Tableau Bar Chart Basics

Cynthia Gail Manor

First Edition

August 7, 2021

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Edition Notice

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ACC BGTC Student Publications
11928 Stonehollow Dr., Bldg. 4000
Austin, TX 78758

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Team Manager	Professor David McMurrey, PhD
Editing / Design / Layout	Cynthia Gail Manor
Front and Back Cover Graphics	Shutterstock/emEF
Printer/Binder	ACC BGTC Student Publications, U.S.A.
Cover Printer	American Color Labs, Austin TX, U.S.A.
First Edition	August 2021
Library of Congress Control Number	2021008135
ISBN	978-9-7874-0008-0

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Chapter 1: Introduction

1.1 What's Covered

This tutorial covers creating basic bar charts using Tableau Desktop, a popular, industry-standard **visual analytics**[1] tool.

The types of bar charts covered are:

1. "Starting a Basic Bar Chart" on page 5
2. "Grouped Bar Charts" on page 13
3. "Stacked Bar Charts" on page 19

There are also chapters on updating chart colors and **color palettes**[2]:

1. "Introduction to Assigning Chart Colors" on page 25
2. "Assign a Single Color to a Chart" on page 29
3. "Assign a Color Palette to a Chart" on page 37

1.2 Student Prerequisites

Students should know how to perform the following actions:

- Install and open Tableau
- Connect to Excel data sources
- Use basic card, shelf, toolbar, sidebar, and view (visualization or "viz") options.

[1] "Visual analytics is a means of exploring and understanding data. It supports and accelerates the analysis process itself. You can ask a question, get the answer, and ask follow-up questions—all within a visual interface." (Tableau)

[2] A color palette is a group of colors. The colors in the palette may be selected to complement one another.

Students should have introductory knowledge following concepts[1]:

- **Dimensions**[2]
- **Measures**[3]
- Blue Fields vs Green Fields
- **Discrete vs Continuous**[4]

1.3 Software Version

Tableau Desktop 2021.1.3 64-bit for Windows

1.4 About the Data

The **Superstore** Microsoft Excel file is provided by default with Tableau Desktop.

It consists of customer orders for various types of office supplies and furniture, from labels to book cases.

The dataset consists of multiple tables. We will be using the **Orders** table for the exercises.

[1]For detailed information about these topics, read Tableau's article on Dimensions and Measures, Blue and Green.

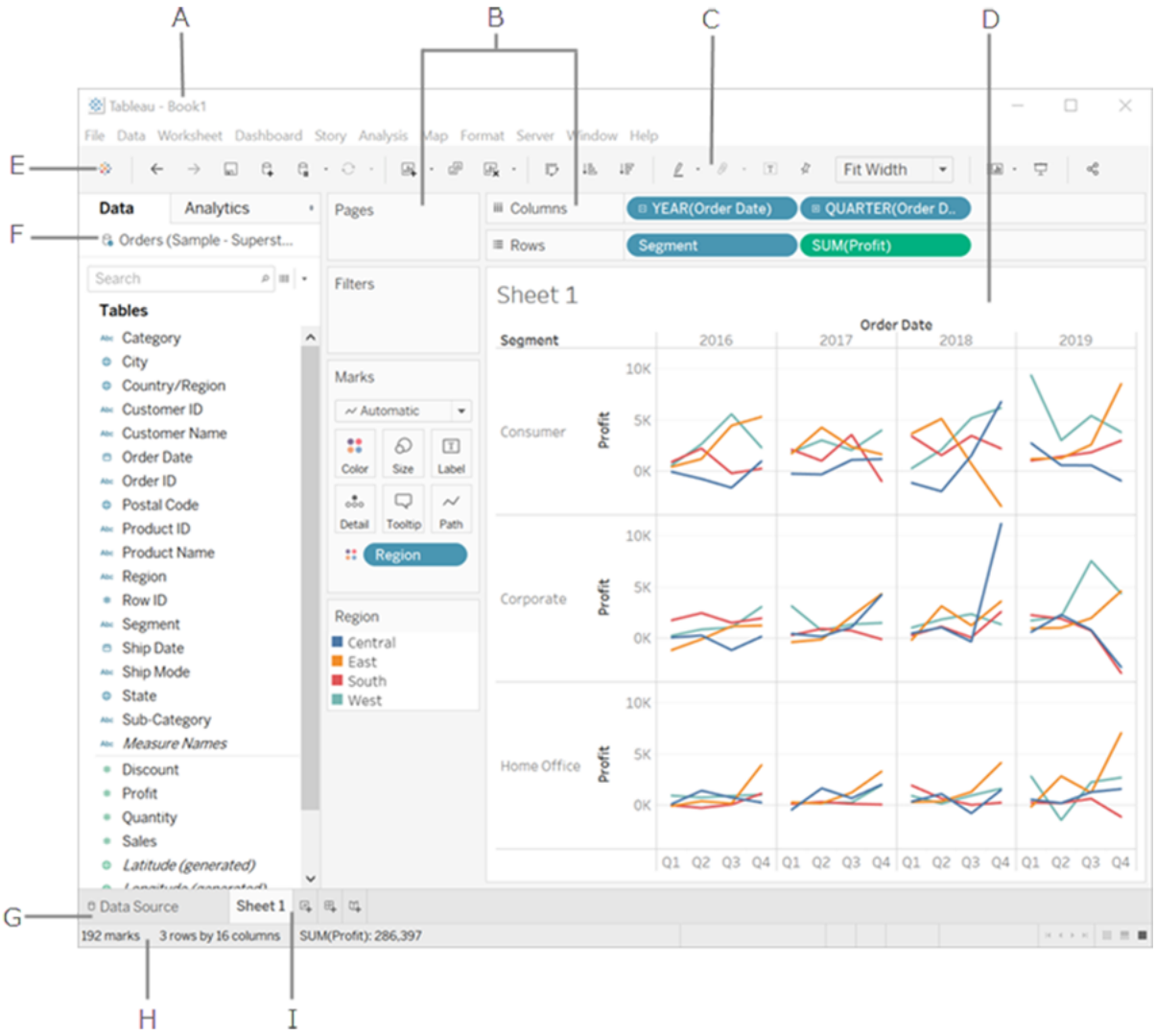
[2]"Dimensions contain qualitative values (such as names, dates, or geographical data). You can use dimensions to categorize, segment, and reveal the details in your data. Dimensions affect the level of detail in the view." (Tableau)

[3]"Measures contain numeric, quantitative values that you can measure. Measures can be aggregated. When you drag a measure into the view, Tableau applies an aggregation to that measure by default." (Tableau)

[4]"Continuous and discrete are mathematical terms. Continuous means "forming an unbroken whole, without interruption"; discrete means "individually separate and distinct." (Tableau)

Chapter 2: Tableau Workspace

2.1 Workspace Layout



2.2 Workspace Layout Legend

A	Workbook Name	A workbook contains sheets. A sheet can be a worksheet, a dashboard, or a story
B	Cards & Shelves	Drag fields to the cards and shelves in the workspace to add data to your view
C	Toolbar	Use the toolbar to access commands and analysis and navigation tools
D	View	This is the canvas in the workspace where you create a visualization (also referred to as a "viz")
E	Click this Icon	Click this icon to go to the Start page, where you can connect to data
F	Sidebar	In a worksheet, the sidebar area contains the Data pane and the Analytics pane
G	Click this Tab	Click this tab to go to the Data Source page and view your data
H	Status Bar	Displays information about the current view
I	Sheet Tabs	Tabs represent each sheet in your workbook. This can include worksheets, dashboards, and stories.

Source: Tableau website[1], https://help.tableau.com/current/pro/desktop/en-us/environment_workspace.htm

[1]Acknowledgment—The graphic and associated legend information in this chapter are taken DIRECTLY from the Tableau website: https://help.tableau.com/current/pro/desktop/en-us/environment_workspace.htm. This *excludes* the table design of the legend.

Chapter 3: Starting a Basic Bar Chart

3.1 Horizontal and Vertical Bar Charts

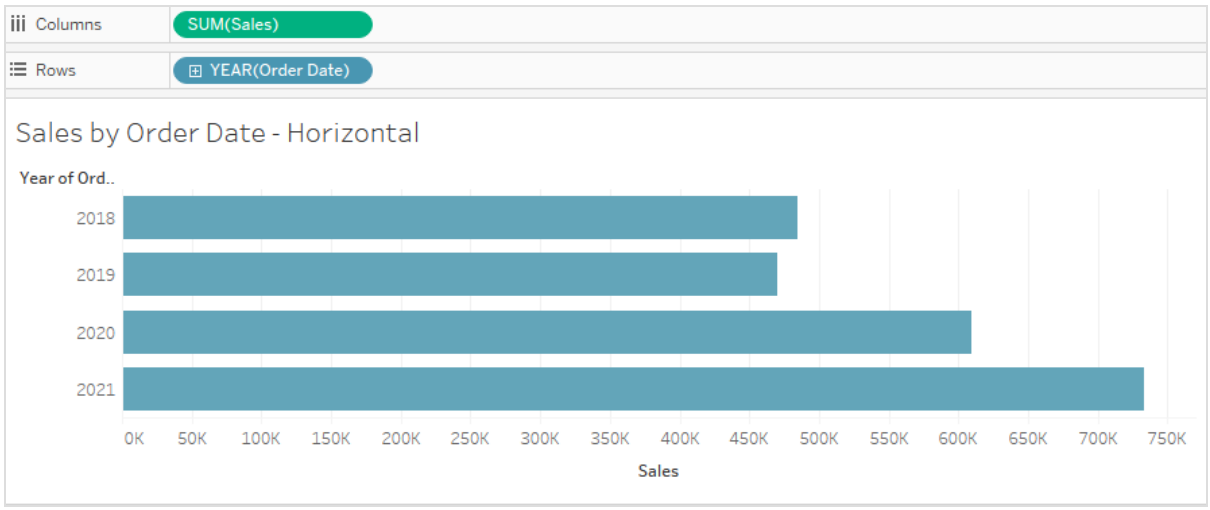
The direction of the bars in a bar chart is determined by the placement of the **dimension** and **measure** values on the **Column** and **Row** shelves.

Figure A

For a **horizontal bar chart**:

- Place the **dimension value** (Year of Order Date) on the **Rows** shelf.
- Place the **measure value** (Sales) on the **Columns** shelf.

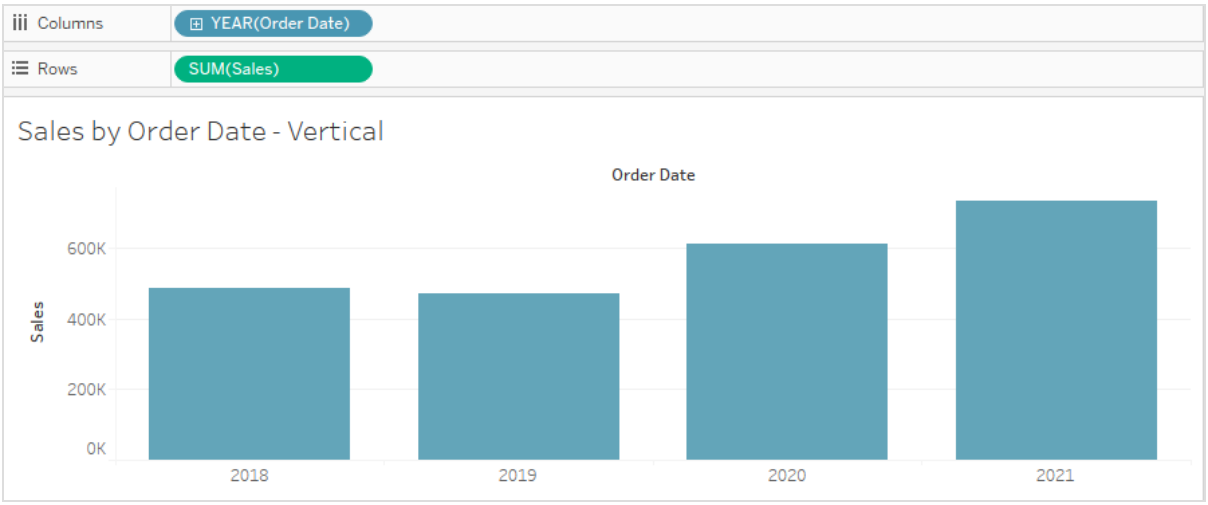
Figure B



For a **vertical bar chart**:

- Place the **measure value** (Sales) on the **Rows** shelf.
- Place the on the **dimension value** (Year of Order Date) **Columns** pane

Figure C

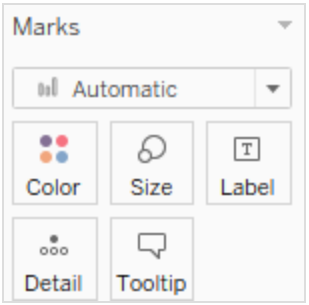


3.2 Set Chart Type

The following steps can be performed before or after you drag your fields onto the row / column shelves.

