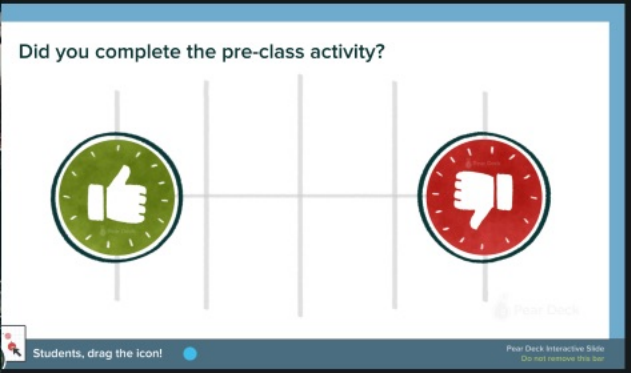
Data Visualization with Tableau

Session 1

CLARUSWAY©
WAY TO REINVENT YOURSELF



No Draggable™ Response

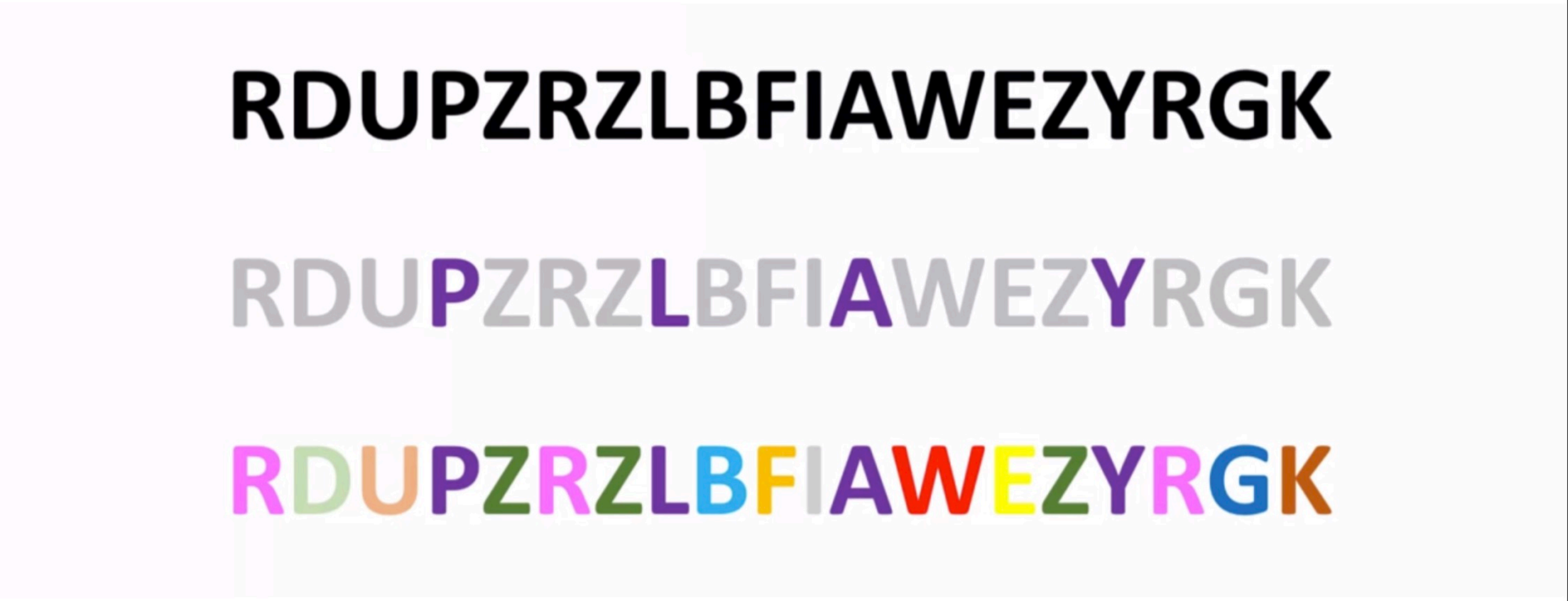
You didn't answer this question

Find a word that begins with P as quickly as

RDUPZRZLBFIAWEZYRGK

RDUPZRZLBFIAWEZYRGK

RDUPZRZLBFIAWEZYRGK


RDUPZRZLBFIAWEZYRGK
RDUPZRZLBFIAWEZYRGK
RDUPZRZLBFIAWEZYRGK

Some visual cues that pop out at us without conscious effort

COLOR HUE

ORIENTATION

TEXTURE

POSITION & ALIGNMENT

COLOR BRIGHTNESS

COLOR SATURATION

SIZE

SHAPE

tableau®

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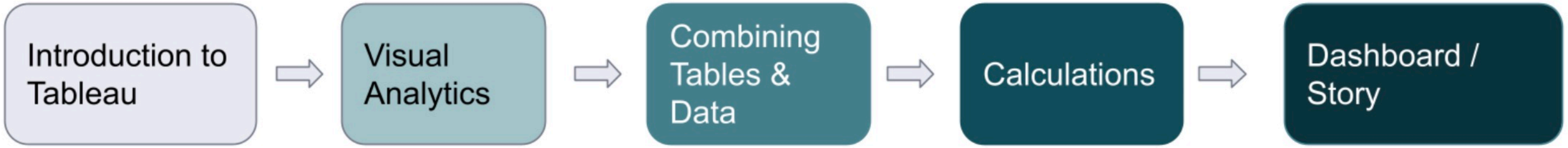
1 Course Info

Course Info

Course Duration

13 Sessions 39 Hours in Total In-Class
4-5 Sessions 4-5 Hours in Total Lab

Course Flow & Level of Course



Course Projects

2 Projects, 3 Assignments

Course Info

Course Objective

- The students will learn how to implement Tableau Desktop from the very beginning and how to use it to leverage data visualization to make decision making very easy.
- At the end of the course, you will be able to
  - Connect relational databases (MSSQL Server etc), spreadsheets & flat files (excel, txt, csv, google sheets), geofiles, pdf files and create interactive, functional and visually appealing dashboards and reports.
  - Easily adapt other BI tools such as Power BI Data Studio Looker
  - Start to apply data analysis and BI related jobs with %95 self- confidence level.

Objective

- Define what Tableau and Business Intelligence
- Install Tableau Desktop and Tableau Public
- Describe the areas of the start page
- Describe the areas of the data source page
- Connect to an Excel file

BUSINESS INTELLIGENCE

How to follow the class?

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

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Story of Tableau

Chris Stolte

CO-FOUNDER AND TECHNICAL ADVISOR

The Catalyst?

A Department of Defense (DOD) project aimed at increasing people's ability to analyze information. Brought to the Stanford University Computer Science department, the project took flight with Chris Stolte. Stolte, then a PhD candidate, was researching visualization techniques for exploring and analyzing relational databases and data cubes. His early career as a database programmer helped him see the problems with existing data analysis tools. Hungering for a project to change the world, he knew this was it.

Pat Hanrahan

TABLEAU'S CHIEF SCIENTIST AND CO-FOUNDER

The mind behind Pixar

The mind behind Pixar, and Stolte's PhD advisor, Professor Pat Hanrahan realized too it was a project that could change the world. A founding member of Pixar and chief architect for RenderMan, Pat had already transformed the world of animated film.

