

Tableau Essentials

Bharat Bhushan Verma





About Trainer

- ❖ KG to PG (Physics)
- ❖ Physics to Management (IIM Ahmedabad) specializing in Operations Research
- ❖ Management to Electrical Engineering (IIT Bombay)
- ❖ Cofounded Kie Square Consulting
- ❖ Founder Director of startup Business schools and Dean of first Liberal school in India
- ❖ Startups to Marketing Strategy
- ❖ Marketing Strategy to Artificial Intelligence & Deep Learning in Fintech, Telecom & Banking

Published in Public Health, Electricity Markets, Telecom, Advertising & Communication Strategies

Worked on assignments with International Monetary Fund, Royal Netherland Embassy etc.

Conducts training in

Python (Pandas, NumPy, SciPy, Matplotlib, Bokeh)

R (dplyr, rstanarm, knitr, ggplot2)

Data Visualization (Tableau, Qlik, MicroStrategy, D3.js)

Machine Learning (Reinforced Learning, Scikit Learn)

Deep Learning (Tensorflow, Theano, CNN, RNN)

Agenda

D1 M1: Data Visualization Overview

- Data Visualization Overview
- Where Tableau fits in the data analysis ecosystem
- Tableau File Types
- Tableau Interface

D1 M2: Tableau Overview

- Worksheets, Dashboard, Stories
- Dimensions & Measures
- Continuous Vs Discrete Data
- Folders, Hierarchies

Agenda

D1 M3: Getting Data in Tableau

- Data Import Export
- Data Join
- Data Extracts
- Data Blending
- Data Source Filters

D1 M4: Processing Data for Visualization

- Data Transformation
- Data Interpreter
- Data field merge and split
- Data Pivot
- Groups & Sets

Exercise Files

Please download the
exercise and data files
from

<https://github.com/dearbharat/tableauEssential>

D1 M1 Data Visualization Overview

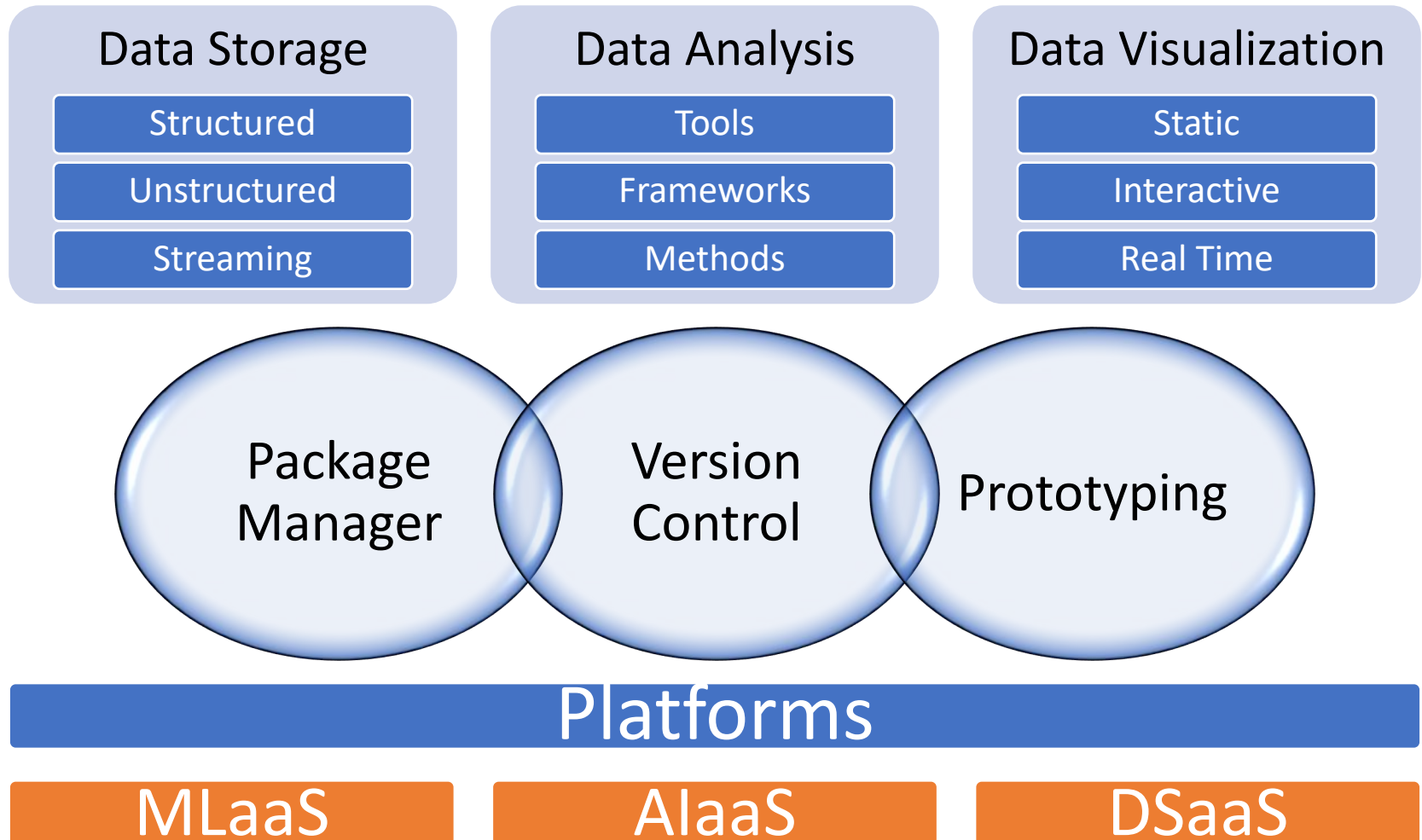
Data Visualization
Overview

Where Tableau fits in
the data analysis
ecosystem

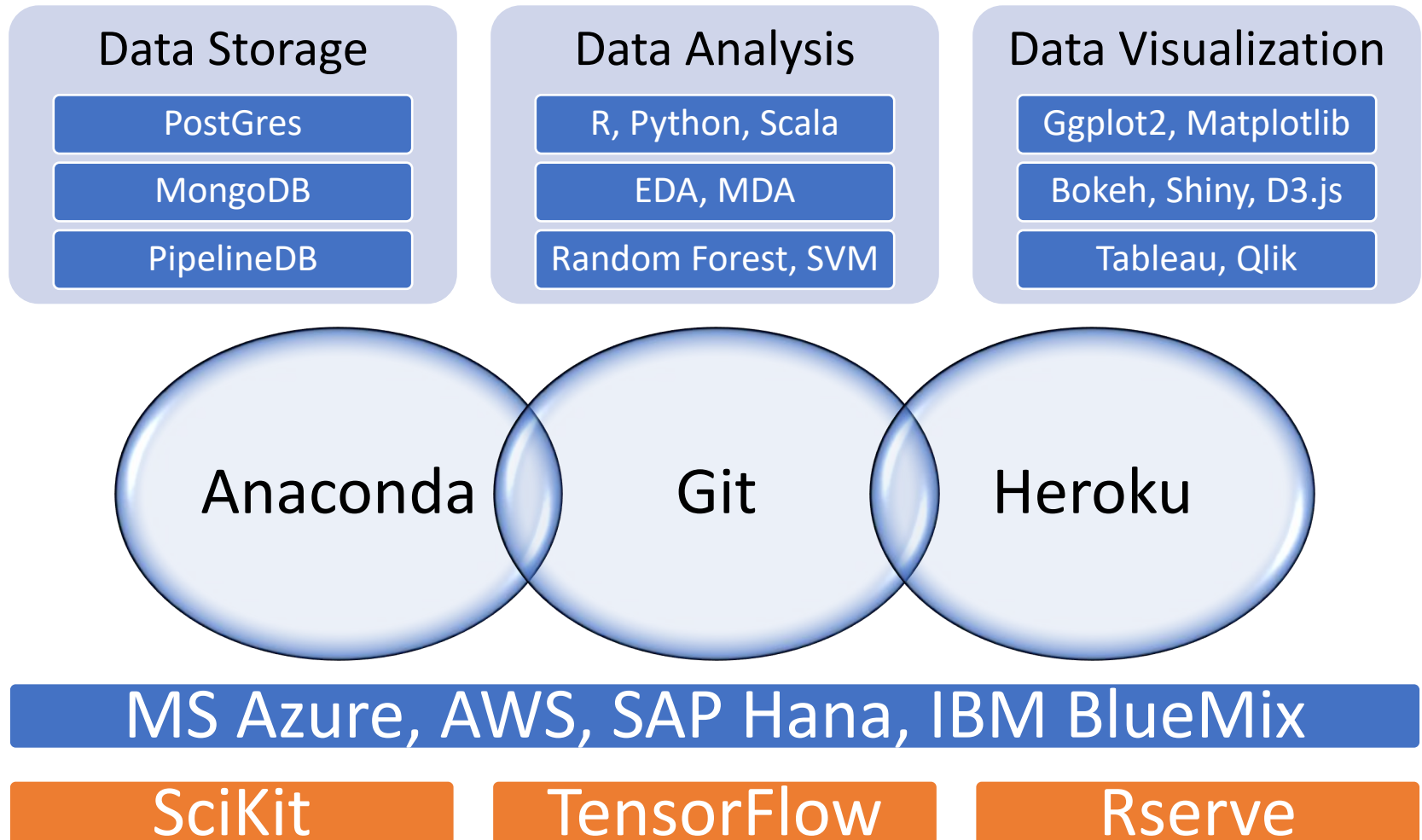
Tableau File Types

Tableau Interface

Data Analytics Ecosystem



Data Analytics Ecosystem



What is Tableau?

- Tableau is a data visualization software created by Tableau Software.
- Tableau connects to nearly any data source, such as Excel, Oracle, Amazon...
- Tableau allows for instantaneous insight by transforming data into visually appealing, interactive visualizations called dashboards.

Tableau Website

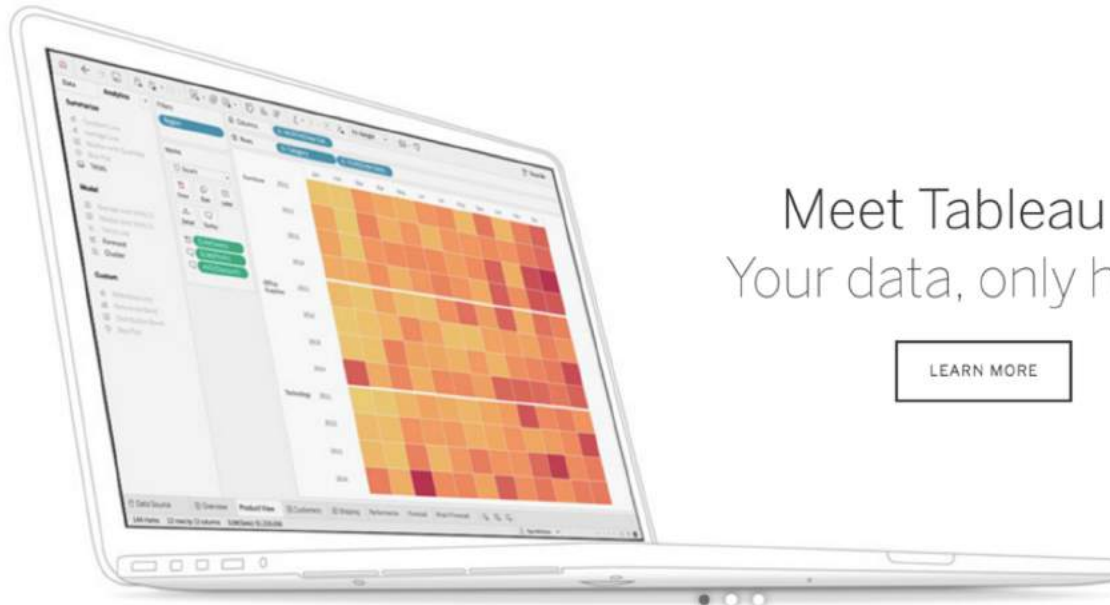
- <http://www.tableau.com/>



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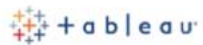


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Tableau Desktop

- <http://www.tableau.com/products/desktop>



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Answer questions
at the speed of thought
with Tableau Desktop

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[SEE IT IN ACTION](#)