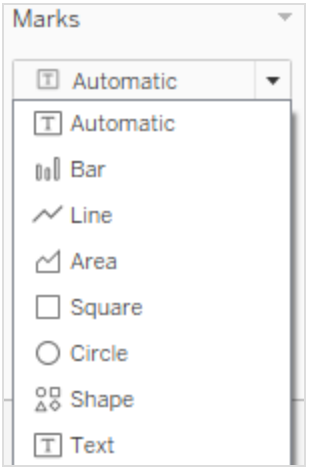
1. Go to the **Marks** card.

Figure D



2. Click on the **Chart Type** drop-down list, currently set to **Automatic**. Click on **Bar**.

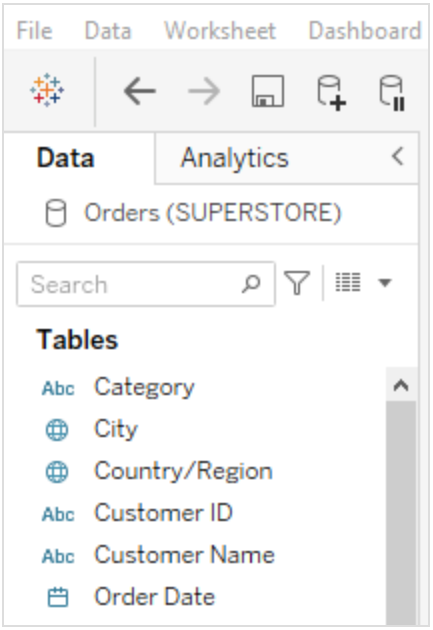
Figure E



3.3 Add Fields to Column and Row Panes

1. Go to the **Data** sidebar.

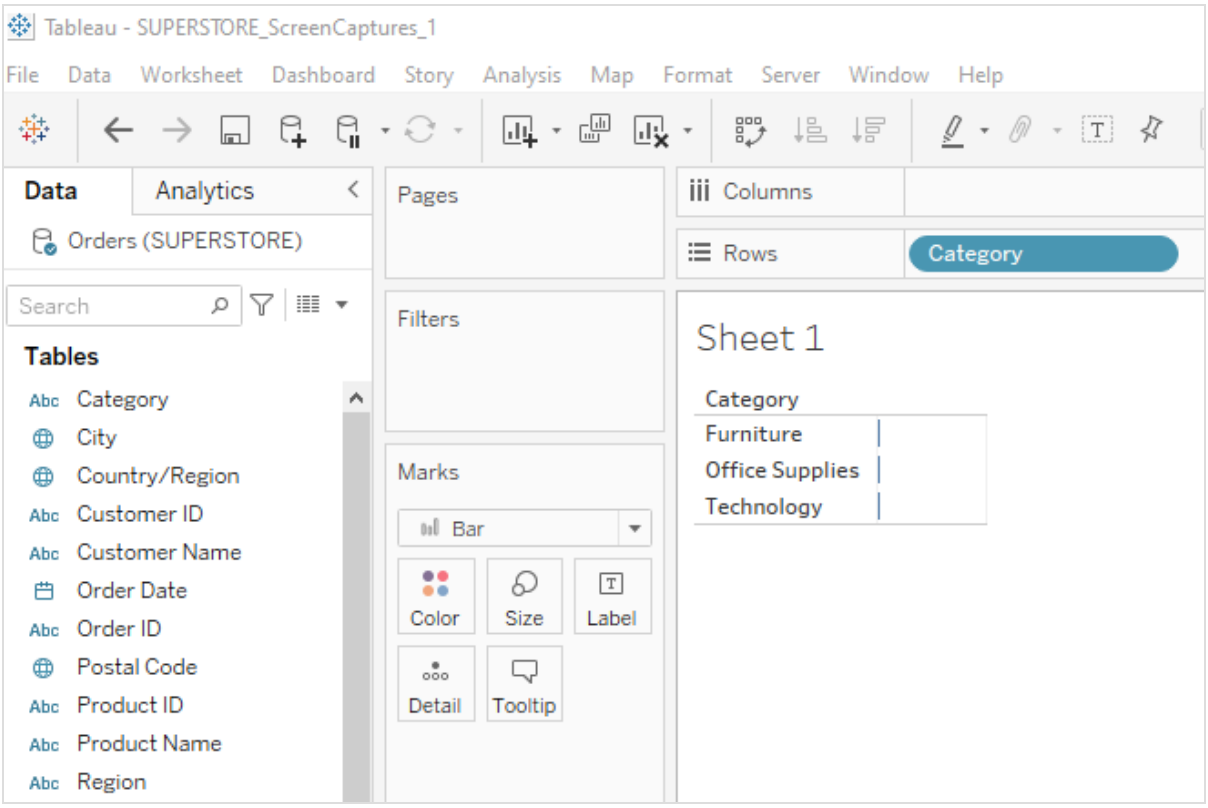
Figure F



2. In the **Tables** section, click on the **Category** field (dimension).

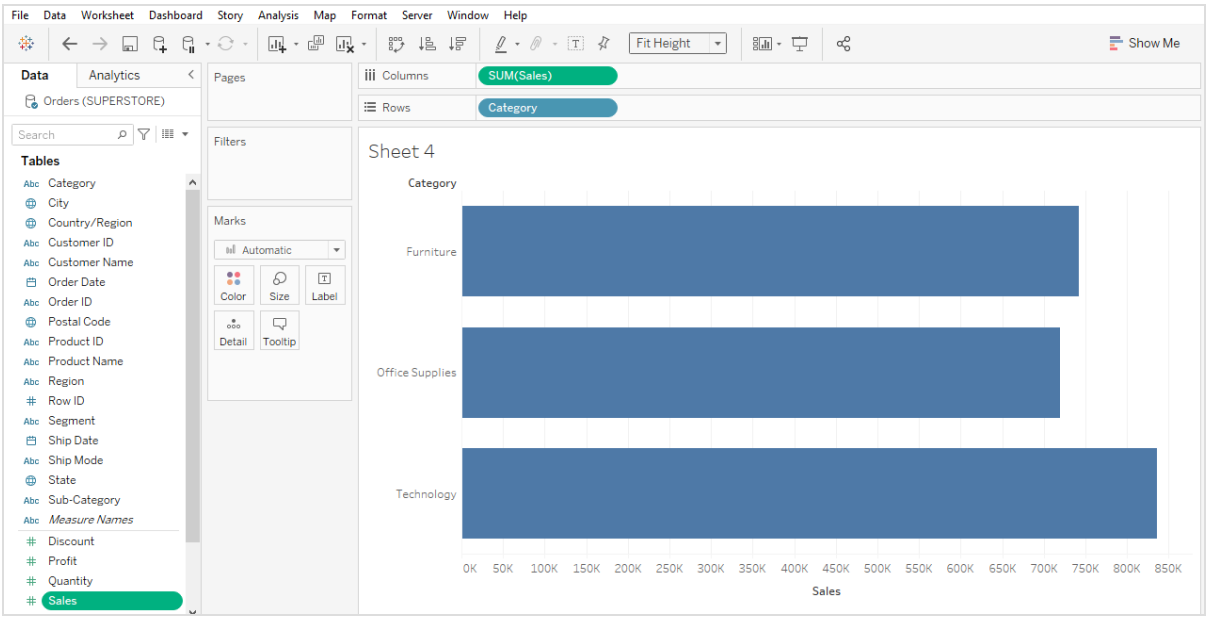
3. Drag the field to the **Rows** shelf. A starter visualization will appear in the **View**.

Figure G



4. Click on the **Sales** field (measure) and drag it to the **Columns** shelf.

Figure H

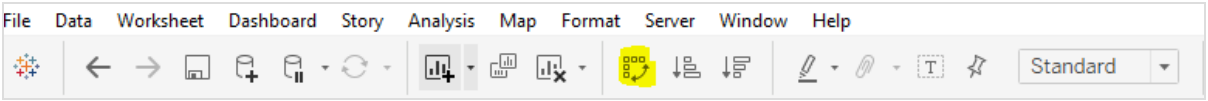


3.4 Switch Between Horizontal and Vertical Bar Chart

If you have already built a horizontal (or vertical) bar chart, you can quickly switch it to a vertical (or horizontal) chart.

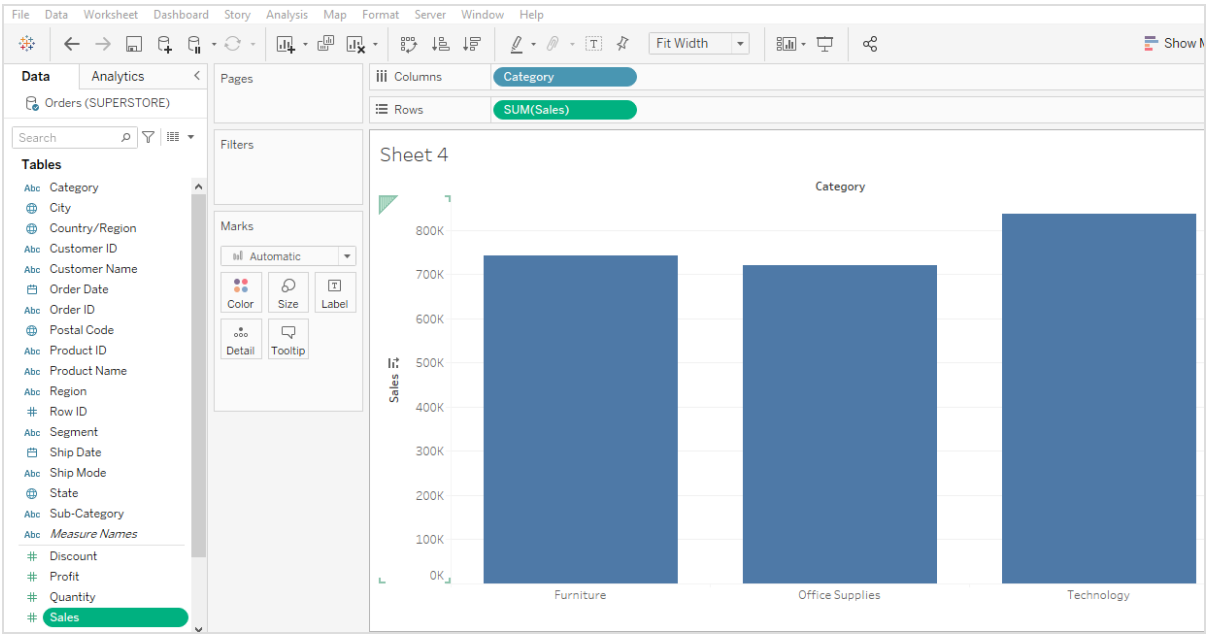
1. Go to the **Toolbar**.

Figure I



2. Click on the **Swap Rows and Columns** icon .

Figure J



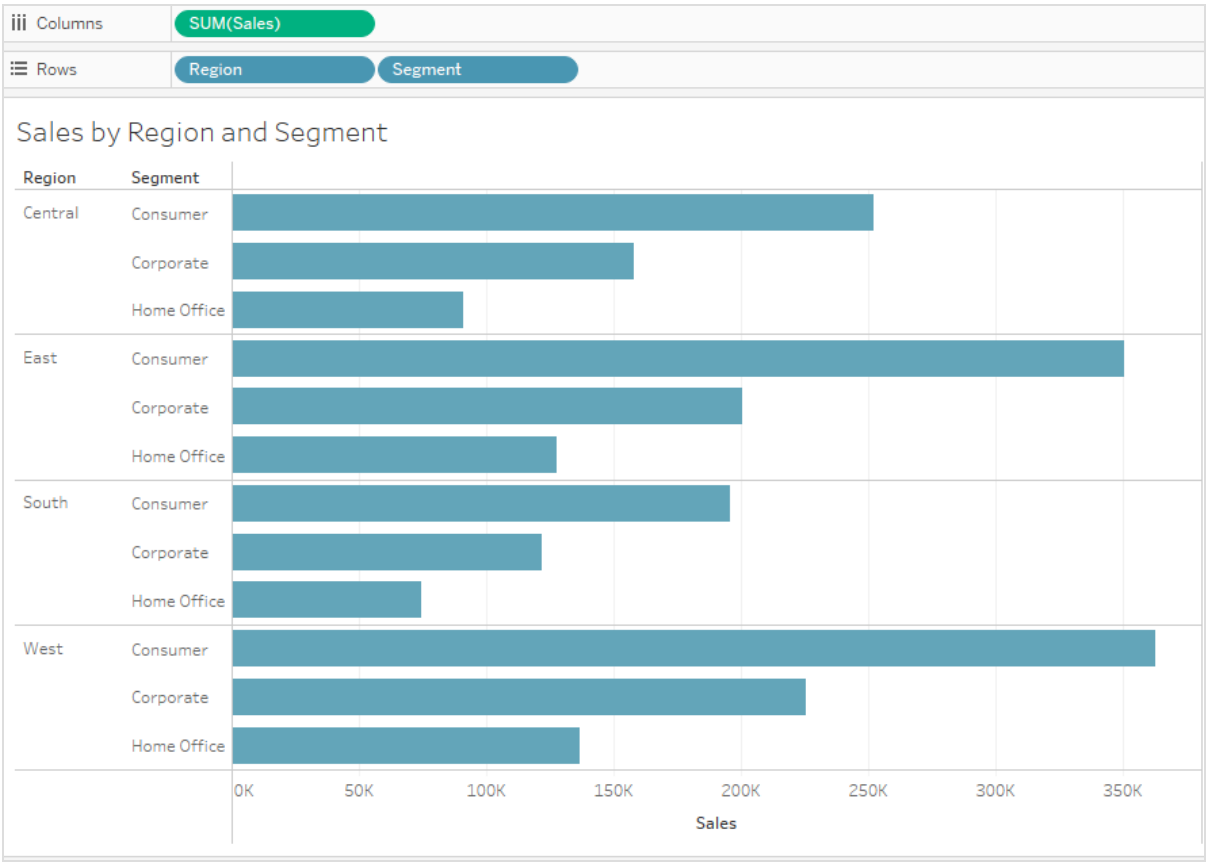
Chapter 4: Grouped Bar Charts

A grouped bar chart displays one **measure value** (e.g., Sales) by two or more **dimension values** (e.g., Category, Sub-Category).

