

# Data properties

CONNECTING DATA IN TABLEAU



**Sara Billen**

Curriculum Manager, DataCamp

# Managing data



- Dimension/measure assignments
- Column name/alias changes
- Data types changes
- Default properties assignments

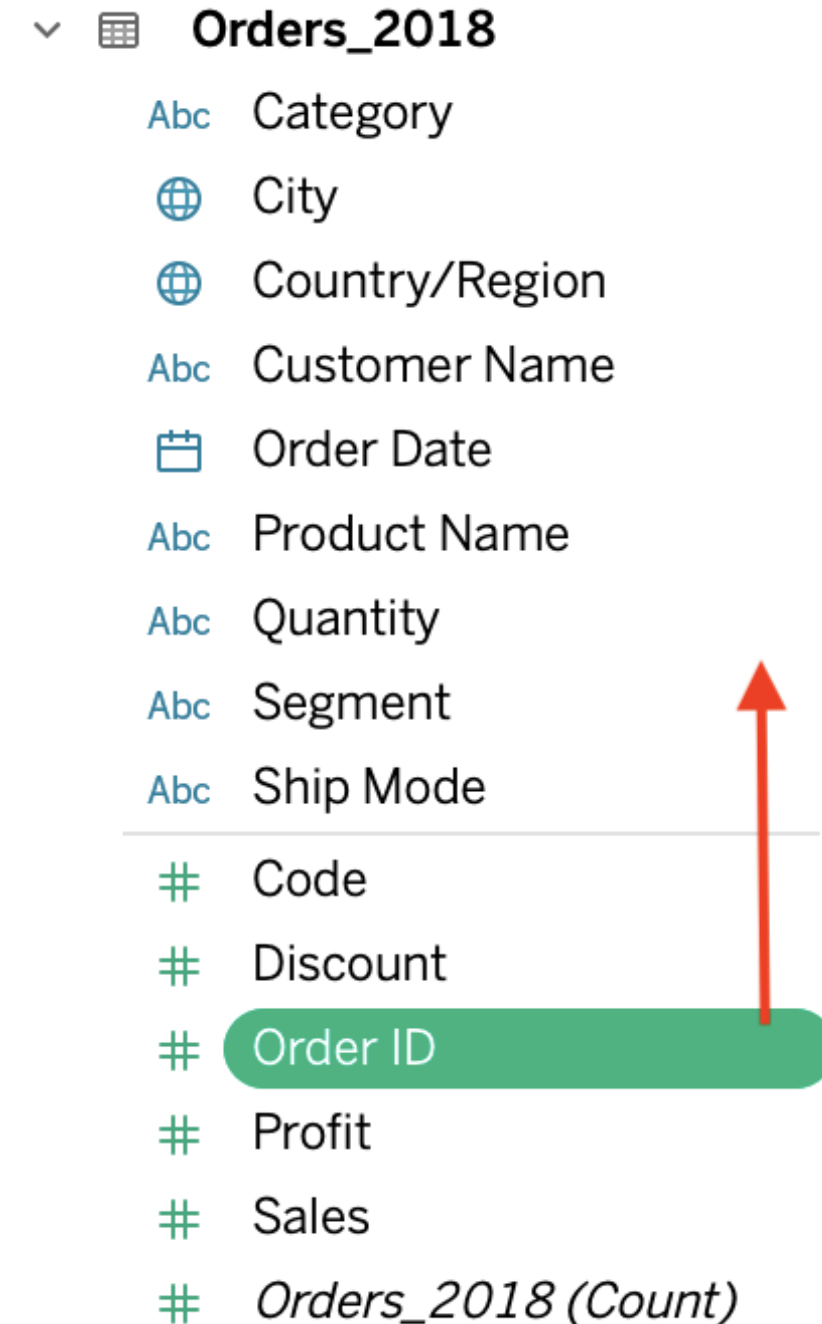
# Dimension vs. measures

## Dimensions

- Qualitative values
- E.g., names, dates, geographical data

## Measures

- Numeric/quantitative values
- E.g., price, duration, age



▼	📅	<b>Orders_2018</b>
Abc	Category	
🌐	City	
🌐	Country/Region	
Abc	Customer Name	
📅	Order Date	
Abc	Product Name	
Abc	Quantity	
Abc	Segment	
Abc	Ship Mode	
<hr/>		
#	Code	
#	Discount	
#	Order ID	
#	Profit	
#	Sales	
#	Orders_2018 (Count)	

# Column names and aliases

## Change column names

Abc

Orders!2018

<del>Segment</del>	Type
Consumer	
Consumer	
Corporate	
Consumer	
Corporate	
Corporate	
Consumer	

## Change aliases

Abc

Orders!2018

Segment	
<del>Consumer</del>	b2c
<del>Consumer</del>	b2c
<del>Corporate</del>	b2b
<del>Consumer</del>	b2c
<del>Corporate</del>	b2b
<del>Corporate</del>	b2b
<del>Consumer</del>	b2c

# Data types

Data type	Example
String values	Celia
Number (integer) values	15
Date values	16-07-1993
Date and time values	18-03-2016 12:45:28 AM
Boolean values	True
Geographic values	United States
Cluster or mixed values	<i>A mix of the above</i>

← → 📄 ↺
🗃️ Orders\_2018+ (Orders 2018 with Mfg)
Connection  
● Live ○ Extract
Filters  
0 | [Add](#)

