An Introduction to Tableau

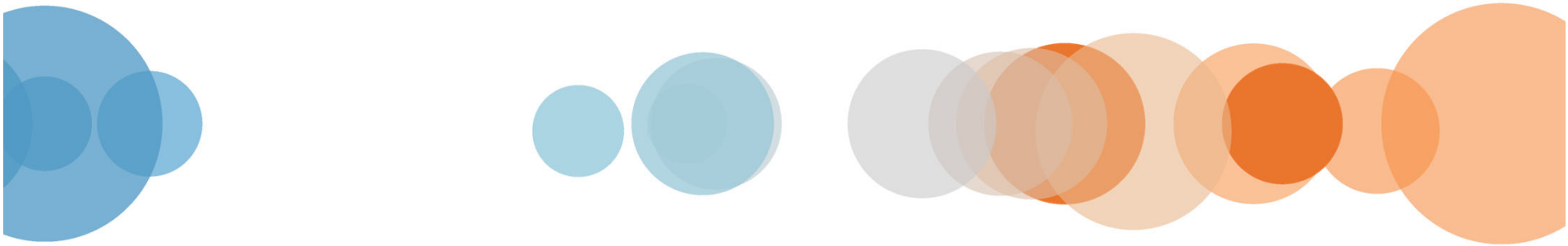
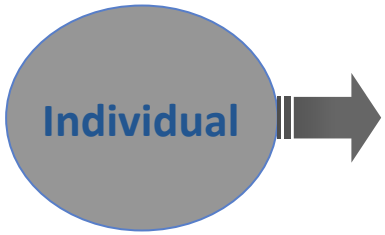
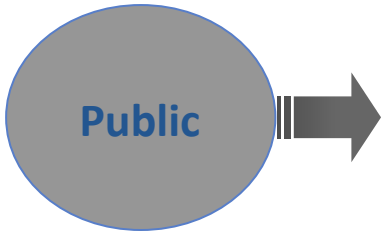


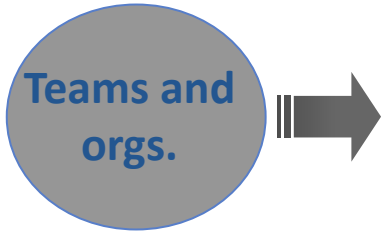
Tableau Software Products



- Authoring software: Desktop, Prep Builder, and Server or Online
- $70/month per license
- Read/Write Tableau files (and publish)
- Database connections
- Play control for animation

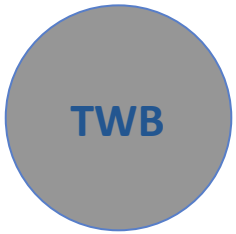


- Tableau Public Authoring software
- Tableau Reader viewing software
- FREE
- Save Tableau Files to Tableau Public Server
- Excel/CSV
- Web Data Connector (WDC)

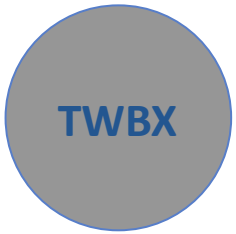


- Tableau Online or On-Premises Server
- Pricing varies
- Save Tableau Files to Private Tableau Server
- Authentication or Tableau hosted online server

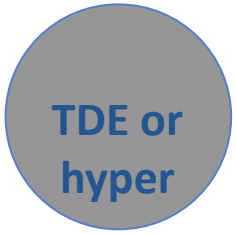
Tableau File Types



- Tableau Workbook File
- XML file with visualization
- Does NOT contain data
- Can't open without data files



