

What to expect?



Data Visualization



Why Tableau?



What is Tableau?



Installing Tableau



Understanding Tableau



Visualizations in Tableau



Functions in Tableau



Success Story





01

Introduction to Tableau & Data Visualization

What is Data Visualization?

- ❑ Visualization allows us visual access to huge amounts of data in easily digestible visuals.



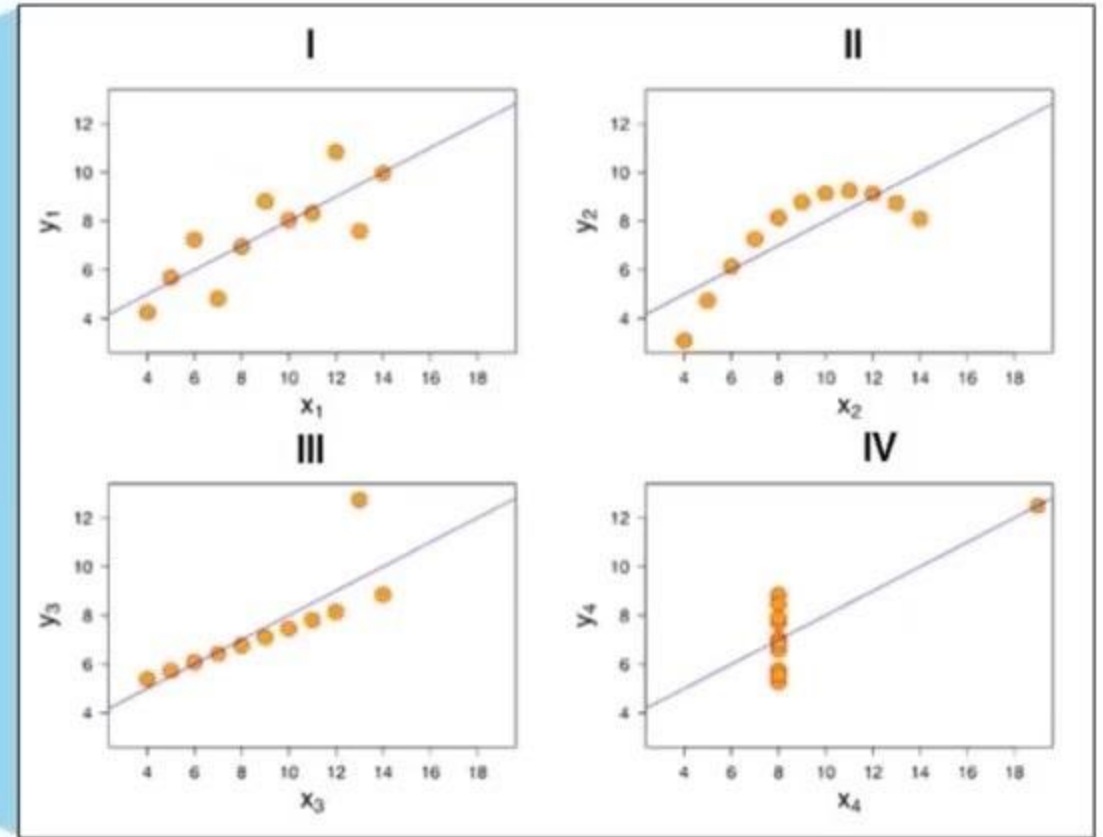
- ❑ Well designed data graphics are usually the simplest and at the same time, the most powerful.

Power of Data Visualization

I		II		III		IV	
X	Y	X	Y	X	Y	X	Y
10	8,04	10	9,14	10	7,46	8	6,58
8	6,95	8	8,14	8	6,77	8	5,76
13	7,58	13	8,74	13	12,74	8	7,71
9	8,81	9	8,77	9	7,11	8	8,84
11	8,33	11	9,26	11	7,81	8	8,47
14	9,96	14	8,1	14	8,84	8	7,04
6	7,24	6	6,13	6	6,08	8	5,25
4	4,26	4	3,1	4	5,39	19	12,5
12	10,84	12	9,13	12	8,15	8	5,56
7	4,82	7	7,26	7	6,42	8	7,91
5	5,68	5	4,74	5	5,73	8	6,89
99,00	82,51	99,00	82,51	99,00	82,50	99,00	82,51
9,00	7,50	9,00	7,50	9,00	7,50	9,00	7,50
3,32	2,03	3,32	2,03	3,32	2,03	3,32	2,03