Tableau Online

- <http://www.tableau.com/products/cloud-bi>

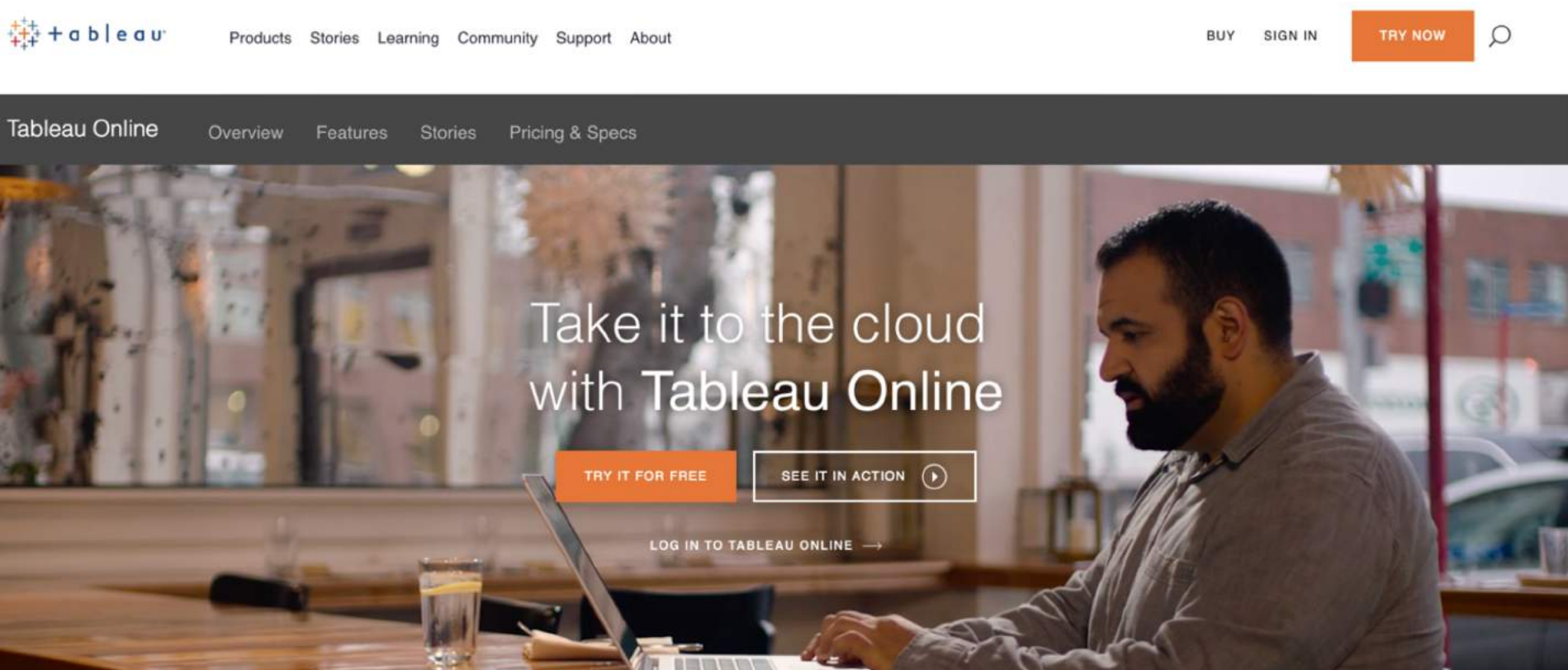


Tableau Server

- <http://www.tableau.com/products/server>



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Boris Bikes by Station During the July 2015 Tube Strike in London

Access interactive insight
from anywhere
with Tableau Server

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Tableau Server/Online Sign In

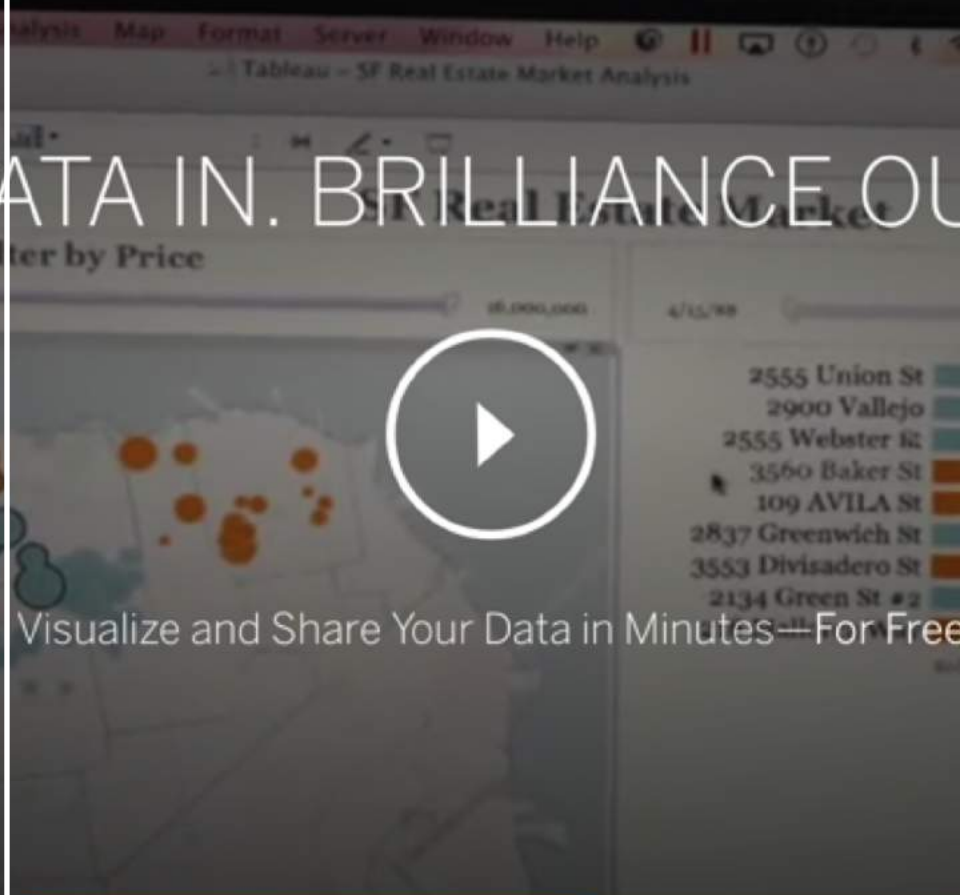
- To use Tableau Server, Sign in from
- Server -> Sign In



Tableau Public

- Free Tableau software. Same as Tableau desktop except less data sources and not able to save data locally, only publicly.
- <https://public.tableau.com/>

DATA IN. BRILLIANCE OUT.



Enter your email address

Download the App

Available for Windows and Mac | [Privacy Policy](#)

Tableau Public Account

- To use Tableau Public, need to create a Tableau Public account and profile
- <https://public.tableau.com/profile/dearbharat#!/>

Tableau Reader

- To open Tableau Packaged Workbook (twbx file)
- <http://www.tableau.com/products/reader>



Products Stories Learning Community Support About

BUY EDIT ACCOUNT SIGN OUT

TRY NOW



Open visualizations built in
Tableau Desktop for free
with Tableau Reader.

DOWNLOAD NOW



D1 M2 Tableau Overview

Worksheets,
Dashboard, Stories
Dimensions &
Measures
Continuous Vs Discrete
Data
Folders, Hierarchies

Tableau File Types

Tableau Workbook (.twb)

- Stores a visualization without source data

Tableau Data Source (.tds)

- Stores the server address, password and other information required to access a data source

Tableau Bookmark (.tbn)

- Stores a connection to a worksheet in another Tableau workbook

Tableau Data Extract (.tde)

- Stores Tableau data as a filtered and aggregated extract

Tableau Packaged Workbook (.twbx)

- Stores extracted data and visualizations for viewing in Tableau or Tableau Reader

← →

Connections [Add](#)

global_superstore_2016
Excel

Sheets [p](#)

☐ Use Data Interpreter
Data Interpreter might be able to clean your Excel workbook.

Orders
People
Returns
New Union

Orders (global_superstore_2016)

Connection [Live](#) [Extract](#)

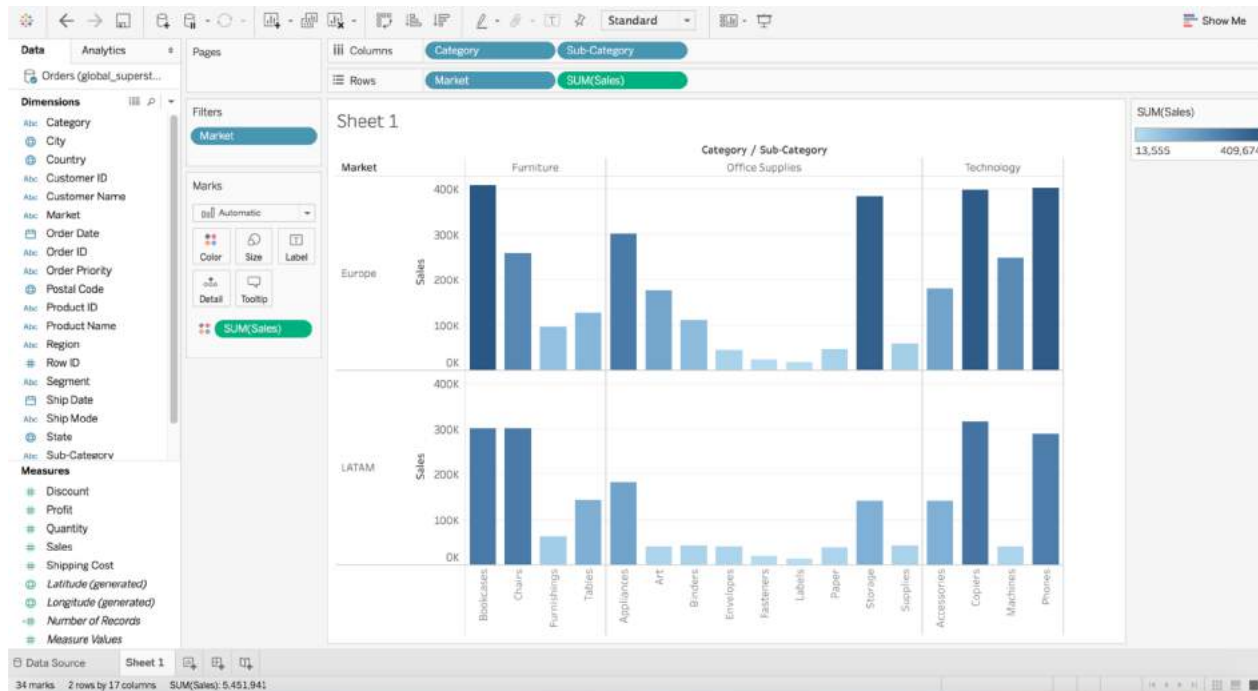
Filters [0](#) [Add](#)

Sort fields Data source order [Show aliases](#) [Show hidden fields](#) 1,000 rows

# Orders Row ID	Abc Orders Order ID	Abc Orders Order Date	Abc Orders Ship Date	Abc Orders Ship Mode	Abc Orders Customer ID	Abc Orders Customer Name	Abc Orders Segment	Abc Orders Postal Code	Abc Orders City
40098	CA-2014-AB1001514...	11/11/14	13/11/14	First Class	AB-100151402	Aaron Bergman	Consumer	73120	Ok
26341	IN-2014-JR162107-4...	5/2/14	7/2/14	Second Class	JR-162107	Justin Ritter	Corporate	null	Wi
25330	IN-2014-CR127307-4...	17/10/14	18/10/14	First Class	CR-127307	Craig Reiter	Consumer	null	Br
13524	ES-2014-KM163754...	28/1/14	30/1/14	First Class	KM-1637548	Katherine Murray	Home Office	null	Be
47221	SG-2014-RH9495111...	5/11/14	6/11/14	Same Day	RH-9495111	Rick Hansen	Consumer	null	Da
22732	IN-2014-JM156557...	28/6/14	1/7/14	Second Class	JM-156557	Jim Mitchum	Corporate	null	Sy
30570	IN-2012-TS2134092...	6/11/12	8/11/12	First Class	TS-2134092	Toby Swindell	Consumer	null	Po
31192	IN-2013-MB1808592...	14/4/13	18/4/13	Standard Class	MB-1808592	Mick Brown	Consumer	null	Ha
40099	CA-2014-AB1001514...	11/11/14	13/11/14	First Class	AB-100151402	Aaron Bergman	Consumer	73120	Ok
36258	CA-2012-AB1001514...	6/3/12	7/3/12	First Class	AB-100151404	Aaron Bergman	Consumer	98103	Se

