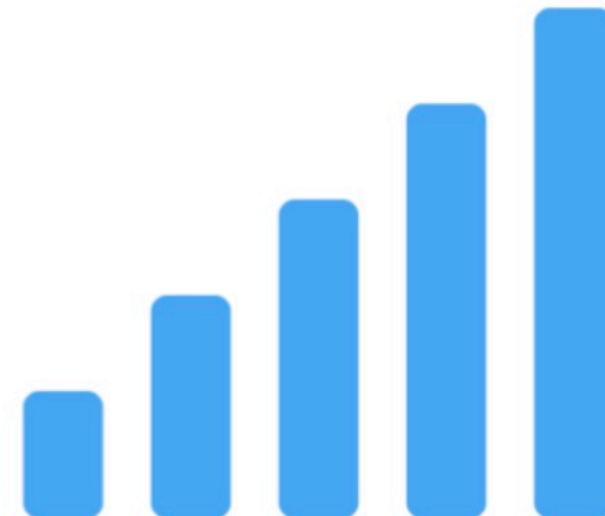




Data Visualization with Tableau

Session 2



Did you complete the pre-class activity?



Students, drag the icon!

Pear Deck Interactive Slide
Do not remove this bar



No Draggable™ Response
You didn't answer this question



Table of Contents

- ▶ Difference Between Dimension and Measure
- ▶ How to Build a Visualization
- ▶ Chart Types
- ▶ Dates

Objective

- Know the ways of how to build a visualization
- Change the mark type to get different charts
- Use different color palettes



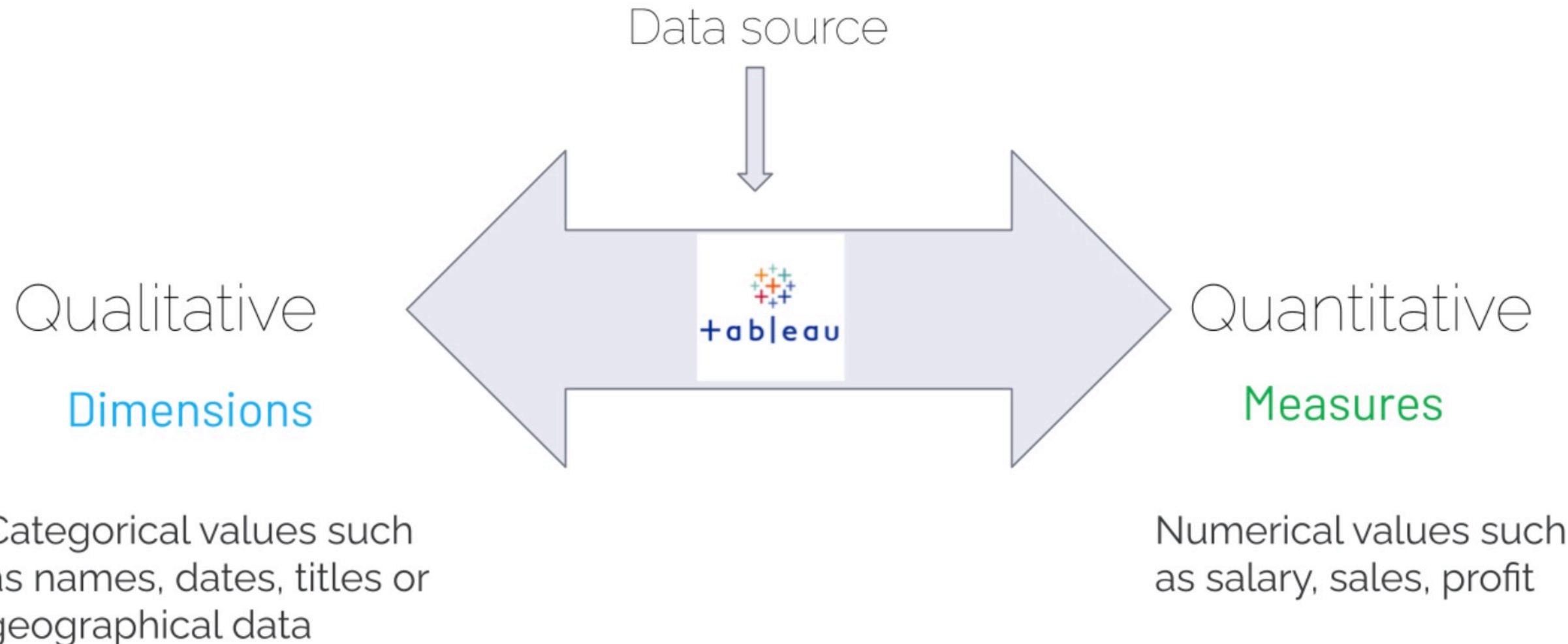
How to follow the class?



