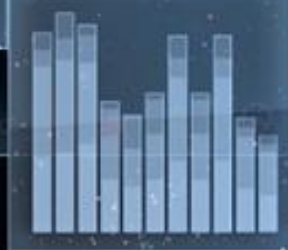# Tableau Desktop 10 Qualified Associate

Lesson 04—Creating Charts in Tableau
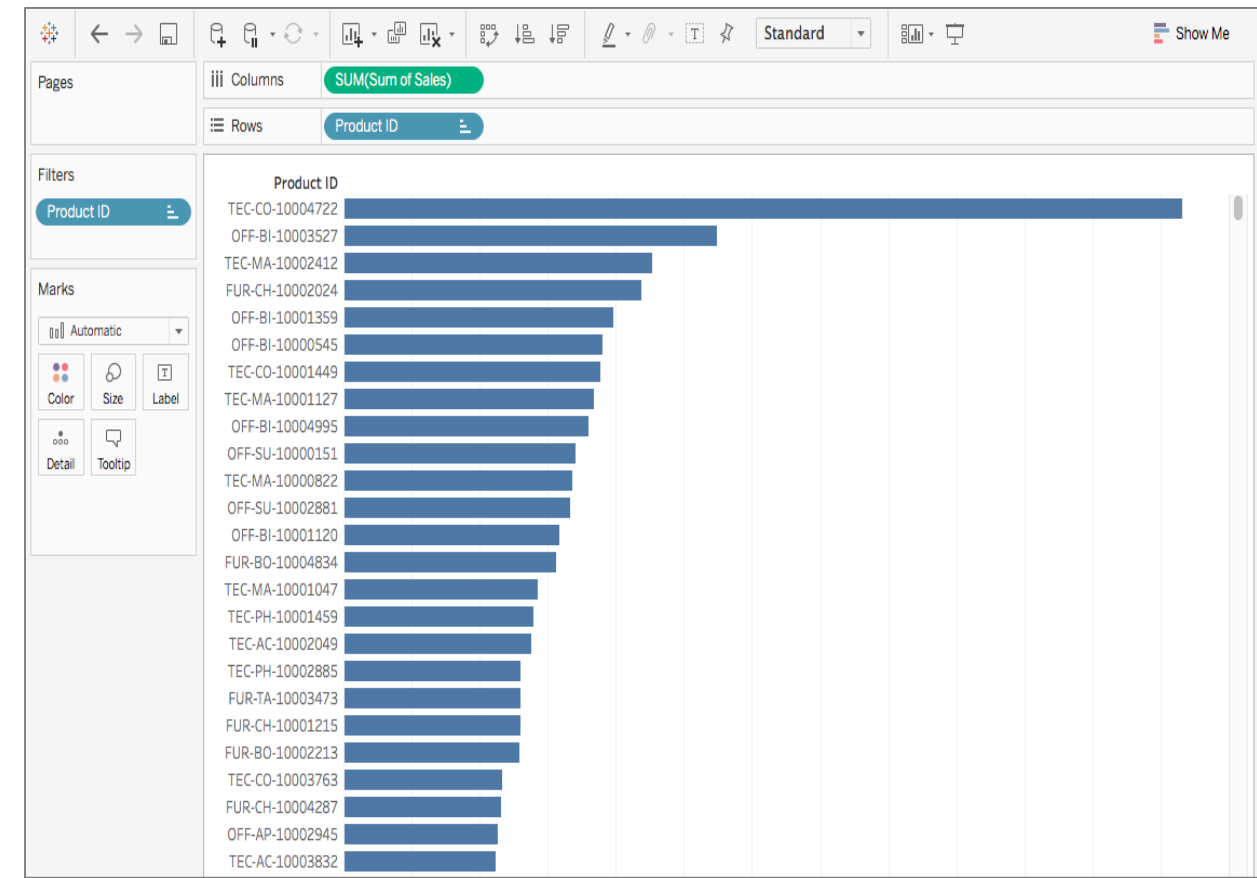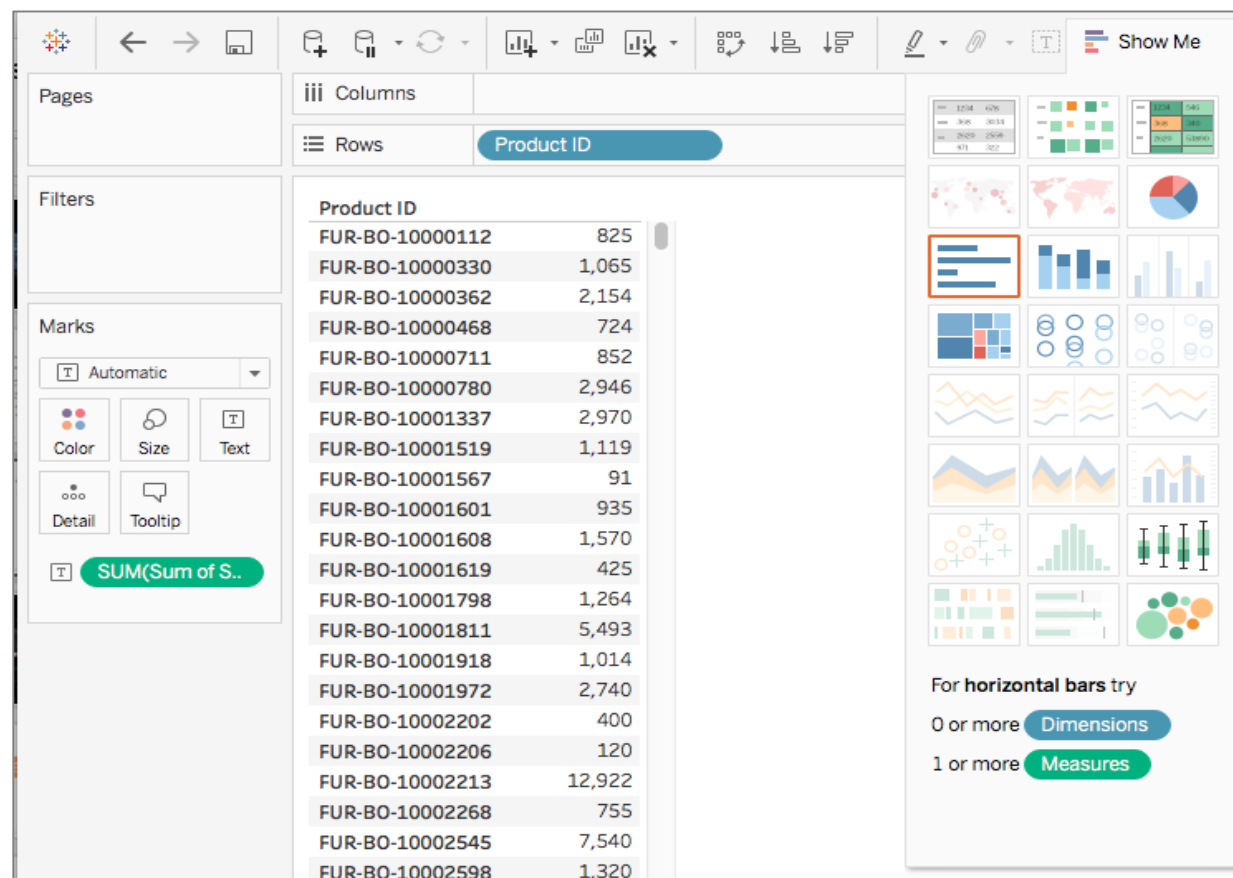
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What's In It For Me

At the end of this lesson, you will be able to:

Describe histograms, pie charts, bullet charts, combination charts, and bar charts.

Explain waterfall charts, Gantt charts, sparkline, and Pareto charts.

Describe maps and plots in tableau

Format the axes using edit axis option

Use titles, captions and tooltips

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Charts

- Charts are visually appealing representations of data and are typically easier for users to understand than tables with numbers.

- To create a chart from your worksheet, click the "Show Me" button to see chart options.

Creating Charts in Tableau

Topic 1: Chart Types

- Histograms
- Pie Charts
- Bullet Charts
- Combination Charts
- Bar Charts
- Waterfall Charts
- Gantt Charts
- Sparkline Charts
- Pareto Charts

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Histograms

Histograms are used to display the distribution of values in a field.

The steps to create a histogram are mentioned below:

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts

Pareto Charts

Start by creating bins for values of a measure.

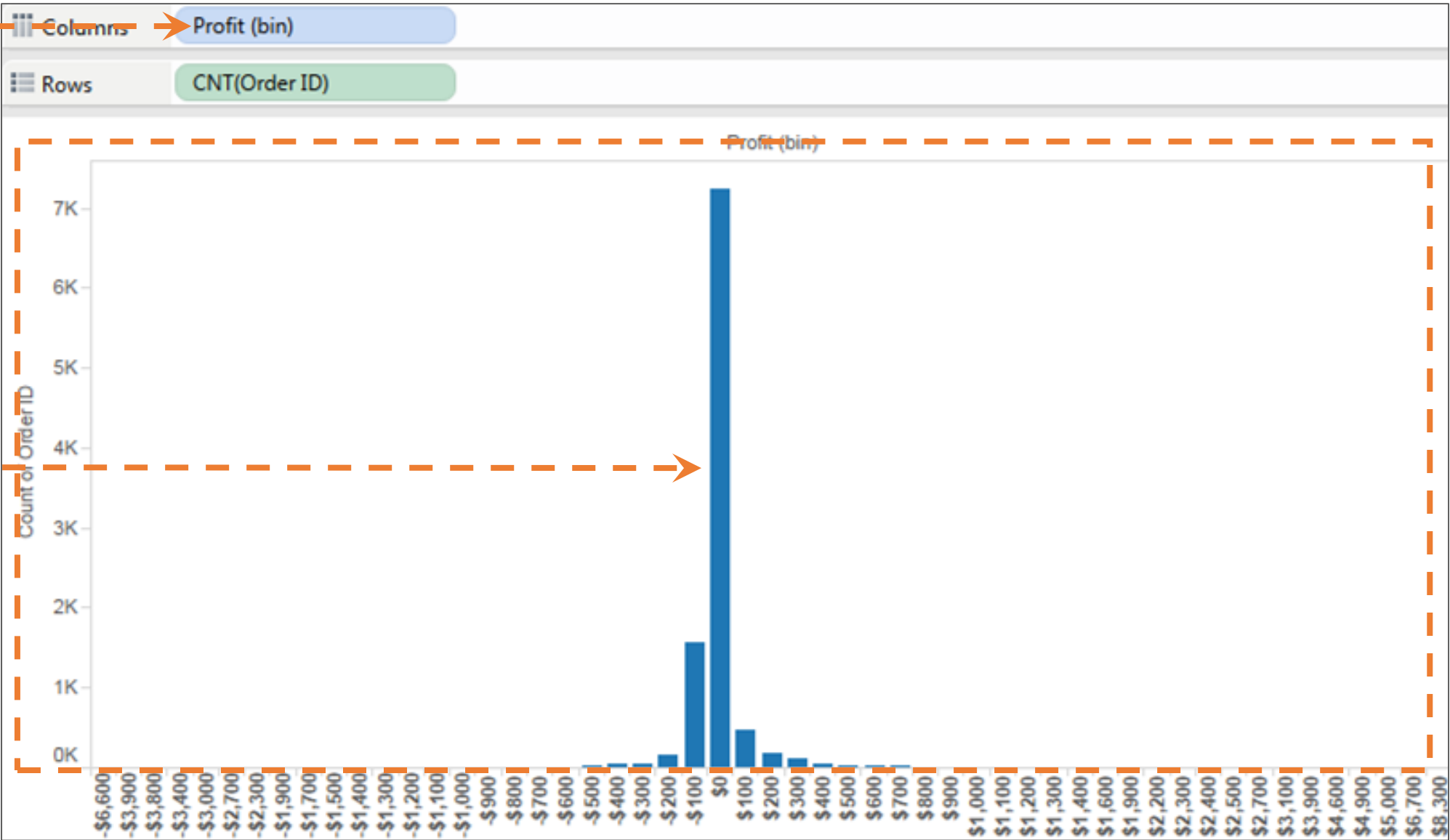Then, create a view based on the measure's binned values.

Chart Types

PIE CHARTS

Pie charts are used to analyze the proportional relationships among the data.

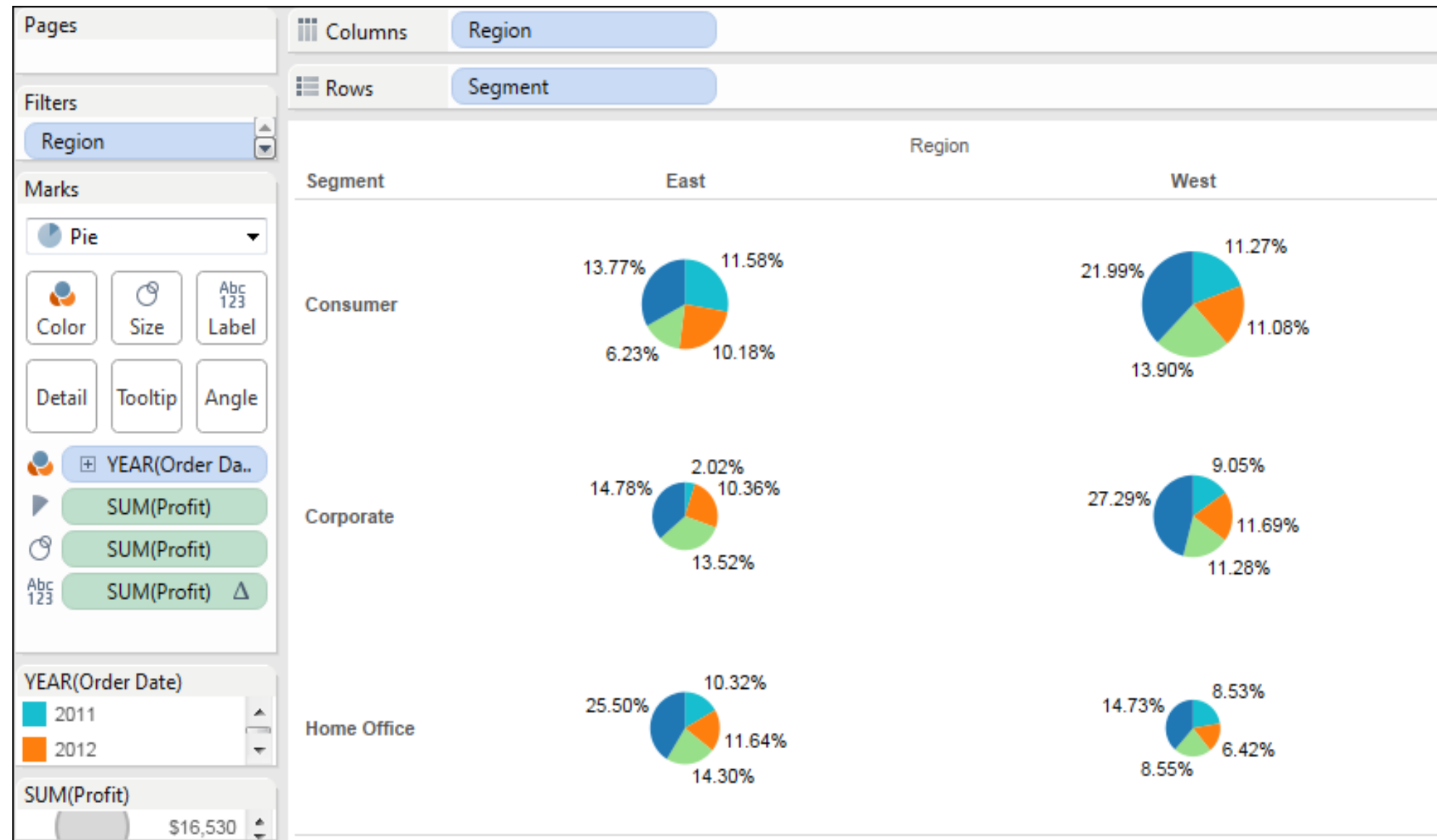They can also be used as a mark type, called pie mark, to show proportions.