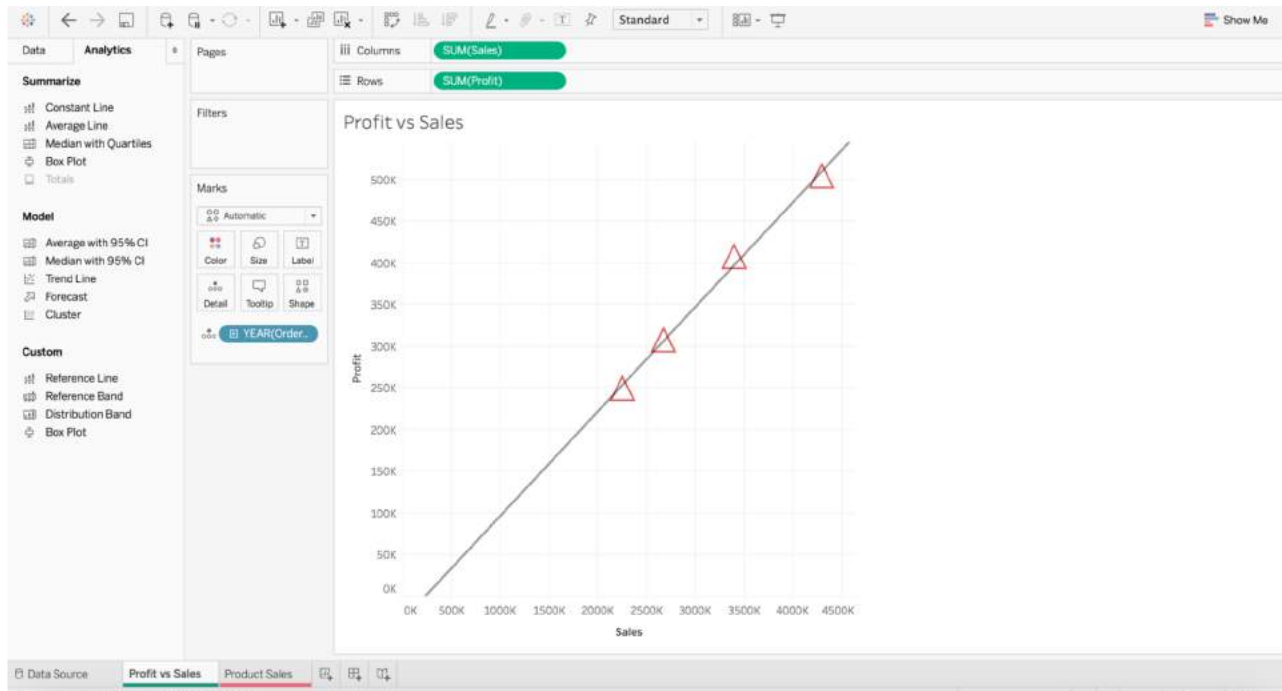
Explore Tableau Interface

Open global_superstore_2016.twb



Create Your First Viz

Q: How is the sales across categories and market?



Another Viz

Q: Is profit increasing with sales over the years?

Worksheet Basics

- Create new Worksheet (CTRL/CMD T)
- Rename Worksheet
- Duplicate Worksheet
- Delete Worksheet
- Reorder Worksheet
- Change Color
- CTRL Z to undo



Worksheet Basics

- Dimension and Measure fields
- Continuous and Discrete fields
- Hide/Show worksheet elements
- Hide/Show shelf elements
- Organize elements into folder
- Organize elements into hierarchy

Dimension and Measure

- If a field has values that are numbers that can be added, averaged, or otherwise aggregated, Tableau assigns that field to the **Measures** area of the Data pane when you first connect to a data source. Tableau is assuming that the values are **continuous**.
- If a field contains values that are names, dates, or geographical locations, Tableau assigns that field to the **Dimensions** area of the Data pane when you first connect to a data source. Tableau treats the values as **discrete**.

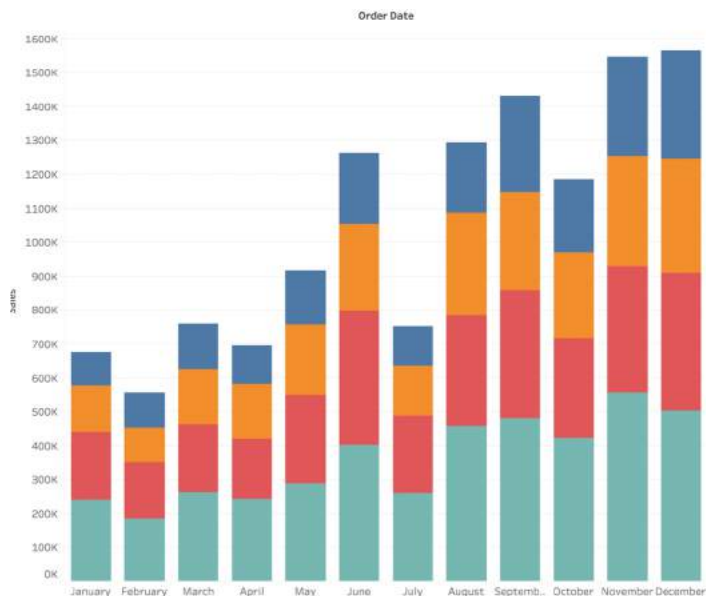
Continuous and Discrete Data

- When you drag a field from the Measures area to Columns or Rows, **the values are continuous by default** and Tableau creates an **axis**
- When you drag a field from the Dimensions area of the Data pane to Columns or Rows, **the values are discrete by default** and Tableau creates column or row **headers**.
- If a field is continuous, the background color is **green**.
- If it is discrete, the background color is **blue**.

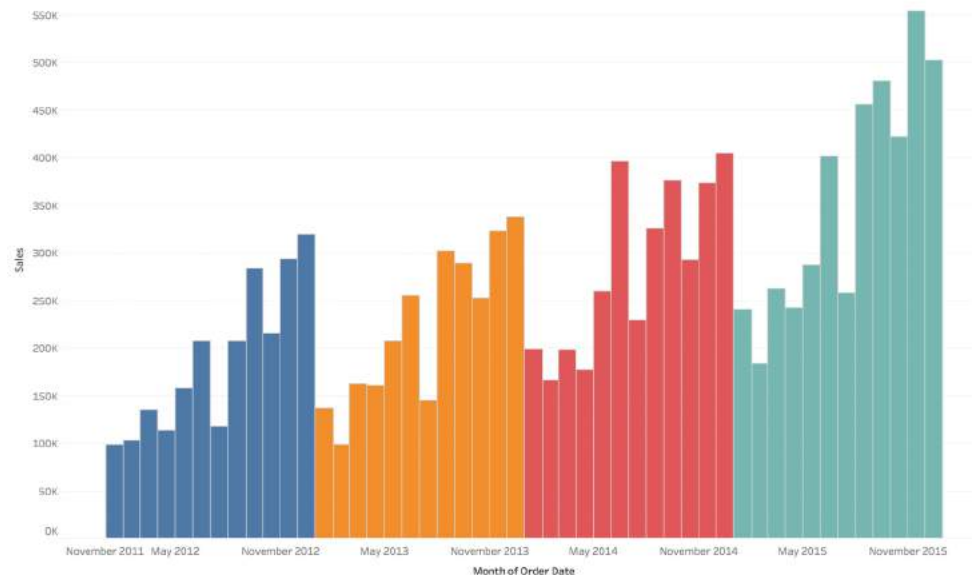
Discrete vs Continuous Data

- Open global_superstore_2016.twb
- Plot Sales vs Month (Order Date)
- Change Month from Discrete to Continuous

Discrete



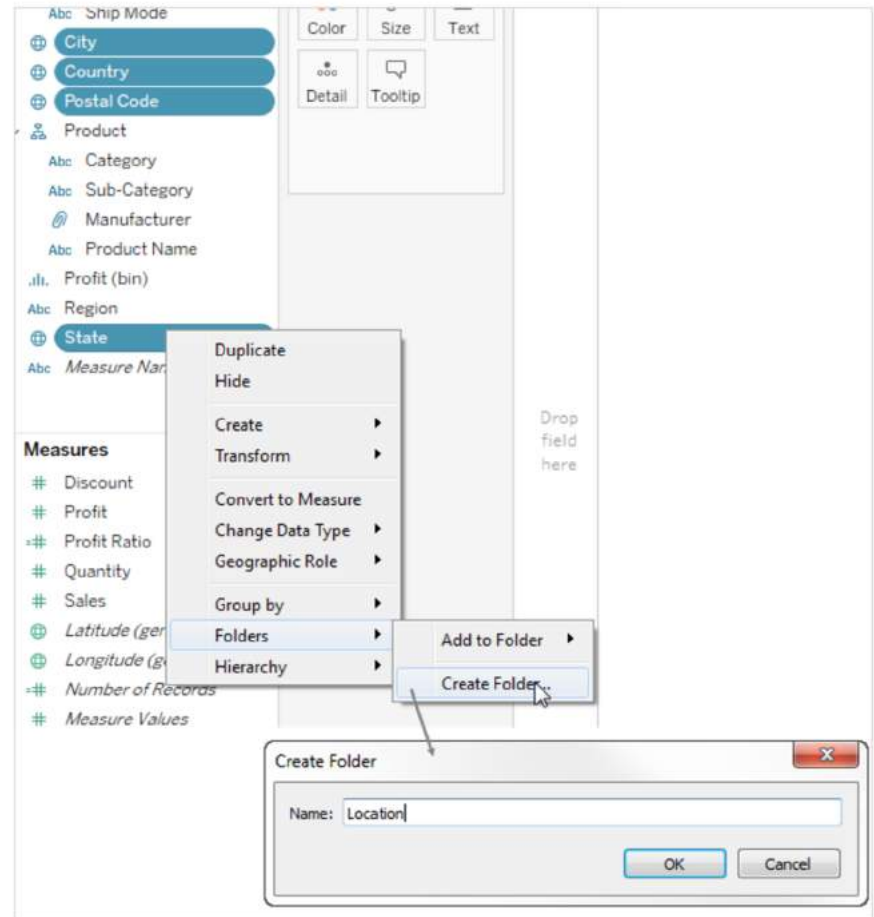
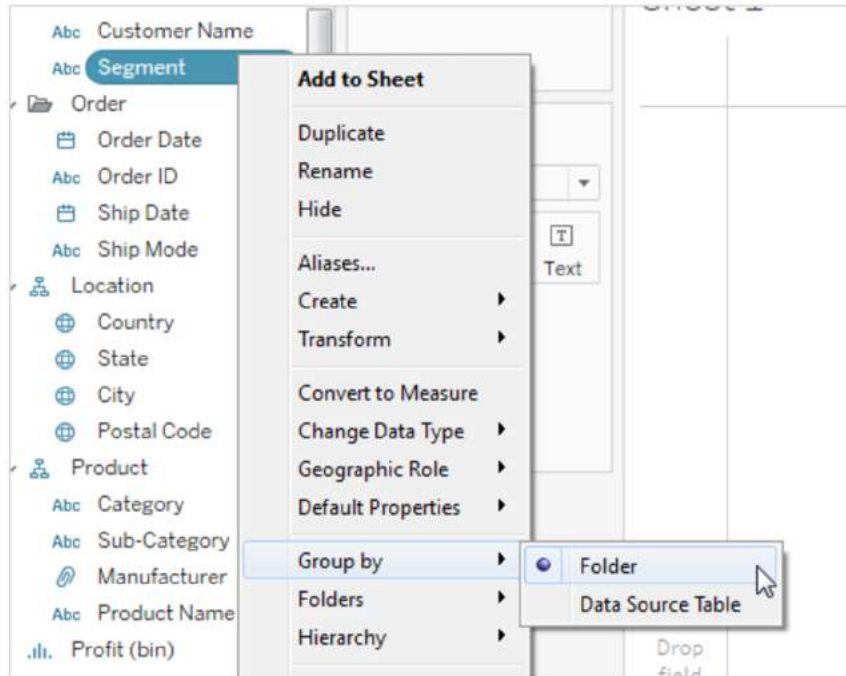
Continuous



Create Folder

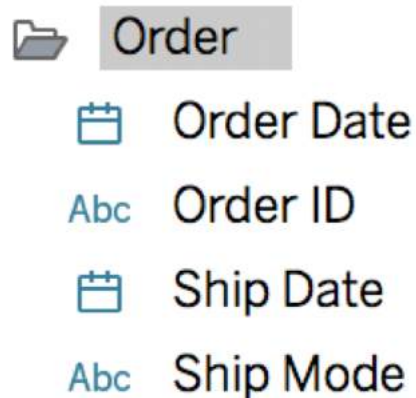
- To make data sources with many fields easier to work with, you can organize the Data pane items into folders
- The Group by Folder option can be accessed from the Data pane menu.
- In the Data pane, select Create Folder.
- When prompted, name the new folder.
- Drag a field on top of the folder name to add the field to the folder