This type of chart is also known as a **clustered bar chart** or **side-by-side bar chart** because the dimension values appear on the same axis.

In the chart below, **Sales** is broken out by **Region**. Each **Region** is broken out by **Segment**.

Figure A

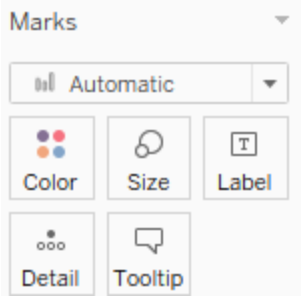


4.1 Set Chart Type

The following steps can be performed before or after you drag your fields onto the row / column shelves.

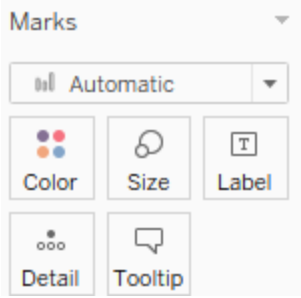
1. Go to the **Marks** card.

Figure B



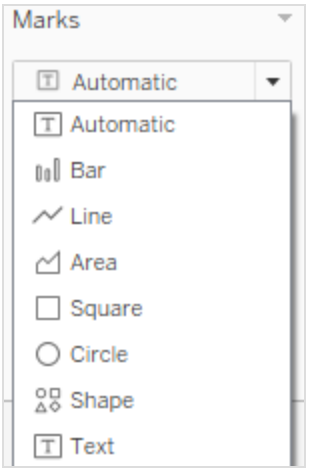
2. Click on the **Chart Type** drop-down list, currently set to **Automatic**.

Figure C



3. Click on **Bar** to select it.

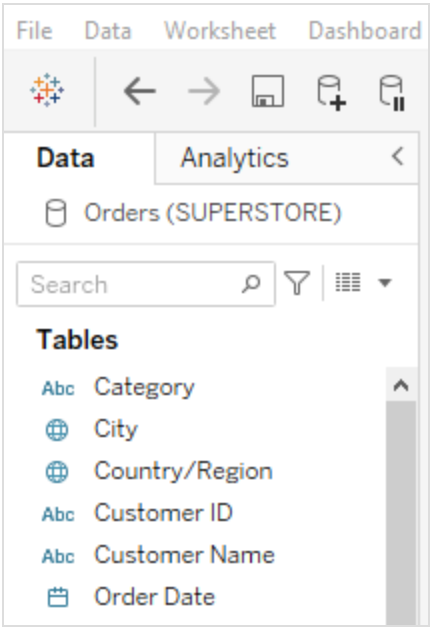
Figure D



4.2 Add Fields to Column and Row Shelves

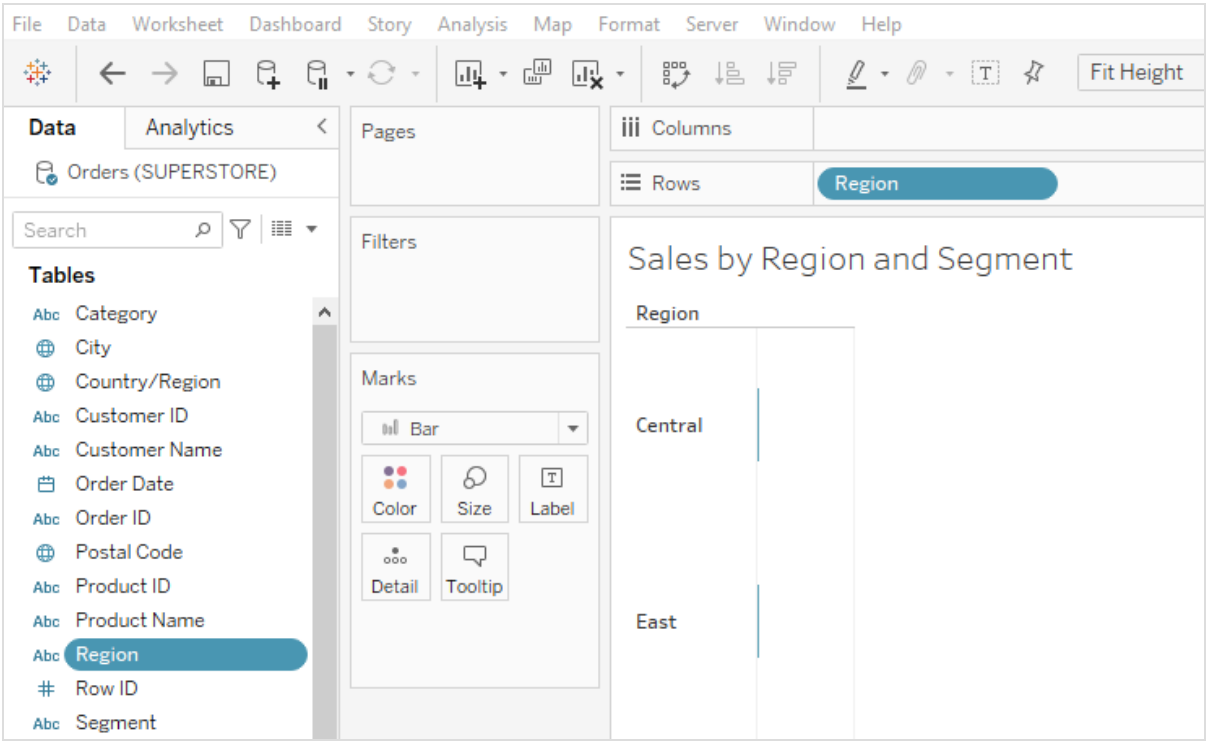
1. Go to the **Data** sidebar.

Figure E



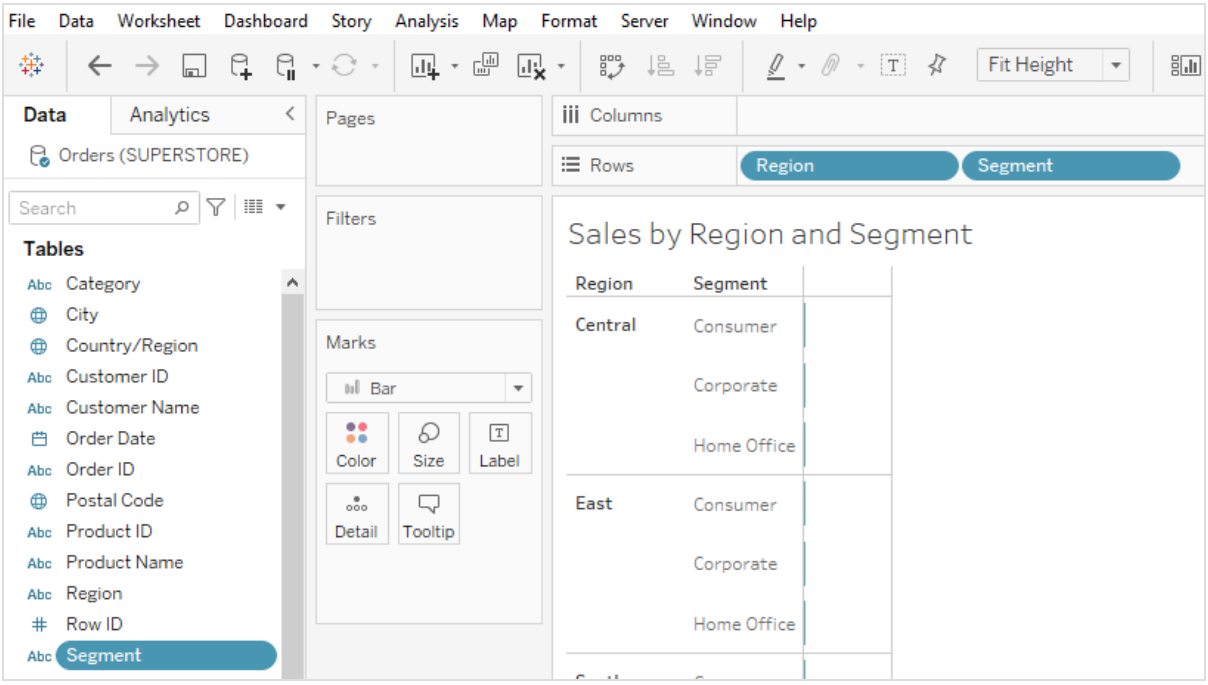
2. In the **Tables** section, click and drag the **Region** field to the **Rows** shelf. A starter visualization will appear in the **View**.

Figure F



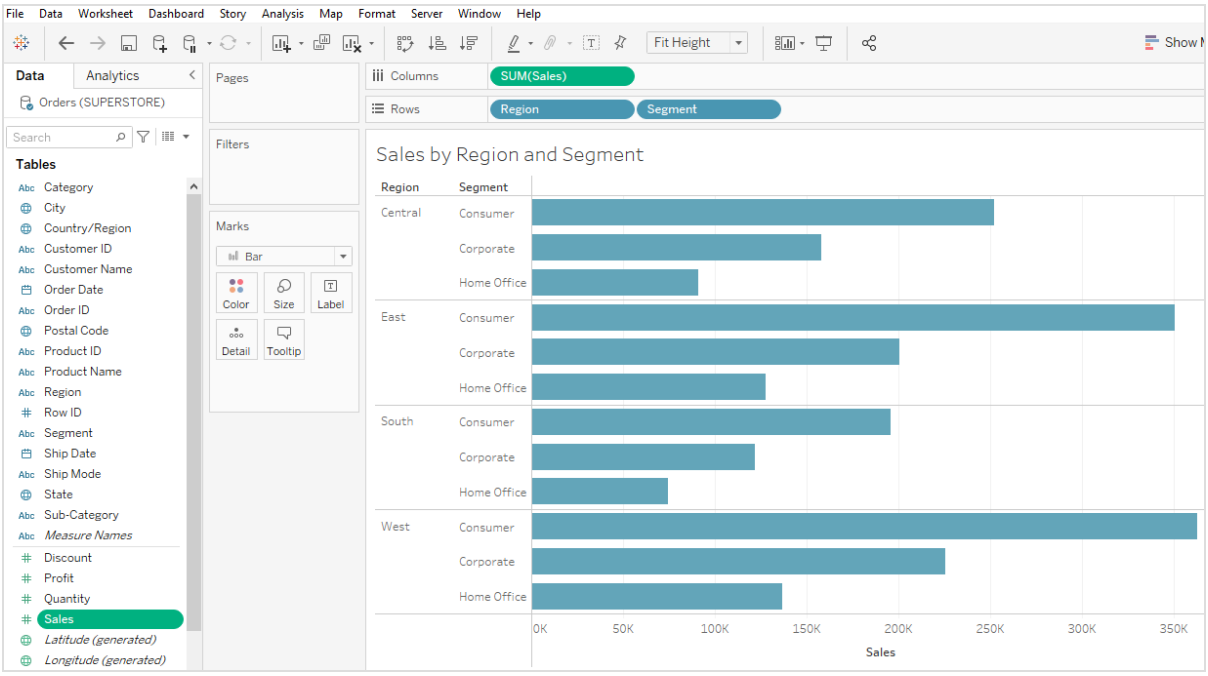
3. Click on the **Segment** field and drag it to the **Rows** shelf. Drop it to the RIGHT of the **Region** field.

