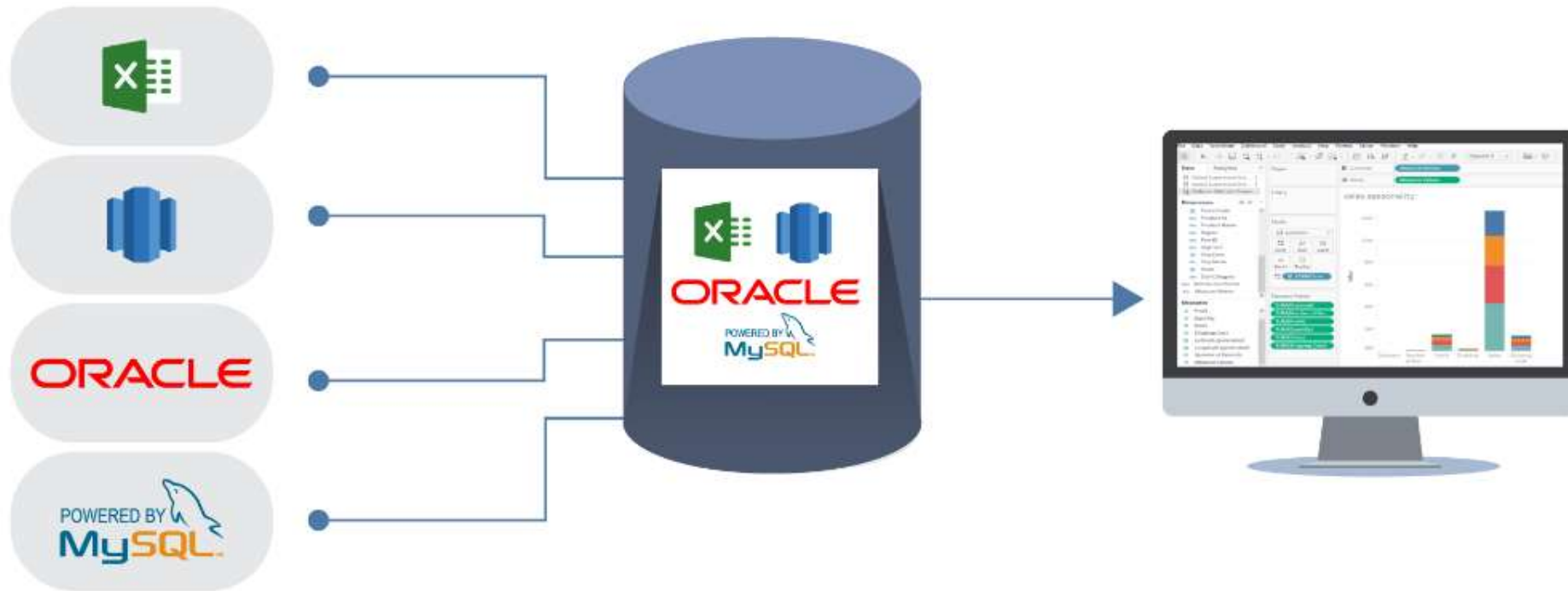




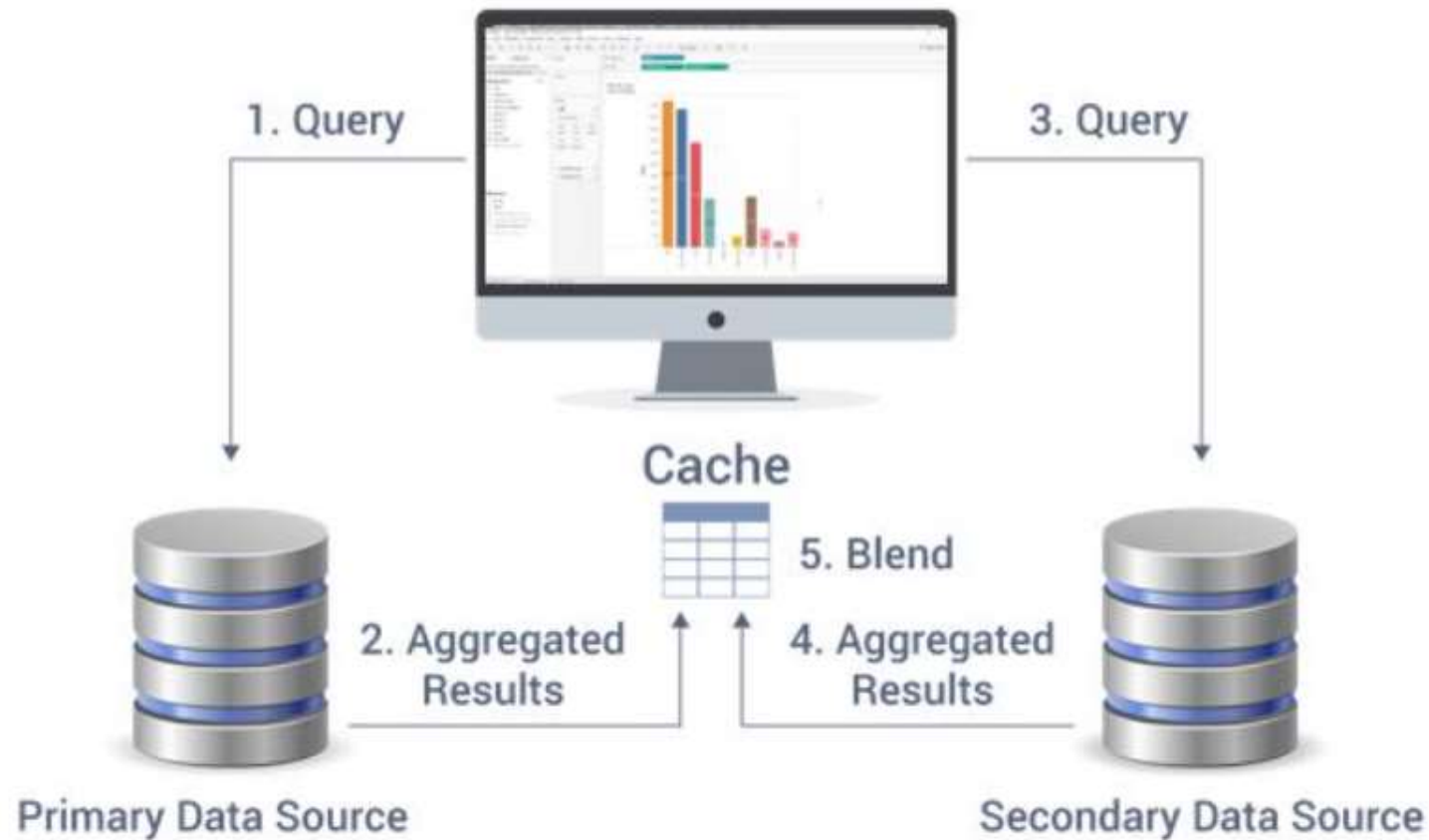
Data Blending

Data Blending

Data Blending is to issue two separate queries and then to blend them together to get aggregate results



Data Blending (Contd...)



Data Blending Process

Joins V/S Blending

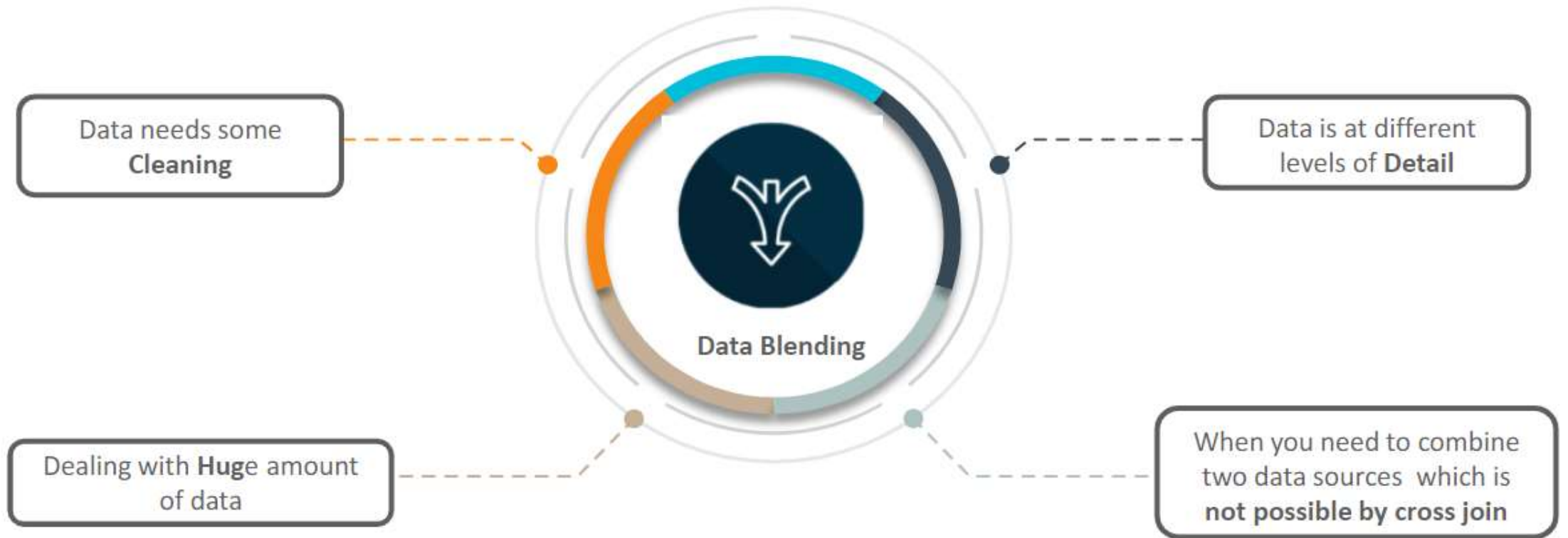
Data Joining

- Joining is done at **row level**
- Single query to a single data source
- For example, collecting information from two sheet tabs within a **single** Excel file

Data Blending

- Data blending is done at an **aggregate level**
- Different queries sent to each data source
- For example, collecting information was stored in **separate** (excel and csv. or from some other data source) files you would need to do a **data blend** in **Tableau**

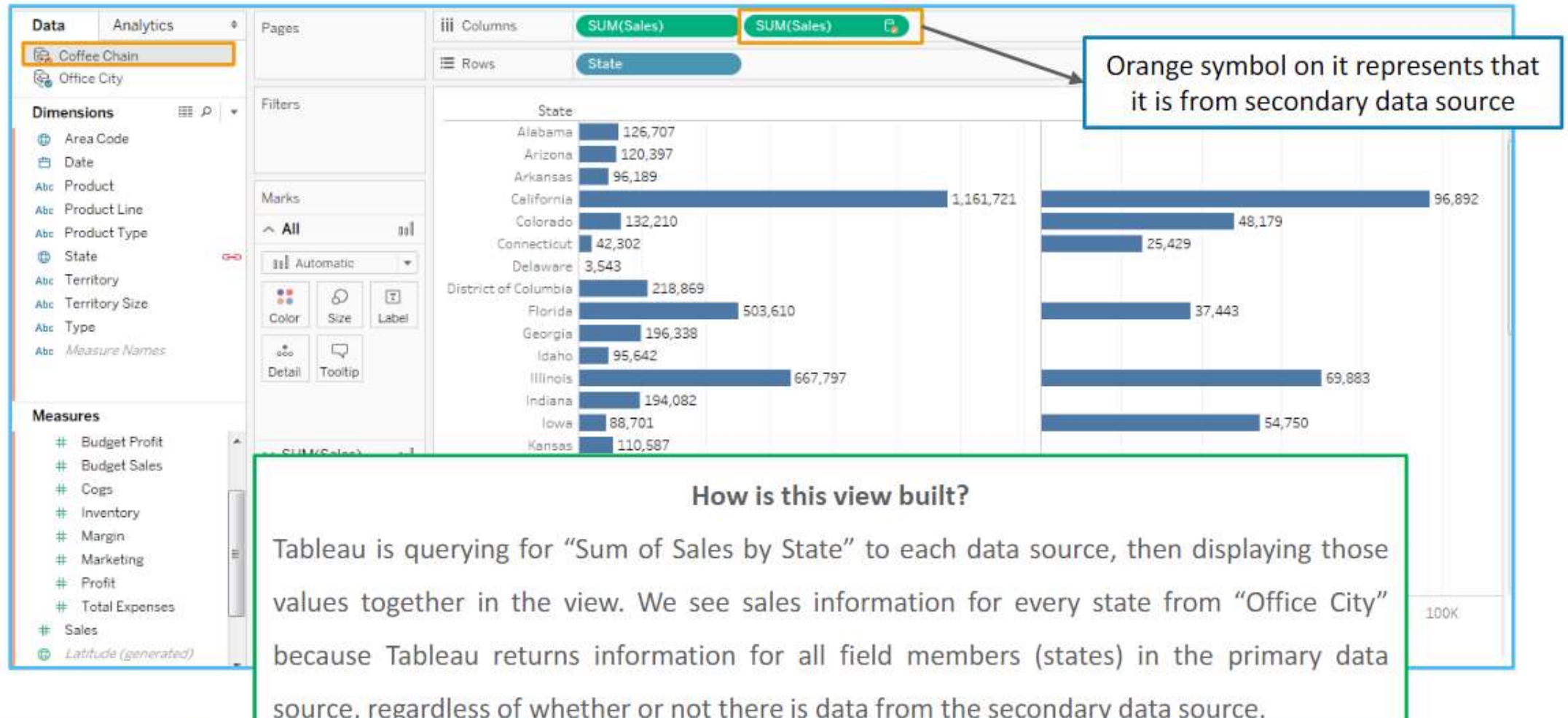
When To Use Data Blending?



Data Blending (Contd...)



Data Blending (Contd...)