Anscombe's Quartet Dataset

When viewed in tabular format, all the four quartets look similar

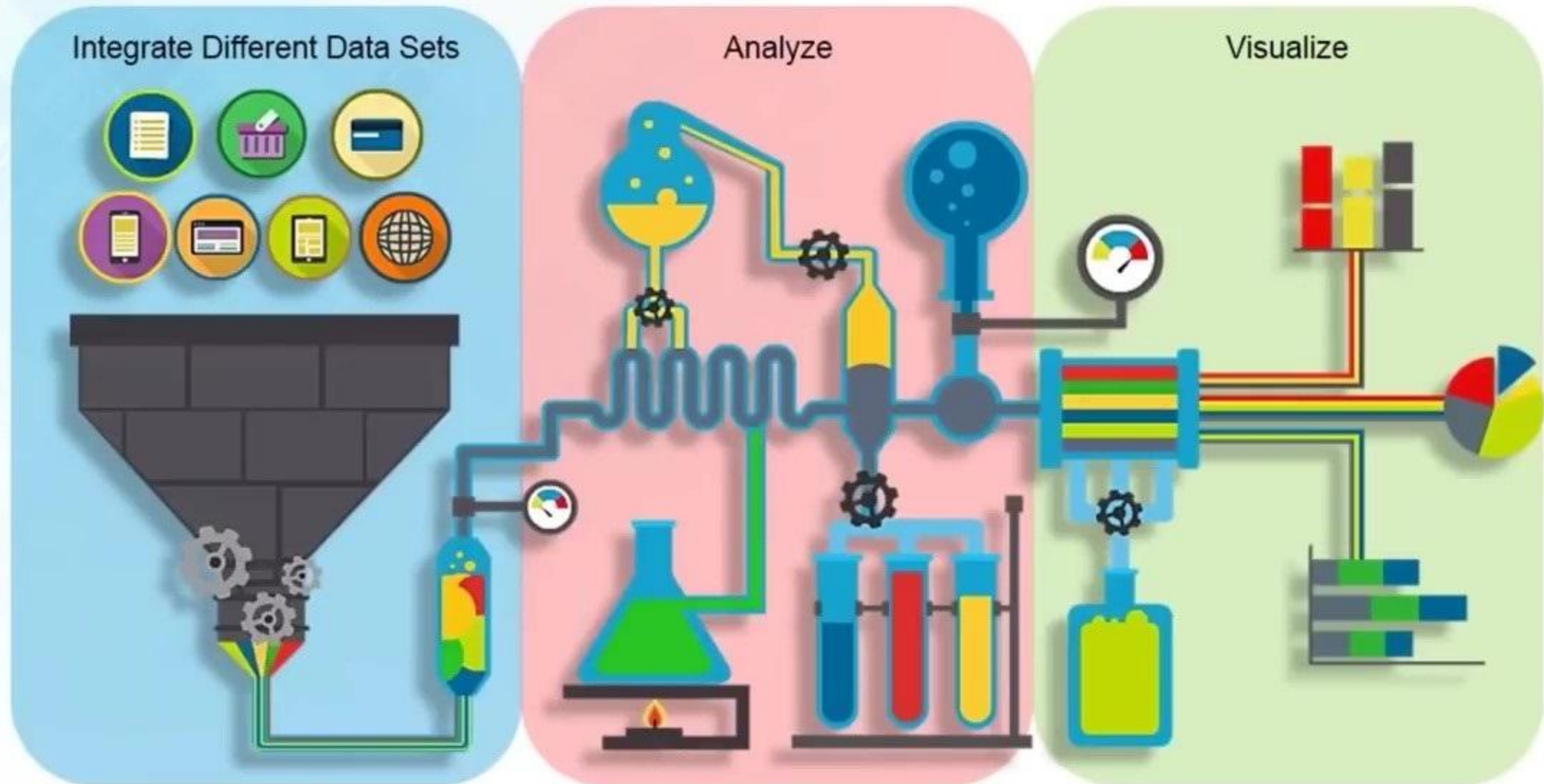


Graphical Data Visualization

Scope of Visual Analytics



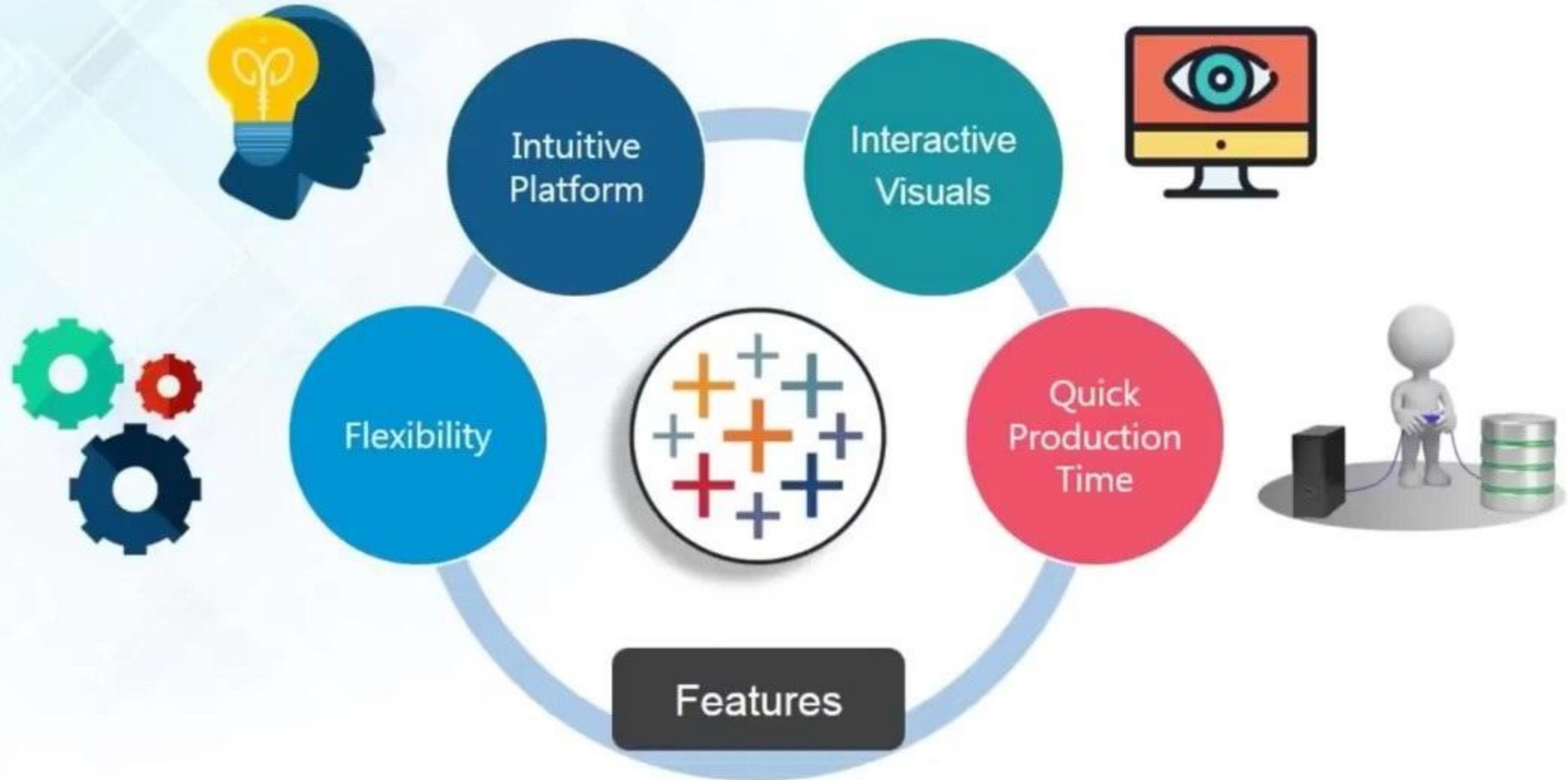
Data Visualization



Why Tableau?



Why Tableau?



What is Tableau?