Figure G



4. Click on the **Sales** field and drag it to the **Columns** shelf.

Figure H

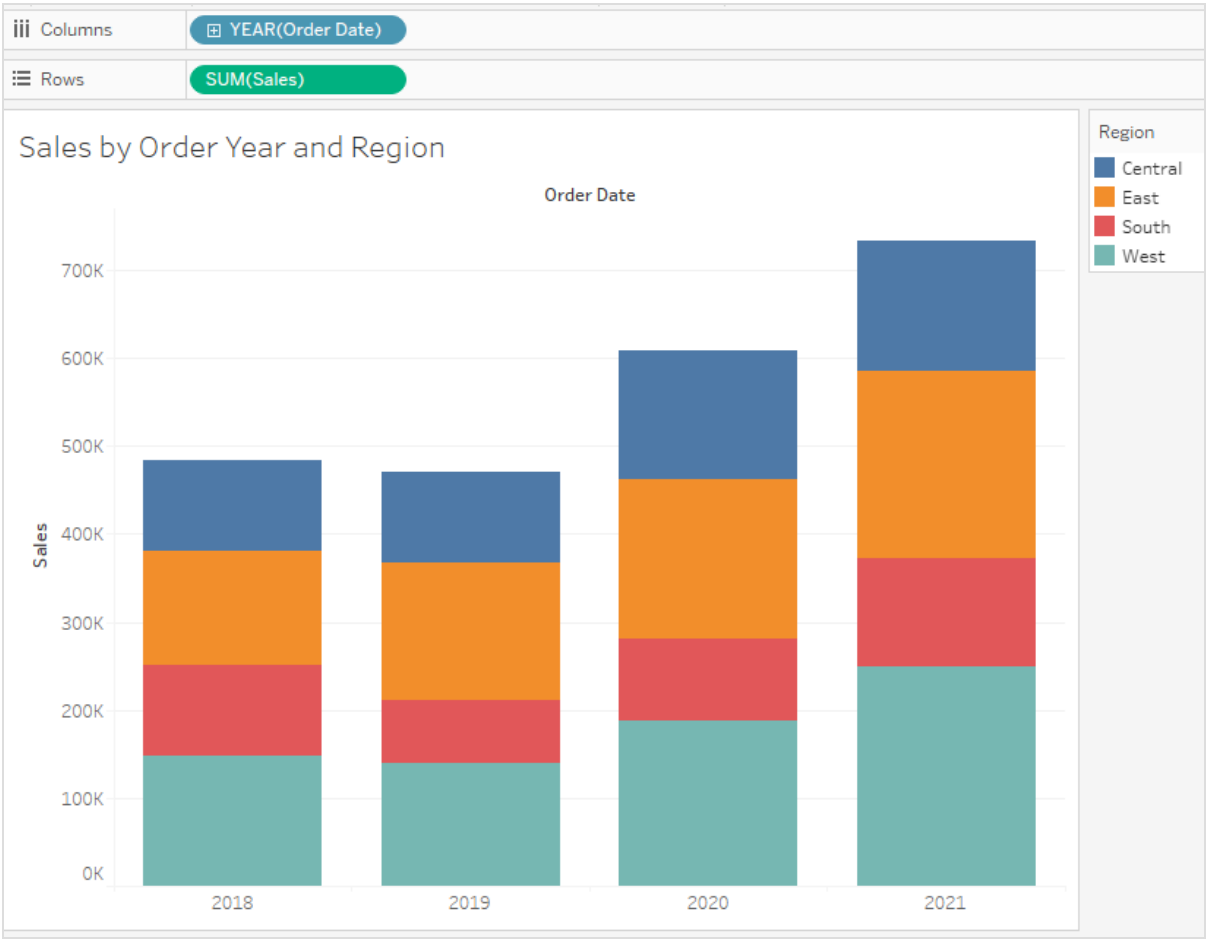


Chapter 5: Stacked Bar Charts

A **stacked bar chart** "uses bars to show comparisons between categories of data, but with ability to break down and compare parts of a whole. Each bar in the chart represents a whole, and segments in the bar represent different parts or categories of that whole."[1]

In the chart below, Sales is broken out by **Order Date - Year**. In addition, each **Year** is further segmented by **Region** using colors. A legend is shown on the right side of the screen, indicating which colors correspond to each **Region**.

Figure A



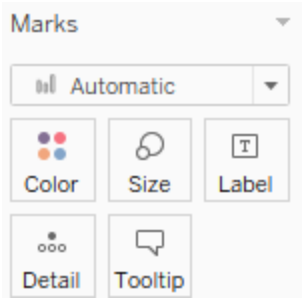
[1]BusinessQ, Stacked Bar Chart: Definition and Examples

5.1 Set Chart Type

The following steps can be performed before or after you drag your fields onto the row / column panes.

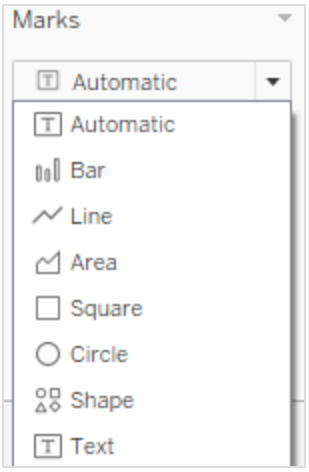
1. Go to the **Marks**shelf.

Figure B



2. Click on the **Chart Type** drop-down list, currently set to **Automatic**. Click on **Bar** to select it.

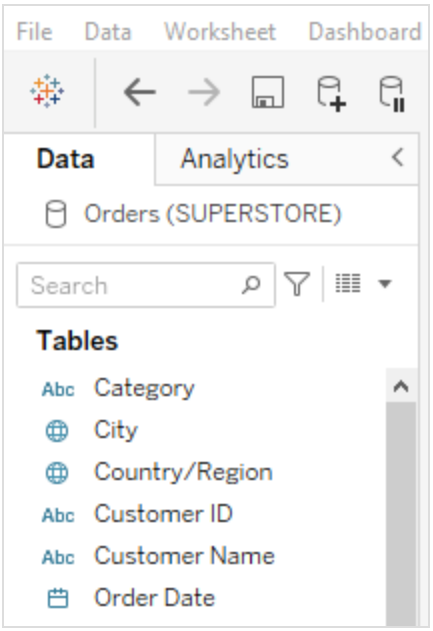
Figure C



5.2 Add Fields to Column and Row Shelves

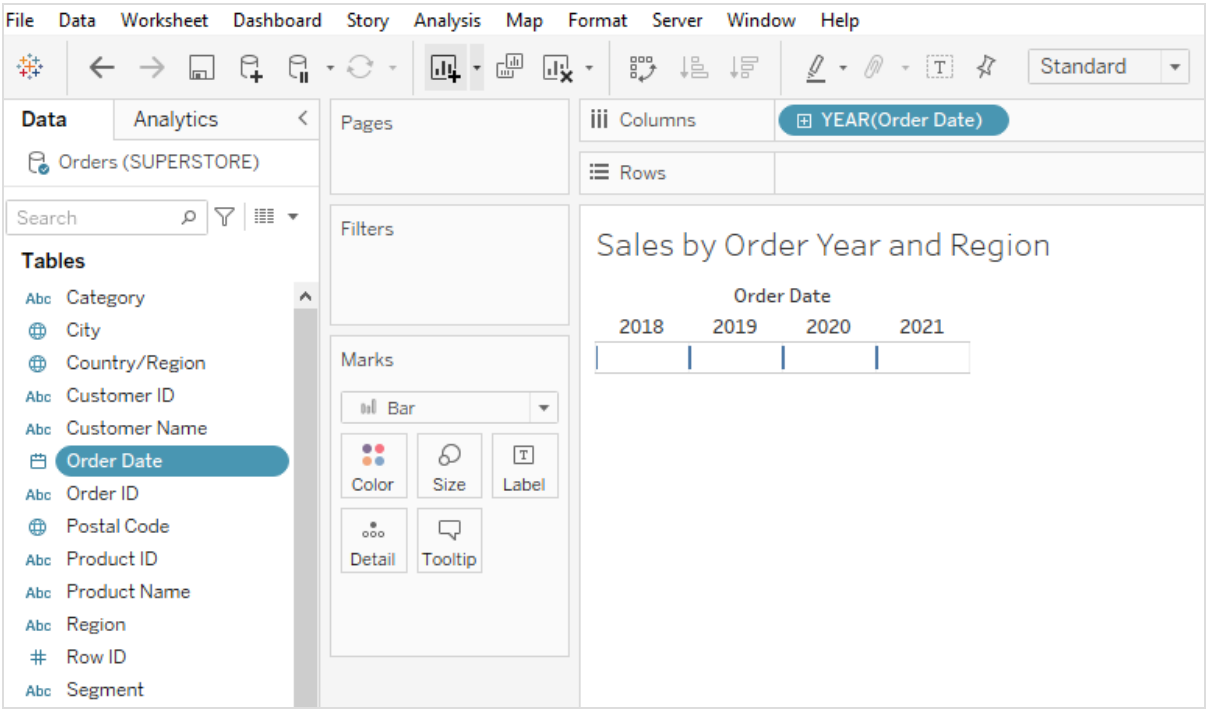
1. Go to the **Data** sidebar.

Figure D



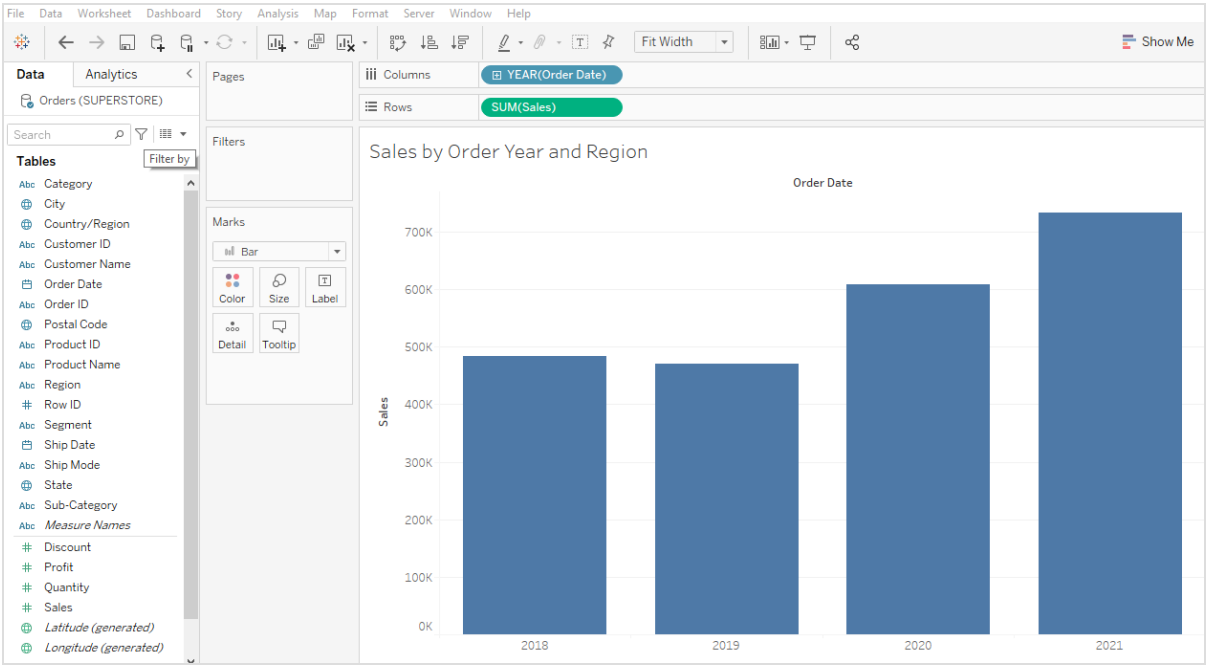
2. In the **Tables** section, click and drag the **Order Date** field to the **Columns** panel. A starter visualization will appear in the **View**.

Figure E



3. Click and drag the **Sales** field onto the **Rows** shelf.

Figure F

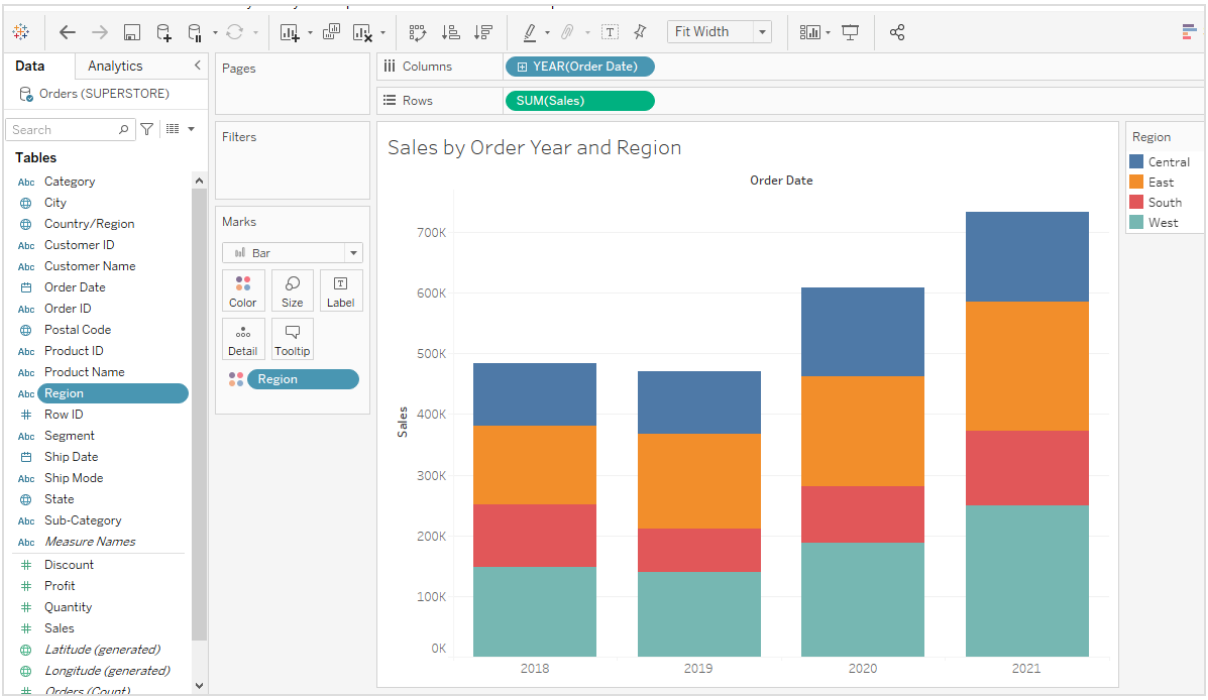


5.3 Add Field to Color Marks Card

1. Click on the **Region field**. Drag and drop it onto the **Color Marks** icon

in the **Marks** panel.