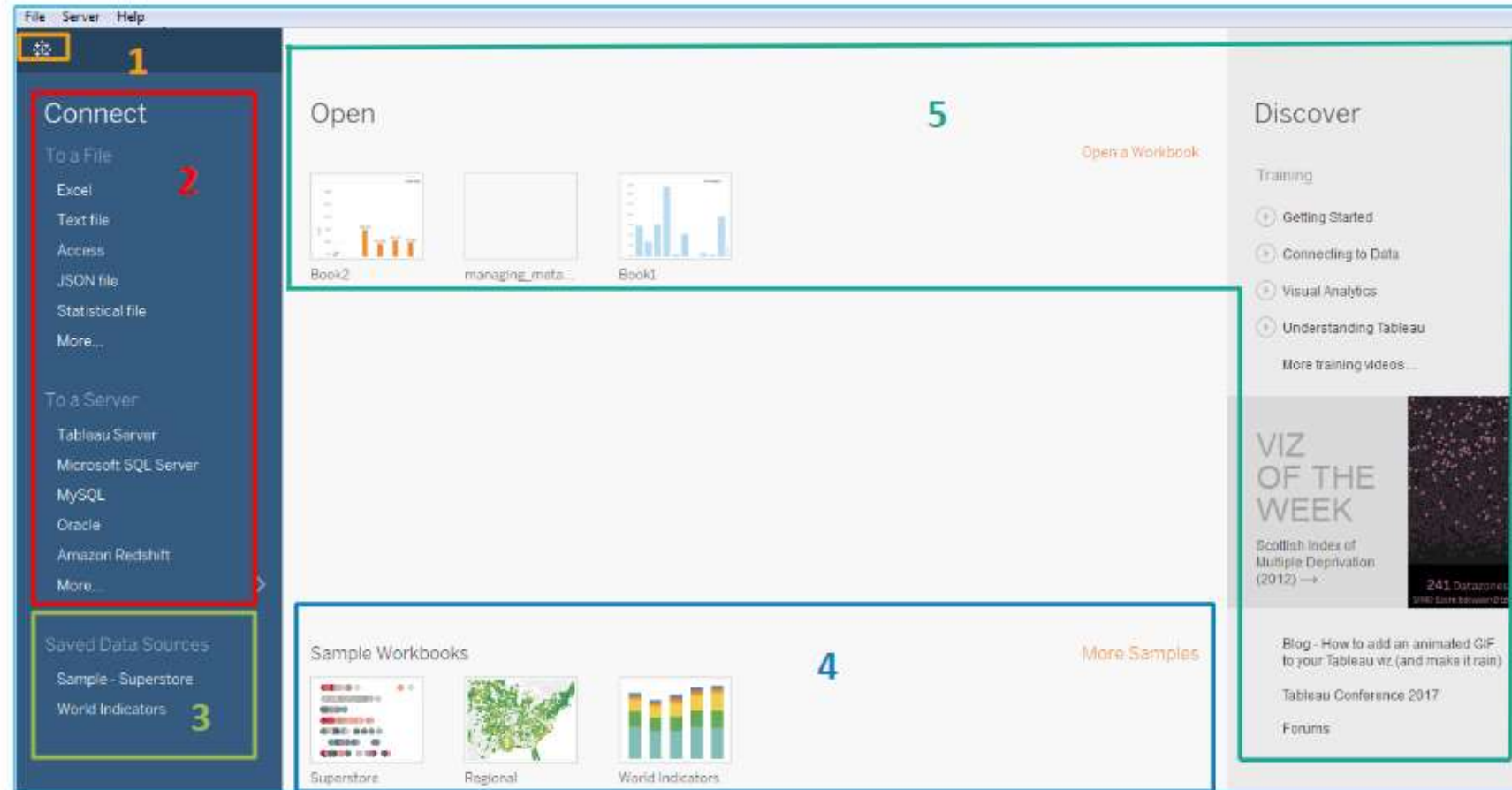
Note:

- To Create a relationship between all csv files in one connection you can create this relationship from data connections section.
- For creating relation between different data connections you need to use data blending option from tableau visualization section (Data → Edit Blend relationship) usually it will be done automatically and you can do it manually.



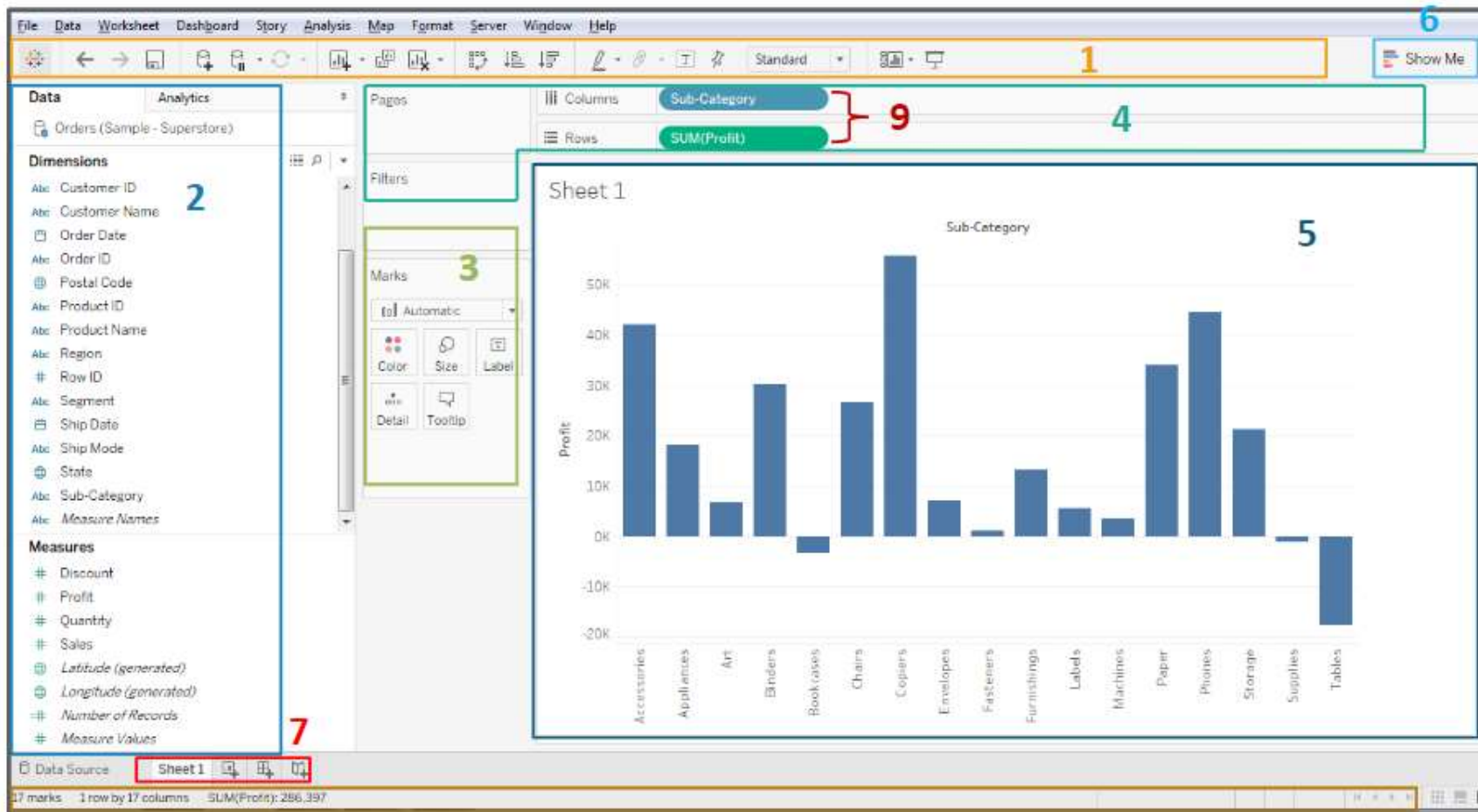
Tableau Desktop UI

Tableau UI - Home Screen



- 1 Menu Bar
- 2 Connect
- 3 Saved Data sources
- 4 Sample Workbooks
- 5 Open and Discover

Tableau UI - Sheet



- 1 Toolbar
- 2 Side Bar
- 3 Marks Card
- 4 Column, Row, Pages and Filters Shelves
- 5 Canvas
- 6 Show me
- 7 Sheet
- 8 Status bar
- 9 Pills

Tableau UI - Sheet (Contd...)

The Side Bar contains tabs for Data and Analytics

Toolbar is used for common functions such as undo, redo, save, add a data source, and so on

Analytics pane provides features like Summarize, Model and Custom

Data pane shows the data source at the top and contains a list of fields from the data source below, divided into Dimensions and Measures

Data Source: Orders (Sample - Superstore)

Dimensions: Customer ID, Customer Name, Order Date, Order ID, Postal Code, Product ID, Product Name, Region, Row ID, Segment, Ship Date, Ship Mode, State, Sub-Category, Measure Names

Measures: Discount, Profit, Quantity, Sales, Latitude (generated), Longitude (generated), Number of Records, Measure Values

Columns: Sub-Category

Rows: SUM(Profit)

Visual: Bar chart showing Profit by Sub-Category. The Y-axis represents Profit (ranging from -20K to 30K) and the X-axis represents Sub-Category (Accessories, Appliances, Art, Binders, Bookcases, Chairs, Copiers, Envelopes, Fasteners, Furnishings, Labels, Machines, Paper, Phones, Storage, Supplies, Tables).

Sub-Category	Profit (SUM)
Accessories	25K
Appliances	18K
Art	8K
Binders	28K
Bookcases	-5K
Chairs	25K
Copiers	30K
Envelopes	8K
Fasteners	-2K
Furnishings	15K
Labels	5K
Machines	3K
Paper	30K
Phones	30K
Storage	22K
Supplies	-2K
Tables	-18K

Tableau UI - Sheet (Contd...)

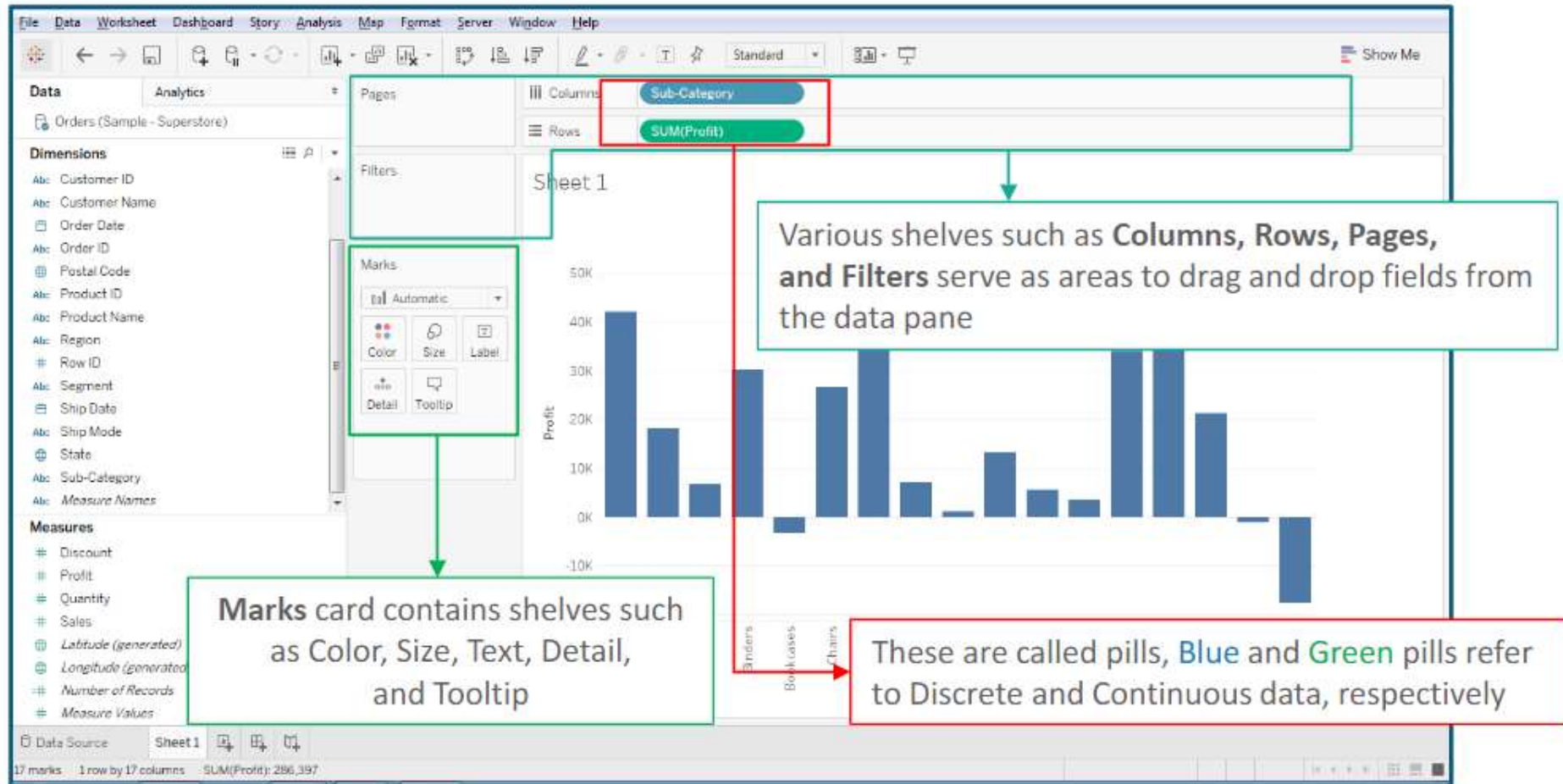
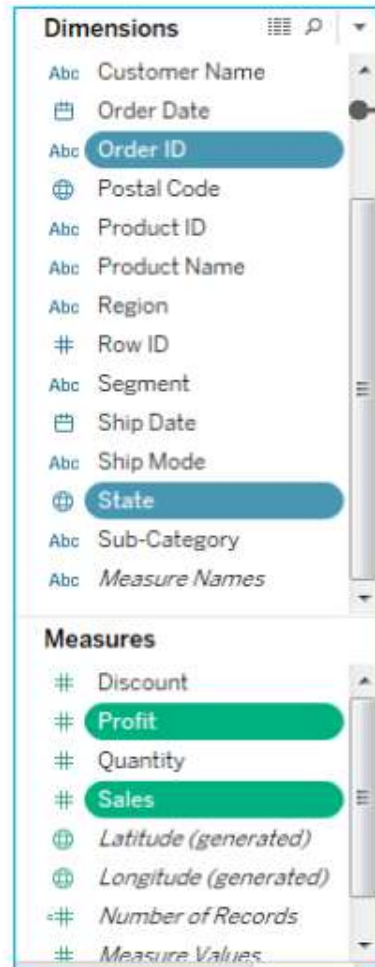


Tableau UI - Show Me



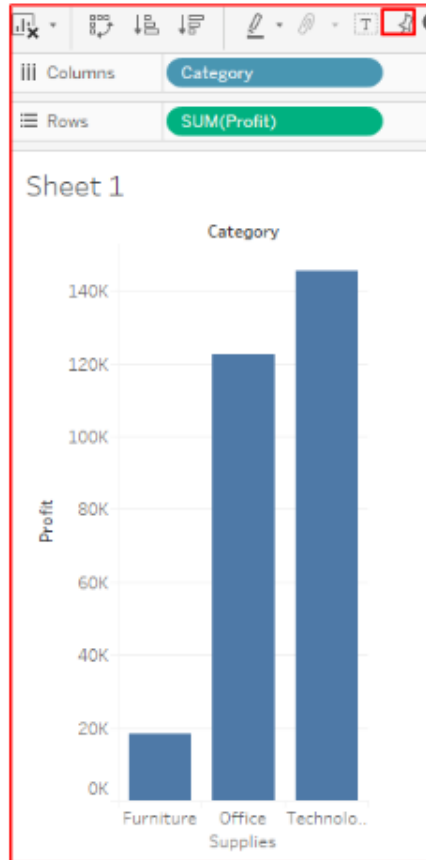
Select fields in the **Data** pane that you want to analyze.
Hold the Ctrl key to make multiple selections

Show Me smartly highlights view types (graphs) that work best with the field types (Attributes) in your data