- ❑ Tableau is a Software company which produces interactive data visualization products focused on business intelligence.
- ❑ Tableau helps the world's largest organizations unleash the power of their most valuable assets: their data and their people.
- ❑ Allows the customers to spend more time on data analysis and less on "data wrangling".



Integrate

Integrate



Analyze

Analyze



Visualize

Visualize

Tableau Architecture



Tableau Architecture

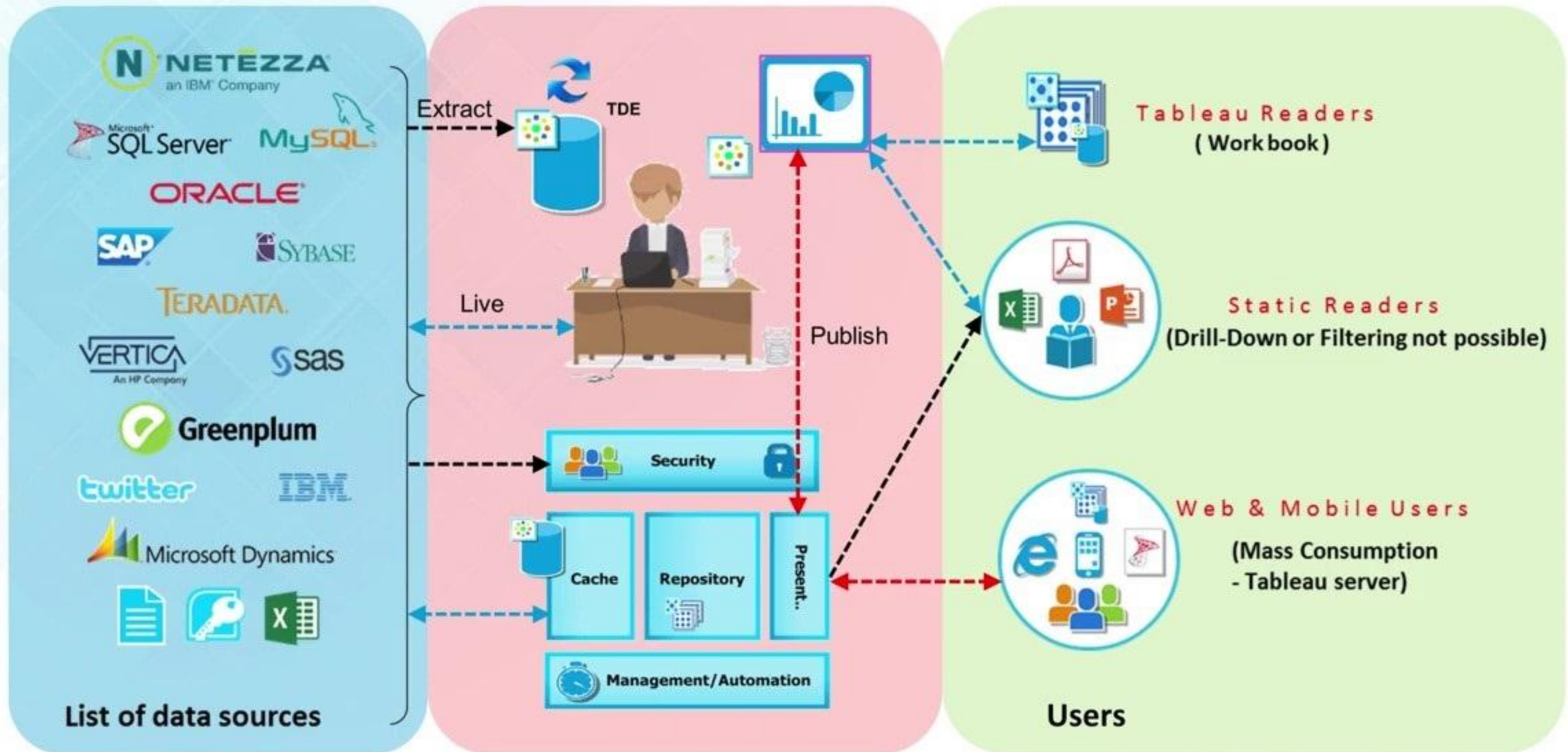


Tableau Product Family

Tableau Product Family



Pros of Tableau

EASE OF USE



DIRECT CONNECT AND GO



PERFECT MASHUPS



BEST PRACTICES IN A BOX



Companies using Tableau

50,000+
Customers

citibank

CISCO

Google

THE WORLD BANK



XBOX



Ferrari

Deloitte.