Figure G



2. A default **color palette** will be assigned to the chart. Chart colors will be explored in more detail in the chapter, "Introduction to Assigning Chart Colors" on page 25.

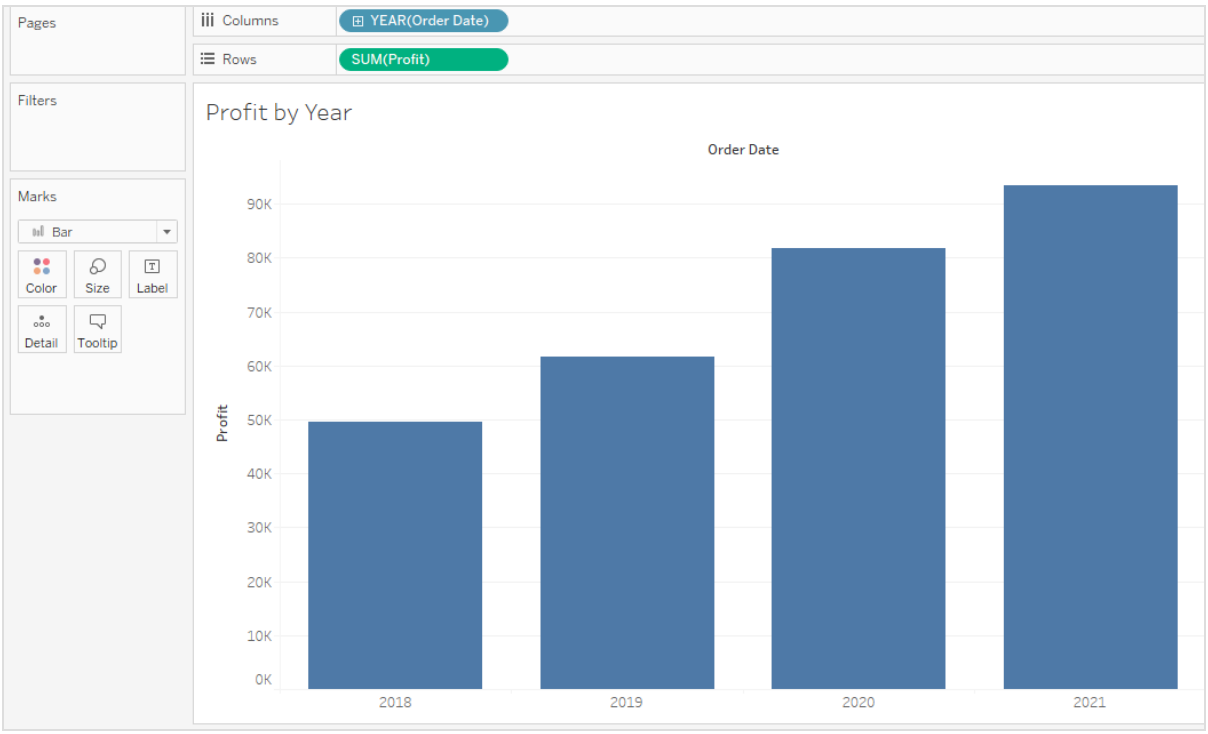
Chapter 6: Introduction to Assigning Chart Colors

6.1 Default Colors

When you create a chart, it is assigned a default **color** or a default **color palette**, depending on the chart type.

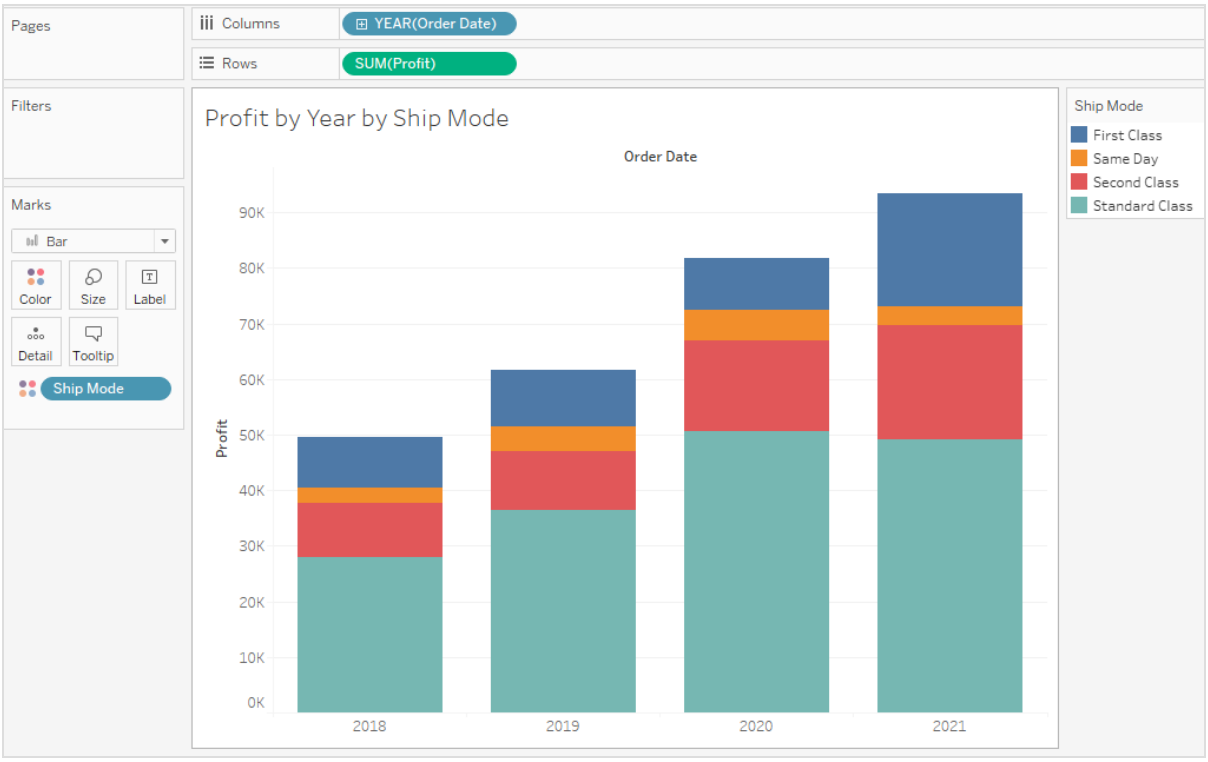
If the chart has one **dimension** (e.g., Order Date - Year) and one **Measure** (e.g., Profit), all of the bars will be assigned to the same default color, usually blue.

Figure A



If the chart is a **stacked chart**, it will be assigned a default **color palette**, usually the **Tableau 10** palette. The stacked bar chart shows that each **Order Date -Year's Profit** is broken out by **Ship Mode**.

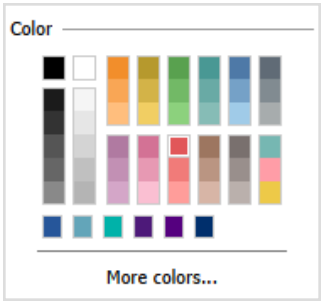
Figure B



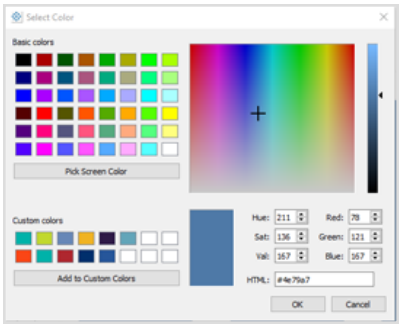
6.2 Where to Update Chart Colors

Chart colors can be updated in the following areas:

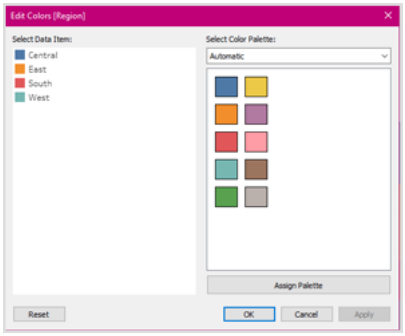
Initial Colors Dialog Window



More Colors Dialog Window



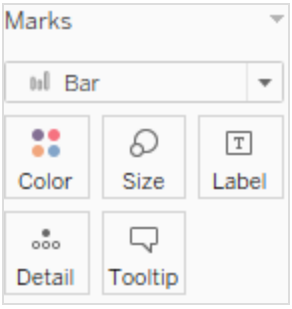
Color Palette Dialog Window



These areas can be accessed by clicking on the **Color Marks** icon

in the **Marks** card.

Figure C

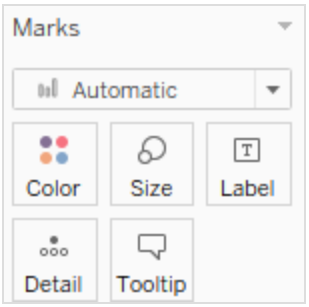


Chapter 7: Assign a Single Color to a Chart

7.1 Assign Color Using Initial Colors Dialog Window

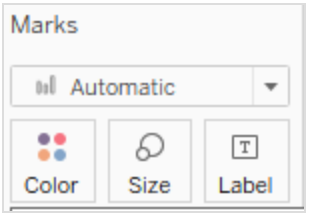
1. Go to the **Marks** card.

Figure A



2. Click the **Color Marks** icon.

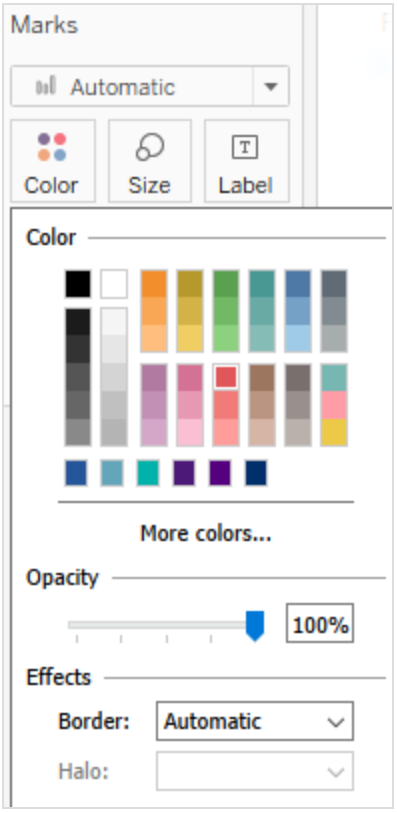
Figure B



3. The **Color Marks** dialog window will appear with an initial set of colors.

4. Click on a color square (or swatch) to select it.

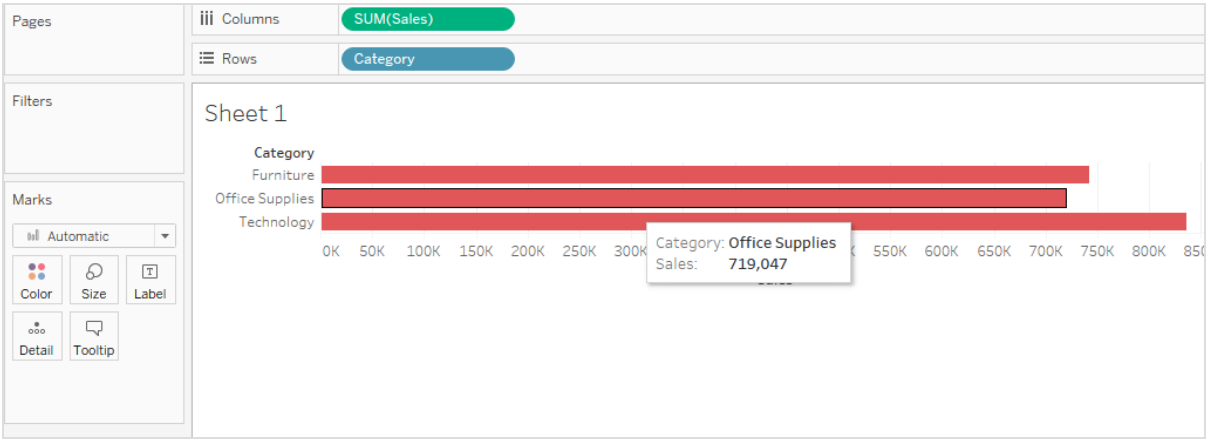
Figure C



5. To exit the **Color Marks** dialog window, click on any area of the screen outside the dialog window OR click on the **ESC** button on your keyboard.