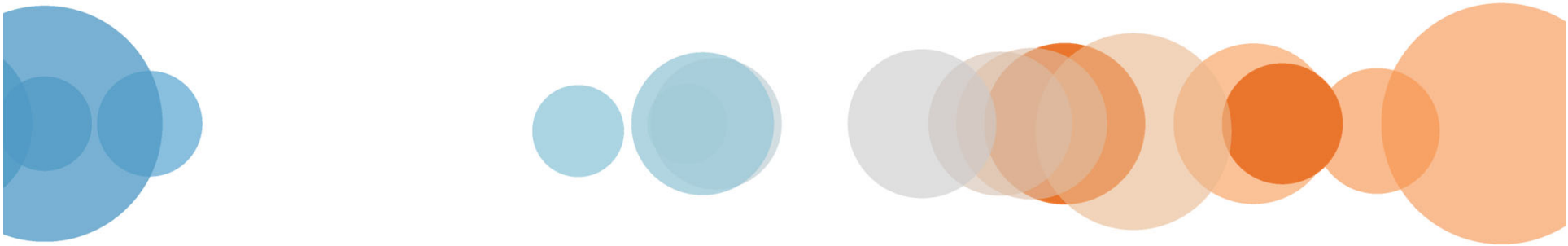
- Tableau Packaged Workbook
- ZIP file
- Contains TWB file
- Contains the data



- Tableau Data Extract
- Compressed data sources

Tableau Desktop: Start your free 14-day trial
https://www.tableau.com/products/desktop/download