The New York Times

Adobe

U.S. AIR FORCE

Stanford
University

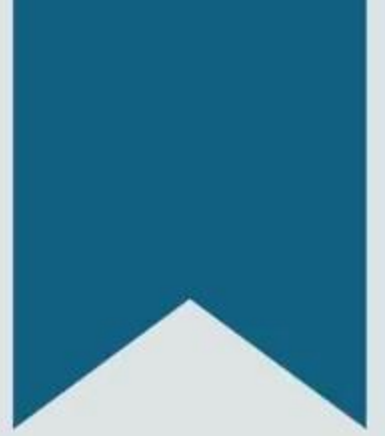
Bank of America



Coca-Cola

skype™

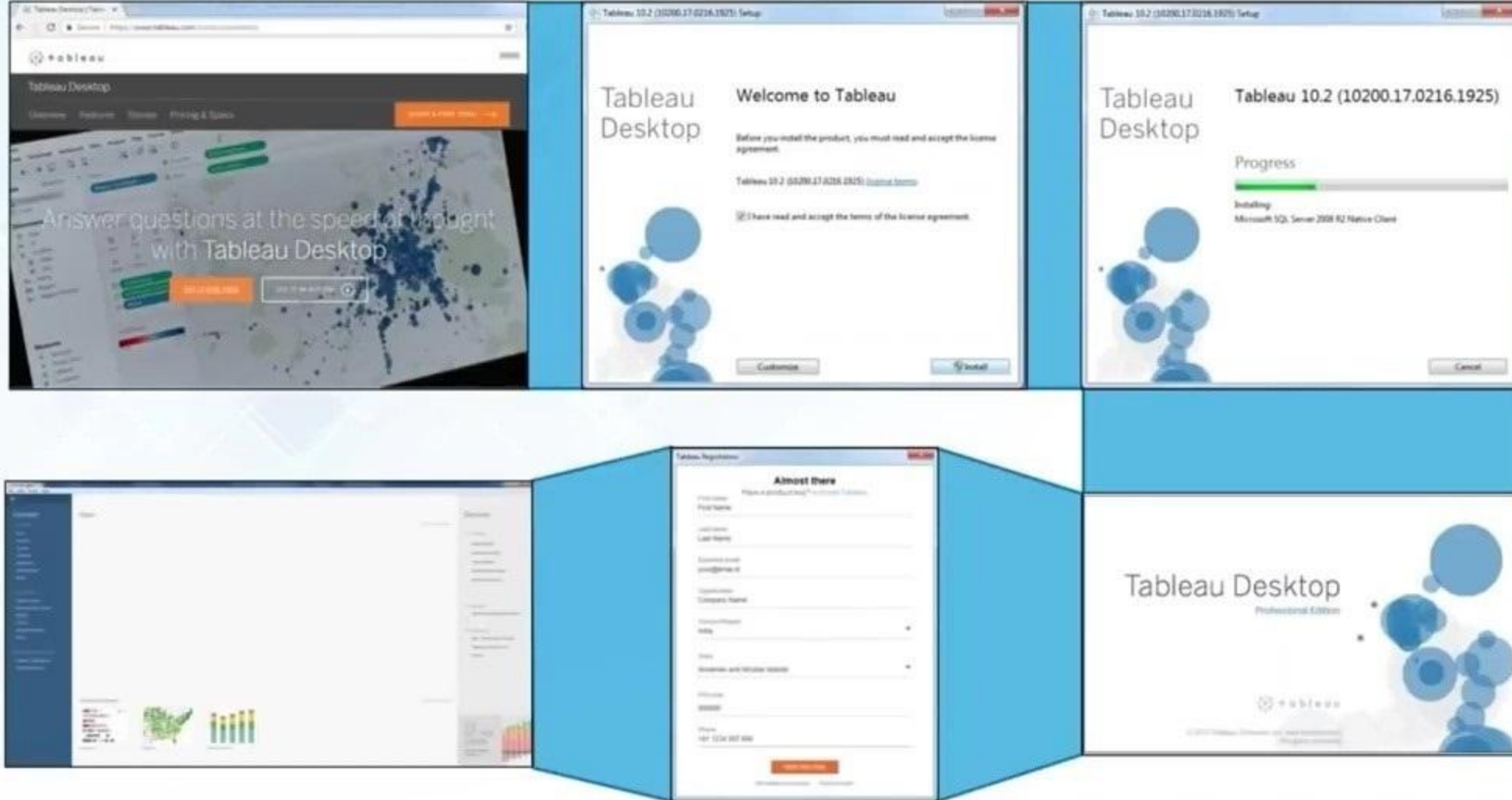
pepsi



02

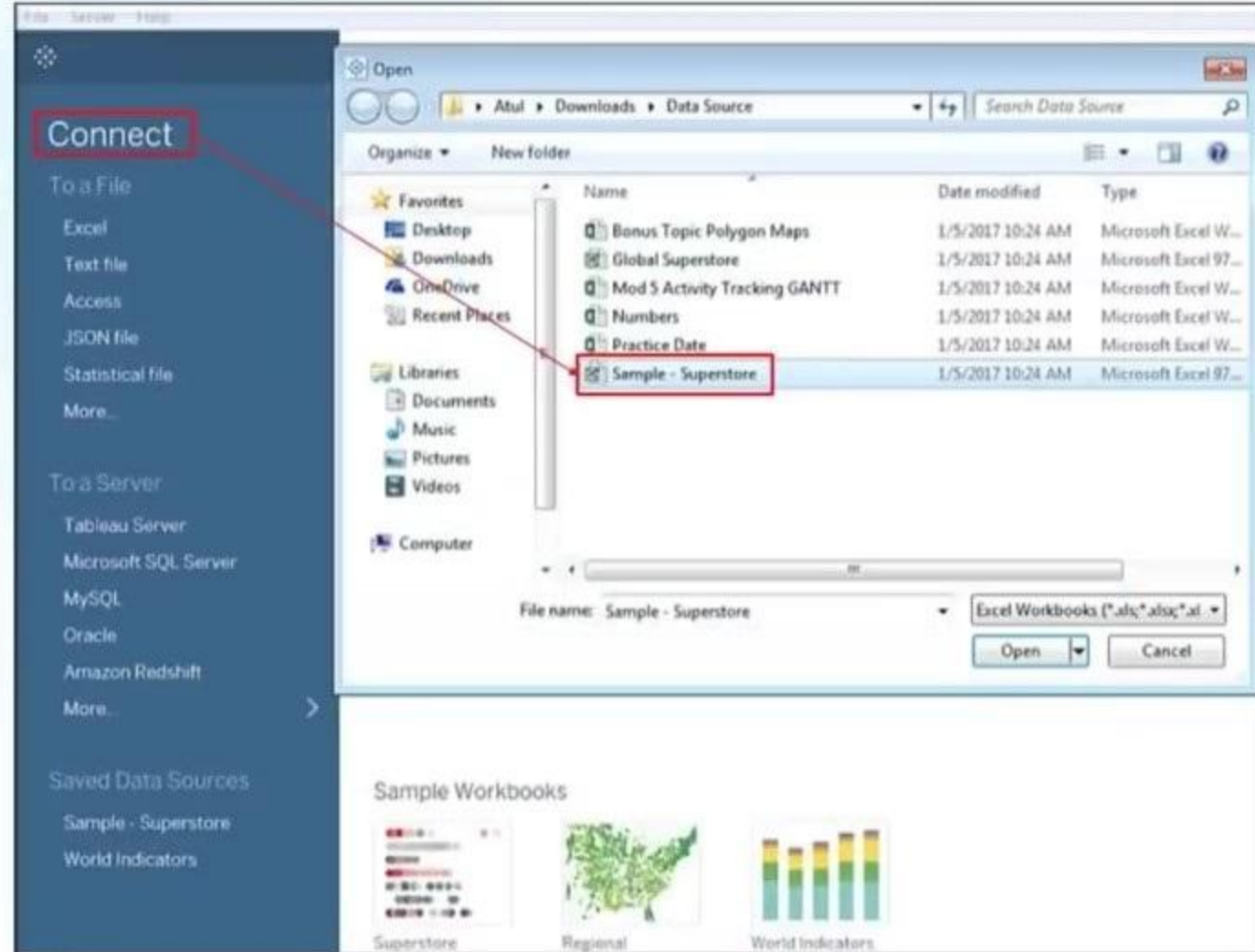
Tableau Desktop Installation

Installing Tableau



How to use  **+ a b | e a u**[®]

