

Tableau Desktop Specialist – Understanding Dimensions vs. Measures and Discrete vs. Continuous

Dimensions vs. Measures & Discrete vs. Continuous



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Tableau Desktop Specialist Certification



Adam



Pooja

Overview

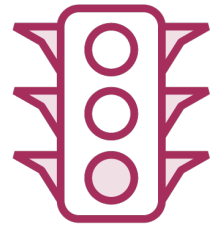


Understanding Dimensions vs. Measures & Discrete vs. Continuous

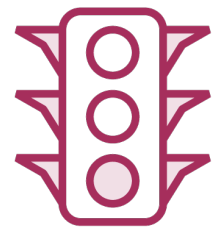
- Data field roles
- Date parts vs. date values
- Discrete vs. continuous filters
- Discrete vs. continuous legends
- Demos



Course Information



Prerequisite: Familiarity with the Tableau interface



Prerequisite: Tableau Desktop Specialist – Creating and Modifying a Dashboard



Software: Tableau Desktop 2021.1



Download the exercise files



Data Field Roles



Dimensions

Contain qualitative values (such as names, dates, or geographical data).



Measures

Contain numeric, quantitative values that you can measure.



What's the Difference?

Dimensions

Qualitative

Categorize

Segment

Reveal details in your data

Change the level of detail in a view

Measures

Quantitative

Can be aggregated across rows

Examples:

- SUM
- AVG
- MIN
- MAX



Data Pane Organization

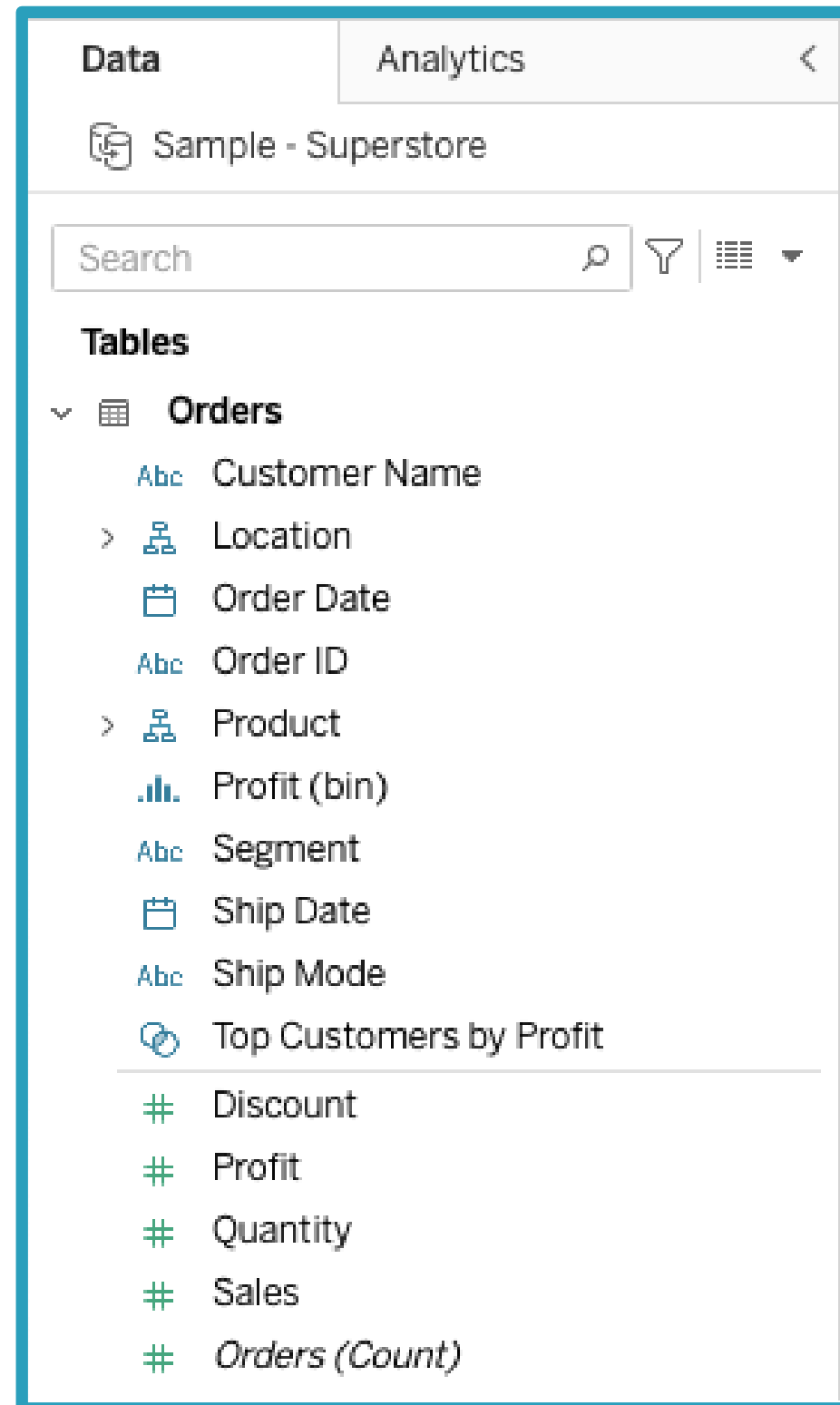


Tableau analyzes data source

Assigns each field to dimensions or measures

Based on the type of data



Data Roles

individually separate and distinct

forming an unbroken whole, without interruption



Discrete Fields

Blue Pills

Values treated as finite

Adds headers to the view

iii Columns	Dimension								
☰ Rows									
1	2	3	4	5	6	7	8	9	10
●	●	●	●	●	●	●	●	●	●