Tableau Exploratory of Data



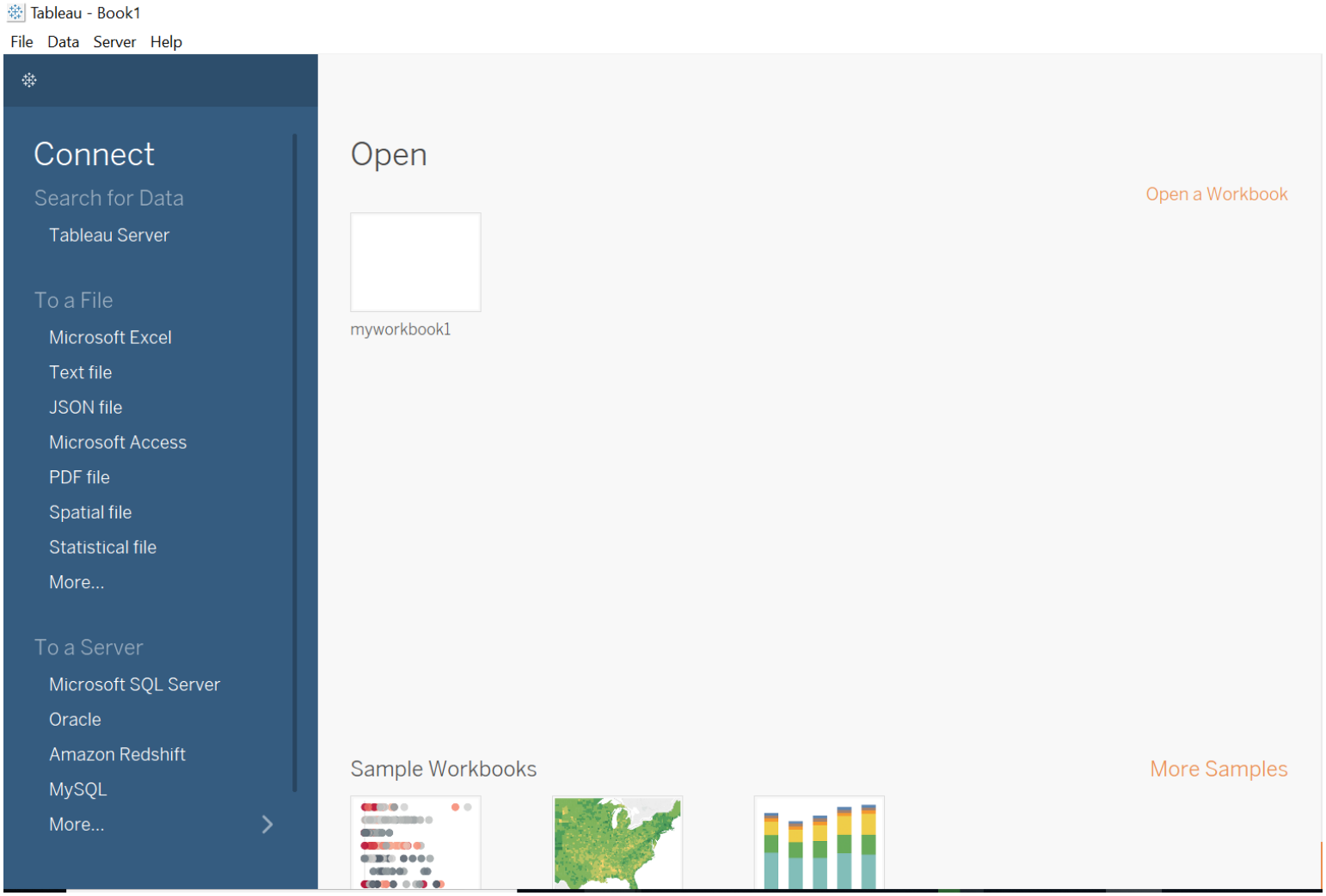


Tableau - Book1
File Data Server Help
Connect
Search for Data
Tableau Server
To a File
Microsoft Excel
Text file
JSON file
Microsoft Access
PDF file
Spatial file
Statistical file
More...
To a Server
Microsoft SQL Server
Oracle
Amazon Redshift
MySQL
More...
Open
Open a Workbook
myworkbook1
Sample Workbooks
More Samples