"We create pictures that answer questions, but we do it for businesses that want to know things about their data."

Chris, Pat, and a team of Stanford PhDs realized that computer graphics could deliver huge gains in people's ability to understand data. The breakthrough arose when they brought together two computer science disciplines for the first time: computer graphics and databases. Their invention VizQL™ let people analyze data just by building drag & drop pictures of what they wanted to see.

Christian Chabot

CO-FOUNDER AND CHAIRMAN

"I see the future"

"I see the future" was Christian Chabot's reaction when he saw what they invented. Chabot had spent years analyzing data before studying entrepreneurship at Stanford Business School. Together, Christian, Chris, and Pat formed a company and spun out of Stanford in 2003. With Christian on board as CEO, Tableau rapidly hit one success after another: first, customers, multiple awards, international expansion, the first million in revenue, and multiple new inventions. Tableau is revolutionizing business analytics. And this is only the beginning.

"We've become a democratizing force in one of the world's greatest areas of need."

Tableau Products

Tableau Desktop

Tableau Prep

Tableau Online

Tableau Server

Course: Data Analysis 12/22 EU | Course: Data Visualization with | Reflect & Review - Pear Deck

app.peardeck.com/review/student/txotwgcnc/-NEBiNJB4IqntHezFD-k

Uygulamalar | DIC | IT | DUTCH | EN | NL | PY-SQ | FORUM | U | OTHER | MAPS | SM | TR | HTML-CSS | DEVOPS | STATISTIC | In Zicht thema 3 v...

Tableau Products

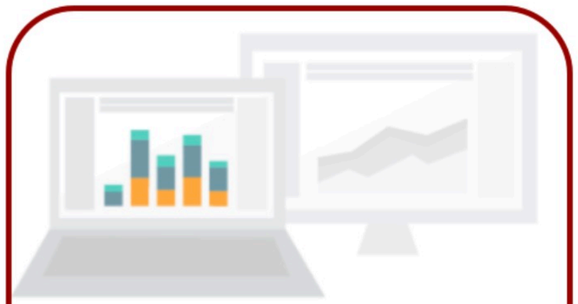

Tableau Desktop

Tableau Prep

Tableau Online

Tableau Server

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Slide 18 of 49

Date: 12.10.2022
Hunter's Reflect & Review

Session: TABLEAU_EU_DS12...

TABLEAU DESKTOP

TABLEAU DESKTOP PROFESSIONAL

- Paid version
- Full feature
- 1 year free licence for academic person and students

TABLEAU DESKTOP PUBLIC

- Free version
- Limited feature

Why Tableau?

Gold Standard in Visual Analysis

Figure 1: Magic Quadrant for Analytics and Business Intelligence Platforms

Source: Gartner (February 2021)

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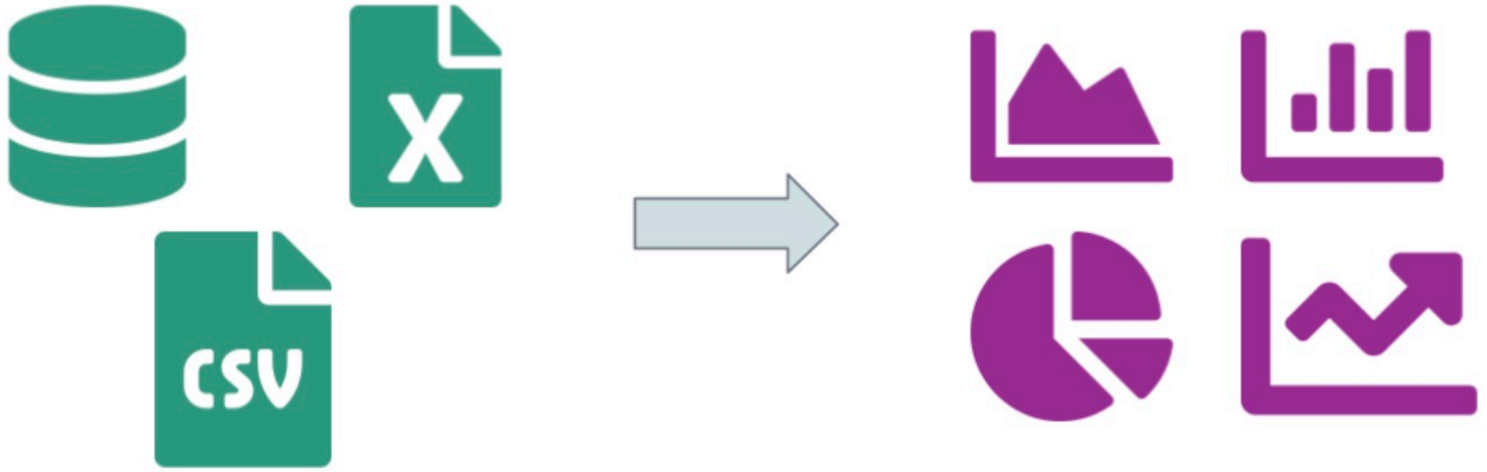
What is a dataset?

In the context of Tableau, a data set (sometimes called as a data source, or database) contains the data used to build visualizations. Every chart such as line chart, bar chart you see in Tableau has a connected database or spreadsheet that feeds the data.



Type of Data Sources

There are four different data source type in Tableau you connect to:

01	Spreadsheets, Flat Files	• Microsoft Excel • Google Sheets • csv, text file
02	**Relational Databases**	• MySQL, MSSQL Server, PostreSQL
03	**Cloud Data**	• AWS • Microsoft Azure • Google Cloud
04	**Other**	• Spatial Files • Statistical Files • PDF files

What is a field?

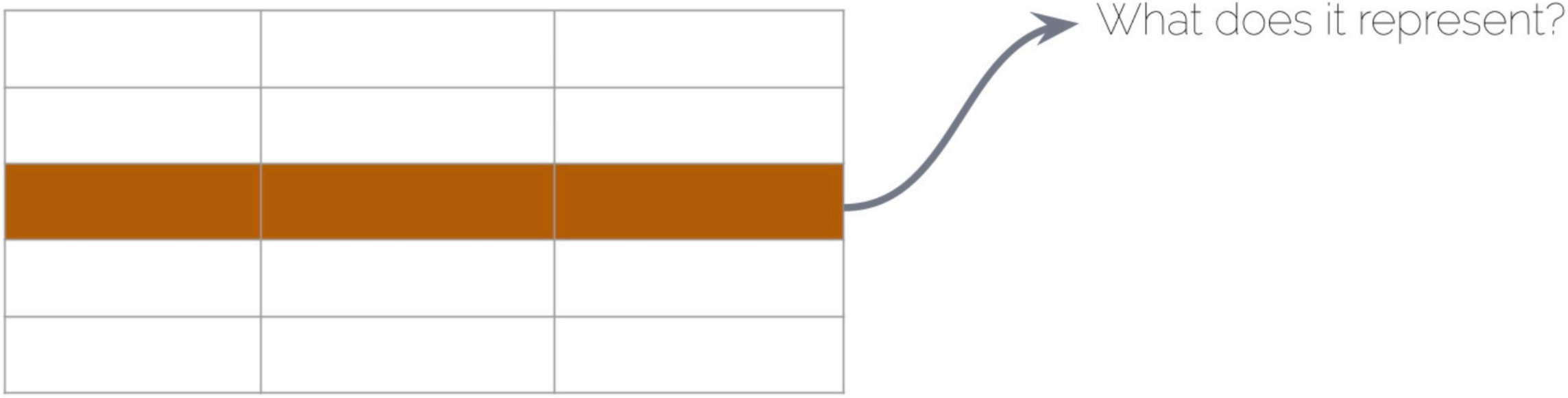
A field (aka, column or attribute) is a part of a record (or row) and contains a single piece of data for the subject of the record. In Tableau, we don't use term *column*, instead, we use ***field***.