Tableau UI - Connections



We can connect to multiple file formats and servers in Tableau

Tableau Datatypes

Icon	Data type
Abc	Text (string) values
📅	Date values
🕒	Date & Time values
#	Numerical values
T/F	Boolean values
🌐	Geographic values

Boolean

True / False

True / False

Date

Date Values

December 31, 2016

Date & Time

Date &
Timestamp Values

December 31, 2016
01:00:00 AM

Geographical Values

Geographical Mapping

New York, France,
India, Beijing

Text / String

Text or String Values

Welcome to Tableau

Number (Decimal)

Decimal Numbers

5.0000

Number (Whole)

Whole Numbers

5

Tableau UI – Connections

The screenshot shows the Tableau Desktop interface with the following elements:

- Connections Pane:** Located on the left, it shows 'Sample - Superstore' as the selected data source. An annotation points to this pane with the text: "A preview of the data set can be seen before opening our worksheet".
- Data Source Name:** 'Sample - Superstore' is highlighted in the top center. An annotation points to it with the text: "You can rename the data source just by clicking on it."
- Connection Type:** 'Live' is selected under the 'Connection' section.
- Data Preview:** A table of data is shown at the bottom, enclosed in a red box. The table has columns: Order ID, Order Date, Ship Date, Ship Mode, Customer Name, and Segment. The first row is highlighted.
- Filters:** '0' filters are applied, with an 'Add' button.
- Sort fields:** 'Data source order' is selected.
- Show aliases:** Unchecked.
- Show hidden fields:** Unchecked.
- Rows:** '1,000' rows are displayed.

Order ID	Order Date	Ship Date	Ship Mode	Customer Name	Segment
CA-2011-103800	03-01-2013	07-01-2013	Standard Class	Darren Powers	Consumer
CA-2011-112326	04-01-2013	08-01-2013	Standard Class	Phillina Ober	Home Office
CA-2011-112326	04-01-2013	08-01-2013	Standard Class	Phillina Ober	Home Office
CA-2011-112326	04-01-2013	08-01-2013	Standard Class	Phillina Ober	Home Office
CA-2011-141817	05-01-2013	12-01-2013	Standard Class	Mick Brown	Consumer
CA-2011-130813	06-01-2013	08-01-2013	Second Class	Lycoris Saunders	Consumer

We have connected to an *Excel* Sheet "*Sample - Superstore*"

This is the *Dashboard* once we load data into *Tableau Desktop*

Tableau UI – Connections

The screenshot shows the Tableau Desktop interface with the 'Connections' pane on the left. The 'Sample - Superstore' connection is selected. A red box highlights the 'Sample - Superstore' entry in the 'Connections' pane. A green box highlights the 'Sample - Superstore' entry in the 'Connections' pane with the text: "You can rename the data source just by clicking on it." Another green box highlights the message "Connection Established with file: 'Sample - Superstore'" with the text: "A preview of the data set can be seen before opening our worksheet". The main area displays a table of data from the 'Sample - Superstore' connection.

Connections

Sample - Superstore

Orders

Connection Established with file: "Sample - Superstore"

Sort fields Data source order Show aliases Show hidden fields 1,000 rows

Order ID	Order Date	Ship Date	Ship Mode	Customer Name	Segment
CA-2011-103800	03-01-2013	07-01-2013	Standard Class	Darren Powers	Consumer
CA-2011-112326	04-01-2013	08-01-2013	Standard Class	Phillina Ober	Home Office
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CA-2011-141817	05-01-2013	12-01-2013	Standard Class	Mick Brown	Consumer
CA-2011-130813	06-01-2013	08-01-2013	Second Class	Lycoris Saunders	Consumer

We have connected to an *Excel* Sheet "*Sample - Superstore*"

