Tableau Desktop 10 Qualified Associate

Lesson 01—Exploring Tableau Interface

TABLEAU DESKTOP 10

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What's In It For Me

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

- Describe the components and terminologies of Tableau
- Describe Tableau Desktop Public edition, view, and data pages
- Explain the fields generated by Tableau automatically

Quick Recap: Why Tableau?

Meet Genelia, a data scientist. She wants to analyze the US employment by state as part of her new project.

What are the possible challenges that she might face?

She needs:

- To handle a huge amount of data (big data)
- To visualize the data
- To generate reports in the correct format

Quick Recap: Why Tableau?

Genelia's colleague suggested her to use Tableau!

- Tableau is a leading
  - business intelligence,
  - analytics, and
  - visualization application tool.
- It helps to analyze data to learn and make better decisions.
- It generates quick and correct reports on visualizations, which can be customized according to our needs.

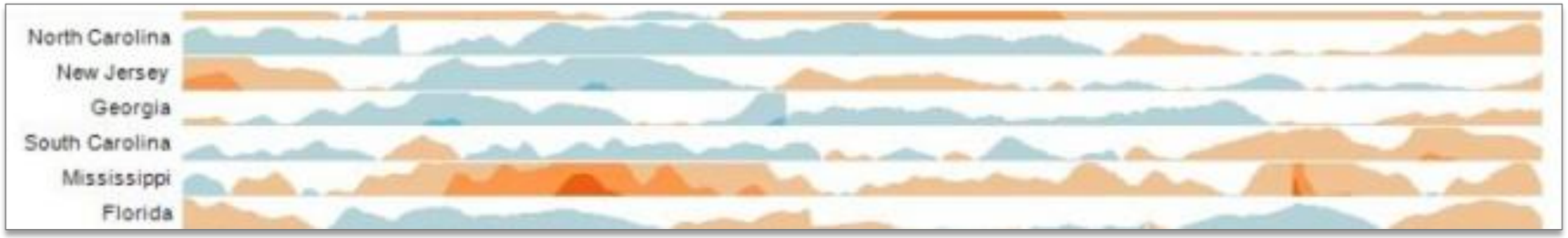
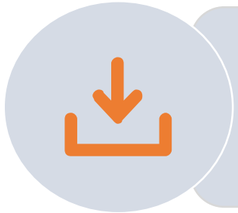


Tableau visualization on US employment

Download Tableau Desktop Public

Tableau Public latest version (10.x) can be downloaded from:



https://public.tableau.com/en-us/s/download

Introduction to Tableau Interface

Topic 1: Getting Started with Tableau Application

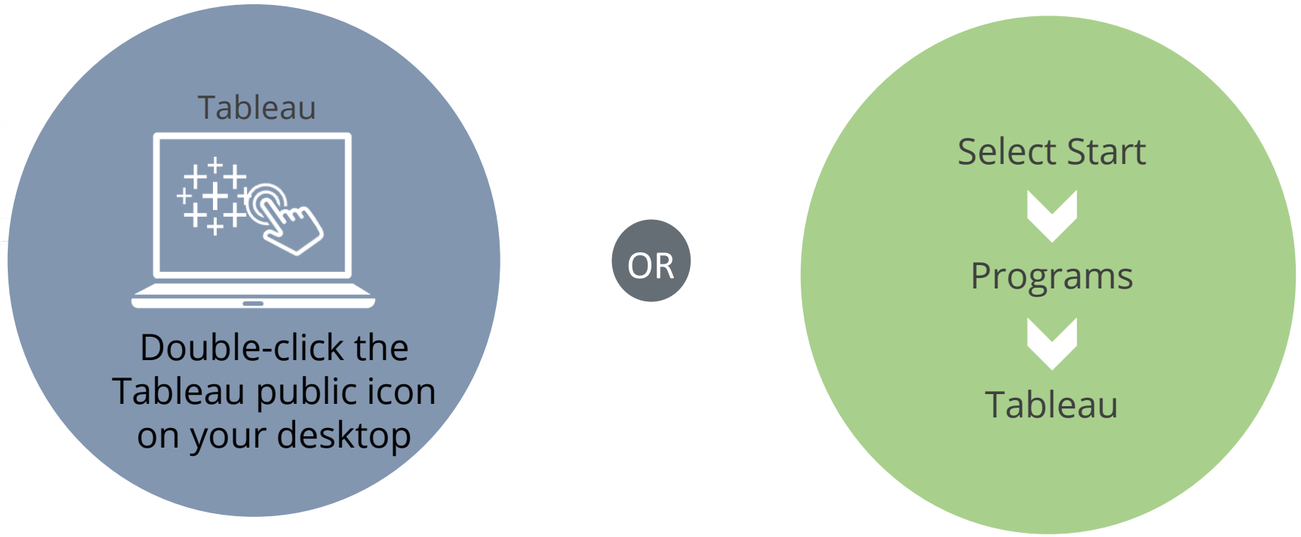
TABLEAU DESKTOP 10

- Opening Tableau Public Application
- Exploring the start page
- Exploring the data source page
- Exploring Tableau workspace
- Tableau files and folders

Getting Started with Tableau Application

OPENING TABLEAU APPLICATION

One of the following methods can be used to open the Tableau Public application:



This will take you to the Tableau start page.

Getting Started with Tableau Application

Opening Tableau Application

Exploring the Start Page

Exploring the Data Source Page

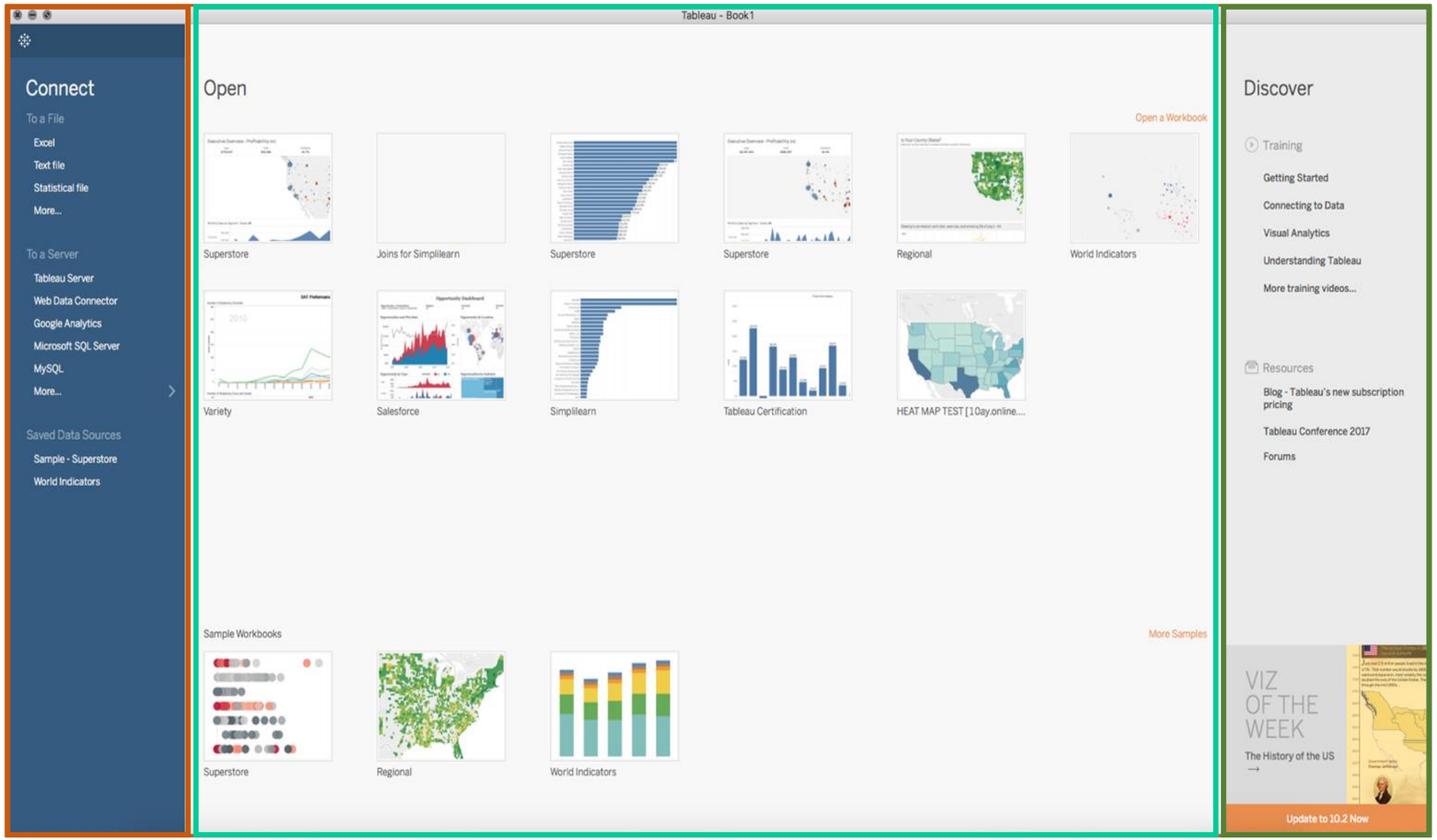
Exploring Tableau Workspace

Tableau Files and Folders

EXPLORING THE START PAGE

The start page in Tableau Public is a central location. Through this, you can:

- **Connect** to your data.
- **Access (through open section)** most recently used workbooks.
- **Discover** content produced by the Tableau community.

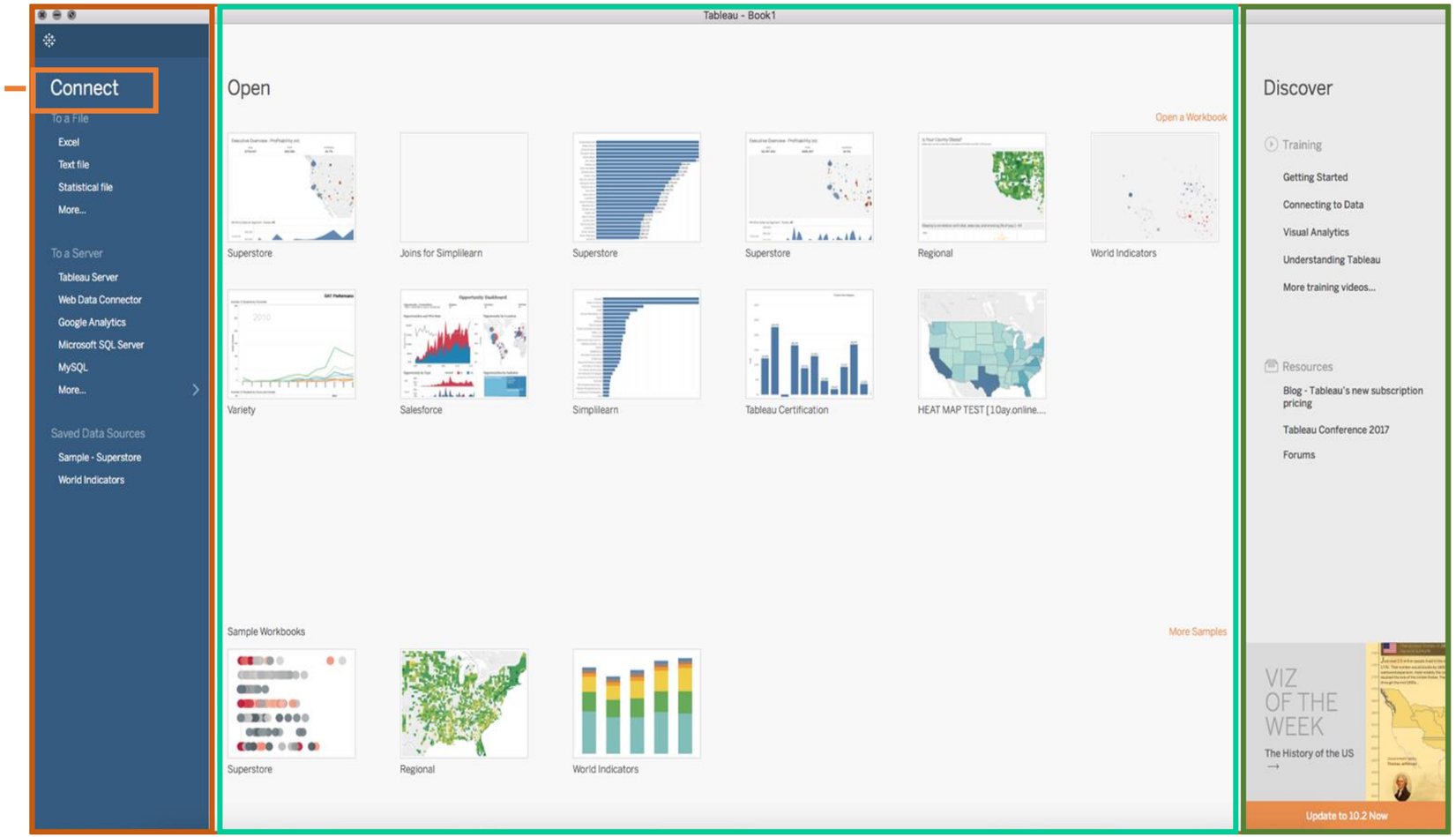


Getting Started with Tableau Application

EXPLORING THE START PAGE: CONNECT SECTION

- Opening Tableau Application
- Exploring the Start Page
- Exploring the Data Source Page
- Exploring Tableau Workspace
- Tableau Files and Folders

Connect section lists different connectivity options (to a file, server, or saved data sources) offered by Tableau.

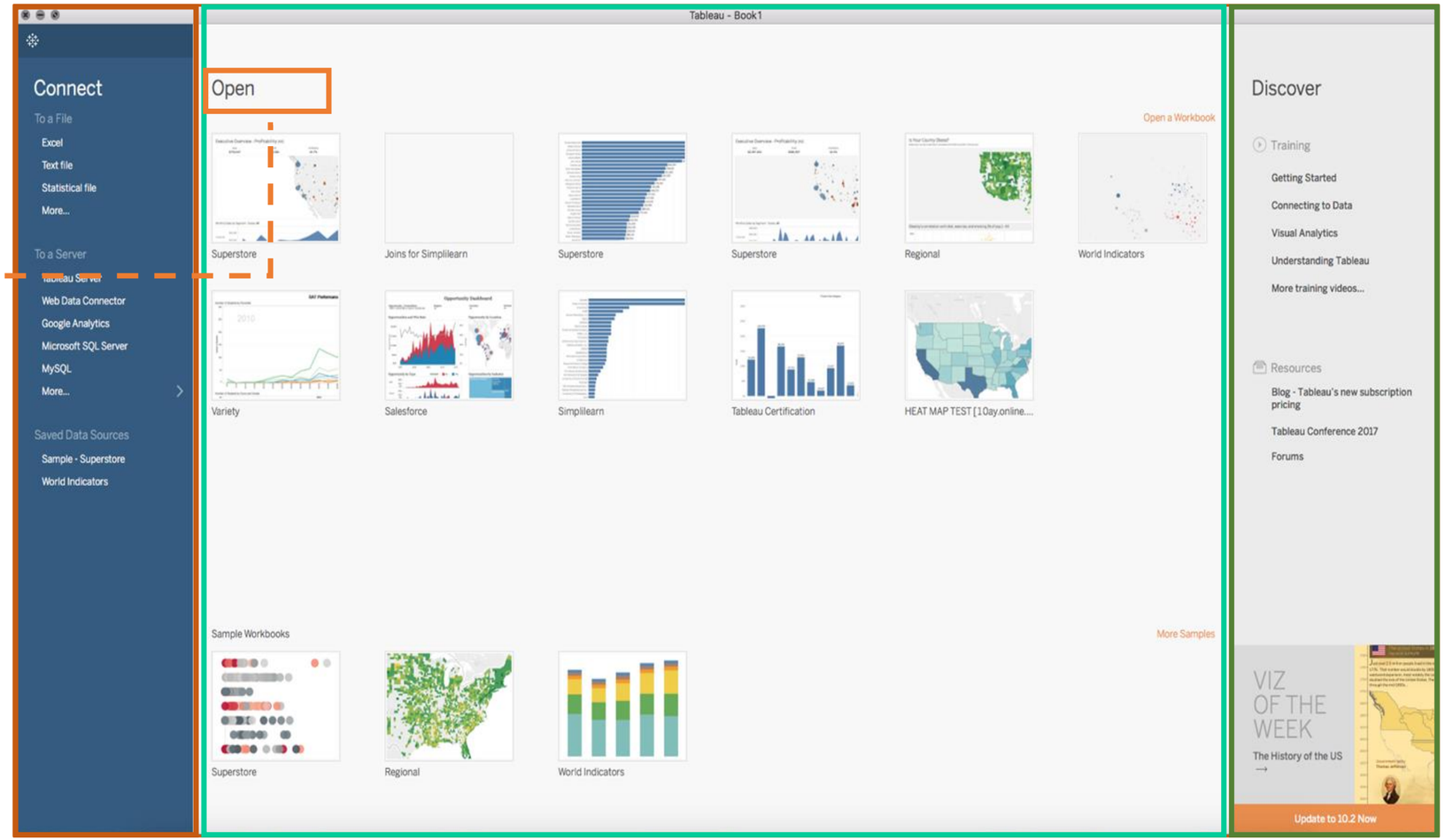


Getting Started with Tableau Application

EXPLORING THE START PAGE: OPEN SECTION

- Opening Tableau Application
- Exploring the Start Page
- Exploring the Data Source Page
- Exploring Tableau Workspace
- Tableau Files and Folders

The open section provides access to recently opened or sample workbooks.

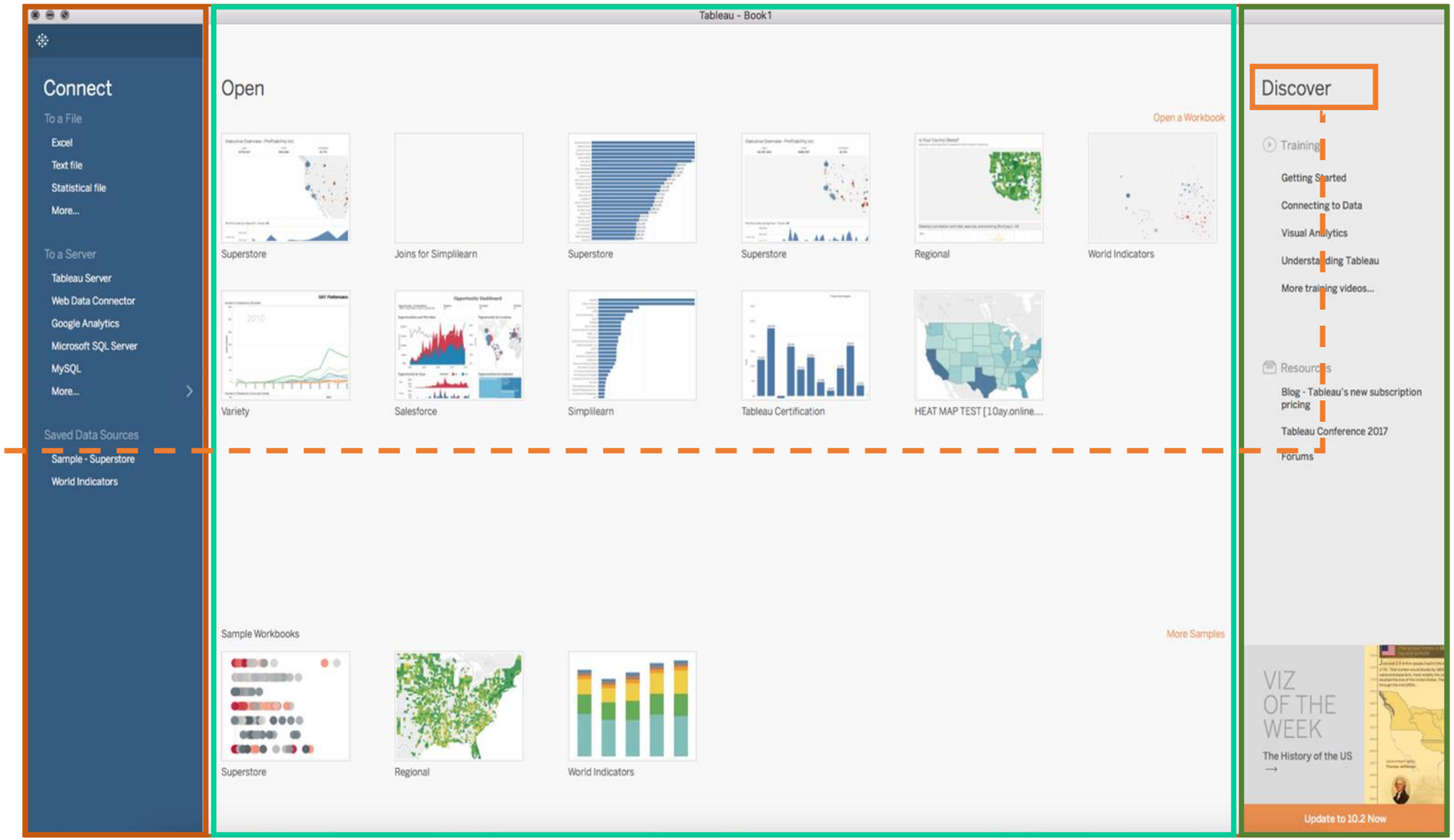


Getting Started with Tableau Application

EXPLORING THE START PAGE: DISCOVER SECTION

- Opening Tableau Application
- Exploring the Start Page
- Exploring the Data Source Page
- Exploring Tableau Workspace
- Tableau Files and Folders

Discover section has links to Tableau community and helps users access training content, videos, tutorials, and latest visualizations.