6. The bars should appear with the color you selected.

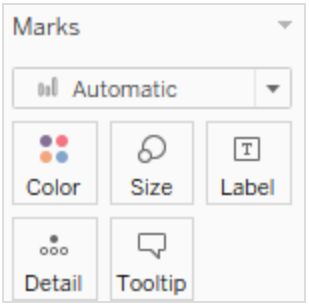
Figure D



7.2 Assign Color Using More Colors Dialog Window

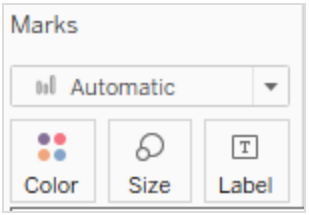
1. Go to the **Marks** card.

Figure E



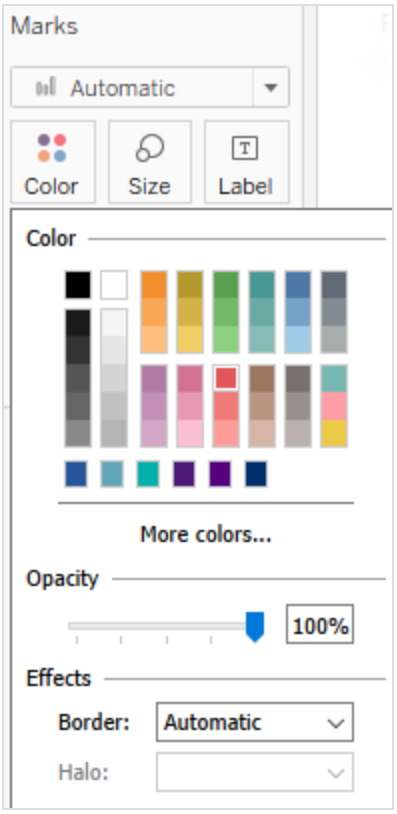
2. Click the **Color Marks** icon.

Figure F



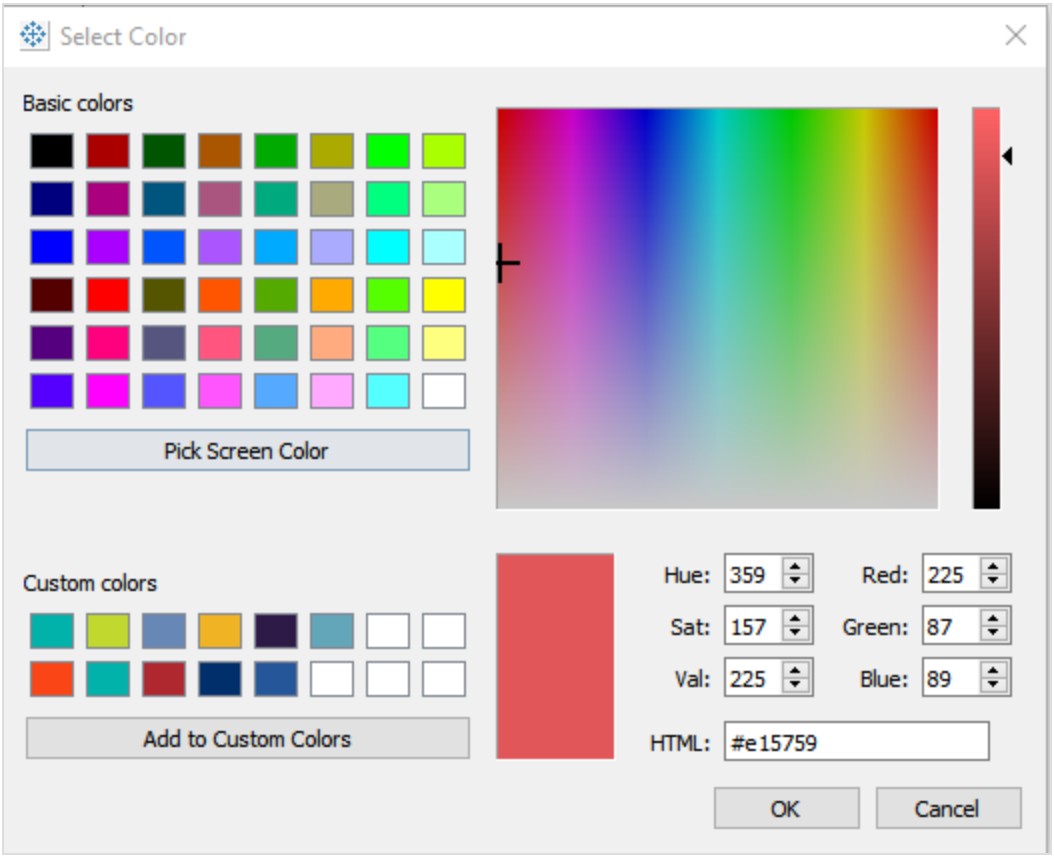
3. Click on **More Colors**.

Figure G



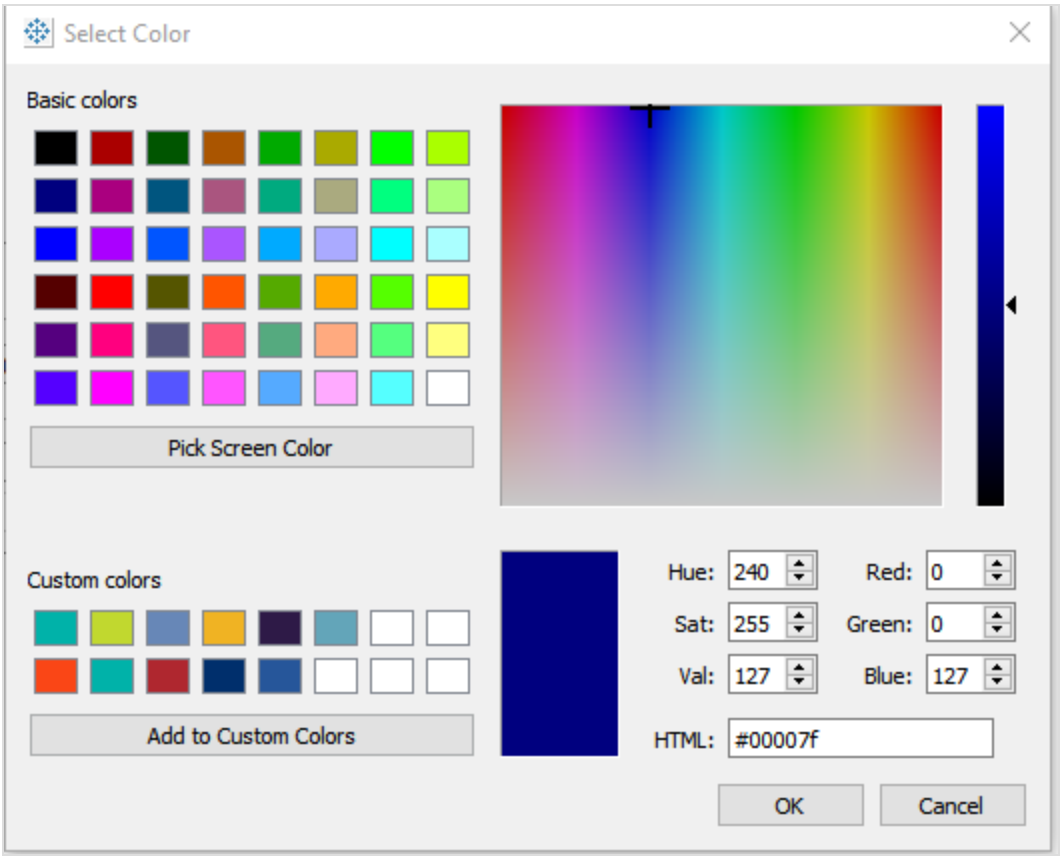
4. A **More Colors** dialog window will appear.

Figure H


Select Color
Basic colors
Pick Screen Color
Custom colors
Add to Custom Colors
Hue: 359
Sat: 157
Val: 225
Red: 225
Green: 87
Blue: 89
HTML: #e15759
OK
Cancel

5. Select a color from **Basic Colors**. by clicking on the corresponding color square. A navy blue color was selected for this exercise.

Figure I

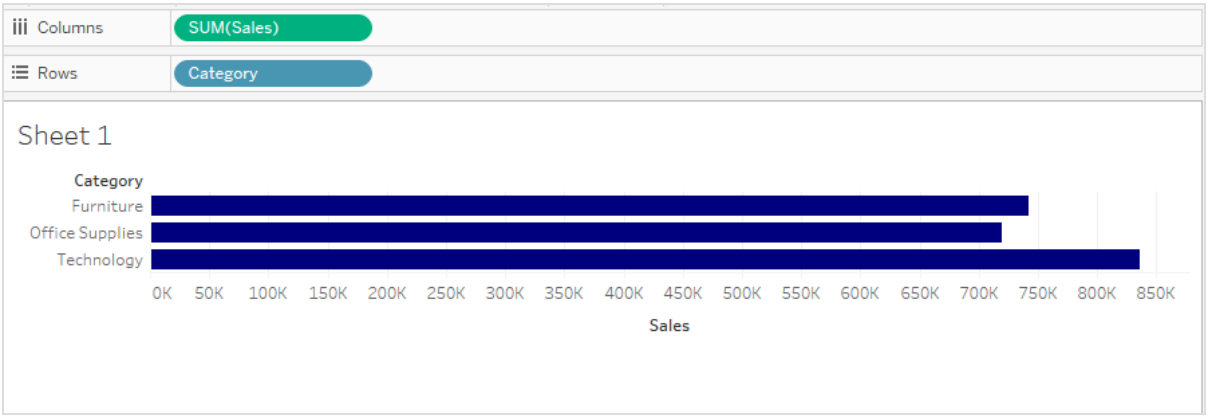


6. When you select a color, the **HSV**[1], **RGB**[2] and **HTML HEX**[3] codes for that color are populated in the bottom left section of the window.

7. Click on **OK** to save your selection and close the window.

8. The color you selected should be applied to your chart.

Figure J



[1]"HSV is a cylindrical color model that remaps the RGB primary colors into dimensions that are easier for humans to understand...Hue specifies the angle of the color on the RGB color circle. A 0° hue results in red, 120° results in green, and 240° results in blue. Saturation controls the amount of color used. Value controls the brightness of the color." (Programming Design Systems)

[2]"RGB is a color model with three dimensions – red, green, and blue – that are mixed to produce a specific color. When defining colors in these dimensions, one has to know the sequence of colors in the color spectrum, e.g. that a mix of 100% red and green produces yellow." (Programming Design Systems)

[3]"HTML color codes are hexadecimal triplets representing the colors red, green, and blue (#RRGGBB). For example, in the color red, the color code is #FF0000, which is '255' red, '0' green, and '0' blue." (Computer Hope)

7.2 Assign Color Using More Colors Dialog Window

Chapter 8: Assign a Color Palette to a Chart

A **color palette** is a group of colors. Tableau has nearly 20 built-in color palettes.

When you use **Color Marks** to assign a color palette, your chart will be assigned with the **Tableau 10** palette by default.

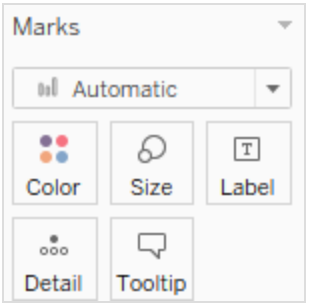
The chart below was assigned the **Tableau 10** default color palette.

Figure A

8.1 Select a Color Palette

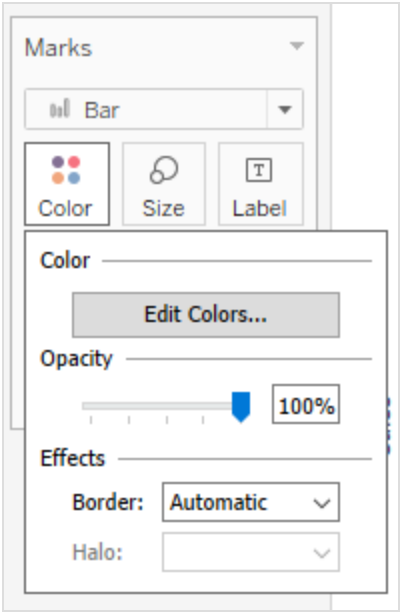
1. To select a different color palette, click on the **Color Marks** icon in the **Marks Card**.