This is the *Dashboard* once we load data into *Tableau Desktop*

Tableau Desktop UI

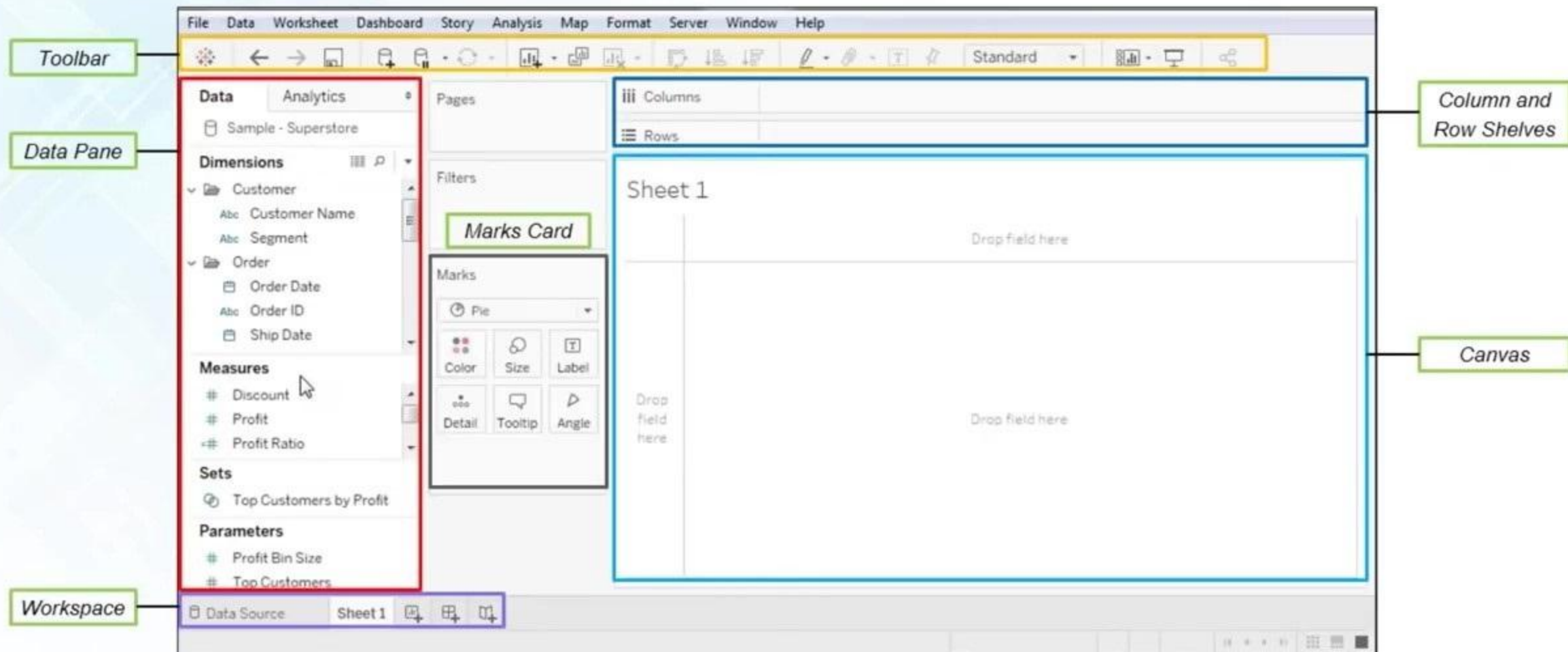
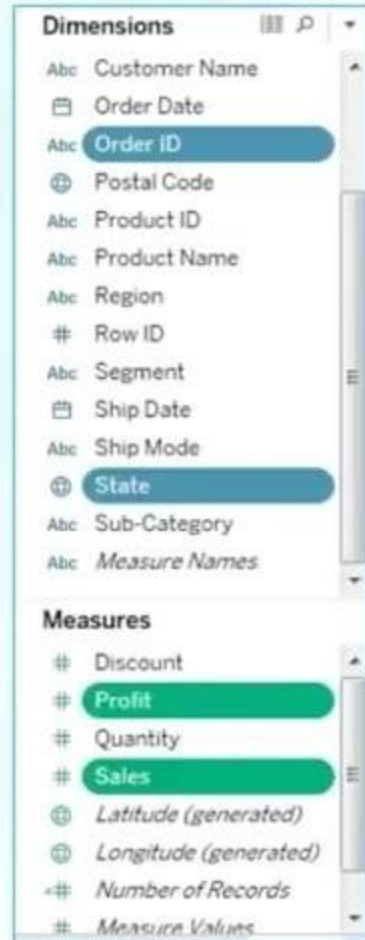


Tableau Dashboard

Tableau UI – Dimensions & Measures



Once we connect to a data source in Tableau, the columns get divided into *Dimensions* and *Measures*.

A *Dimension* is a field that is an independent variable.

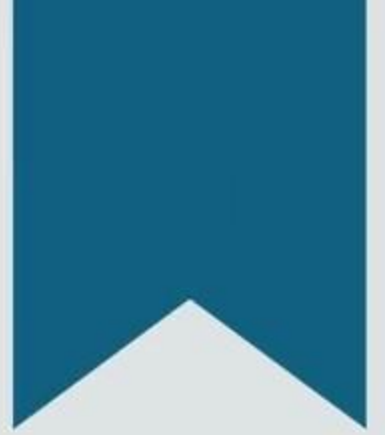
A *Measure* is a field that is a *Dependent Variable* and its value is a function of one or more *Dimensions*.

Tableau UI – Show Me



Show Me in Tableau shows all the possible visualizations available for our data source.

The visualizations that are highlighted are the ones that are currently available for the current selection of dimensions and measures.