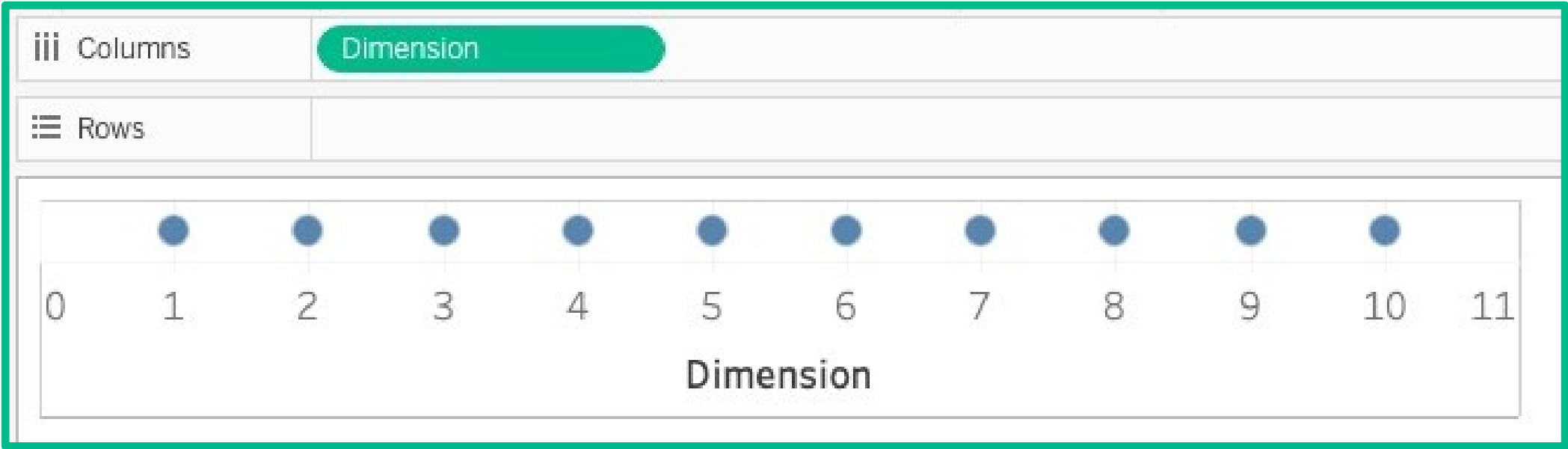


Continuous Fields

Green Pills

Values treated as an infinite range

Adds axes to the view



Remember This

Discrete

Continuous

Product Name

Year(Order Date)

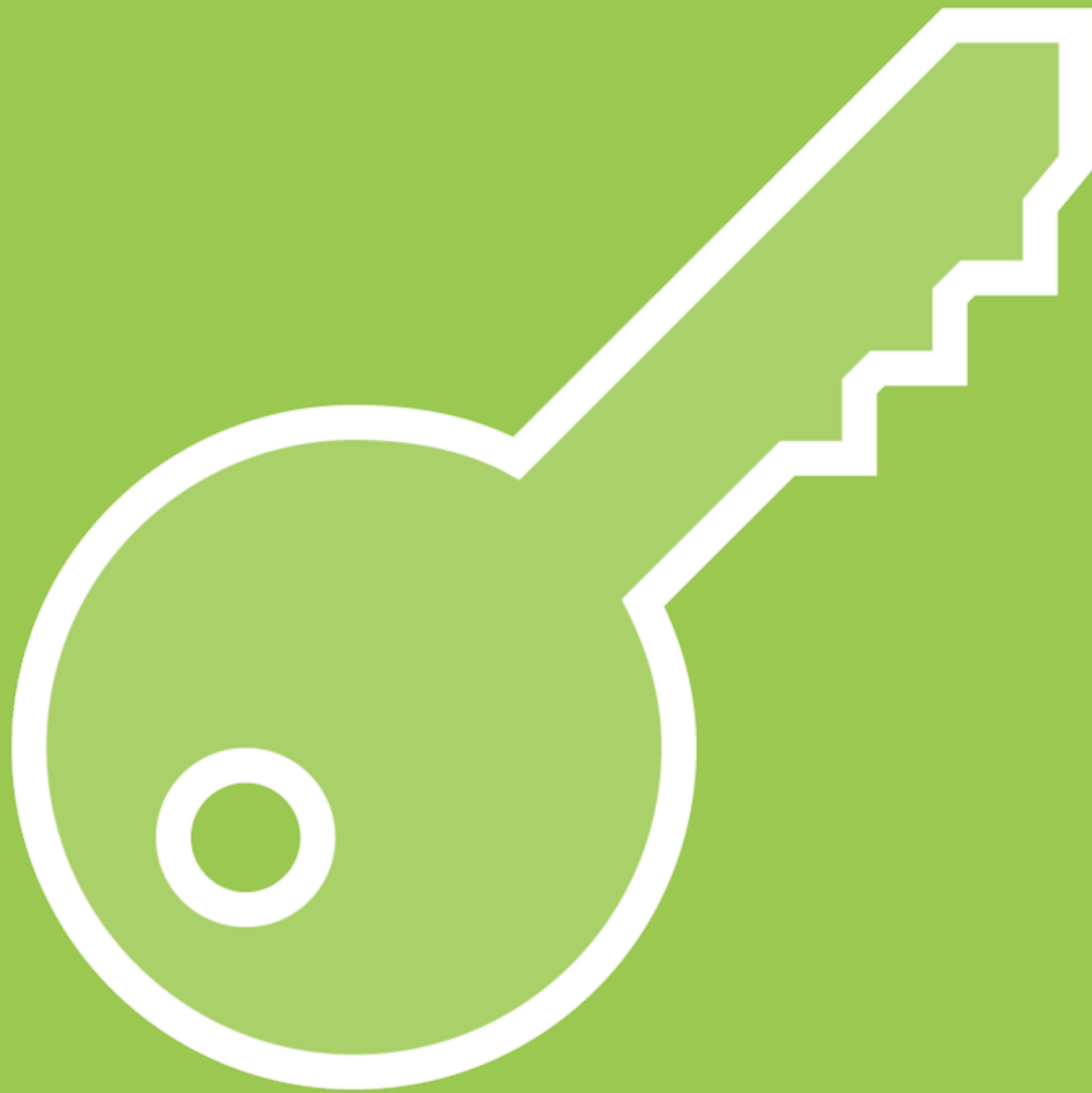
Dimensions

SUM(Sales)

SUM(Sales)

Measures





Discrete vs. Continuous

The key to understanding what Tableau is going to draw is to understand the difference between discrete and continuous pills.

Discrete pills draw headers while continuous pills draw axes.