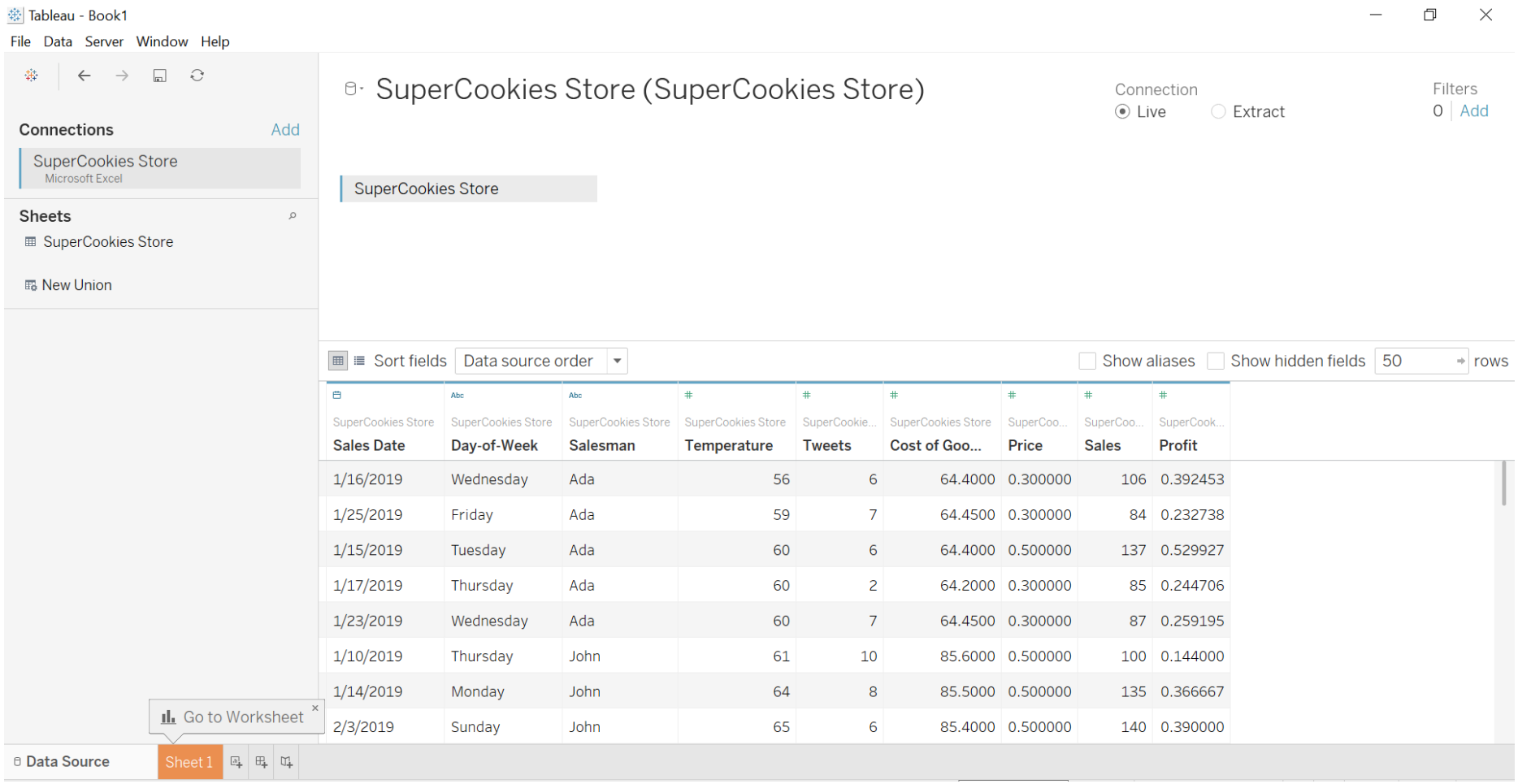


Tableau - Book1
File Data Server Window Help
Connections Add
SuperCookies Store
Microsoft Excel
Sheets
SuperCookies Store
New Union
SuperCookies Store (SuperCookies Store)
Connection
Live
Extract
Filters
0 Add
SuperCookies Store
Sort fields
Data source order
Show aliases
Show hidden fields
50
rows
SuperCookies Store Sales Date
SuperCookies Store Day-of-Week
SuperCookies Store Salesman
SuperCookies Store Temperature
SuperCookie... Tweets
SuperCookies Store Cost of Goo...
SuperCoo... Price
SuperCoo... Sales
SuperCook... Profit
1/16/2019 Wednesday Ada 56 6 64.4000 0.300000 106 0.392453
1/25/2019 Friday Ada 59 7 64.4500 0.300000 84 0.232738
1/15/2019 Tuesday Ada 60 6 64.4000 0.500000 137 0.529927
1/17/2019 Thursday Ada 60 2 64.2000 0.300000 85 0.244706
1/23/2019 Wednesday Ada 60 7 64.4500 0.300000 87 0.259195
1/10/2019 Thursday John 61 10 85.6000 0.500000 100 0.144000
1/14/2019 Monday John 64 8 85.5000 0.500000 135 0.366667
2/3/2019 Sunday John 65 6 85.4000 0.500000 140 0.390000
Go to Worksheet
Data Source
Sheet 1