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts

Pareto Charts

Chart Types

Bullet charts are generally used to compare a primary measure to one or more other measures.

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts
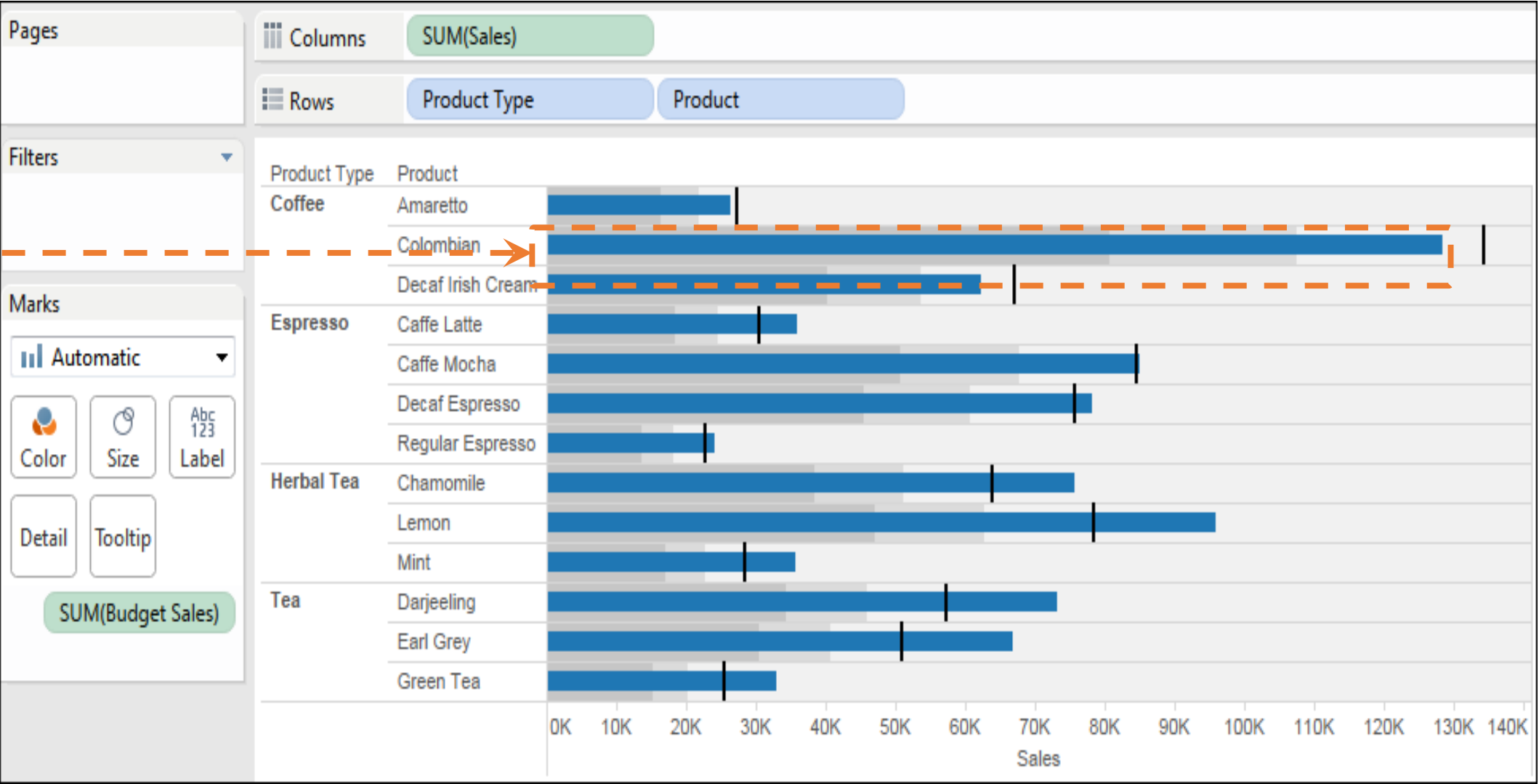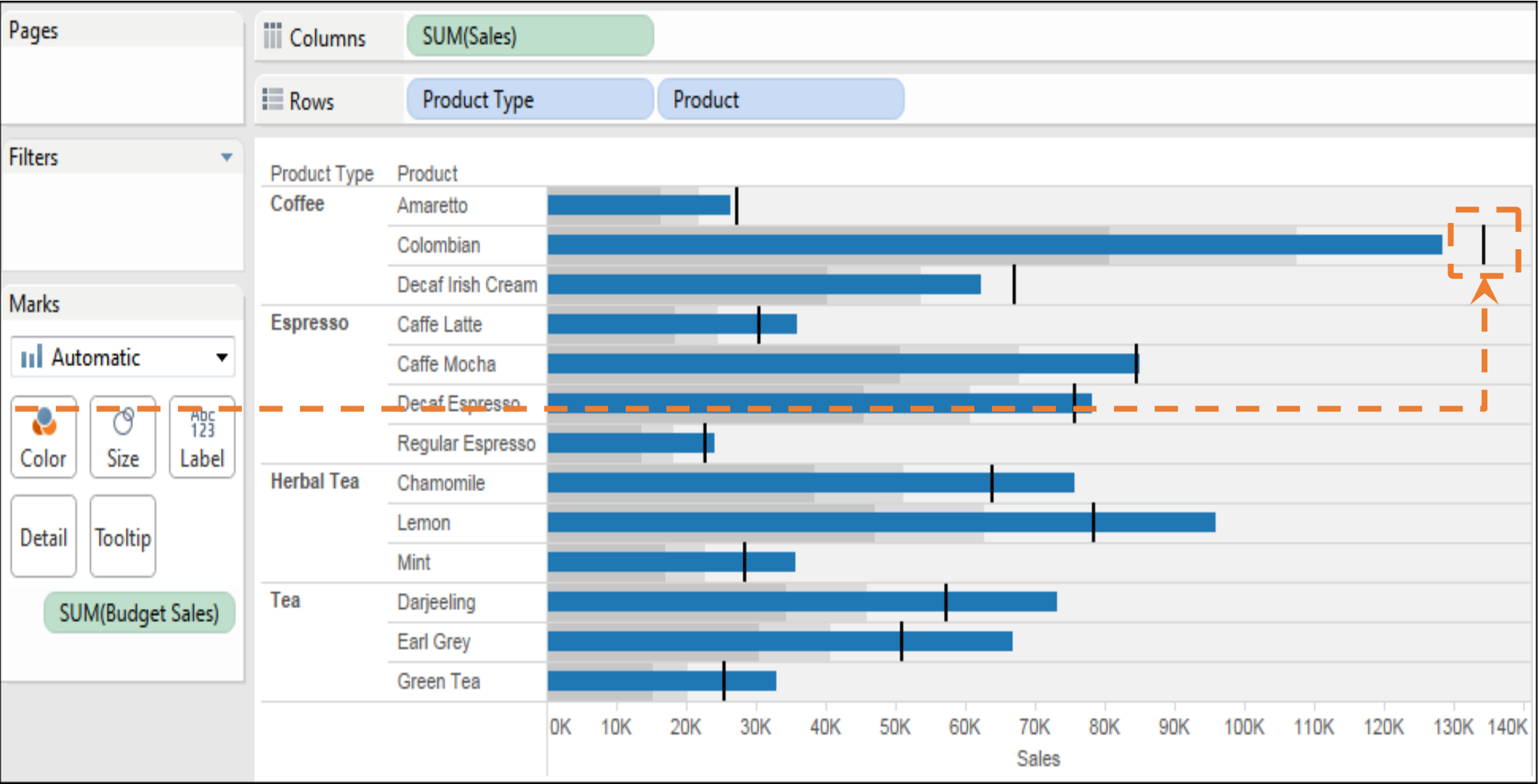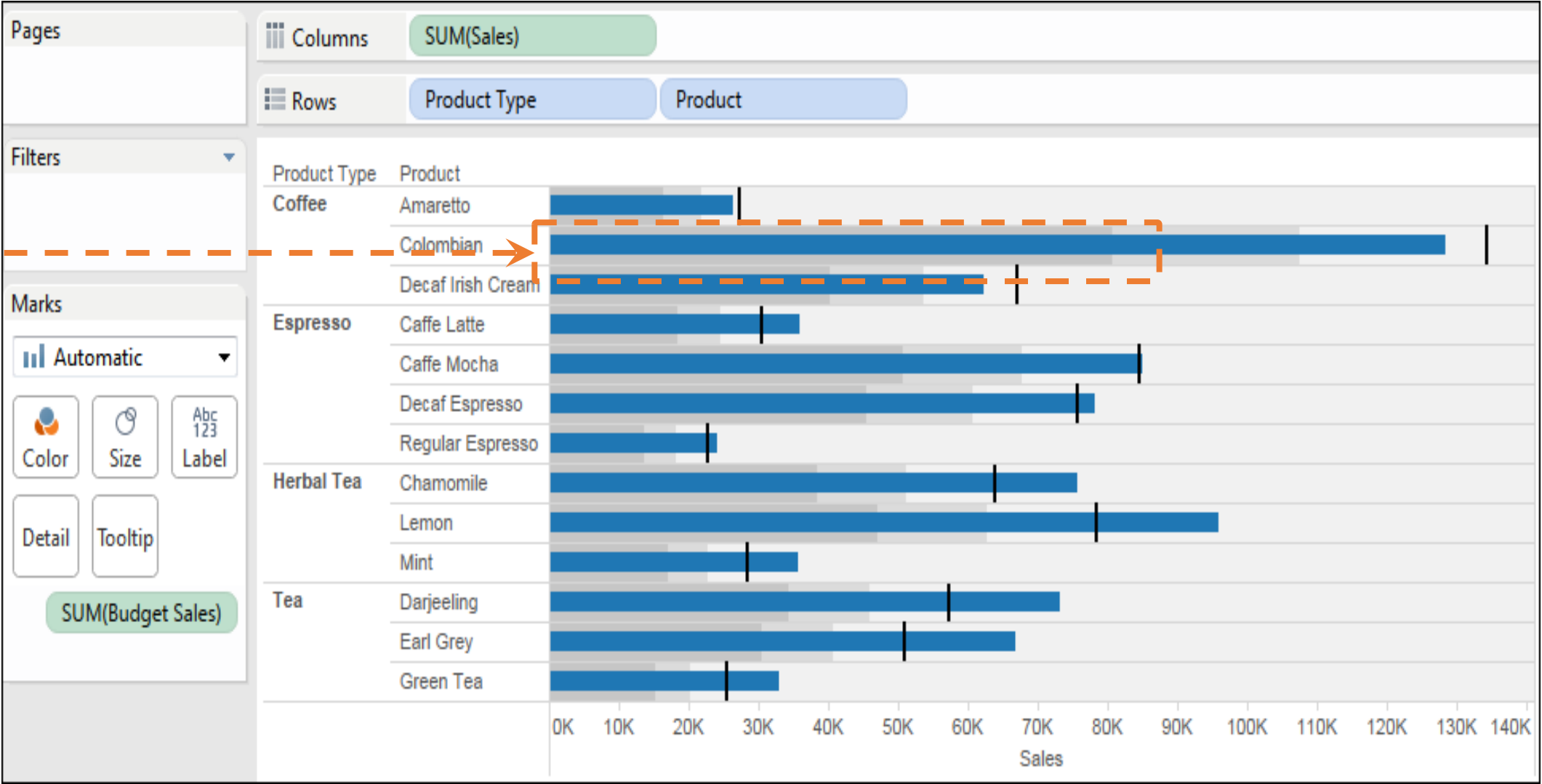
Pareto Charts

Sales is represented by the blue horizontal bars.

Chart Types

BULLET CHARTS

Bullet charts are generally used to compare a primary measure to one or more other measures.

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts

Pareto Charts

Reference line shows the average of budget sales.

Chart Types

Bullet charts are generally used to compare a primary measure to one or more other measures.

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts

Pareto Charts

Reference distributions is displayed with grey shading to show 60% and 80% of average budget sales.

Demo—Creating Bullet Charts

Demonstrate the use of sample coffee chain dataset and create a bullet chart with products, sales, and budget sales.

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Chart Types

COMBINATION CHARTS

Combination charts are views that use multiple mark types in the same sheet.

Multiple measures in a view can be customized to show the distinct mark type for each distinct measure.

These measures can be displayed as individual axes, blended axes, or dual axes.