**Orders\_2018**

**Mfg**

<div style="background-color: #e8f5e9; padding: 5px;">Abc</div> <small>Orders!2018</small> <b>Order ID</b>	<div style="background-color: #e8f5e9; padding: 5px;">📅</div> <small>Orders!2018</small> <b>Order Date</b>	<div style="background-color: #e8f5e9; padding: 5px;">Abc</div> <small>Orders!2018</small> <b>Ship Mode</b>	<div style="background-color: #e8f5e9; padding: 5px;">Abc</div> <small>Orders!2018</small> <b>Customer Name</b>	<div style="background-color: #e8f5e9; padding: 5px;">Abc</div> <small>Orders!2018</small> <b>Segment</b>	<div style="background-color: #e8f5e9; padding: 5px;">🌐</div> <small>Orders!2018</small> <b>Country/Region</b>	<div style="background-color: #e8f5e9; padding: 5px;">🌐</div> <small>Orders!2018</small> <b>City</b>
CA-2018-152156	08/11/2018	USPS Priority	Claire Gute	Consumer	United States	Henderson
CA-2018-152156	08/11/2018	USPS Priority	Claire Gute	Consumer	United States	Henderson
CA-2018-138688	12/06/2018	USPS Priority	Darrin Van Huff	Corporate	United States	Los Angeles
CA-2018-161389	05/12/2018	USPS Ground	Irene Maddox	Consumer	United States	Seattle
CA-2018-137330	09/12/2018	USPS Ground	Ken Black	Corporate	United States	Fremont
CA-2018-137330	09/12/2018	USPS Ground	Ken Black	Corporate	United States	Fremont
CA-2018-121755	16/01/2018	USPS Priority	Eric Hoffmann	Consumer	United States	Los Angeles
CA-2018-121755	16/01/2018	USPS Priority	Eric Hoffmann	Consumer	United States	Los Angeles

📊 📋 Sort fields Data source order ▼
☒ Show aliases ☐ Show hidden fields 1.000 ➡ rows

🗃️ **Data Source**
Data Prep: Alias, Rename, & Pres... + + +

<sup>1</sup> [https://help.tableau.com/current/pro/desktop/en-us/maps\\_geographicroles.htm](https://help.tableau.com/current/pro/desktop/en-us/maps_geographicroles.htm)

←

→

↺

Connections

Add

Orders 2018 with Mfg

Microsoft Excel

Sheets

Mfg

Orders\_2018

New Union

Orders\_2018+ (Orders 2018 with Mfg)

Connection

Live

Extract

Filters

0

Add

Orders\_2018

Mfg

Sort fields

Data source order

Show aliases

Show hidden fields

1.000

rows

<div>Abc</div> <div>Orders!2018</div> <div>Order ID</div>	<div></div> <div>Orders!2018</div> <div>Order Date</div>	<div>Abc</div> <div>Orders!2018</div> <div>Ship Mode</div>	<div>Abc</div> <div>Orders!2018</div> <div>Customer Name</div>	<div>Abc</div> <div>Orders!2018</div> <div>Segment</div>	<div></div> <div>Orders!2018</div> <div>Country/Region</div>	<div></div> <div>Orders!2018</div> <div>City</div>
CA-2018-152156	08/11/2018	USPS Priority	Claire Gute	Consumer	United States	Henderson
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CA-2018-121755	16/01/2018	USPS Priority	Eric Hoffmann	Consumer	United States	Los Angeles

Data Source

Data Prep: Alias, Rename, & Pres...

# Default properties

Allows the analyst to assign characteristics to be consistently shown

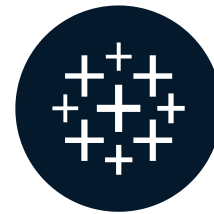
- Aggregation
- Comments
- Number formatting
- Color
- Shape
- Totals



**Let's practice!**  
CONNECTING DATA IN TABLEAU

# Managing the presentation of data

CONNECTING DATA IN TABLEAU



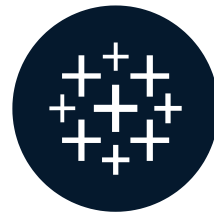
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Curriculum Manager, DataCamp