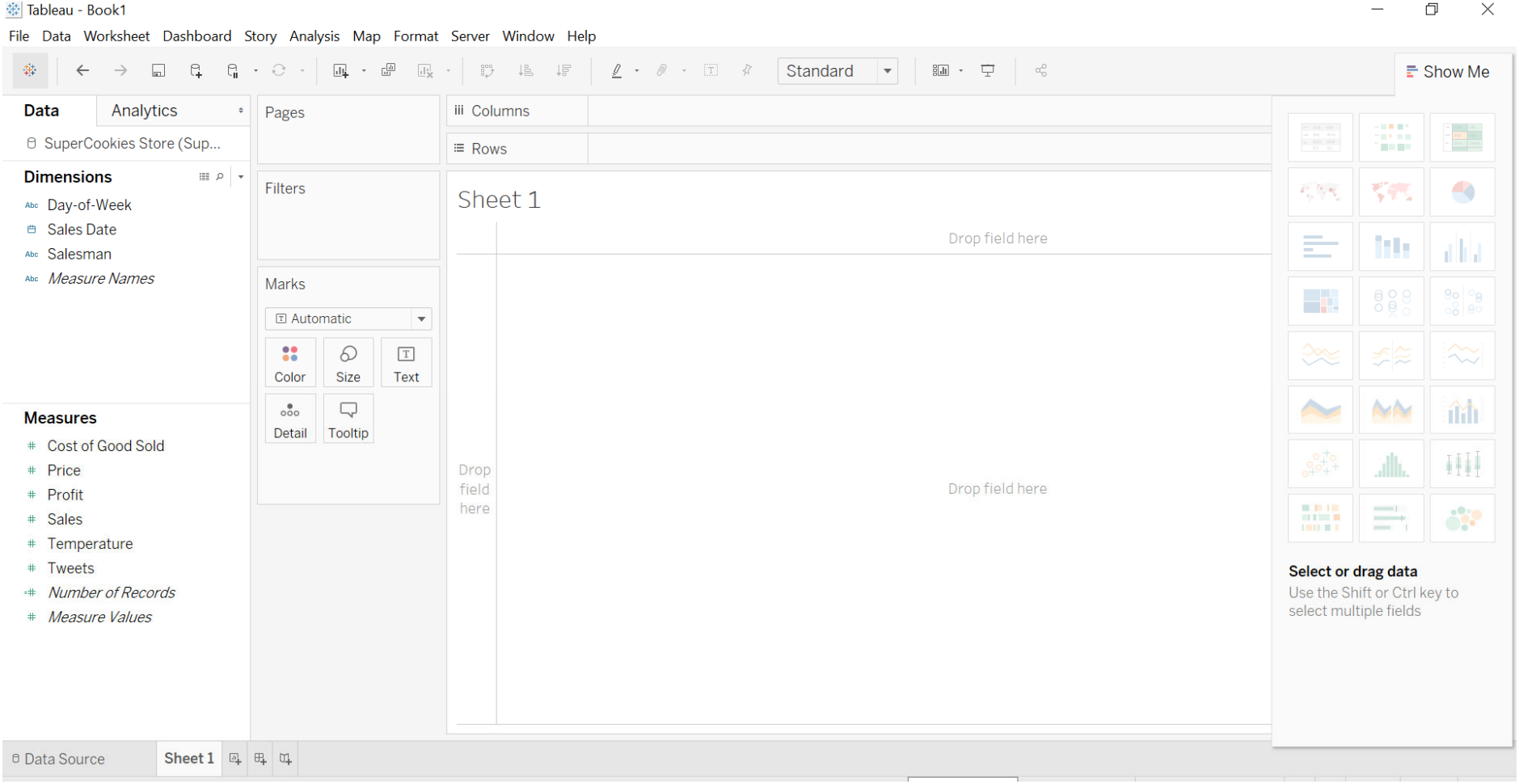


Tableau - Book1
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Standard
Show Me
Data
Analytics
SuperCookies Store (Sup...
Dimensions
Day-of-Week
Sales Date
Salesman
Measure Names
Measures
Cost of Good Sold
Price
Profit
Sales
Temperature
Tweets
Number of Records
Measure Values
Pages
Filters
Marks
Automatic
Color
Size
Text
Detail
Tooltip
Columns
Rows
Sheet 1
Drop field here
Drop field here
Drop field here
Select or drag data
Use the Shift or Ctrl key to select multiple fields
Data Source
Sheet 1