Open Show Me by clicking Show Me on the toolbar



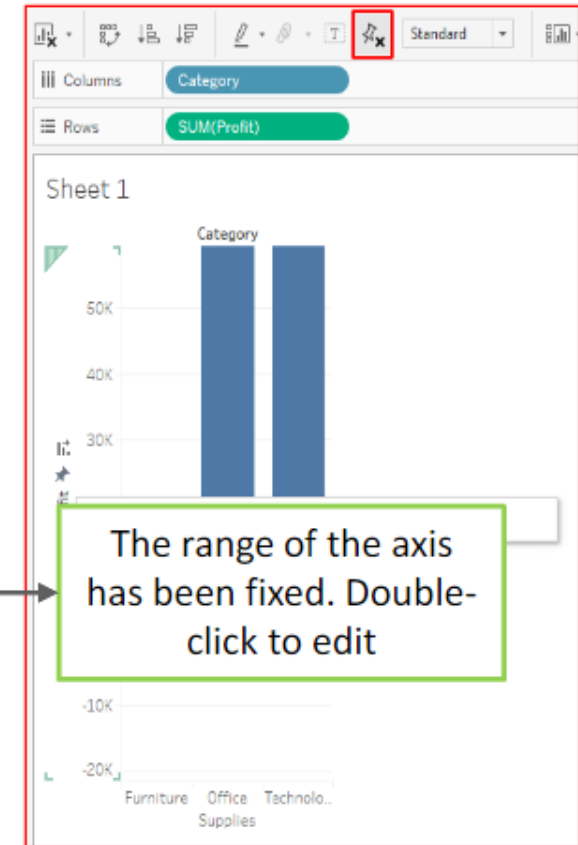
Tableau UI - Fix Axes



Click on this icon to fit axes and select ranges

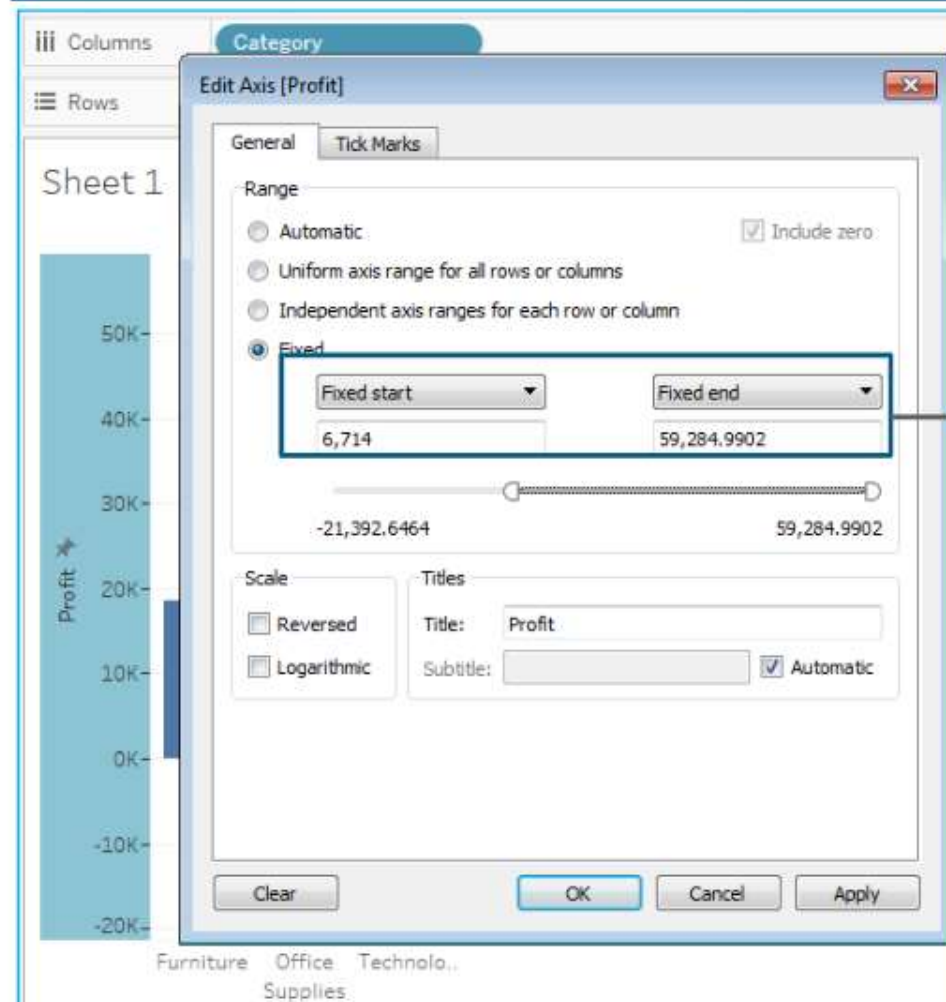
Fit Axes adjusts the **range** based on the minimum and maximum values in the view.

Use Fit Axes by using  from the toolbar



The range of the axis has been fixed. Double-click to edit

Tableau UI - Fix Axes



The range has been set to
6,714 – 59,284,9902

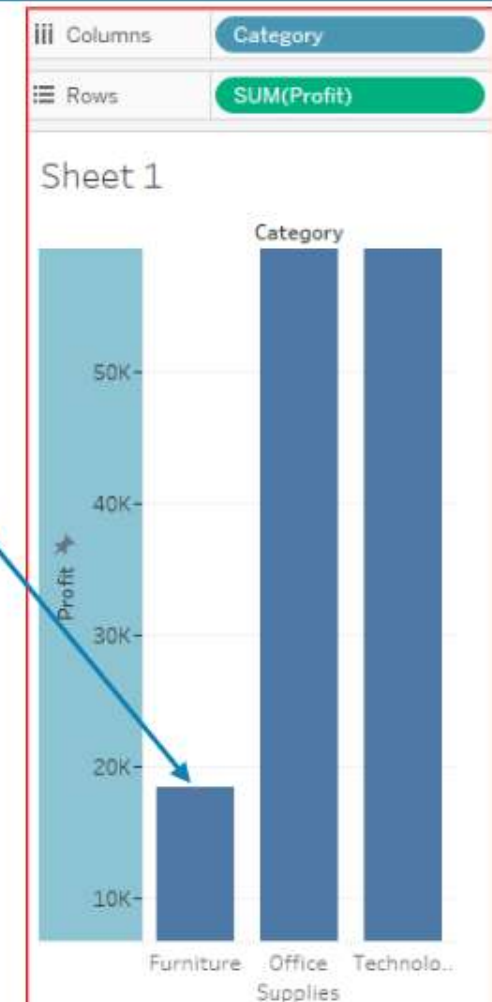











Tableau Data Types

Dimensions	
Abc	Category
	City
	Country
Abc	Customer ID
Abc	Customer Name
	Order Date
Abc	Order ID
	Postal Code
Abc	Product ID
Abc	Product Name
Abc	Region
#	Row ID
Abc	Segment
	Ship Date
Measures	
#	Discount
#	Profit
#	Quantity
#	Sales
	Latitude (generated)

Icons	Data Types
Abc	Text (string) values
	Date Values
	Date And Time values
#	Numerical Values
T F	Boolean Values
	Geographic Values



Quiz

1

Which of the following does NOT appear in the Data Source page?



Cross Join



Full-Outer Join



Inner Join



Left-Outer Join

2

Which of the following tools offered by Tableau is used for building or preparing data?



Tableau Reader



Tableau Desktop



Tableau Online



Tableau Prep

3

At which step do we apply a filter?



Cleaning Step



Input Step



Aggregate Step



Pivot Step

4

Which of the following data connections should be established for connecting a CSV file within Tableau Prep?



Excel



Statistical File



Text File



Spatial File

5

What is the correct reason to use Data Extract instead of using a Live connection for a Dataset in Tableau?



The data is constantly being updated and you want to make the viz based on a static data set and later change to a Live connection once the visualization is ready.



Extract takes up less space as compared to Live connection



Your data set is in CSV format, so you are required to create an extract



The NULL values are dropped from the dataset once the connection type is changed to an Extract

6

While working with a Full-Outer Join, only the matching records from each Table are Joined. True or False?



FALSE



TRUE



Thank you !!

Tableau

(Business Intelligence)

By Eng. Mohammed Marwan Shahin



Outlines

- **Creating basic Visual Analytics using :**
 - Text Table
 - Bar chart
 - Stacked Bar Chart
 - Line graph
 - Area chart
 - Pie-chart
 - Scatter Plot
- **Demonstrate Different ways to share our charts statically.**
- **Viewing our charts using Tableau Reader**
- **Explain Some feature like** (Hierarchy, Highlight, Quick sort , group by, Filtering , sets)
- **Create calculated fields using** (text , Date , Logical, Aggregate and Arithmetic functions)



Visual Analytics

Why Visual Analytics?

Visual Analytics: Interactive graphical display of data used to generate analytical results and insights

Improves Decision Making

Better Sense of Risk

Better Key Strategic Initiative

Good Financial Performance



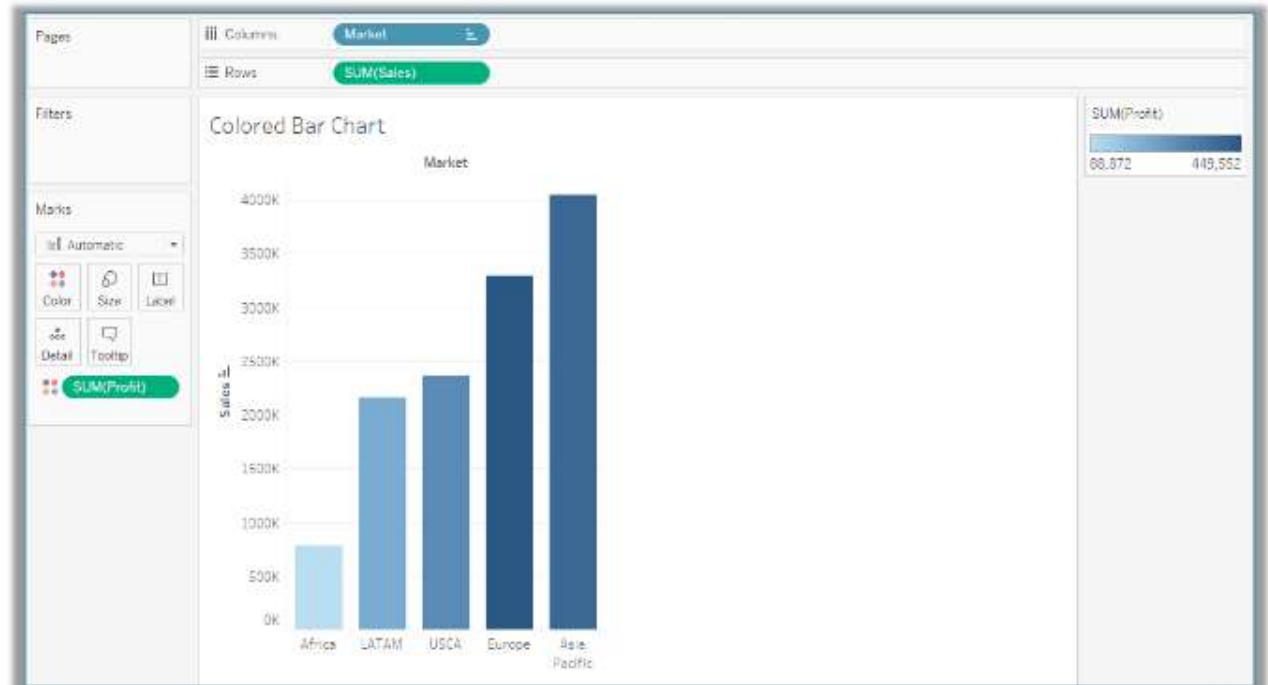


Types Of Bar Charts

Bar Chart

A Bar Chart visually represents data in a way that makes comparison of values simpler

- Drag **Sales** field from Measures on to the Rows shelf
- Drag **Market** field from Dimensions on to the Columns shelf
- Drag **Profit** field from Measures on to the Color shelf



A Bar Chart displaying Market - Wise Sales

Stacked Bar Chart

A Stacked Bar Chart is useful for adding another level of detail in the Bar Chart

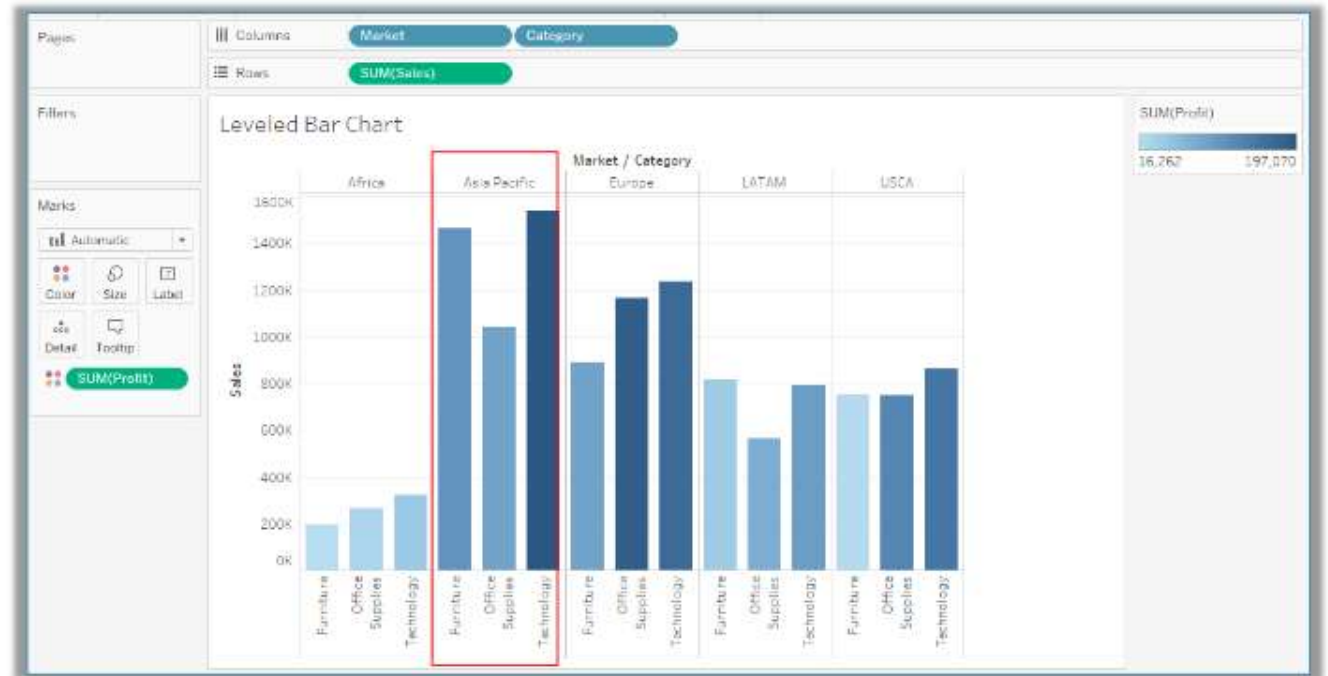
- Drag **Category** field from Dimensions on to the Color shelf
- Drag **Category** field from Dimensions on to the Label shelf
- Drag **Profit** field from Measures on to the Label shelf



The view shows how the various product categories have contributed to total sales across Market

Side By Side Bar Chart

- Drag **Market** field from Dimensions on to the Columns shelf
- Drag **Category** field from Dimensions on to the Columns shelf
- Drag **Profit** field from Measures on to the Color shelf



A Side By Side Bar Chart shows that profits are best for all the product categories in Asia Pacific Market

