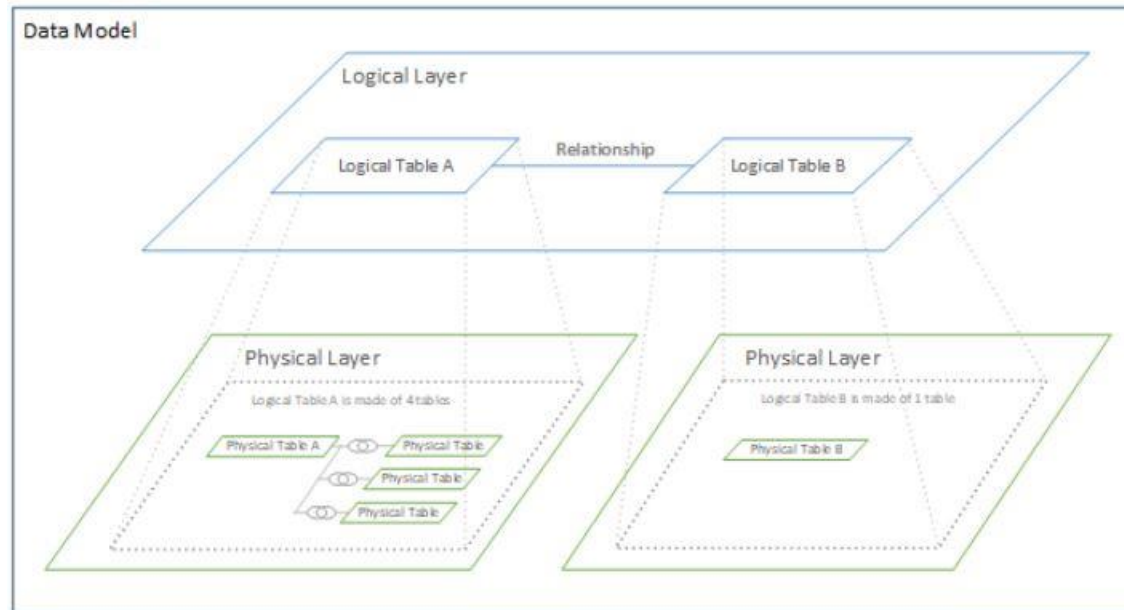


# TABLEAU DATA MODEL

In versions of Tableau **prior to 2020.2**, the **data model** had **only the physical layer**. In Tableau **2020.2 and later**, the **data model** has the **logical (semantic) layer** and a **physical layer**.

This provides more options for combining data using schemas based on which might be more suitable for analysis.



# TABLEAU DATA MODEL

In previous versions of Tableau, the **data model** in the data source consisted of a single, **physical layer** where we could specify **joins and unions**.

Tables added to the physical layer (joined or unioned) create a single, flattened table (denormalized) for analysis.

For Tableau **versions 2020.2 and beyond**, the **data model** in the data source includes a new semantic layer above the physical layer—called the **logical layer**

At this logical layer we can add multiple tables and relate them to each other.

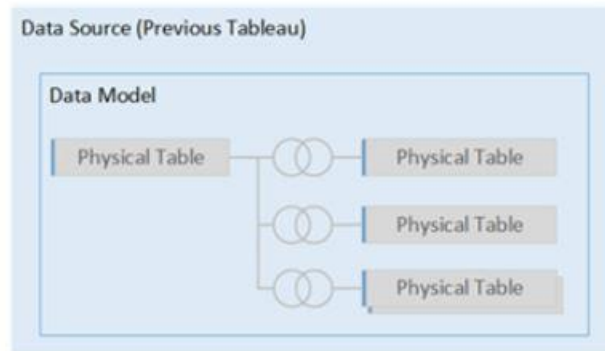
Tables at the logical layer are not merged in the data source, they remain distinct (normalized), and maintain their native level of detail.

Logical tables act like containers for merged physical tables.

A logical table can contain a single, physical table or it can contain multiple physical tables merged through joins or unions.

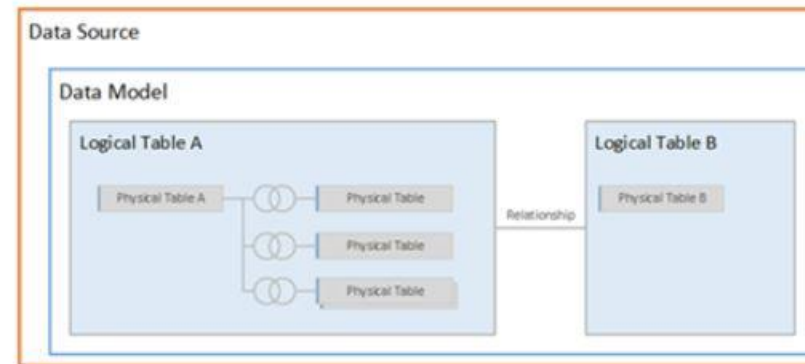
# TABLEAU DATA MODEL

## PREVIOUS VERSIONS



*In versions of Tableau before 2020.2, the data model has only the physical layer*

## 2020.2 AND LATER



*In 2020.2 and later, the data model has two layers: the logical layer and the physical layer*

# STEPS TO CREATE A RELATIONSHIP AND A JOIN

**Step 1: Relationships** can be created in the **logical layer** of the data source.

This is the default view of the canvas that we see in the Data Source page.