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts
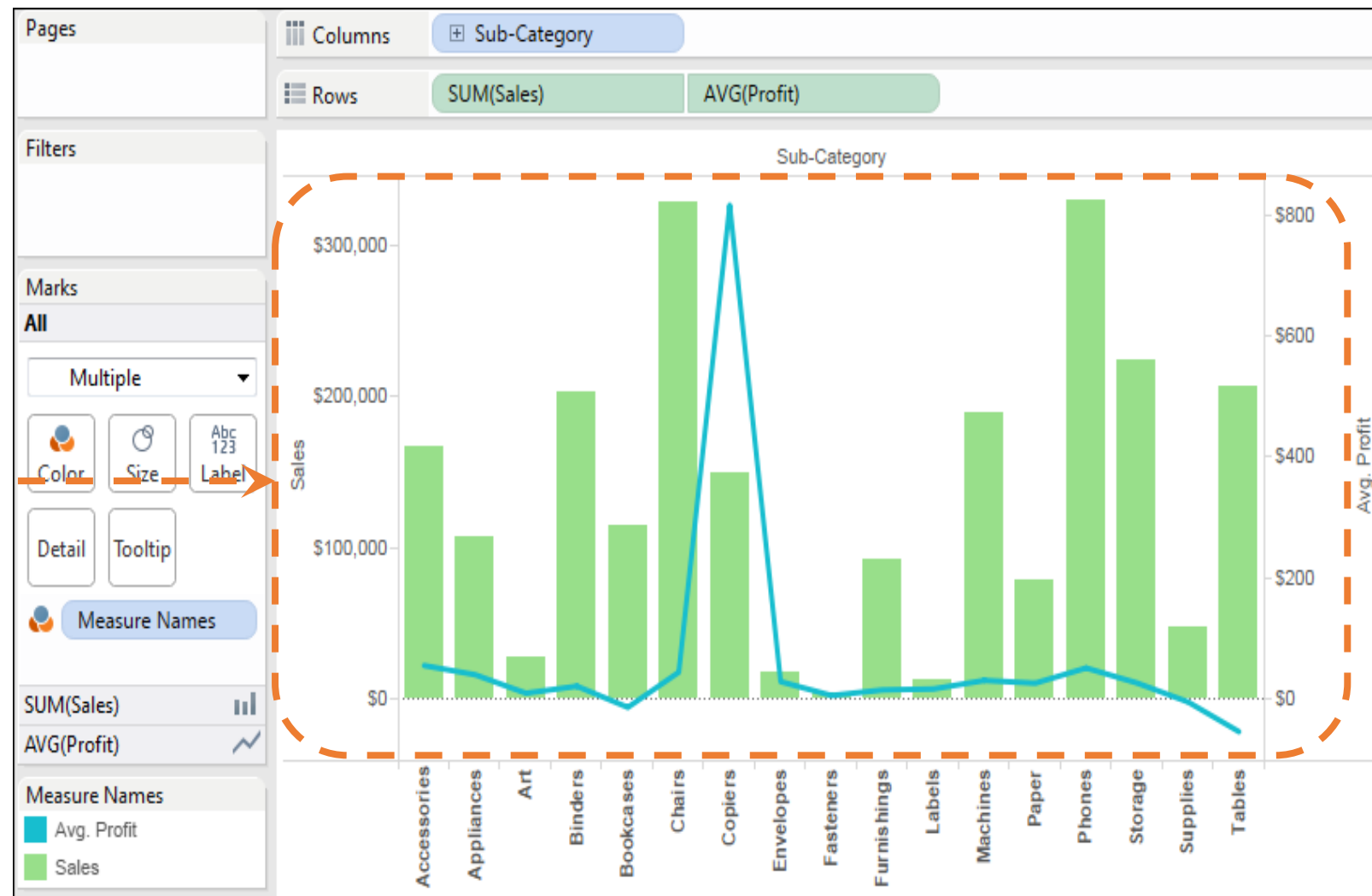
Pareto Charts

Distinct mark types for distinct measures

Chart Types

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts

Pareto Charts

Bars in bar chart are used to analyze the performance of multiple categories along a single measure.

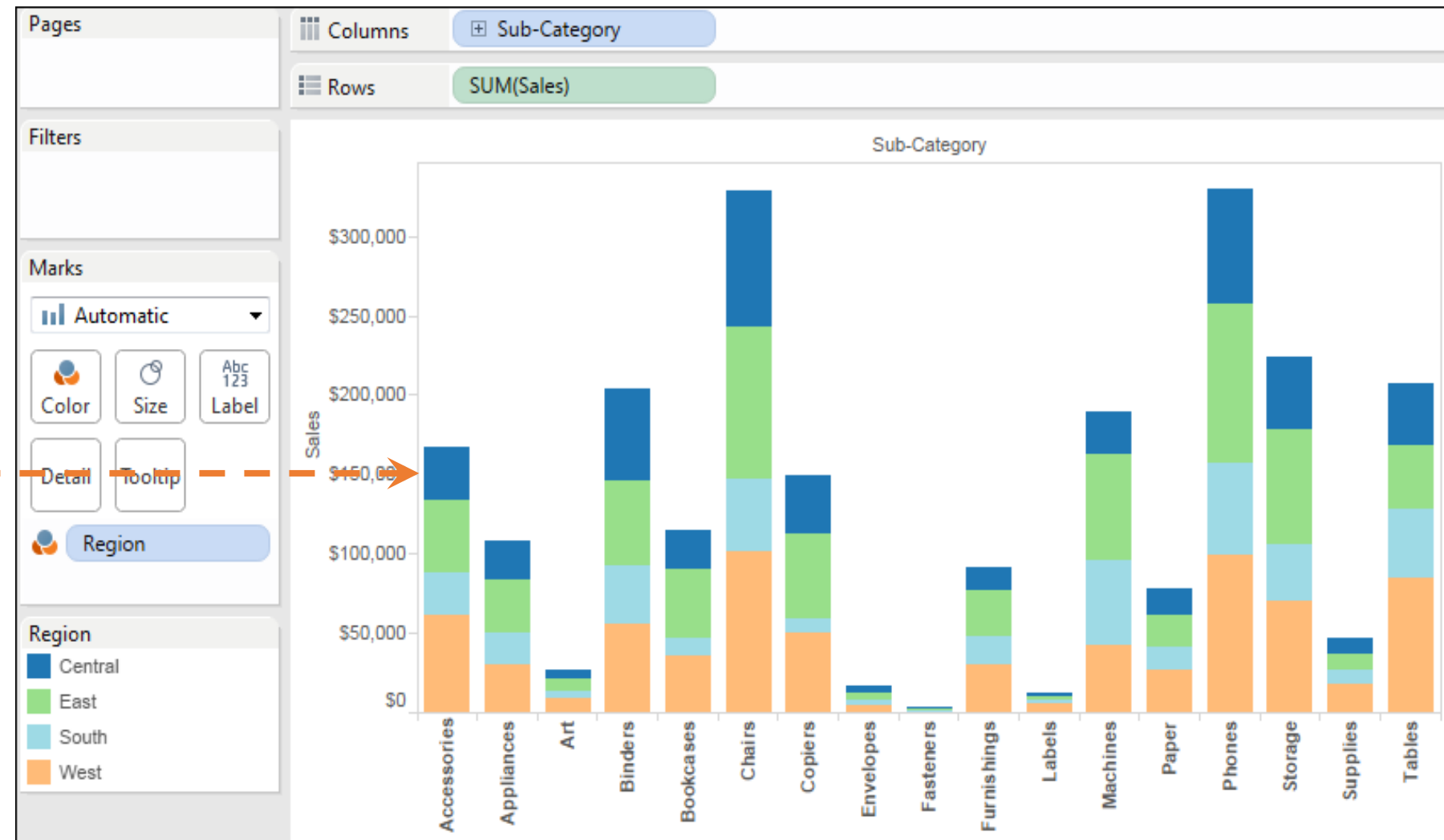The colored bars stacked on each other are showing sales for each region for each sub-category.

Chart Types

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts

Pareto Charts

Waterfall charts are used to analyze how an initial value is affected by a series of intermediate values.

A waterfall chart helps you visualize the cumulative effect of sequential positive or negative values.
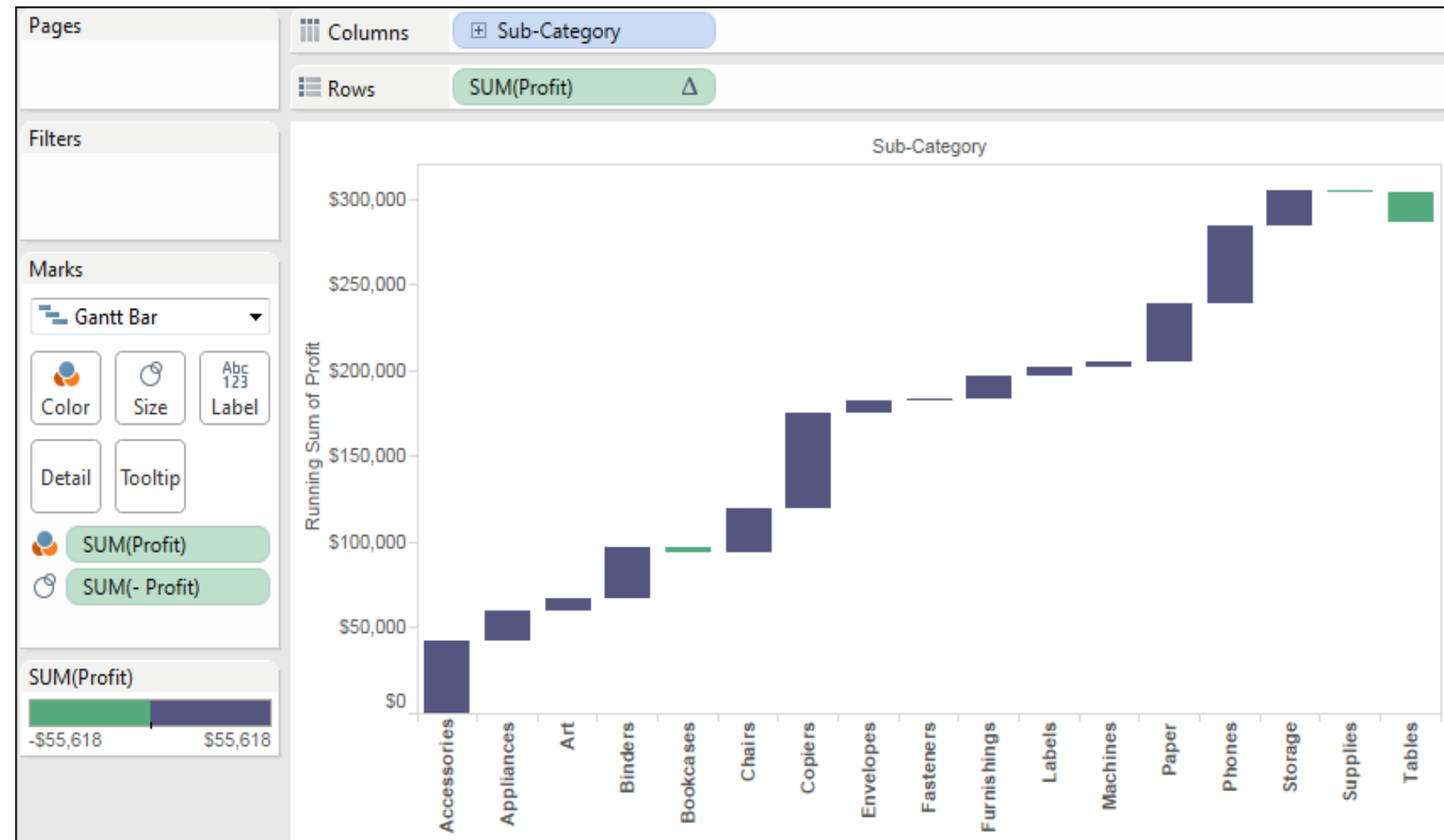
Chart Types

GANTT CHARTS

Gantt charts are used for analyzing the duration of events over time.

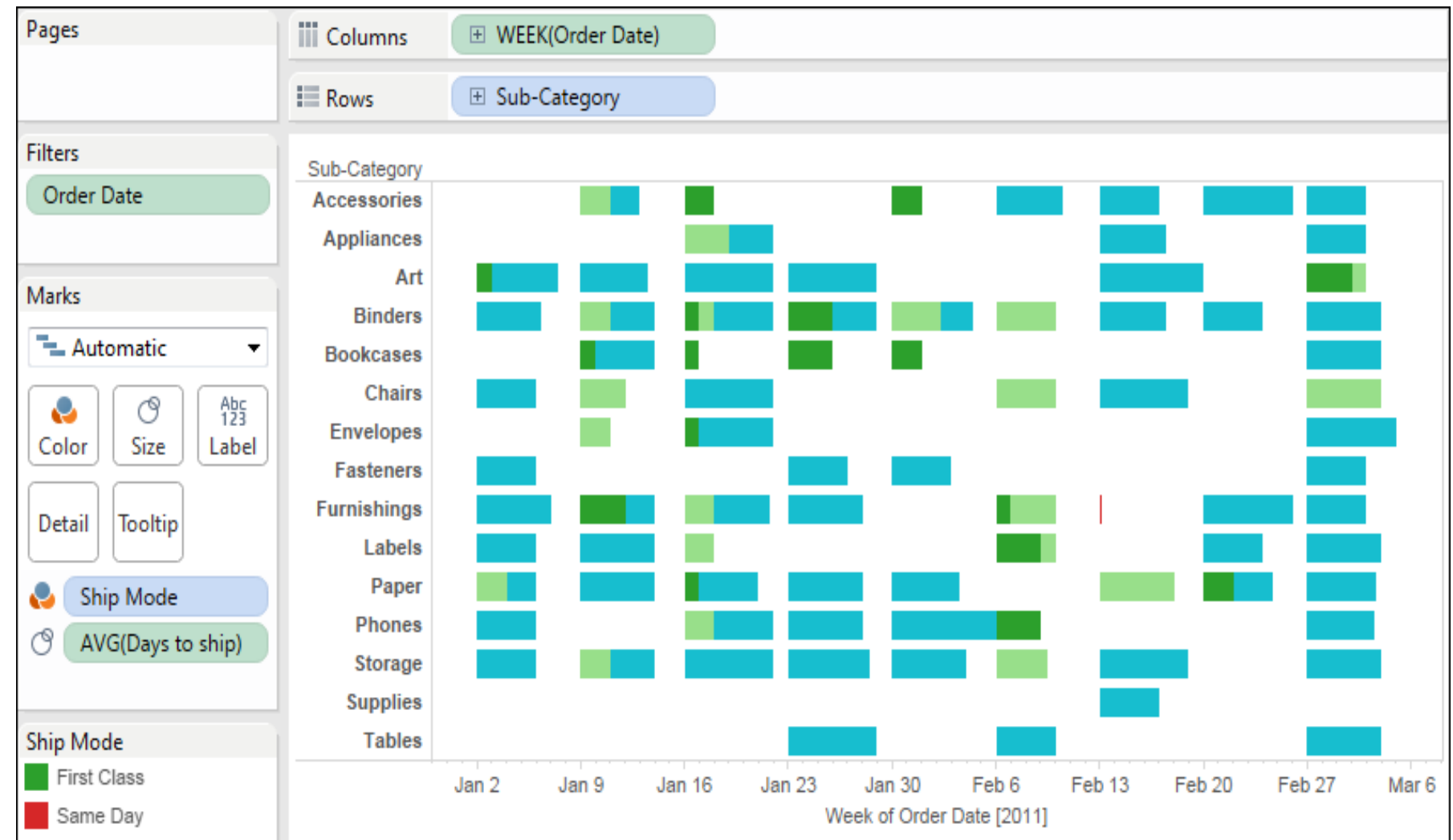In Gantt Bar Charts, each mark shows the duration of that specific dimension member.

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts

Pareto Charts

Chart Types

SPARKLINE CHARTS

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts

Pareto Charts

Sparkline charts are often used to see trends in data over time.