Getting Started with Tableau Application

- Opening Tableau Application
- Exploring the Start Page
- Exploring the Data Source Page
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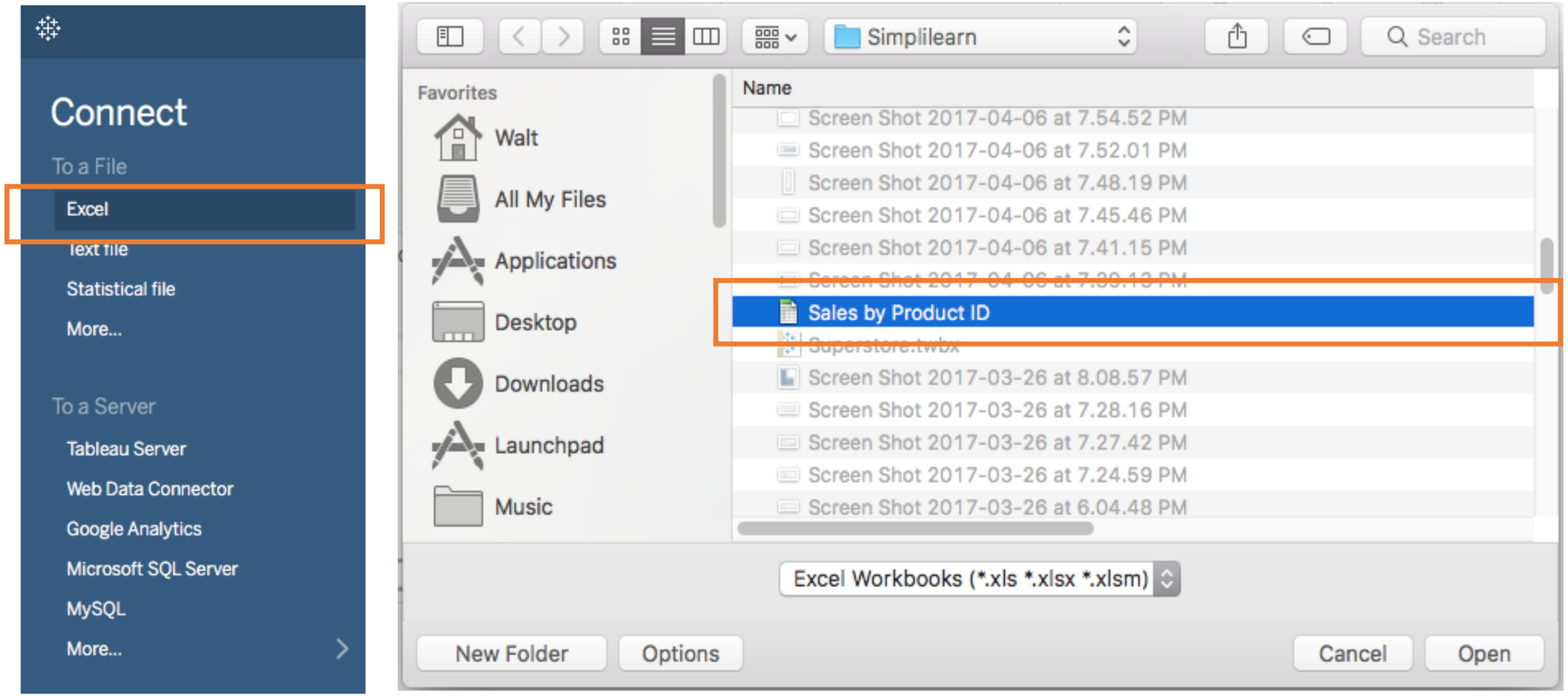
- Tableau Files and Folders

CONNECTING TO DATA SOURCE

To start visualization, it's important to connect to a data source.

Here is how you connect to an Excel data source:



Getting Started with Tableau Application

Opening Tableau Application

Exploring the Start Page

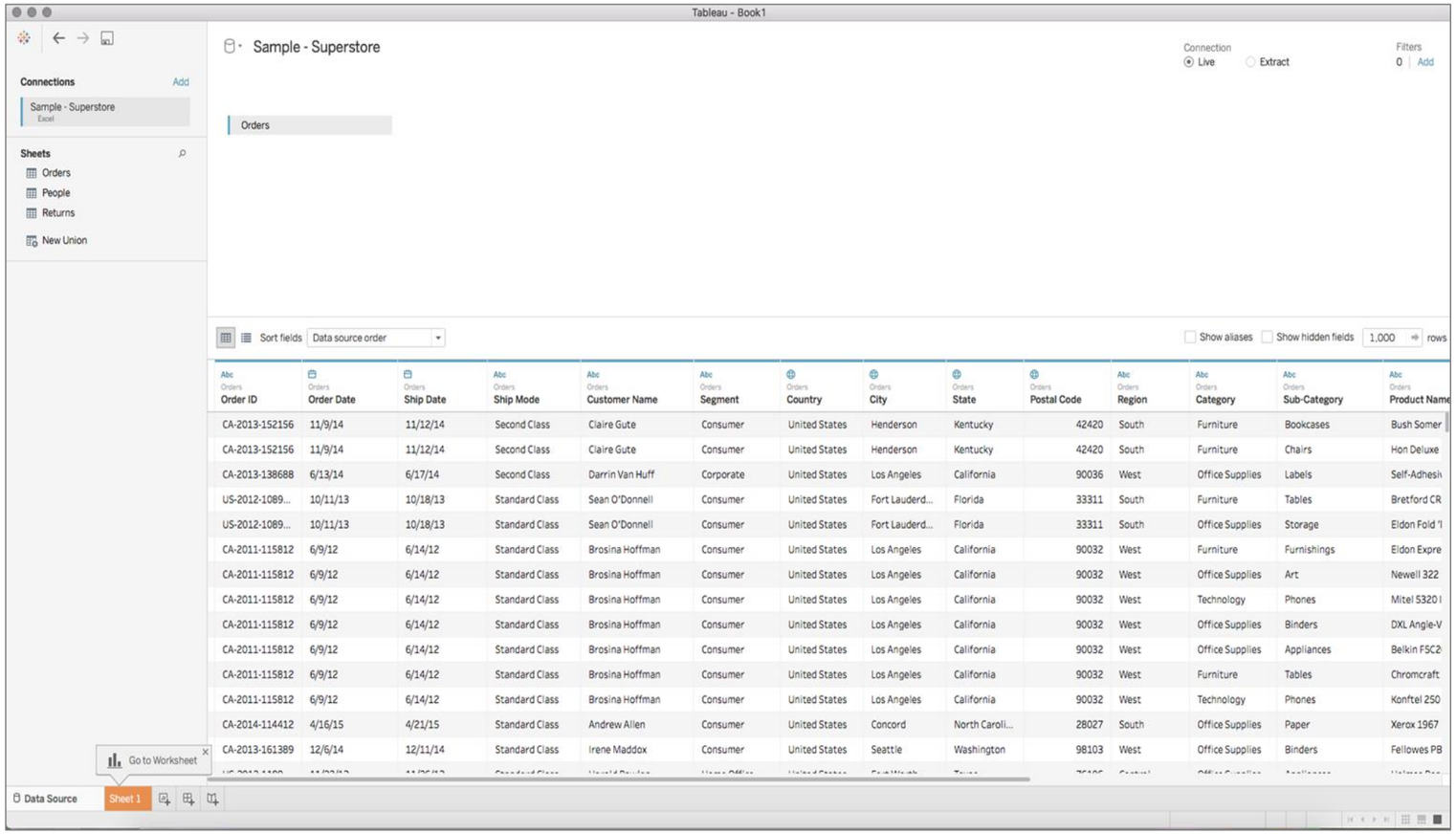
Exploring the Data Source Page

Exploring Tableau Workspace

Tableau Files and Folders

EXPLORING THE DATA SOURCE PAGE

- Tableau takes you to the Data Source page after you establish the initial connection to your data.
- The Data Source page is used to make changes to the Tableau data sources.



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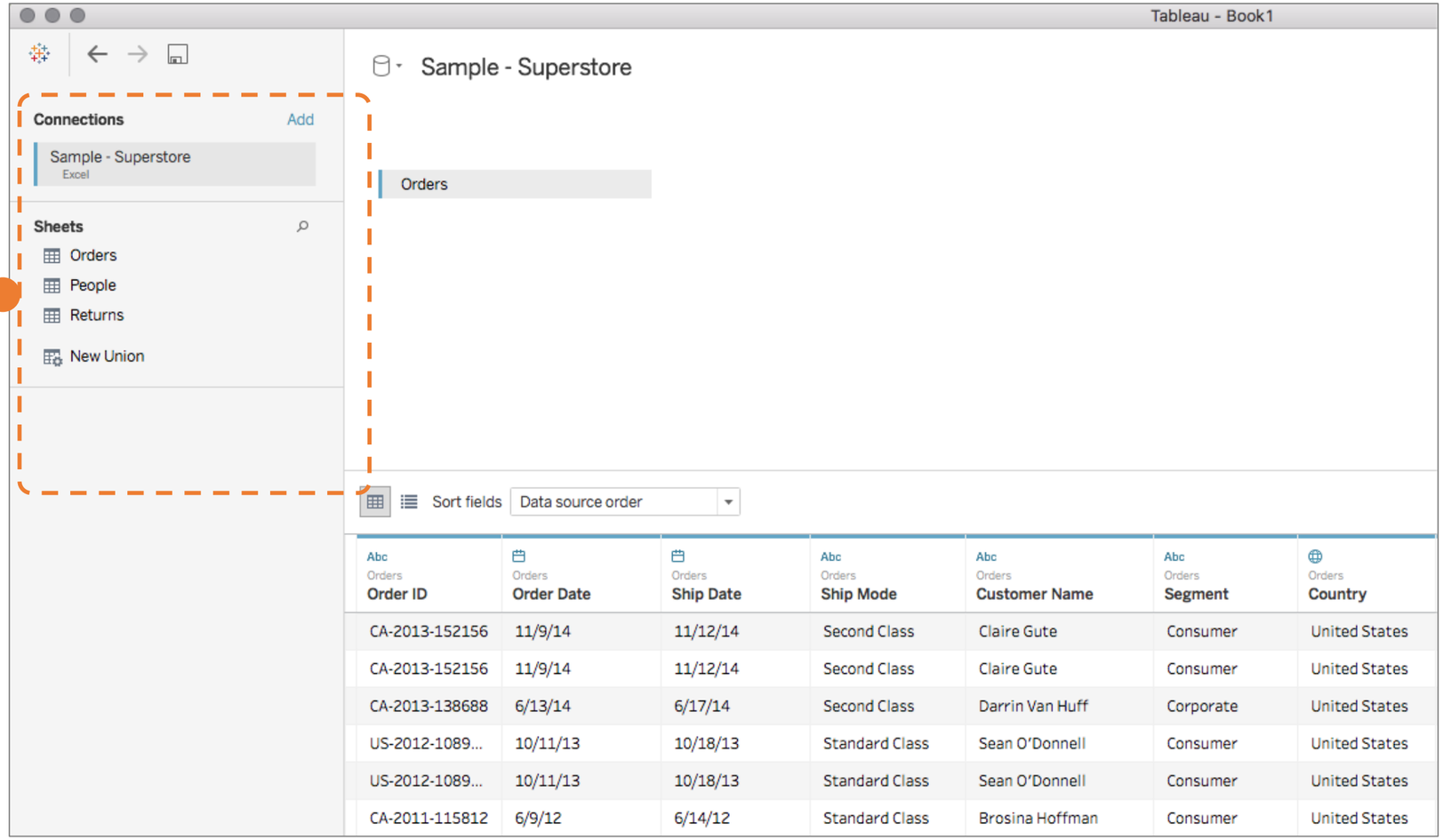
Getting Started with Tableau Application

EXPLORING THE DATA SOURCE PAGE

- Opening Tableau Application
- Exploring the Start Page
- Exploring the Data Source Page
- Exploring Tableau Workspace
- Tableau Files and Folders

The left pane displays details about the data that Tableau Desktop is connected to.



Getting Started with Tableau Application

EXPLORING THE DATA SOURCE PAGE

- Opening Tableau Application
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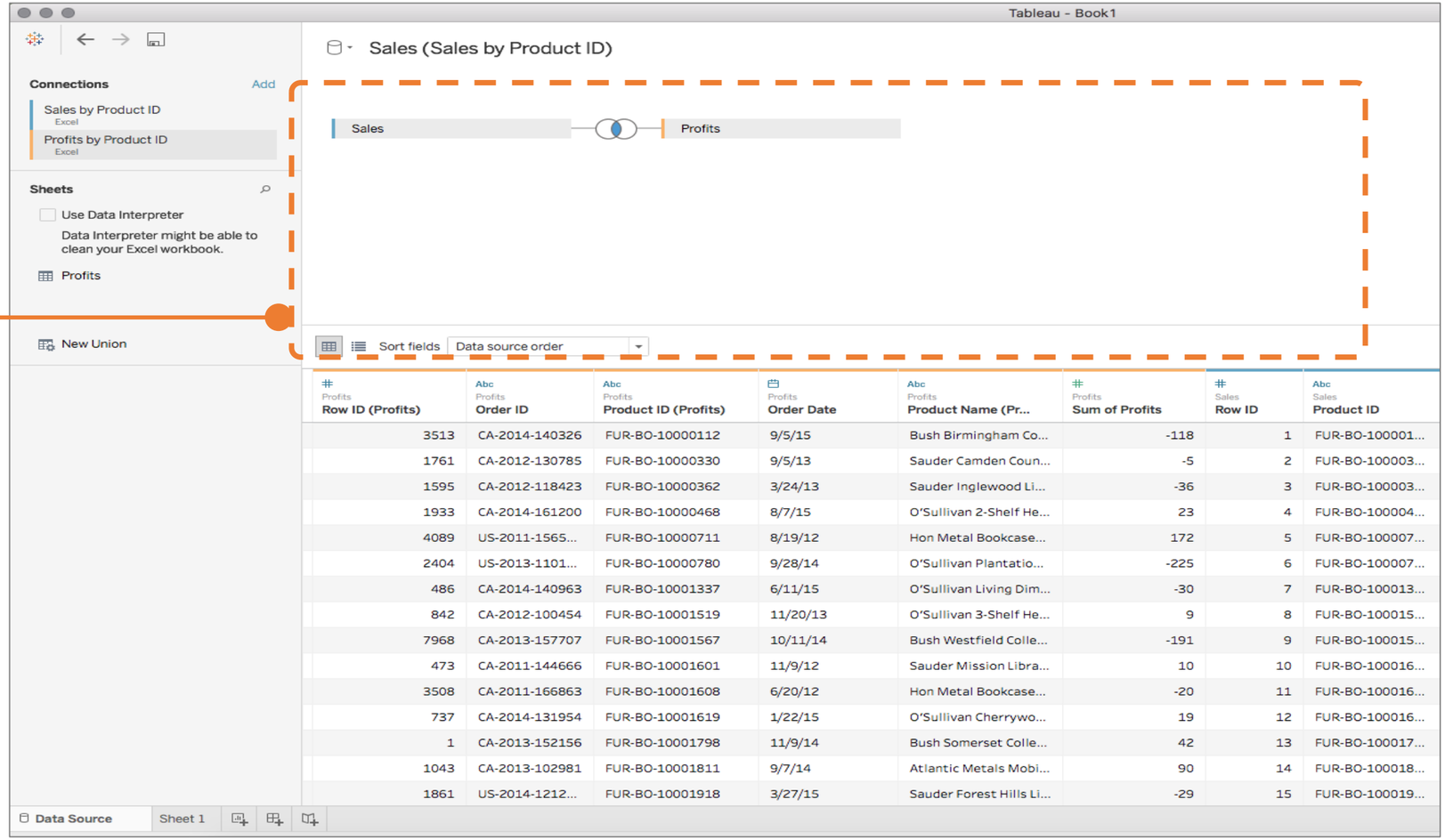
Join area defines the type of join between the tables in the data source.



Profits Row ID (Profits)	Profits Order ID	Profits Product ID (Profits)	Profits Order Date	Profits Product Name (Pr...	Profits Sum of Profits	Sales Row ID	Sales Product ID
3513	CA-2014-140326	FUR-BO-10000112	9/5/15	Bush Birmingham Co...	-118	1	FUR-BO-100001...
1761	CA-2012-130785	FUR-BO-10000330	9/5/13	Sauder Camden Coun...	-5	2	FUR-BO-100003...
1595	CA-2012-118423	FUR-BO-10000362	3/24/13	Sauder Inglewood Li...	-36	3	FUR-BO-100003...
1933	CA-2014-161200	FUR-BO-10000468	8/7/15	O'Sullivan 2-Shelf He...	23	4	FUR-BO-100004...
4089	US-2011-1565...	FUR-BO-10000711	8/19/12	Hon Metal Bookcase...	172	5	FUR-BO-100007...
2404	US-2013-1101...	FUR-BO-10000780	9/28/14	O'Sullivan Plantatio...	-225	6	FUR-BO-100007...
486	CA-2014-140963	FUR-BO-10001337	6/11/15	O'Sullivan Living Dim...	-30	7	FUR-BO-100013...
842	CA-2012-100454	FUR-BO-10001519	11/20/13	O'Sullivan 3-Shelf He...	9	8	FUR-BO-100015...
7968	CA-2013-157707	FUR-BO-10001567	10/11/14	Bush Westfield Colle...	-191	9	FUR-BO-100015...
473	CA-2011-144666	FUR-BO-10001601	11/9/12	Sauder Mission Libra...	10	10	FUR-BO-100016...
3508	CA-2011-166863	FUR-BO-10001608	6/20/12	Hon Metal Bookcase...	-20	11	FUR-BO-100016...
737	CA-2014-131954	FUR-BO-10001619	1/22/15	O'Sullivan Cherrywo...	19	12	FUR-BO-100016...
1	CA-2013-152156	FUR-BO-10001798	11/9/14	Bush Somerset Colle...	42	13	FUR-BO-100017...
1043	CA-2013-102981	FUR-BO-10001811	9/7/14	Atlantic Metals Mobi...	90	14	FUR-BO-100018...
1861	US-2014-1212...	FUR-BO-10001918	3/27/15	Sauder Forest Hills Li...	-29	15	FUR-BO-100019...

Data source filters can be defined to restrict data coming from data source.