Drag the **Orders table** to the canvas

Tableau Public - Book1

File Data Window Help

Connections Add

Sample - Superstore\_2021  
Microsoft Excel

Sheets

☐ Use Data Interpreter  
Data Interpreter might be able to clean your Microsoft Excel workbook.

Orders  
People  
Returns  
Orders  
People  
Returns  
New Union

Orders (Sample - Superstore\_2021)

Filters  
0 Add

Orders

Need more data?  
Drag tables here to relate them. [Learn more](#)

Orders 21 fields 9994 rows 100 rows

#	Abc Orders	Orders	Orders	Abc Orders	Abc Orders	Abc Orders
Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name
1	CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520	Claire Gute
2	CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520	Claire Gute
3	CA-2020-138688	12-06-2020	16-06-2020	Second Class	DV-13045	Darrin Van Huff
4	US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335	Sean O'Donnell
5	US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335	Sean O'Donnell
6	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman

Type	Field Name	Physical Table	Remote Fie...
#	Row ID	Orders	Row ID
Abc	Order ID	Orders	Order ID
Calendar	Order Date	Orders	Order Date

Go to Worksheet

Data Source Sheet 1

# STEPS TO CREATE A RELATIONSHIP AND A JOIN

**Step 2:** Drag the second table **Returns** table to the canvas.

When we see the "noodle" between the two tables, drop that table.

Tableau Public - Book1  
File Data Window Help

Connections  
Sample - Superstore\_2021  
Microsoft Excel

Sheets  
☐ Use Data Interpreter  
Data Interpreter might be able to clean your Microsoft Excel workbook.

Orders  
People  
Returns  
Orders  
People  
Returns  
New Union

Orders (Sample - Superstore\_2021)  
Filters  
0 | Add

Orders

Need more data?  
Drag tables here to relate them. [Learn more](#)

Orders 21 fields 9994 rows

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name
1	CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520	Claire Gule
2	CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520	Claire Gule
3	CA-2020-138688	12-06-2020	16-06-2020	Second Class	DV-13045	Darrin Van Huff
4	US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335	Sean O'Donnell
5	US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335	Sean O'Donnell
6	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman

Fields

Type	Field Name	Physical Table	Remote F...
Row ID	Row ID	Orders	Row ID
Order ID	Order ID	Orders	Order ID
Order Date	Order Date	Orders	Order Date

Go to Worksheet

Tableau Public - Book1  
File Data Window Help

Connections  
Sample - Superstore\_2021  
Microsoft Excel

Sheets  
☐ Use Data Interpreter  
Data Interpreter might be able to clean your Microsoft Excel workbook.

Orders  
People  
Returns  
Orders  
People  
Returns  
New Union

Orders+ (Sample - Superstore\_2021)  
Filters  
0 | Add

Orders Returns

Orders Returns

How do relationships differ from joins? [Learn more](#)

Orders Operator Returns

Order ID = Order ID (Returns)

Add more fields

Performance Options

Returned	Order ID (Returns)
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100867
Yes	CA-2018-102652

Go to Worksheet

# STEPS TO CREATE A RELATIONSHIP AND A JOIN

## Step 3: Click on the first table i.e., **Orders** to get the view of **Logical Table of Orders**

Tableau Public - Book1

File Data Window Help

Connections

Sample - Superstore\_2021  
Microsoft Excel

Sheets

☐ Use Data Interpreter  
Data Interpreter might be able to clean your Microsoft Excel workbook.

Orders  
People  
Returns  
Orders  
People  
Returns  
New Union

Orders+ (Sample - Superstore\_2021)

Filters  
0 Add

Orders Returns

Logical Table: Orders  
Double-click this logical table to see its physical table.