Create Folder



Ex: Create Folder

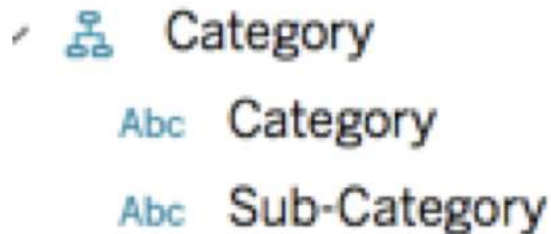
- Open global_superstore_2016.twb
- Create a folder Order
- Group Order Date, Order ID, Ship Date, Ship Mode under Order folder



Time : 5 mins

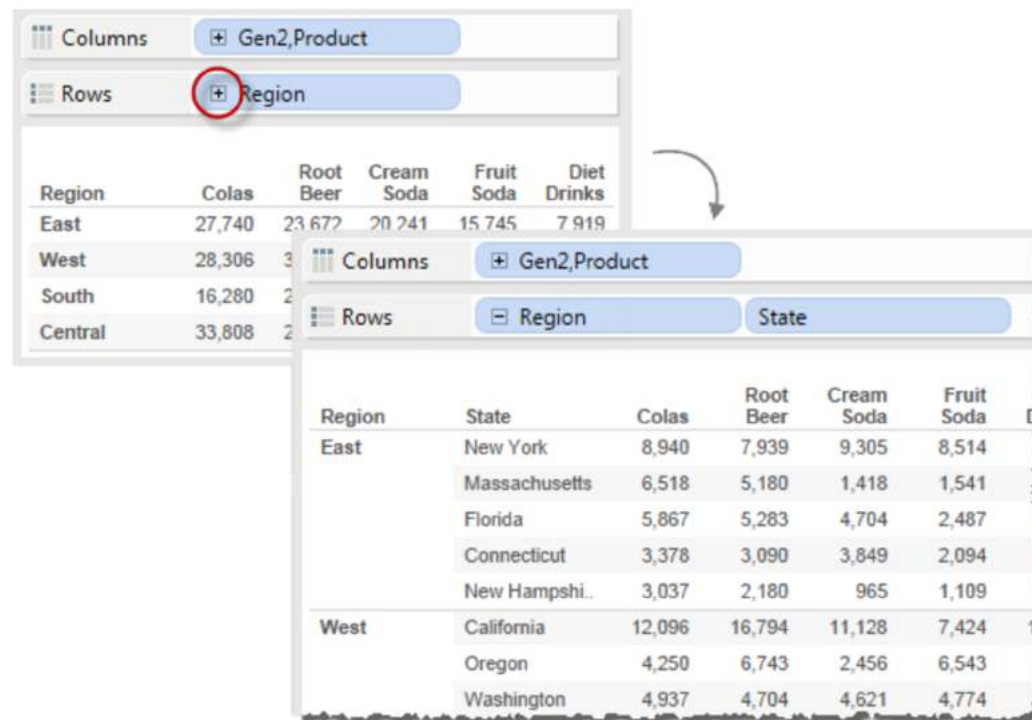
Create Hierarchy

- Drag and drop one dimension to another dimension
- Select Create Hierarchy
- When prompted, name the new hierarchy



Drilling Down and Up

- You can drill down or drill up by clicking on a dimension that is placed on any shelf



The image illustrates the process of drilling down in a Tableau dashboard. The top panel shows the initial setup with 'Gen2,Product' on the Columns shelf and 'Region' on the Rows shelf. The bottom panel shows the result of clicking on the 'Region' dimension, which has drilled down to the 'State' level. The 'State' dimension is now on the Rows shelf, and the data is displayed as a nested table.

Region	Colas	Root Beer	Cream Soda	Fruit Soda	Diet Drinks
East	27,740	23,672	20,241	15,745	7,919
West	28,306	3			
South	16,280	2			
Central	33,808	2			

Region	State	Colas	Root Beer	Cream Soda	Fruit Soda	Diet Drinks
East	New York	8,940	7,939	9,305	8,514	
	Massachusetts	6,518	5,180	1,418	1,541	
	Florida	5,867	5,283	4,704	2,487	
	Connecticut	3,378	3,090	3,849	2,094	
	New Hampshire	3,037	2,180	965	1,109	
West	California	12,096	16,794	11,128	7,424	
	Oregon	4,250	6,743	2,456	6,543	
	Washington	4,937	4,704	4,621	4,774	

Ex: Hierarchy

- Open global_superstore_2016.twb
- Create a hierarchy for Location - Country, State, City, Postal Code
- Plot Sales vs Country, further drill down to City



Time: 5 mins

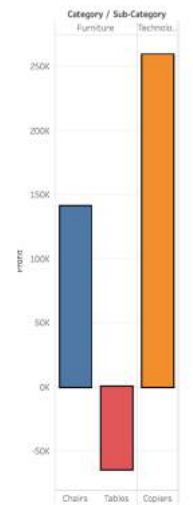
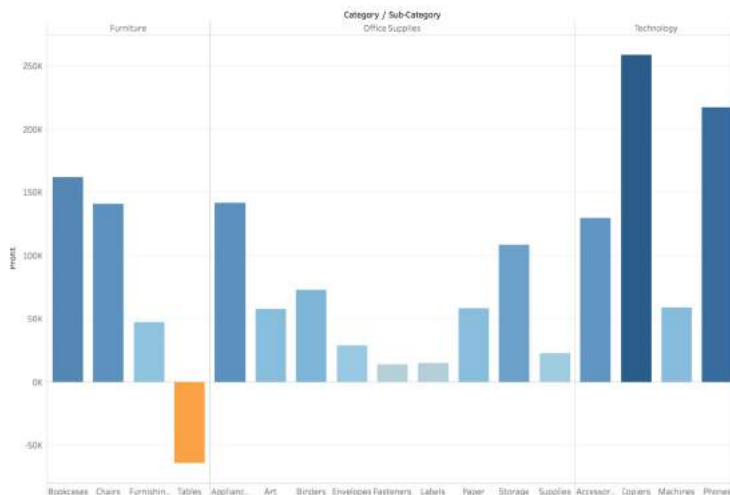
Data Visualization

Show Me:

- Bar Chart
- Table
- Map
- Box plot
- Line plot
- Pie chart
- Histogram
- Heat map
- Tree map

Bar Chart

- On the Dimensions pane, open Product and drag Category, then Sub-Category to the Columns shelf. From the Measures pane, drag Profit to the Rows shelf.
- To display each bar as a separate color, drag Sub-Category to the Color card.
- Drag Profit on color, click the Color card to edit the color palette and choose Blue.



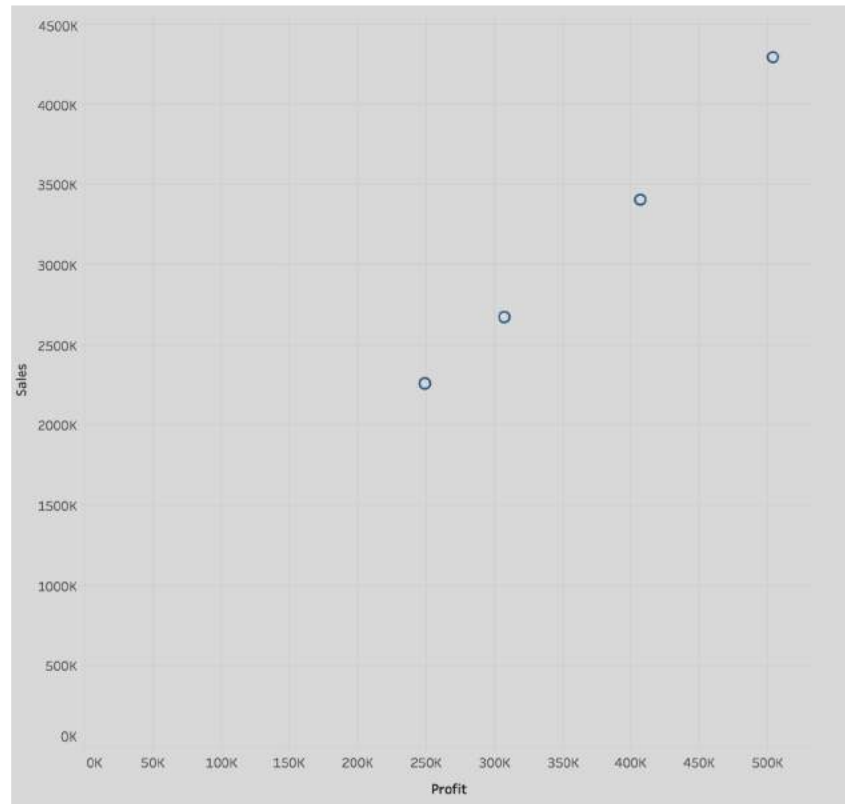
Table

- Drag Segment to the Columns and Category and Sub-Category to the Rows, then drag Profit to the Text card

Category	Sub-Catego..	Segment		
		Consumer	Corporate	Home Office
Furniture	Bookcases	79,222	54,677	28,025
	Chairs	72,672	45,370	22,354
	Furnishings	26,469	13,200	7,176
	Tables	-24,730	-29,520	-9,833
Office Supplies	Appliances	65,568	52,185	23,810
	Art	33,042	14,265	10,523
	Binders	40,220	18,572	13,641
	Envelopes	14,977	9,236	4,637
	Fasteners	6,821	4,586	2,437
	Labels	7,664	4,519	2,806
	Paper	27,624	17,180	13,308
	Storage	47,644	38,573	22,200
	Supplies	9,603	8,471	4,486
Technology	Accessories	60,273	45,534	23,820
	Copiers	124,216	83,622	50,730
	Machines	28,372	15,504	14,991
	Phones	129,585	45,235	41,897

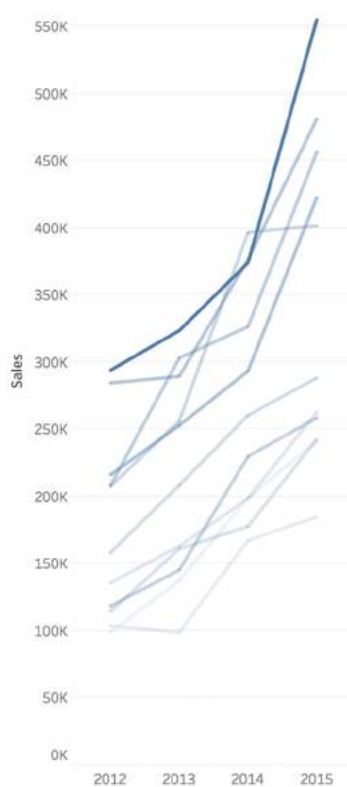
Scatter Plot

- Drag Sales to Columns and Profit to Rows
- Disable Aggregate Measures from Analysis menu
- Drag Order Date to Detail Shelf