- Don't try to do at the same time with me!!!
- Just listen and pay attention to the details.
- I will give you time to practice.



Dimensions & Measures





Dimensions & Measures

Data Analytics

Sample - Superstore

Search

Tables

- .iii. Profit (bin)
- Abc Region
- Abc Segment
- Ship Date
- Abc Ship Mode
- Top Customers by Profit
- Abc Measure Names

Discount

Profit

Profit Ratio

Quantity

Sales

Latitude (generated)

Longitude (generated)

Migrated Data (Count)

-# Number of Records

Measure Values

Dimensions

Line that separates Dimensions and Measures

Measures



Discrete vs Continuous

Blue pill

DISCRETE

individually separate and distinct

treated as finite

generally add headers to the view

Furniture

Office Supplies

Technology

Green pill

CONTINUOUS

forming an unbroken whole,
without interruption

treated as an infinite

generally add axes to the view





Discrete vs Continuous

Blue pill

DISCRETE

Product Category

Segment

Country

Age

Green pill

CONTINUOUS

Revenue

Population

Profit

Age



The 4 Roles of Fields

Tables

- 🌐 Country/Region
- 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
- Abc Ship Mode
- 🌐 State
- Abc Sub-Category
- Abc Measure Names
- # Discount
- # Profit
- # Quantity
- # Sales

Dimensions with a data type of String or Boolean cannot be continuous

Dimension

DISCRETE

Dimension

CONTINUOUS

Measure
Measure

DISCRETE

CONTINUOUS

How to Build a Visualization



The screenshot shows the Tableau desktop application interface. A red box highlights the shelf areas: Pages shelf, Filters shelf, Columns shelf, Rows shelf, and Marks shelf. A large grey curly brace labeled "View" spans across these shelves. The left sidebar lists various data fields under Tables and Measures. The main workspace is labeled "Sheet 1".

Tableau - Book2

File Data Worksheet Dashboard Story Analysis Map Format Server Window Help

Standard Show Me

Data Analytics

Orders (Sample - Supers...)

Search

Tables

- Abc Category
- City
- Country/Region
- 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

Abc Measure Names

- Discount
- Profit
- Quantity
- Sales
- Latitude (generated)
- Longitude (generated)
- Orders (Count)
- Measure Values

Pages shelf

Filters shelf

Marks Card

Columns shelf

Rows shelf

Sheet 1

Drop field here

Drop field here

Drop field here

Data Source Sheet 1

The screenshot shows the Tableau desktop interface with a red border highlighting the central workspace, which is labeled "View". The workspace is divided into four main shelves:

- Pages shelf**: Located on the left side of the workspace.
- Filters shelf**: Located below the Pages shelf.
- Marks shelf**: Located below the Filters shelf, containing options for Color, Size, Text, Detail, and Tooltip.
- Columns shelf**, **Rows shelf**, and **Drop field here**: Located at the top of the workspace.

A callout bubble with the number "1" points to the workspace area, with the text: "Refers to space where we drag fields and show data."



Tableau - Book1

File Data Worksheet Dashboard Story Analysis Map Format Server Window Help

Show Me

Data Analytics Orders+ (Sample - Sup...
Search

Pages Columns SUM(Sales)
Rows Category

2

Another meaning of the "view" is the visualizations you've built or are building.

Tables

- Category
- City
- Country/Region
- 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
- Discount
- Profit

Marks

- Automatic
- Color
- Size
- Label
- Detail
- Tooltip
- Category

Sheet 1

Category

Furniture

Office Supplies

Technology

Sales

0K 100K 200K 300K 400K 500K 600K 700K 800K

3 marks 3 rows by 1 column SUM(Sales): 2.297.201

Robert

Ways to Build a Viz

There are several ways you can create views in Tableau.