Sparkline charts are characterized by their ability to spot outliers in highly dense data.
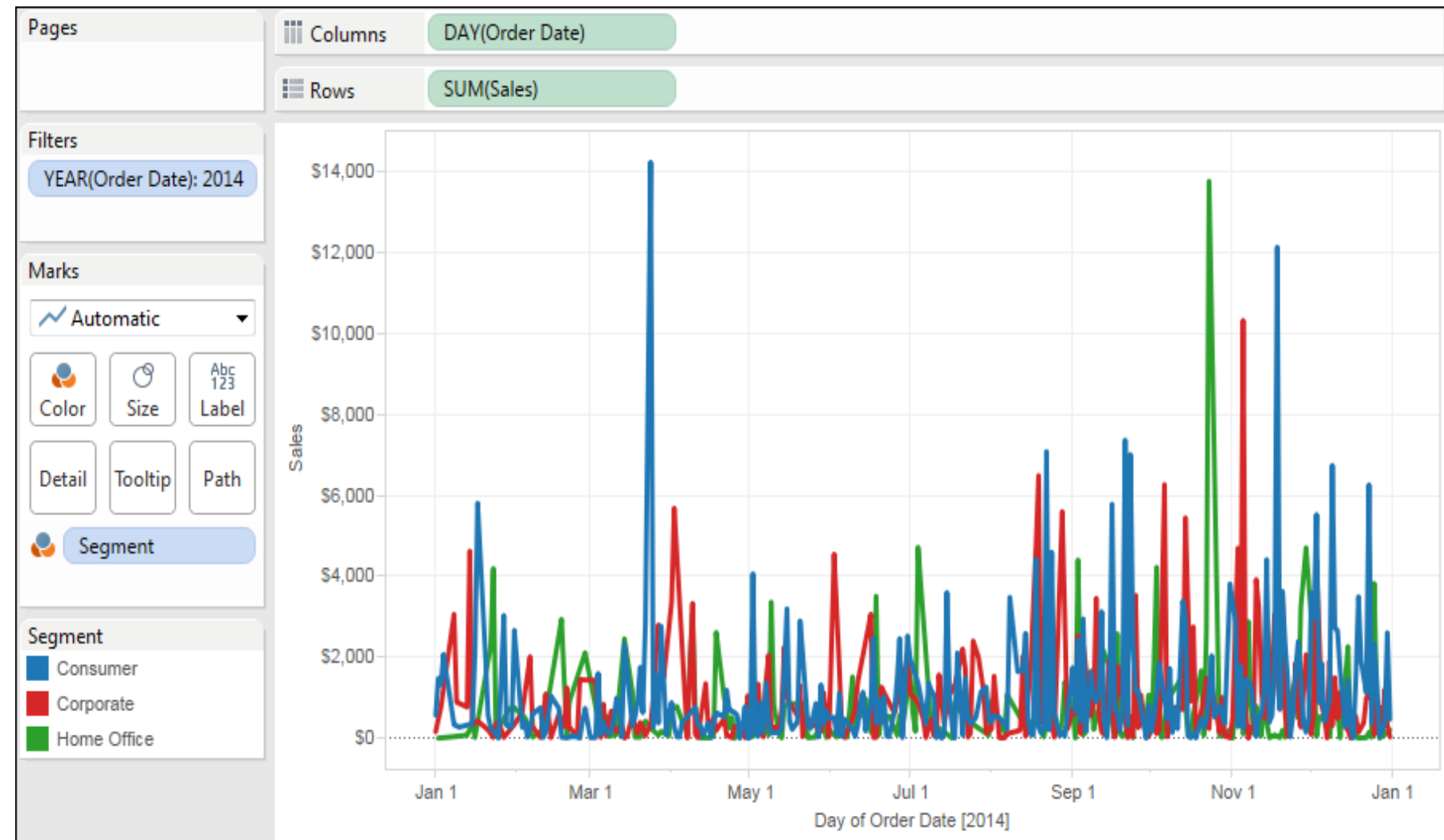
Chart Types

Pareto charts are based on the Pareto principle, also known as the 80–20 rule.

The Pareto principle states that, for many events, roughly 80% of the effects come from 20% of the causes.

Histograms

Pie Charts

Bullet Charts

Combination Charts

Bar Charts

Waterfall Charts

Gantt Charts

Sparkline Charts

Pareto Charts

Pareto charts contain both a bar and a line, where distinct values are represented by a bar in descending order, and the cumulative totals are represented by a line.
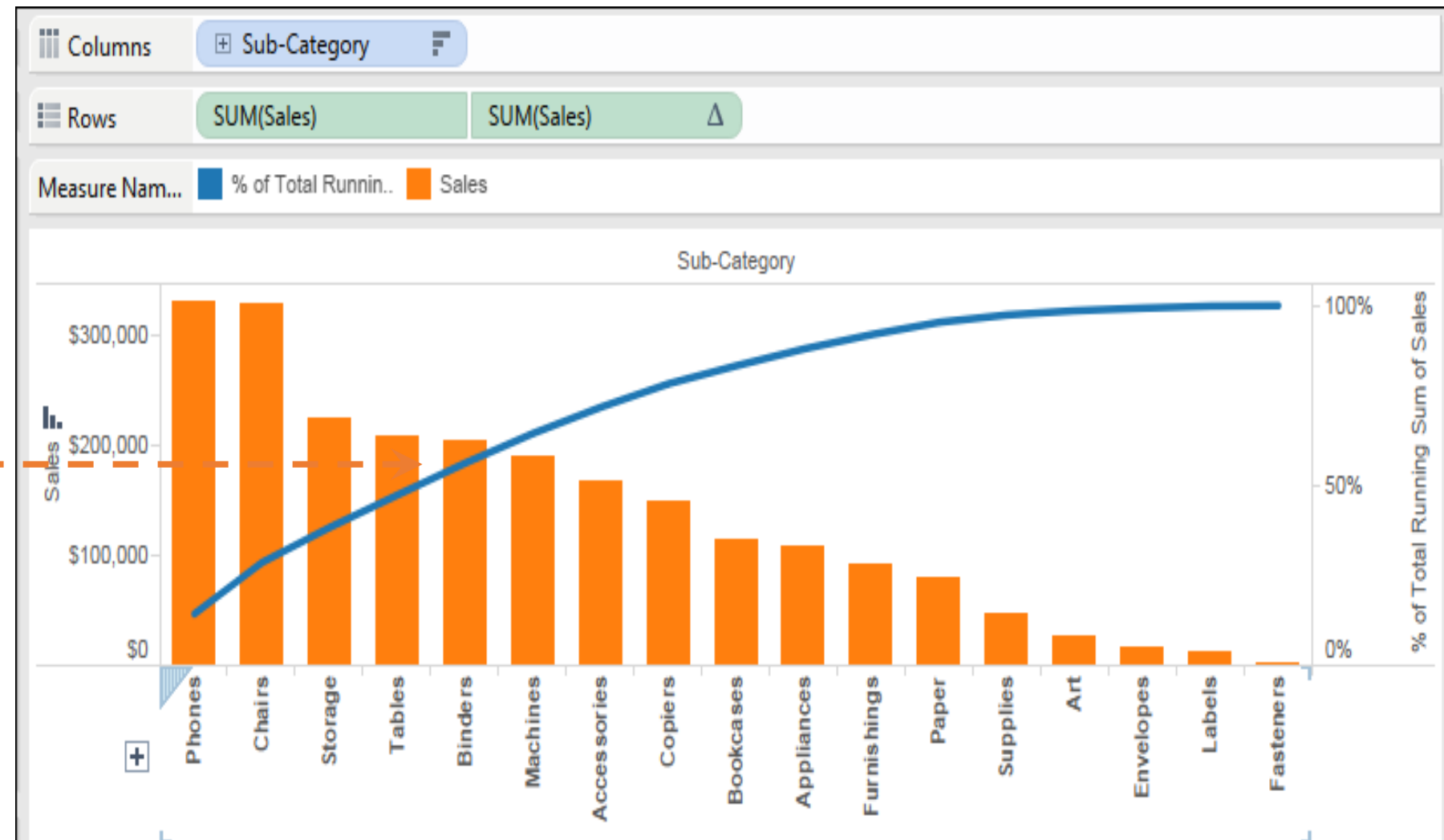
Demo—Creating Pareto Chart

Demonstrate how to create a bar chart and dual axis chart, sort a dimension in descending order by a measure, Add table calculation to calculate running total and a secondary calculation to calculate percent of total of running total

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Creating Charts in Tableau

Topic 2: Maps

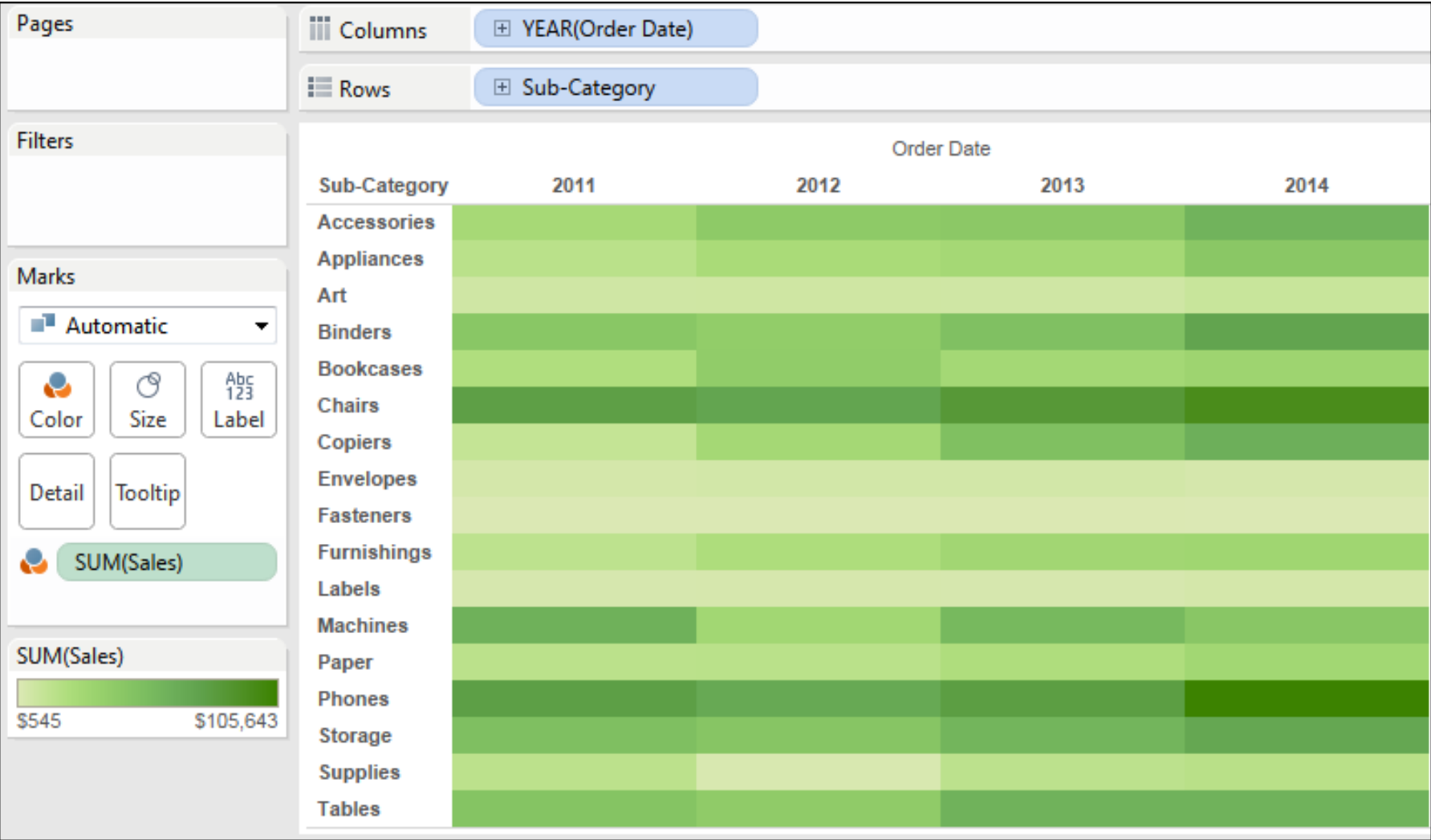- Heat Maps
- Tree Maps

Maps

HEAT MAPS

Heat maps are used to compare categorical data using colors.

They help to visualize measures against dimensions with the help of color schemes.
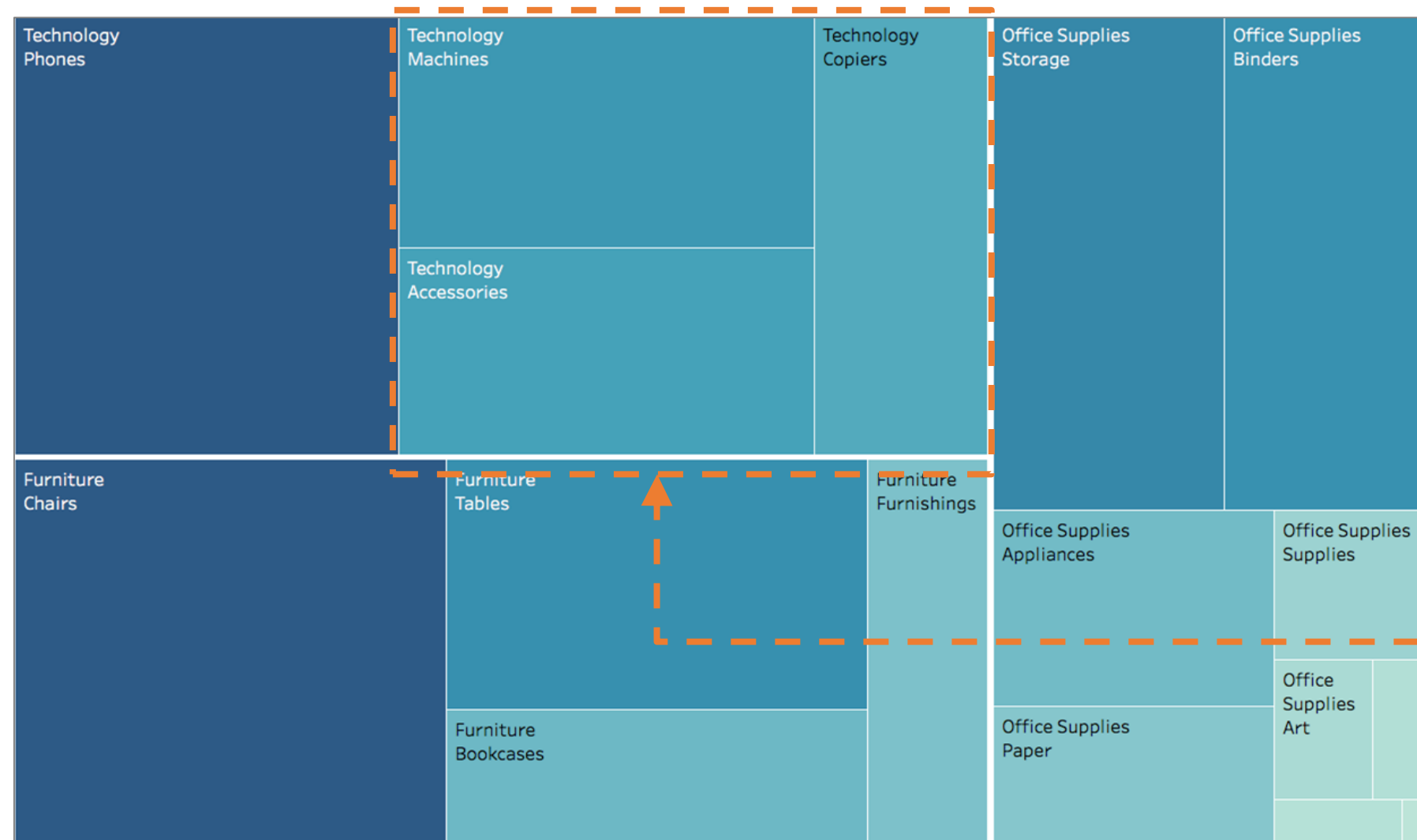
Heat Maps

Tree Maps

Maps

Tree maps are used to present hierarchically structured (tree-structured) data.