employees table

emp_id	first_name	last_name	salary	job_title	gender	hire_date
17679	Robert	Gilmore	110000	Operations Director	Male	2018-09-04
26650	Elvis	Ritter	86000	Sales Manager	Male	2017-11-14
30840	David	Barrow	85000	Data Scientist	Male	2019-12-12

Row-level Record

Row-level record is a very important concept in Tableau. Because it's very important to understand what info a row of data contains. In this way, you'll have more power to ask complex questions to your data.

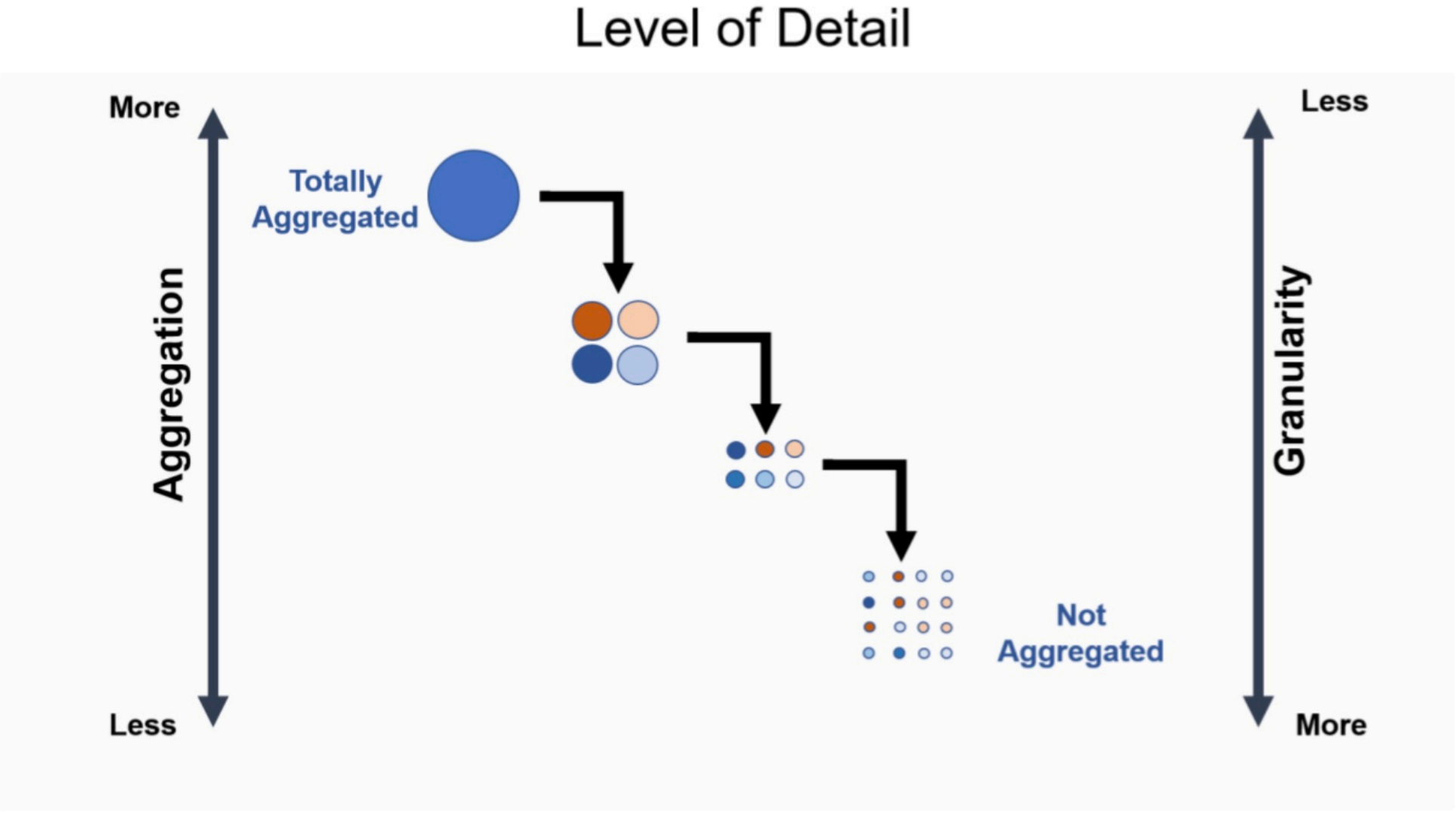


Row-level Record

Name	Mode_of_Trasportation	Days_Per_Week
Brandon	Bus	2
Brandon	Bicycle	3
Arthur	Car	2
Arthur	Bicycle	1
Arthur	Walk	2
Isaac	Car	3
Isaac	Bicycle	2

Each row displays the number of days per week a commuter uses a specific mode of transportation to go to work or go back home.