Motion Chart

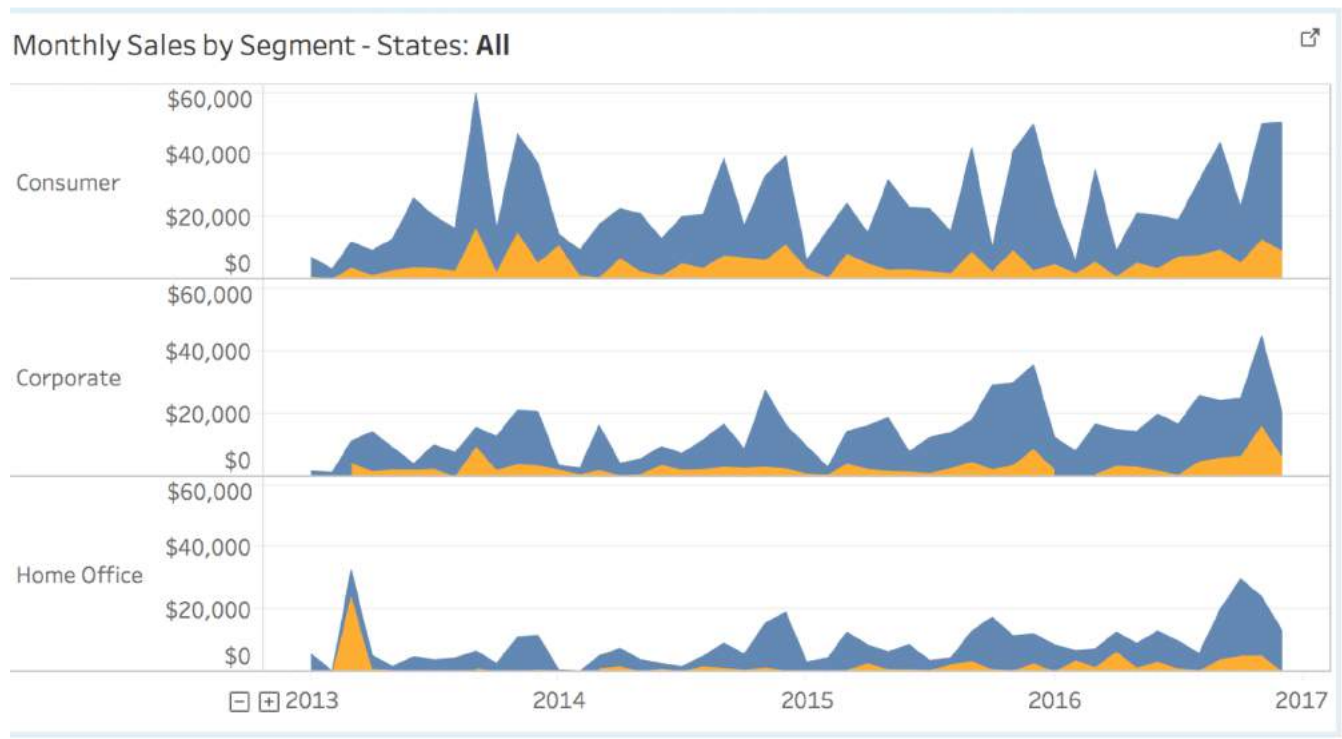
- Drag Order Date to Columns and Sales to Rows
- Drag Order Date to Page Shelf, Change to Month
- Check Show History and Select All



Ex: View

- Open global_superstore_2016.twb
- Plot Monthly Sales by Segment

Time: 5 mins



Saving Workbook

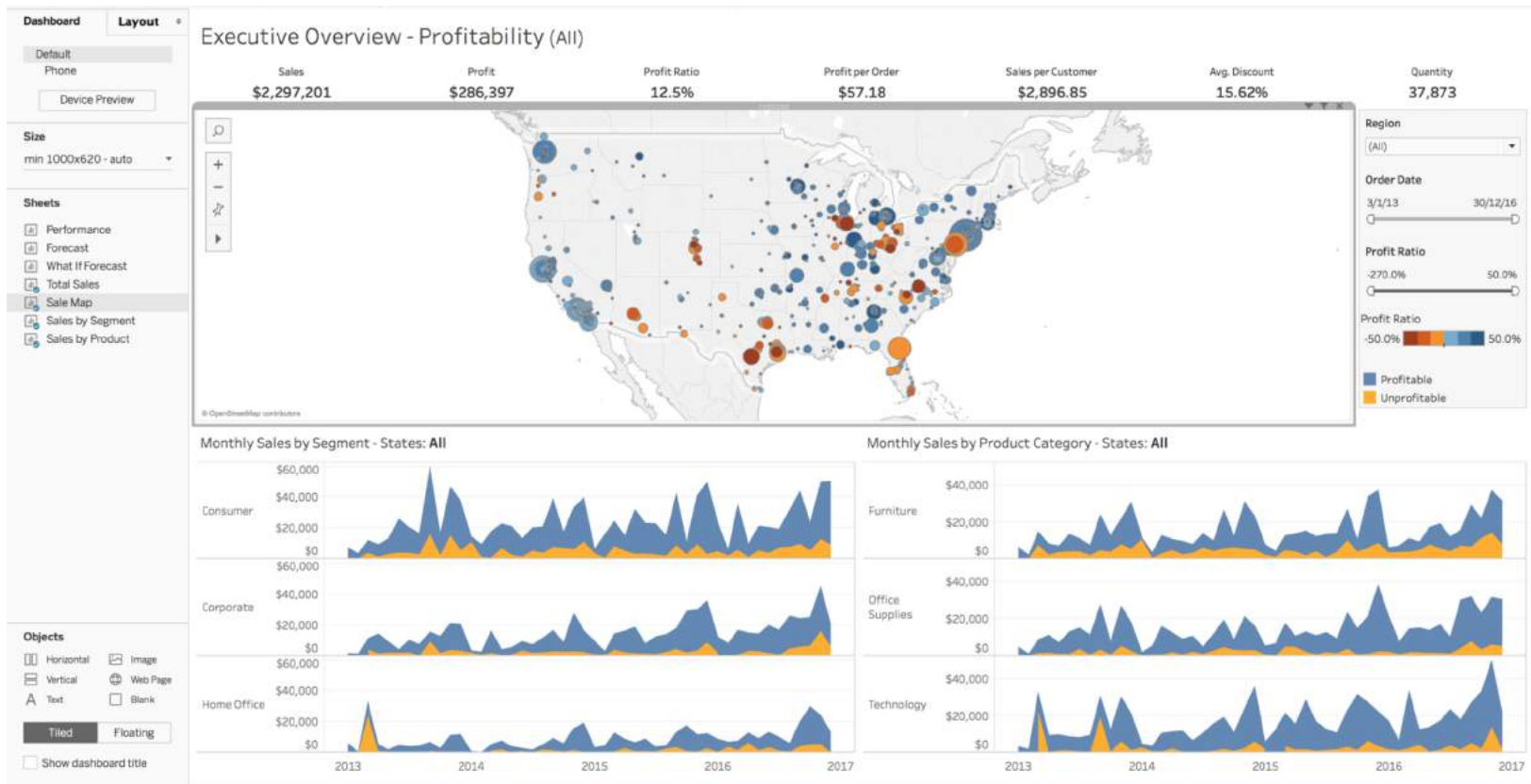
- File -> Save As -> Either twb and twbx.
- File -> Export Packaged Workbook

Dashboard

- A dashboard is a collection of several worksheets and supporting information shown in a single place so you can compare and monitor a variety of data simultaneously
- Each view you add to the dashboard is connected to its corresponding worksheet. That means when you modify the worksheet, the dashboard is updated and when you modify the view in the dashboard, the worksheet is updated.

Dashboard

- Dashboard is good for displaying all relevant data and info on one page



Dashboard Basics

- Drag and hold to drop sheet to desired location
- Add Objects - Layout Container, Image, Web page, Text
- Tiled vs Floating object
- Fit - Standard, Fit width, Fit height, Entire
- Filter - Apply to worksheet
- Device Designer Default/ Desktop/ Laptop/ Phone (Only can view on Tableau Online)

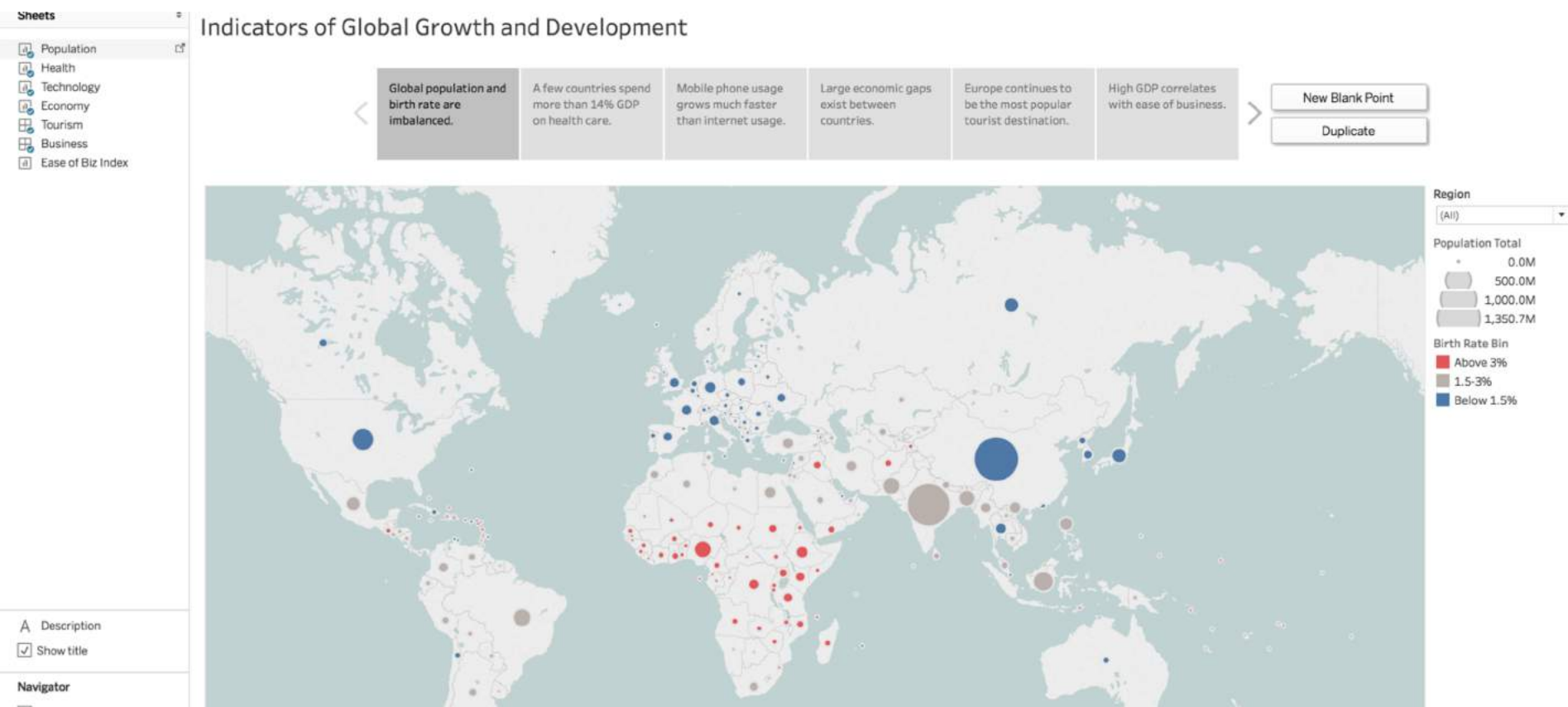
Ex: Dashboard

- Open global_superstore_2016.twb.
- Add a Table view, Bar Chart view and map view to the dashboard
- Add Filter action to create interaction among the worksheets

Time: 5 mins

Story

- A story is a sheet that contains a sequence of worksheets or dashboards that work together to convey information



Story Basics

- Add sheets to blank story point
- Rename the caption
- Resize captions
- Rearrange the story point
- Delete story point
- Add a filter and update
- Add a description
- Any changes to story will not affect the worksheet

D1 M3

Getting Data in Tableau

Data Import Export

Data Join

Data Extracts

Data Blending

Data Source Filters

Data Sources

- Tableau can connect to wide variety of data sources such as Excel, Google, Oracle...