Figure B



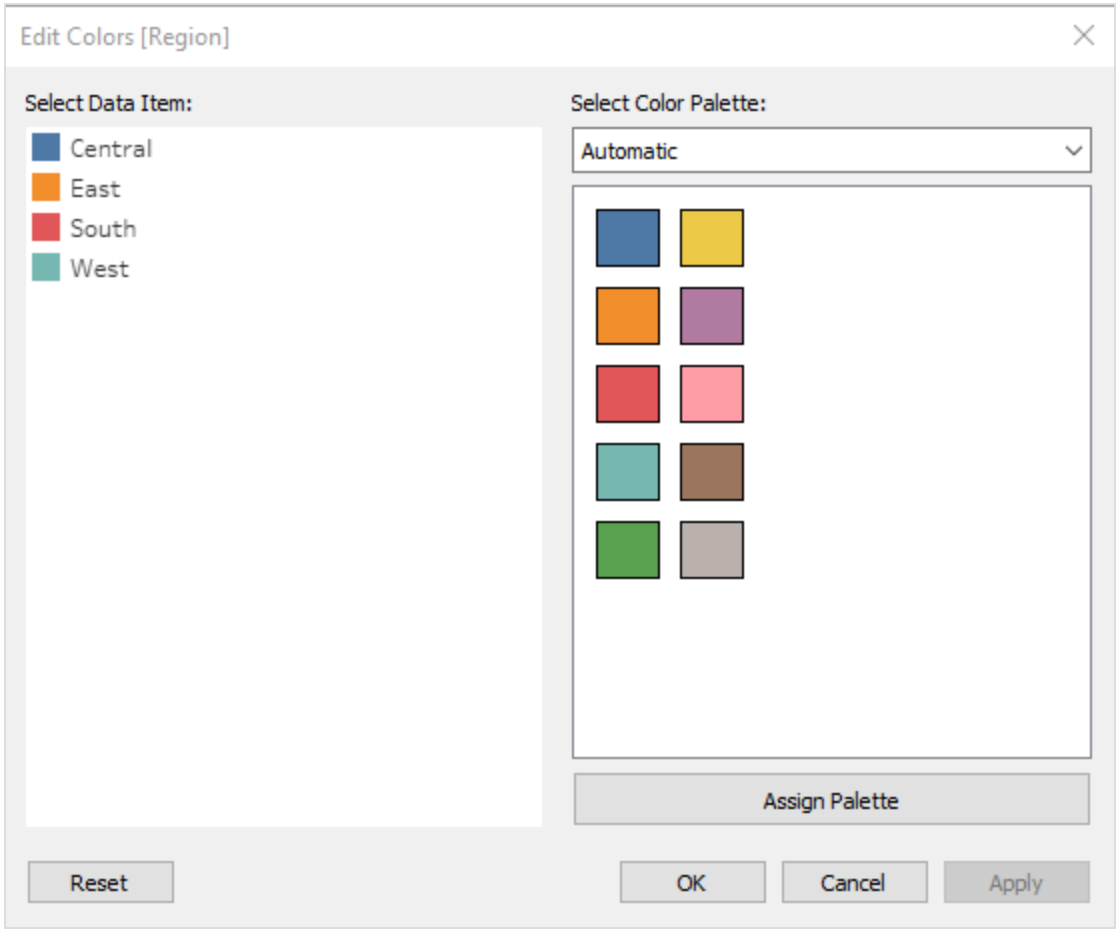
2. Click the **Edit Colors** button.

Figure C



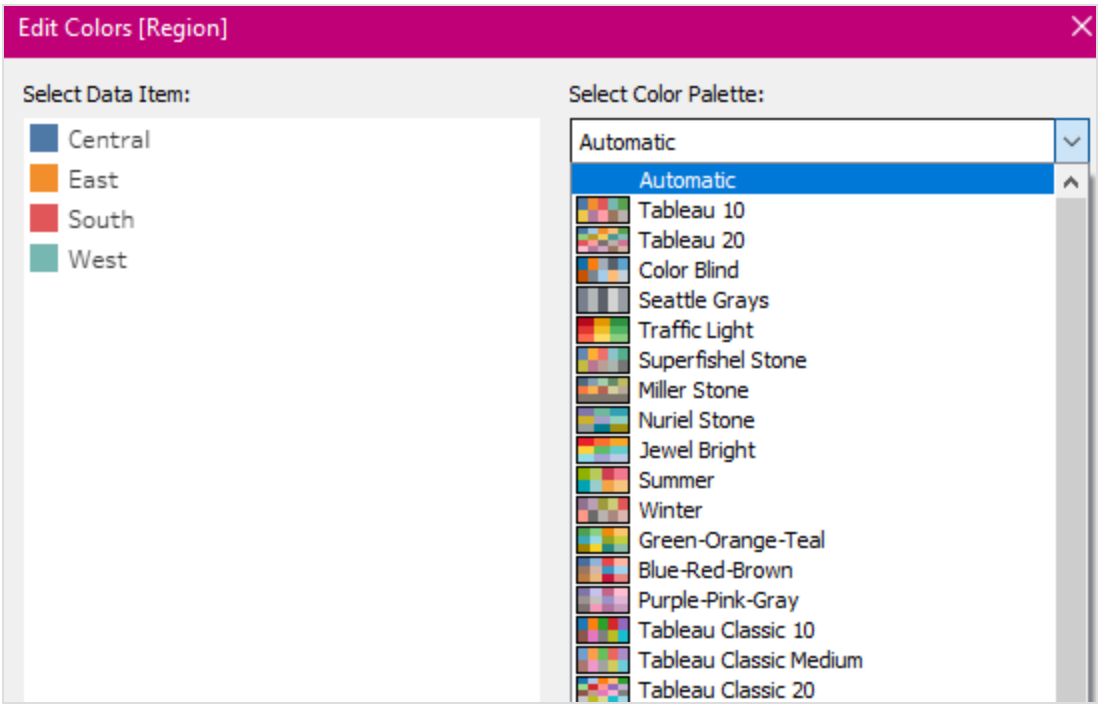
3. The **Edit Colors** dialog window will appear, displaying the currently assigned color palette (Automatic) and the colors assigned to each field.

Figure D


Edit Colors [Region]
Select Data Item:
Central
East
South
West
Select Color Palette:
Automatic
Assign Palette
Reset
OK
Cancel
Apply

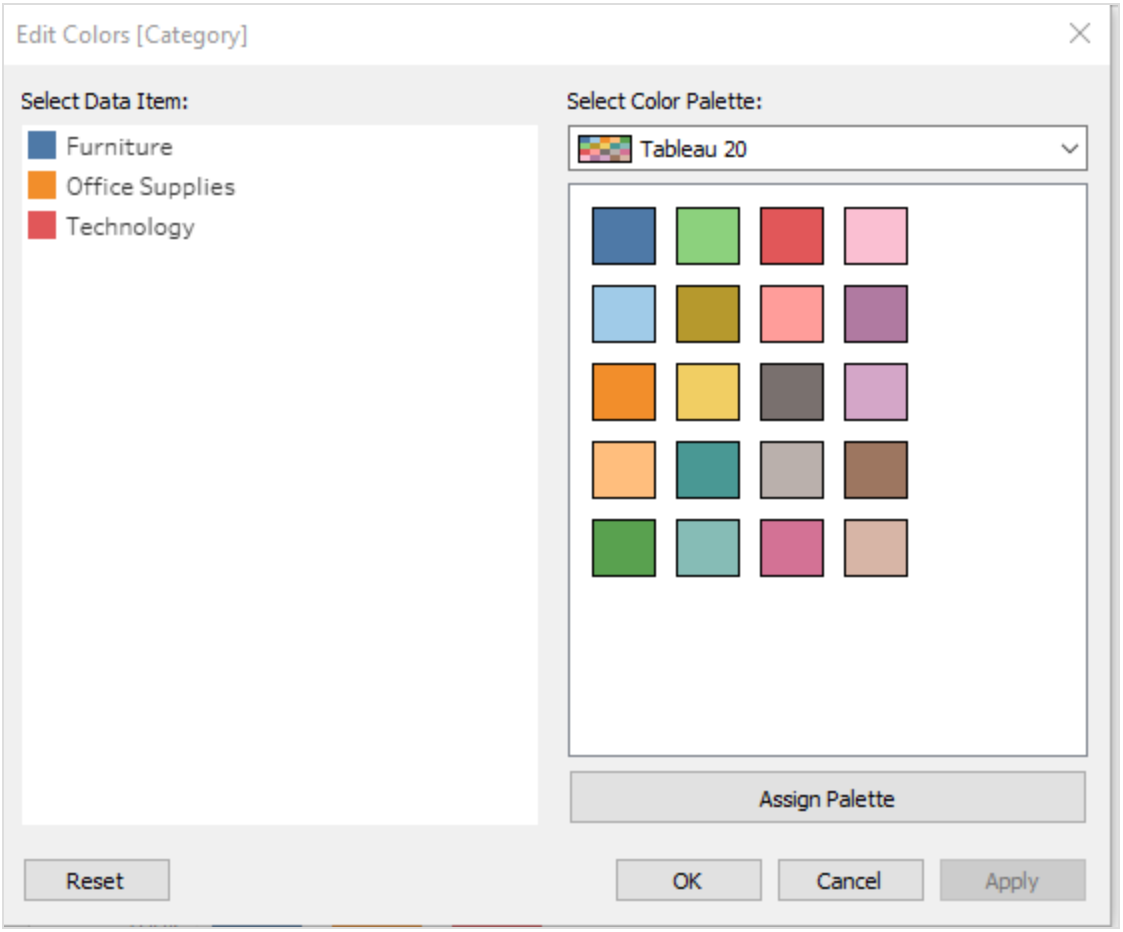
4. Click on the **Select Color Palette** drop-down menu. Click on a **color palette** to select it.

Figure E



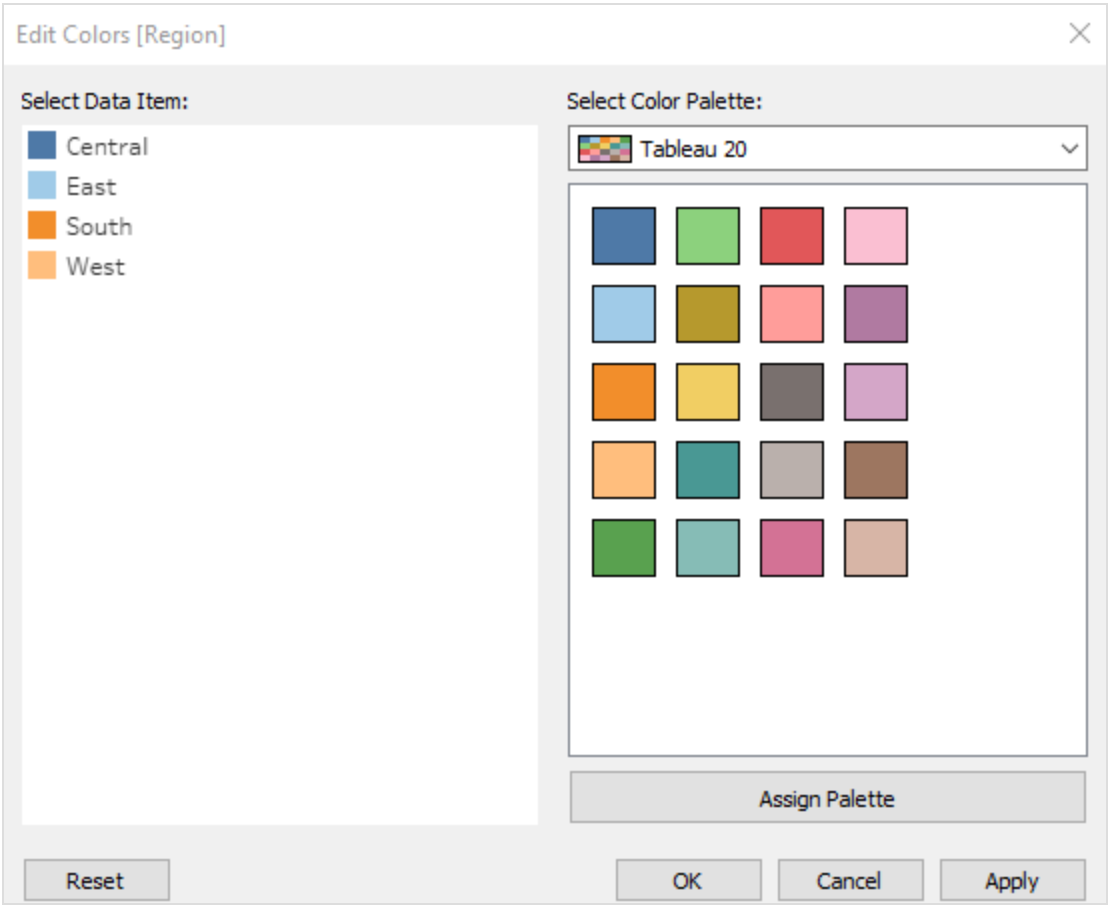
5. Click on the **Assign Palette** button to assign it to your visualization.