**Let's practice!**  
CONNECTING DATA IN TABLEAU

# More data management

CONNECTING DATA IN TABLEAU

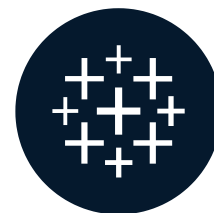


**Sara Billen**  
Instructor

**Let's practice!**  
CONNECTING DATA IN TABLEAU

# Tableau connectors

CONNECTING DATA IN TABLEAU

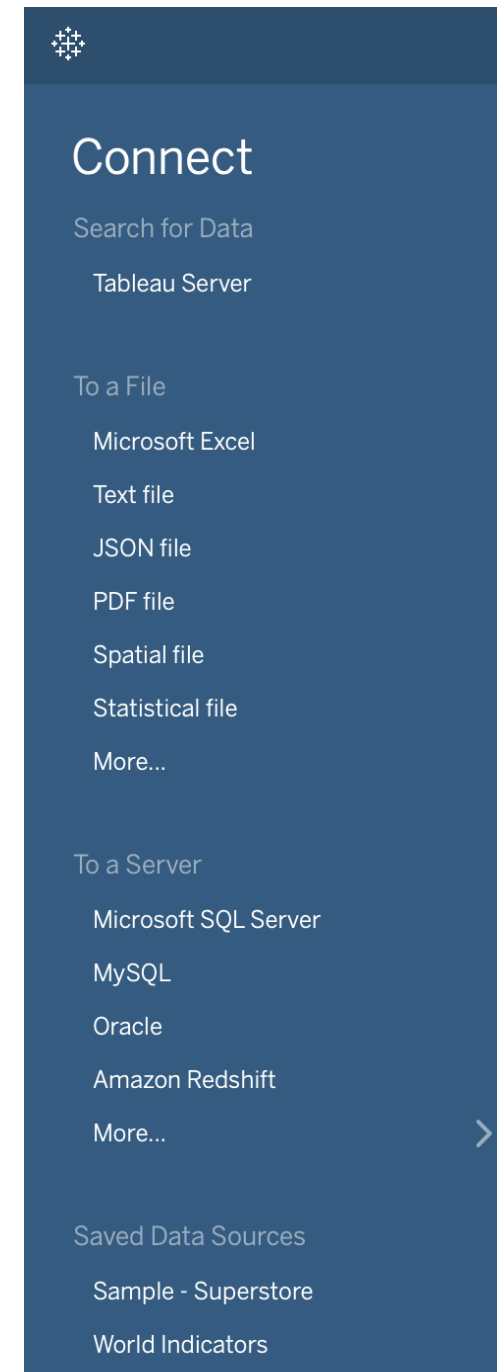


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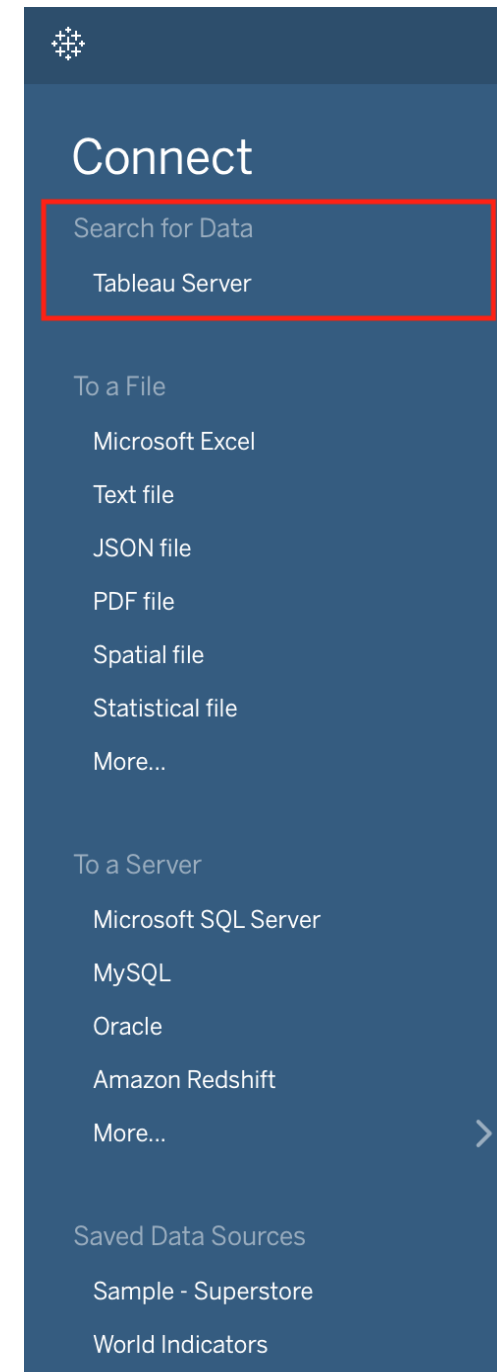
# Data connectors

- Four options:



# Data connectors

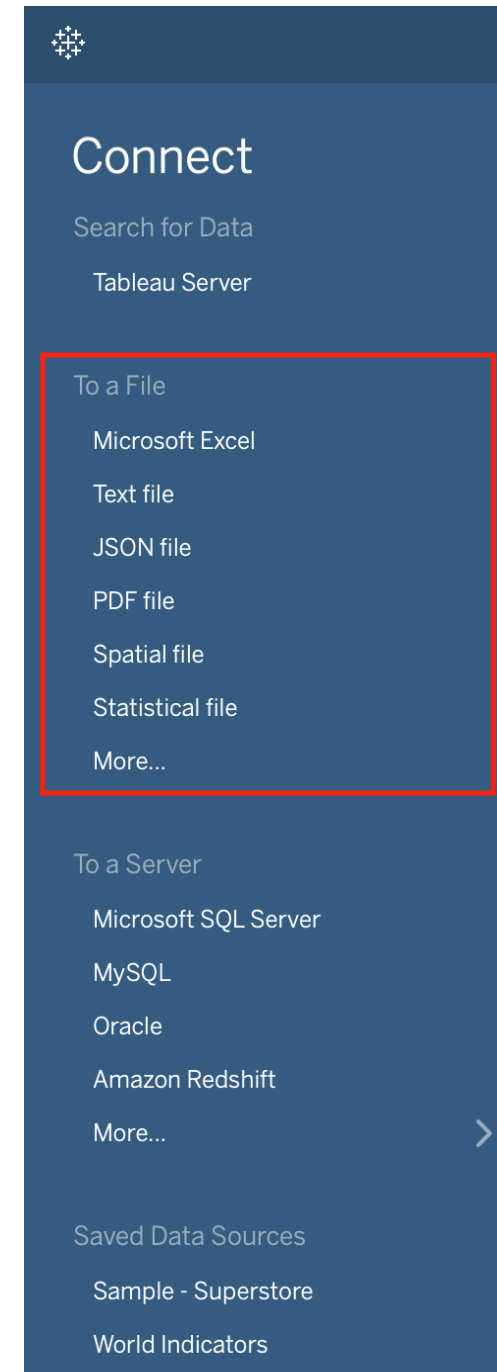
- Four options:
  - Tableau server





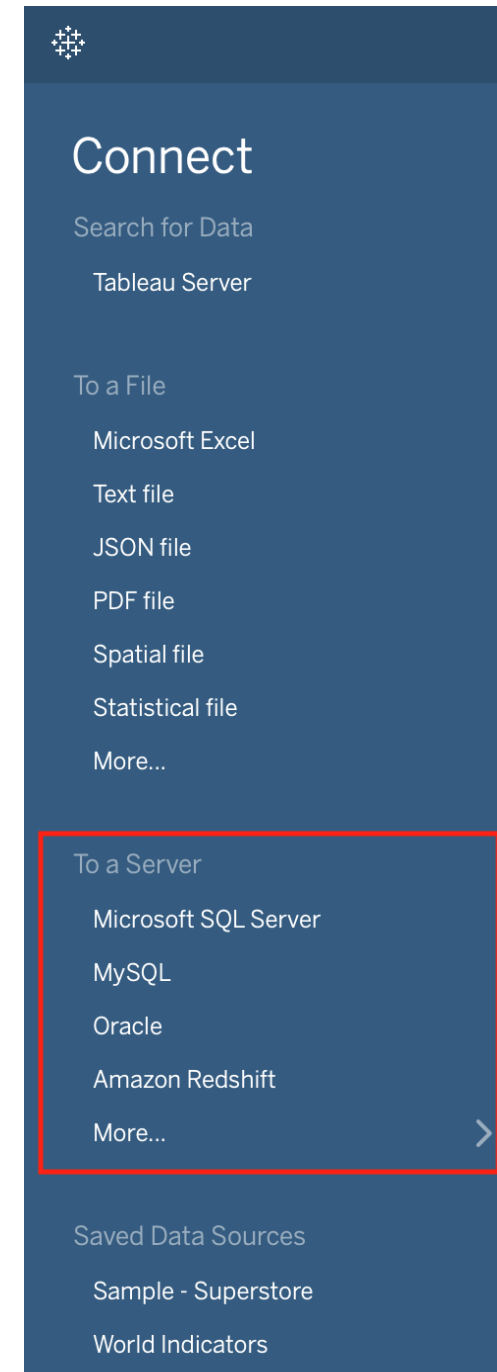
# Data connectors

- Four options:
  - Tableau server
  - File



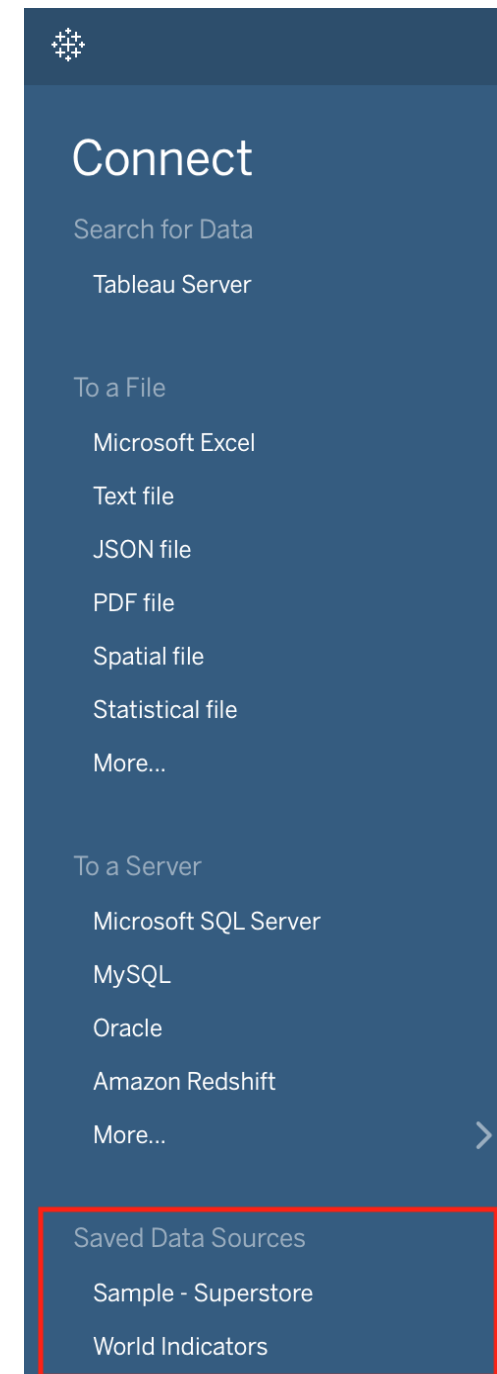
# Data connectors

- Four options:
  - Tableau server
  - File
  - Server



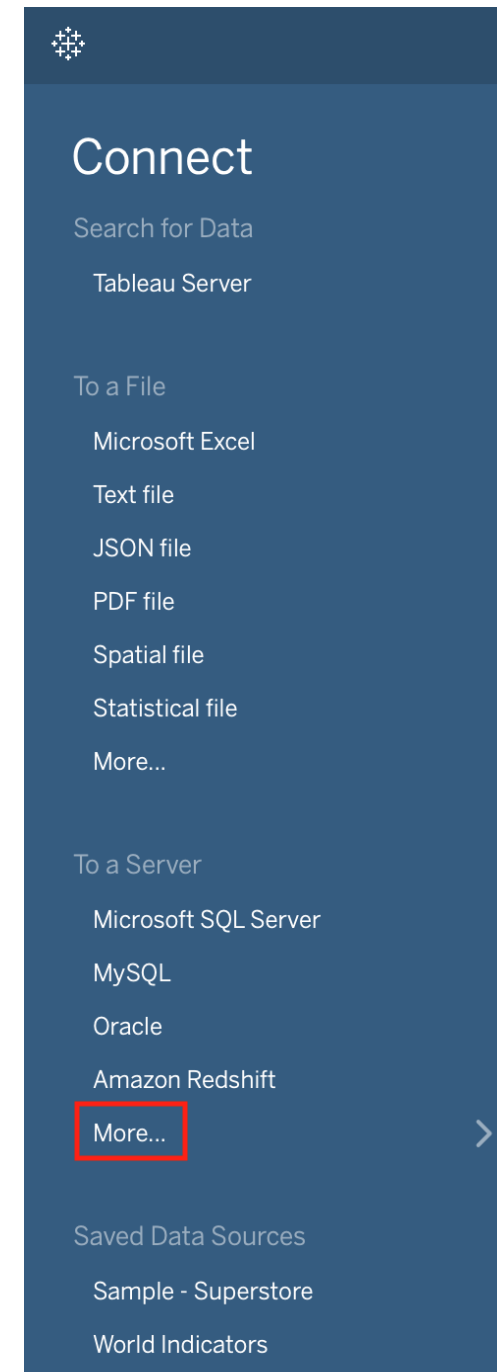
# Data connectors


- Four options:
  - Tableau server
  - File
  - Server
  - Saved data source



# Data connectors

- Four options:
  - Tableau server
  - File
  - Server
  - Saved data source





# Connect

Search for Data

Tableau Server

To a File

Microsoft Excel

Text file

JSON file

PDF file

Spatial file

Statistical file

More...

To a Server

Microsoft SQL Server

MySQL

Oracle

Amazon Redshift

More...