Granularity, Level of Detail, Aggregation



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Connect to Tableau

Basic Workflow of Tableau

Connect to Tableau

Basic Workflow of Tableau

Start Page

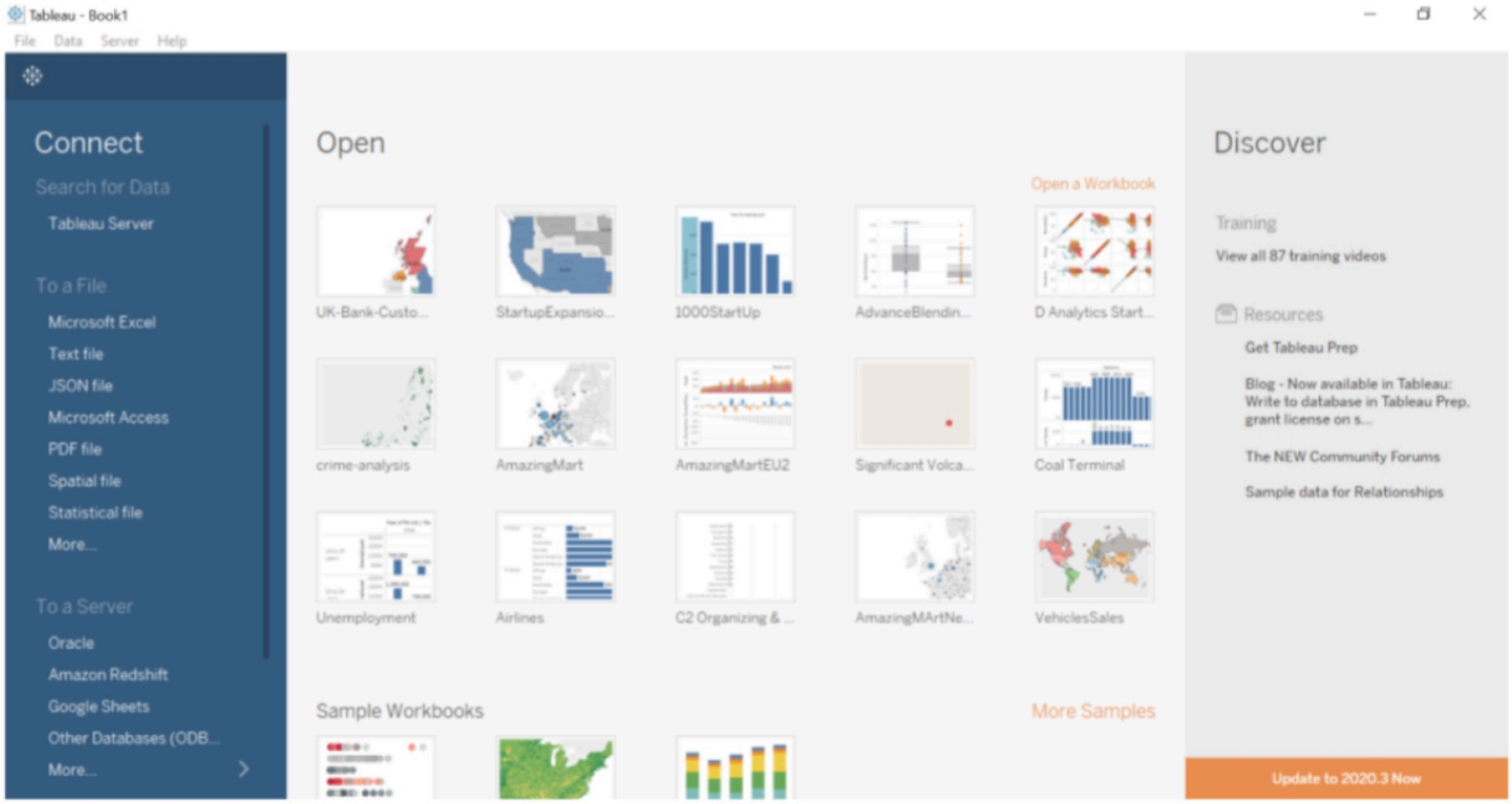
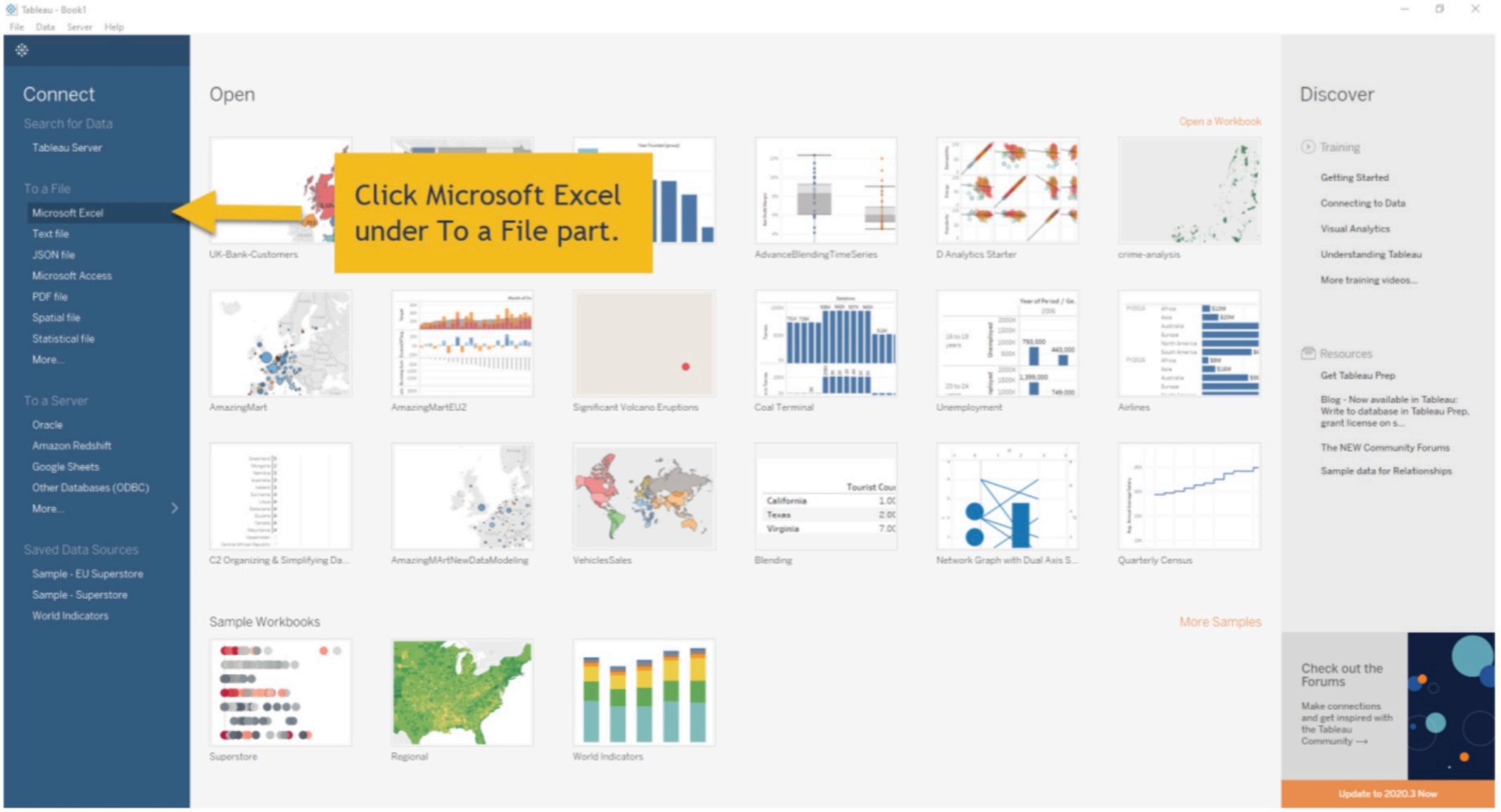
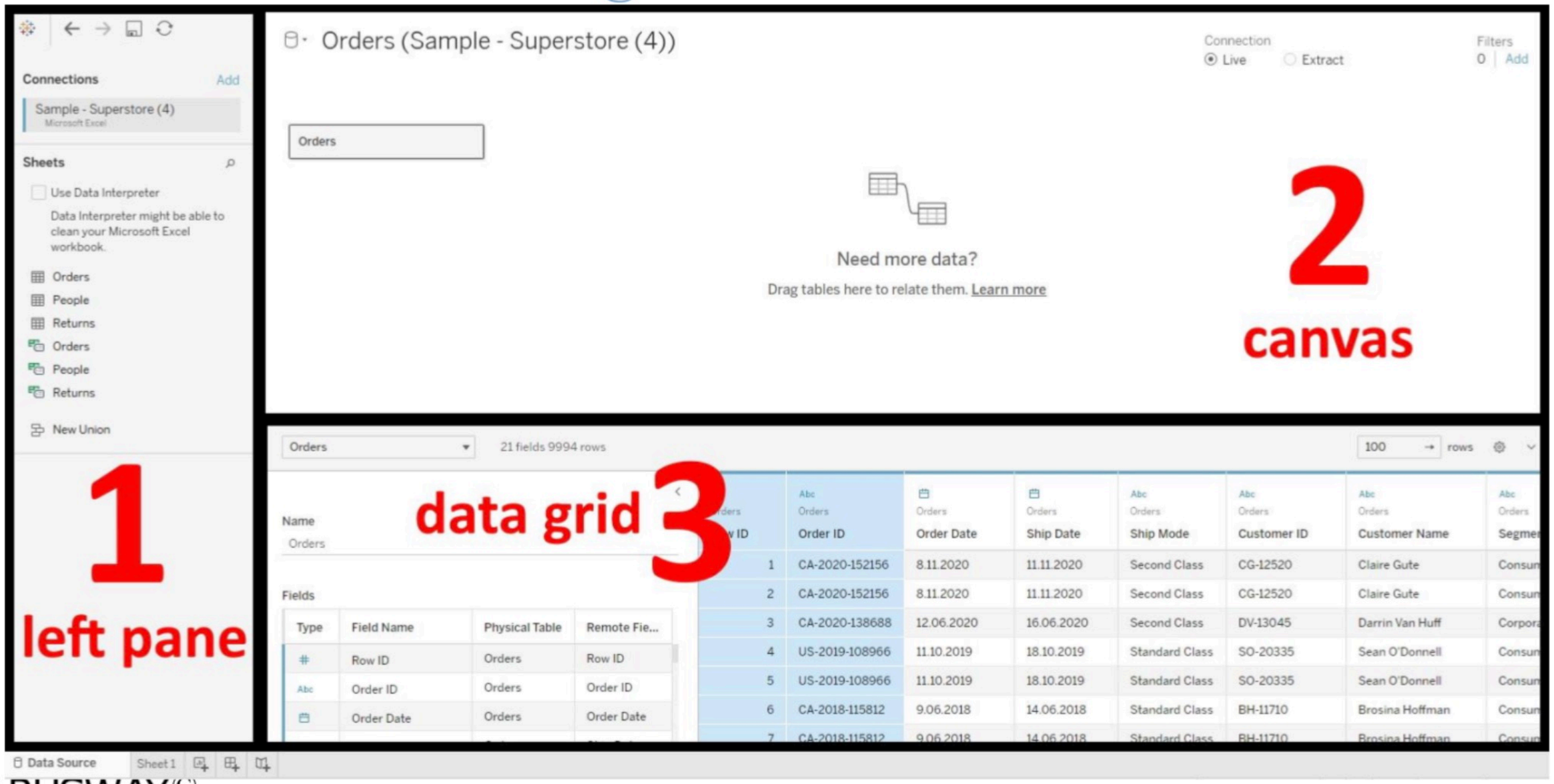