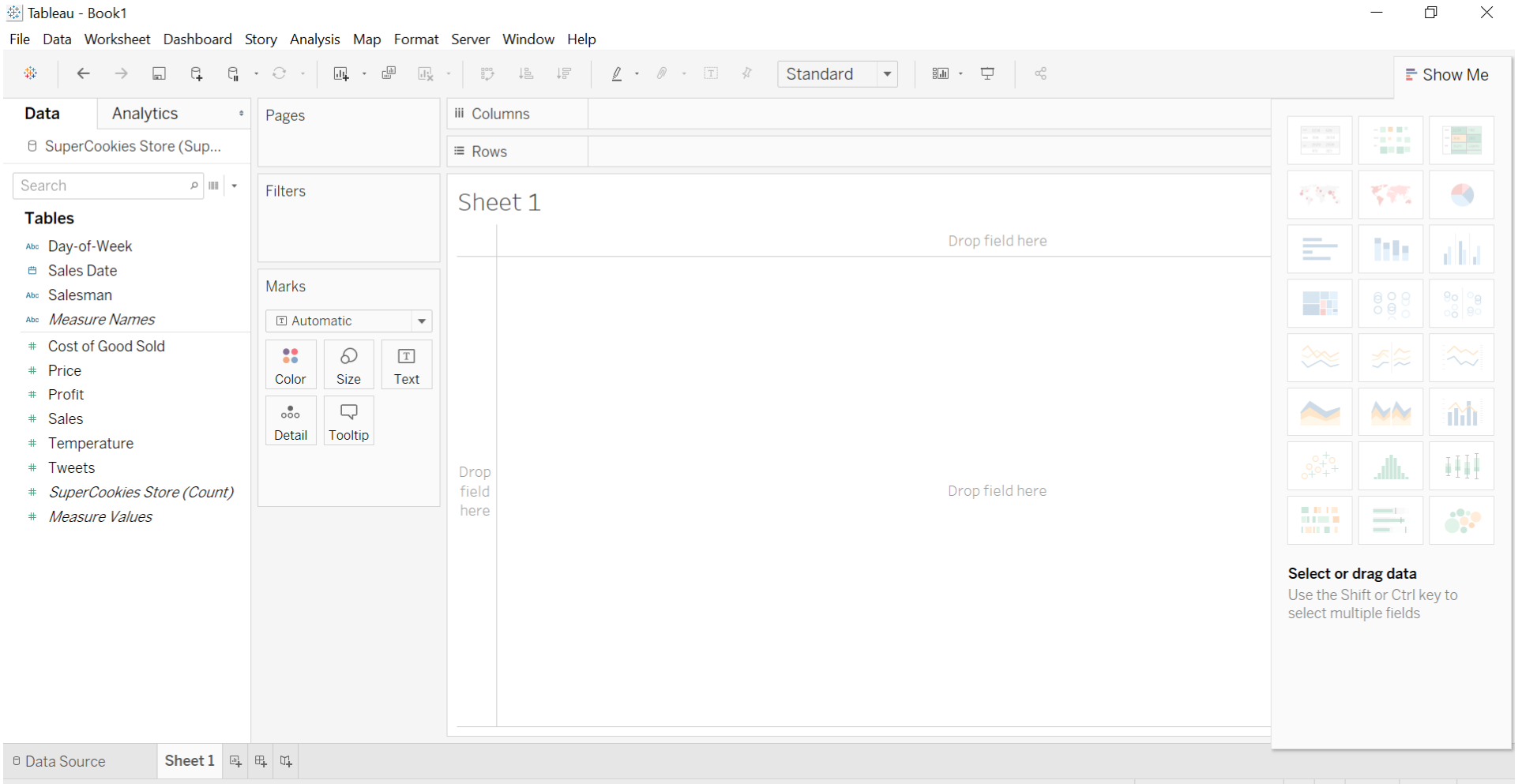


Tableau - Book1
File Data Worksheet Dashboard Story Analysis Map Format Server Window Help
Standard
Show Me
Data
Analytics
SuperCookies Store (Sup...
Search
Tables
Day-of-Week
Sales Date
Salesman
Measure Names
Cost of Good Sold
Price
Profit
Sales
Temperature
Tweets
SuperCookies Store (Count)
Measure Values
Pages
Filters
Marks
Automatic
Color
Size
Text
Detail
Tooltip
Columns
Rows
Sheet 1
Drop field here
Drop field here
Drop field here
Select or drag data
Use the Shift or Ctrl key to select multiple fields
Data Source
Sheet 1