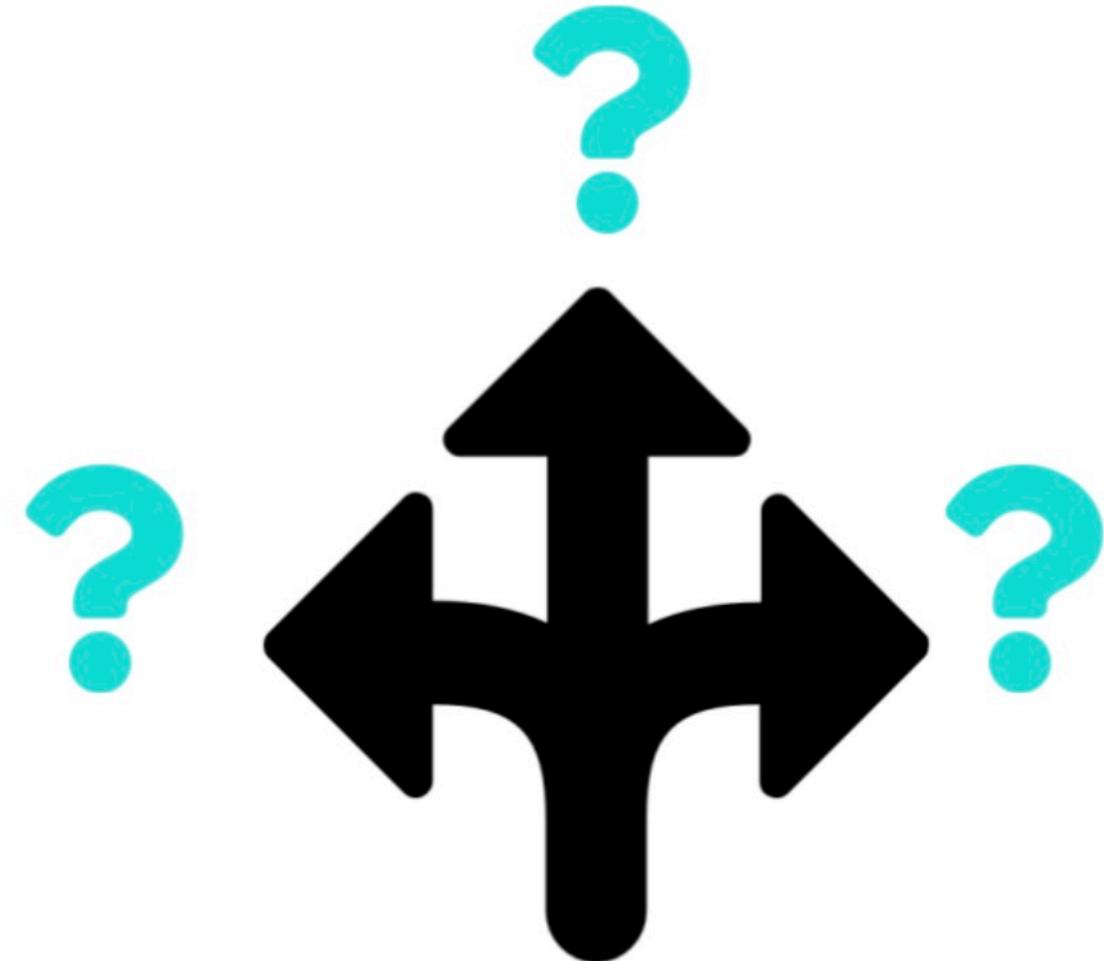
Ways to Build a Viz

- Drag and Drop Fields onto the Columns and Rows Shelves
- Drag and Drop Field onto Drop Here areas on the view
- Double-click Fields on the Data Pane
- Using Show Me
- Using Marks Card

Ways to Build a Viz



Every view starts with a question.