Heat Maps

Tree Maps

Each branch of the tree is given a rectangle, which is then tiled with smaller rectangles representing sub-branches.

Creating Charts in Tableau

Topic 3: Plots

- Scatter Plots
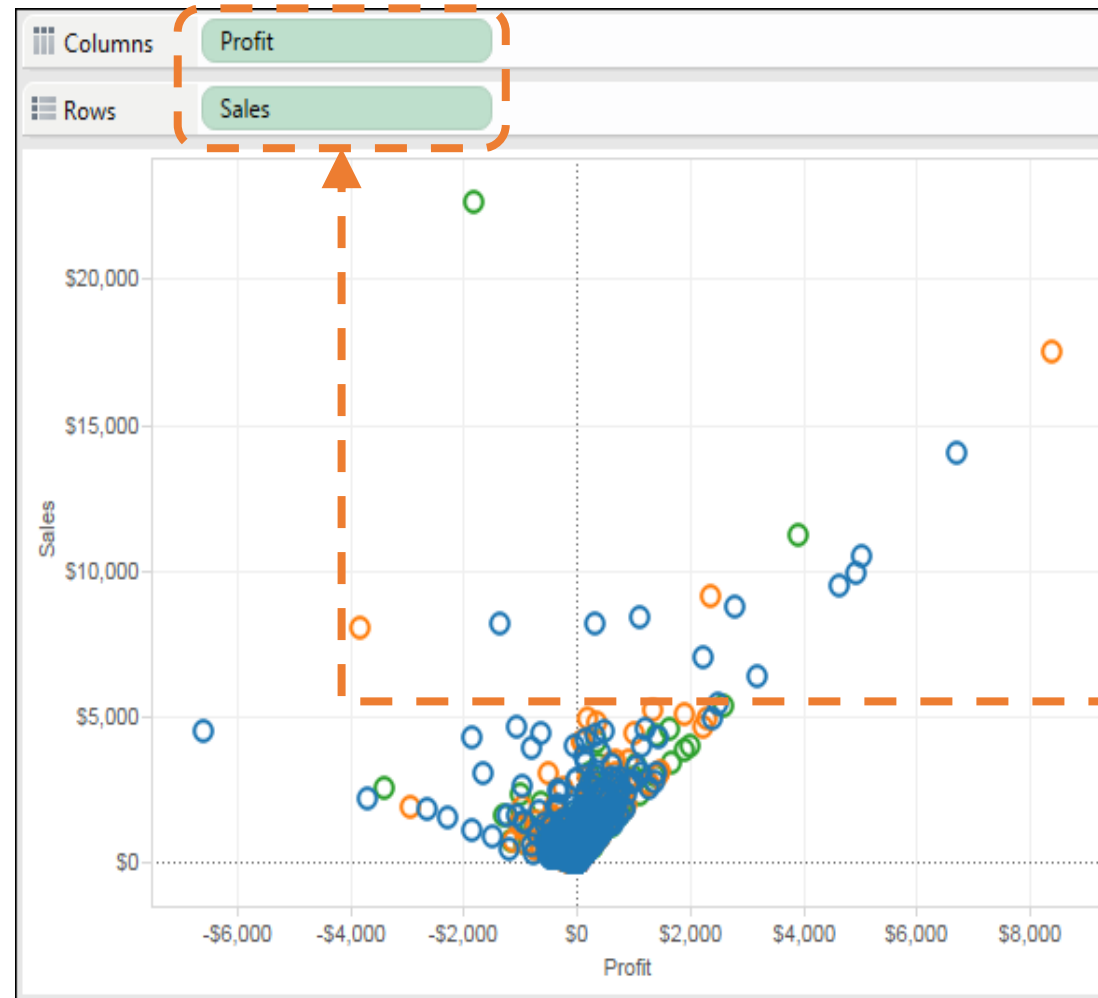- Box Plots

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Plots

Scatter plots are used to visualize relationships between numeric fields.

Scatter plots use one measure on the Columns shelf and at least one measure on the Rows shelf.

Scatter plots are of two types:

Scatter Plots

Box Plots

Matrix of scatter plots

Simple Scatter plot

Demo—Creating Scatter Plots
Demonstrate how to connect to the sample superstore data source, create a view with profit on the x axis and sales on the y axis, color code the scatter using the category dimension, connect the view to a matrix by adding the region dimension
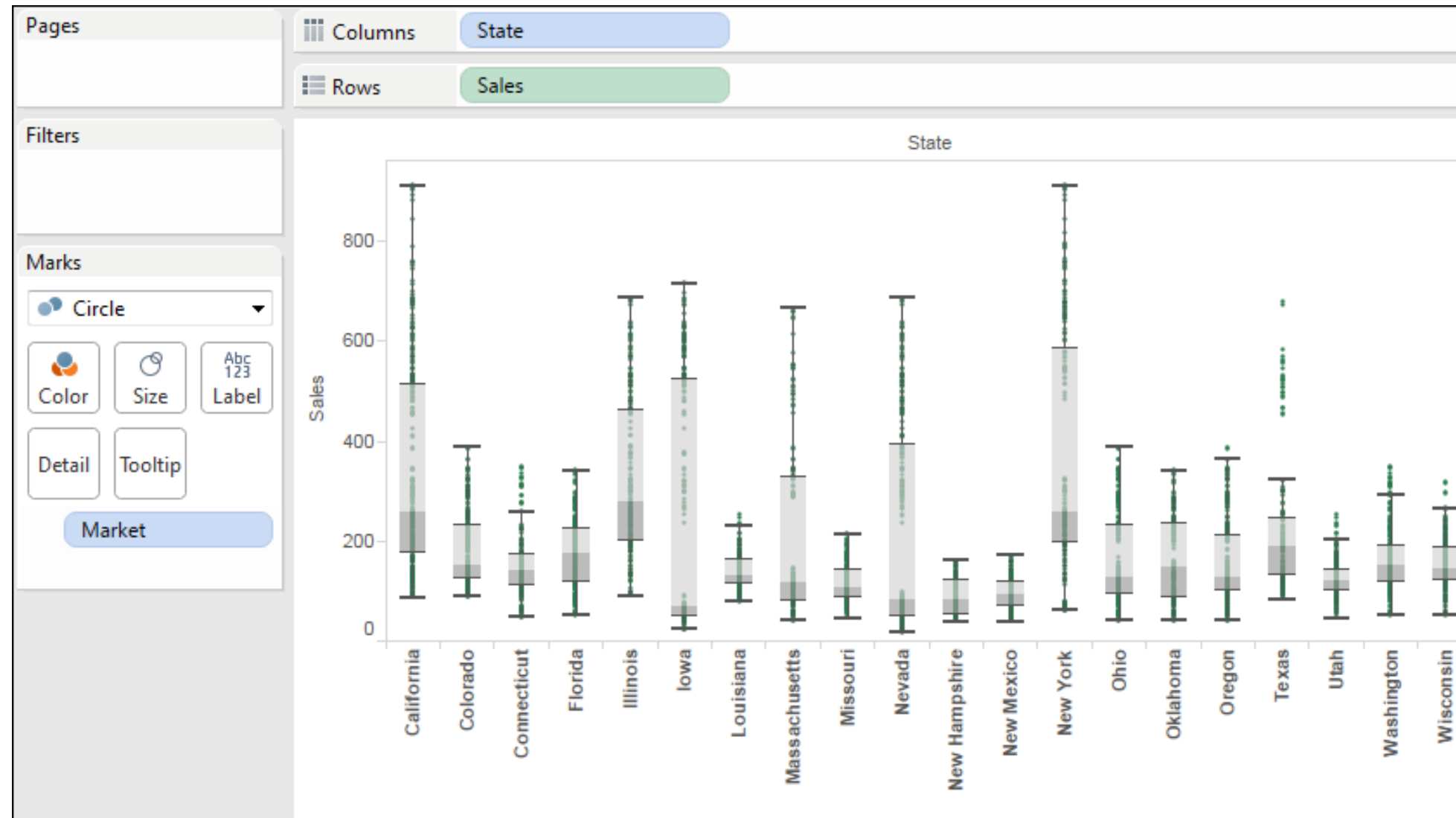
Plots

BOX PLOTS

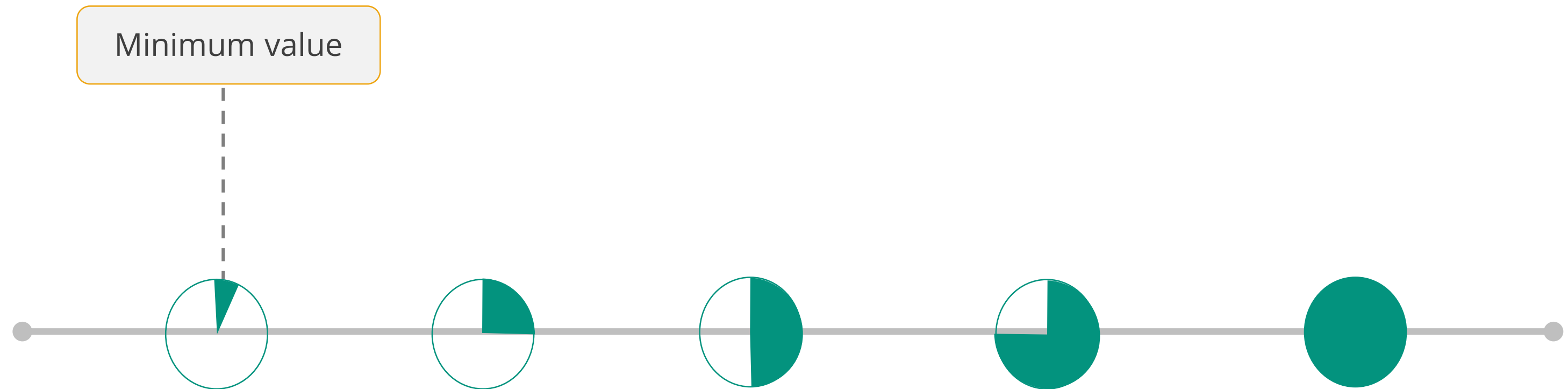Box plots are useful for comparing sets of data.

Scatter Plots

Box Plots

Plots

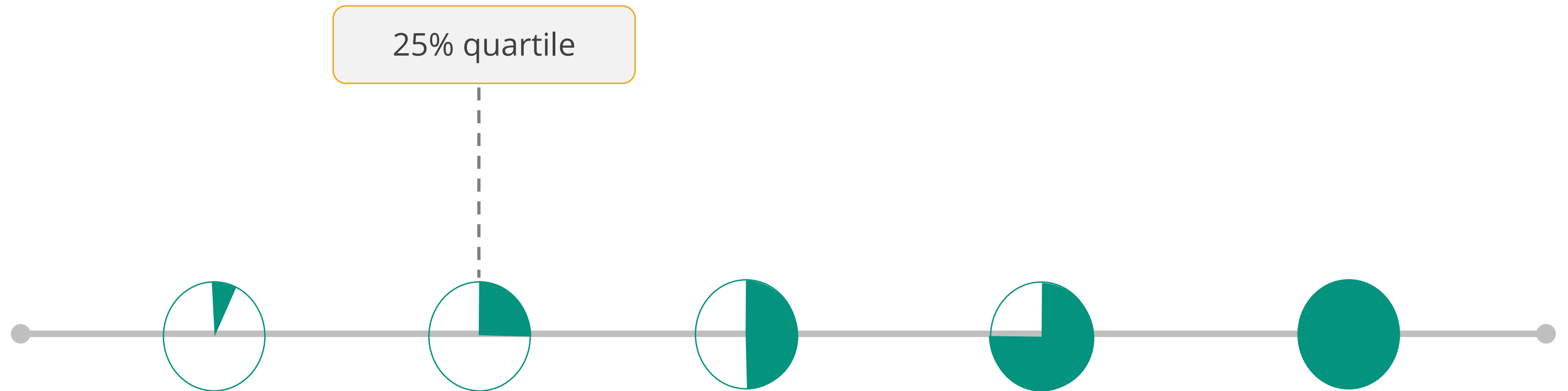A Box plot is a diagram of a distribution of data that can highlight up to five key values within that data:

Minimum value
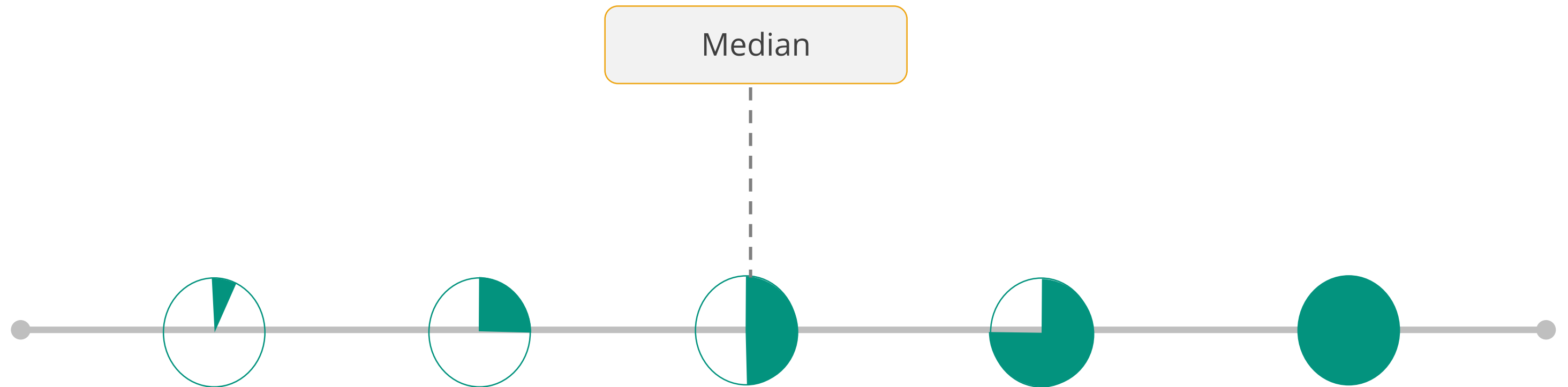
Plots

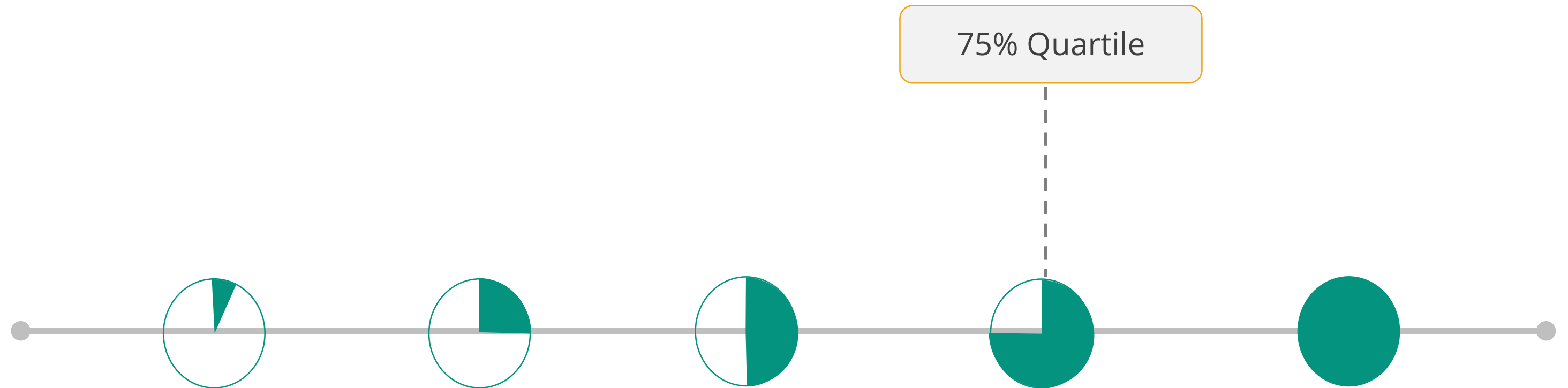## WORKING WITH BOX PLOTS

25% quartile

Plots

WORKING WITH BOX PLOTS

Plots

75% Quartile

Plots

Maximum value
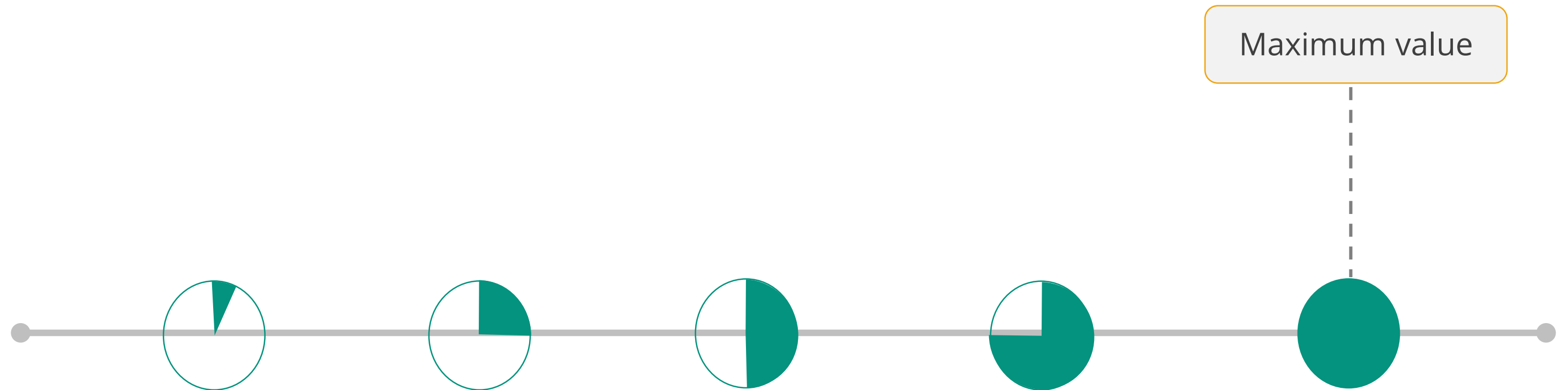
Creating Charts in Tableau

Topic 3: Formatting the axes using edit axis option

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Edit Axis Option

The axis can be formatted to specify the range, scale, and tick mark properties using the Edit Axis window.

Formatting Tick Marks

Edit Axis [Sales]

General | Tick Marks

Major tick marks

- ◯ Automatic
- ◉ Fixed
- ◯ None

Every: 100,000 units

Tick Origin: 0

Minor tick marks

- ◯ Automatic
- ◉ Fixed
- ◯ None

Every: 10,000 units

Tick Origin: 0

Clear | OK | Cancel | Apply

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Edit Axis Option

The axis can be formatted to specify the range, scale, and tick mark properties using the Edit Axis window.

Formatting Tick Marks

Changing the Axis Range

Edit Axis [Sales]

General | Tick Marks

Range

- ( ) Automatic   ☑ Include zero
- ( ) Uniform axis range for all rows or columns
- ( ) Independent axis ranges for each row or column
- ( ) Fixed

Start: End:

| 0 | | 877,961.73465 |

$0 $877,962

Scale   **Titles**

☐ Reversed   Title: Sales

☐ Logarithmic   Subtitle: ☑ Automatic

Clear   OK   Cancel   Apply

Edit Axis Option

The axis can be formatted to specify the range, scale, and tick mark properties using the Edit Axis window.

Formatting Tick Marks

Changing the Axis Range

Formatting the Axis Display

Edit Axis [Sales]

General   Tick Marks

Range

- ◉ Automatic   ☑ Include zero
- ○ Uniform axis range for all rows or columns
- ○ Independent axis ranges for each row or column
- ○ Fixed

Start:

End:

0

877,961.73465

$0 $877,962

Scale

- ☐ Reversed
- ☐ Logarithmic

Titles

Title: Sales

Subtitle: ☑ Automatic

Clear   OK   Cancel   Apply

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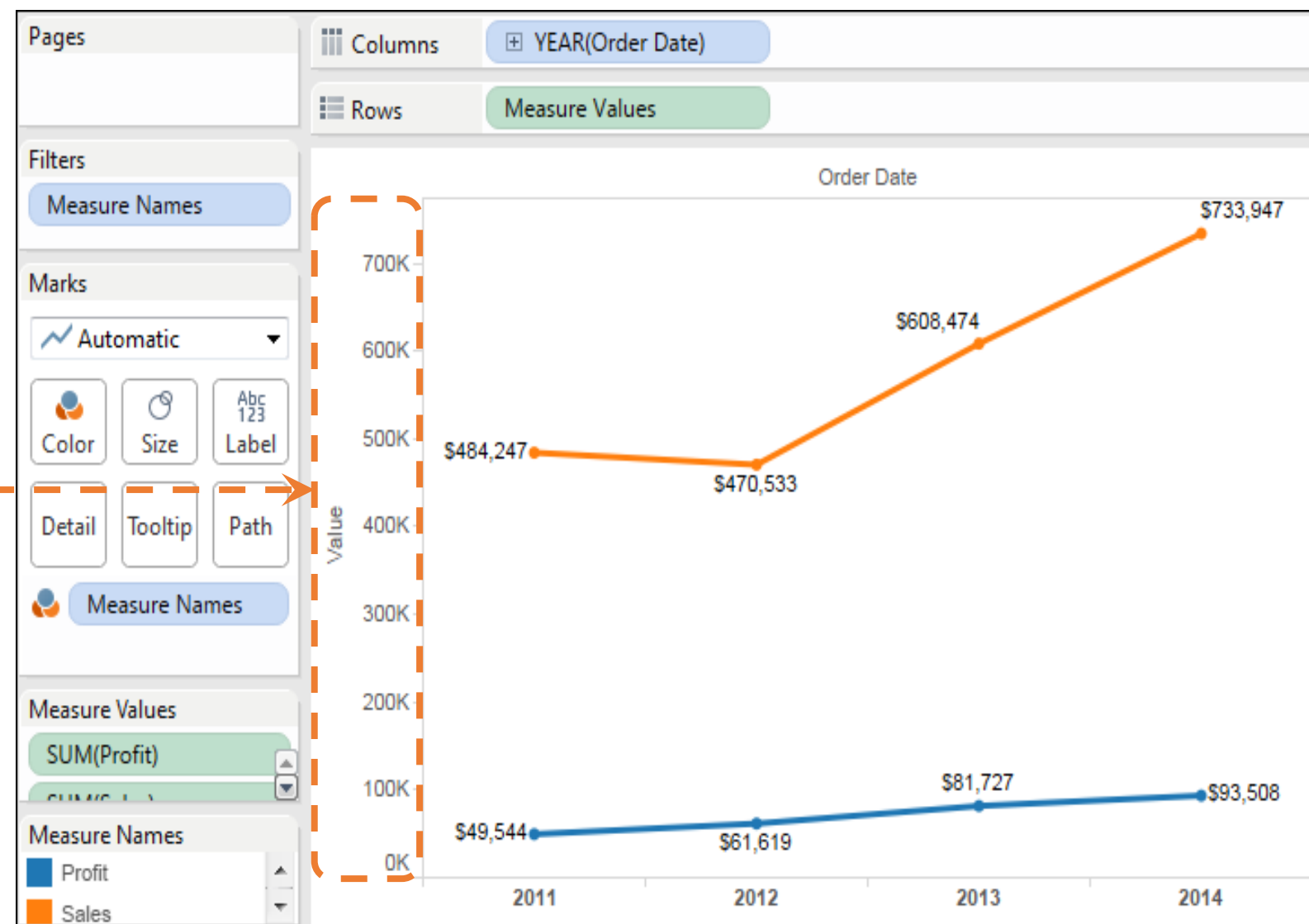
Combined Axis

Combined axes are views that use measures sharing a single axis so that all the marks are displayed in a single pane.

Combined axes use two or more measures that share a single axis.

Combined Axes showing sales and profit values

Creating Charts in Tableau

Topic 5: Using Titles, Captions, and Tooltips

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Using Titles, Captions, and Tooltips

Titles are useful for labeling sheets; they give meaningful names to your sheets.

Enabling Titles	Formatting Titles	Applying Shading and Borders

Reset Cards

Title

Caption

Summary

Legends ▶

Quick Filters ▶

Parameters ▶

Map Legend

✓ Columns Shelf

✓ Rows Shelf

✓ Pages Shelf

✓ Filters Shelf

Measure Values Shelf

Current Page

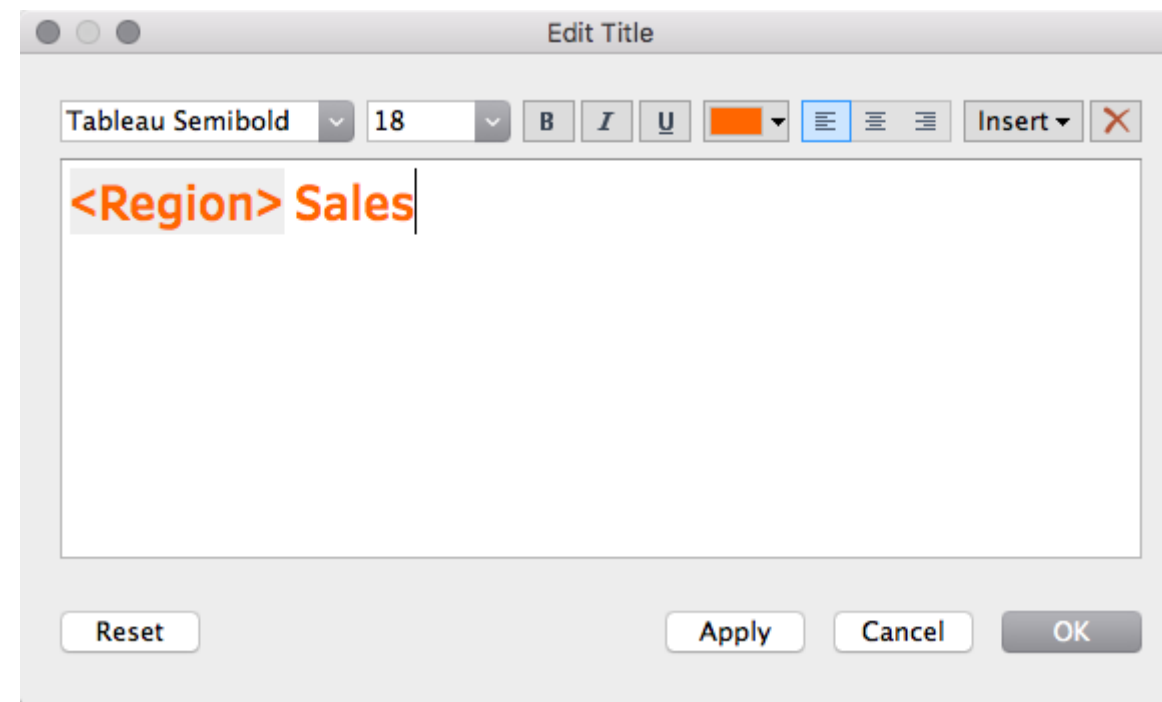✓ Marks

Using Titles, Captions, and Tooltips

ADDING TITLE TO VIEWS

Titles can be formatted with different font types, sizes, and colors and can include static text strings, fields, or combinations of both.

| Enabling Titles | Formatting Titles | Applying Shading and Borders |

Using Titles, Captions, and Tooltips

Titles can be formatted with shading and borders to create a custom look:

Enabling Titles	Formatting Titles	Applying Shading and Borders

Using Titles, Captions, and Tooltips

Captions are useful for adding descriptions to the view. Use a caption to give a short description of what users can analyze from the view.
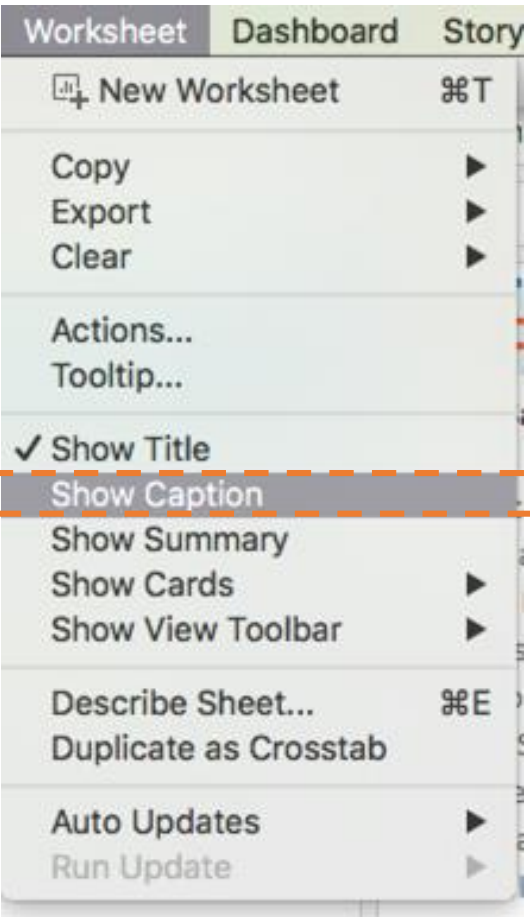
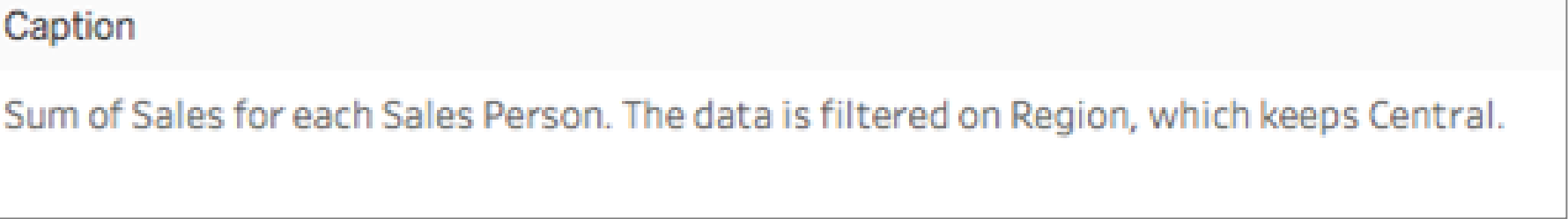| Enabling Captions	Formatting Captions	Applying Shading and Borders

Using Titles, Captions, and Tooltips

ADDING CAPTIONS TO VIEWS

Enabling Captions	Formatting Captions	Applying Shading and Borders

Caption

Sum of Sales for each Sales Person. The data is filtered on Region, which keeps Central.
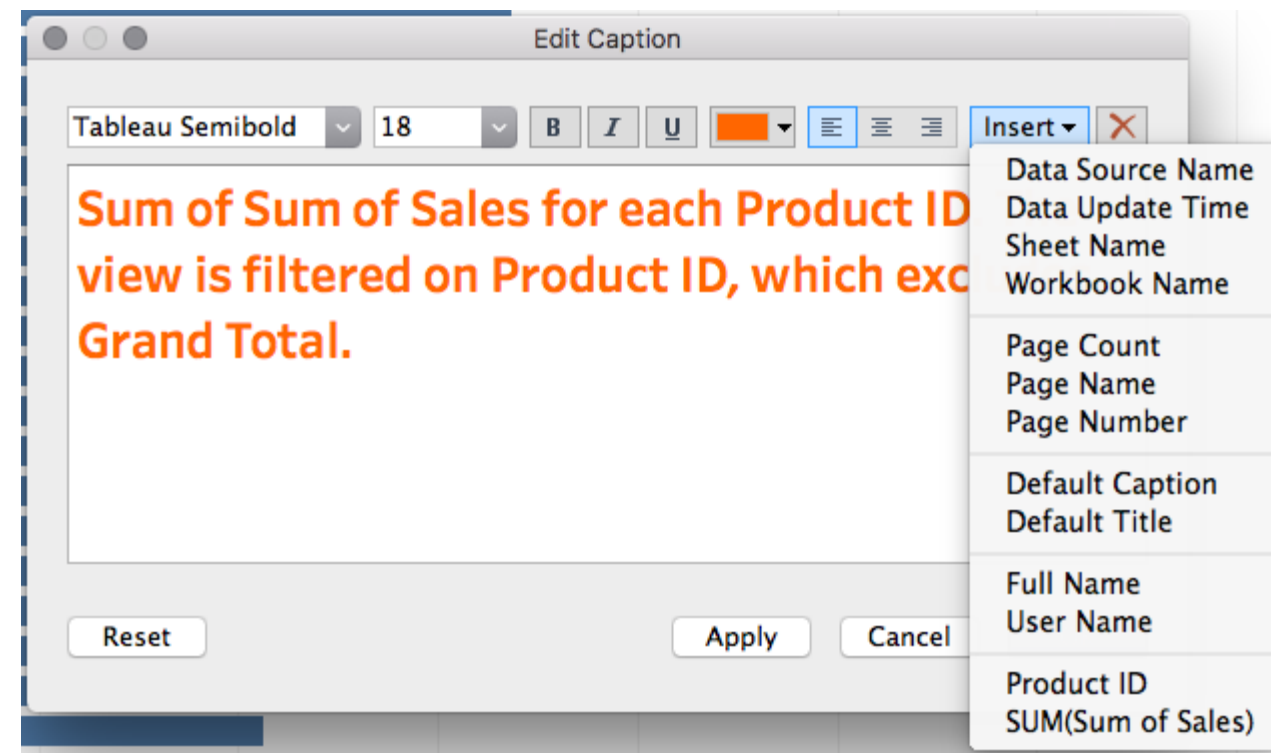
Using Titles, Captions, and Tooltips

ADDING CAPTIONS TO VIEWS

Captions can be formatted like Titles, with custom fonts, sizes, and colors and can include text strings, fields, or combinations of both.

Enabling Captions

Formatting Captions
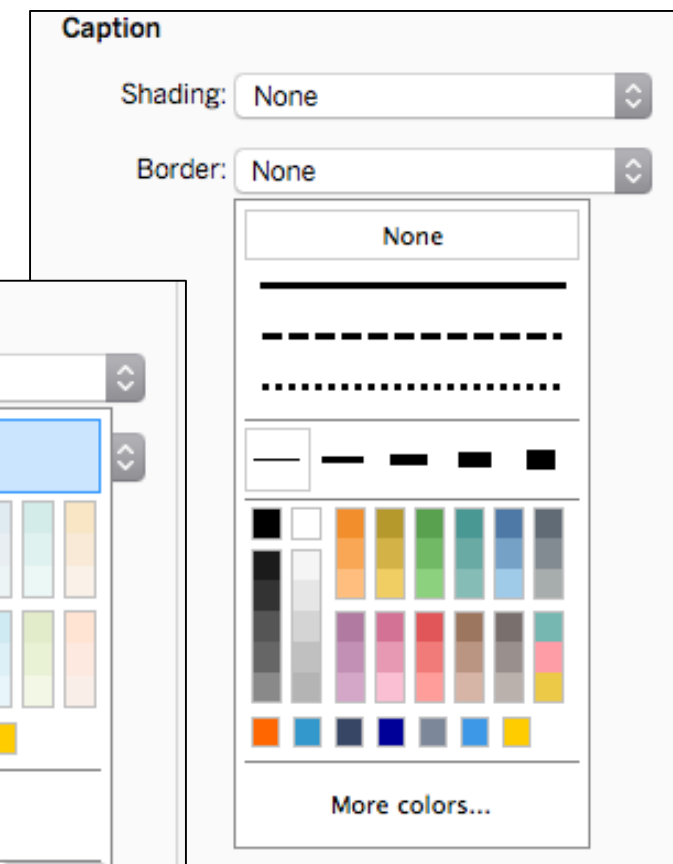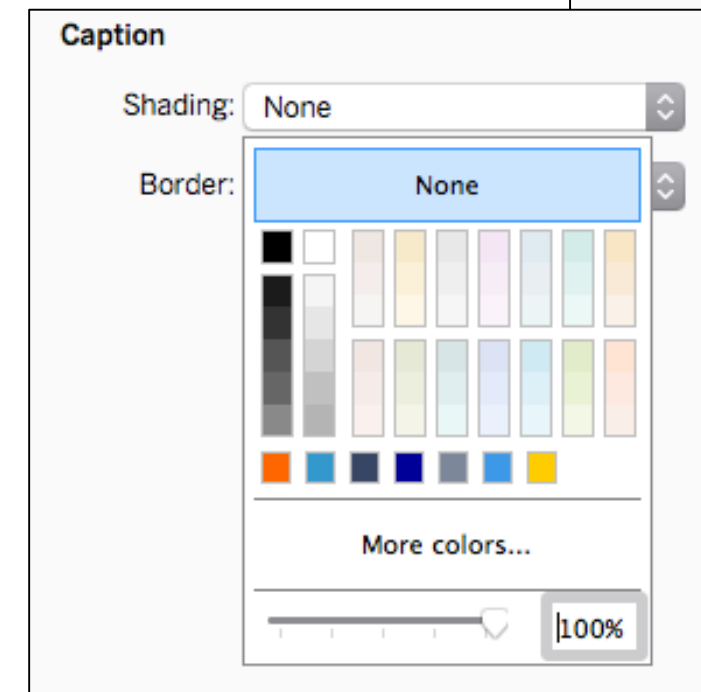
Applying Shading and Borders

Using Titles, Captions, and Tooltips

Captions can be formatted like titles, with custom shading and borders.

Enabling Captions

Formatting Captions

Applying Shading and Borders
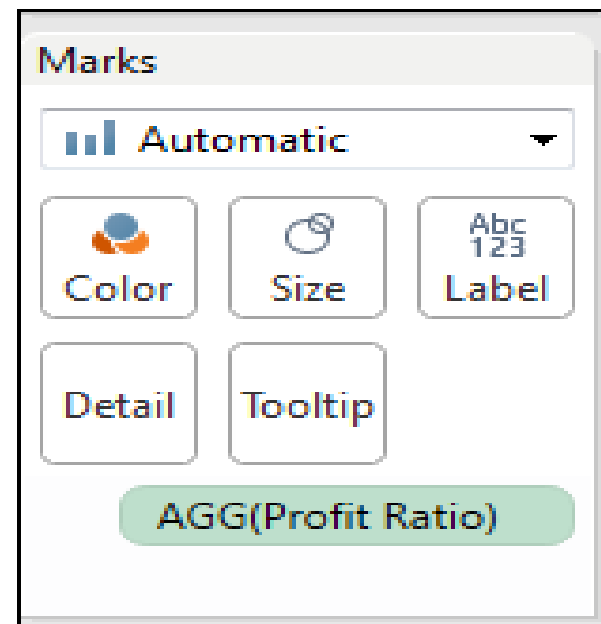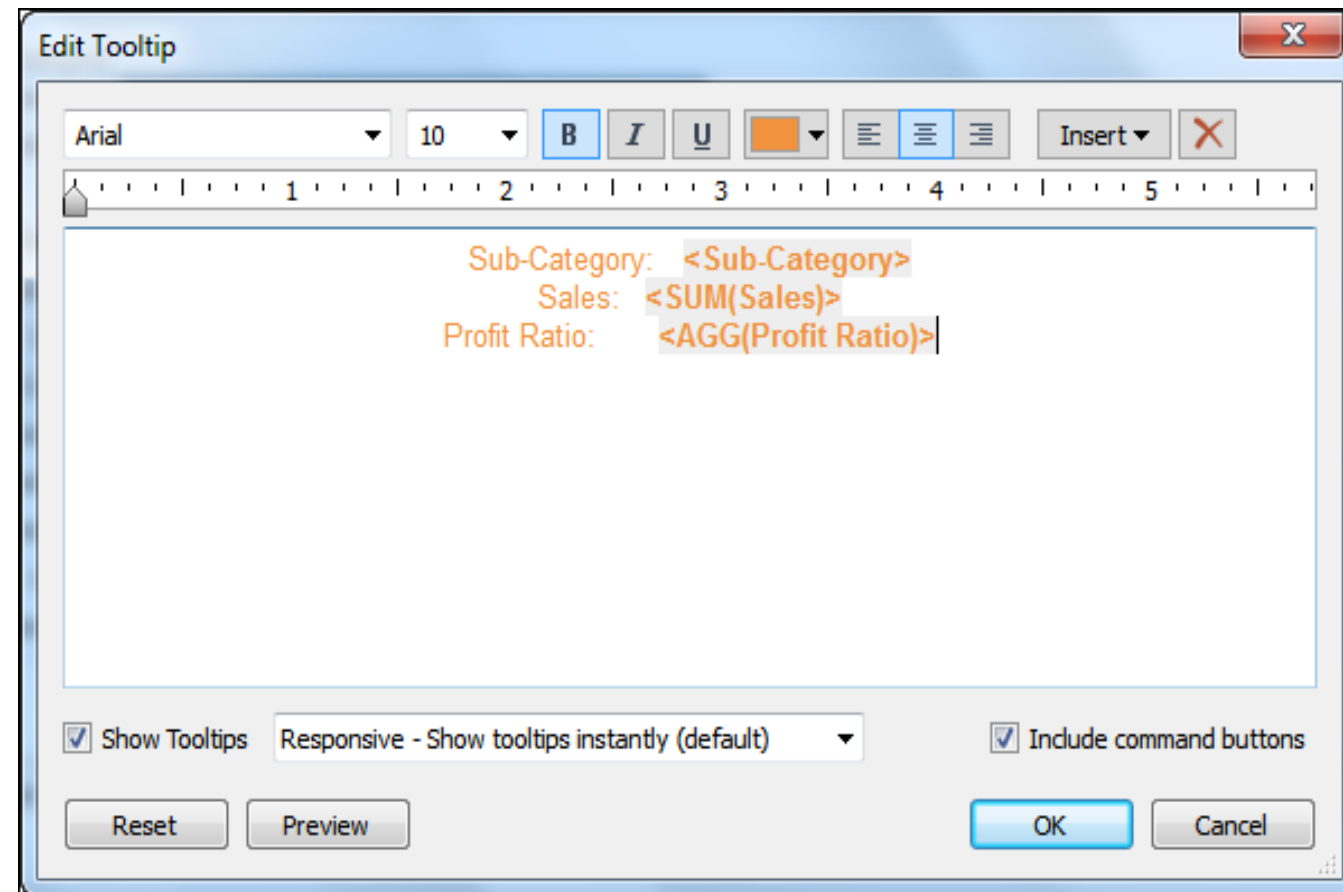
Using Titles, Captions, and Tooltips

ADDING TOOLTIPS TO VIEWS

- Tooltips are useful to provide additional information that is not already present in the view.

- They are displayed when you hover over a mark in the view.

- You can add any number of fields in the tooltip by dragging them to the Tooltip shelf.