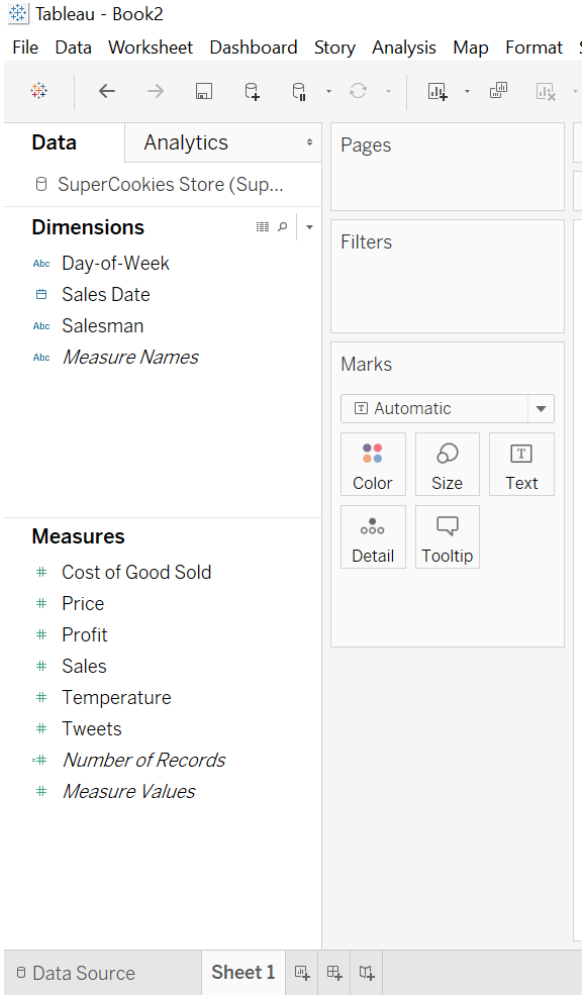


Tableau - Book2
File Data Worksheet Dashboard Story Analysis Map Format
Data
Analytics
Pages
SuperCookies Store (Sup...
Dimensions
Day-of-Week
Sales Date
Salesman
Measure Names
Filters
Marks
Automatic
Color
Size
Text
Detail
Tooltip
Measures
Cost of Good Sold
Price
Profit
Sales
Temperature
Tweets
Number of Records
Measure Values
Data Source
Sheet 1