Tableau - Book1
File Data Server Help
Connect
Search for Data
Tableau Server
To a File
Microsoft Excel
Text file
JSON file
Microsoft Access
PDF file
Spatial file
Statistical file
More...
To a Server
Oracle
Amazon Redshift
Google Sheets
Other Databases (ODB...
More...
Open
Open a Workbook
UK-Bank-Custo...
StartupExpansio...
1000StartUp
AdvanceBlendin...
D Analytics Start...
crime-analysis
AmazingMart
AmazingMartEU2
Significant Volca...
Coal Terminal
Unemployment
Airlines
C2 Organizing & ...
AmazingMArtNe...
VehiclesSales
Sample Workbooks
More Samples
Discover
Training
View all 87 training videos
Resources
Get Tableau Prep
Blog - Now available in Tableau: Write to database in Tableau Prep, grant license on s...
The NEW Community Forums
Sample data for Relationships
Update to 2020.3 Now

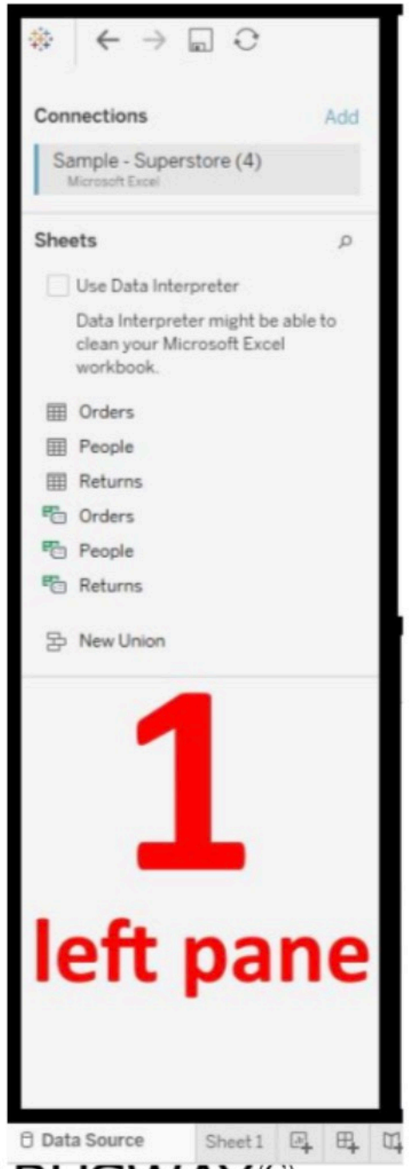
Time to Connect



Data Source Page



Data Source Page

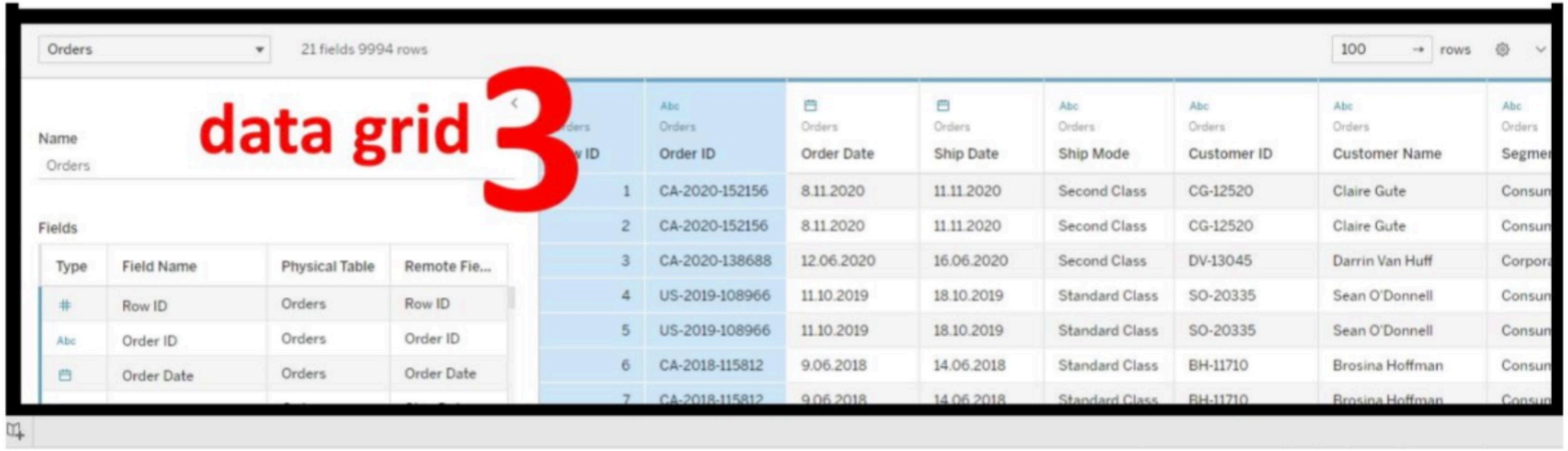


This pane shows the connected data source and its details (sheet names, table names), Data Interpreter, Union (this is the same of SQL Union ALL) feature.