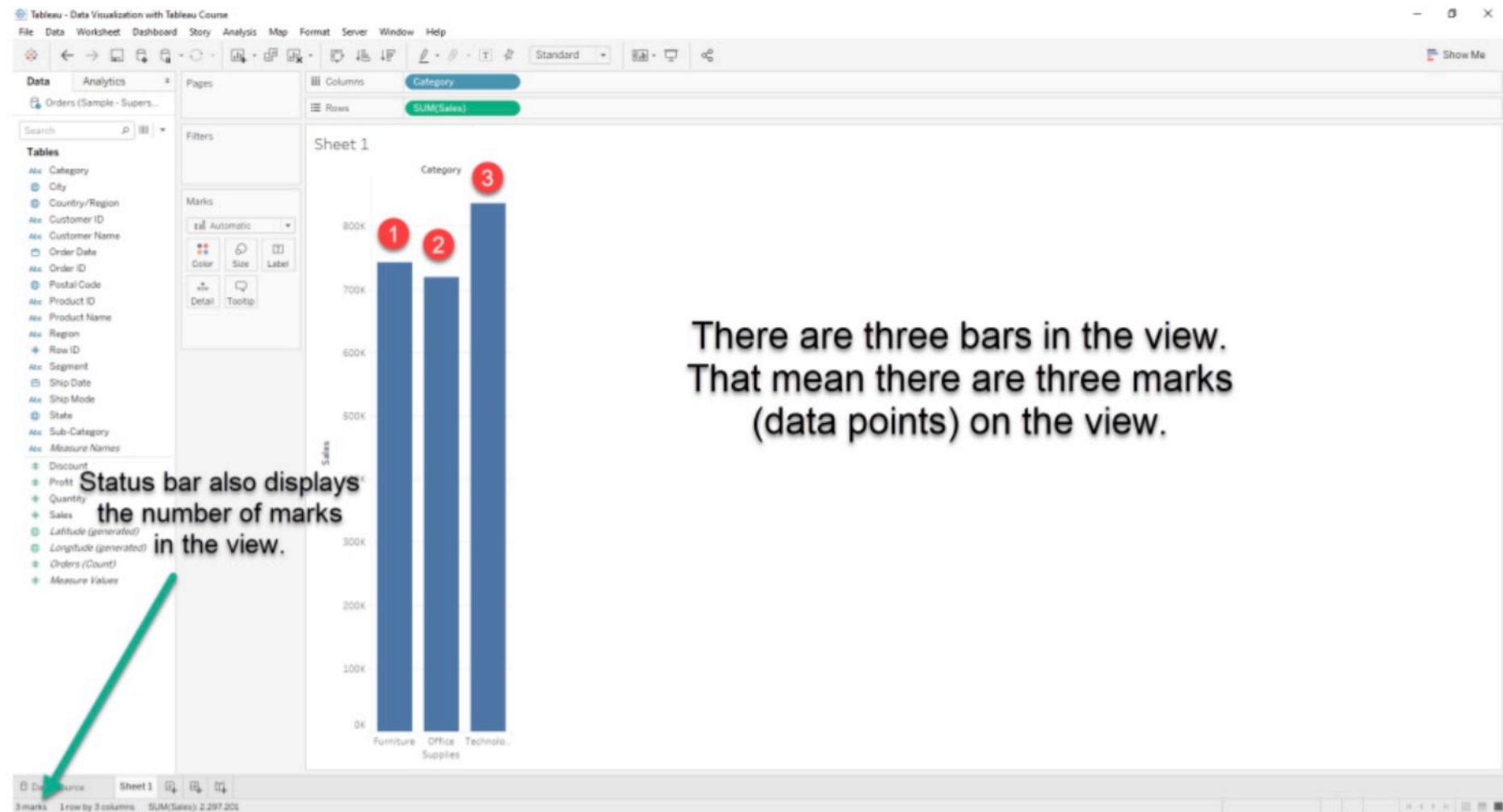
Ways to Build a Viz



How our Sales are broken down by product Category?

What is a Mark?

Mark is a data point. Tableau displays data using marks, where every mark corresponds to a row (or a group of rows) in our data source.