Additional field added to the Tooltip shelf

Formatting a tooltip

Using Titles, Captions, and Tooltips

ADDING TOOLTIPS TO VIEWS

- The image below displays sales by subcategory in a bar chart. Title and caption have been enabled to label the view.
- Profit ratio values are additionally displayed in the tooltip.

Title Enabled

Customized Tooltip

Additional field added to the tooltip shelf

Caption Enabled
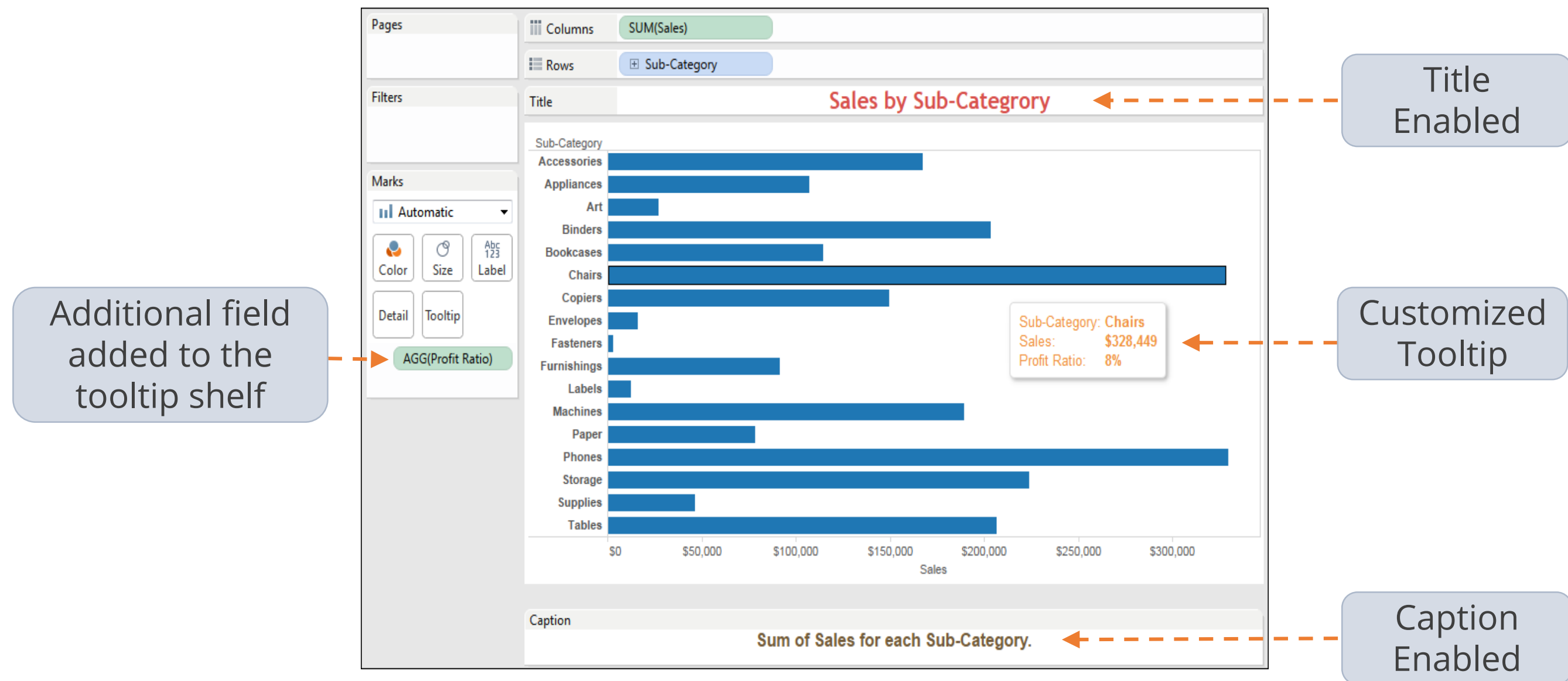
Quiz

The Measure Values shelf is to create a(n) _____.

a.   blended axis chart

b.   dual axis chart

c.   individual axis chart

d.   bullet chart

QUIZ 1

The Measure Values shelf is used to create a(n) _____.

a. blended axis chart

b. dual axis chart

c. individual axis chart

d. bullet chart

The correct answer is **a.**

The Measure Values Shelf is used to create a blended axis chart.

QUIZ 2

Which of the following shelves is used for creating a motion chart?

a. Filters shelf

b. Pages shelf

c. Angle shelf

d. Detail shelf

QUIZ 2

Which of the following shelves is used for creating a motion chart?

a. Filters shelf

b. Pages shelf

c. Angle shelf

d. Detail shelf

The correct answer is **b.**

The Pages shelf is used to create a motion chart.

QUIZ 3

Which of the following visualizations will be appropriate for comparing actual sales to target sales?

a. Gantt chart

b. Waterfall chart

c. Pareto chart

d. Bullet graph

QUIZ 3

Which of the following visualizations will be appropriate for comparing actual sales to target sales?

a. Gantt chart

b. Waterfall chart

c. Pareto chart

d. Bullet graph

The correct answer is **d.**

The bullet graph be appropriate for comparing actual sales to target sales.

Which of the following visualizations will you use to depict the distribution of a set of data?

a. Box plot

b. Waterfall chart

c. Pareto chart

d. Bullet graph

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QUIZ 4

Which of the following visualizations will you use to depict the distribution of a set of data?

   a.   Box plot

   b.   Waterfall chart

   c.   Pareto chart

   d.   Bullet graph

The correct answer is   **a.**

Box plot is used to depict the distribution of a set of data.

QUIZ 5

In a _____, the marks are stacked.

a. box plot

b. bar in bar chart

c. dual axis chart

d. combination chart

In a _____, the marks are stacked.

a. box plot

b. bar in bar chart

c. dual axis chart

d. combination chart

The correct answer is **b.**

In a bar in bar chart, the marks are stacked.

Titles, Captions, and Tooltips are _____

a.   created manually by the user

b.   created automatically by Tableau

c.   created automatically, but can be customized by the user

d.   None of the above

Titles, Captions, and Tooltips are _____

a. created manually by the user

b. created automatically by Tableau

c. created automatically, but can be customized by the user

d. None of the above

The correct answer is   **c.**

Titles, Captions, and Tooltips are created automatically by Tableau, but the user can edit them to make them more appropriate for the worksheet and meaningful to the user.

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Guided Exercise

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Problem Statement

Genelia now needs to design an advertising campaign for certain product categories across various regions. To start with, she needs to analyze how each of the product categories is performing in different regions. For this, she needs to create a bar in bar chart that shows the sales values for each product category across various regions. Using the Sample-Superstore saved data source, create a worksheet and answer the following questions:

- Which product category has the highest sales in the East region?

- Which region recorded the lowest sales of office supplies?

Solution

- Which product category has the highest sales in the East region?
  Technology

- Which region recorded the lowest sales of office supplies?
  South
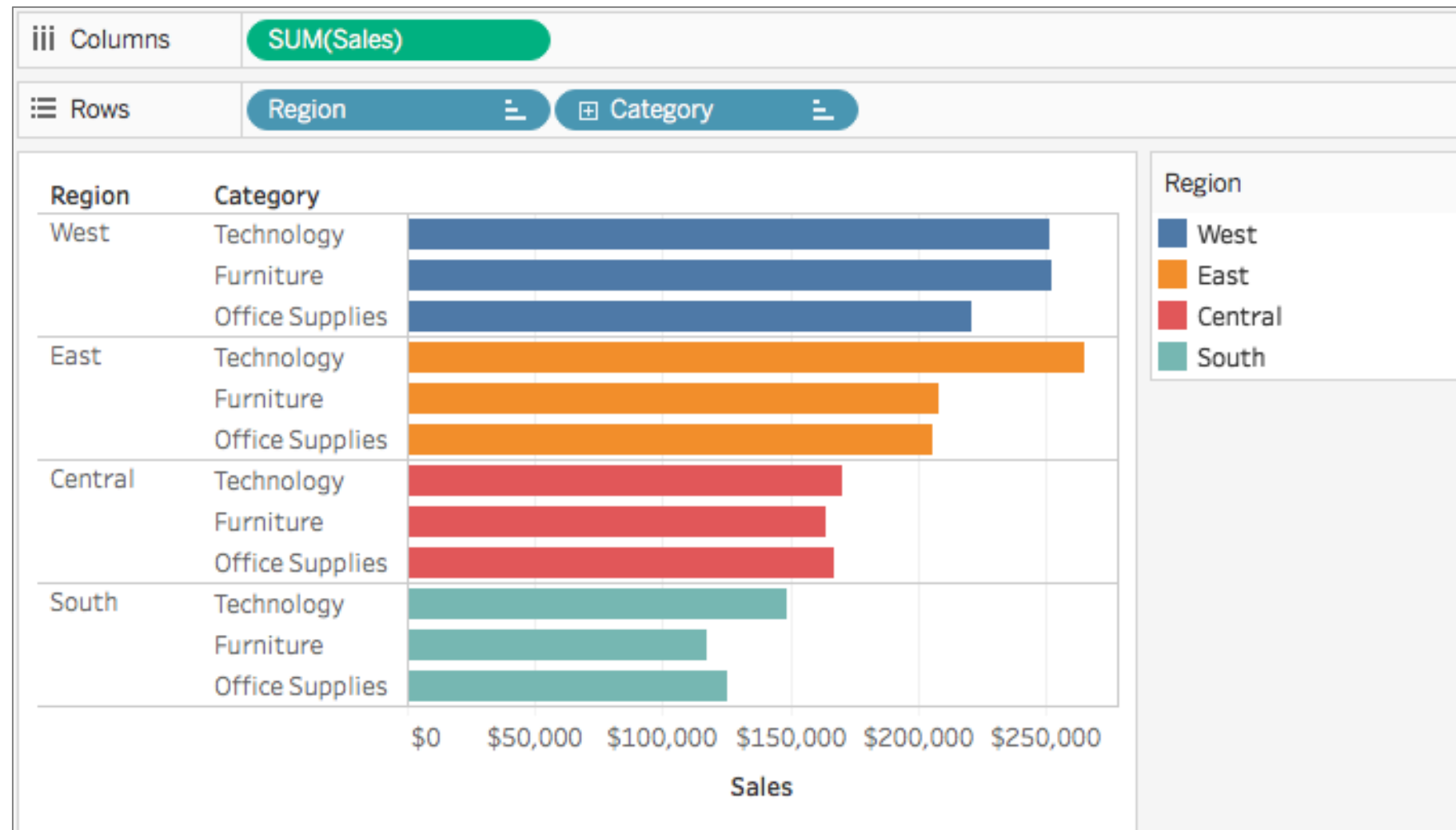
Key Takeaways

- Histograms are used to display the distribution of values in a field.

- Bullet charts are used to compare one measure to one or more measures.

- Combined axis charts are views in which multiple measures are plotted on a single axis.

- Scatter plots are used to visualize relationships between numeric fields.

- Pages shelf allows you divide your analyses into a series of pages.

- Pareto charts are based on the Pareto principle, also known as the 80–20 rule.

- Adding titles, captions, and tooltips to charts helps the users understand the data
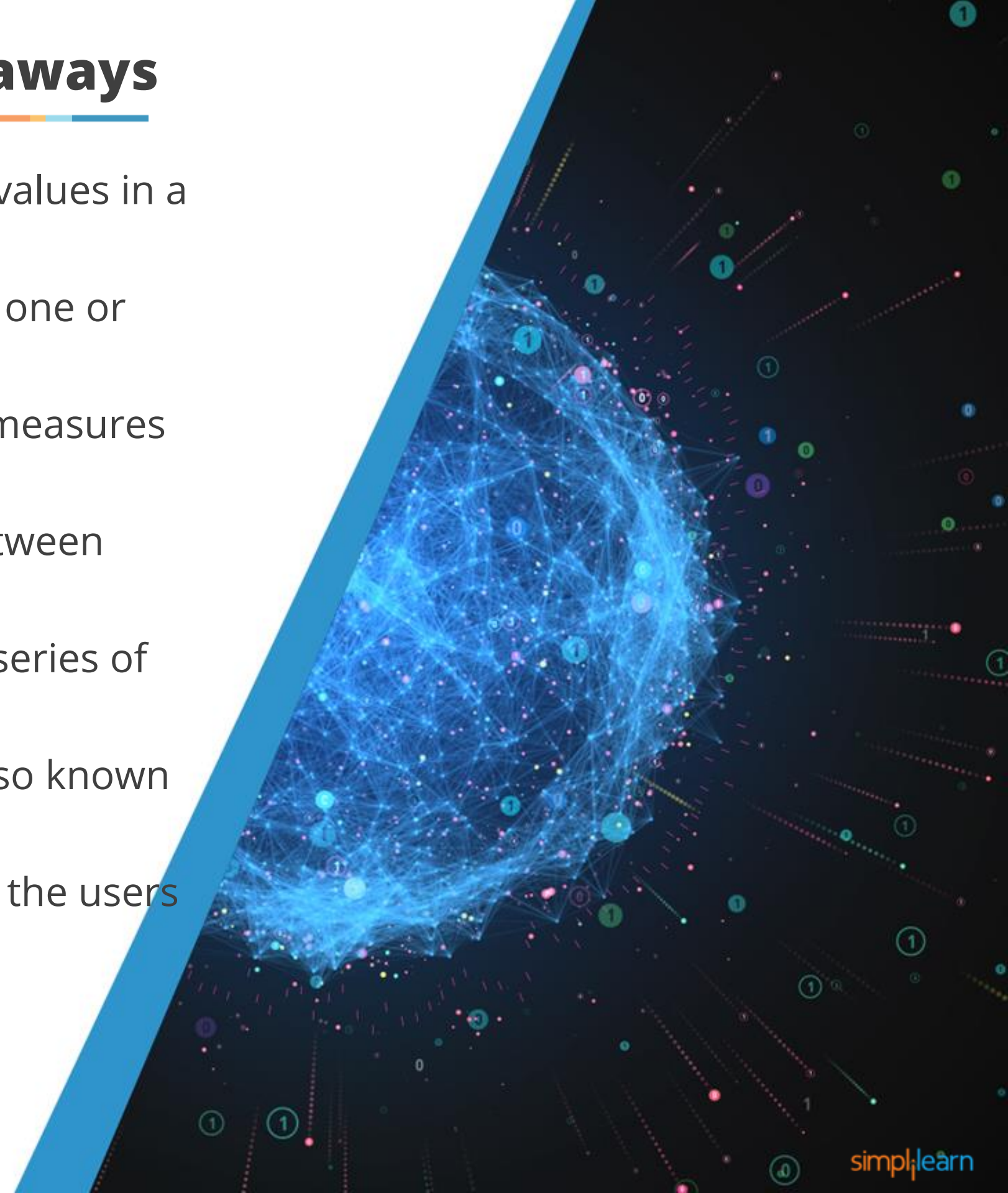
This concludes "Creating Charts in Tableau."

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