Figure F



6. The first three colors in the first column of the palette were assigned to the **Region** values by default. However, you can assign other colors in this palette (see next steps).

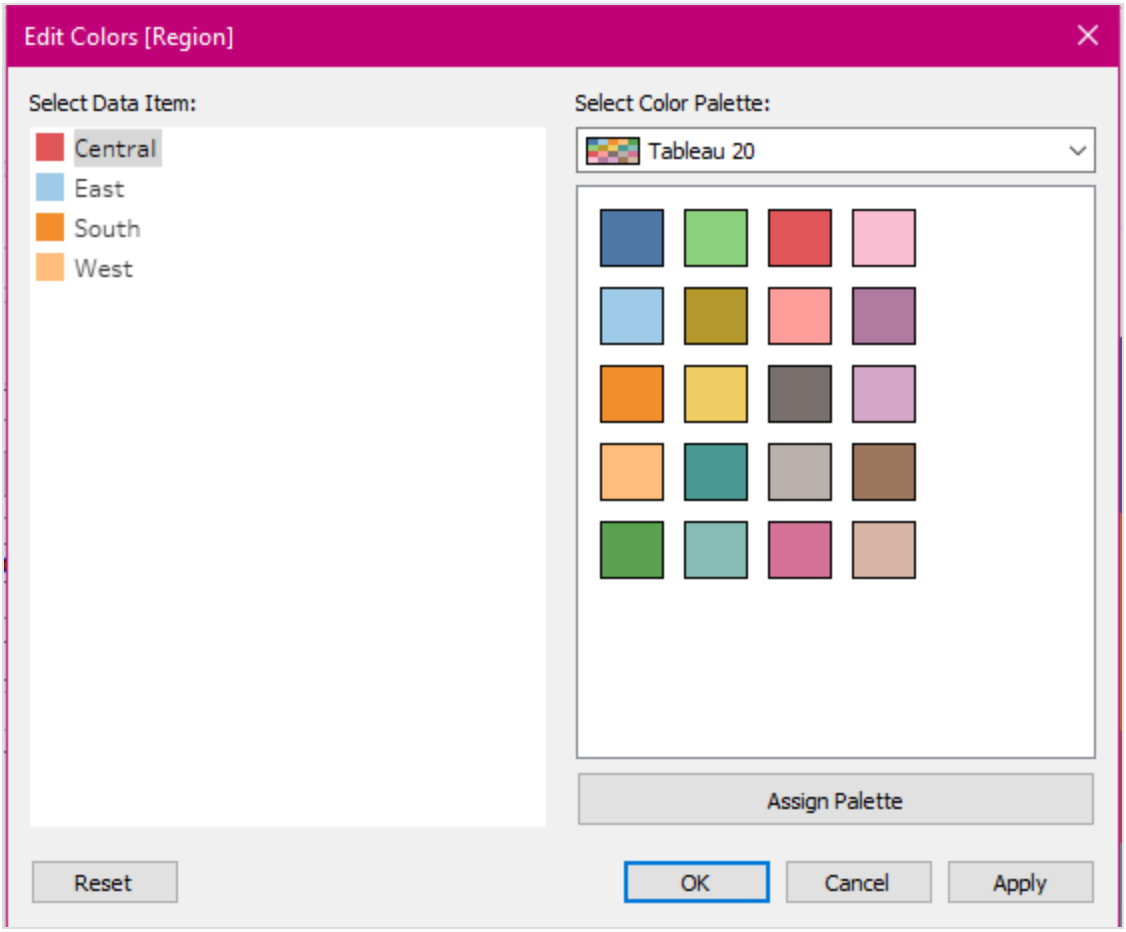
Figure G



8.2 Update Default Colors Assigned to Data Item

1. Click on the **Central** field. Then click on the color square of the desired new color. The color red was selected in the figure below.

Figure H

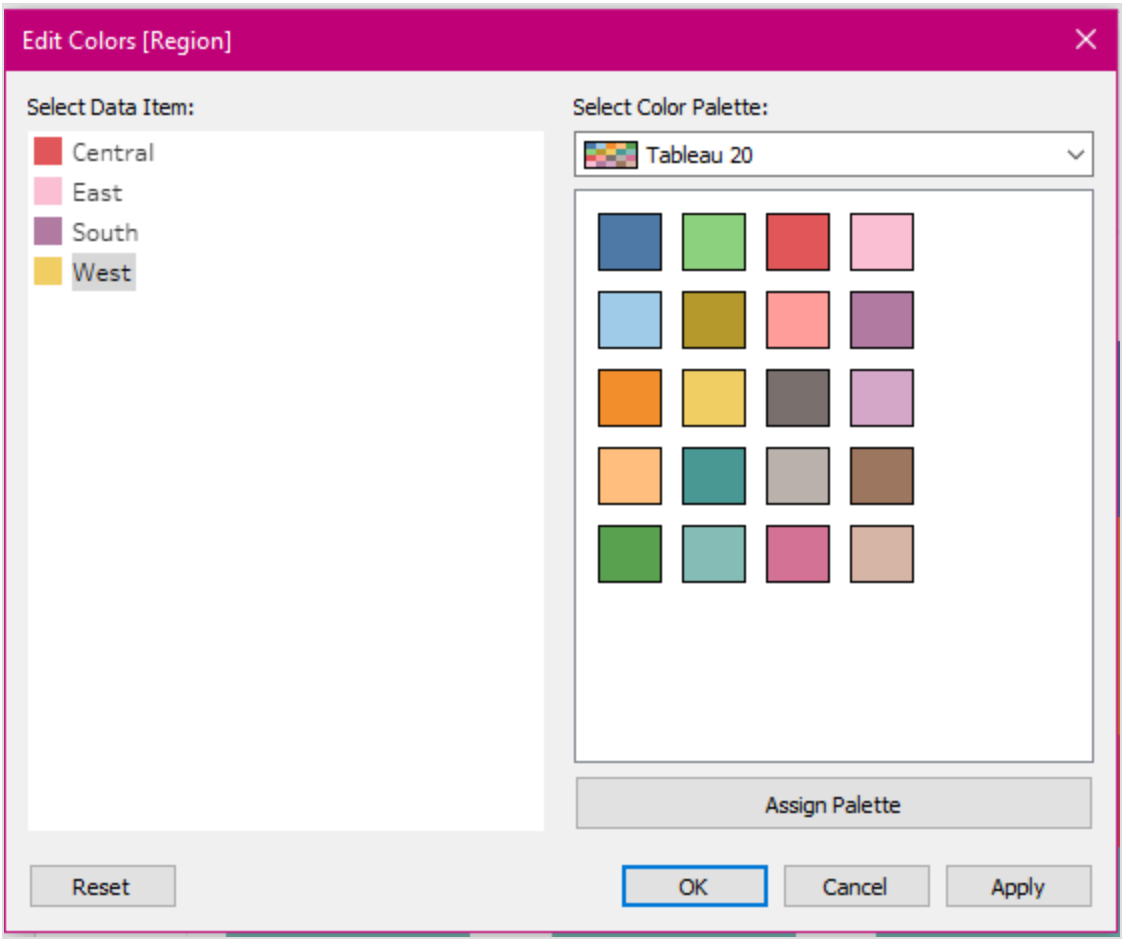


2. Repeat **Step 7** for each of the remaining **Region** values to assign them new colors.

8.3 Save Changes

1. When you have finished assigning new colors to the **Region** values, click **Apply**.
   WARNING! If you forget to click APPLY, your color changes may not be saved.

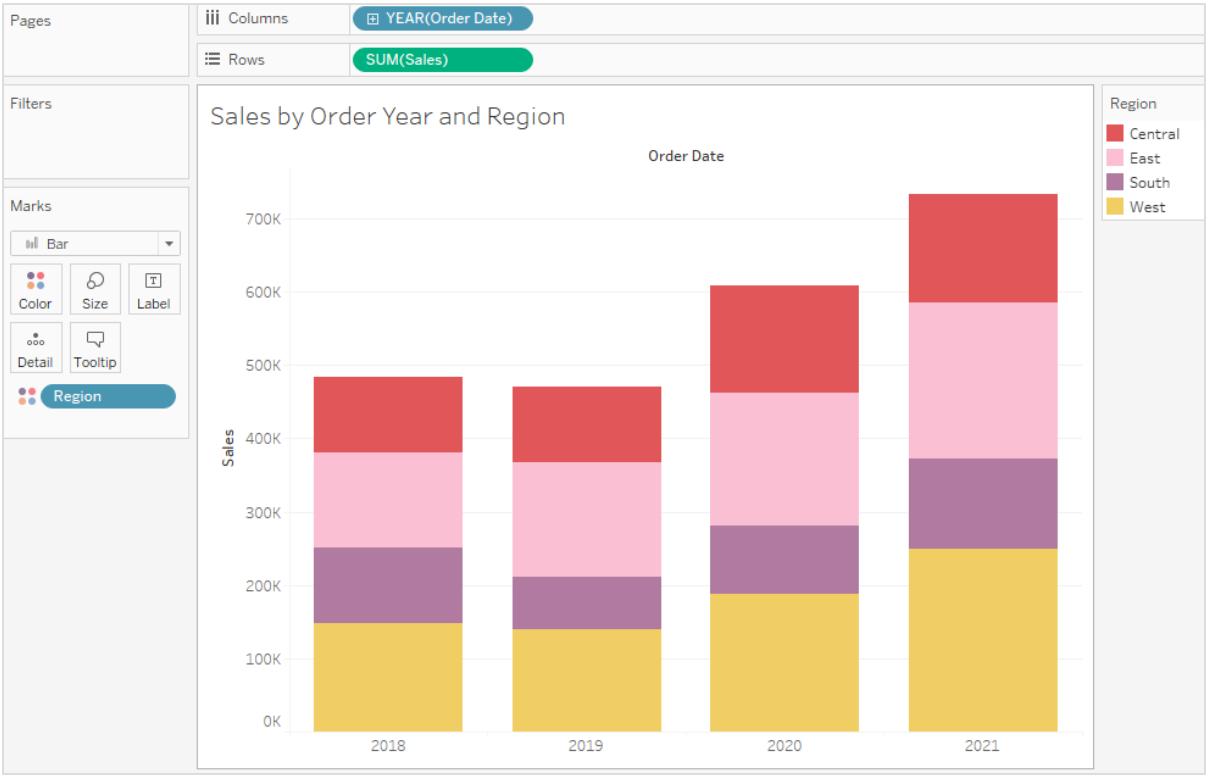
Figure I



2. Click **OK** to exit the dialog window.

3. The colors you selected should be applied to your chart.

Figure J


Pages
Columns
YEAR(Order Date)
Rows
SUM(Sales)
Filters
Marks
Bar
Color
Size
Label
Detail
Tooltip
Region
Sales by Order Year and Region
Order Date
Sales
700K
600K
500K
400K
300K
200K
100K
0K
2018
2019
2020
2021
Region
Central
East
South
West

Glossary

C

color palettes

A color palette is a group of colors. The colors in the palette may be selected to complement one another.

D

Dimensions

"Dimensions contain qualitative values (such as names, dates, or geographical data). You can use dimensions to categorize, segment, and reveal the details in your data. Dimensions affect the level of detail in the view." (Tableau)

Discrete vs Continuous

"Continuous and discrete are mathematical terms. Continuous means "forming an unbroken whole, without interruption"; discrete means "individually separate and distinct." (Tableau)

H

HSV

"HSV is a cylindrical color model that remaps the RGB primary colors into dimensions that are easier for humans to understand...Hue specifies the angle of the color on the RGB color circle. A 0° hue results in red, 120° results in green, and 240° results in blue. Saturation controls the amount of color used. Value controls the brightness of the color." (Programming Design Systems)

HTML HEX

"HTML color codes are hexadecimal triplets representing the colors red, green, and blue (#RRGGBB). For example, in the color red, the color code is #FF0000, which is '255' red, '0' green, and '0' blue." (Computer Hope)

M

Measures

"Measures contain numeric, quantitative values that you can measure. Measures can be aggregated. When you drag a measure into the view, Tableau applies an aggregation to that measure by default." (Tableau)

R

RGB

"RGB is a color model with three dimensions – red, green, and blue – that are mixed to produce a specific color. When defining colors in these dimensions, one has to know the sequence of colors in the color spectrum, e.g. that a mix of 100% red and green produces yellow." (Programming Design Systems)

V

visual analytics

"Visual analytics is a means of exploring and understanding data. It supports and

accelerates the analysis process itself. You can ask a question, get the answer, and ask follow-up questions—all within a visual interface." (Tableau)

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ABOUT TABLEAU

Tableau is one of the most popular industry-standard data visualization platforms in the world.

This tutorial introduces the basics of building Tableau bar charts because they are the most used type of chart.

The topics covered include:

- Horizontal and Vertical Bar Charts
- Grouped Bar Charts
- Stacked Bar Charts
- Updating Chart Colors and Color Palettes

For more information about Tableau, visit www.tableau.com.

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Tableau Bar Chart Basics

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Developed with MadCap Flare 2021 r2

Sun Aug 8, 2021 10:59:52 AM