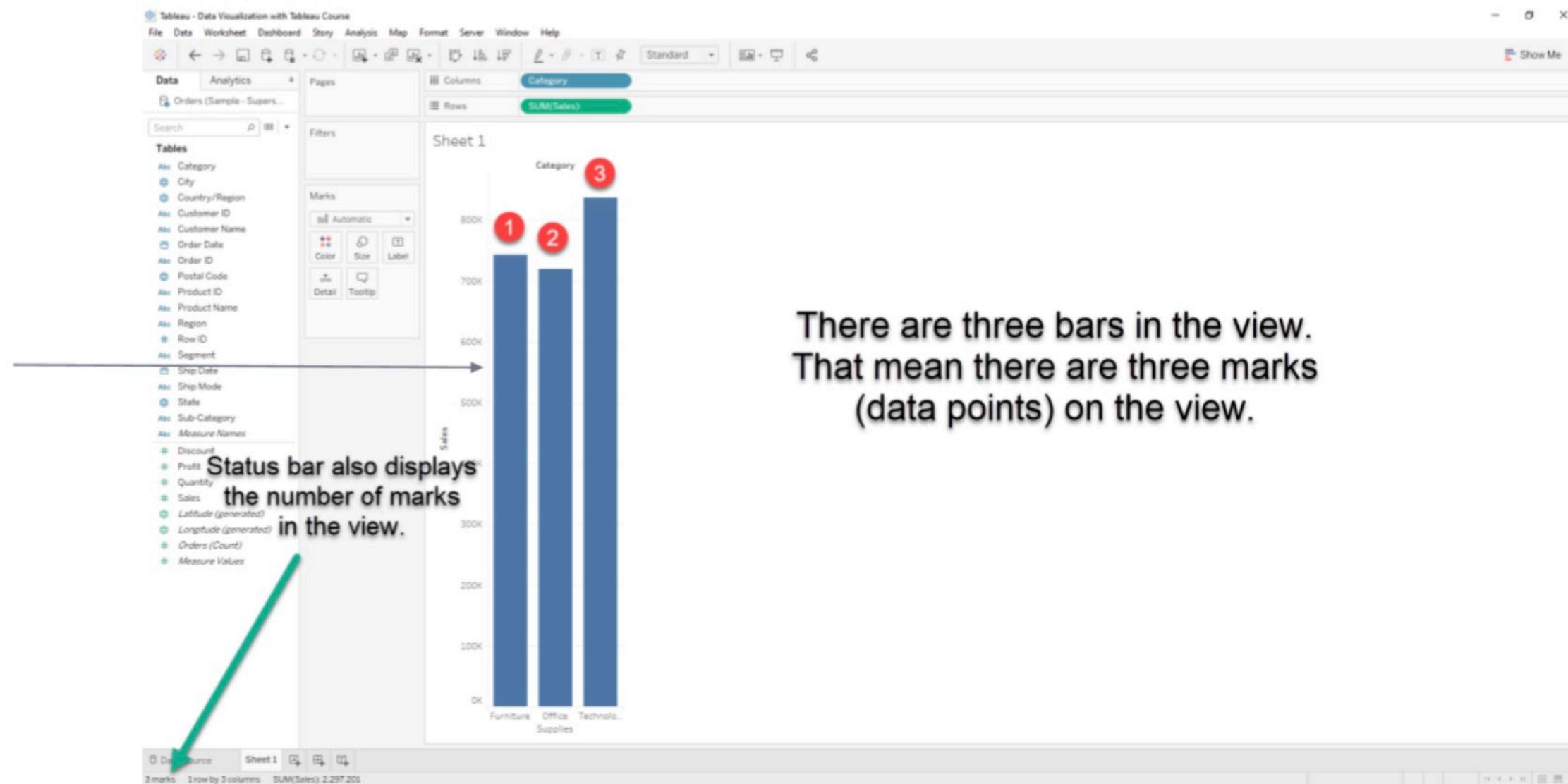


What is a Mark?

When we refer to a mark in Tableau, we mean the shape used to represent data in the visualization.