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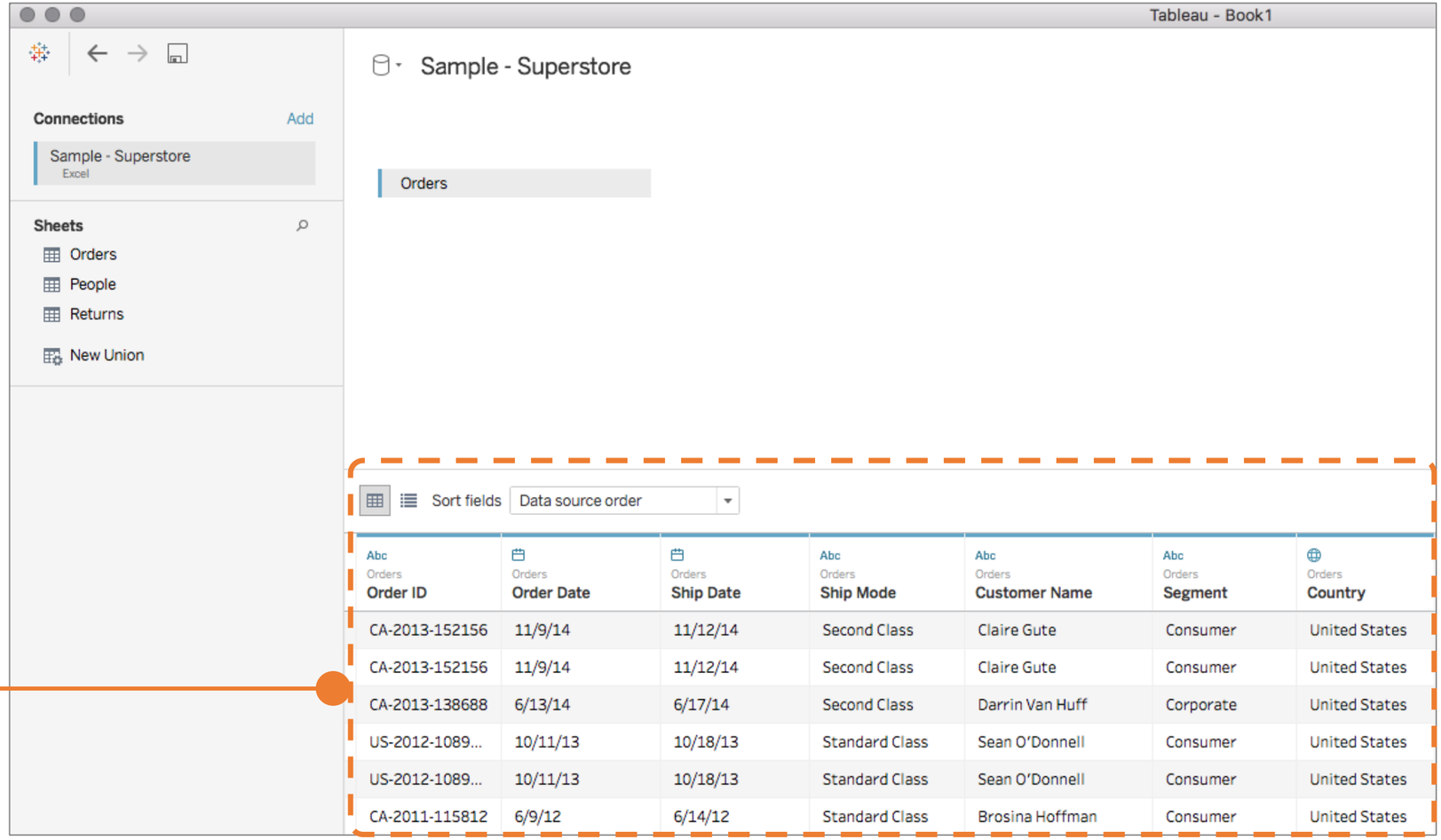
Getting Started with Tableau Application

EXPLORING THE DATA SOURCE PAGE

- Opening Tableau Application
- Exploring the Start Page
- Exploring the Data Source Page
- Exploring Tableau Workspace
- Tableau Files and Folders



Preview pane gives a quick view of the data and allows general modification.

Getting Started with Tableau Application

EXPLORING THE DATA SOURCE PAGE

- Opening Tableau Application
- Exploring the Start Page
- Exploring the Data Source Page
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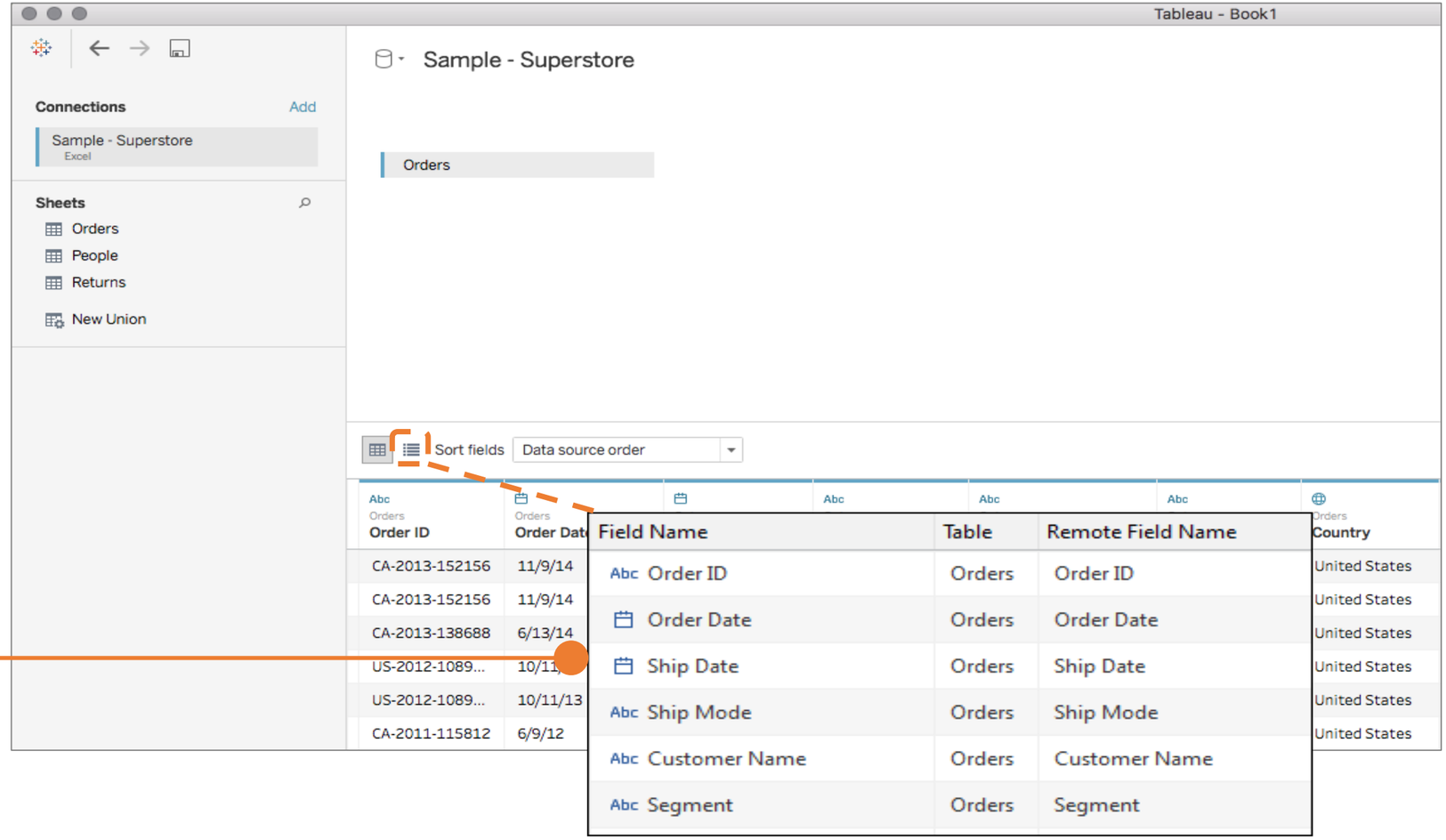
- Tableau Files and Folders

Metadata area displays the fields as rows, which will help you quickly examine the structure of the data source.



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Getting Started with Tableau Application

Opening Tableau Application

Exploring the Start Page

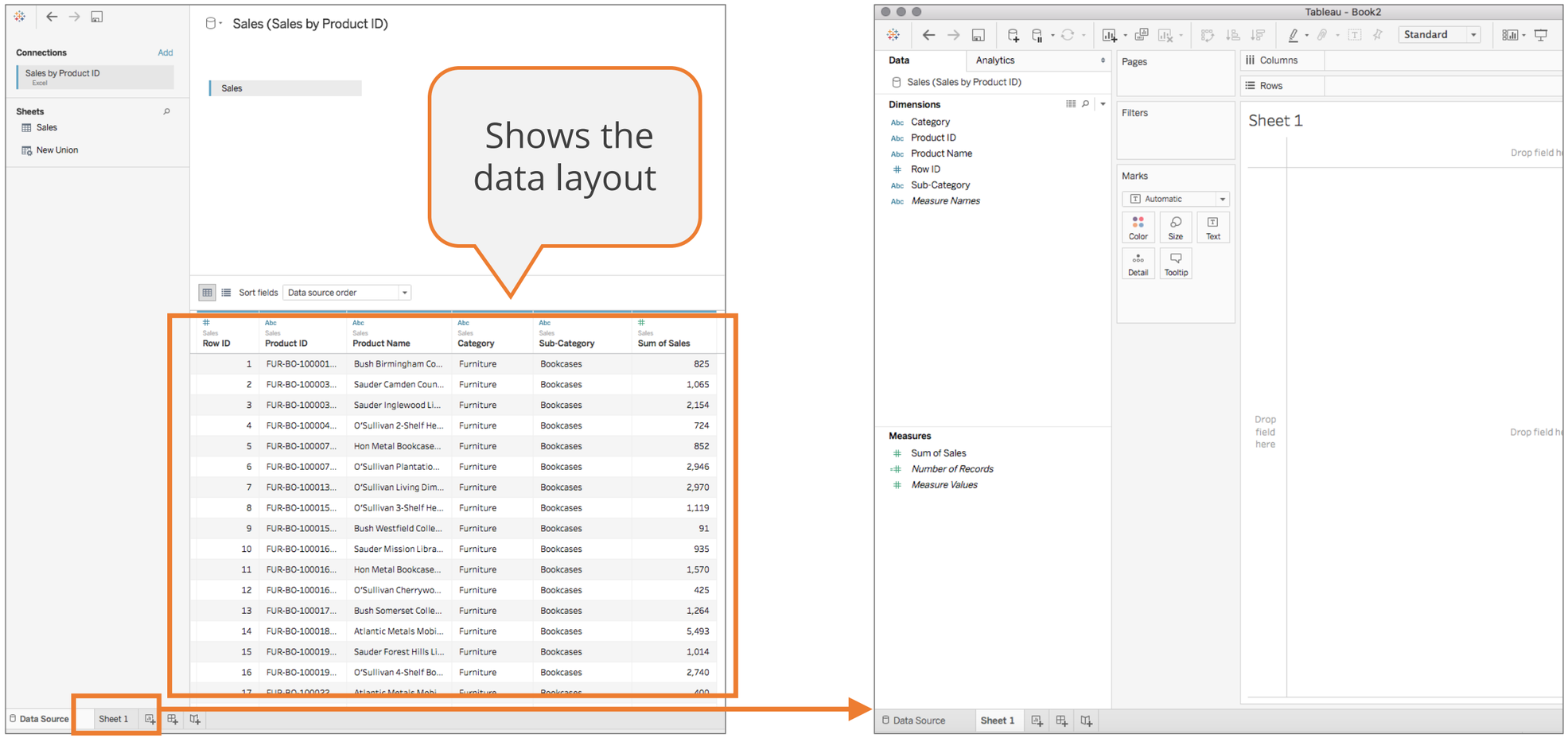
Exploring the Data Source Page

Exploring Tableau Workspace

Tableau Files and Folders

EXPLORING THE DATA SOURCE PAGE

After reviewing the data source page to confirm the data was interpreted correctly, click the “Sheet1” tab to open a worksheet in the Tableau workspace. The data source will appear in the data pane:



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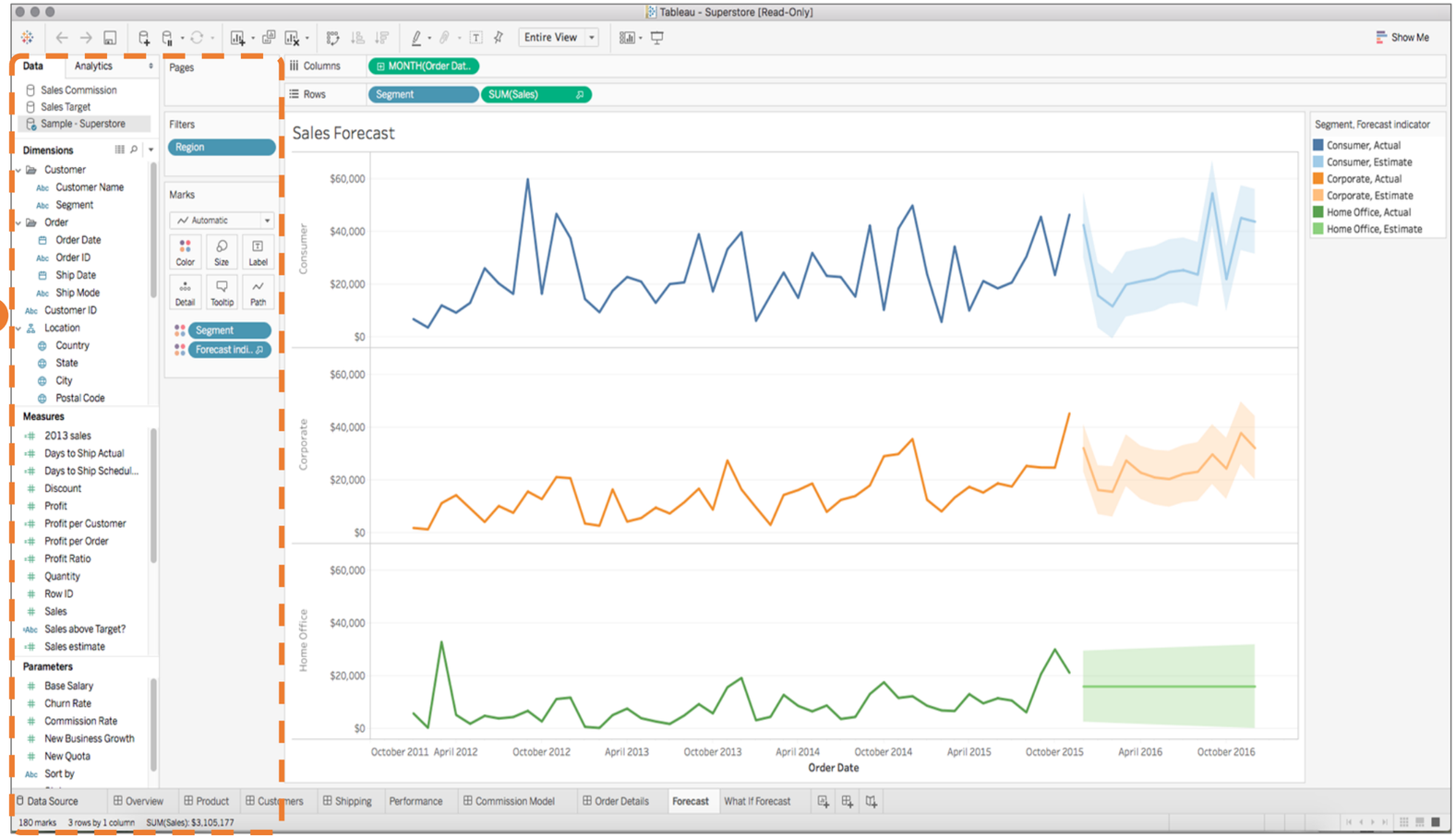
Getting Started with Tableau Application

EXPLORING TABLEAU WORKSPACE

- Opening Tableau Application
- Exploring the Start Page
- Exploring the Data Source Page
- Exploring Tableau Workspace
- Tableau Files and Folders

The Tableau workspace consists of menus, the data pane, a toolbar, cards and shelves, and a few sheets, including worksheets, dashboards, or stories.

Data pane contains data sets from different data sources.



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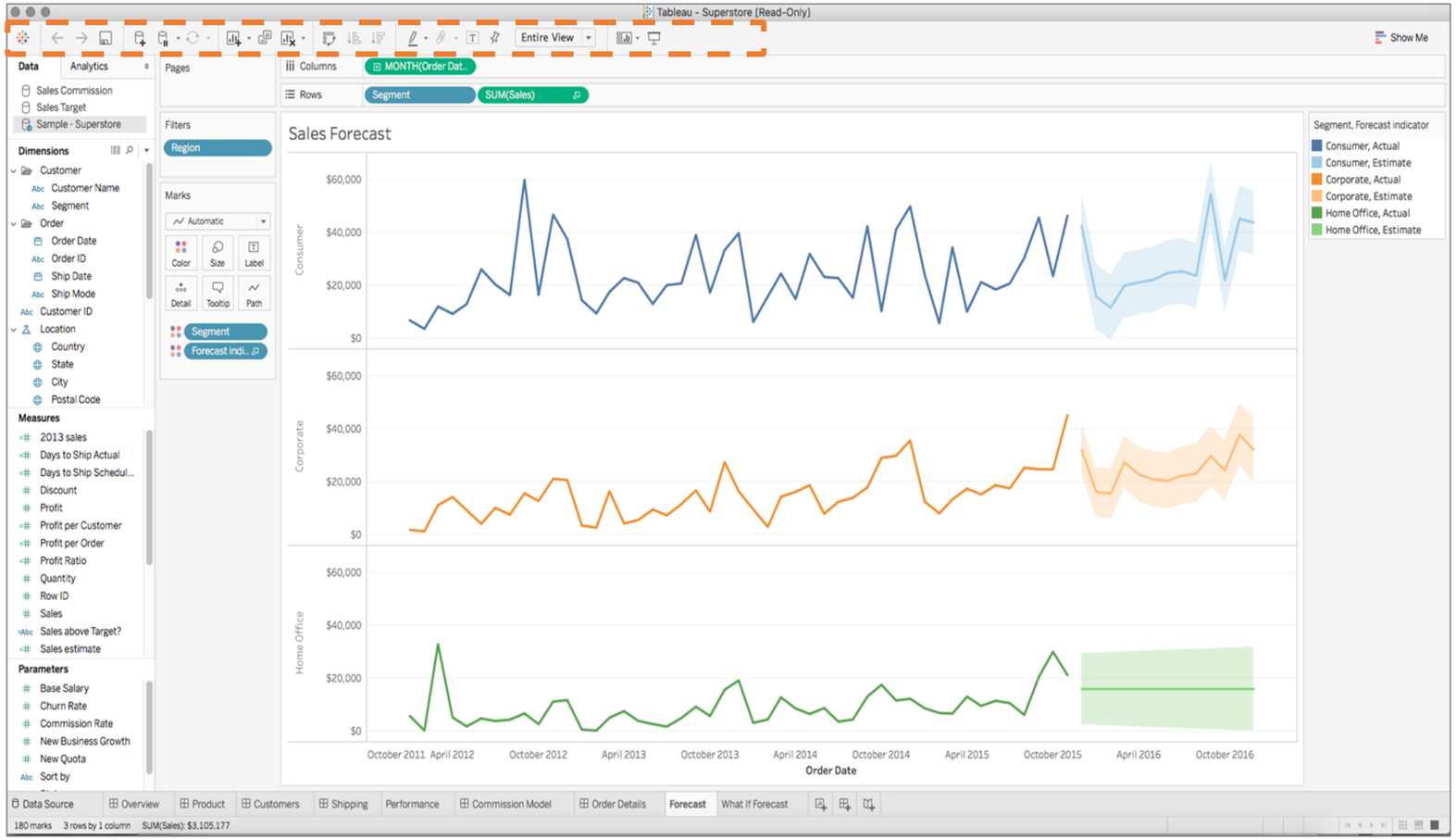
Getting Started with Tableau Application

EXPLORING TABLEAU WORKSPACE: TOOLBAR

The toolbar on Tableau workspace provides quick access controls for commonly used functions:

- Undo and Redo
- Save
- Add data source
- Add worksheet (or dashboard, story)
- Duplicate sheet
- Clear sheet (or formatting and other options)
- Pause auto updates
- Run update
- Swap
- Sort ascending/descending
- Group members
- Show mark labels
- Show/hide cards
- View options
- Fix axes
- Highlight
- Presentation mode