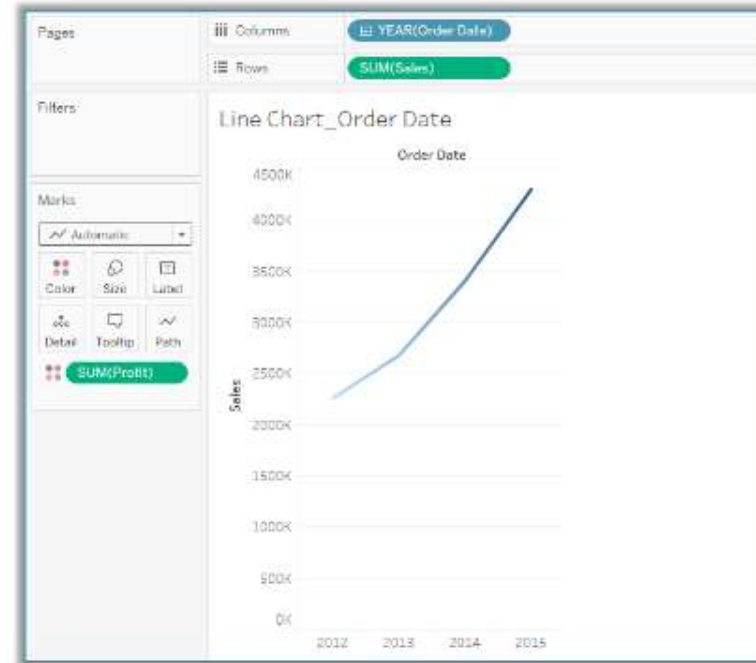


Types Of Line Charts

Line Chart

A Line Chart connects related marks in a visualization to display the relationship between them

- Drag **Sales** field from Measures on to the Rows shelf
- Drag **Order Date** field from Dimensions on to the Columns shelf
- Drag **Profit** field from Measures on to the Color shelf

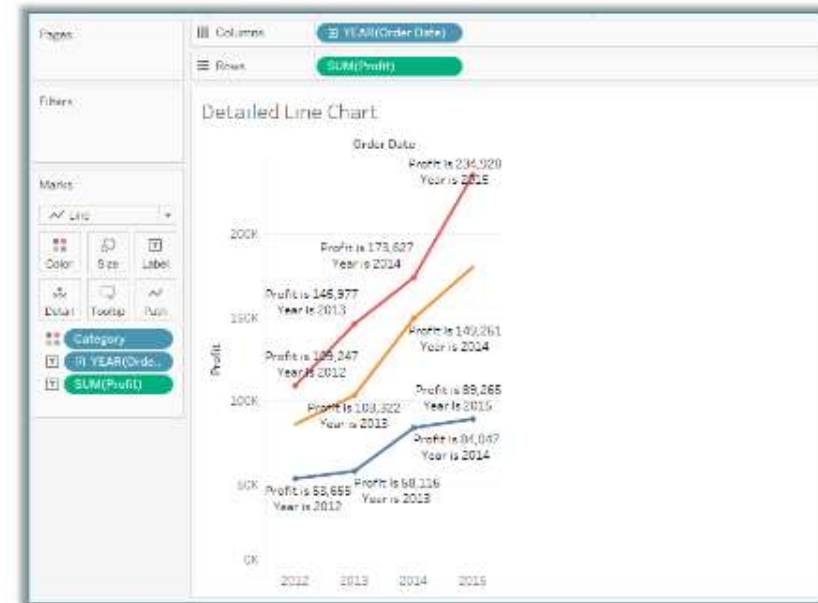


A Line Chart which displays year after year increase in sales

Labeled Line Chart

A Labeled Line Chart is a Line Chart wherein each of the points are labeled to make the values of the measure visible

- Drag **Category** field from Dimensions on to the Color shelf
- Drag **Order Date** field from Dimensions on to the Label shelf

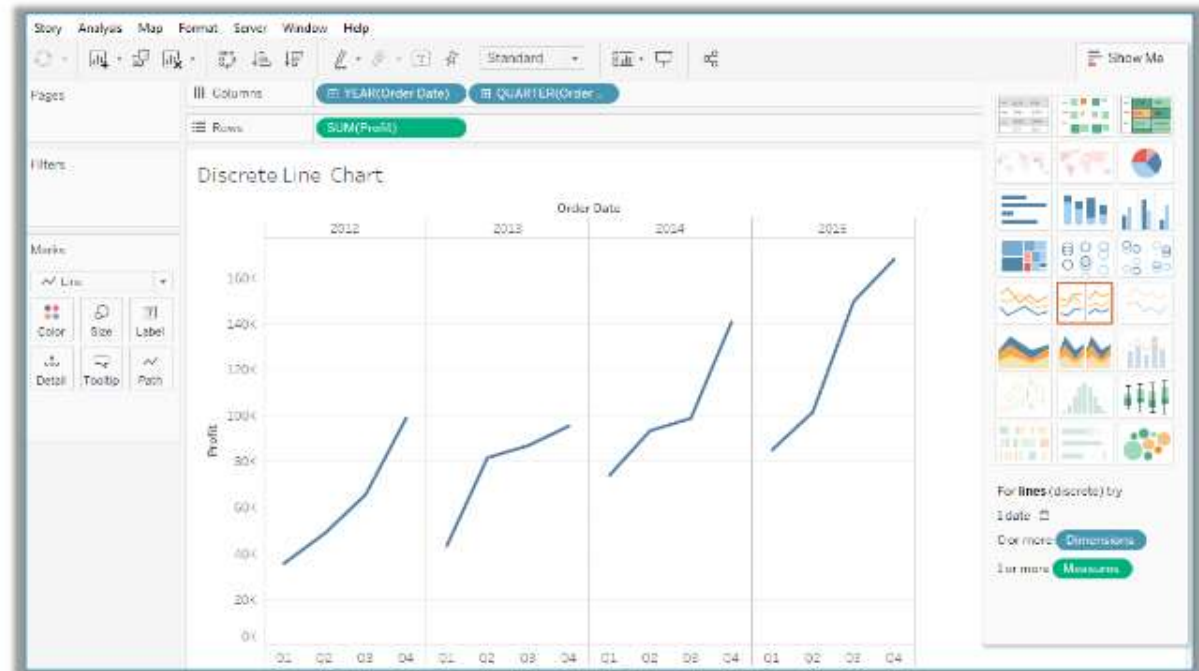


A Labeled Line Chart that displays year after year profit values of various product categories

Discrete Line Chart

A Discrete Line Chart represents values at specific points along the number line

- Drill down the **Order Date** field from the Columns shelf
- Quarter wise profits across years will be displayed

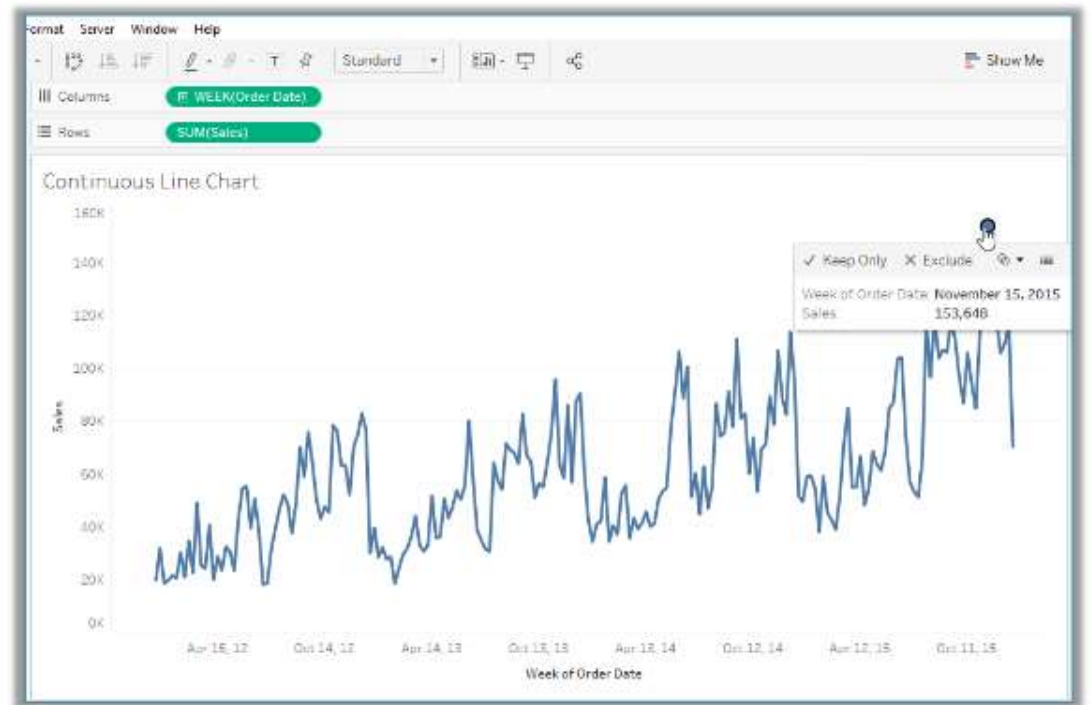
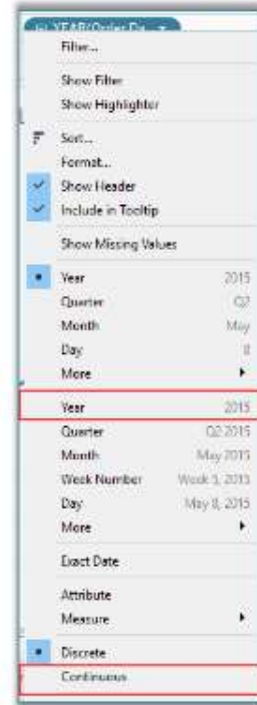


A Discrete Line Chart displays profits across various quarters

Continuous Line Chart

A Continuous Line Chart is a Line Chart which is used to display the development of a phenomenon over time

- Click on the **Order Date** field from the Columns shelf and select the Year option from the Continuous field
- Drill down the **Order Date** field from the Columns shelf to WEEK

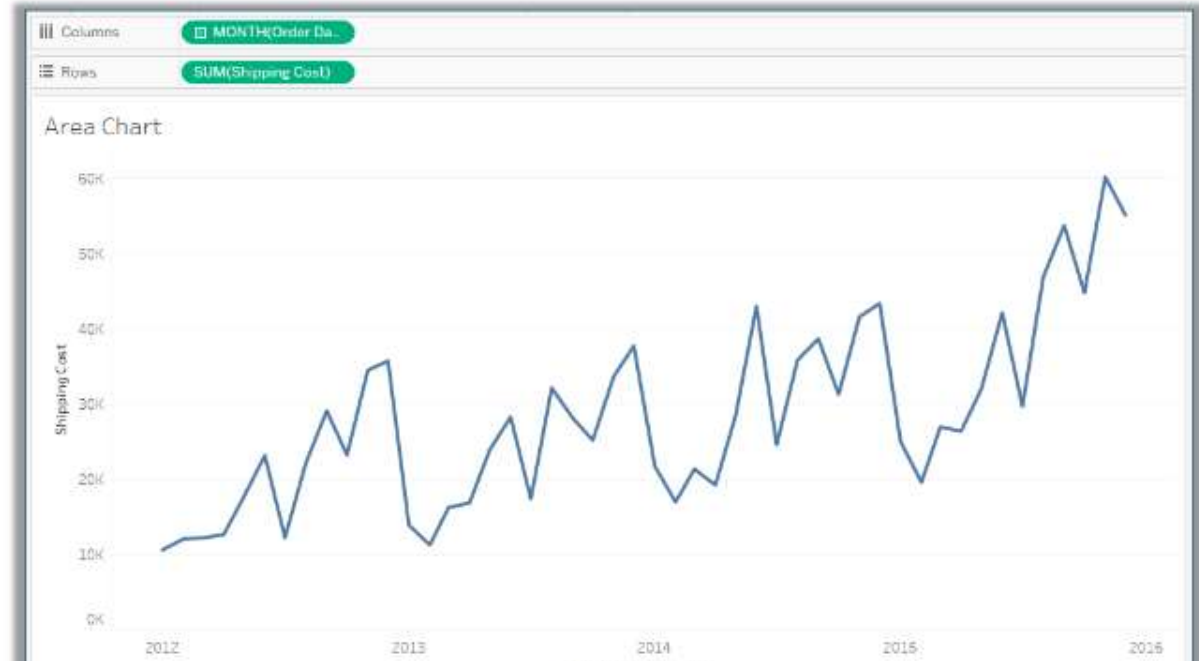
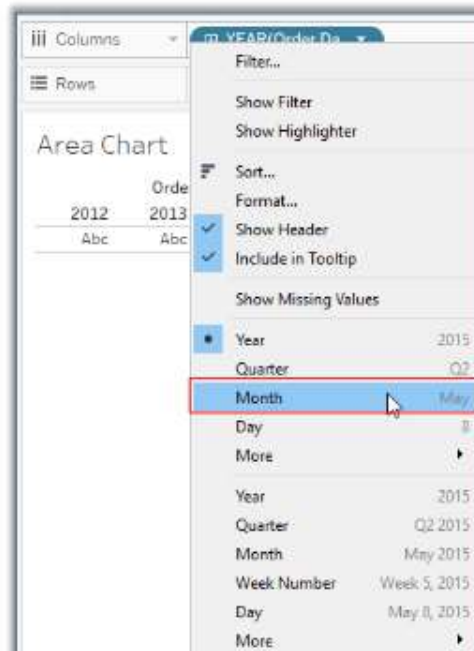


A Continuous Line Chart displaying week wise sales

Area Chart

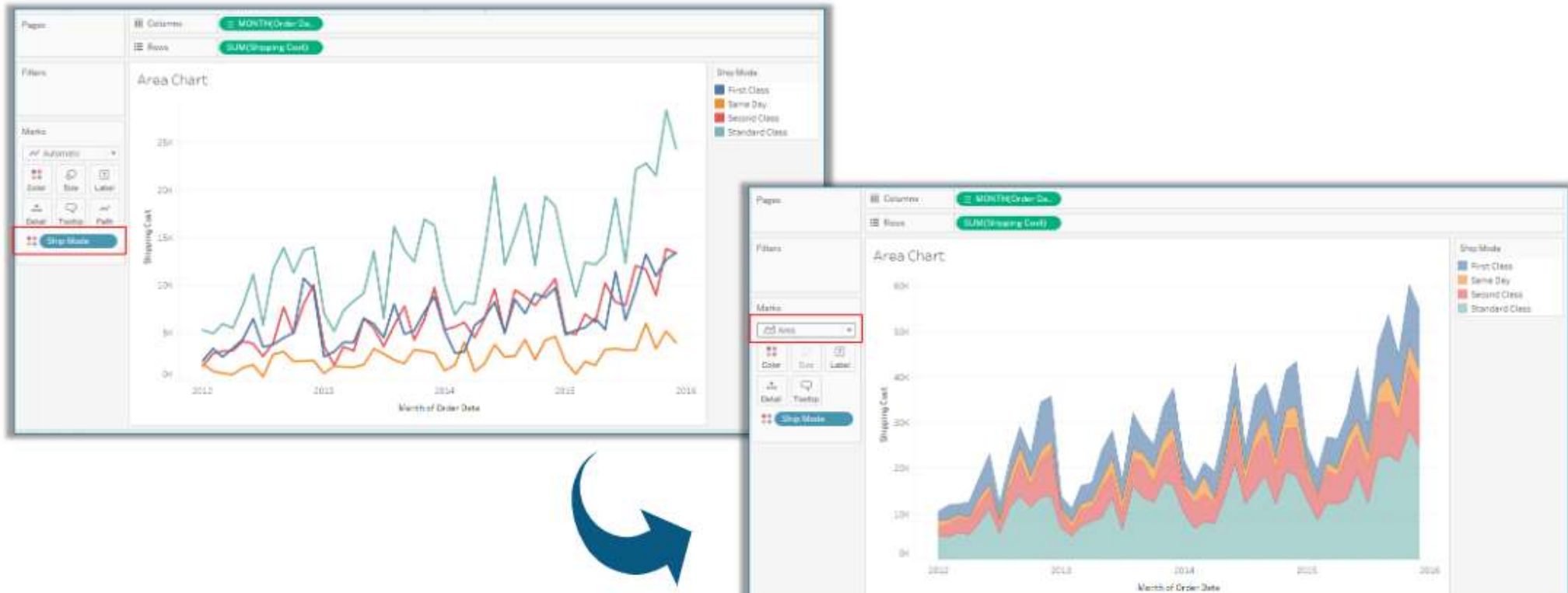
Area Chart is a Line Chart wherein the area between the line and the axis are shaded