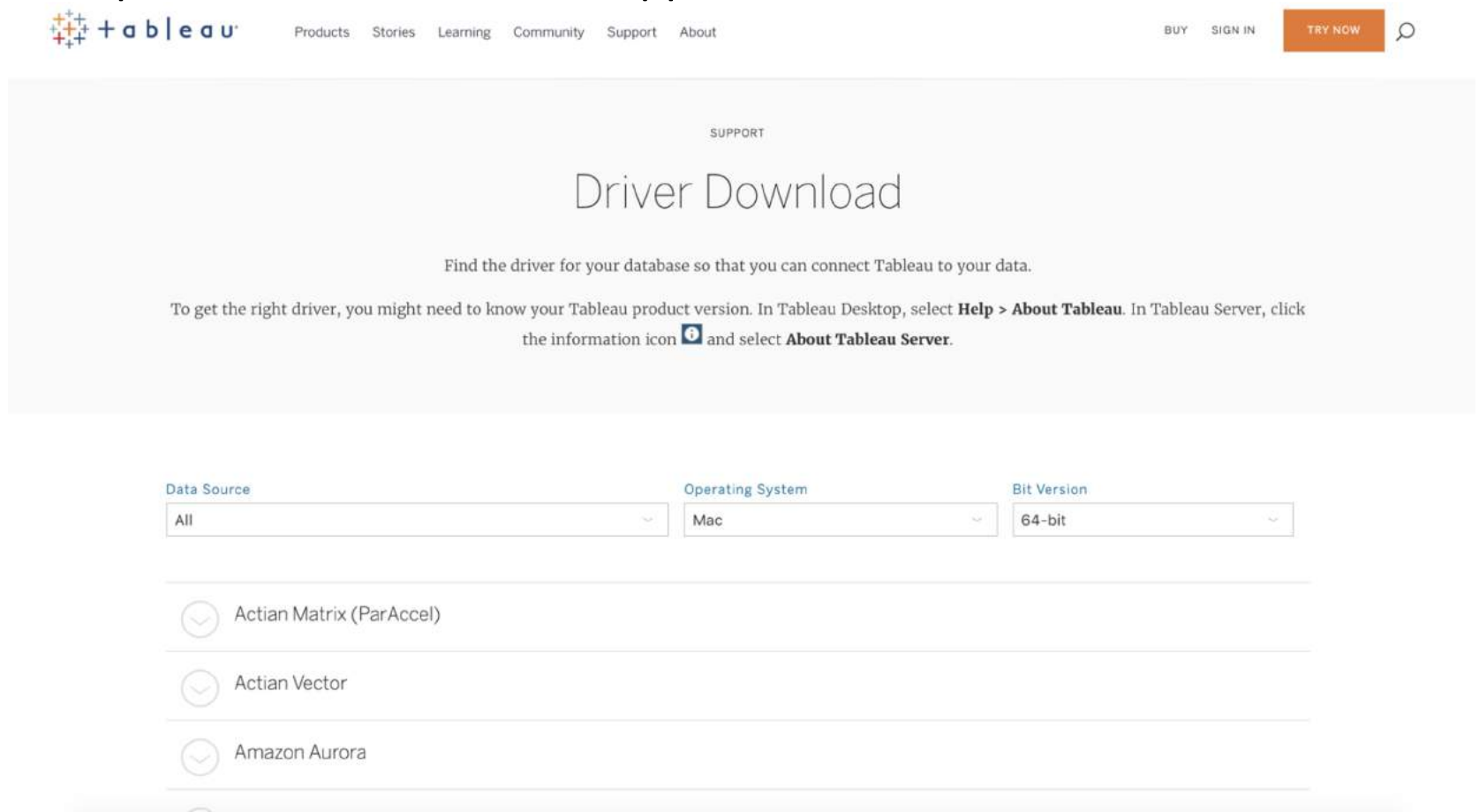
Connect to Excel

- Connect to global_superstore_2016.xls
- Various ways to connect to the data sources
 - Menu -> New Data Sources
 - Toolbar -> Click on New Data Sources icon
 - Shortcut key -> CTRL(CMD) D
- Edit the Sheet name, Field name, Filter the data



Installing Tableau Driver

- <https://www.tableau.com/support/drivers>



The screenshot shows the Tableau website's support page for downloading drivers. The header includes the Tableau logo, navigation links (Products, Stories, Learning, Community, Support, About), and user options (BUY, SIGN IN, TRY NOW, and a search icon). The main heading is "Driver Download" under the "SUPPORT" category. Below the heading, a paragraph instructs users to find the driver for their database to connect Tableau to their data. It provides specific instructions for Tableau Desktop (selecting Help > About Tableau) and Tableau Server (clicking the information icon and selecting About Tableau Server). At the bottom, there are three dropdown menus for filtering drivers: "Data Source" (set to "All"), "Operating System" (set to "Mac"), and "Bit Version" (set to "64-bit"). Below these filters, a list of drivers is shown, including "Action Matrix (ParAccel)", "Action Vector", and "Amazon Aurora", each with a dropdown arrow to its left.


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SUPPORT

Driver Download

Find the driver for your database so that you can connect Tableau to your data.

To get the right driver, you might need to know your Tableau product version. In Tableau Desktop, select **Help > About Tableau**. In Tableau Server, click the information icon  and select **About Tableau Server**.

Data Source: All Operating System: Mac Bit Version: 64-bit

- ▼ Action Matrix (ParAccel)
- ▼ Action Vector
- ▼ Amazon Aurora

Connect to MySQL DB

- Install MySQL Driver

Tableau - Book1

Connections: localhost MySQL

Database: mysql

Table: proc

Connection: ☒ Live ☐ Extract

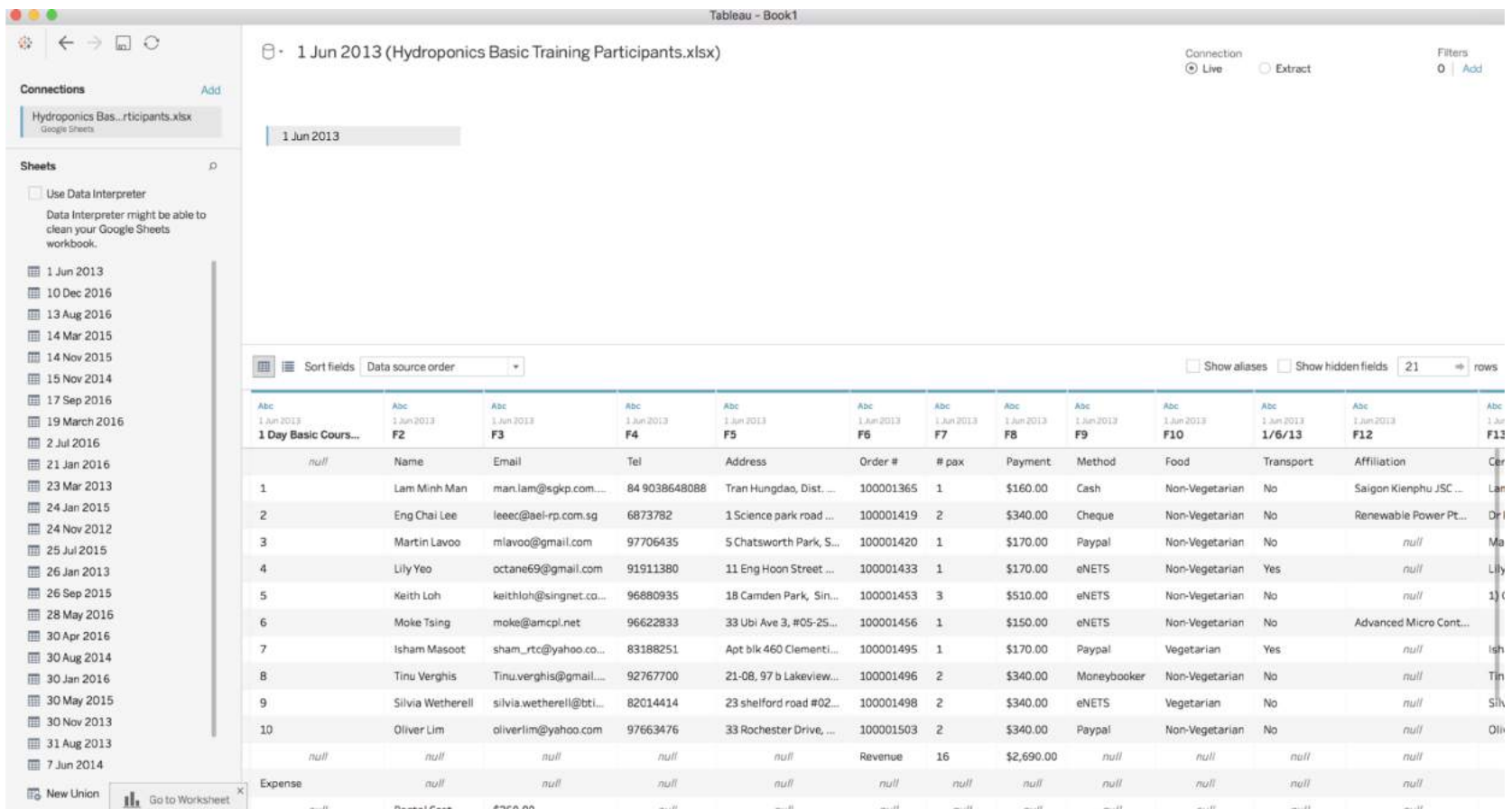
Filters: 0 | Add

Sort fields: Data source order

☐ Show aliases ☐ Show hidden fields 48 rows

proc Db	proc Name	proc Type	proc Specific Name	proc Language	proc Sql Data Access	proc Is Deterministic	proc Security Type	proc Param List	proc Returns	proc Body	At
sys	extract_schema_fro...	FUNCTION	extract_schema_fro...	SQL	NO_SQL	YES	INVOKER	path VARCHAR(512)	null	null	tt
sys	extract_table_from...	FUNCTION	extract_table_from...	SQL	NO_SQL	YES	INVOKER	path VARCHAR(512)	null	null	tt
sys	format_bytes	FUNCTION	format_bytes	SQL	NO_SQL	YES	INVOKER	bytes TEXT	null	null	tt
sys	format_path	FUNCTION	format_path	SQL	NO_SQL	YES	INVOKER	in_path VARCHAR(5...	null	null	tt
sys	format_statement	FUNCTION	format_statement	SQL	NO_SQL	YES	INVOKER	statement LONGTEXT	null	null	tt
sys	format_time	FUNCTION	format_time	SQL	NO_SQL	YES	INVOKER	picoseconds TEXT	null	null	tt
sys	list_add	FUNCTION	list_add	SQL	CONTAINS_SQL	YES	INVOKER	in_list TEXT, in_add...	null	null	tt
sys	list_drop	FUNCTION	list_drop	SQL	CONTAINS_SQL	YES	INVOKER	in_list TEXT, in_drop...	null	null	tt
sys	ps_is_account_enab...	FUNCTION	ps_is_account_enab...	SQL	READS_SQL_DATA	YES	INVOKER	in_host VARCHAR(6...	null	null	tt
sys	ps_is_consumer_en...	FUNCTION	ps_is_consumer_en...	SQL	READS_SQL_DATA	YES	INVOKER	in_consumer varcha...	null	null	tt
sys	ps_is_instrument_d...	FUNCTION	ps_is_instrument_d...	SQL	READS_SQL_DATA	YES	INVOKER	in_instrument VARC...	null	null	tt
sys	ps_is_instrument_d...	FUNCTION	ps_is_instrument_d...	SQL	READS_SQL_DATA	YES	INVOKER	in_instrument VARC...	null	null	tt
sys	ps_is_thread_instru...	FUNCTION	ps_is_thread_instru...	SQL	READS_SQL_DATA	NO	INVOKER	in_connection_id BI...	null	null	tt
sys	ps_thread_id	FUNCTION	ps_thread_id	SQL	READS_SQL_DATA	NO	INVOKER	in_connection_id BI...	null	null	tt

- Allow Tableau to access your Google Sheet



Extract

- External source can be slow
- Use Extract to create a local copy
- Save the extract to your Tableau Repository (**File -> Repository Location**)
- To reload the changes from original data source, Menu->Data->**Refresh All Extracts**
- Or in the Visualization dashboard, right click the data source -> **Refresh**



Data Source Filters

- Two ways to filter the extract
 - Click the **Filter button** on the Data Source
 - Right click the data source on Visualization dashboard -> Extract Data -> **Add Filters**

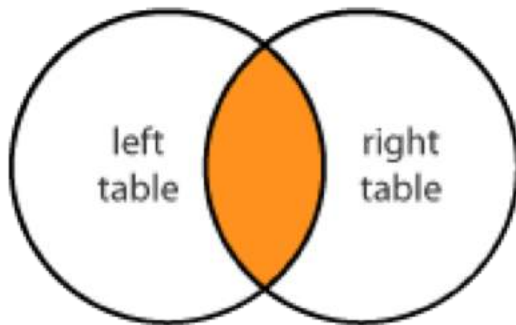
Ex: Extract

- Load Module 4 Sales 2016.xls
- Change Live data connection to Extract
- Filter a few product IDs
- Rename source name
- Refresh the extract