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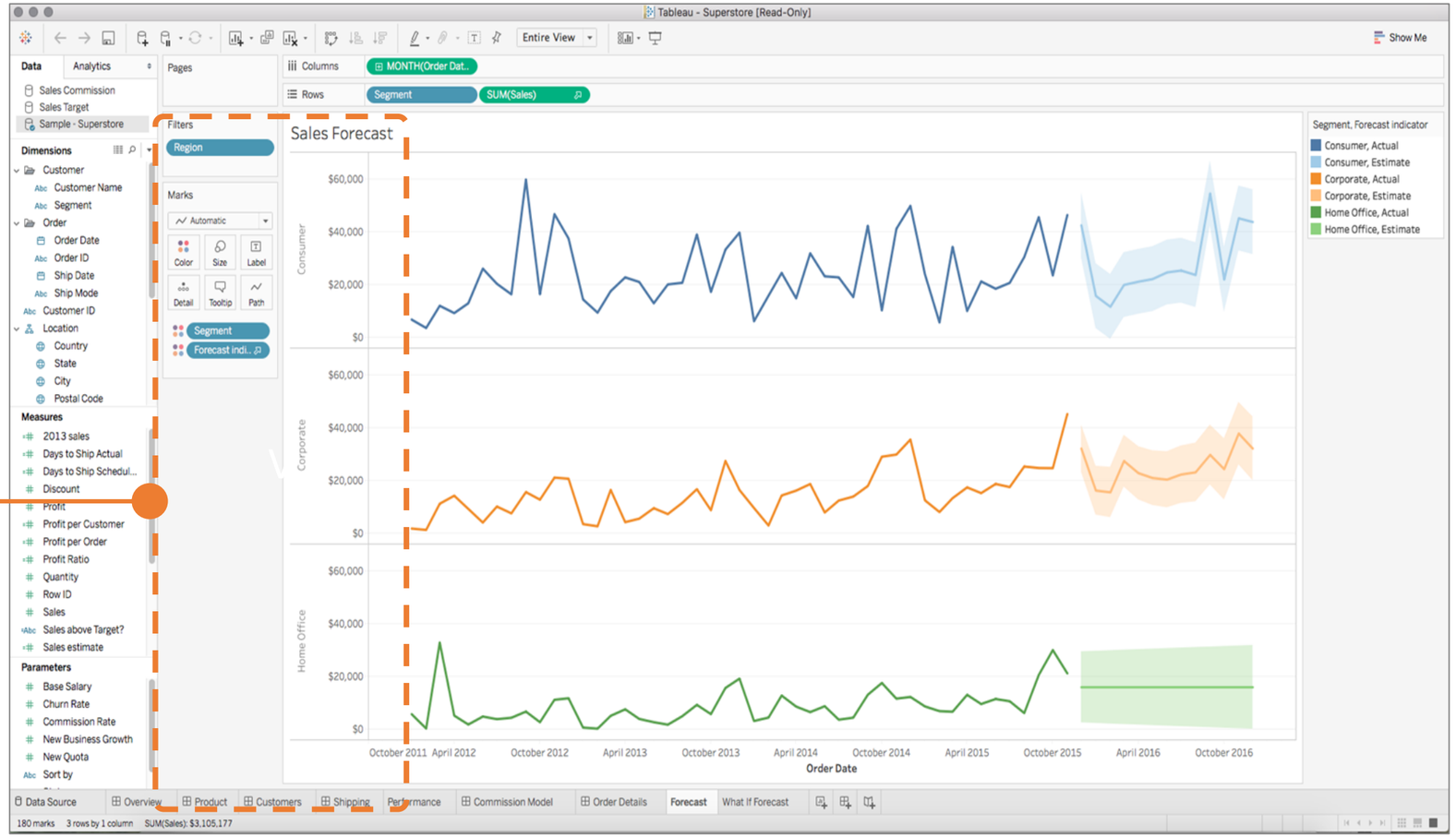
Getting Started with Tableau Application

EXPLORING TABLEAU WORKSPACE: CARDS

- Opening Tableau Application
- Exploring the Start Page
- Exploring the Data Source Page
- Exploring Tableau Workspace
- Tableau Files and Folders

Cards are containers for shelves, legends, and other controls.



Properties of cards are based on its type. For example, Marks card controls the mark properties.

Getting Started with Tableau Application

EXPLORING TABLEAU WORKSPACE: CARDS

Cards visible by default:

- Columns
- Rows
- Pages
- Filters
- Marks

Cards that can be enabled using the toolbar action:

- Title
- Caption
- Summary

Some cards are dynamic and are visible depending upon mark/view type:

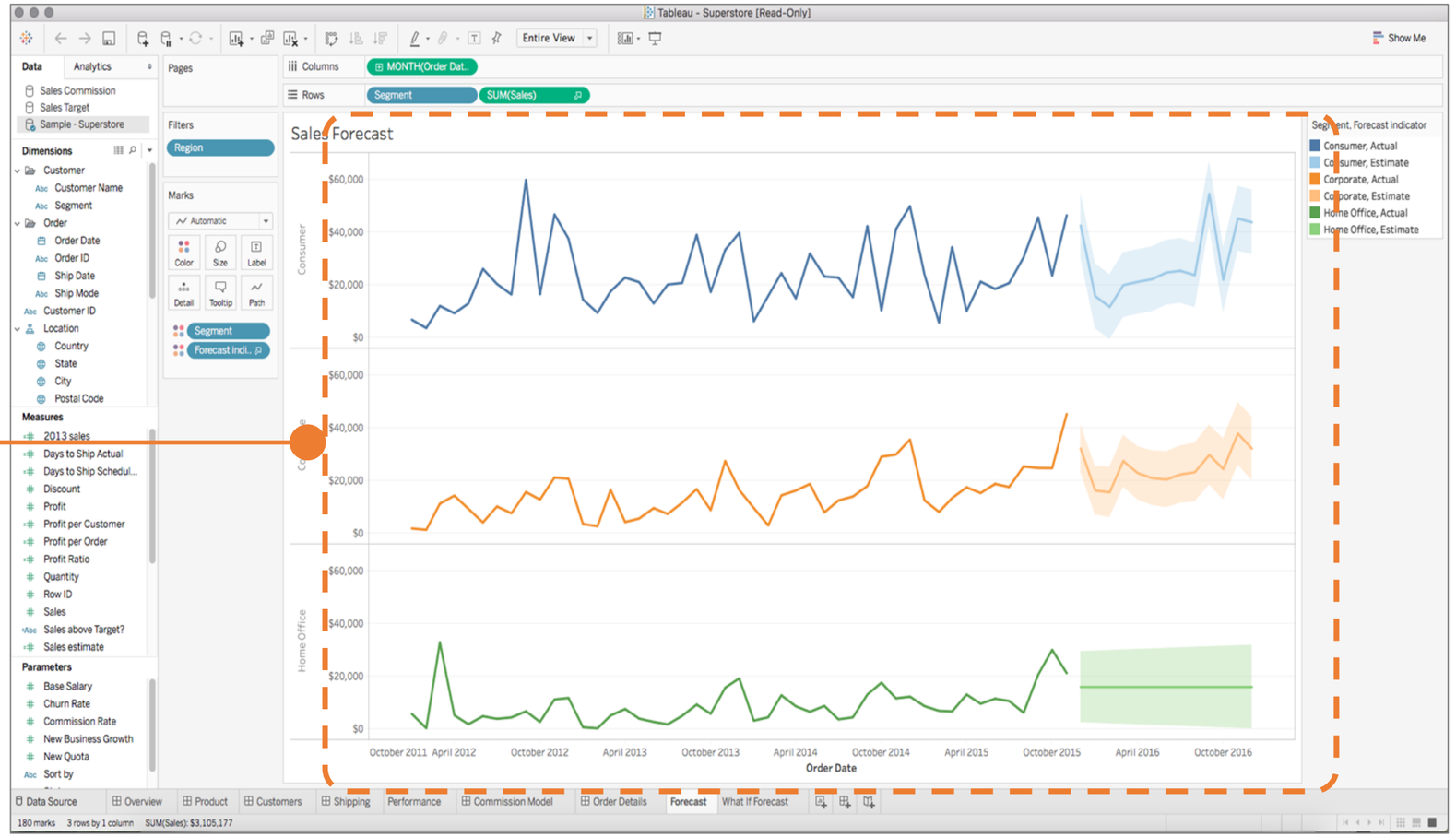
- Legend
- Parameters
- Map Legend
- Measure Values Shelf

Getting Started with Tableau Application

EXPLORING TABLEAU WORKSPACE: VIEW

- Opening Tableau Application
- Exploring the Start Page
- Exploring the Data Source Page
- Exploring Tableau Workspace
- Tableau Files and Folders

The actual visualization created by placing dimensions and measures on shelves is visible in the view.



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Getting Started with Tableau Application

EXPLORING TABLEAU WORKSPACE: SHOW ME

Opening Tableau Application

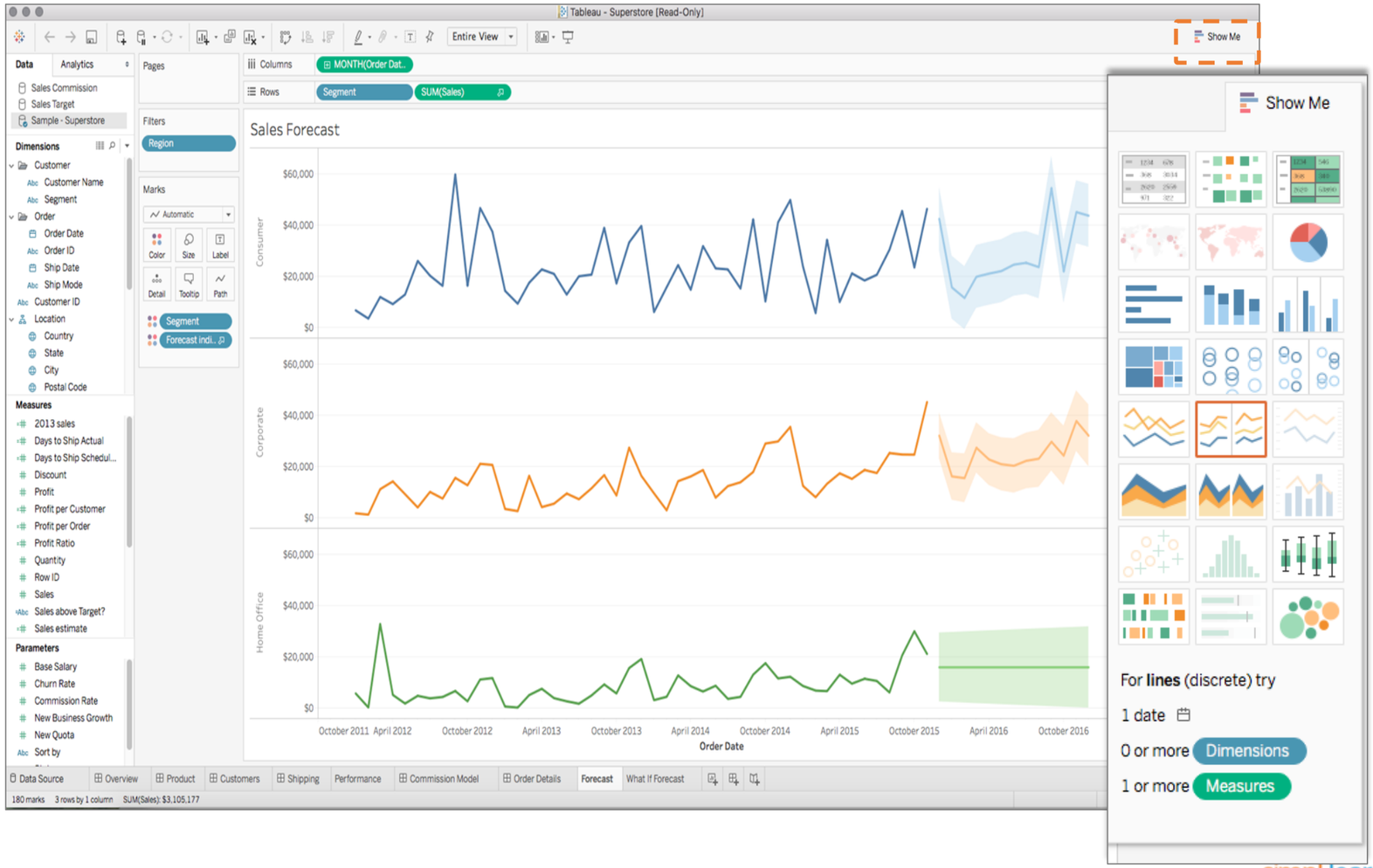
Exploring the Start Page

Exploring the Data Source Page

Exploring Tableau Workspace

Tableau Files and Folders

- Show Me section contains all possible visualizations in Tableau.
- Depending on the Dimensions and Measures selected, it highlights the allowed views.
- Based on the current view, it highlights the alternative views.



Getting Started with Tableau Application

TABLEAU FILES AND FOLDERS

Different file types associated with Tableau are:

Workbooks (.twb)
Workbooks hold one or more worksheets and zero or more dashboards and stories.

Bookmarks (.tbm)
Bookmarks contain a single worksheet and are used as an easy way to quickly share your work.

Packaged Workbooks (.twbx)
A packaged workbook is a single zip file that contains a workbook along with any supporting local file data sources and background images.

Data Extract (.tde)
Extract files are a local copy of a subset or entire data source. Use extracts to share data, work offline, and improve database performance.

Data Source (.tds)
Data source files do not contain the actual data but the information necessary to connect to the data source.

Packaged Data Source (.tdsx)
A packaged data source is a zip file that contains the data source file (.tds) described above as well as local file data sources such as Extract files (.tde), text files, Excel files, Access files, and local cube files.

Demo—Getting Started with Tableau Application

Demonstrate how to create a workbook and vertical bar chart, connect to saved data source, add a return table, and save the workbook

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Introduction to Tableau Interface

Topic 2: Components of View Section

Components of View Section

A view consists of several sections:

- Field labels
- Title
- Marks Cards
- Legends
- Captions
- Values
- Headers

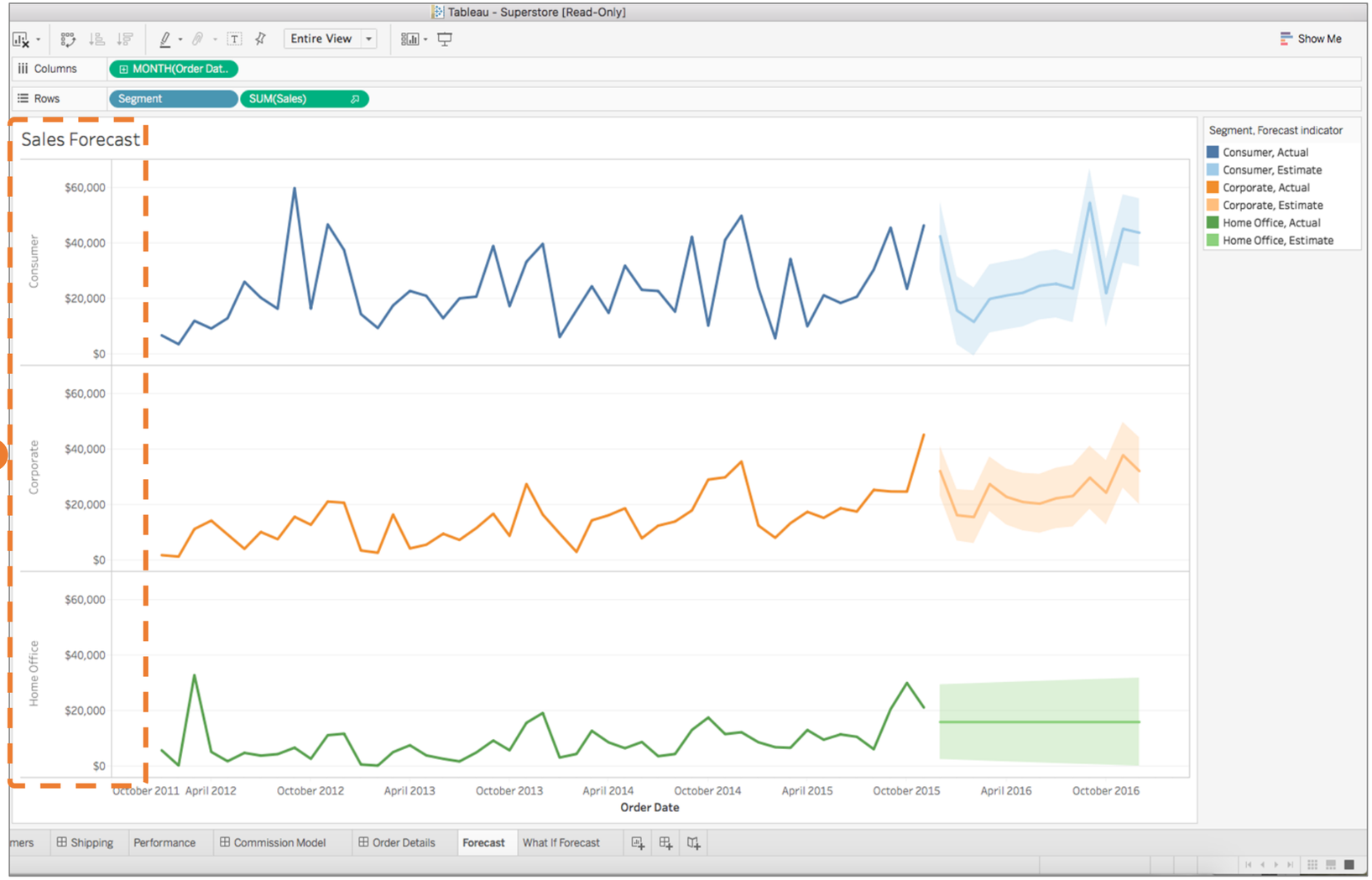
Some of the sections are specific to the visualization selected.

Components of View Section

- Field labels
- Title
- Marks card
- Legends
- Captions
- Values
- Headers

FIELD LABELS

Field labels display the members of the field.

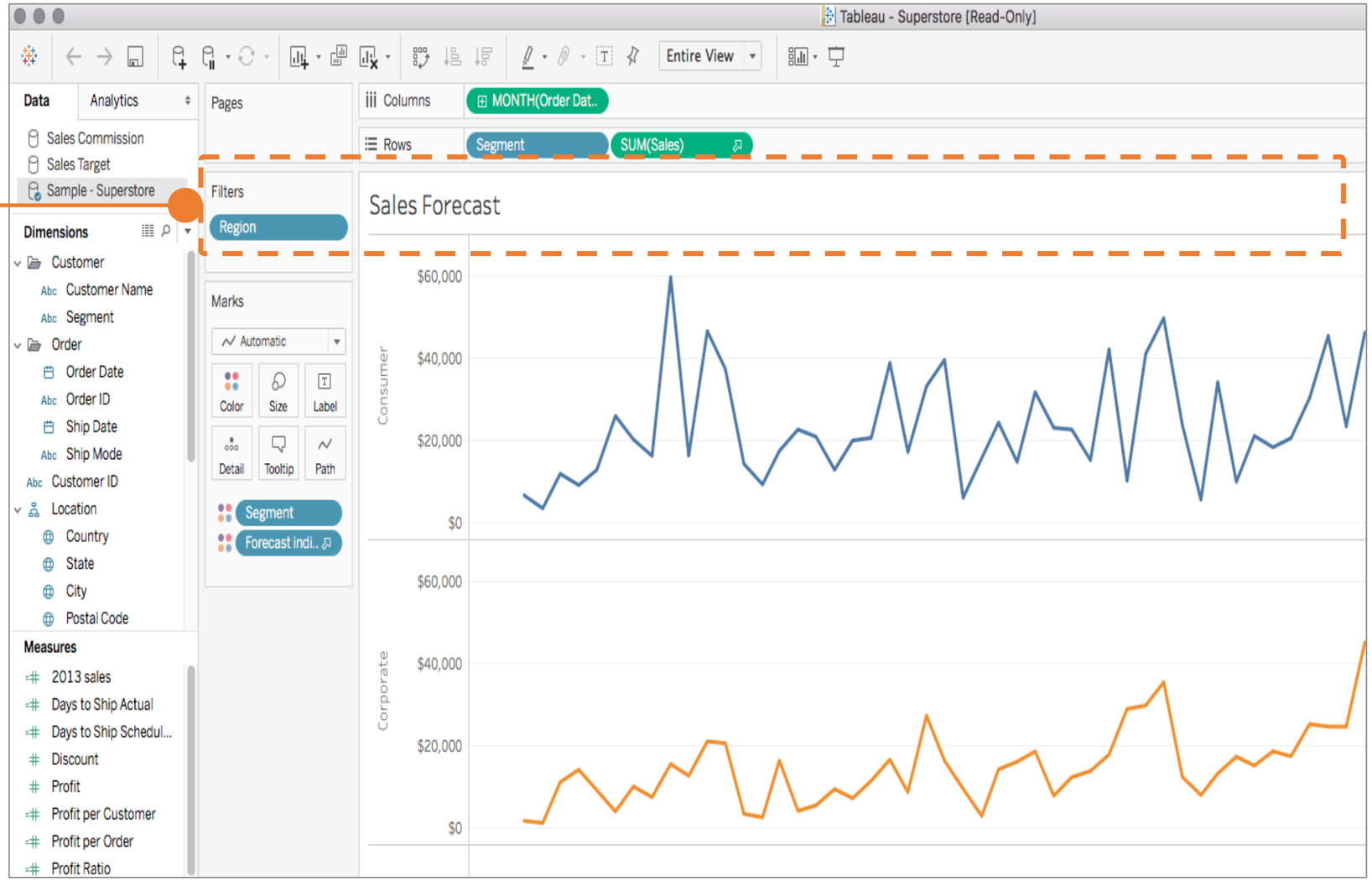


Components of View Section

- Field labels
- Title
- Marks card
- Legends
- Captions
- Values
- Headers

TITLE

Title displays the title of the worksheet.