Date Parts vs. Date Values



Date Parts

Part of a date (i.e., day, month or year)

Numeric or string data types



Date Parts of 2021-12-31 15:23:57

year	2021
quarter	4 Q4
month	12 December
dayofyear	365
day	31

weekday	• 6 • Friday
week	53 Week 53
hour	15
minute	23
second	57

iso-year	2021
iso-quarter	4 Q4
iso-week	52 W52
iso-Weekday	5

*ISO 8601 Standard always starts a week on Monday



Date Parts and Data Roles

Discrete

DATEPART('year',[Date])

Columns	
Rows	YEAR(Date)
Discrete Date Part - Year of Order Date	
Year of Date	
2021	Abc

Continuous

DATEPART('year',[Date])

Columns	
Rows	YEAR(Date)
Continuous Date Part - Year of Order Date	
Year of Date	
2021	

Dimensions



Date Values

Return an actual date

Truncated to a specific level



Date Values of 2021-12-31 15:23:57

year	2021-01-01 12:00:00AM	hour	2021-12-31 03:00:00 PM
quarter	2021-10-01 12:00:00AM	minute	2021-12-31 03:23:00 PM
month	2021-12-01 12:00:00AM	second	2021-12-31 03:23:57 PM
week	2021-12-26 12:00:00 AM		
day	2021-12-31 12:00:00 AM		



Date Values and Data Roles

Discrete

DATETRUNC('year',[Date])

Columns	
Rows	Date
Discrete Date Value - Year of Order Date	
Date	
1/1/2021 12:00:00 AM	Abc

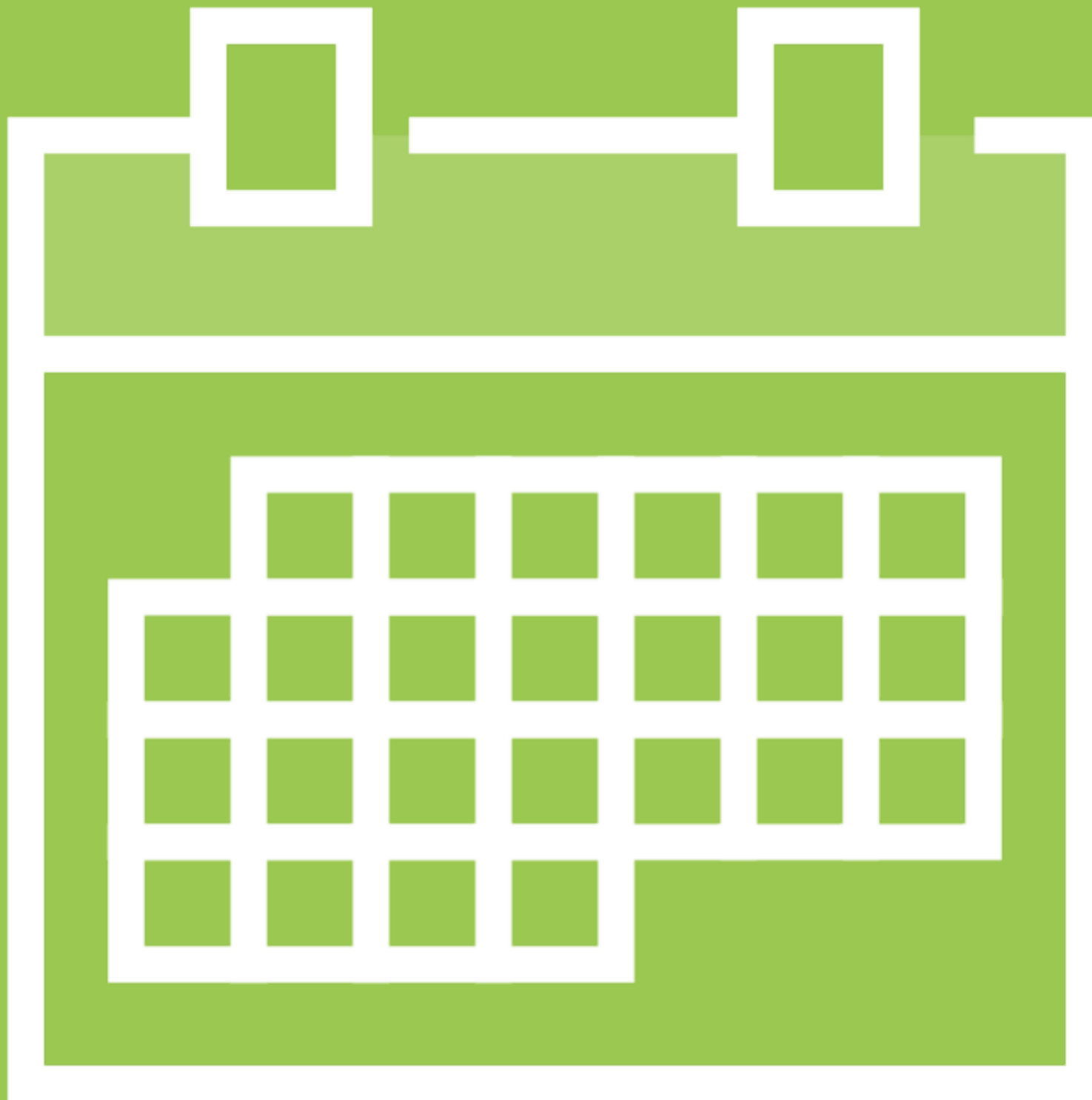
Continuous

DATETRUNC('year',[Date])

Columns	
Rows	Date
Continuous Date Value - Year of Order Date	
Date	
2021	

Dimensions





Date Part vs. Date Value

Date parts return part of a date as a numeric or string data type. Date Values return an actual date truncated to a specified level. They can be either discrete or continuous.



Discrete vs. Continuous Filters



Discrete Dimension Filters

Filters

Category

Sheet 4

Filter [Category]

General Wildcard Condition Top

☒ Select from list ☐ Custom value list ☐ Use all

Enter search text

☐ Furniture

☐ Office Supplies

☐ Technology

All None ☐ Exclude

Summary

Field: [Category]