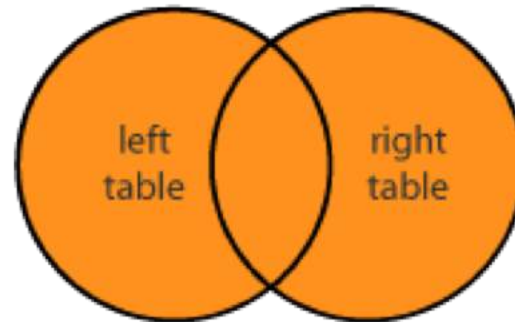
Time: 5 mins

Data Join Types

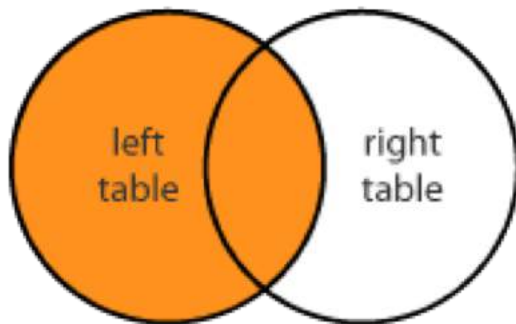
INNER JOIN



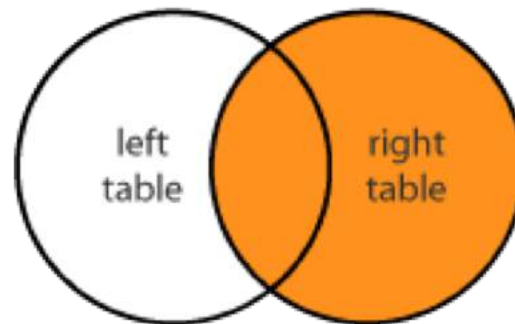
FULL JOIN



LEFT JOIN



RIGHT JOIN



Data Join Type Definitions

Inner Join: Returns all rows when there is at least one match in BOTH tables

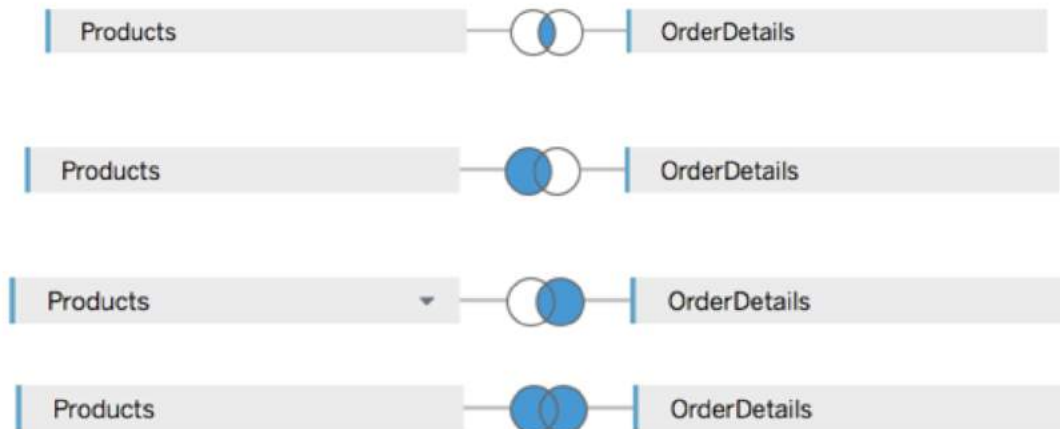
Left Join: Return all rows from the left table, and the matched rows from the right table

Right Join: Return all rows from the right table, and the matched rows from the left table

Full (Outer) Join: Return all rows when there is a match in ONE of the tables

Data Join Demo

- Connect global_superstore_2016.xls
- Create a Inner Join for Orders, People and Returns data sources
- Change to Left Join, Right Join and Full Join



Ex: Data Join

- Connect to Sales 2016.xlsx and Product 2016.csv
- Do a Left Join
- Plot Sales vs Category and Sub-Category, breakdown by Years.

Time: 5 mins

Joining Related Fields with Different Names

- Connect DifferentNames.xls
- Do a Inner Join for Product and OrderDetails
- Select Product ID (Left) and Prod ID (Right)

D1 M4

Data Processing in Tableau

Data Transformation

Data Interpreter

Data field merge & split

Data Pivot

Groups & Sets

Excel Data Interpreter

- Connect to Module 5 MonthlyData.xlsx
- Data is not uploaded correctly
- Use Data Interpreter to clean up the data

Ex: Data Interpreter

- Connect to Module 5 GlobalVehicleSales.xls
- Open the excel file to see whether it match to excel file
- Clean up the data using data interpreter

Time: 2 mins

Split Fields

- Connect to Module 5 acrosssthebay10k.xlsx
- Split the Name to First Name, Last Name
- Custom Split the Overall by "/" to Position and Total
- Split can be done on the Data Source or Visualization dashboard

Ex: Split Fields

- Connect Module 5 CombinedData.xls
- Custom split the Category Name to Category and Product
- Visualize the price for various category and product

Time: 2 mins

Merge Fields

- Connect to Module 5 Weather.xls
- Combine 4 sheets to one sheet with Union
- Merge mismatched fields to Rainfall and Month
- Plot Rainfall vs Month



Pivot Data

- Connect to Module 5 GlobalVehicleSales.xlsx
- Clean up using data interpreter
- Select all the years
- Select Pivot -> Generate 2 fields
- Rename the 2 pivot fields

Ex: Pivot Data

- Open GlobalVehicleSales.xlsx from Module 5 exercise folder
- In the Data Source, select 2005 to 2014, right click and select Pivot
- Rename the pivot fields to Year and Sales
- Goto Worksheet, drag Year to Column, Sales to Row
- Create a Pivot Table of Year (Col) and Region (Row)
- Analysis -> Totals -> Show Grand Totals

Time: 5 mins

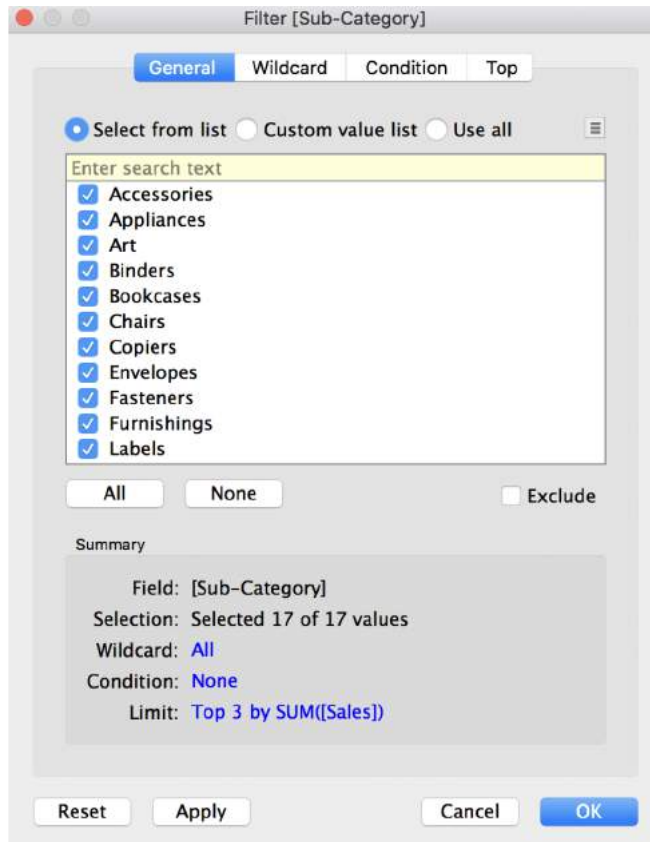
Filter Data

- Filtering is the process of removing certain values or range of values from a result set
- Tableau can do 3 types of filtering
 - Filter Dimensions
 - Filter Measures
 - Filter Date

Filter Dimension

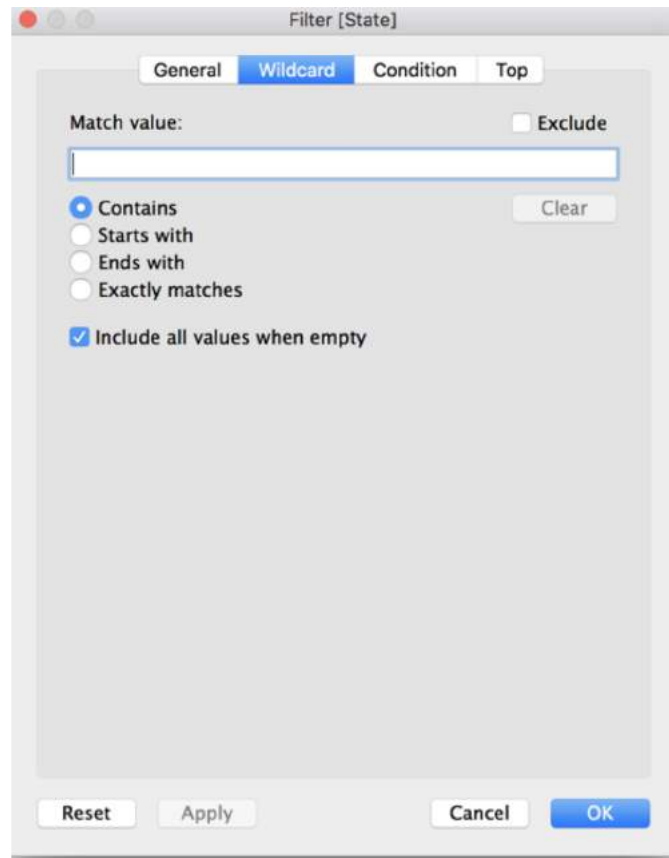
Tableau offers the following types of filters for dimensions.

- General Filter
- Wildcard Filter
- Condition Filter
- Top Filter



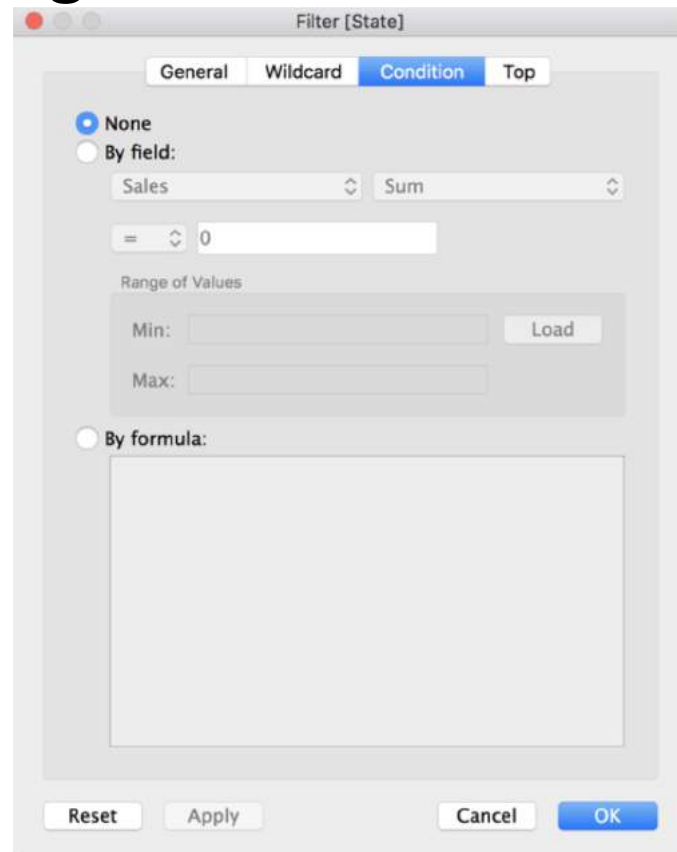
Wildcard Filter

- Use wildcard filter to select states



Condition Filter

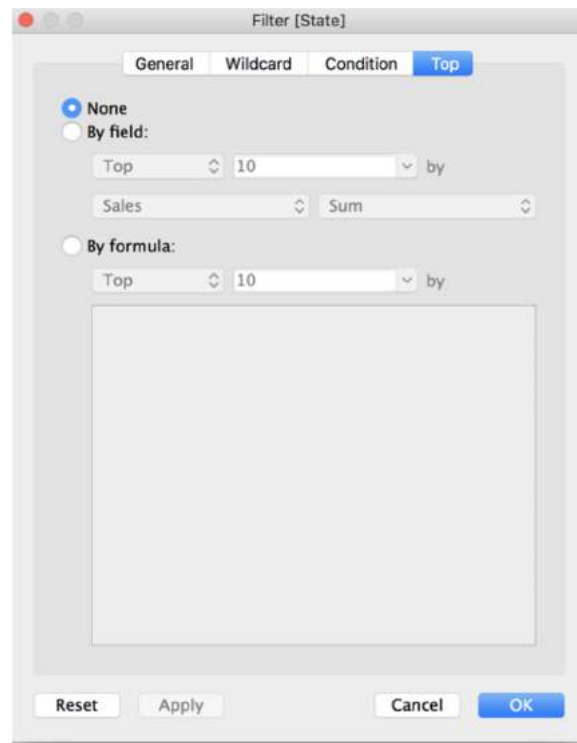
- Use condition filter to apply some conditions to a filter eg Add a condition eg Quantity Sum < 100



The screenshot shows a 'Filter [State]' dialog box with four tabs: 'General', 'Wildcard', 'Condition' (selected), and 'Top'. Under the 'Condition' tab, there are three radio button options: 'None' (selected), 'By field:', and 'By formula:'. The 'By field:' option is expanded, showing a configuration for a condition on the 'Sales' field. The condition is set to 'Sum' with a value of '0'. Below this, there is a 'Range of Values' section with 'Min:' and 'Max:' input fields and a 'Load' button. The 'By formula:' option is also visible with an empty text area. At the bottom of the dialog are 'Reset', 'Apply', 'Cancel', and 'OK' buttons.