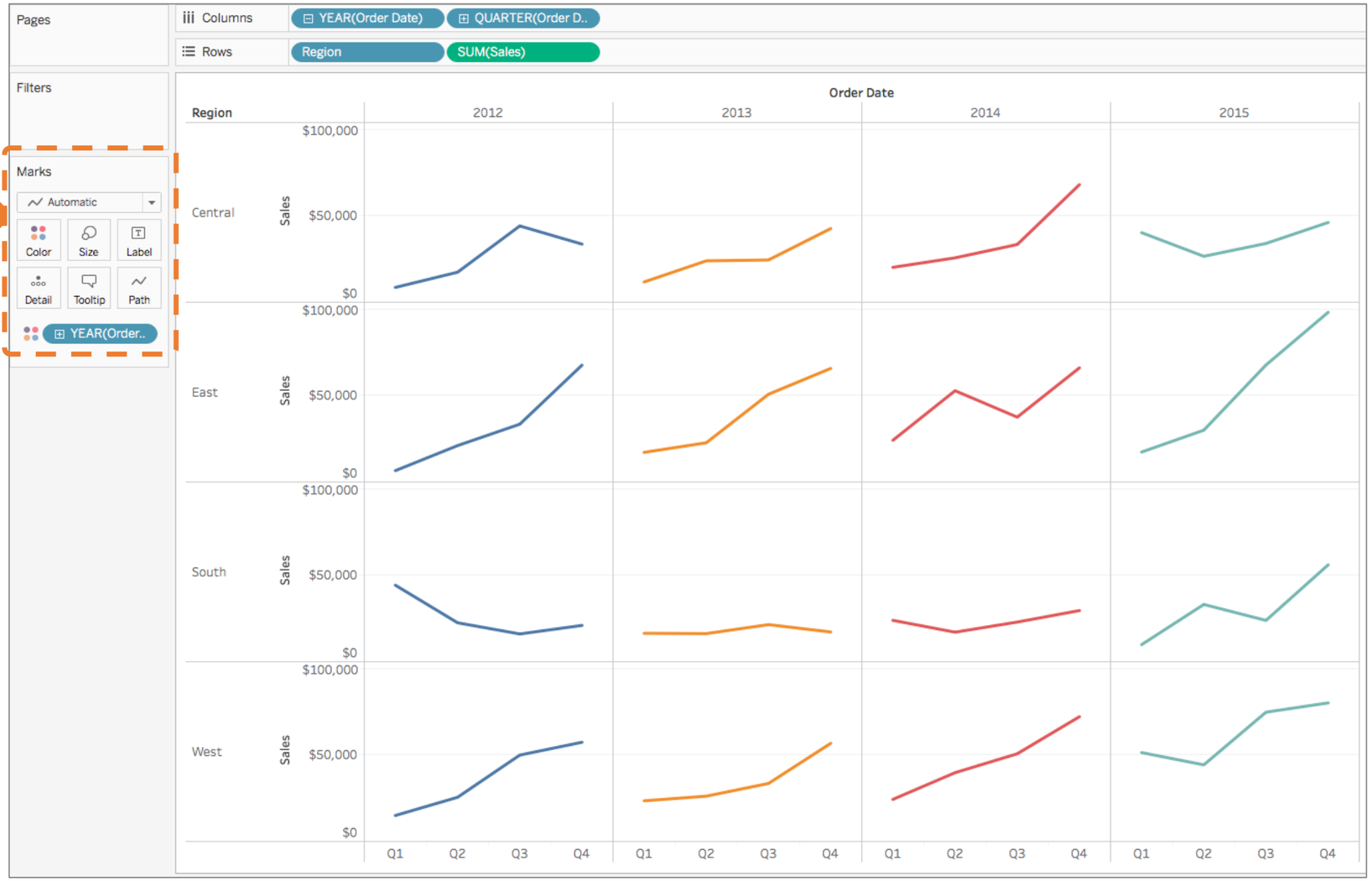


Components of View Section

- Field labels
- Title
- Marks card
- Legends
- Captions
- Values
- Headers

MARKS CARDS

Marks cards are the primary means to express dimensions and measures in visualizations.



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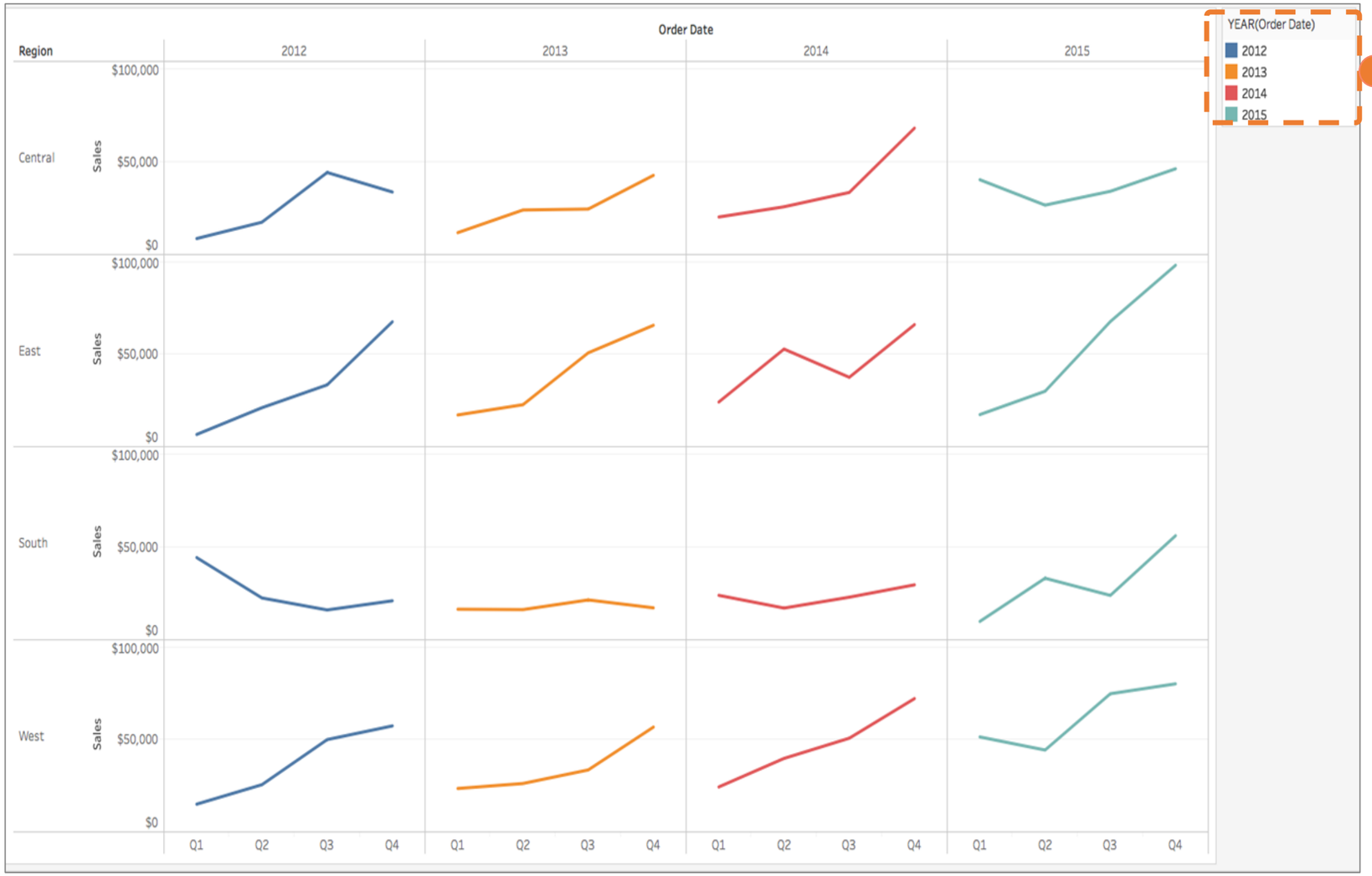
Components of View Section

- Field labels
- Title
- Marks card
- **Legends**
- Captions
- Values
- Headers

LEGENDS

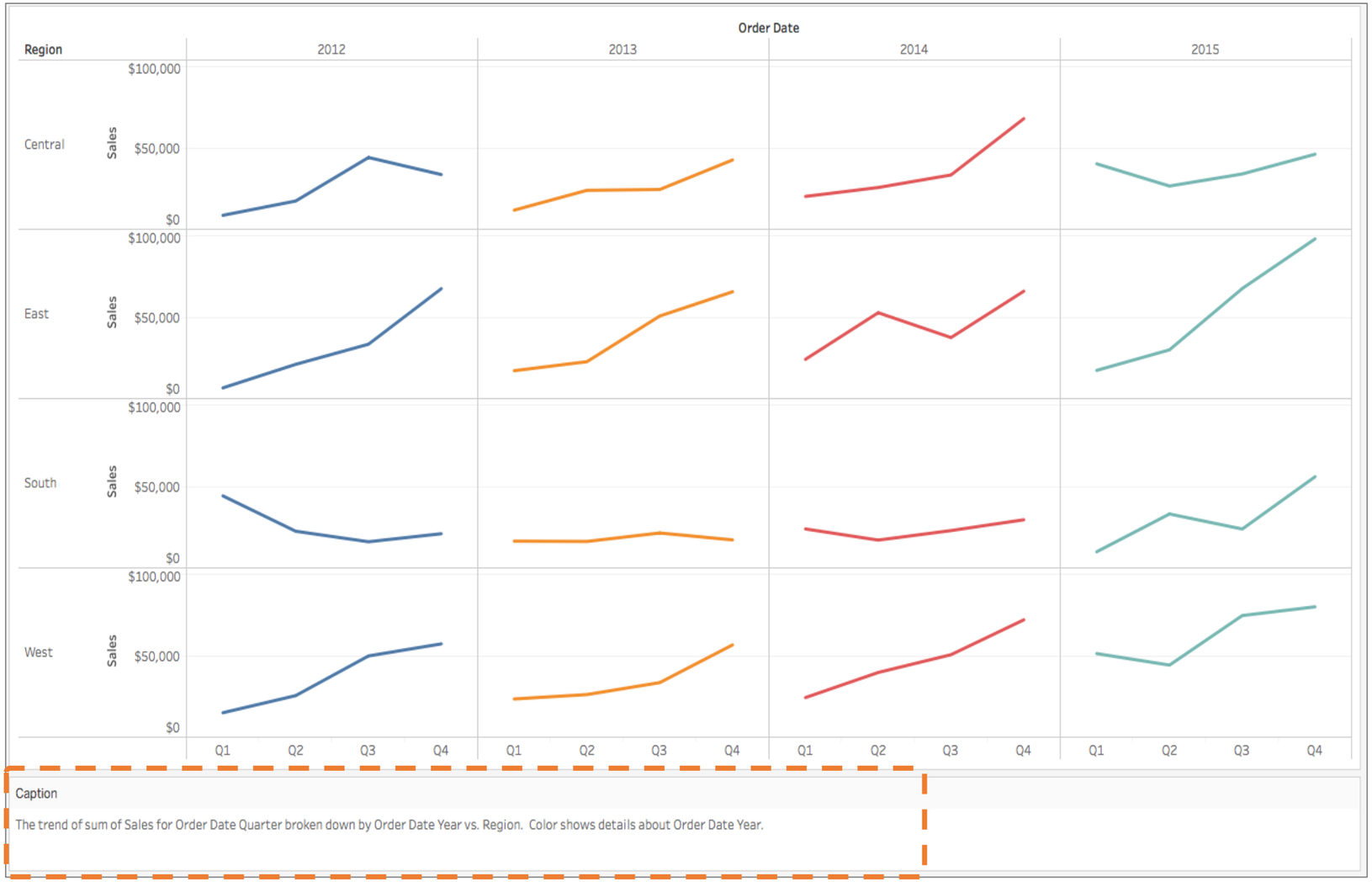


Legends indicate how the view is encoded in relation to your data; they define the color coding of the marks, which can be customized.

Components of View Section

- Field labels
- Title
- Marks card
- Legends
- Captions
- Values
- Headers

CAPTIONS



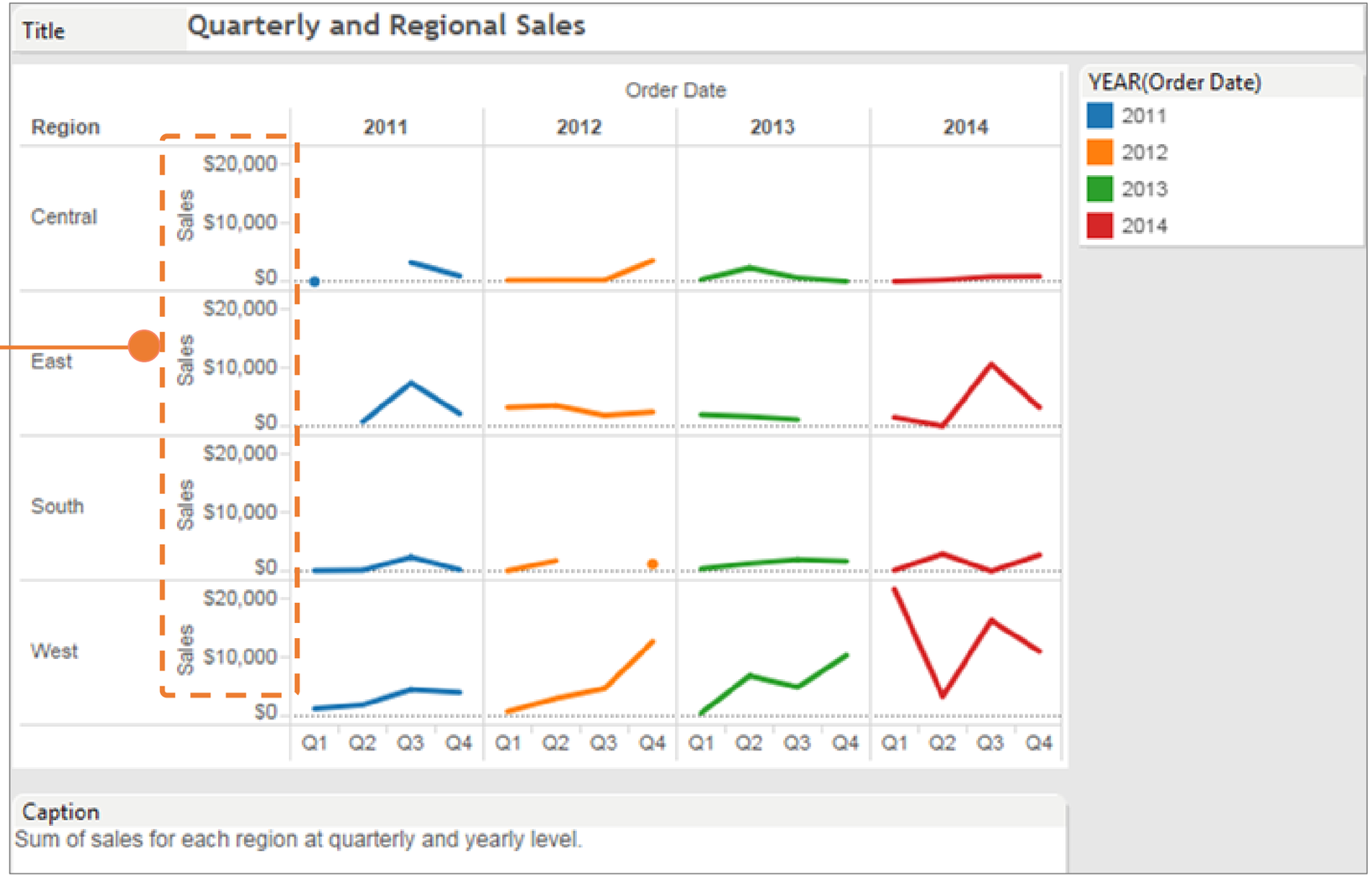
Captions are auto-generated based on the view and describe visualization based on the shelf data.

Components of View Section

- Field labels
- Title
- Marks card
- Legends
- Captions
- Values
- Headers

VALUES

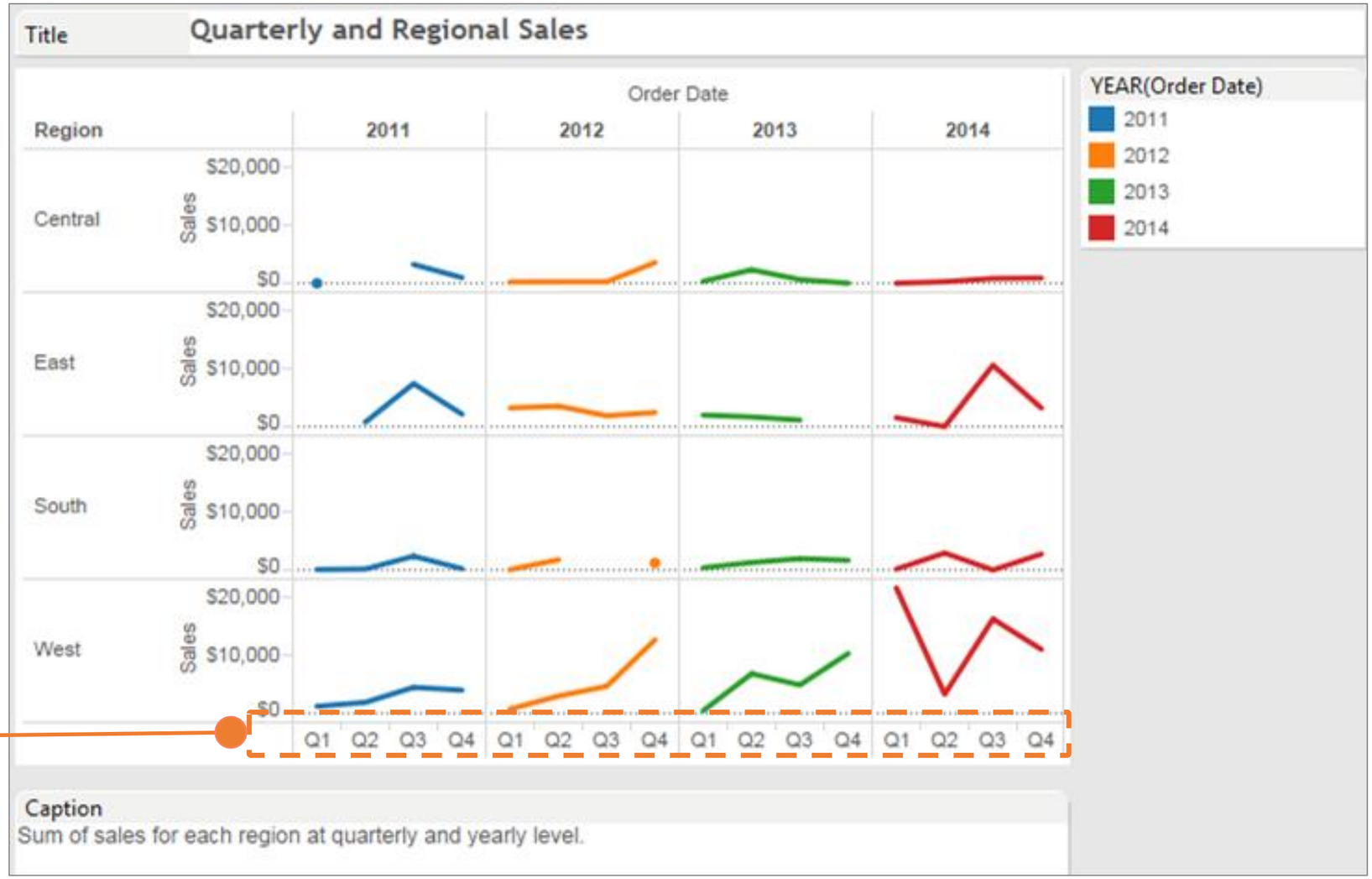
Values represent the numerical data contained in a Measure. It is represented as a continuous axis.