Saved Data Sources

Sample - Superstore

World Indicators

Search

Alibaba AnalyticDB for MySQL

Alibaba Data Lake Analytics

Alibaba MaxCompute

Amazon Athena

Amazon Aurora for MySQL

Amazon EMR Hadoop Hive

Amazon Redshift

Anaplan

Apache Drill

Aster Database

Azure Synapse Analytics

Box

Cloudera Hadoop

Databricks

Denodo

Dropbox

Esri ArcGIS Server

Exasol

Firebird 3

Google Ads

Google Analytics

Google BigQuery

Google Cloud SQL

Google Drive

Google Sheets

Hortonworks Hadoop Hive

Impala

Intuit QuickBooks Online

Kognitio

Kyvos

LinkedIn Sales Navigator

MapR Hadoop Hive

MariaDB

Marketo

MemSQL

Microsoft SQL Server

MongoDB BI Connector

MySQL

OData

OneDrive

Oracle

Oracle Eloqua

Pivotal Greenplum Database

PostgreSQL

Presto

Qubole Presto

Salesforce

SAP HANA

ServiceNow ITSM

SharePoint Lists

Snowflake

Spark SQL


Teradata

Vertica

Web Data Connector

Other Databases (JDBC)

Other Databases (ODBC)



# Connect

Search for Data

Tableau Server

To a File

- Microsoft Excel
- Text file
- JSON file
- PDF file
- Spatial file
- Statistical file
- More...

To a Server

- Microsoft SQL Server
- MySQL
- Oracle
- Amazon Redshift
- More... >

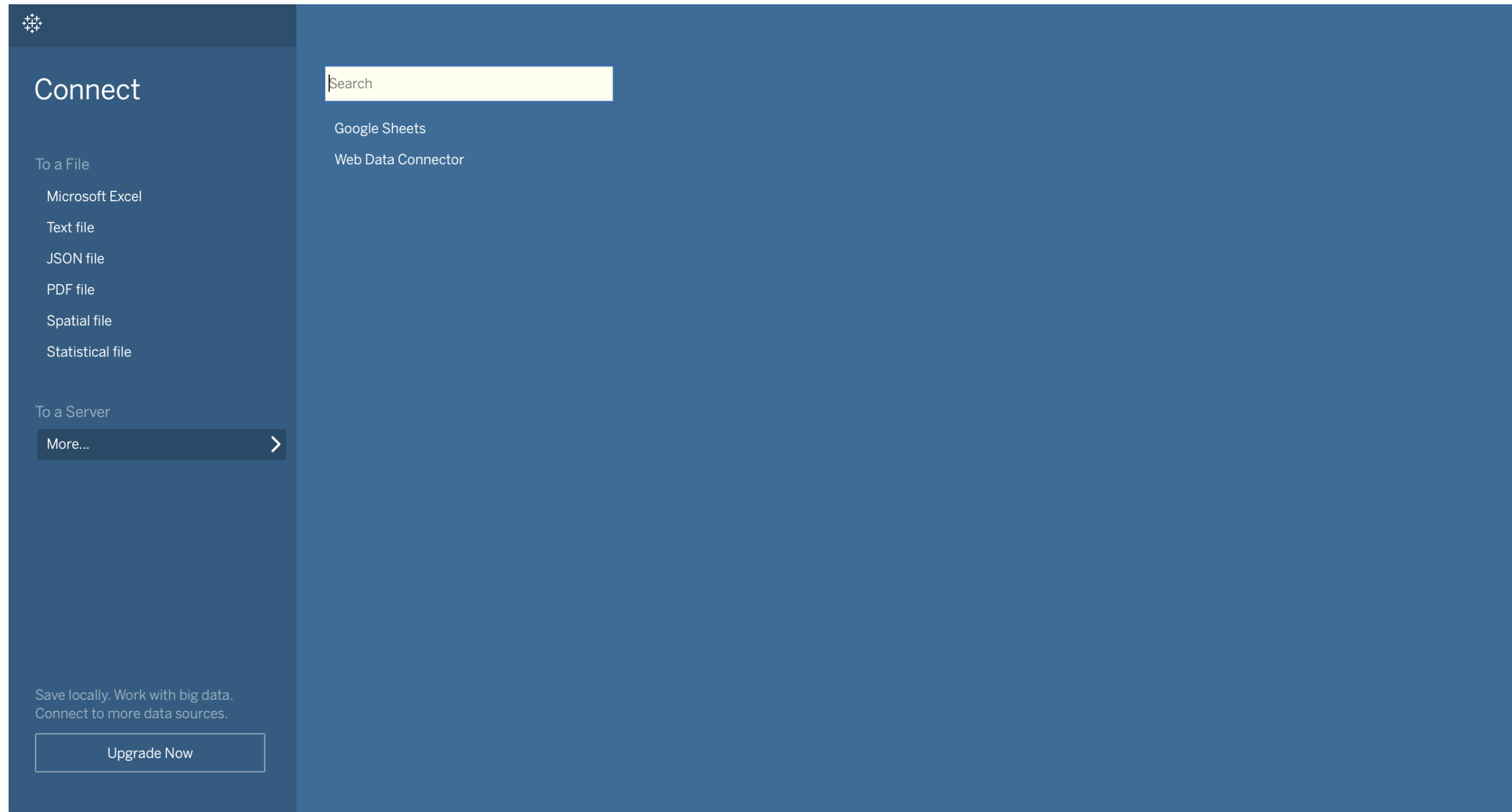
Saved Data Sources

- Sample - Superstore
- World Indicators

Search

Alibaba AnalyticDB for MySQL	Google BigQuery	Pivotal Greenplum Database
Alibaba Data Lake Analytics	Google Cloud SQL	PostgreSQL
Alibaba MaxCompute	Google Drive	Presto
Amazon Athena	Google Sheets	Qubole Presto
Amazon Aurora for MySQL	Hortonworks Hadoop Hive	Salesforce
Amazon EMR Hadoop Hive	Impala	SAP HANA
Amazon Redshift	Intuit QuickBooks Online	ServiceNow ITSM
Anaplan	Kognitio	SharePoint Lists
Apache Drill	Kyvos	Snowflake
Aster Database	LinkedIn Sales Navigator	Spark SQL
Azure Synapse Analytics	MapR Hadoop Hive	Teradata
Box	MariaDB	Vertica
Cloudera Hadoop	Marketo	Web Data Connector
Databricks	MemSQL	Other Databases (JDBC)
Denodo	Microsoft SQL Server	Other Databases (ODBC)
Dropbox	MongoDB BI Connector	
Esri ArcGIS Server	MySQL	
Exasol	OData	
Firebird 3	OneDrive	
Google Ads	Oracle	
Google Analytics	Oracle Eloqua	