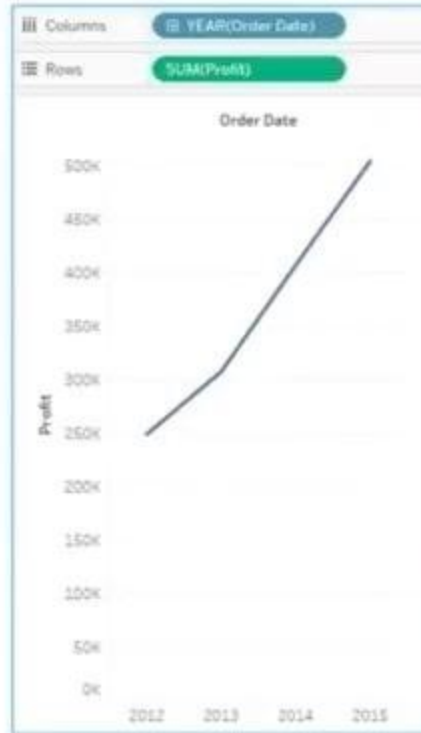
03

Data Visualization using Tableau

Tableau – Visualizations



Bar Graph

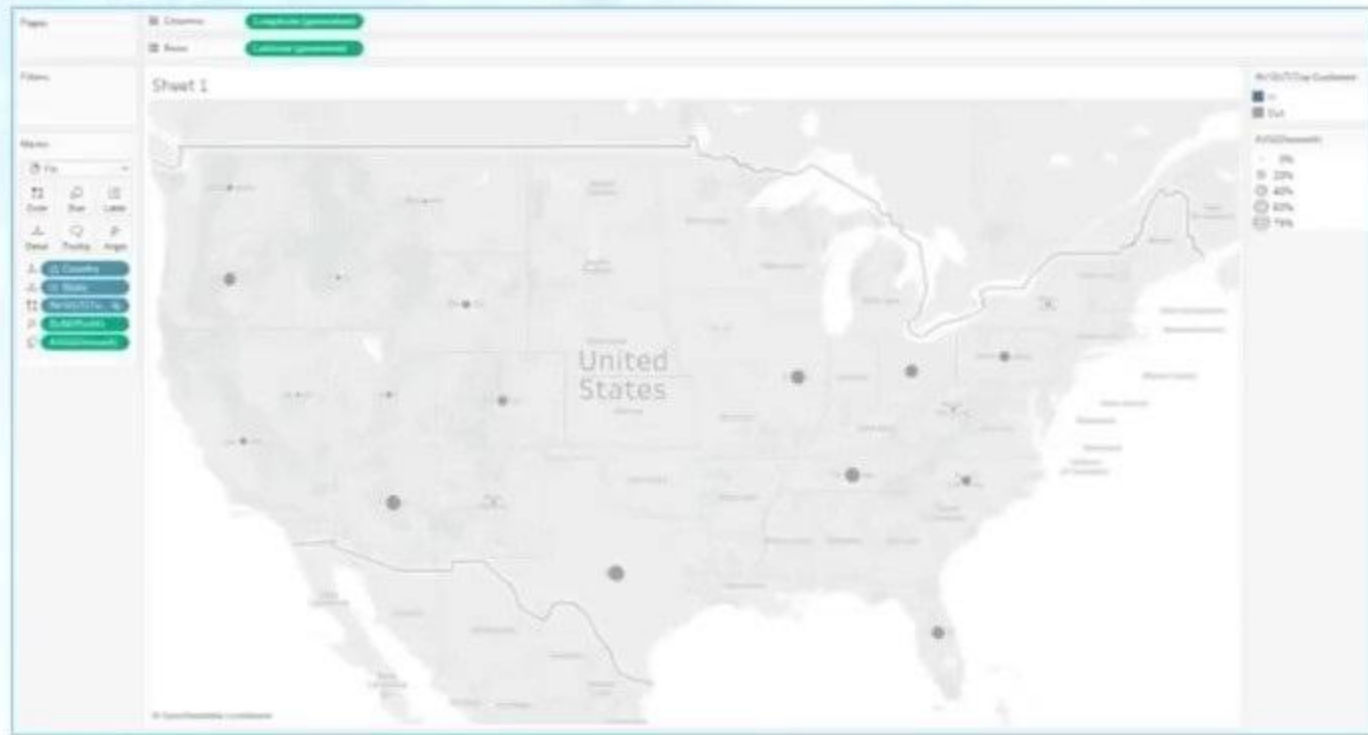


Line Graph

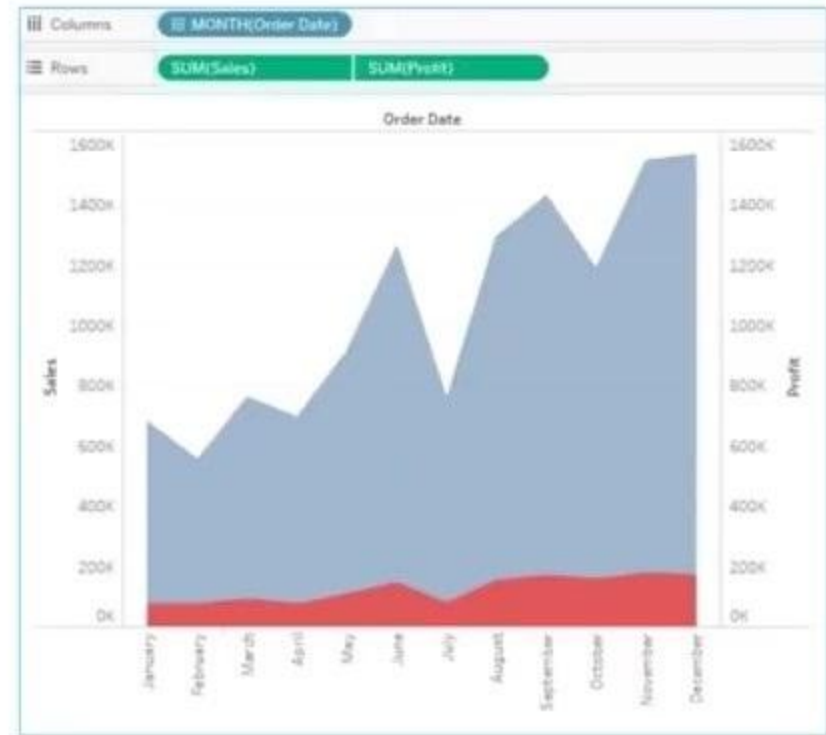


Dual Axis Graph

Tableau – Visualizations

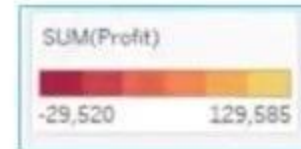
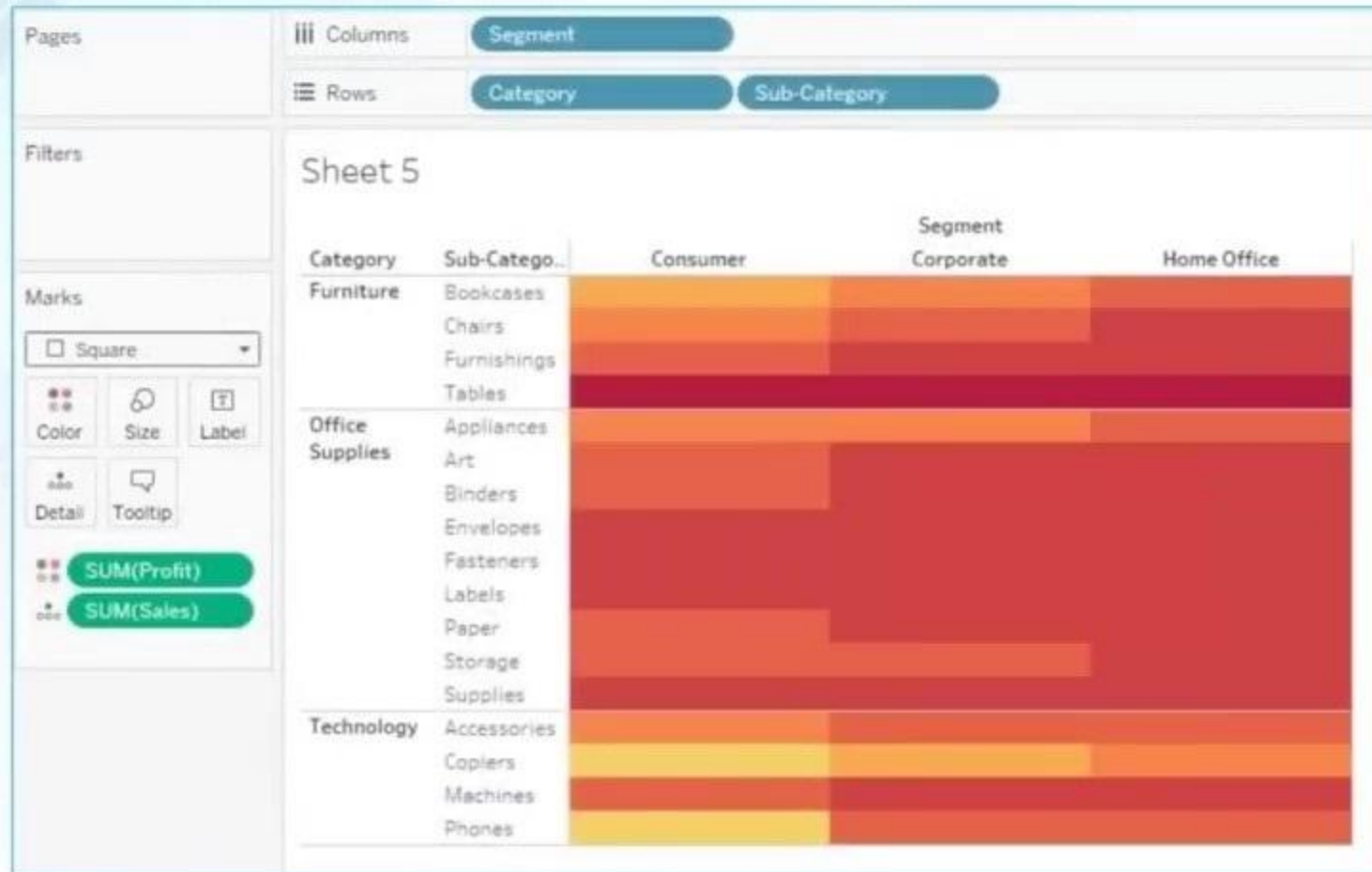