Selection: Selected 0 of 3 values

Wildcard: All

Condition: None

Limit: None

Reset Apply Cancel OK

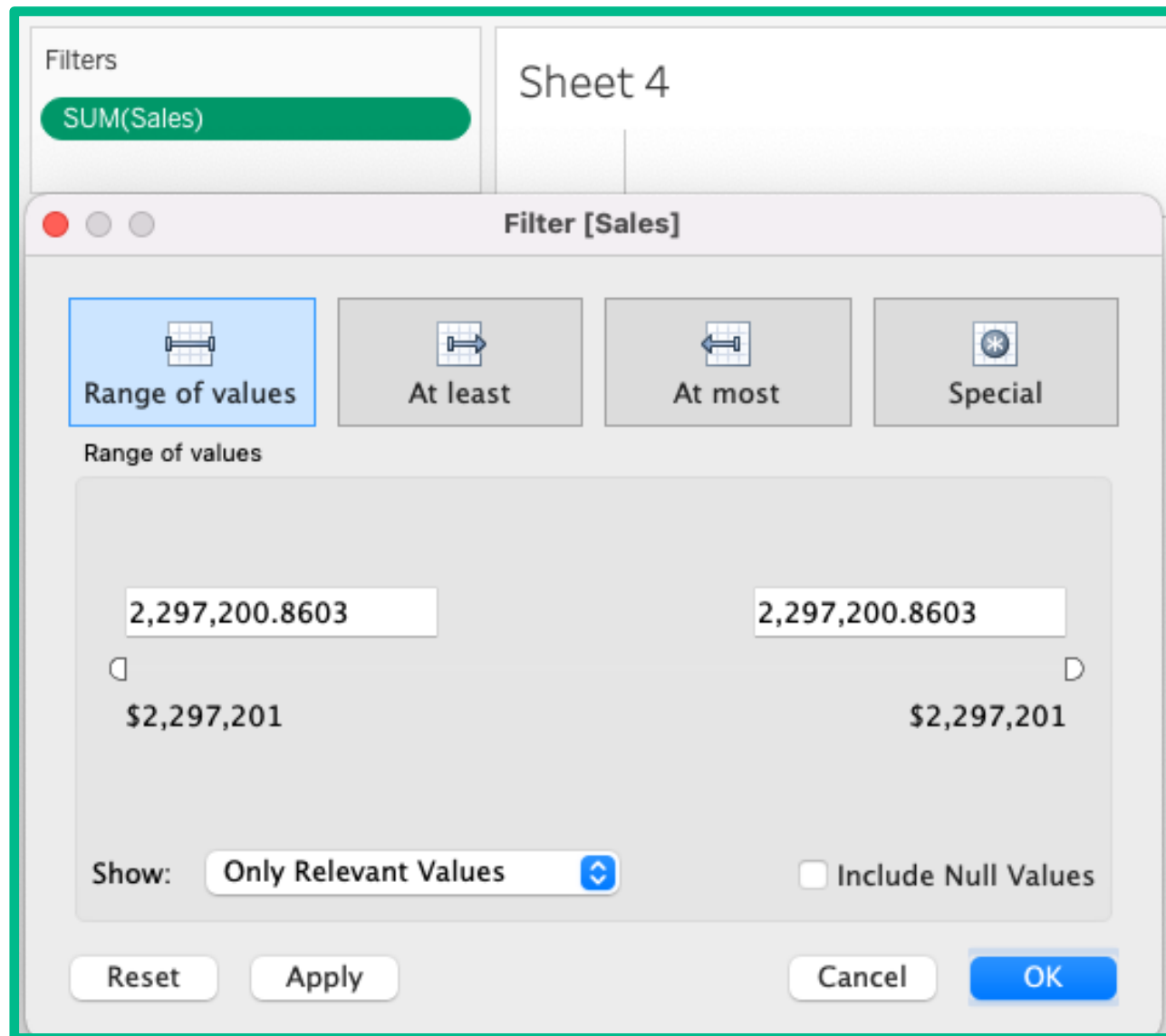
Discrete members available in list

Deselecting a member will remove all of those rows from the view

Select from list or dropdown interactions



Continuous Measure Filters



Select an aggregation

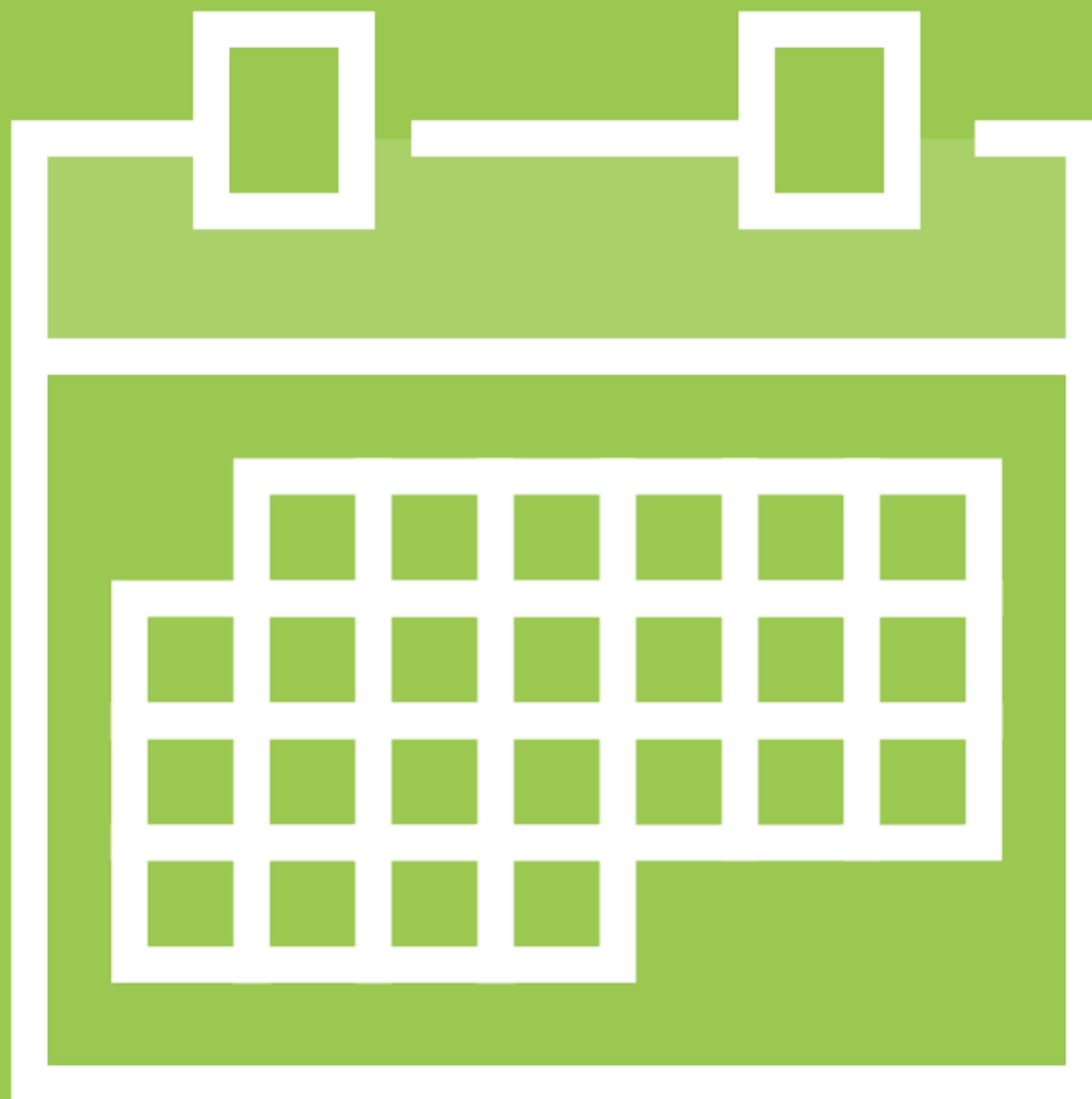
- Aggregates all rows for each mark
- Filter based on the aggregated value

Use all values

- Filter based on row value
- Continuous dimension

Slider interactions





Date Filters

Date filters can be either discrete or continuous.