Top Filter

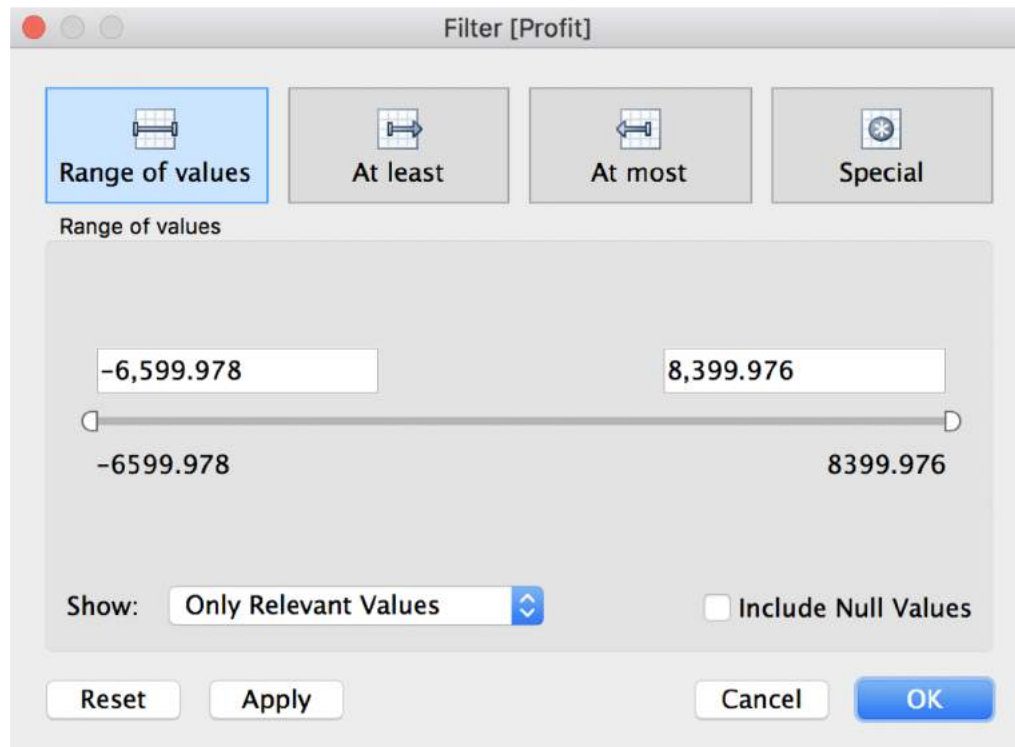
- Use top filter to limit the result set from a filter. For example, from a large set of records on sales we want only the top 10 values.



Filter Measure

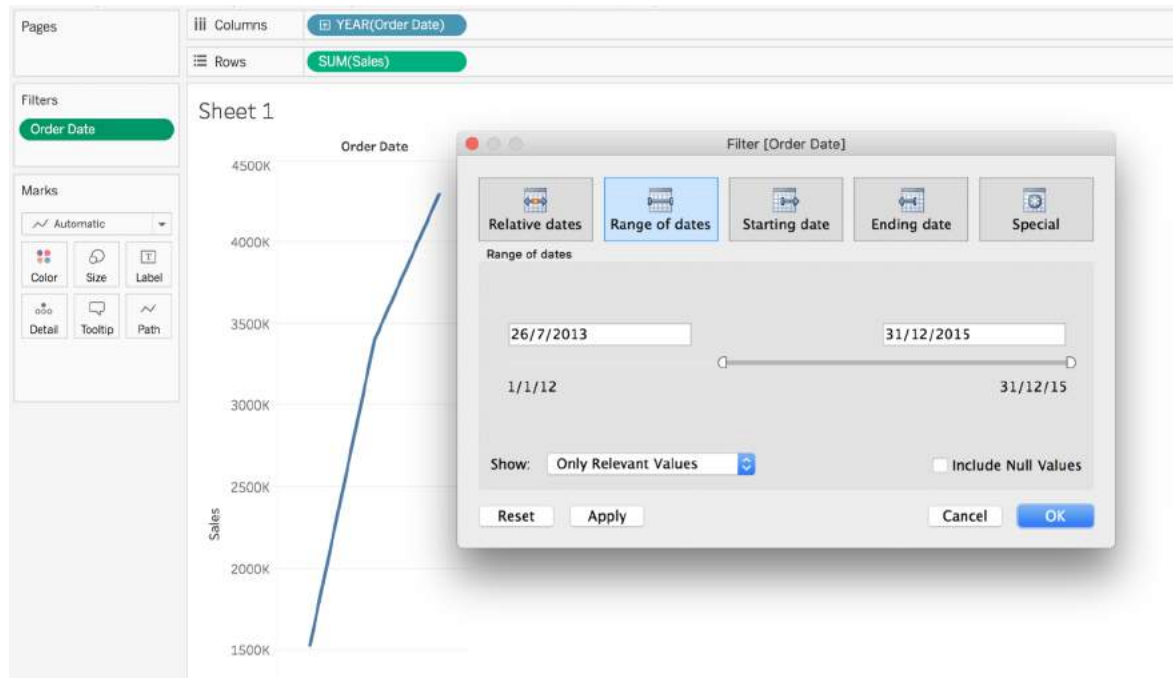
Tableau offers the following types of filters for measures:

- Range of Values
- At Least
- At Most
- Special



Filter Date

- Connect to global_superstore_2016.xls
- Show Sales vs Category
- Drag the "order date" field to the filter



Ex: Filter Data

- Connect to global_superstore_2016.xls
- Create a Filter for Sales vs region
 - Include only East and West regions
 - Sales above 100K
 - Show only 2014 to 2016

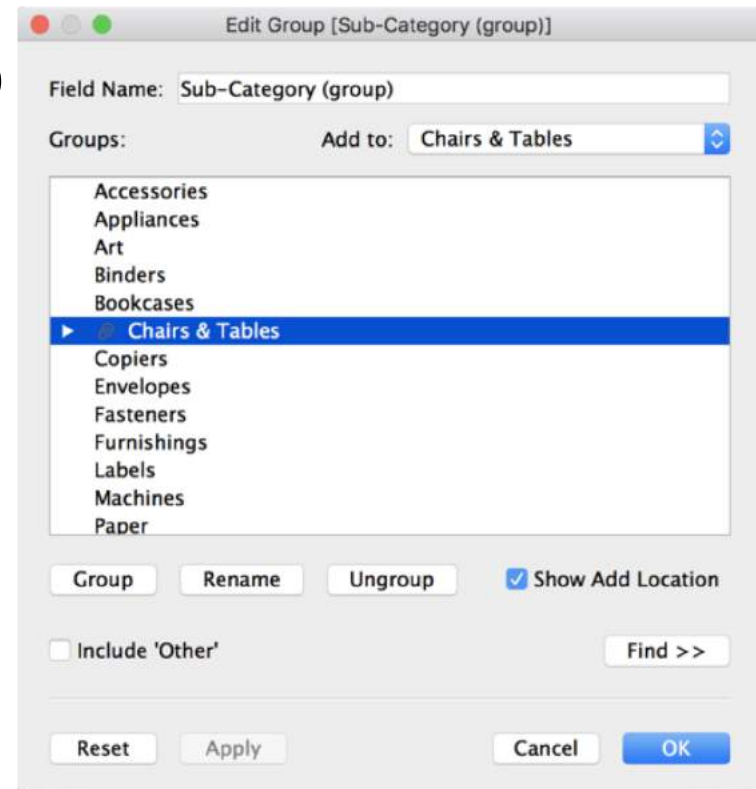
Time: 5 mins

Group

- Plot Sales vs Country
- Filter the ASEAN countries - Singapore, Malaysia, Indonesia, Philippines, Lao, Cambodian
- Right Click and Choose the Group Icon

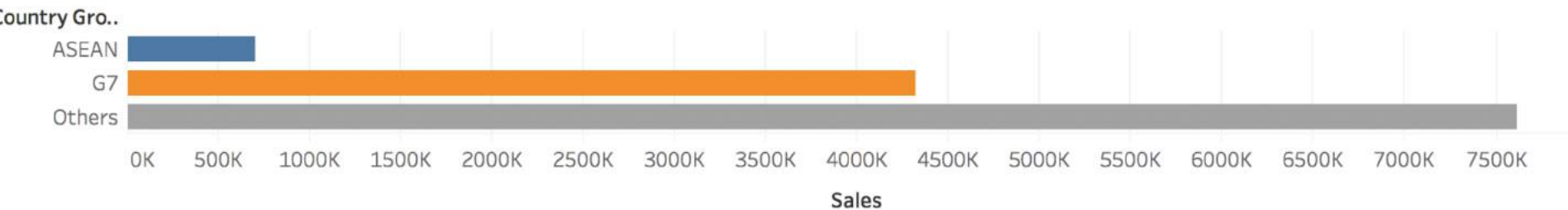
Edit Group

- Select the group on data pane
- Right Click and Edit Group
- Group, Rename & Ungroup
- Include 'Other'



Ex: Group Data

- Connect to global_superstore_2016.xls
- Create a G7 Group of countries: US, Canada, France, Germany, Italy, Japan, Russia



Set

- Select the elements
- Right Click and Choose the Set Icon

Aichi	35
Al Basrah	258
Al Iskandariyah	
Al Madinah	
Al Qahirah	
Alabama	
Alagoas	
Alger	43
Alsace-Champagne-Arden..	2,942
Amazonas	1,820

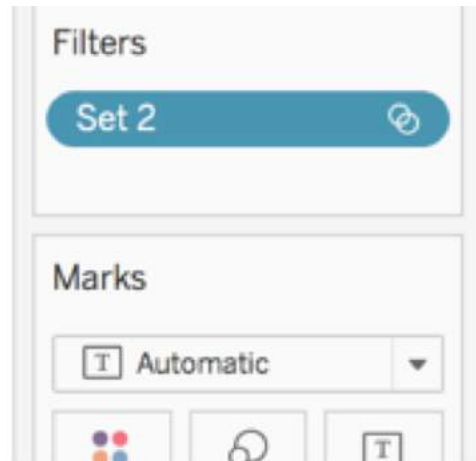
✓ Keep Only ✕ Exclude ≡+ ≡- 🔍 🔗 ▼ ☰

3 items selected · SUM(Sales): 3,855

Al Basrah

Filter by Set

- Drag the Set to the Filters



Sheet 1

State

Andalusía	129
Apulia	1,141
Ash Sharqiyah	683

Combine Sets

- Select 2 sets
- Right Click to select Combine Sets
- Combine by Union, Intersection, Subtraction

The screenshot shows a macOS-style dialog box titled "Create Set [Set 3]". It contains the following elements:

- A text field labeled "Name:" containing the text "Set 3".
- A label "How would you like to combine the two sets?" followed by a dropdown menu.
- A "Sets:" label followed by two dropdown menus, the first containing "Set 1" and the second containing "Set 2". Between these dropdowns is a small icon of two overlapping green circles.
- Four radio button options with corresponding Venn diagram icons:
 - ☒ All members in both sets (two overlapping green circles)
 - ☐ Shared members in both sets (two overlapping circles, with the intersection shaded green)
 - ☐ "Set 1" except shared members (two overlapping circles, with the left circle shaded green)
 - ☐ "Set 2" except shared members (two overlapping circles, with the right circle shaded green)
- A label "Separate members by" followed by a text field containing a comma (",") and the text "East, Green Tea, 2012".
- At the bottom right, there are two buttons: "Cancel" and "OK".

Ex: Organize Data

- Connect to global_superstore_2016.xls
- Create a office items- Chairs, Tables, Binders, Papers
- Plot office items vs others
- Create a combined set office items - Chairs, Tables, Binders, Papers
- Filter the office items

Time: 5 mins

Q&A

Feedback