Geographical Graph



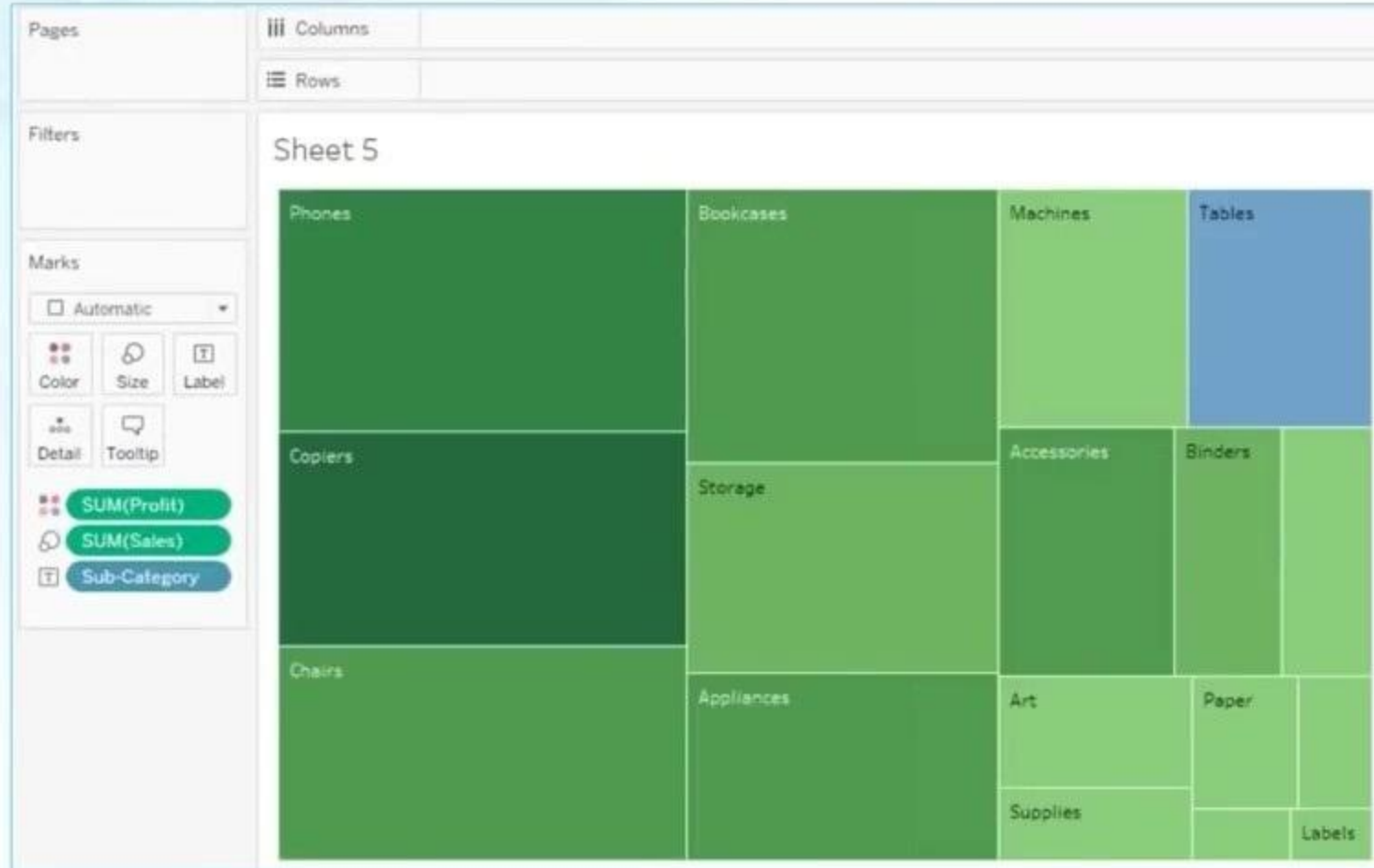
Area Graph with Dual Axes

Tableau – Visualizations



Heat Map

Tableau – Visualizations



Tree Map

Tableau – Applying Visualizations

Let us discuss which visualizations are the best for various applications

Visualization	Application
Bar Graph	Used when Dimension is discontinuous
Line Graph	Preferred for continuous Dimensions
Dual Axis Graph	Used to represent two Measures together
Geographical Graph	Used to plot Measures on geographical map
Area Graph – Dual Axes	Provides better comparison amongst Measures
Heat Map	Used to visualize variations across categories
Tree Map	Used to represent quantity in nested rectangles