Discrete Date Filters

Filters

MY(Order Date)

Sheet 4

Filter [Month, Year of Order Date]

General Condition Top

☒ Select from list ☐ Custom value list ☐ Use all

Enter search text

- ☐ January 2018
- ☐ February 2018
- ☐ March 2018
- ☐ April 2018
- ☐ May 2018
- ☐ June 2018
- ☐ July 2018
- ☐ August 2018
- ☐ September 2018
- ☐ October 2018
- ☐ November 2018

All None ☐ Exclude

Summary

Field: [Month, Year of Order Date]
Selection: Selected 0 of 48 values
Wildcard: All
Condition: None
Limit: None

☐ Filter to latest date value when workbook is opened

Reset Apply Cancel OK

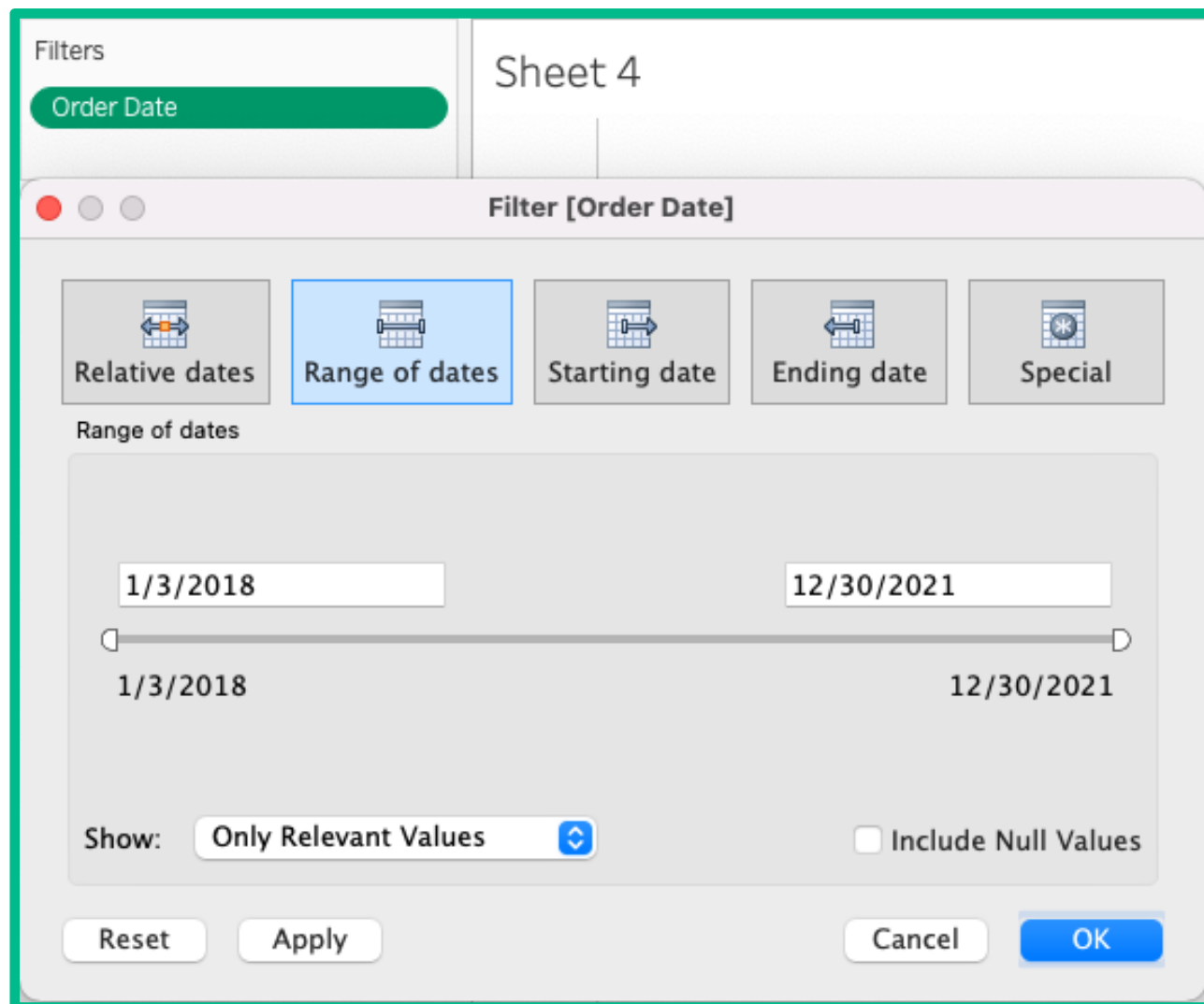
Discrete dimension filter