- Drag **Order Date** field from Dimensions on to the Columns Shelf
- Drag **Shipping Cost** from Measures on to the Rows Shelf



Area Chart

- Drag **Ship Mode** Field from Dimensions on to the Color shelf
- Select **Area** option from drop down menu of Marks Card



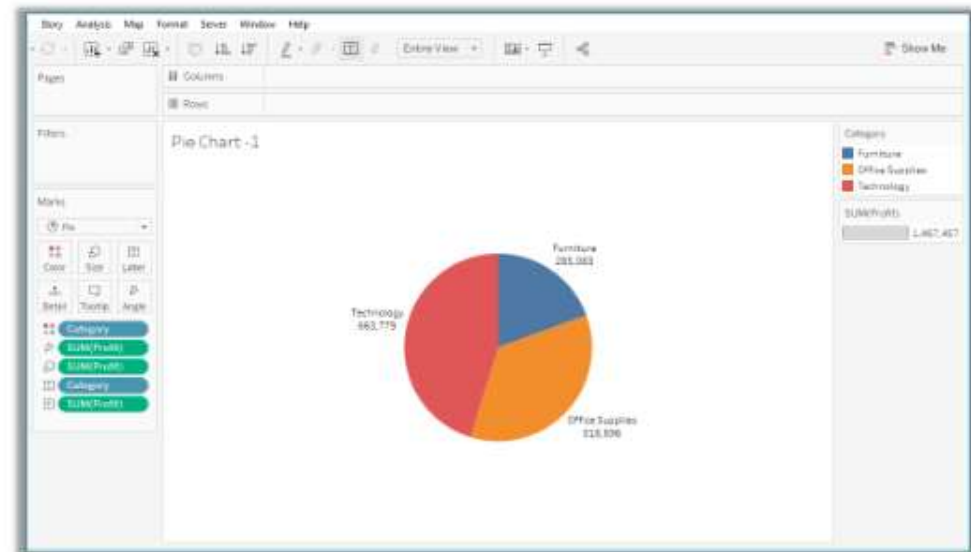


Pie Charts

Pie Chart Using Show Me Tool

A Pie Chart is best suited to show proportional or percentage relationships

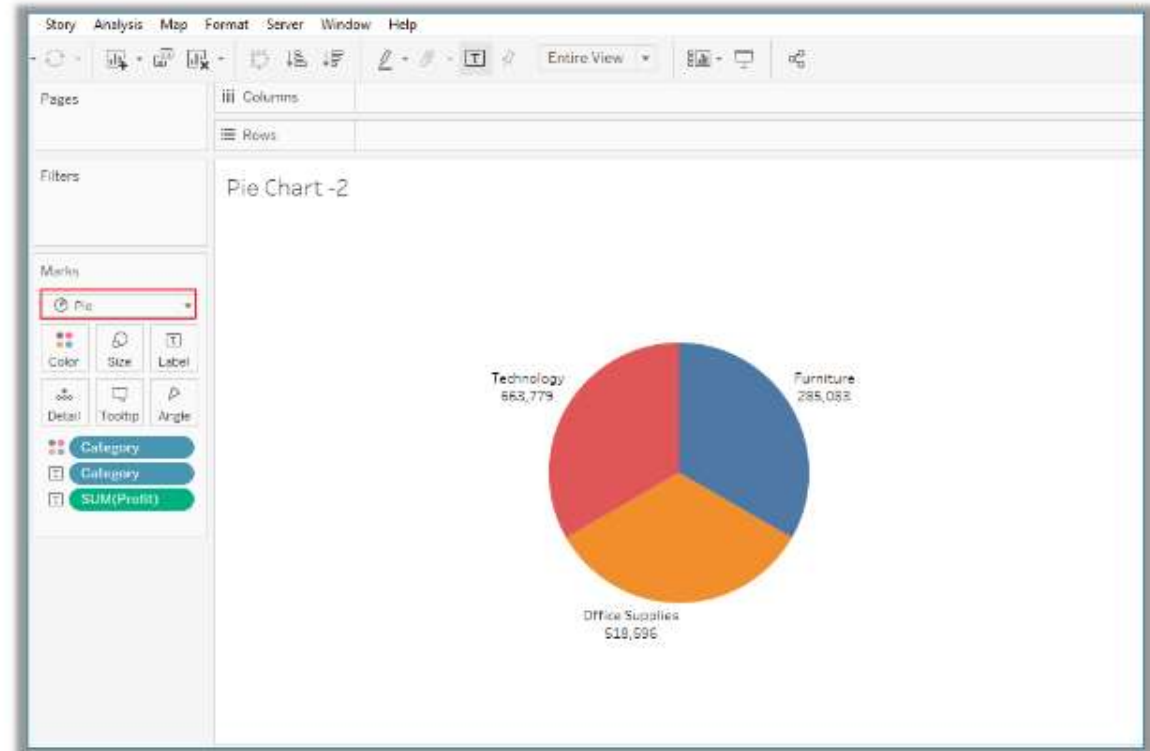
- Select **Category** field from Dimensions, press **Ctrl** key and select **Profit** field from Measures
- Select Pie chart from the **Show Me** Tool
- Choose the **Entire View** option from the Toolbar
- Drag **Category** and **Profit** field on to the Label



A Pie Chart showing Category Wise Profits

Pie Chart Through Marks Card

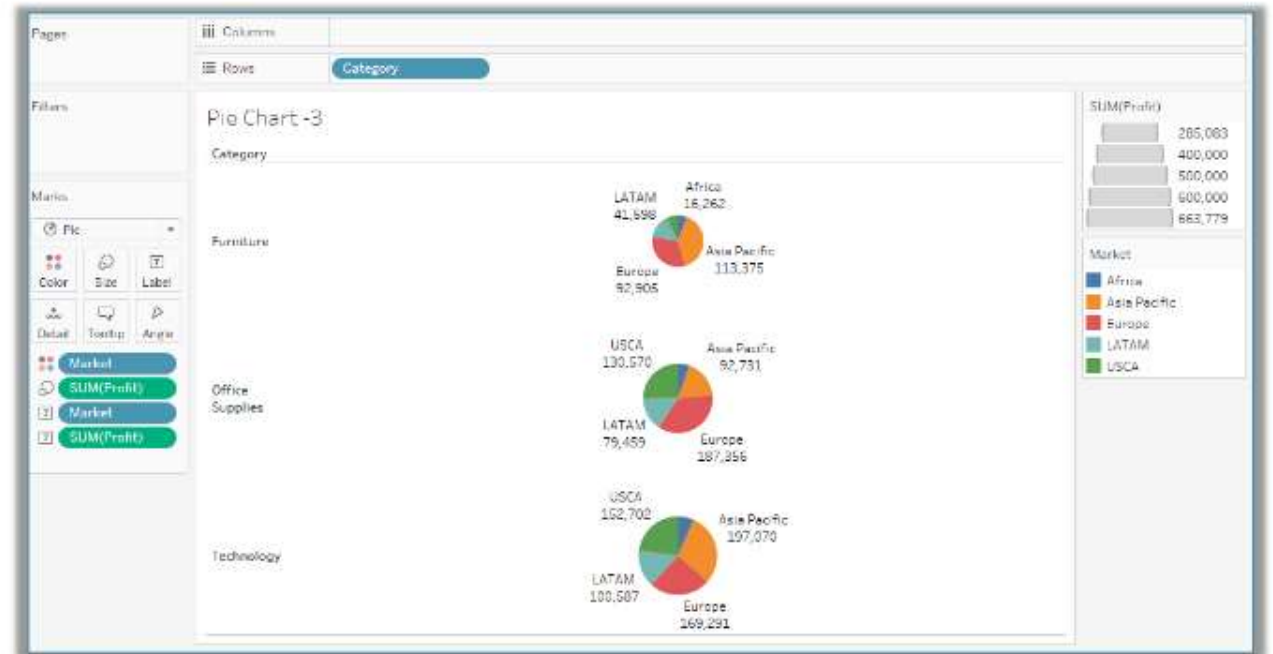
- Drag **Profit** field from Measures on to the pane
- Select the **Pie** option from the Marks Card
- Drag **Category** sales from Dimensions on to the Color shelf
- Choose the **Entire** view option from the toolbar
- Drag **Category** and **Profit** field on to the Label shelf



A Pie Chart showing Category Wise Profits through Marks Card

Pie Chart Through Marks Card

- Drag **Category** field from Dimensions on to the Rows shelf
- Select the **Pie** option from the Marks Card
- Drag **Profit** field from Measures on to the Size shelf
- Drag **Market** field from Dimensions on to the Color shelf
- Drag **Market** and **Profit** field on to the Label shelf



A Pie Chart showing Market Wise Profits through Marks Card



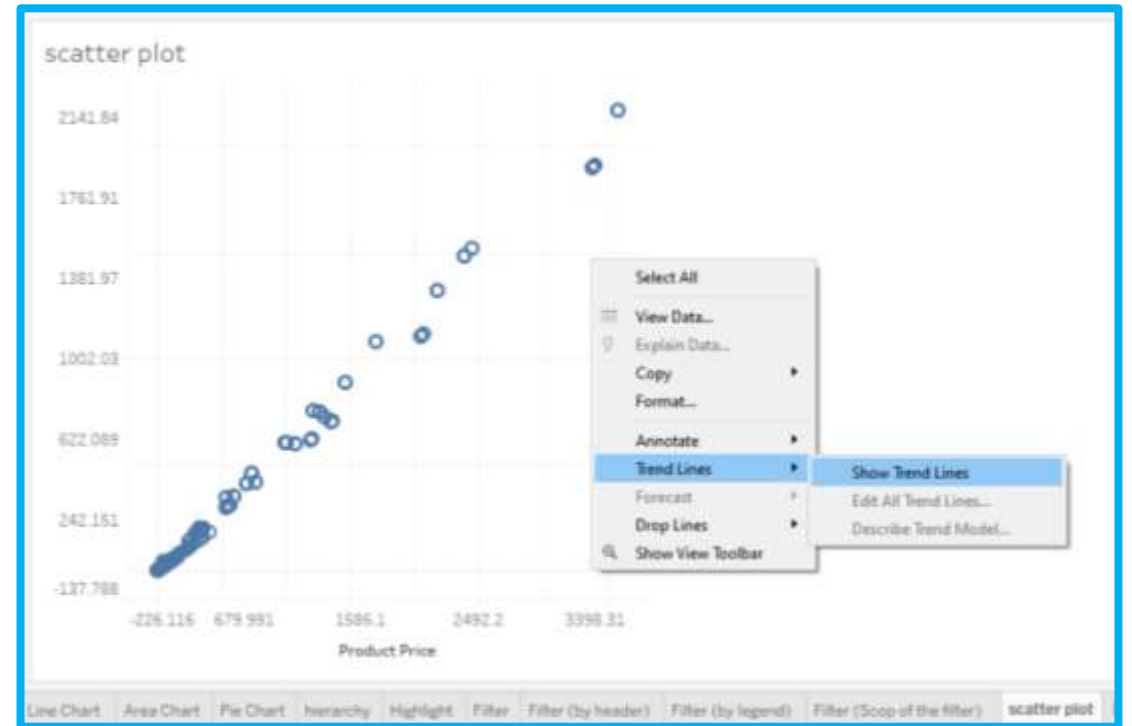
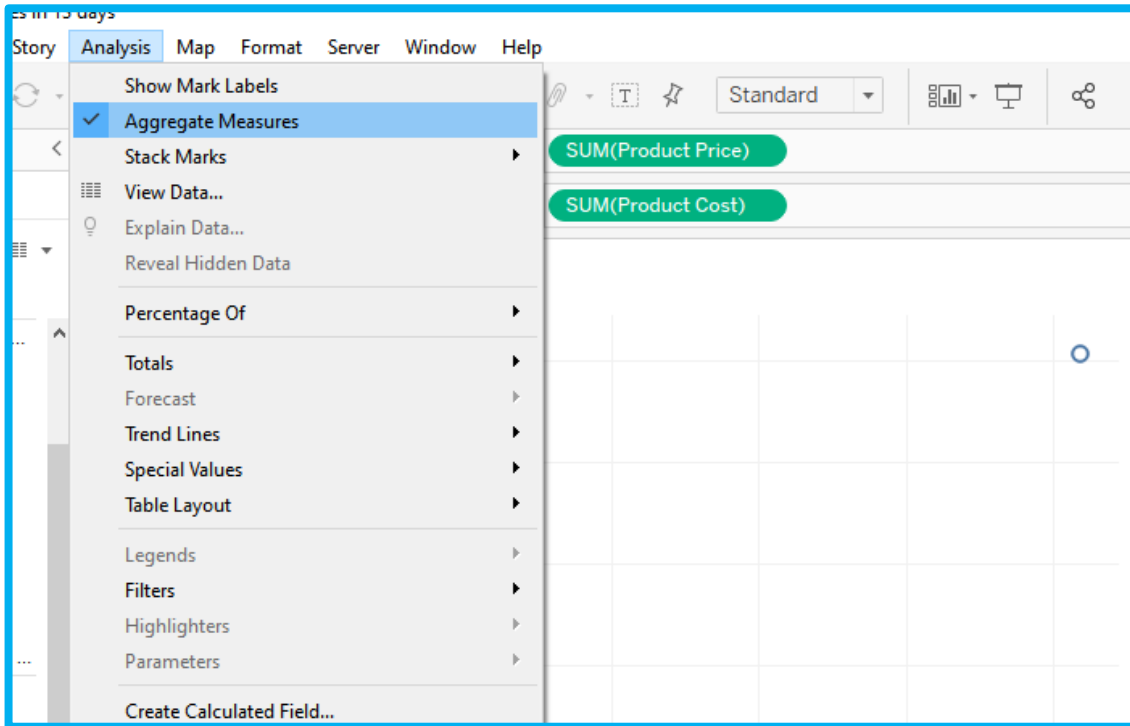
Scatter Plot

Scatter Plot

Can be used for correlation data analysis and predictions, scatterplot will tell us the (Direction) and (strength) of the relationship.

- What will be the output given the input?
- What will be the profit given sales?
- What will be the weight gained given the calories consumed?
- What will be the power output given the wind speed?