Components of View Section

- Field labels
- Title
- Marks card
- Legends
- Captions
- Values
- Headers

HEADERS



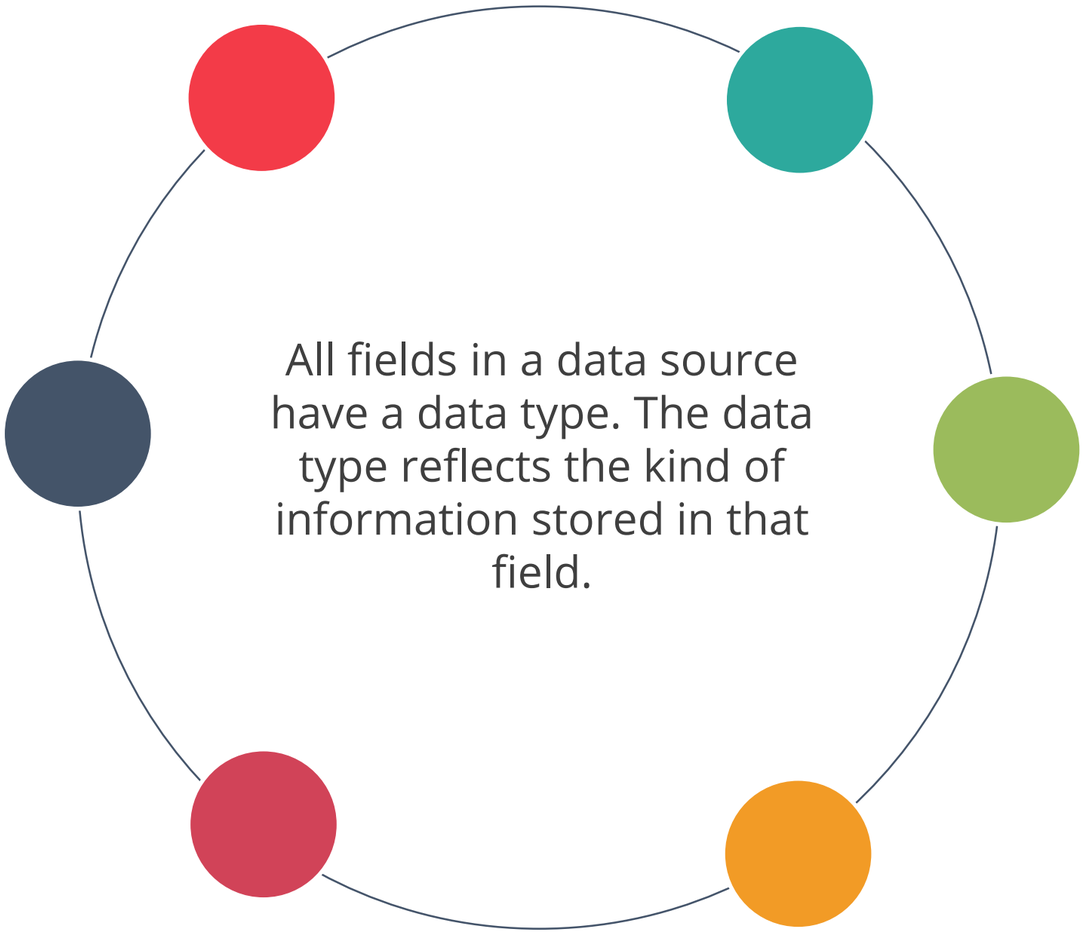
Headers show the member names of each field on the row shelf and column shelf.

Introduction to Tableau Interface

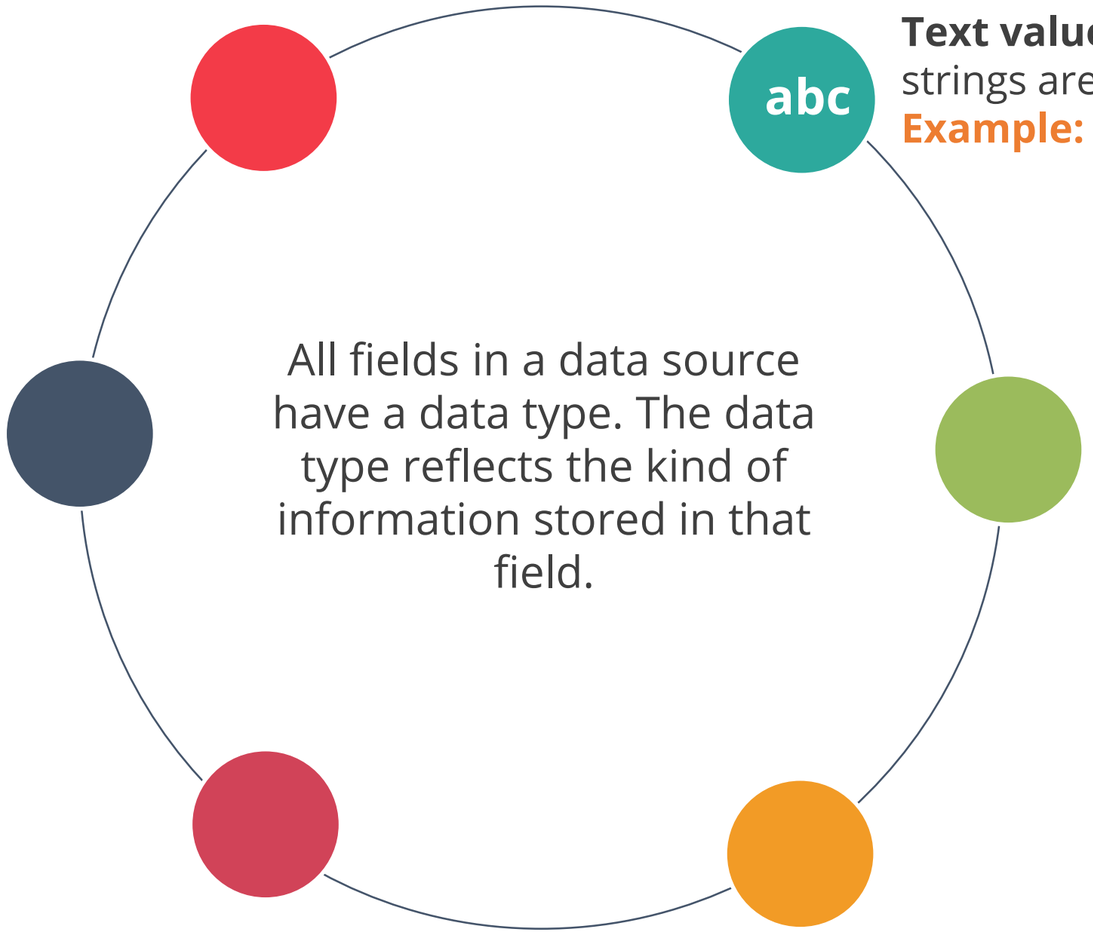
Topic 3: Data Terminology and Definitions

- Data Types
- Data Roles

Data Types

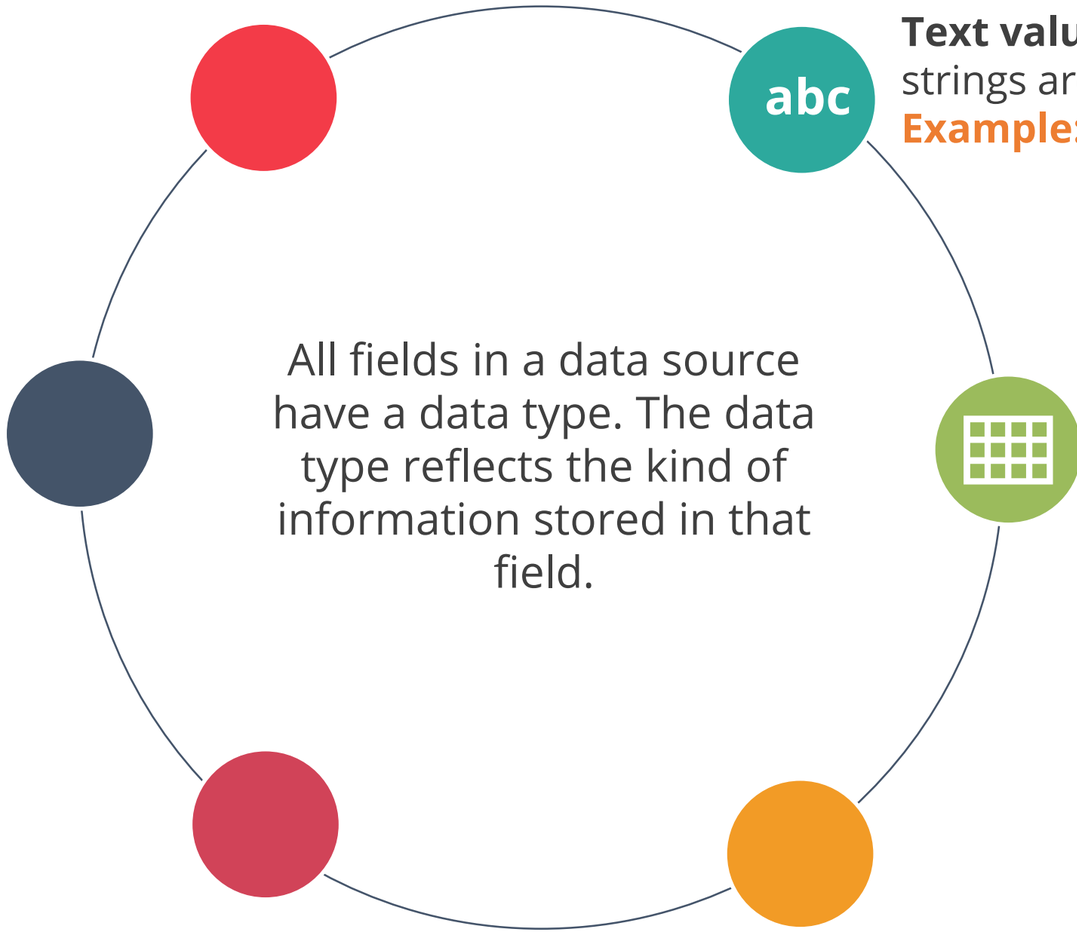


Data Types



Text values: Alphanumeric data and strings are Text data types.
Example: “Books,” “CA-2013-151654”

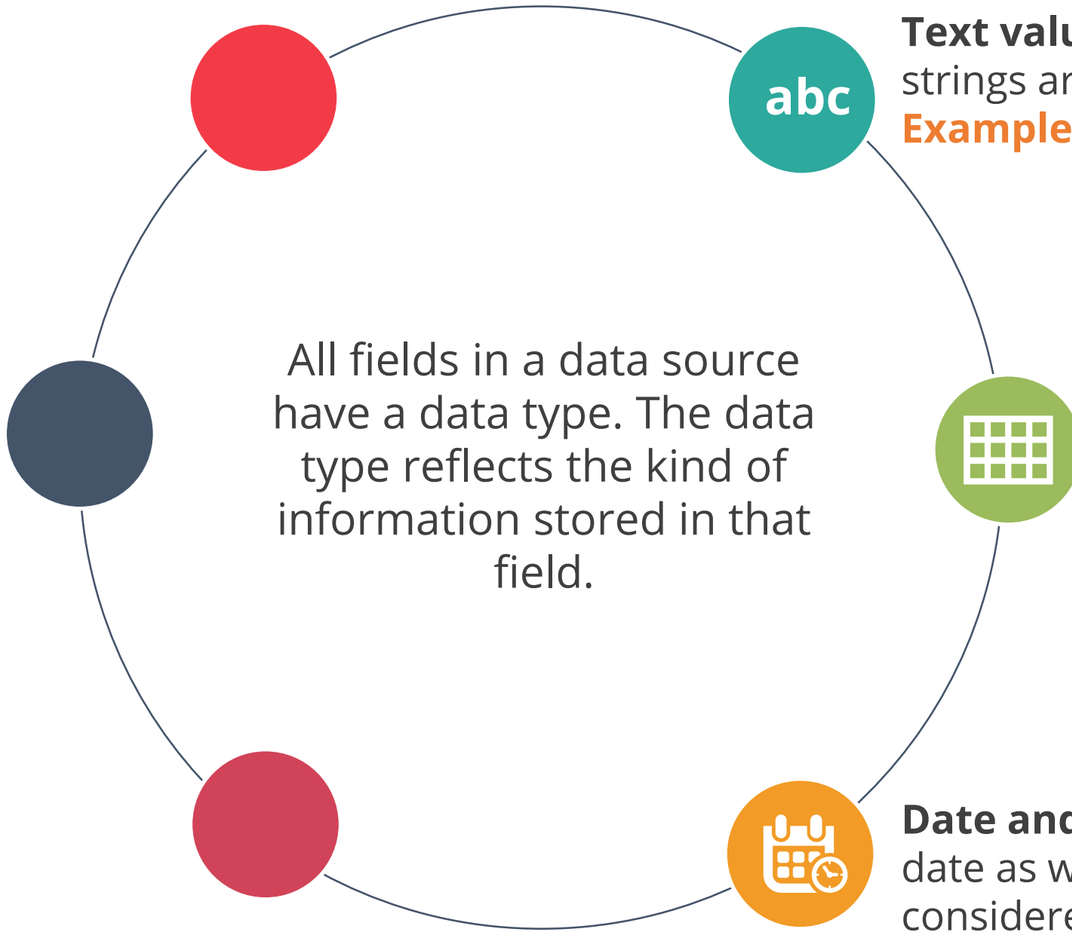
Data Types



Text values: Alphanumeric data and strings are Text data types.
Example: “Books,” “CA-2013-151654”

Date values: Strings matching a date format are considered Dates.
Example: “01/23/2015,” “Jan 2015”

Data Types

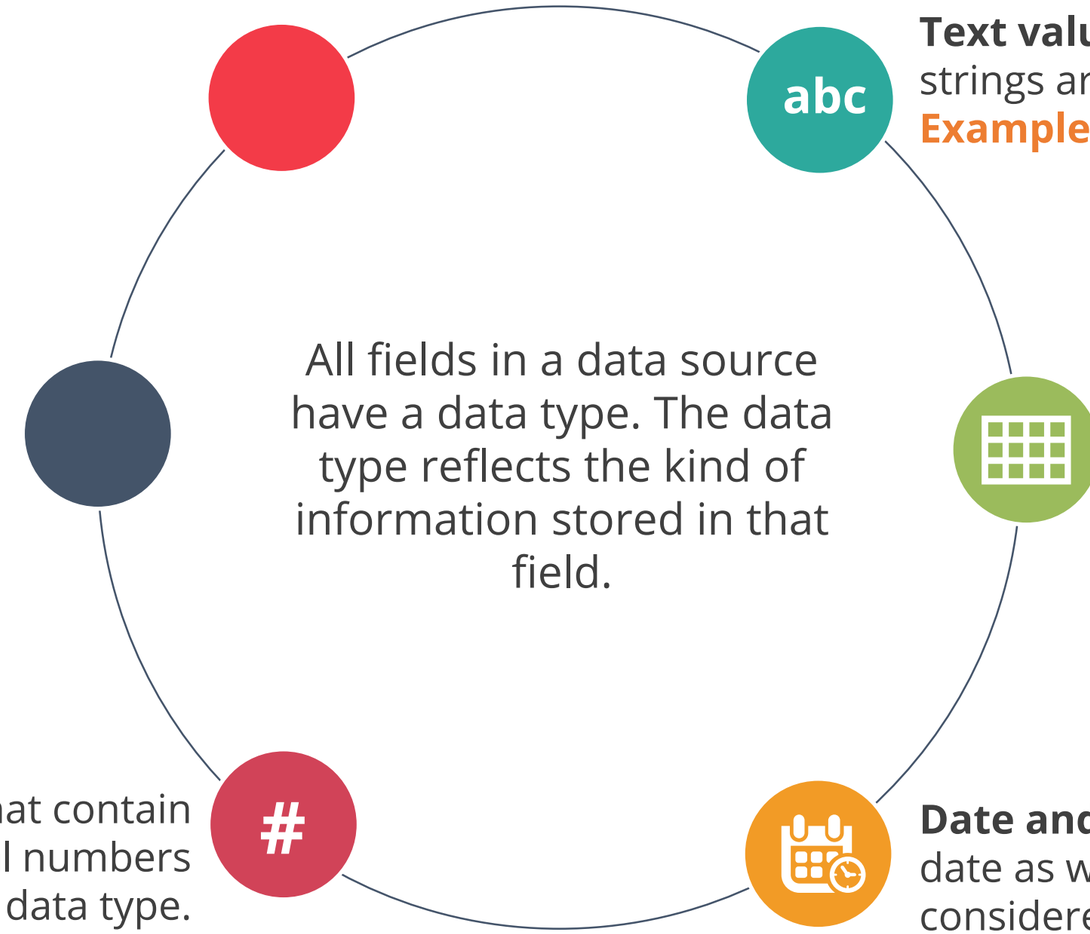


Text values: Alphanumeric data and strings are Text data types.
Example: “Books,” “CA-2013-151654”

Date values: Strings matching a date format are considered Dates.
Example: “01/23/2015,” “Jan 2015”

Date and Time values: Fields that contain date as well as Time information are considered Date and Time data type.
Example: “01/23/2015 4:54:00PM”

Data Types



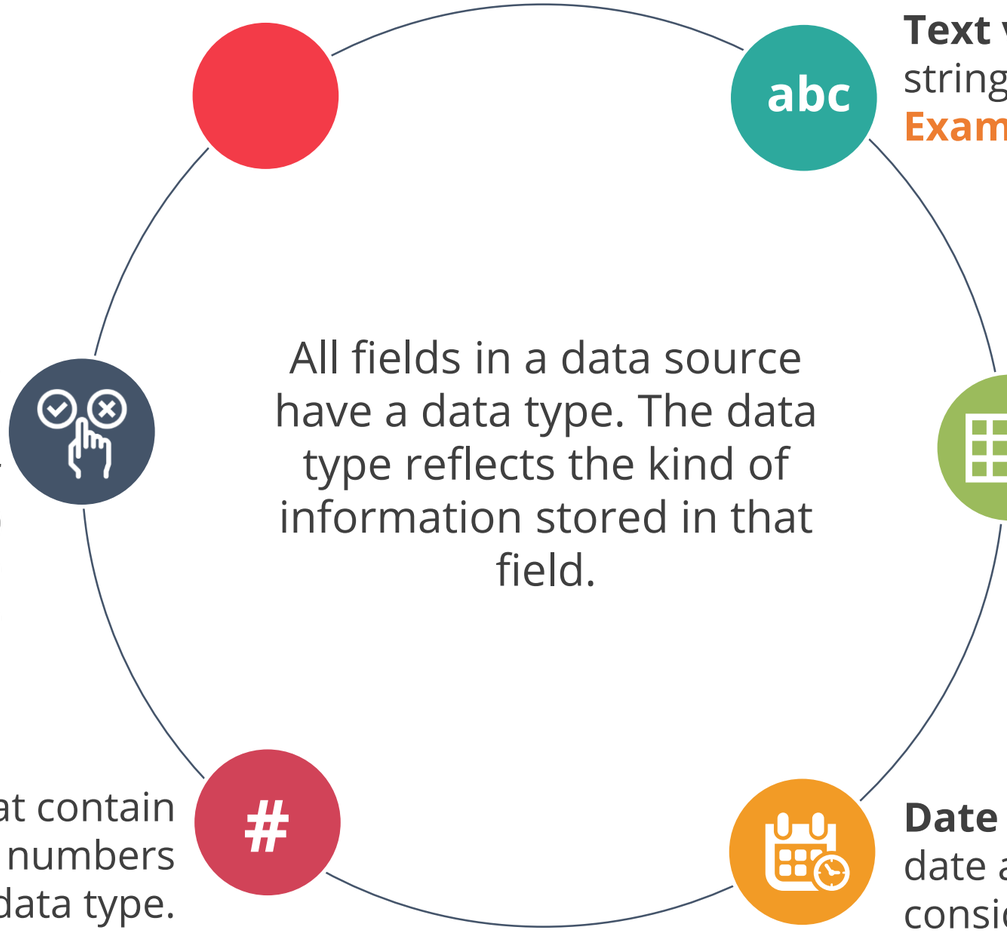
Text values: Alphanumeric data and strings are Text data types.
Example: “Books,” “CA-2013-151654”

Date values: Strings matching a date format are considered Dates.
Example: “01/23/2015,” “Jan 2015”

Date and Time values: Fields that contain date as well as Time information are considered Date and Time data type.
Example: “01/23/2015 4:54:00PM”

Numerical values: Fields that contain Numeric data, including decimal numbers are considered Numerical data type.
Example: 34.56, 410

Data Types



All fields in a data source have a data type. The data type reflects the kind of information stored in that field.