# Tableau Desktop vs Tableau Public



# Sharing your data

- Save as data source
- .tds file
- Does not contain actual data
- Includes:
  - **Information necessary to connect to the actual data:** e.g. database server address, port, location of local files, tables
  - **Modifications made:** e.g. groups, sets, calculated fields, bins, default properties
- Use if the other person has access to the underlying file or database
- Only possible in Tableau Desktop (not on Tableau Public)

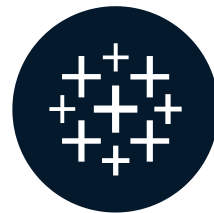


# Let's demo!

CONNECTING DATA IN TABLEAU

# Connecting to data

CONNECTING DATA IN TABLEAU



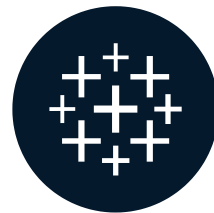
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Curriculum Manager, DataCamp

**Let's practice!**  
CONNECTING DATA IN TABLEAU

# Filters

CONNECTING DATA IN TABLEAU



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Curriculum Manager, DataCamp

# Tableau's order of operations

Order of operations:

1. **Extract filters**
2. **Data source filters**
3. **Context filters**
4. **Dimension filters**
5. **Measure filters**
6. **Table calc filters**

# Extract filters

Connections

Orders 2018 with Mfg  
Microsoft Excel

Sheets

Mfg

Orders\_2018

New Union

Superset

Orders

Sort by

Orders!2018

Row ID

1

2

3

14

22

23

26

27

36

37

43

45

Data Source

Sheet 1

Extract Data

Specify how to store data in the extract:

Data Storage

☒ Logical Tables

☐ Physical Tables

Store data using one table for each logical table. [Learn more](#)  
Use this option if you need to use extract filters, aggregation, or other extract settings.

Specify how much data to extract:

Filters (optional)

Filter	Details
State	excludes Alabama

Add...

Edit...

Remove

Aggregation

☐ Aggregate data for visible dimensions

☐ Roll up dates to 

Year

Number of Rows

☒ All rows

☐ Incremental refresh

☐ Top: 

Manufacturing

 by  rows

☐ Sample: 

Manufacturing

 by  rows

History...

Hide All Unused Fields

Cancel

OK

Connection

☐ Live

☒ Extract

Edit

Refresh

Filters

0 | Add

Extract will include all data.

☒ Show aliases

☐ Show hidden fields

1.000

rows

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# Data source filters

← → ↺ ↻

Connections Add

Orders 2018 with Mfg  
Microsoft Excel

Sheets

Mfg

Orders\_2018

New Union

Superstore

Orders — Manufacturing

Connection

Live

Extract

Filters  
0 Add

Sort fields

Data s

#	Orders!2018	Row ID	Order ID
1	CA-2018-15		
2	CA-2018-15		
3	CA-2018-13		
14	CA-2018-16		
22	CA-2018-137330	09/12/2018	13/12/2018
23	CA-2018-137330	09/12/2018	13/12/2018
26	CA-2018-121755	16/01/2018	20/01/2018
27	CA-2018-121755	16/01/2018	20/01/2018
36	CA-2018-117590	08/12/2018	10/12/2018
37	CA-2018-117590	08/12/2018	10/12/2018
43	CA-2018-101343	17/07/2018	22/07/2018
45	CA-2018-118255	11/03/2018	13/03/2018

OK

Cancel

1.000

rows

Customer Name	Segment	Country
Claire Gute	People	United States
Claire Gute	People	United States
Darrin Van Huff	Enterprise	United States
Irene Maddox	People	United States
Ken Black	Enterprise	United States
Ken Black	Enterprise	United States
Eric Hoffmann	People	United States
Eric Hoffmann	People	United States
Gene Hale	Enterprise	United States
Gene Hale	Enterprise	United States
Ruben Ausman	Enterprise	United States
Odella Nelson	Enterprise	United States

Edit Data Source Filters

Filter

Details

Segment

keeps Enterprise

Add...

Edit...