Scatter Plot



Scatter Plot

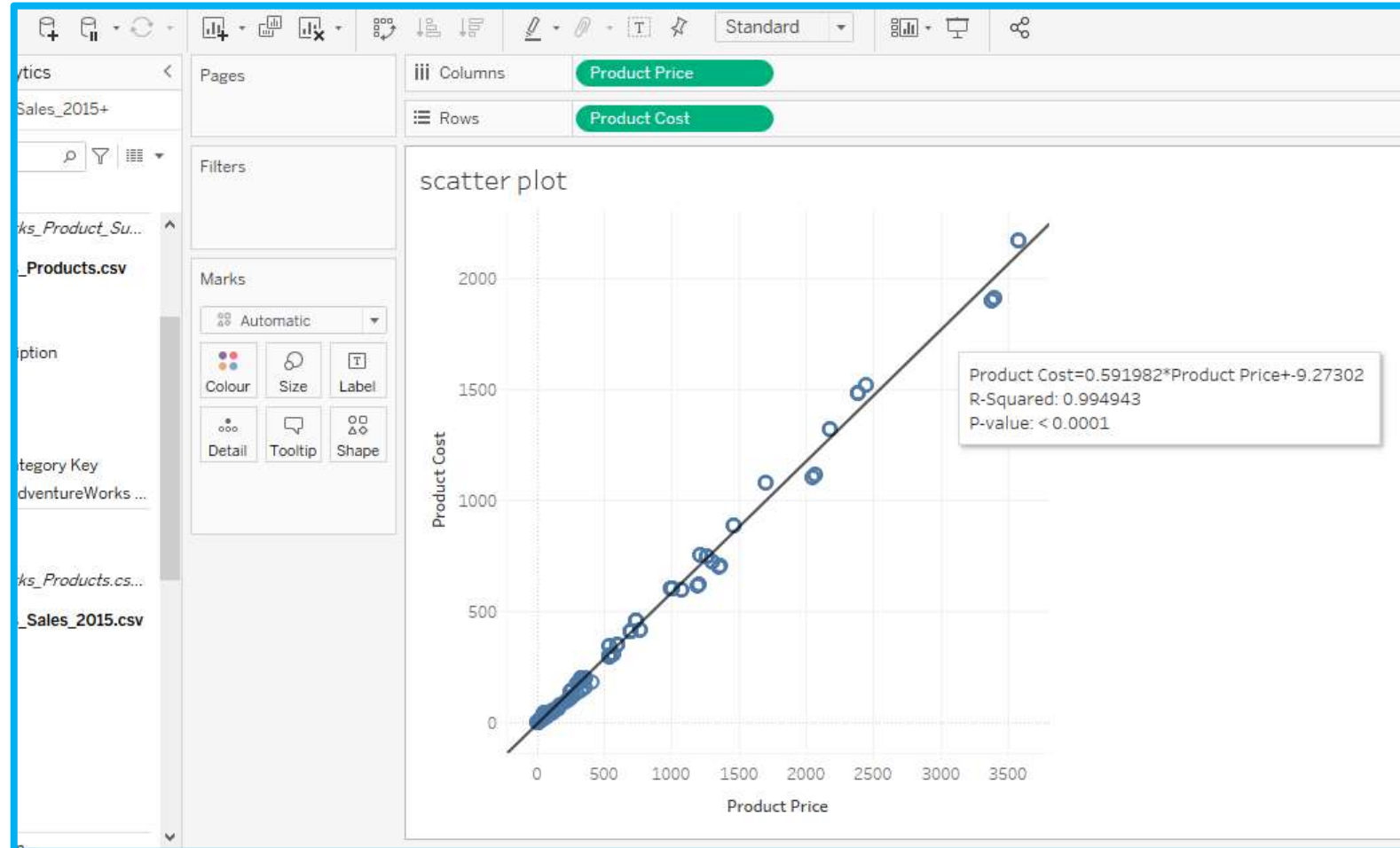




Tableau Reader

Tableau Reader

You Can share Tableau workbook with others using Tableau Readers, it will be an interactive visuals.

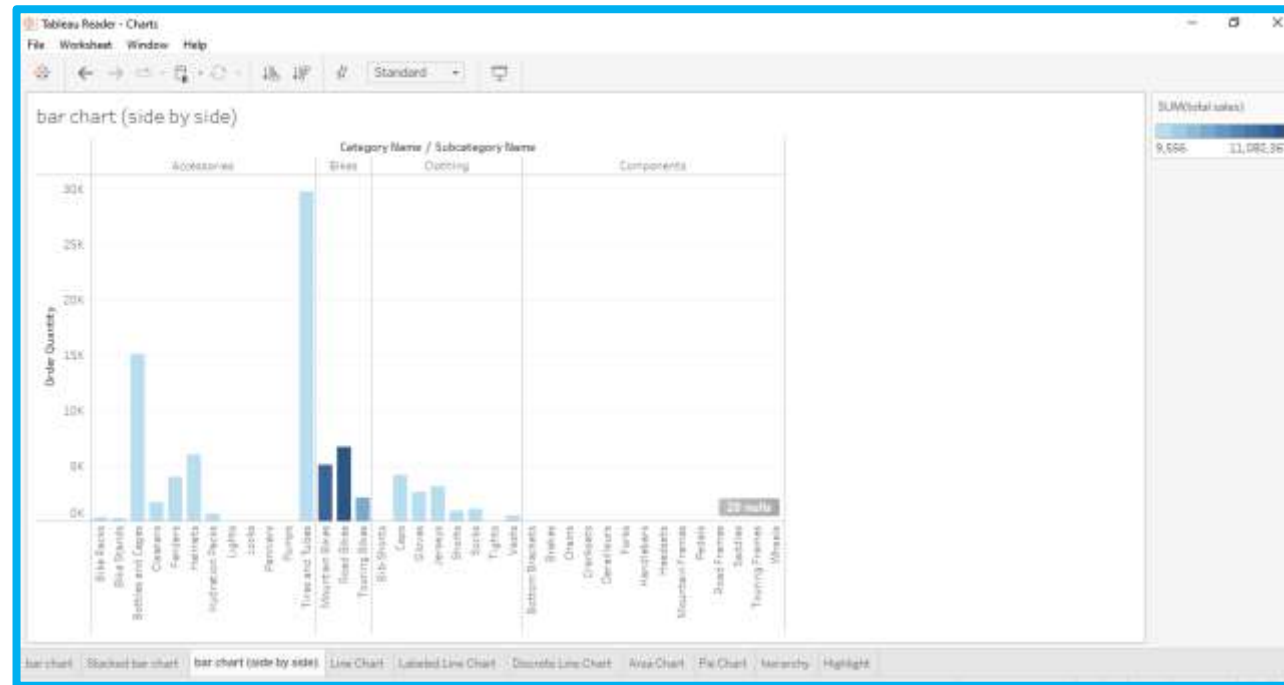


Tableau Reader Installation URL: <https://www.tableau.com/products/reader>

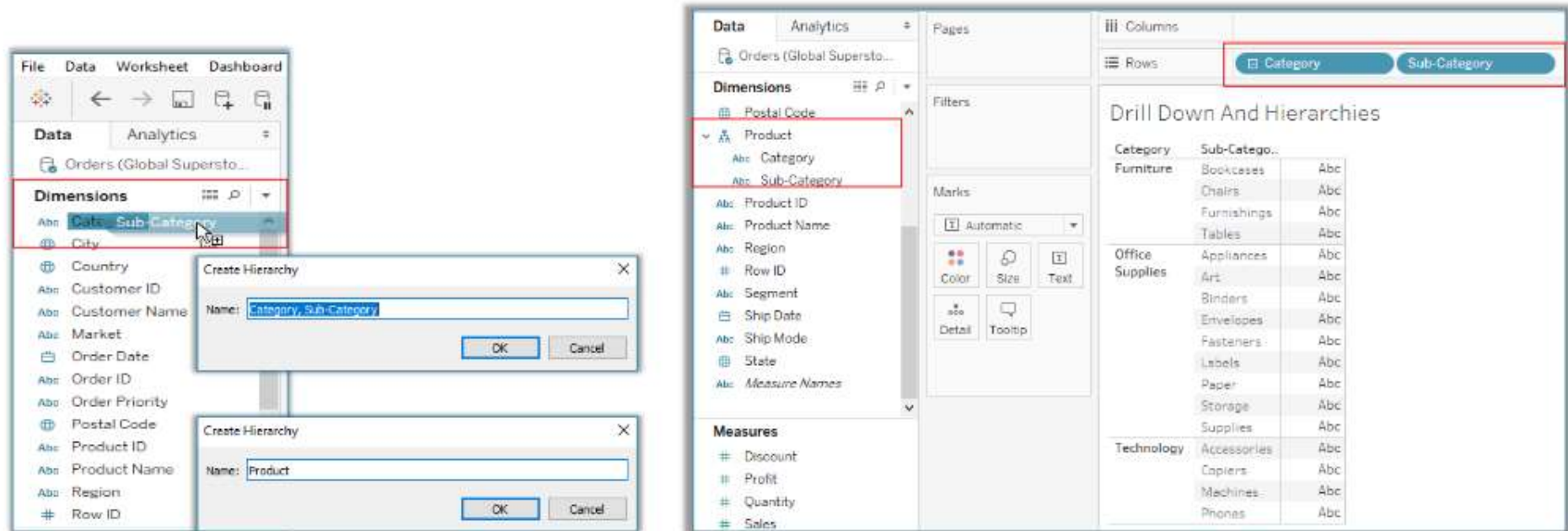
Note: Only packaged workbook can be opened in tableau reader



Hierarchies

Create A Hierarchy

- Drag and drop Sub-Category field from Dimensions onto the Category field
- Name the Hierarchy as “Product”

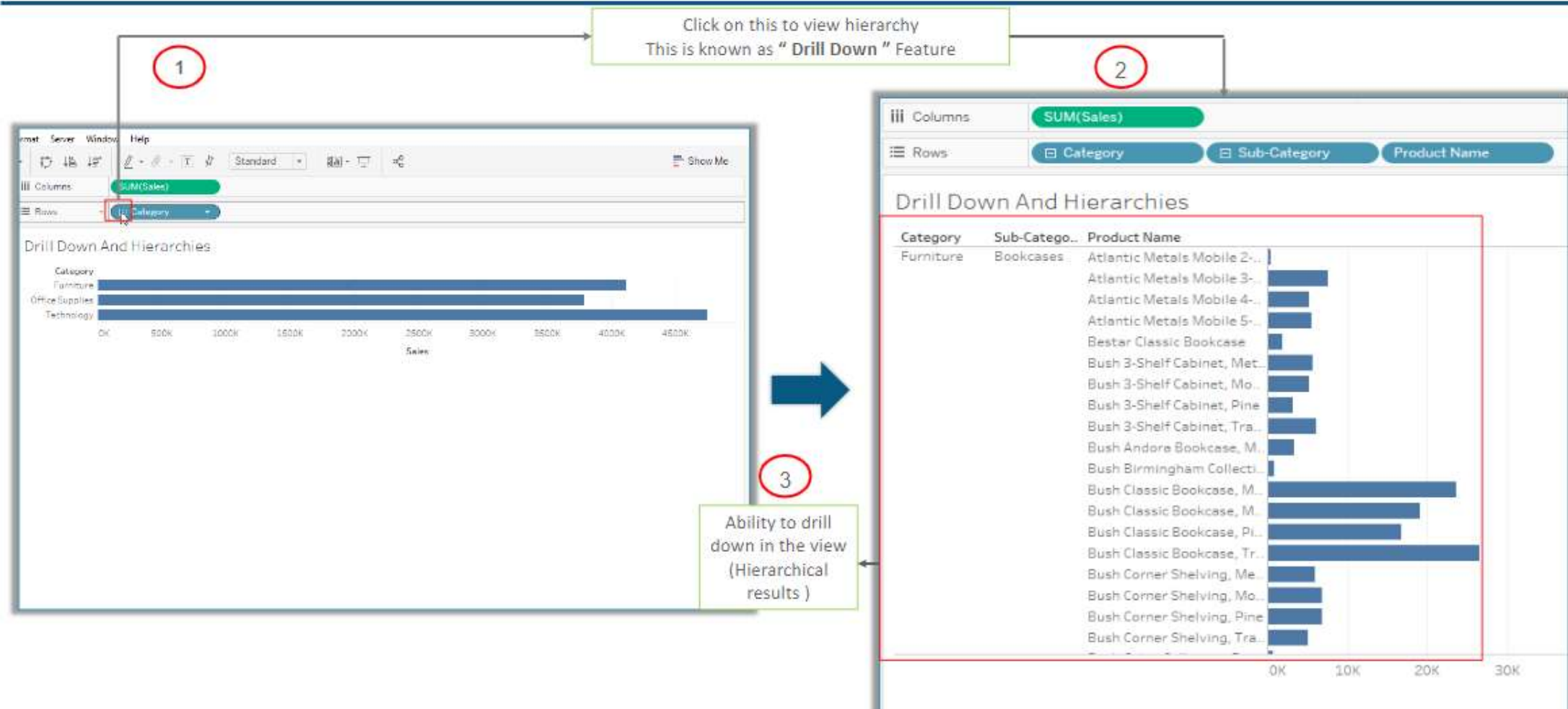


The screenshot illustrates the steps to create a hierarchy in Tableau. On the left, the 'Dimensions' list shows 'Category' and 'Sub-Category' being dragged. On the right, the 'Columns' shelf shows both fields added. The bottom pane displays the resulting hierarchy view.