Shape:

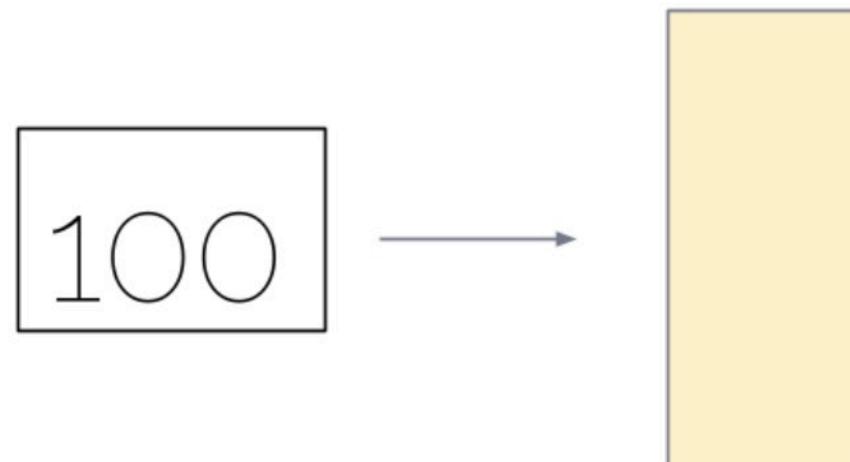
Bar



What is a Mark?

By placing fields on cards, we add context to the visualization by encoding marks with color, size, shape, text, and detail.

Encoding is the process of converting data from one form to another



Working with Dates

Dates are dimensions and they will always appear in the **Dimensions** section of your data pane. Remember, being a dimension does not always mean that they are discrete.

The screenshot shows a data visualization interface with a 'Data' tab selected. A red box highlights the 'Tables' section, which lists various dimensions and measures. The dimensions listed are: 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, Sub-Category (gr...), Measure Names, Discount, Profit, Quantity, and Sales. The 'Analytics' tab is also visible at the top.

Abc	Customer ID
Abc	Customer Name
Abc	Order Date
Abc	Order ID
Abc	Postal Code
Abc	Product ID
Abc	Product Name
Abc	Region
#	Row ID
Abc	Segment
Abc	Ship Date
Abc	Ship Mode
Abc	State
Abc	Sub-Category
Abc	Sub-Category (gr...)
Abc	Measure Names
#	Discount
#	Profit
#	Quantity
#	Sales

Working with Dates



They can come in two different data types within Tableau – date and date & time.



Data Analytics

Orders (Sample - S...)

Search Filter | Columns

Tables

- 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
- Sub-Category (gr...
- Measure Names**
- Discount
- Profit
- Quantity
- Sales

Data Analytics

Tweets

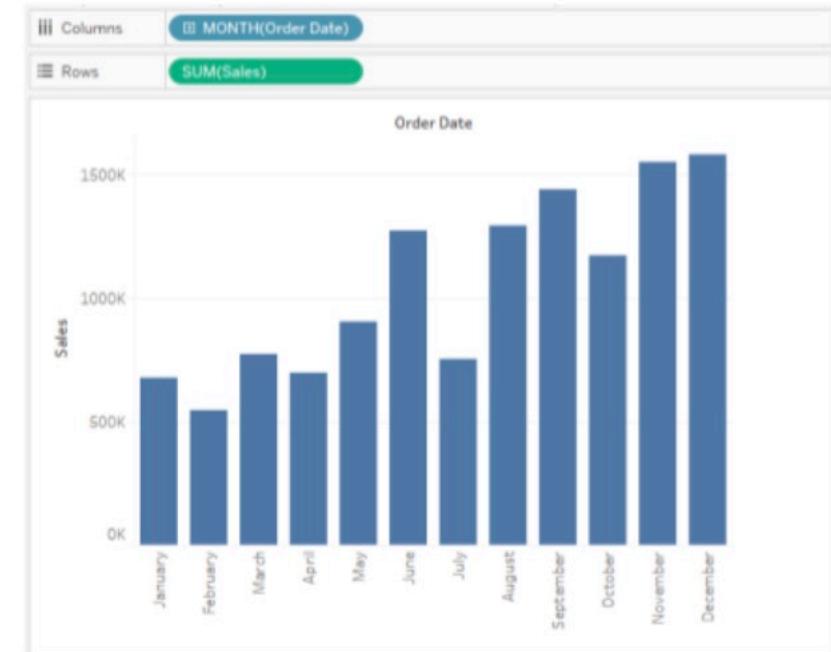
Search Filter | Columns

Tables

- Airline
- Airline Sentiment
- Airline Sentiment G...
- Name
- Negativereason
- Negativereason Gold
- Text
- Tweet Coord
- Tweet Created**
- # Tweet Id
- Tweet Location
- User Timezone
- Measure Names**
- # Airline Sentiment C...
- # Negativereason Co...
- # Retweet Count
- # Tweets.csv (Count)
- # Measure Values