Deselecting a member will remove all of those rows from the view

Select from list, dropdown or slider interactions



Continuous Range of Dates Filters



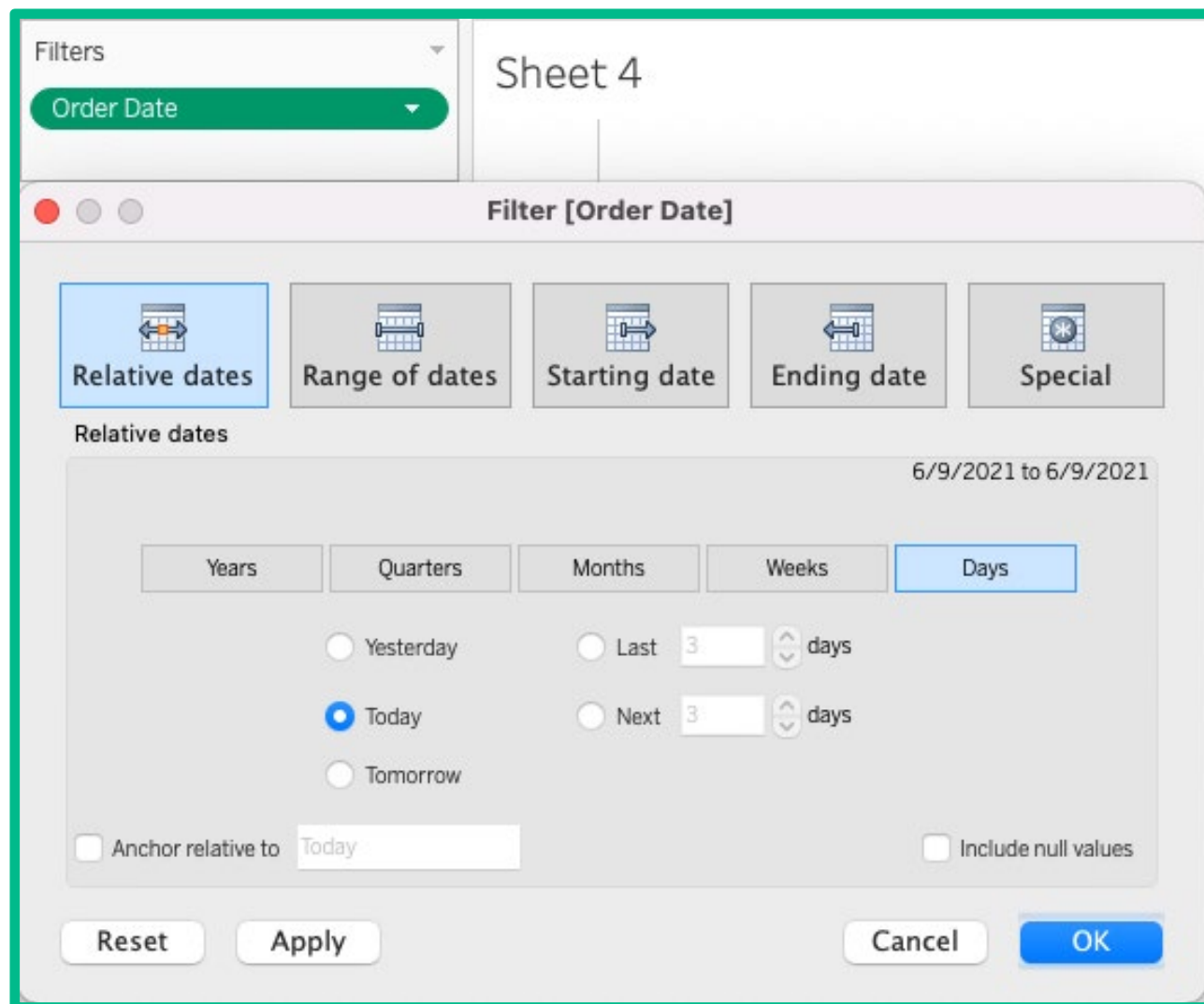
Use all values

- Filter based on row value
- Continuous dimension

Slider interactions



Continuous Relative Date Filters



Filters based on an anchor date

Anchor defaults to today, but can be hardcoded

Many filter options





Data Roles

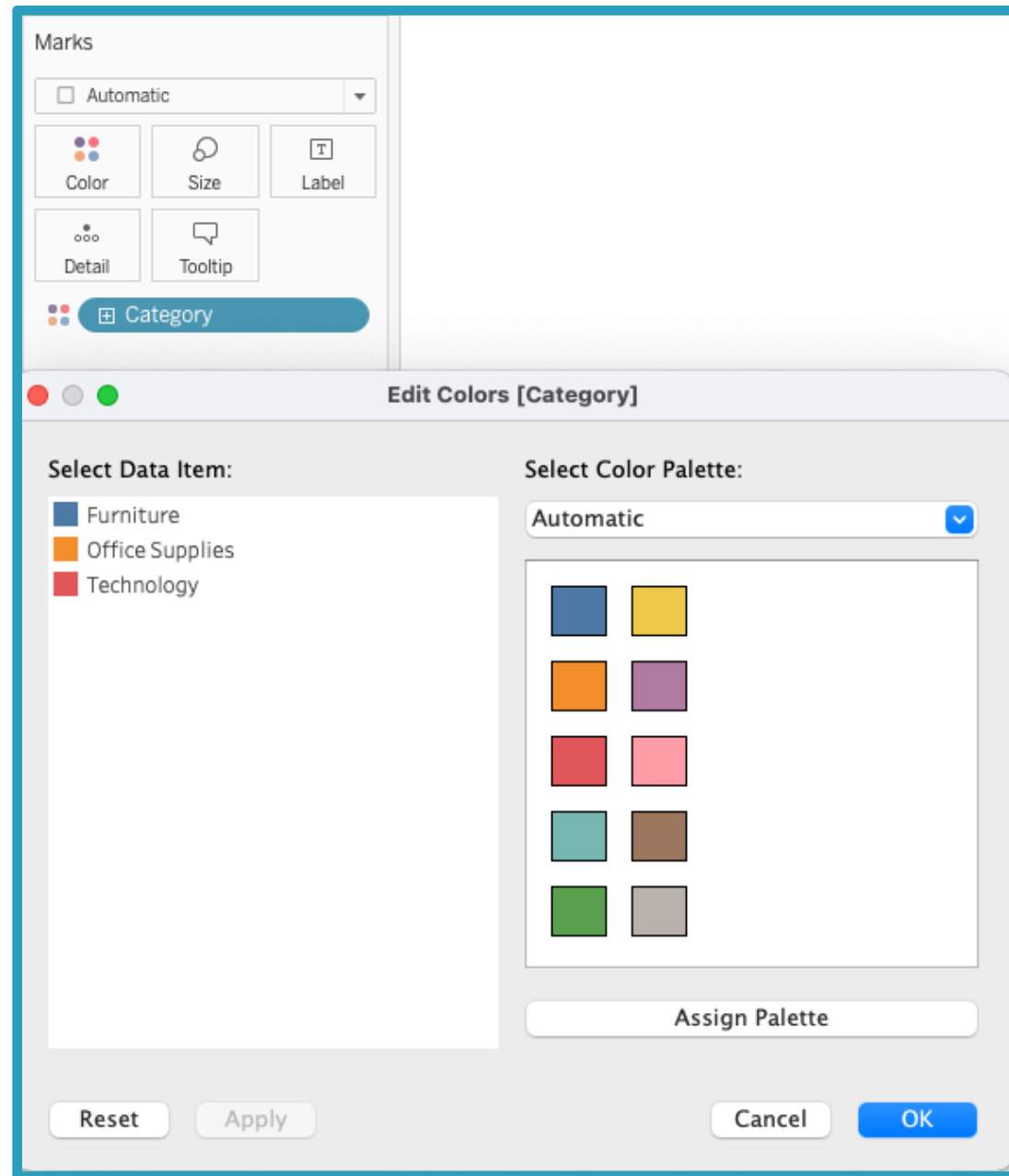
The key to understanding what Tableau is going to filter and how the filter interaction will be configured is based on understanding the data role on the filter shelf.