Data Source Page

Canvas has two layers: logical layer, physical layer. We simply drag and drop the sheet/table names from the left pane to the canvas. The canvas opens with the logical. layer. We can create relationships between logical tables. To enter the physical layer, we double-click a table in the logical layer. We can then add joins and unions between tables in the physical layer.

Data Source Page



Data grid displays the first 100 rows of our data source.
Table Details displays the fields in your data source

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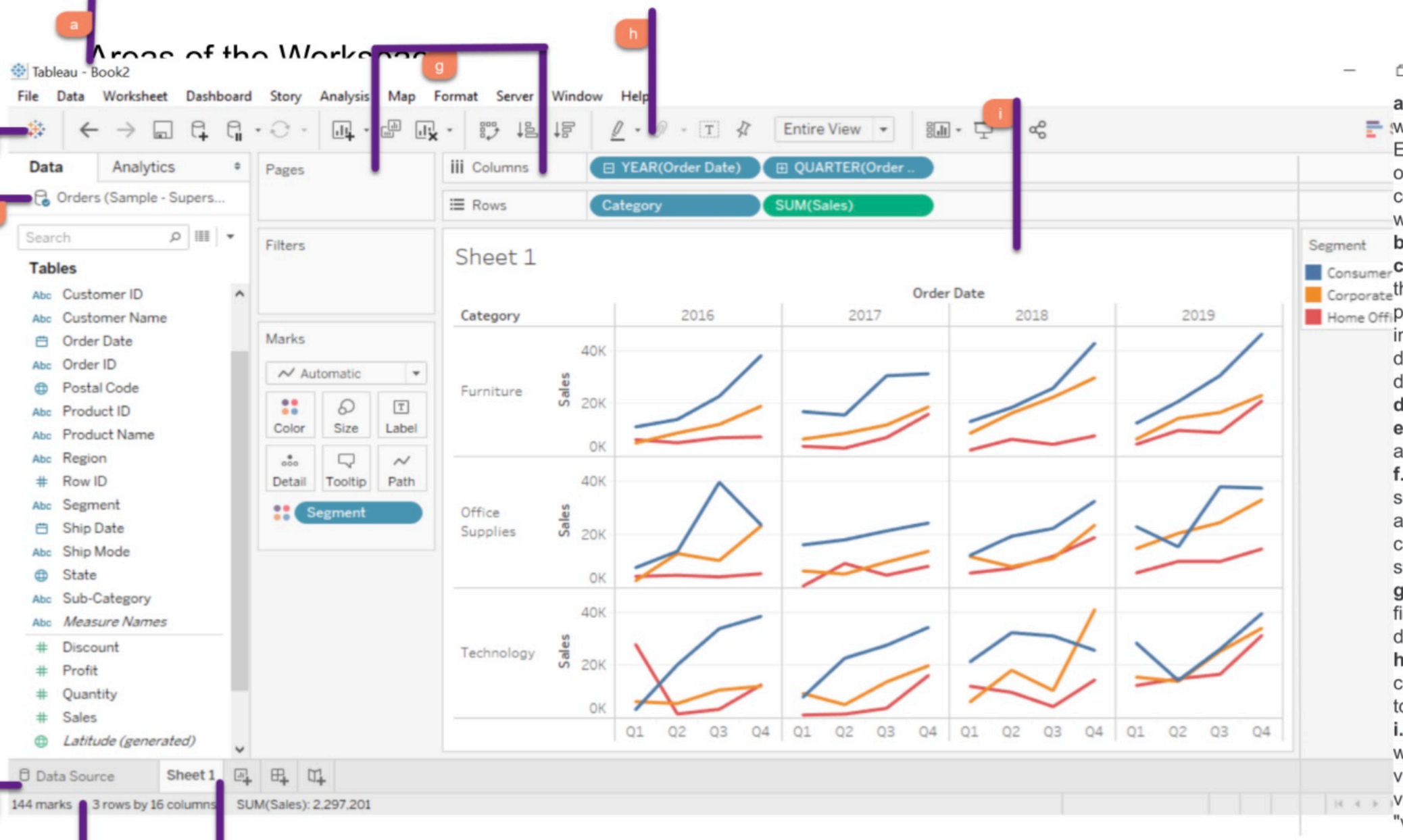
Areas of the Workspace



a.Workbook Name: Tableau uses a workbook and sheet file structure like Excel. When you open Tableau, you open a workbook. A workbook contains sheets. Sheets can be a worksheet, a dashboard, or a story.

b.Go to start page

c.Side Bar: This bar area contains the Data pane and the Analytics pane. But, you can only see this area in a worksheet. When you switch to a dashboard or story, you will see a different side bar structure.

d.Go to data source page

e.Status Bar: Displays information about the current view

f.Sheet Tabs: Tabs represent each sheet in our workbook. As we've already mentioned before, a sheet can be a worksheet, dashboard, and story.

g.Cards and Shelves: We drag fields to the cards and shelves to add data to our view (chart).

h.Toolbar: It is used for accessing commands, analysis, and navigation tools.

i.View: This is the canvas in the workspace where we create a visualization (charts). The visualization is also referred to as a "viz".