Text values: Alphanumeric data and strings are Text data types.
Example: “Books,” “CA-2013-151654”

Boolean values: Fields that contain T/F or 0/1 as the only sets which are considered Boolean. (Supported for relational data sources)
Example: Current year 2017: True
Current year 2016: False

Date values: Strings matching a date format are considered Dates.
Example: “01/23/2015,” “Jan 2015”

Numerical values: Fields that contain Numeric data, including decimal numbers are considered Numerical data type.
Example: 34.56, 410

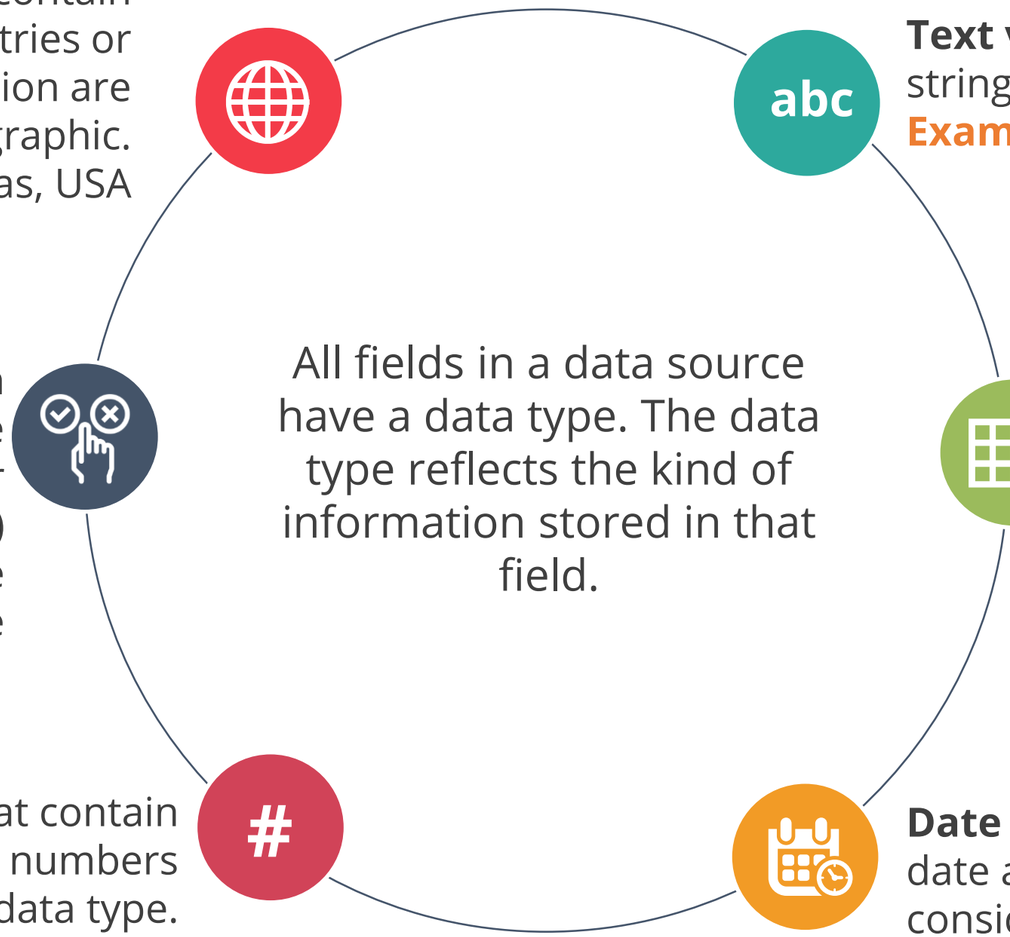
Date and Time values: Fields that contain date as well as Time information are considered Date and Time data type.
Example: “01/23/2015 4:54:00PM”

Data Types

Geographic values: Fields that contain names of cities, states, countries or latitude and longitude information are considered Geographic.
Example: Texas, USA

Boolean values: Fields that contain T/F or 0/1 as the only sets are considered Boolean. (Supported for relational data sources)
Example: Current year 2017: True
Current year 2016: False

Numerical values: Fields that contain Numeric data, including decimal numbers are considered Numerical data type.
Example: 34.56, 410



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Example: “01/23/2015,” “Jan 2015”

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Example: “01/23/2015 4:54:00PM”

Data Roles

In addition to a data type, every field in Tableau Public is characterized by two important settings that determine the behavior of the field when it is placed on a shelf:

- Dimension vs. Measure
- Discrete vs. Continuous

Varying the data roles can result in varying visualization.

Dimension vs. Measure

Dimension

- Dimensions typically produce headers when added to the rows or columns shelves in the view.
- By default, Tableau treats any field containing categorical information as a dimension.

Measure

- Measures typically produce axes when added to the rows or columns shelves.
- By default, Tableau treats any field containing numeric (quantitative) information as a measure.

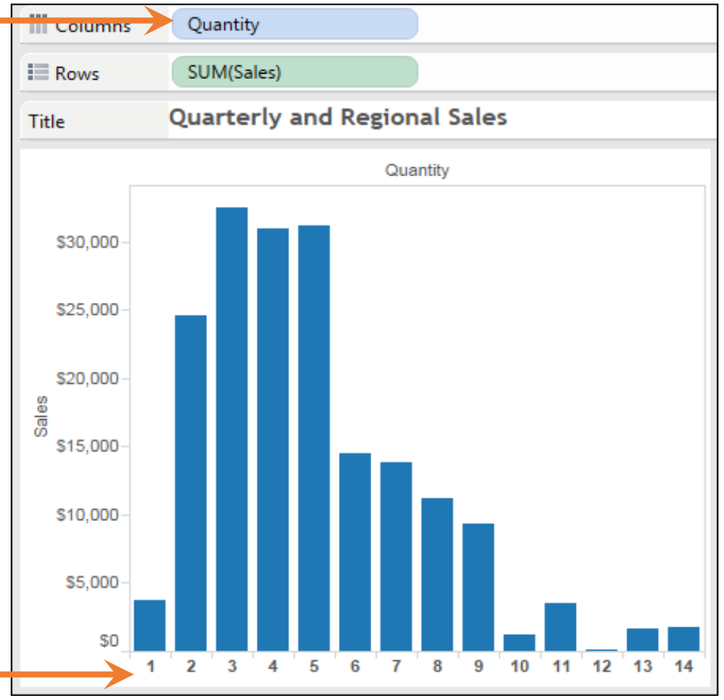
Continuous vs. Discrete

In addition to dimensions and measures, each field is categorized as either discrete or continuous. The graphs below illustrate the differences between these two data roles.

The Quantity field is **blue** in the Columns shelf.

Each distinct quantity is displayed as a header along the bottom of the bar chart.

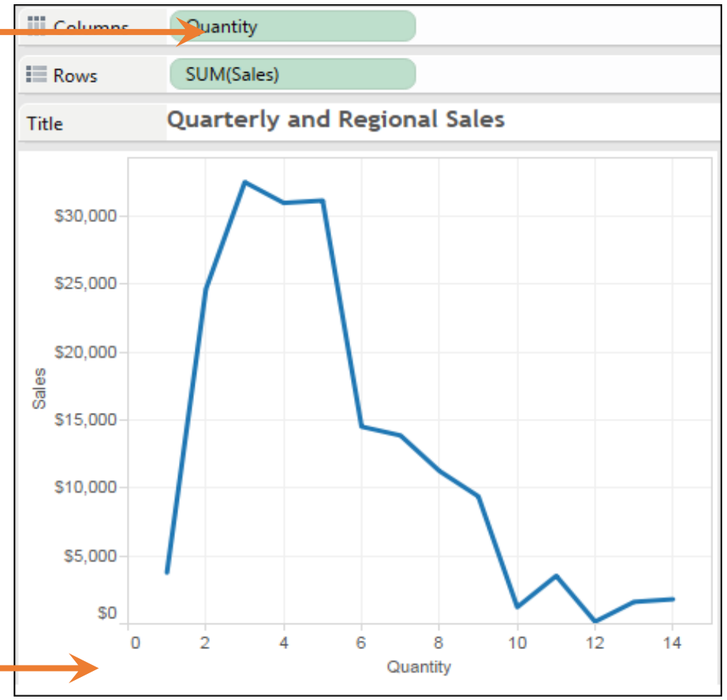
Quantity as a Discrete Measure



The Quantity field is **green** in the Columns shelf.

The quantity values are drawn along a continuous axis along the bottom of the line chart.

Quantity as a Continuous Measure



Introduction to Tableau Interface

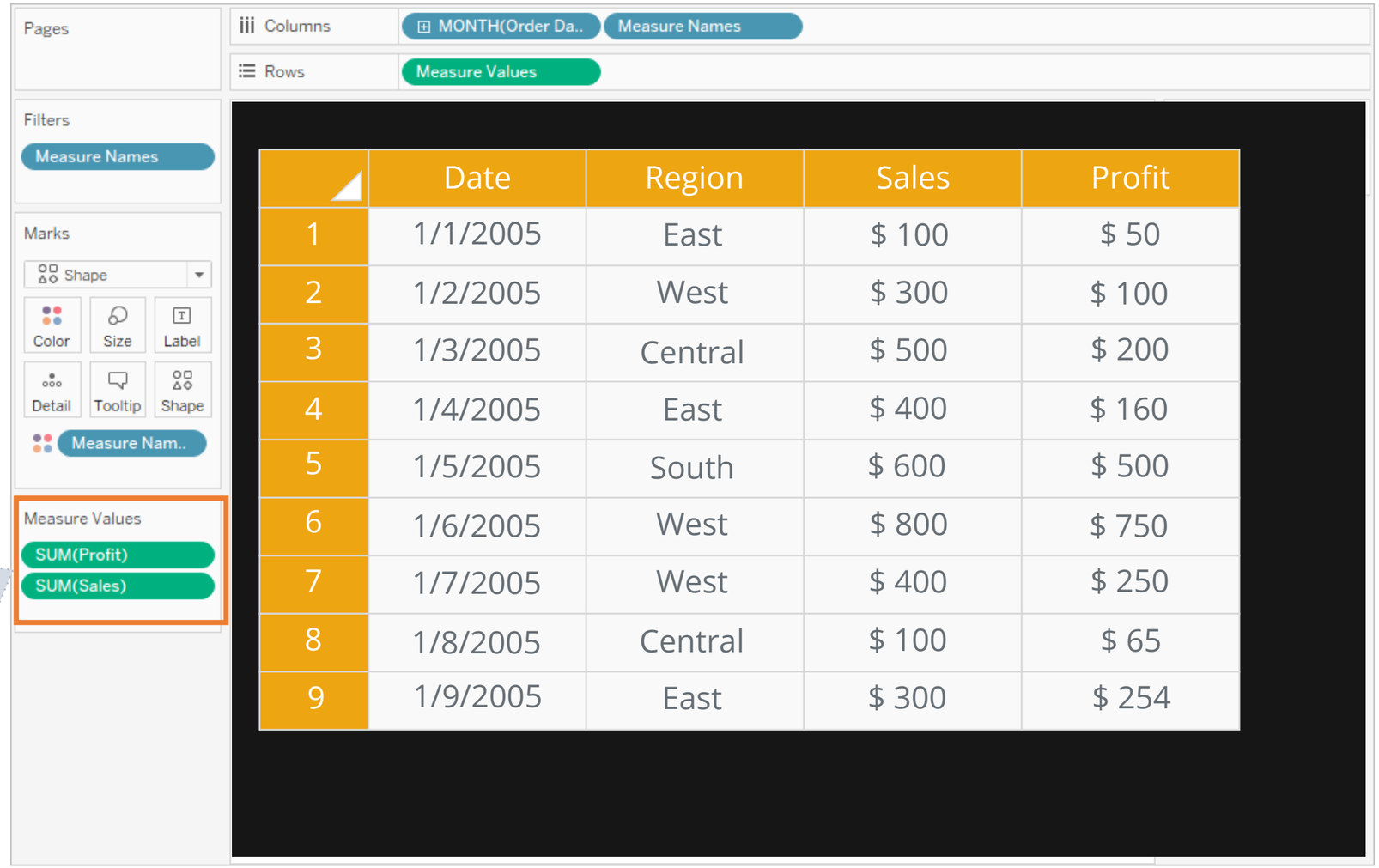
Topic 4: Automatically Generated Fields in Tableau

- Measure values and Measure names
- Number of records measure
- Visual cues for fields

Additional Fields in the Data Pane

- The Tableau data pane contains a number of fields that do not come from your original data. They are automatically generated by Tableau.
- Two of the important fields are: Measure Values and Measure Names.

Measure values appear at the bottom of the measures area. It contains all measures in the data collected into a single field with continuous values.

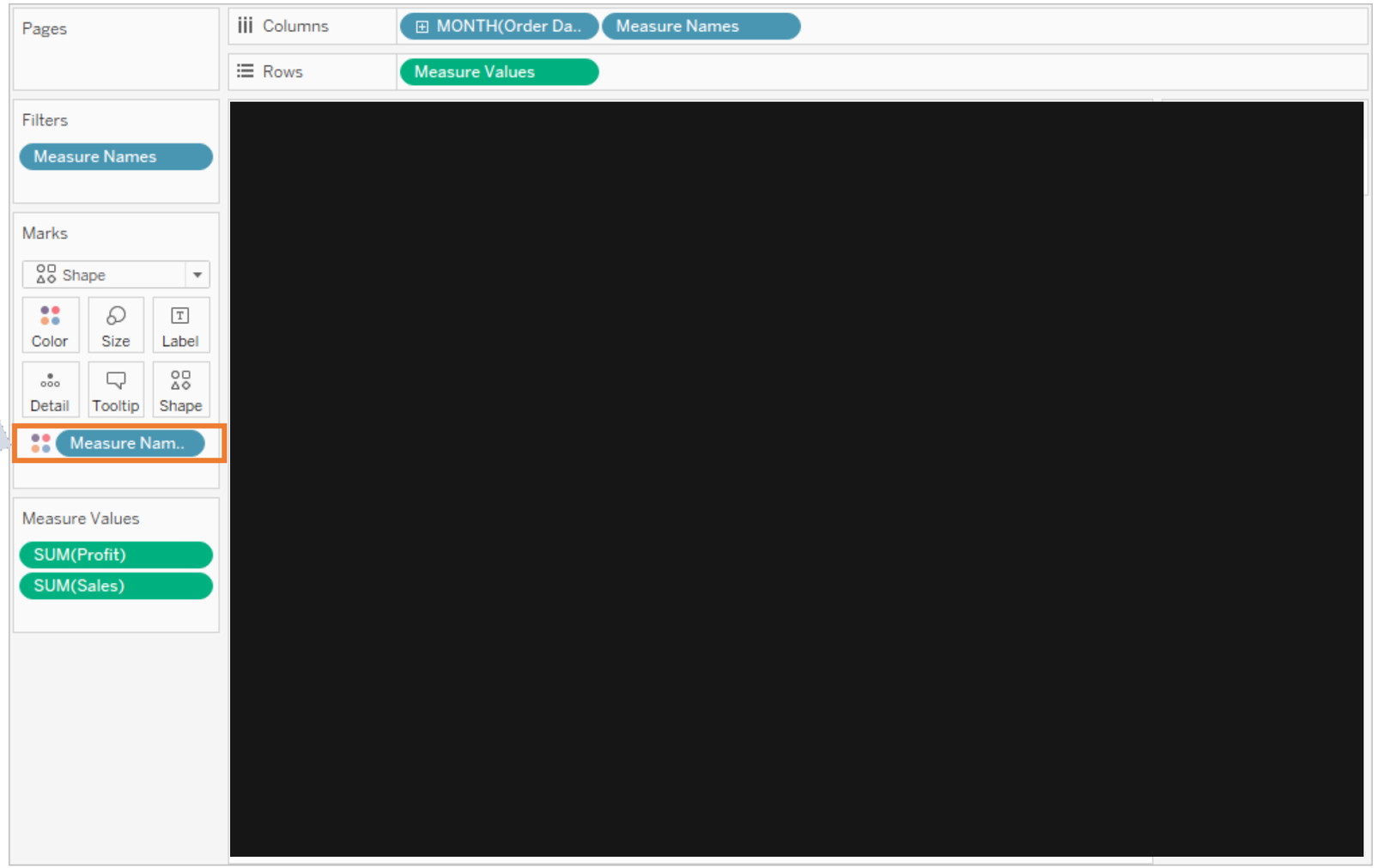


	Date	Region	Sales	Profit
1	1/1/2005	East	$ 100	$ 50
2	1/2/2005	West	$ 300	$ 100
3	1/3/2005	Central	$ 500	$ 200
4	1/4/2005	East	$ 400	$ 160
5	1/5/2005	South	$ 600	$ 500
6	1/6/2005	West	$ 800	$ 750
7	1/7/2005	West	$ 400	$ 250
8	1/8/2005	Central	$ 100	$ 65
9	1/9/2005	East	$ 300	$ 254

Additional Fields in the Data Pane

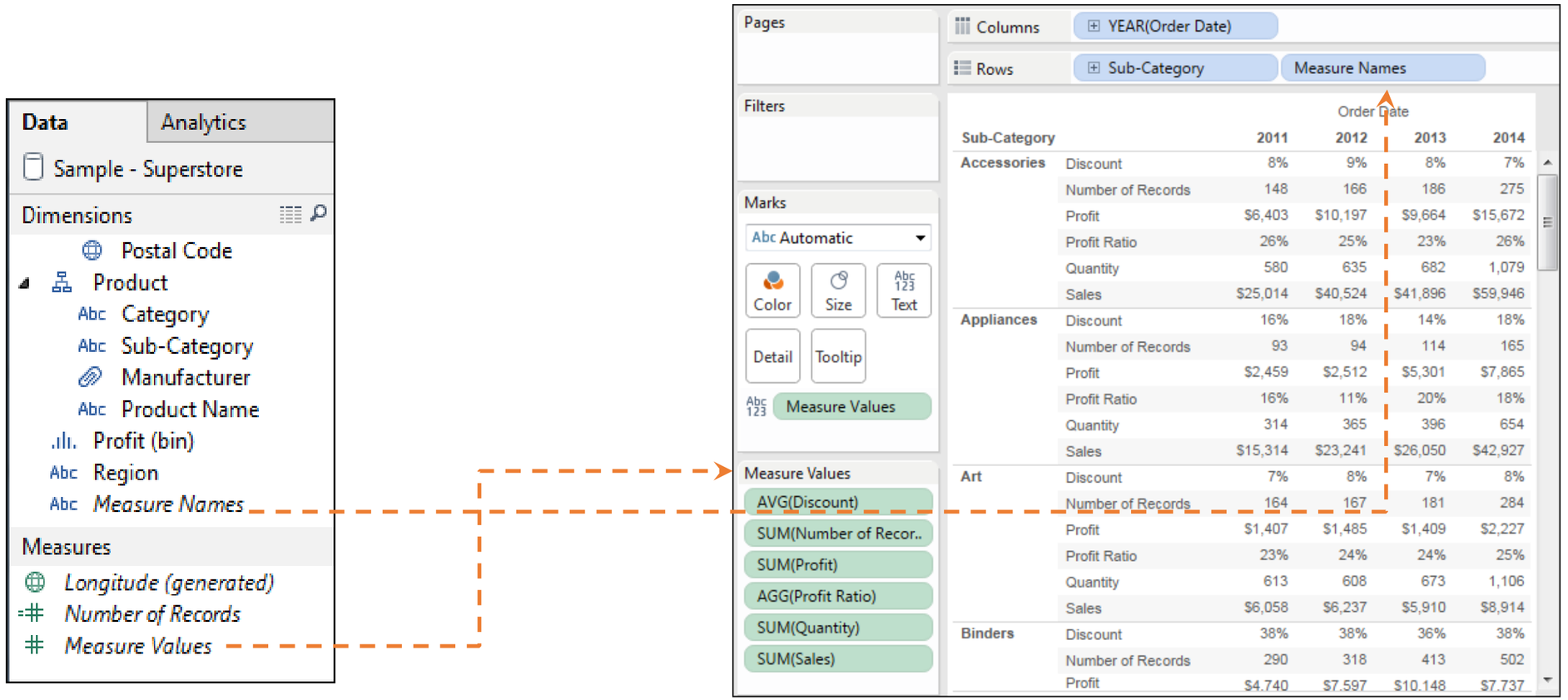
- The Tableau data pane contains a number of fields that do not come from your original data. They are automatically generated by Tableau.
- Two of the important fields are: Measure Values and Measure Names.