Discrete vs. Continuous Color Legends



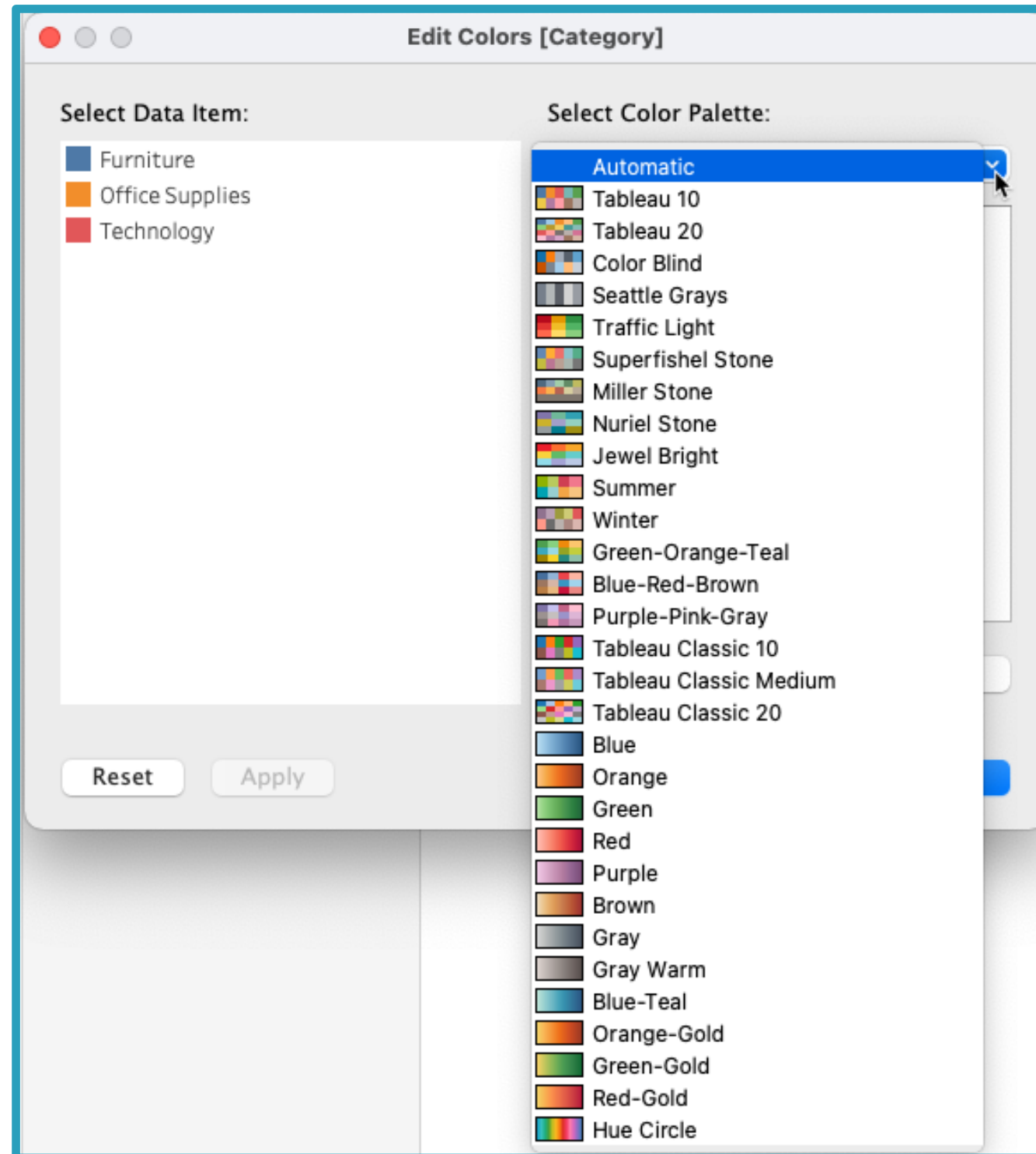
Discrete Color Legends



Each member is assigned a discrete color from the selected palette



Discrete Color Legends

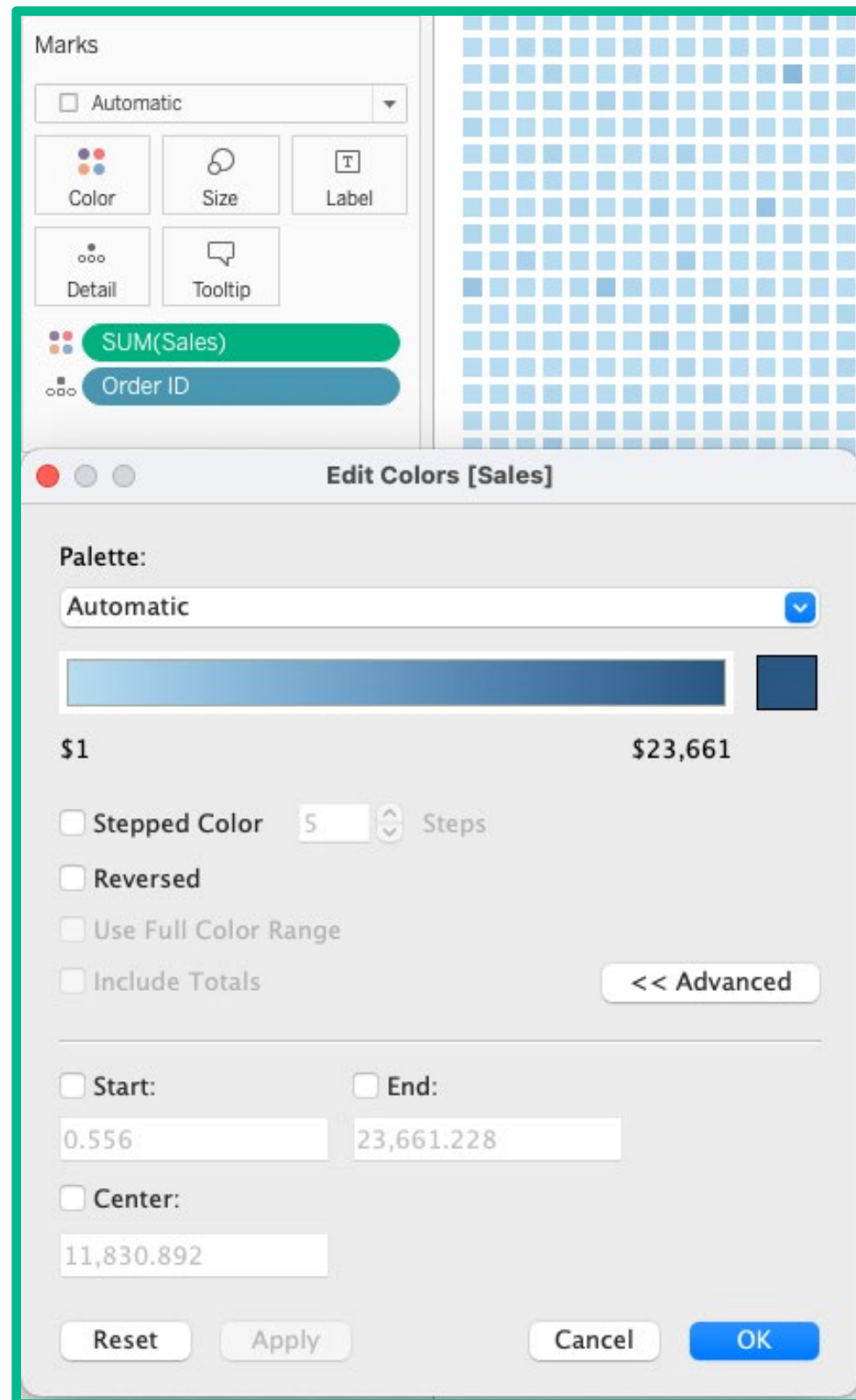


Choose from many palettes, but all of these will have a finite selection of colors

You can also add new palettes by modifying the preferences.tps



Continuous Color Legends



Each mark is colored by the aggregated value