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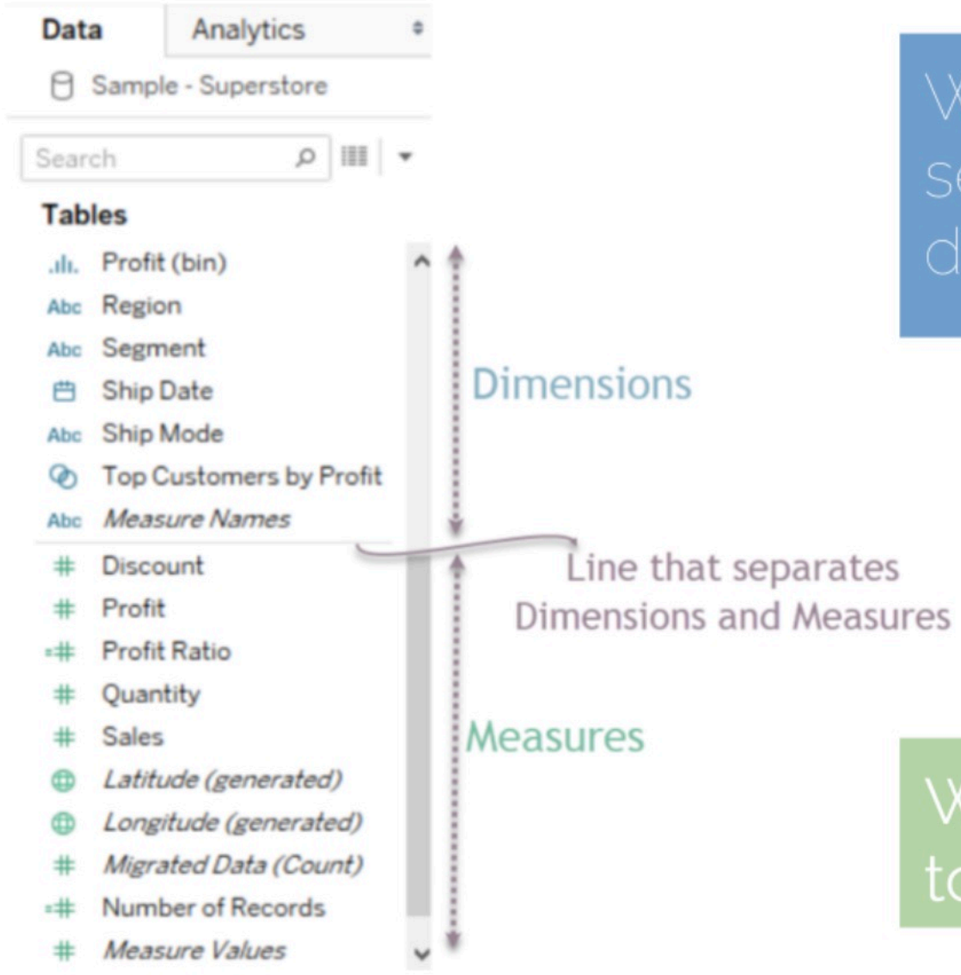
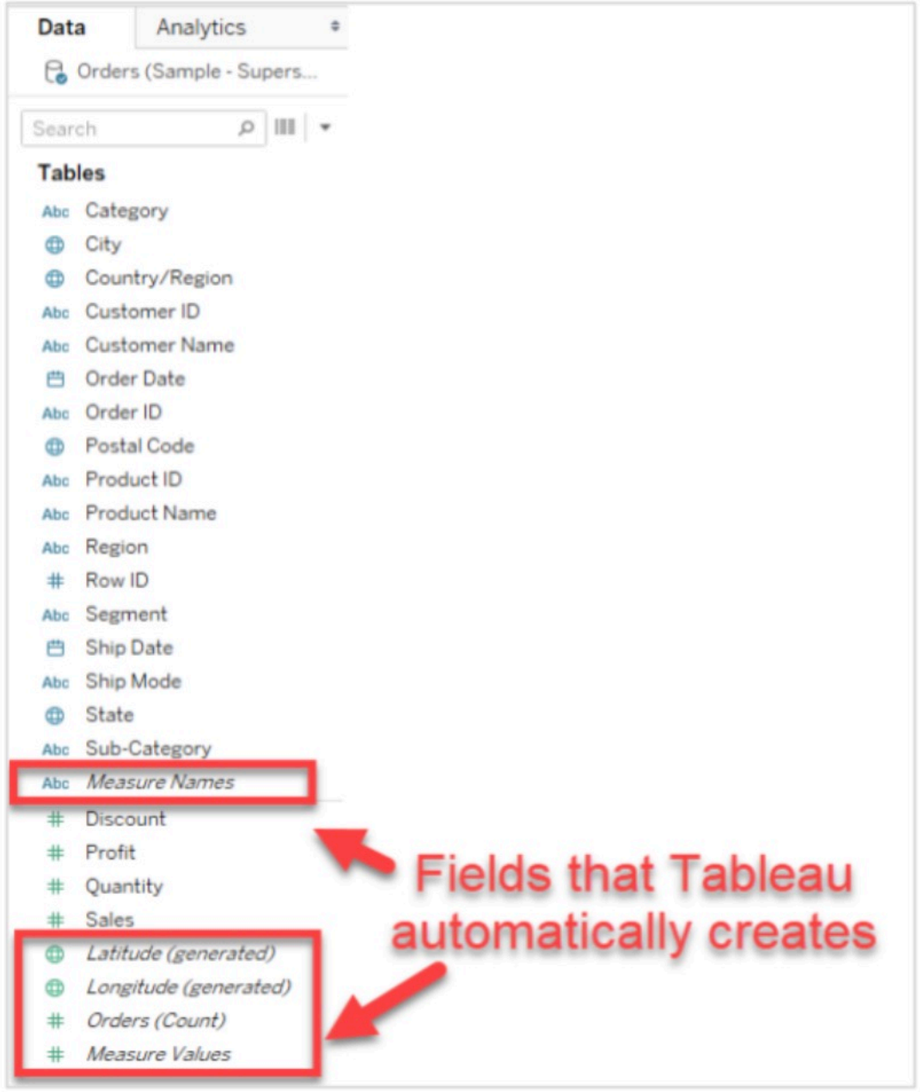
Data Pane



We use **Dimensions** to categorize, segment, break down and reveal the details in our data.

We can apply **Measures** calculations to them and aggregate them

Data Pane



Measure Names field contains the names of all measures in our data.

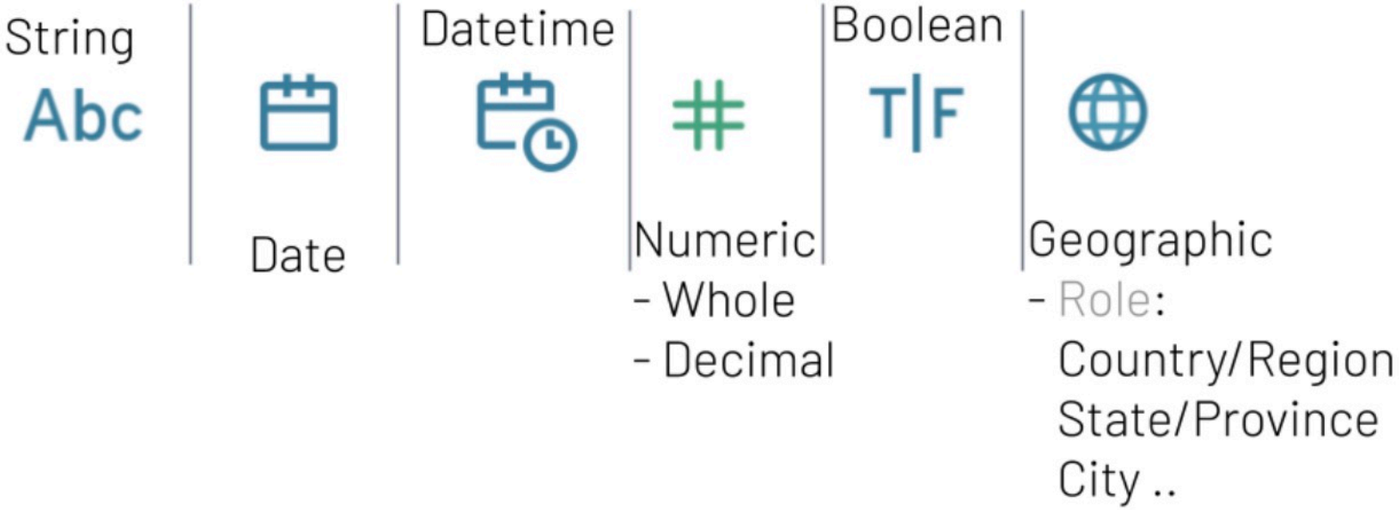
Measure Values field contains all the measures in our data. They are aggregated into a single field.