Drill Down And Hierarchies

Category	Sub-Catego..	Abc
Furniture	Bookcases	Abc
	Chairs	Abc
	Furnishings	Abc
	Tables	Abc
Office Supplies	Appliances	Abc
	Art	Abc
	Binders	Abc
	Envelopes	Abc
	Fasteners	Abc
	Labels	Abc
	Paper	Abc
	Storage	Abc
Technology	Supplies	Abc
	Accessories	Abc
	Copiers	Abc
	Machines	Abc
	Phones	Abc

Hierarchies



Built In Hierarchies

Order Date field has a built-in hierarchy

➤ Year

➤ Quarter

➤ Month

➤ Day



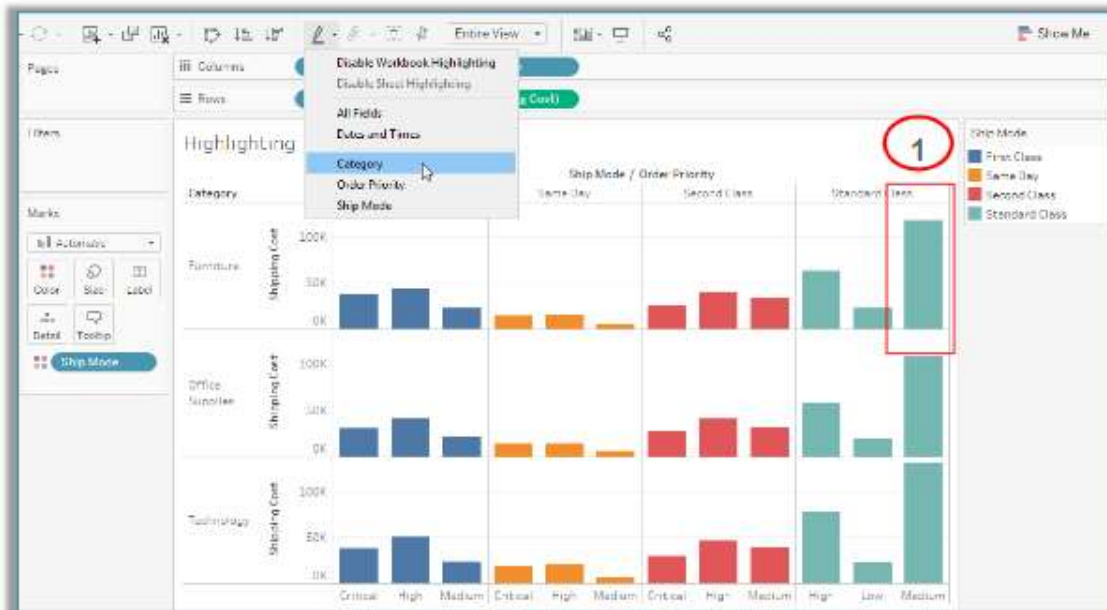
Profits based on the Timeline



Highlighting

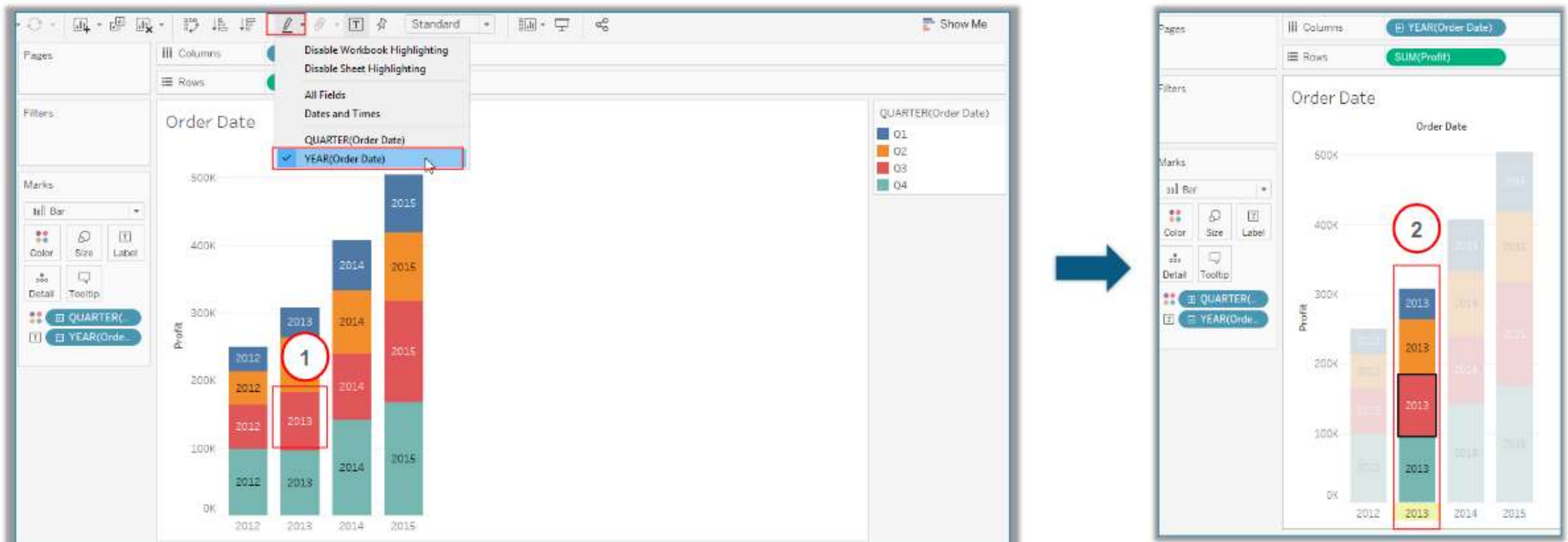
Highlighting Feature In Tableau

- Click on the Highlighting icon in the toolbar, and select the Category option from the drop-down menu
- Click on **1**, the corresponding row (Category) gets highlighted as displayed in **2**



Highlighting Feature In Tableau

- Click on the Highlighting icon and select the Year (Order Date) option from the drop-down menu
- Click on **1**, the corresponding column (Year) gets highlighted as displayed in **2**

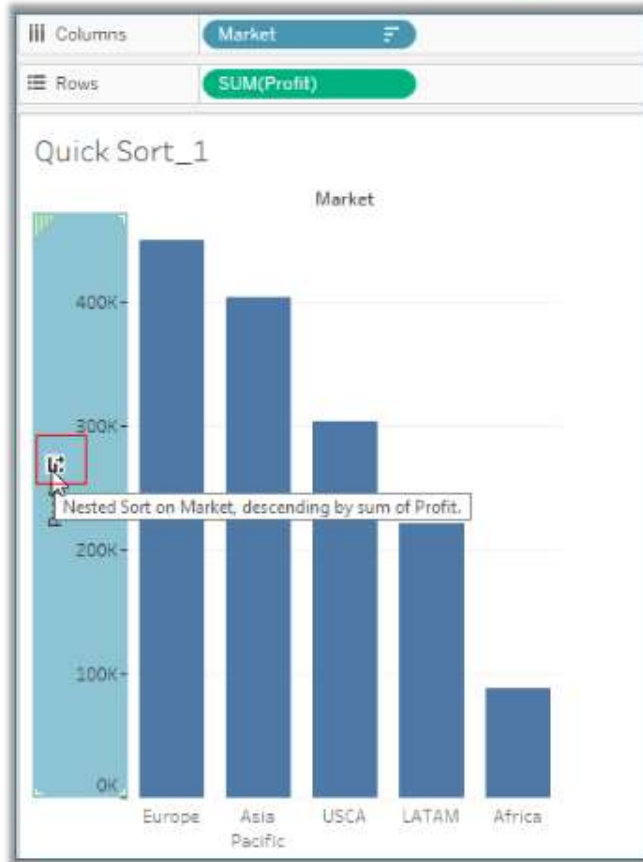




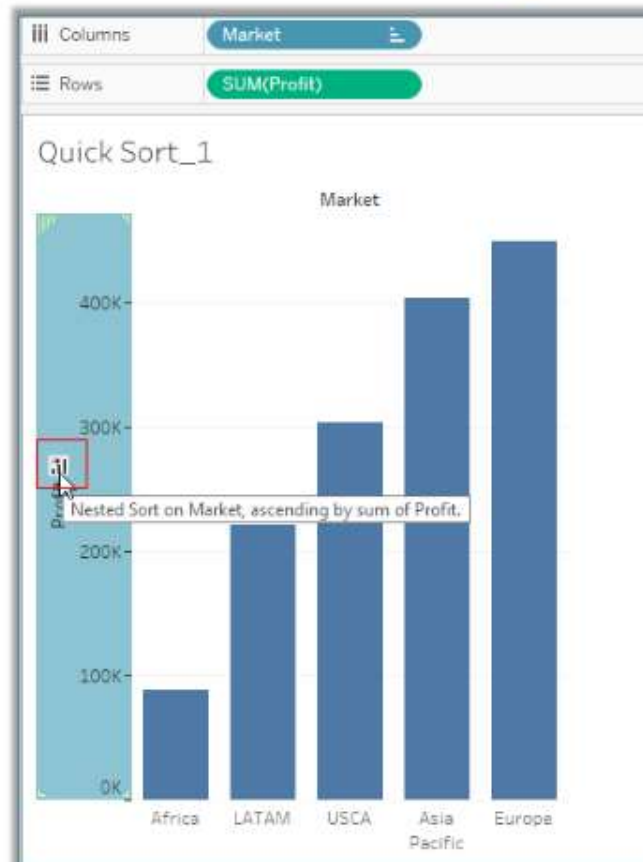
Sorting

Quick Sort

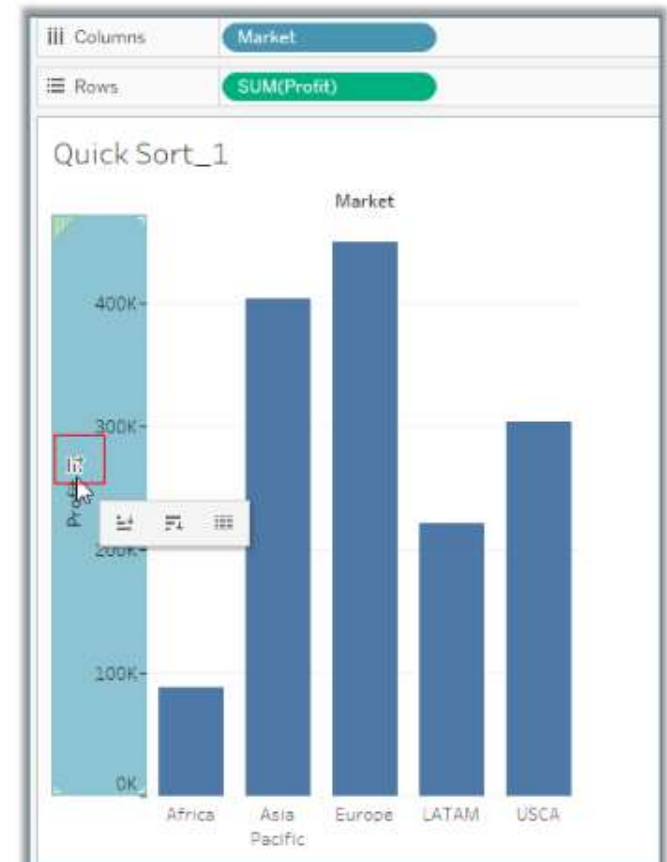
1st Click - Descending



2nd Click - Ascending

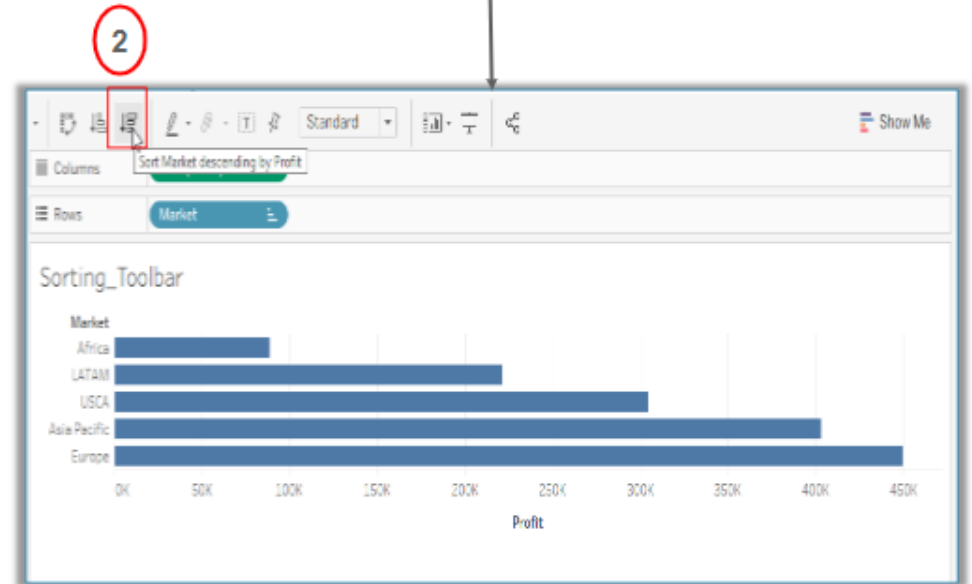
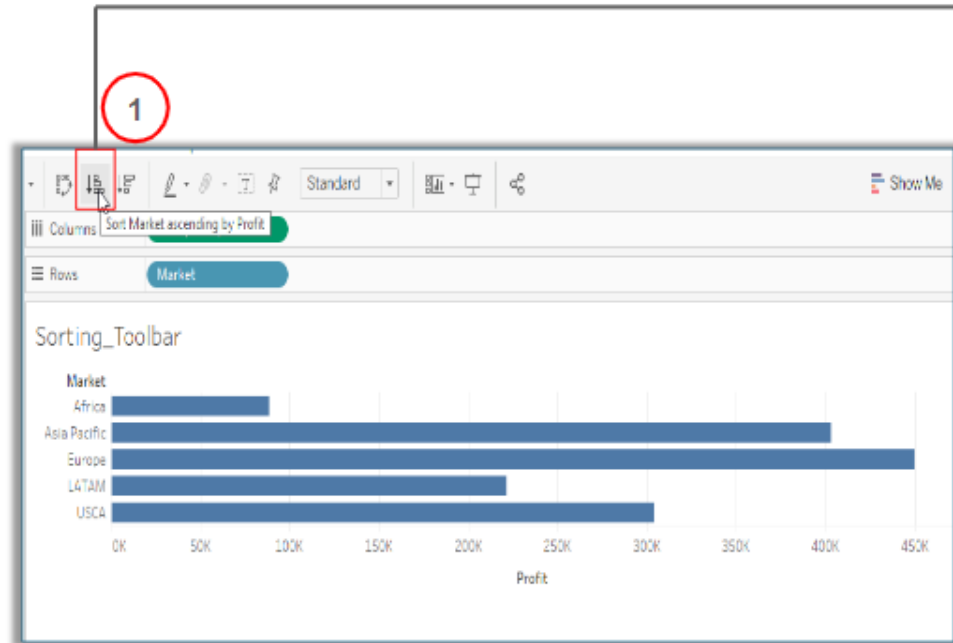