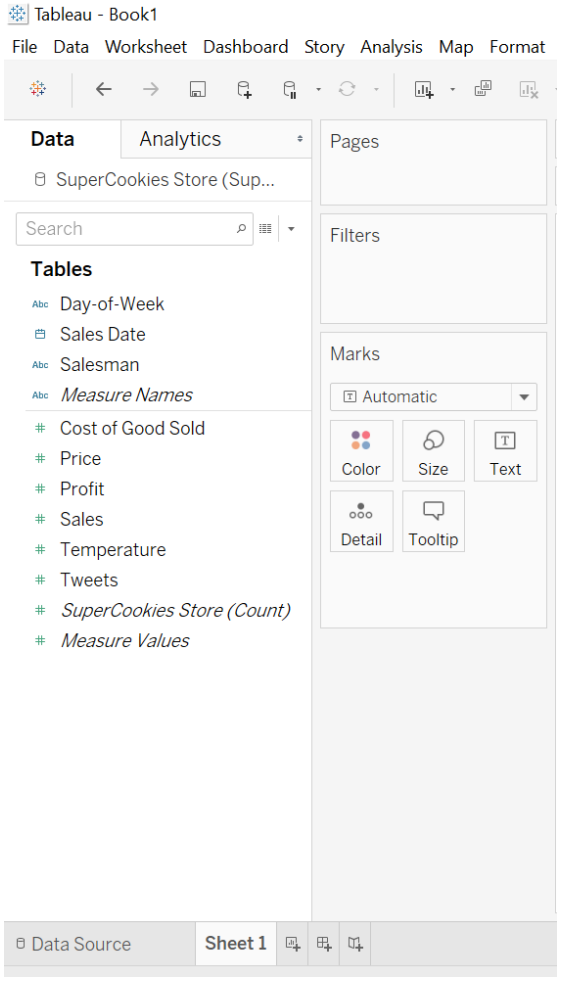


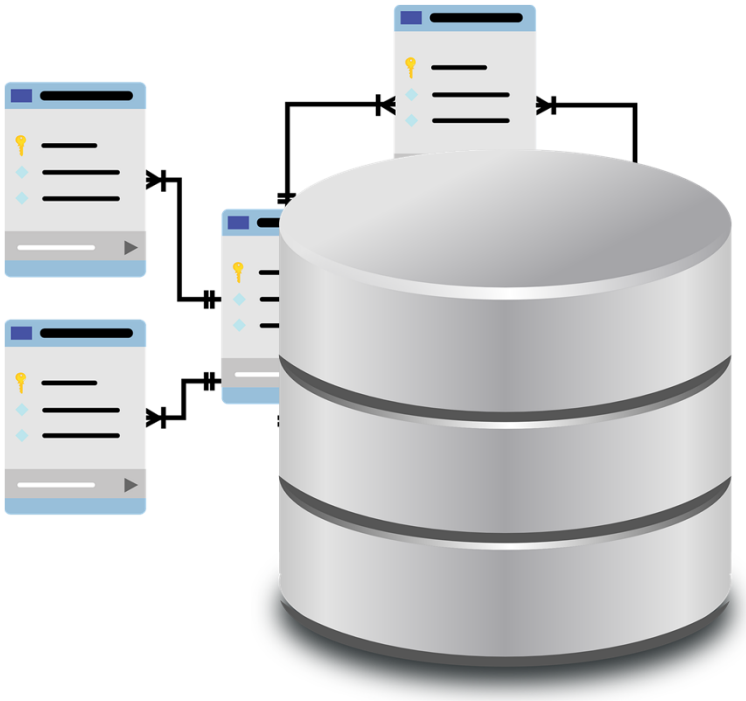
Tableau - Book1
File Data Worksheet Dashboard Story Analysis Map Format
Data
Analytics
Pages
SuperCookies Store (Sup...
Search
Tables
Day-of-Week
Sales Date
Salesman
Measure Names
Cost of Good Sold
Price
Profit
Sales
Temperature
Tweets
SuperCookies Store (Count)
Measure Values
Filters
Marks
Automatic
Color
Size
Text
Detail
Tooltip
Data Source
Sheet 1

Analytical Data Modeling

Two fundamental building blocks:

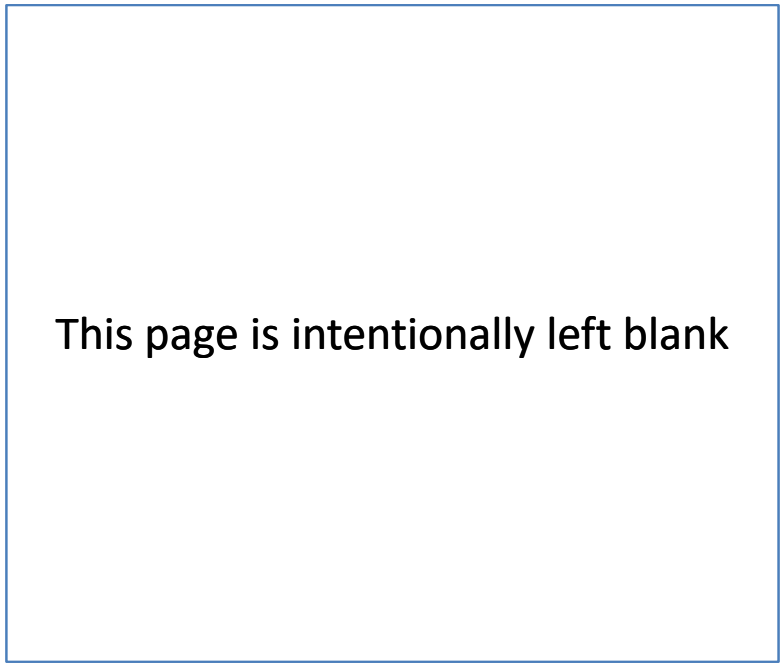
- **Dimensions** = made up of textual attributes
  - Not countable
  - Can be used to group, filter, and build hierarchies
- Measures = numeric facts
  - Countable
  - Typically additive

Tableau: Connecting to MySQL and Random Sample Generation



The Tableau Way!

Visualization



Visualization Principles

- Right tool for the right job
  - Use most effective graph type
- Be factual and ethical
  - Avoid misleading intentionally or unintentionally
- Size matters
  - Concept of proportion
- Color me beautifully appropriately
  - Choose color wisely
- Support your message
  - Align with your story
- KISS applies here!
  - Keep it simple, student

Bar Graph

- Countable, Measurable
- Length and Height
- Frequencies
- Compares and Contrast
- Origin at zero
- Vertical vs horizontal
- Stack or side-by-side

Line Graph

- Countable, Measurable
- Progression, changes, trends over time
- One or more groups (logical relationship)
- Does not have to start from zero
- Linear vs Logarithmic

Pie Graph

- Countable, Measurable
- Compares parts of a whole
- Large part vs small part

Scatter Graph

- Countable, Measurable
- Relationship between two continuous variable
- Correlation, Regression

Histogram Graph

- Distribution
- Central Tendency - Mode