Measure names appear at the bottom of the dimension area. It contains names of all measures in the data collected in the single fields with discrete values.



Using Measure Values and Measure Names

The image illustrates where Measure Names and Measure Values fields in a view are used.

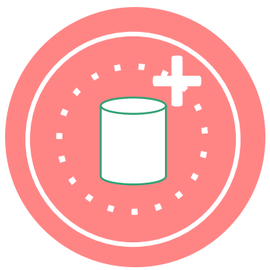


Number of Records Measure

The number of records field is another field automatically created by Tableau for each data source added.

It is not a part of the underlying data.

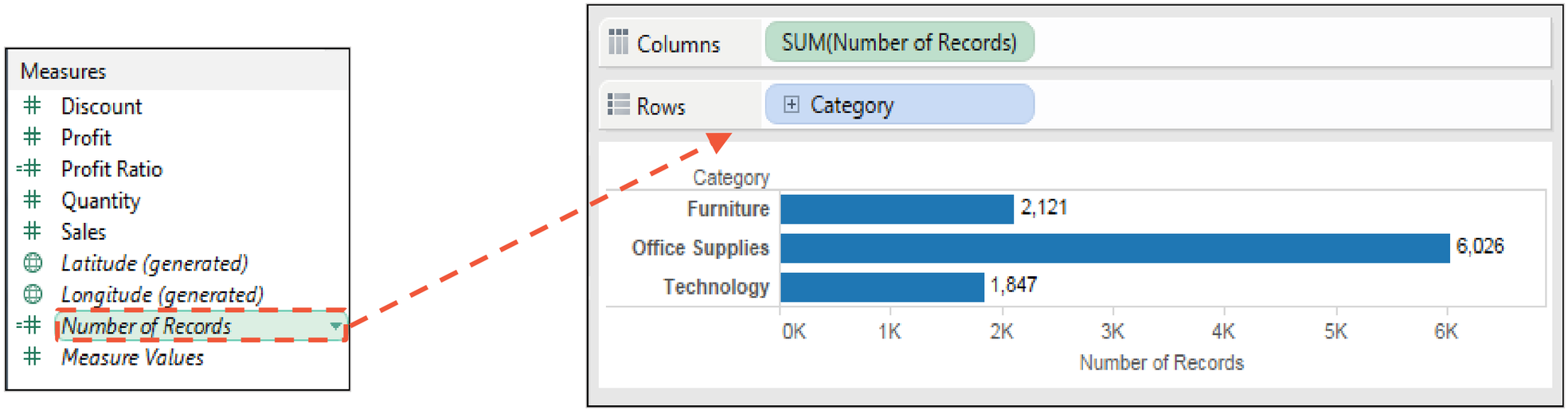
It represents the number of rows in the data source.



It can prove more useful with categorical data

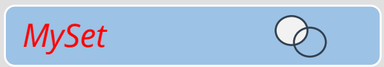
Using the Number of Records Measure

The image illustrates where the number of records field is used to analyze the total orders placed for each product category.



Visual Cues for Fields

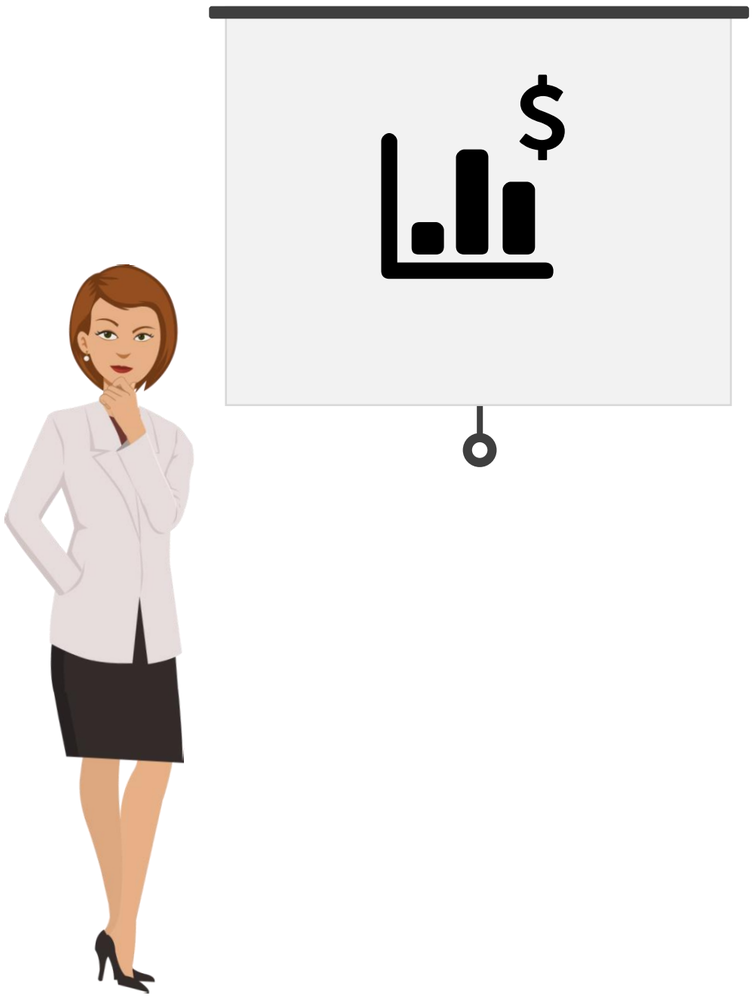
Tableau provides many visual cues to help you evaluate the type of data displayed in the rows or columns shelves:

Icon	Description
	The field is a level in a multidimensional hierarchy.
	The field is blended with a field from another data source.
	The field is a user filter and used when publishing to the web.
	A gray field on the Filters shelf indicates a context filter.
	The arrow icon indicates that a forecast is being displayed for the field.
	The field is from a secondary data source.
	The field is incompatible with one or more other fields in the view.
	The Venn diagram icon indicates a set.
	A field name shown in italics indicates a filtered set.

Use Case 1

Genelia wants to design a discount strategy to increase sales. For this, she needs to analyze the quantity sold as a dimension to compare it against the sales trend.

Let’s understand this through a demonstration.



Demo—Changing Data Roles

Demonstrate how to convert the quantity measure to a dimension and convert the quality dimension from discrete to continuous and create a bar chart displaying sales by quantity

TABLEAU DESKTOP 10

Closing Tableau Application

One of the following methods can be used to close Tableau application:

Click the Close icon located in the right corner of the application title bar

OR

Select File

Close

Quiz

TABLEAU DESKTOP 10

QUIZ
1

Which of the following is NOT a part of the data source page?

a. Preview pane

b. Join area

c. Toolbar

d. Metadata area

QUIZ
1

Which of the following is NOT a part of the data source page?

a. Preview pane

b. Join area

c. Toolbar

d. Metadata area

The correct answer is **c.**

Toolbar is a part of the Tableau workspace.

QUIZ
2

In the Tableau workspace, the sheet tabs are arranged at the _____ .

a. top

b. bottom

c. left

d. right

QUIZ
2

In the Tableau workspace, the sheet tabs are arranged at the _____ .

a. top

b. bottom

c. left

d. right

The correct answer is **b.**

In the Tableau workspace, the Sheet tabs are arranged at the bottom.

QUIZ
3

What does a red chain link visual cue represent?

a. The field is blended with a field from another data source.

b. The field is linked to a website.

c. The dimension is linked to a measure in the same data source.

d. The dimension is linked to another dimension in the same data source.

QUIZ
3

What does a red chain link visual cue represent?

a. The field is blended with a field from another data source.

b. The field is linked to a website.

c. The dimension is linked to a measure in the same data source.

d. The dimension is linked to another dimension in the same data source.

The correct answer is **a.**

The red chain link icon means that the field is (or can be) blended with a field from another data source.

Guided Exercise

Tableau DESKTOP 10

Guided Exercise 1—Problem Statement

Genelia has to design an advertising campaign for certain product categories across various regions. First, she has to analyze how each of the product categories is performing in different regions. For this, she needs to create a bar in the 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:

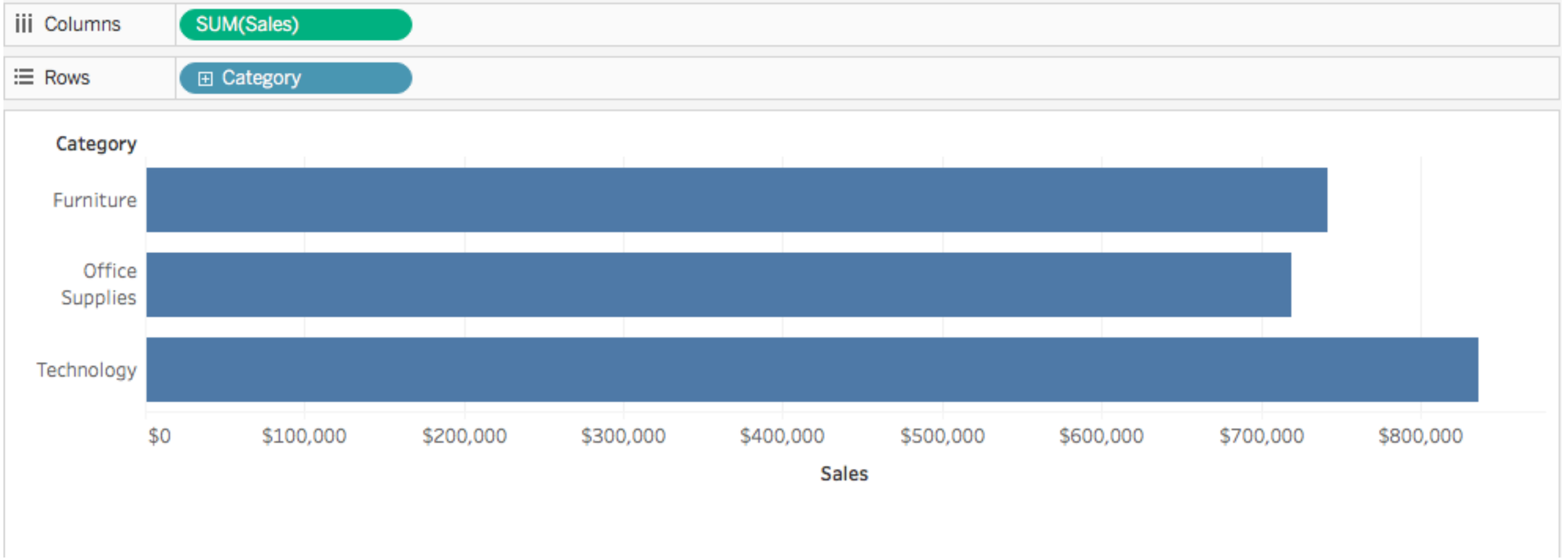
- Which product category has the highest sales in the East region?

- Which region recorded the lowest sales of office supplies?

Guided Exercise 1—Solution

A

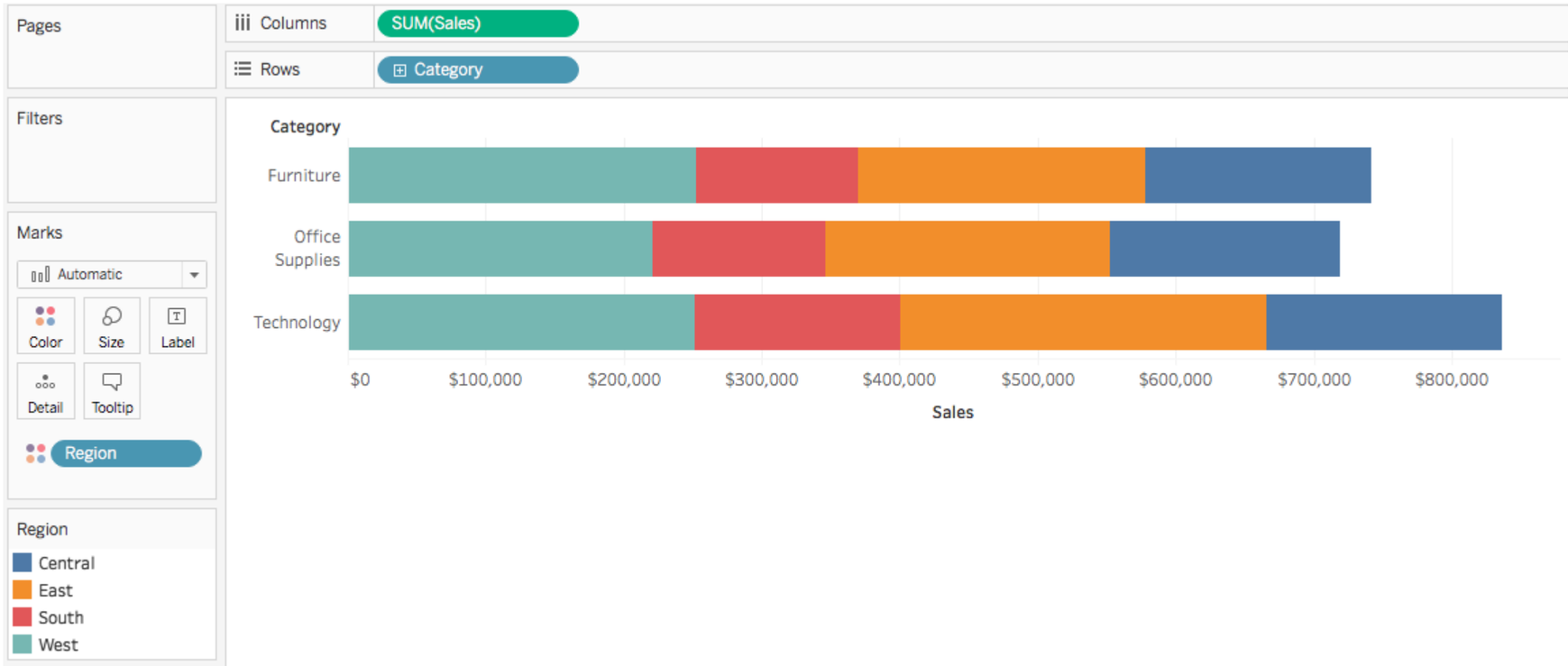
First, Genelia creates a bar chart showing sales by category:



Guided Exercise 1—Solution

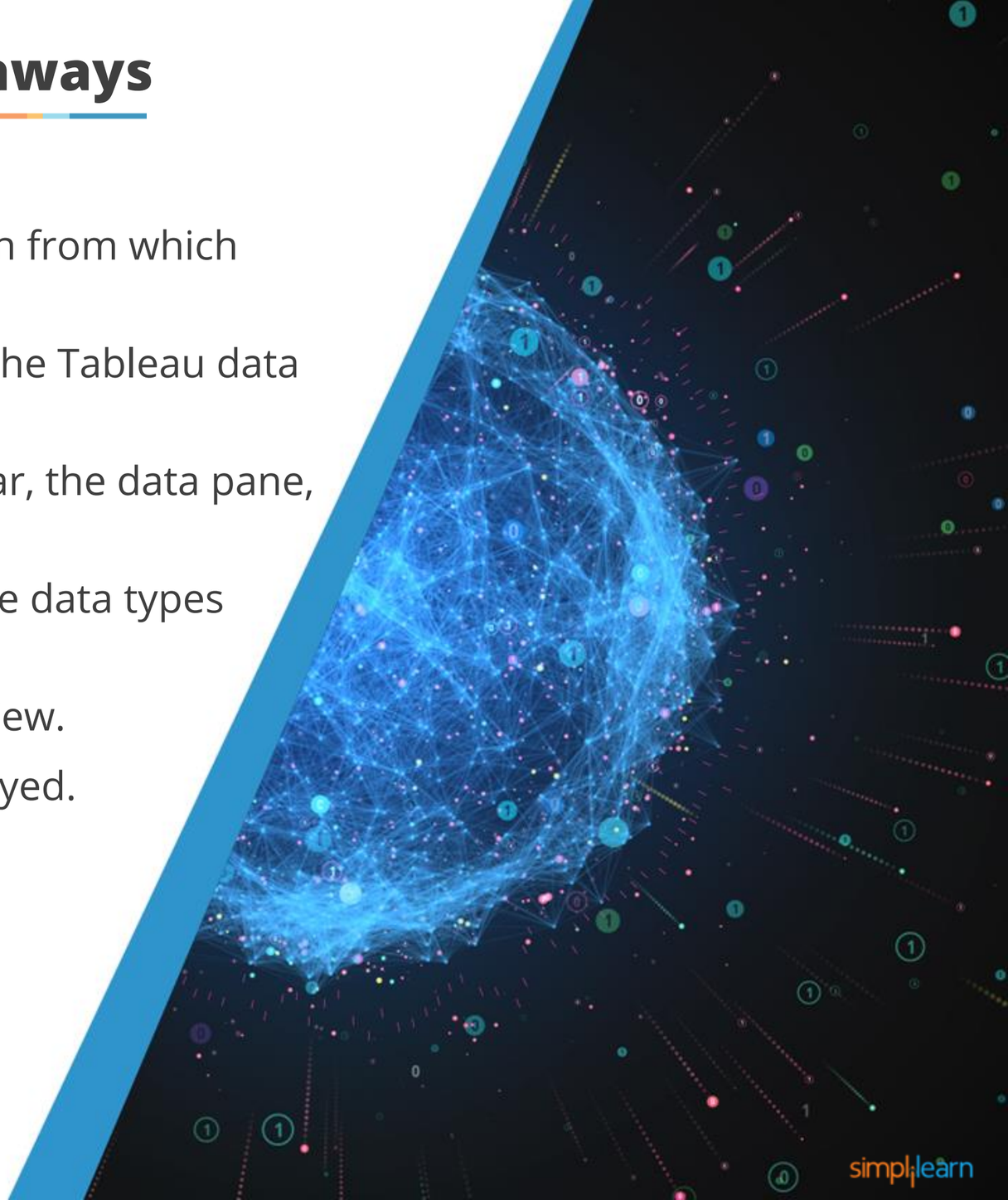
A

Then, Genelia adds the Region dimension using different colors to create the bar in bar chart:



Key Takeaways

- The start page in Tableau Public is a central location from which you can connect to your data.
- The Data Source page is used to make changes to the Tableau data sources.
- The Tableau workspace consists of menus, a toolbar, the data pane, cards, shelves, and one or more sheets.
- Text, Date, Date-Time, and Numeric are some of the data types supported by Tableau.
- Data roles depict the behavior of the fields in the view.
- Visual cues help us evaluate the type of data displayed.



This concludes “Exploring Tableau Interface.”