3rd Click - No Sort



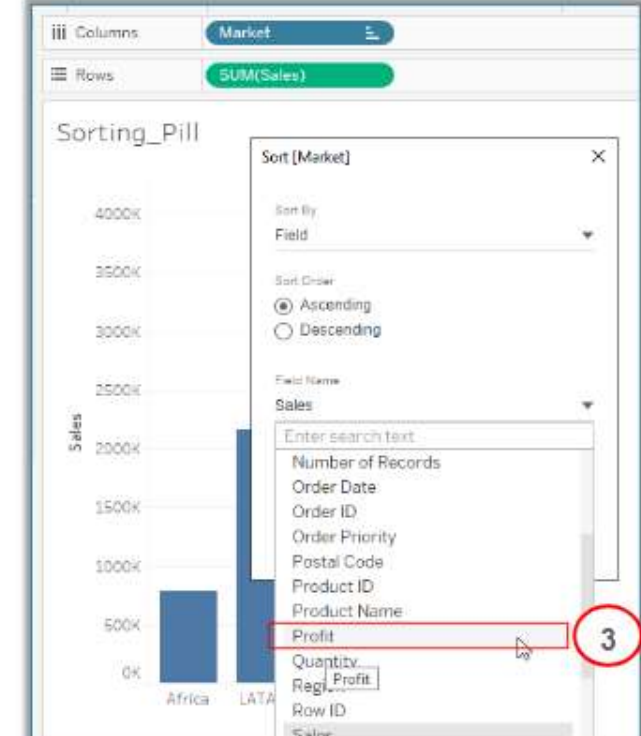
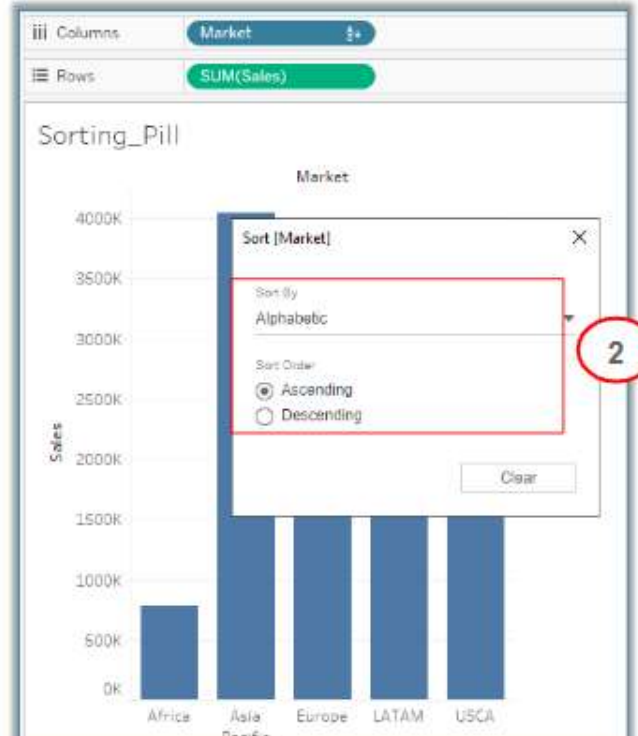
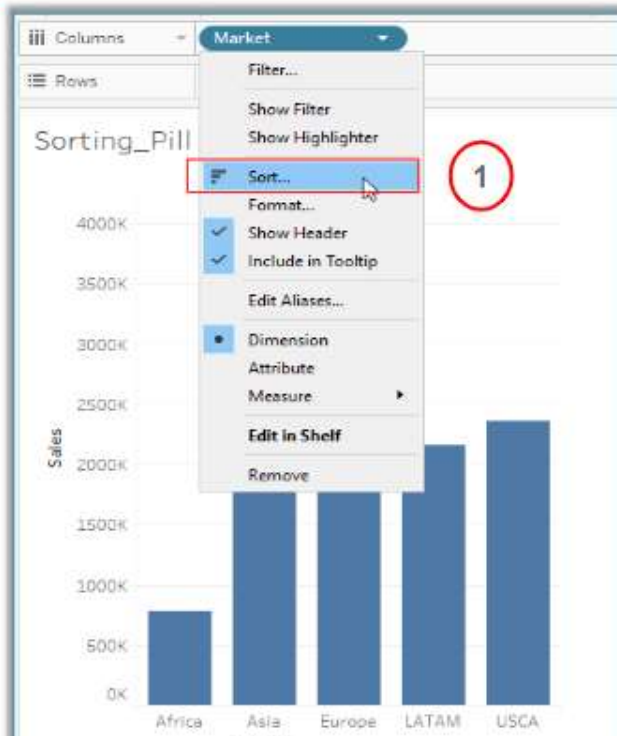
Sort Using Toolbar

- 1 Click on the Sorting Icon from the toolbar which sorts the data in ascending order
- 2 Click on the Sorting Icon from the toolbar which sorts the data in descending order



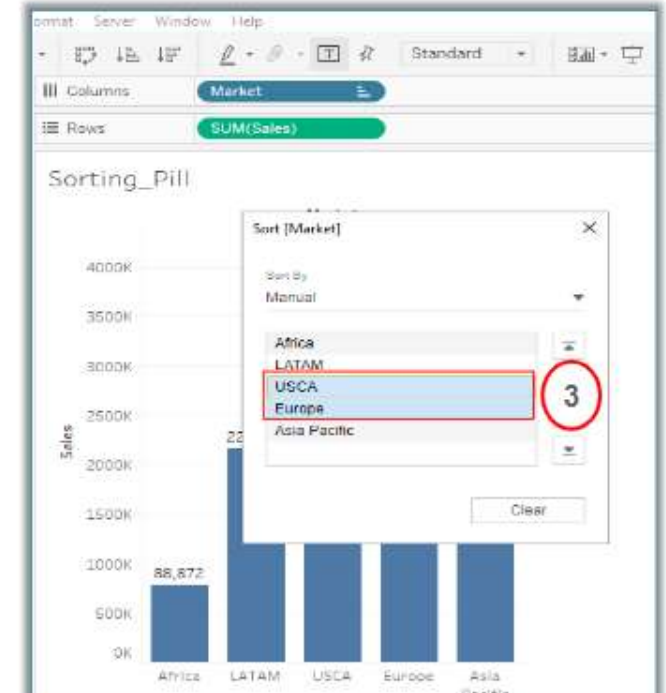
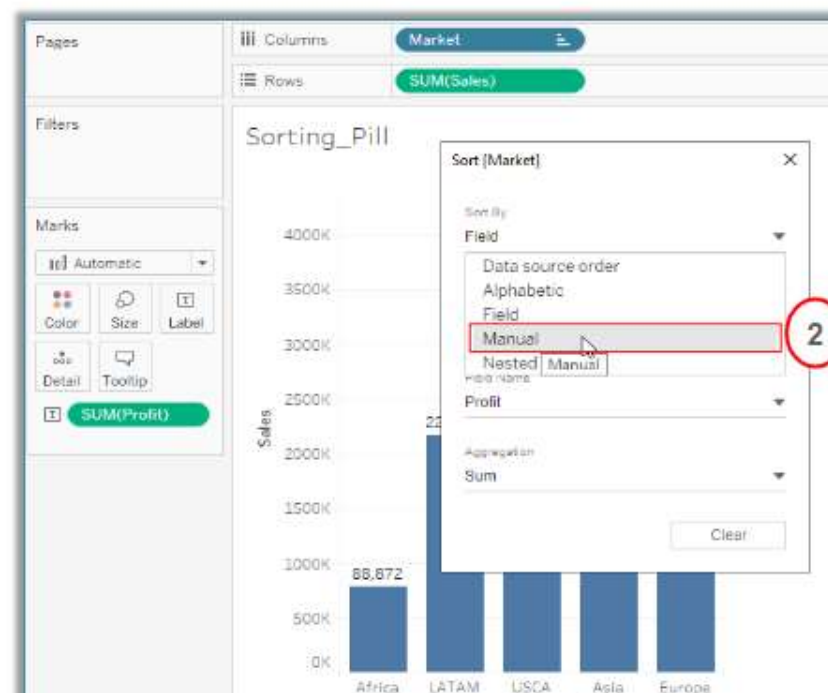
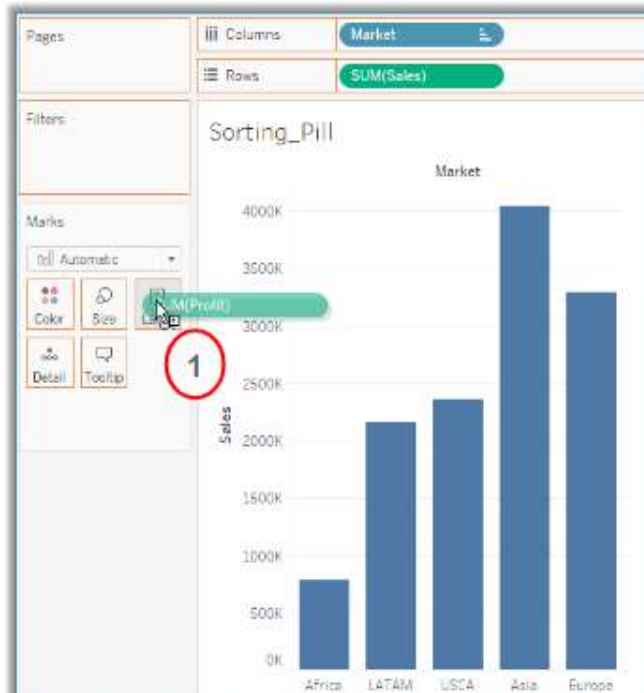
Sort Using Pill

- 1 Click on the Market pill and select the Sort option
- 2 Sort Alphabetically in Ascending order
- 3 Sort by Field by selecting this measure to sort the Market according to the Profit



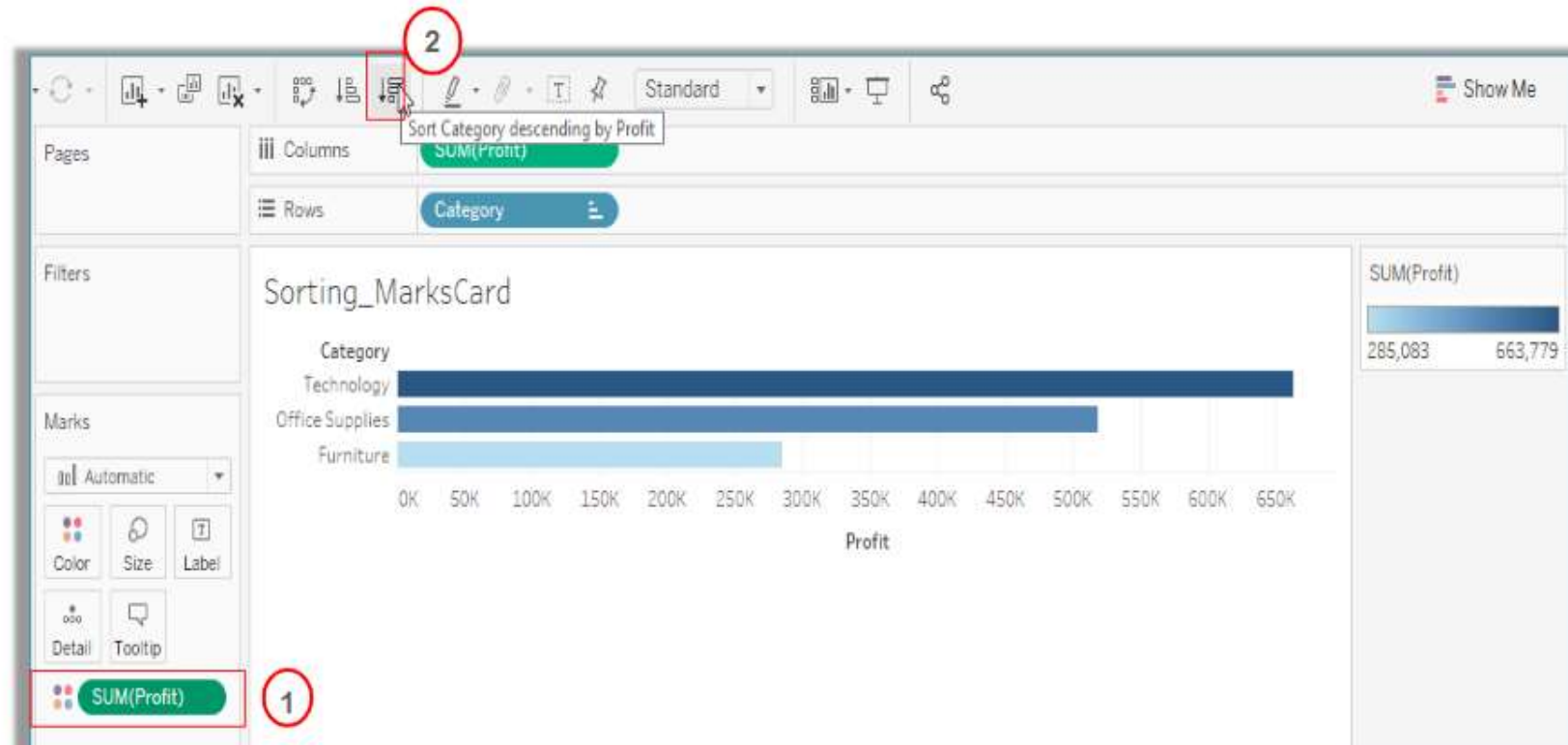
Sort Using Pill

- 1 Drag Profit field from Measures on to the Color shelf
- 2 Select Manual option from the drop - down menu
- 3 Perform Manual Sort



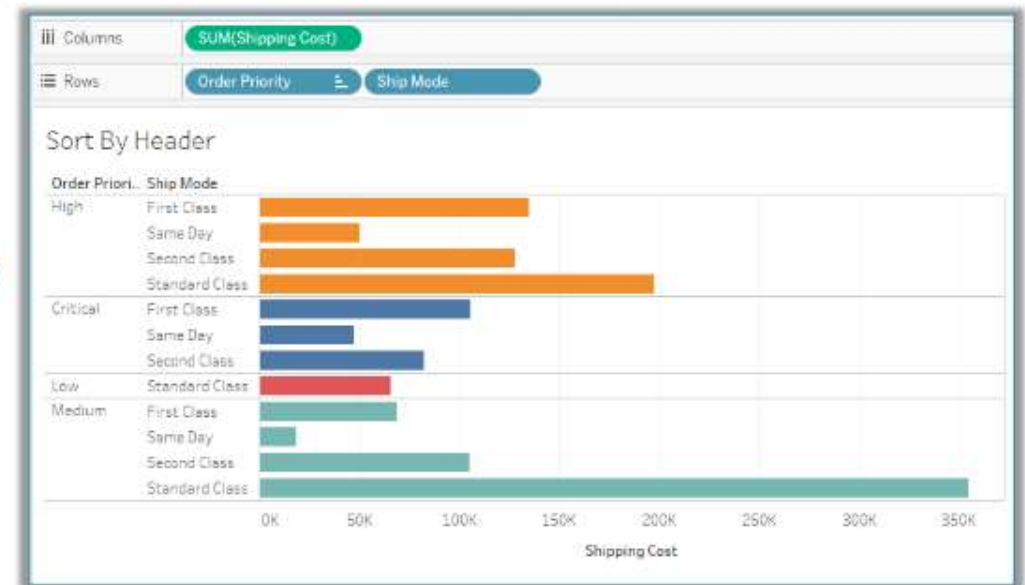
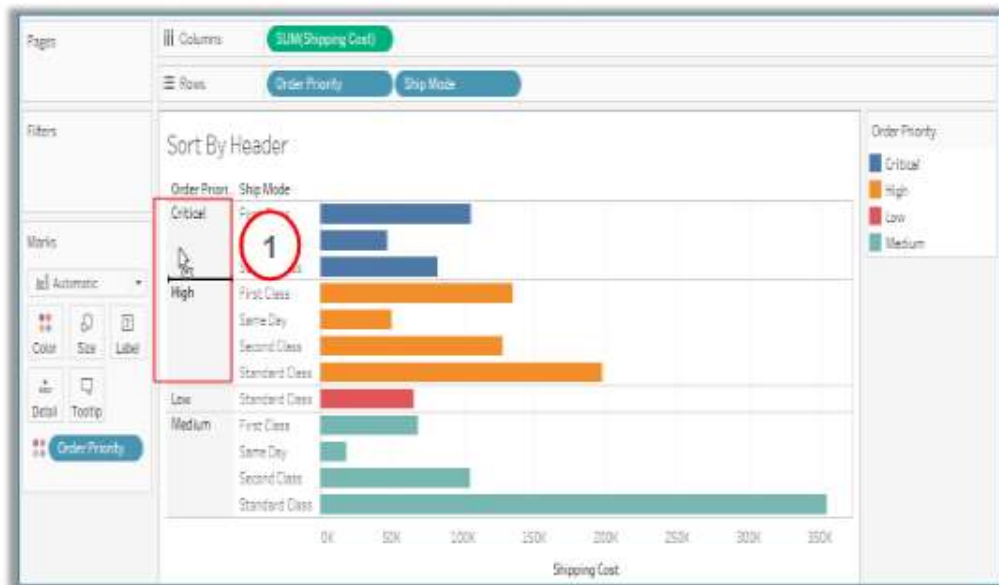
Sort Using Marks Card

- 1 Click on the measure on the Marks Card
- 2 Select the Sort option from the toolbar



Sort By Headers

- 1 Drag the High over Critical to get the data sorted by Headers



Sort By Legends

- 1 Drag the Medium over Low in order to get the data sorted by Legends