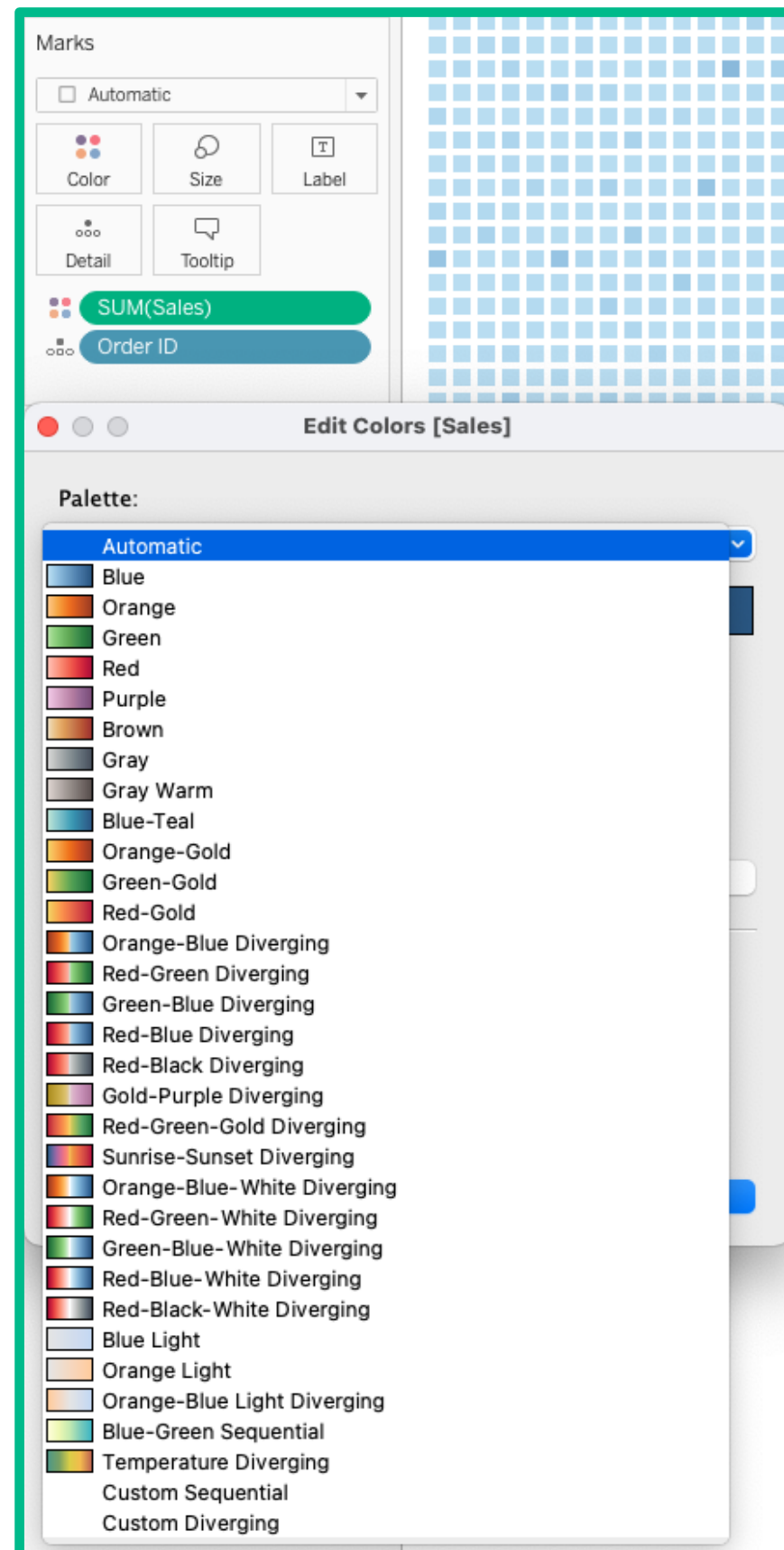
Stepped color creates a discrete number of color shades

Reverse the color palette

Specify the start, center and end of the value range



Continuous Color Legends



Choose from many palettes

Infinite selection of colors along the continuous range

You can also add new palettes by modifying the preferences.tps





Data Roles

The key to understanding how Tableau is going to color marks in a view is based on understanding the data role on the marks card.