NameofTable(Count) field returns the number of records (or the number of rows) for the table.

Latitude (generated) and Longitude (generated) fields are generated if your data set has geographical fields.

Data Types

- All fields in a data source have a data type.
- The data type reflects the kind of information stored in that field, for example integers (410), dates (1/23/2015) and strings ("Wisconsin").
- The data type of a field is identified in the Data pane by one of the icons shown below.

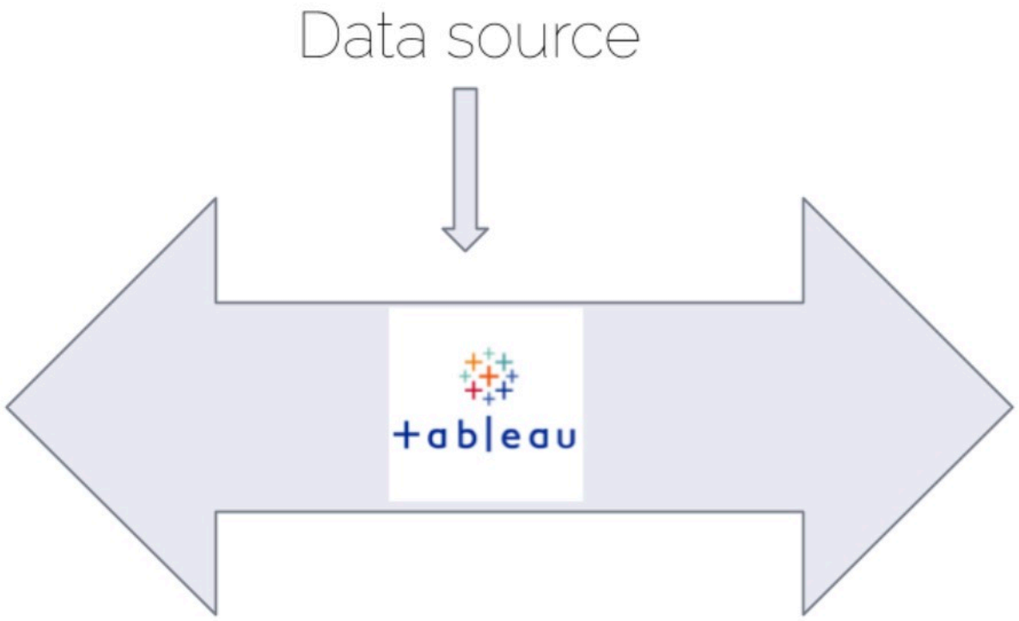


Data Types

Data type icons and descriptions

Icon	Data type
Abc	Text (string) values
	Date values
	Date & Time values
#	Numerical values
T|F	Boolean values (relational only)
	Geographic values (used with maps)
	Cluster Group

Dimensions & Measures



Qualitative

Dimensions

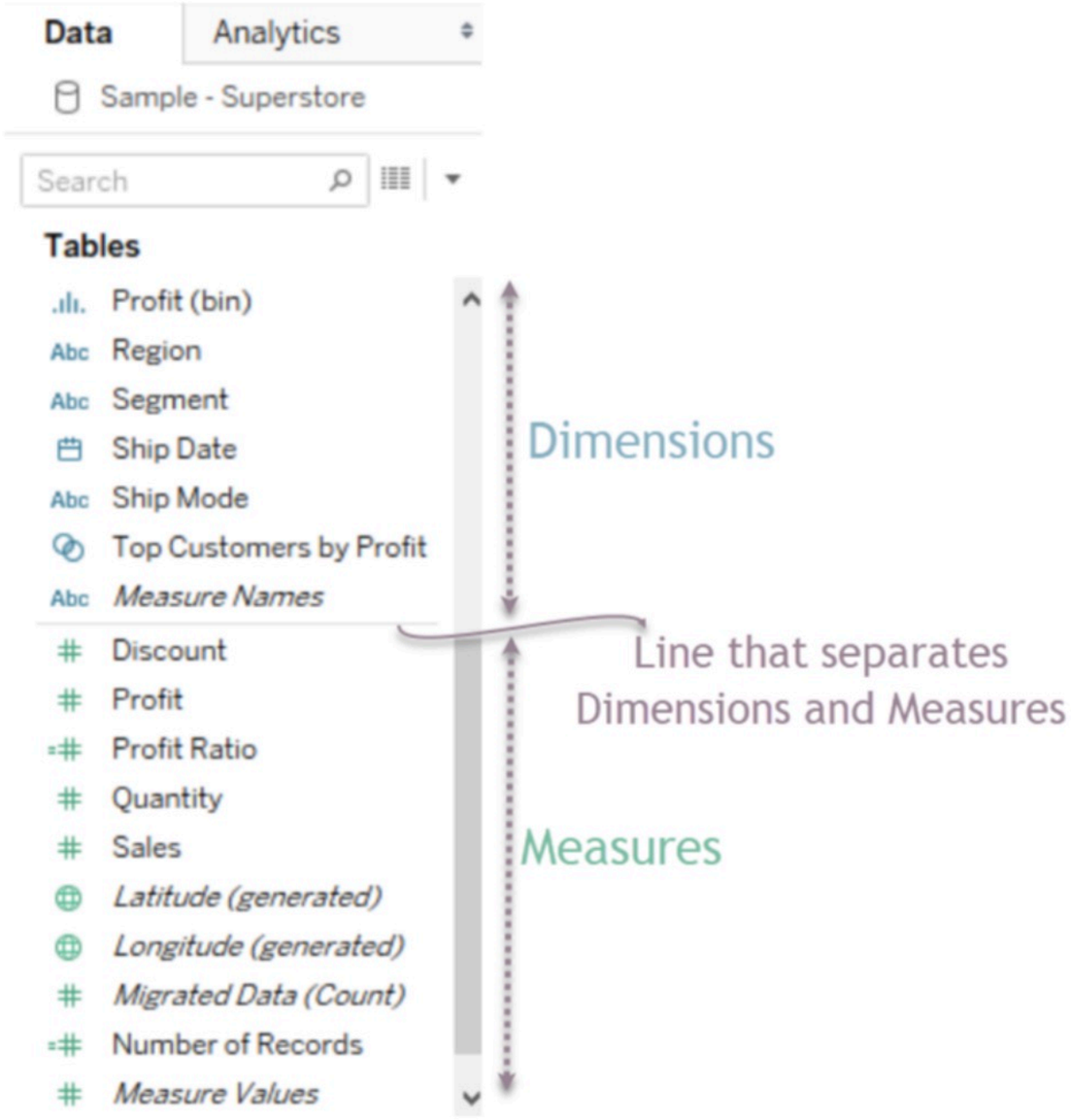
Categorical values such as names, dates, titles or geographical data

Quantitative

Measures

Numerical values such as salary, sales, profit

Dimensions & Measures



ID Number field is dimension.

True

False

No Multiple Choice Respon

You didn't answer this questio

Wrap-up

- What is Tableau?
- Basics of Tableau
- Start Page
- Data Source Page
- Areas of Workspace
- Data Types
- Dimensions and Measures
- Assignment-1

No Draggable™ Response

You didn't answer this question