Remove

OK

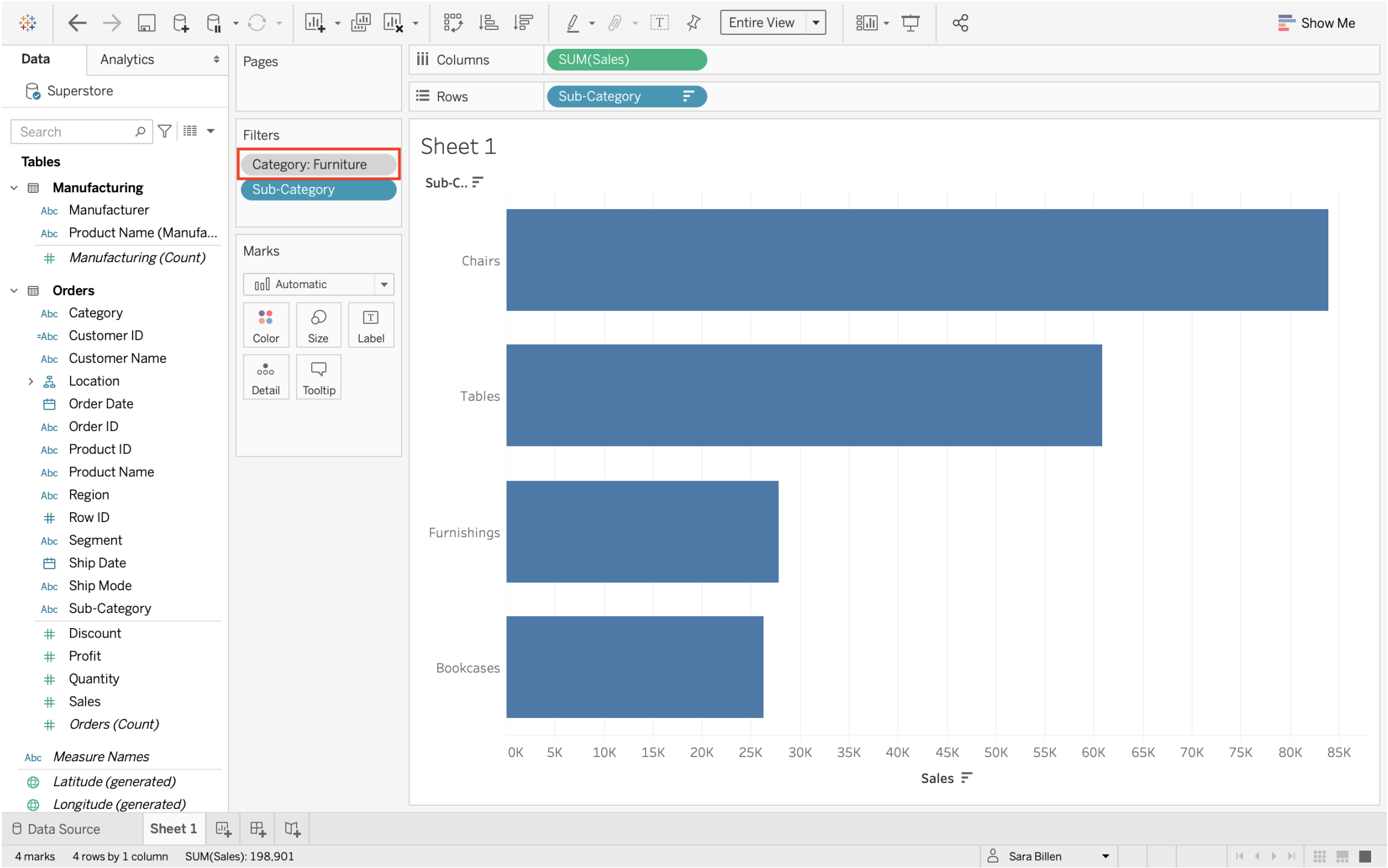
Cancel

Data Source

Sheet 1

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# Context filters





# Context filters example

## Approach 1

### 1. Apply Dimension filter on Furniture

Category	Customer	Country	Sales
Furniture	Claire Gute	Germany	\$408
Office Supplies	Sean O'Donnell	United Kingdom	\$9
Technology	Brosina Hoffman	Austria	\$665
Furniture	Brosina Hoffman	Austria	\$115
Technology	Pete Thompson	United States	\$60

### 2. Apply Dimension filter on Country

Category	Customer	Country	Sales
Furniture	Claire Gute	Germany	\$408
Office Supplies	Sean O'Donnell	United Kingdom	\$9
Technology	Brosina Hoffman	Austria	\$665
Furniture	Brosina Hoffman	Austria	\$115
Technology	Pete Thompson	United States	\$60

## Approach 2

### 1. Apply *Context* filter on Furniture

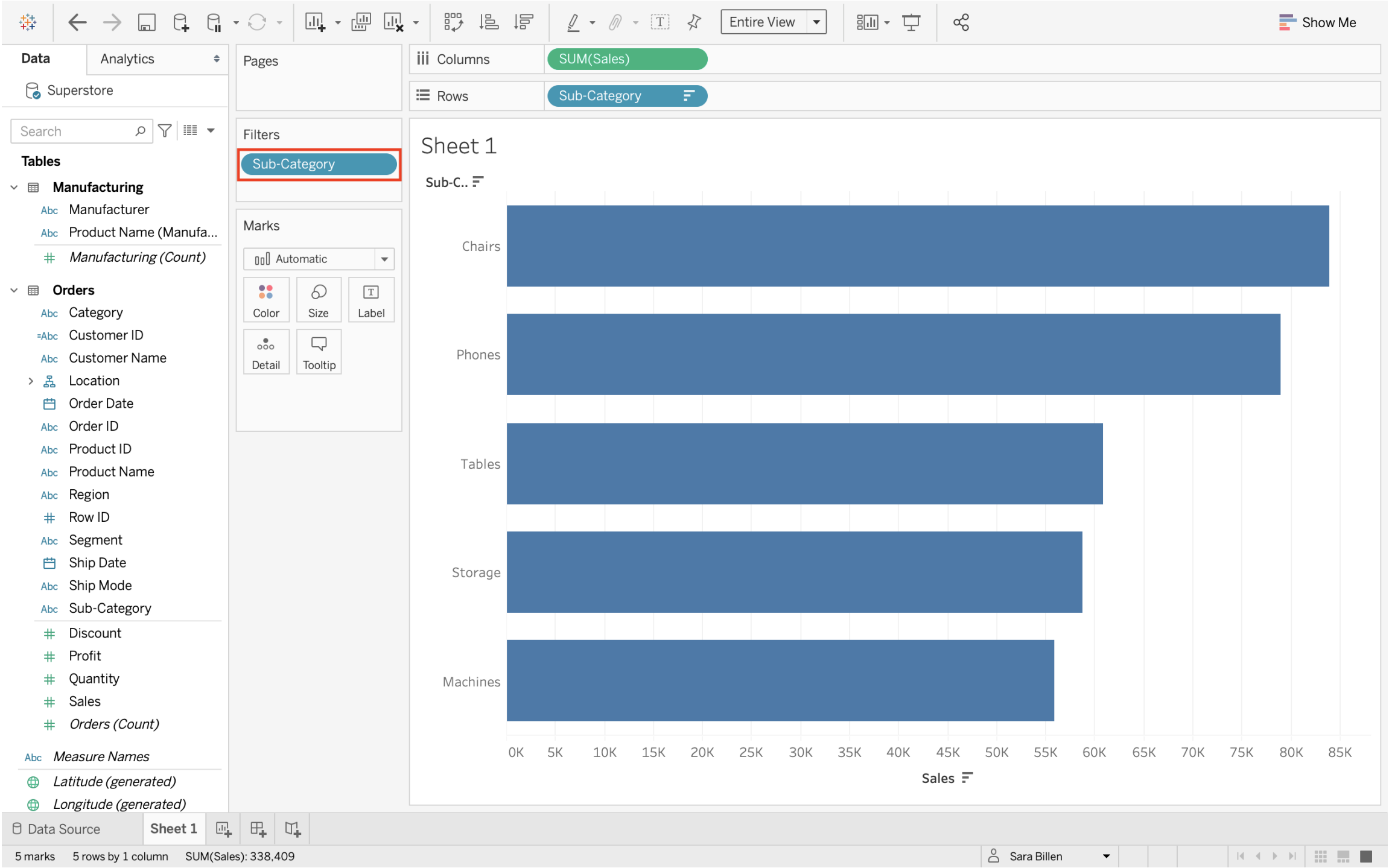
Category	Customer	Country	Sales
Furniture	Claire Gute	Germany	\$408
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Technology	Brosina Hoffman	Austria	\$665
Furniture	Brosina Hoffman	Austria	\$115
Technology	Pete Thompson	United States	\$60