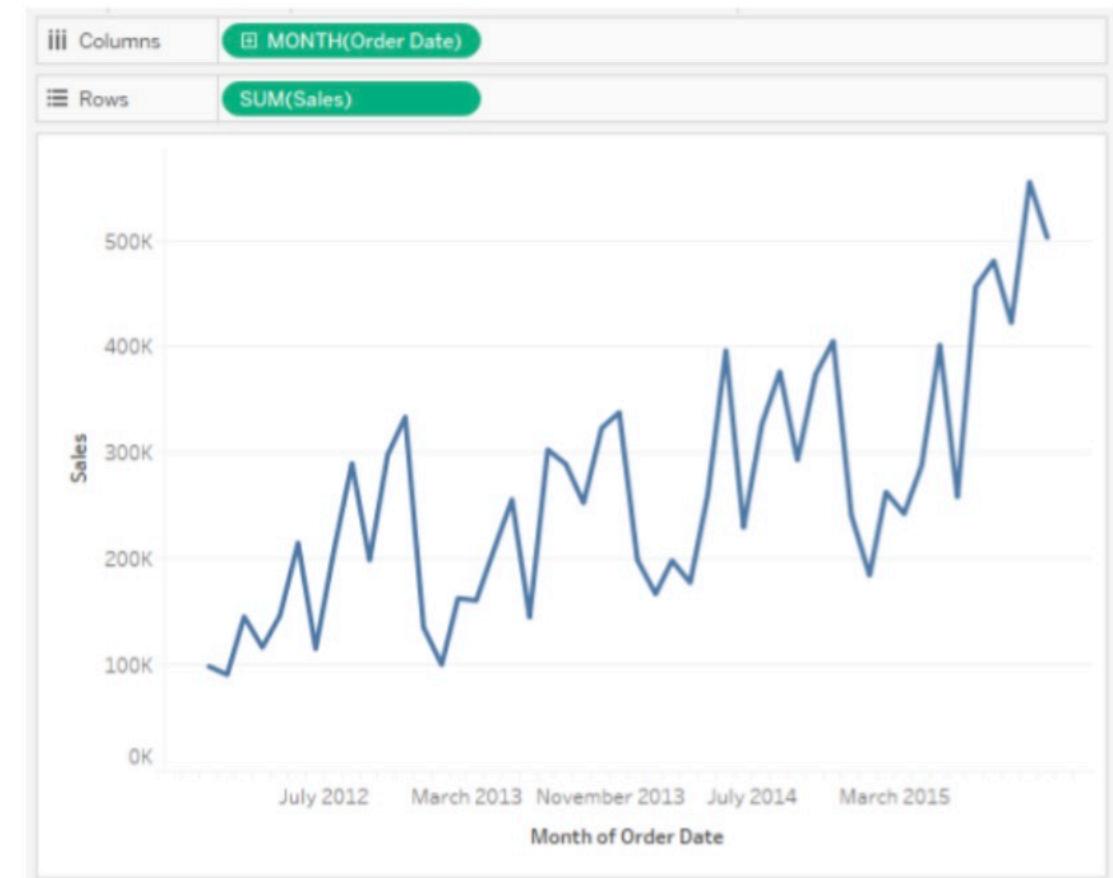
Discrete vs. Continuous

- Date fields can be either discrete or continuous. To understand the difference, let's first talk about date parts and date values.
- Discrete dates use date parts. Date parts are literally the parts that make up a date. Let's take the date of **March 6, 2016**.
- The “**month**” date part is **March** (or **03**).
- The “**day**” date part is **6** and the “**year**” date part is **2016**.
- If I used any of these on their own, such as month, then I would be looking at every March aggregated together in my view and so on.



Discrete vs. Continuous

- Date values are used for continuous dates. They follow the same structure of date parts (i.e. year, quarter, month, week, day and so on). The difference between date values and date parts is that date values imply a level of detail in a timeline. Remember continuous fields do not create headers, they create an axis. In the case of a continuous date, it creates a timeline. Date values determine how our timeline is organized.



Wrap-up

- Build a Viz Using Several Methods
- Definition of Mark
- Using Marks Card
- Color Palette
- Dates