### 2. Apply Dimension filter on Country

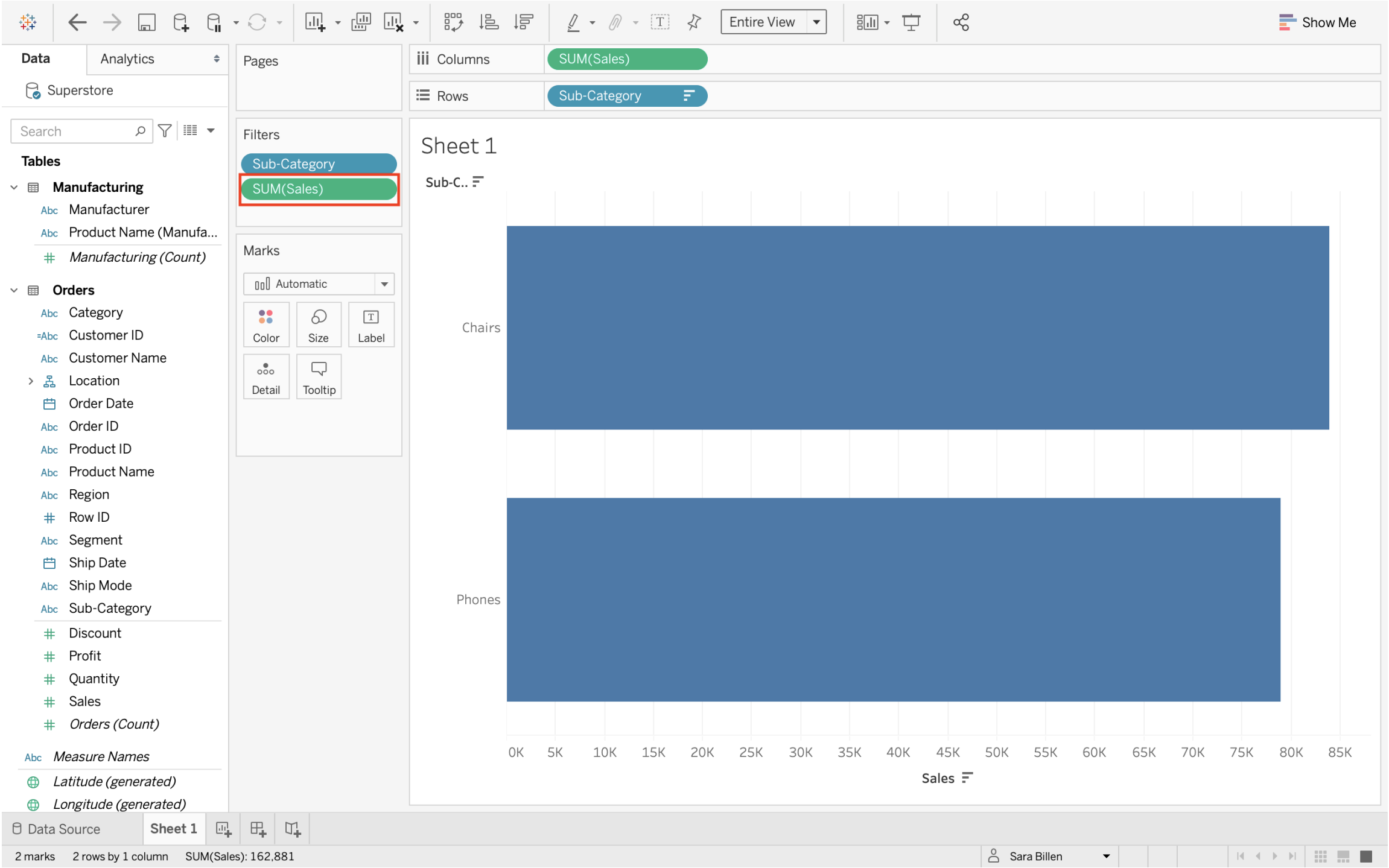
Category	Customer	Country	Sales
Furniture	Claire Gute	Germany	\$408
Furniture	Brosina Hoffman	Austria	\$115

-> Improved performance

# Dimension filters



# Measure filters

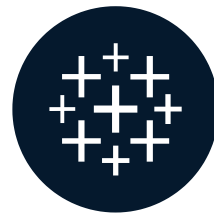


# Let's demo!

CONNECTING DATA IN TABLEAU

# Tableau filters

CONNECTING DATA IN TABLEAU



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