994 rows

100 rows

# Orders	Abc Orders	Orders	Orders	Abc Orders	Abc Orders	Abc Orders	Abc Orders	Orders	Orders	Orders
Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	Country/Region	City	State
1	CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kent
2	CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kent
3	CA-2020-138688	12-06-2020	16-06-2020	Second Class	DV-13045	Darrin Van Huff	Corporate	United States	Los Angeles	Calif
4	US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Flori
5	US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Flori
6	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
7	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
8	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
9	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
10	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
11	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
12	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
13	CA-2021-114412	15-04-2021	20-04-2021	Standard Class	AA-10480	Andrew Allen	Consumer	United States	Concord	Nort

Go to Worksheet

Data Source Sheet 1

# STEPS TO CREATE A RELATIONSHIP AND A JOIN

## Step 4: Click on the second table i.e., **Returns** to get the view of **Logical Table of Returns**

The screenshot shows the Tableau Public interface for a workbook named 'Tableau Public - Book1'. The left sidebar contains the 'Connections' pane with 'Sample - Superstore\_2021' (Microsoft Excel) and the 'Sheets' pane with a list of tables: 'Orders', 'People', 'Returns', 'Orders', 'People', 'Returns', and 'New Union'. The main workspace displays the 'Orders+ (Sample - Superstore\_2021)' view. A relationship line connects the 'Orders' table to the 'Returns' table. A tooltip for the 'Returns' logical table is visible, stating: 'Logical Table: Returns. Double-click this logical table to see its physical table.' Below the tooltip, the 'Returns' table is displayed with 2 fields and 8 rows. The table has columns 'Returned' and 'Order ID (Returns)'. The data is as follows:

Returned	Order ID (Returns)
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100867
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-103373
Yes	CA-2018-103744
Yes	CA-2018-103744
Yes	CA-2018-103940

The bottom of the interface shows the 'Data Source' pane with 'Sheet 1' selected. A 'Go to Worksheet' button is visible in the bottom right corner.

# STEPS TO CREATE A RELATIONSHIP AND A JOIN

**Step 5:** Click on the **noodles** between the two table to get the view of Relationship  
Click on **Edit Relationship**

The screenshot shows the Tableau Public interface with a workbook titled 'Tableau Public - Book1'. The left sidebar contains the 'Connections' pane with 'Sample - Superstore\_2021' (Microsoft Excel) and the 'Sheets' pane with 'Orders', 'People', 'Returns', and 'New Union'. The main view is titled 'Orders+ (Sample - Superstore\_2021)' and shows a relationship between 'Orders' and 'Returns' tables. The 'Edit Relationship' view displays a table with columns 'Returned' and 'Order ID (Returns)'. The table shows 10 rows of data, with the first row having a blue header and the subsequent rows having a light gray background. A 'Go to Worksheet' tooltip is visible at the bottom left.

Returned	Order ID (Returns)
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100867
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-103373
Yes	CA-2018-103744
Yes	CA-2018-103744
Yes	CA-2018-103940



# STEPS TO CREATE A RELATIONSHIP AND A JOIN

**Step 6:** Tableau automatically attempts to create the relationship based on existing key constraints and matching fields to define the relationship.

For this example, the matching field is **Order ID**

If it can't determine the matching fields, we will need to select them.

The screenshot shows the Tableau Public interface with a workbook titled "Tableau Public - Book1". The left sidebar displays the "Connections" pane with "Sample - Superstore\_2021" (Microsoft Excel) and the "Sheets" pane with a list of fields: Orders, People, Returns, Orders, People, Returns, and a "New Union" button. The main workspace shows a relationship diagram with "Orders" and "Returns" tables connected by a line. Below the diagram, a dropdown menu shows "Orders — Returns". The "Performance Options" section is expanded, showing a table with columns "Returned" and "Order ID (Returns)". The table contains 12 rows of data, all with "Yes" in the "Returned" column and various Order IDs in the "Order ID (Returns)" column.

Returned	Order ID (Returns)
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100867
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-103373
Yes	CA-2018-103744
Yes	CA-2018-103744
Yes	CA-2018-103940

# STEPS TO CREATE A RELATIONSHIP AND A JOIN

**Step 7:** We can check the Performance Options i.e., **Cardinality** and **Referential integrity**

If we are not aware of the required performance options, it is preferred to leave the default settings

The default Performance Option settings are Many for cardinality and Some records match for referential integrity.

Tableau automatically optimize these for querying the database.

The screenshot shows the Tableau Public interface with a workbook titled "Tableau Public - Book1". The main view displays a relationship between two tables: "Orders" and "Returns". The relationship is visualized as a line connecting the two tables. Below the relationship diagram, the "Performance Options" are displayed, which help Tableau optimize queries during analysis. The default settings are recommended, and the user can learn more about these options.

**Performance Options**  
These settings help Tableau optimize queries during analysis. The default settings are recommended, if you aren't sure what to choose. [Learn more](#)

Cardinality	Referential Integrity
Many	Some records match

[Revert to Default](#)

The interface also shows a list of sheets on the left: "Orders", "People", "Returns", "Orders", "People", "Returns", and "New Union". The main view displays a table with the following data:

Orders	Returns
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100762
Yes	CA-2018-100867
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-102652
Yes	CA-2018-103373
Yes	CA-2018-103744
Yes	CA-2018-103744
Yes	CA-2018-103940

# STEPS TO CREATE A RELATIONSHIP AND A JOIN

**Step 8:** We can click on the down-arrow at the end of logical table and click on **Open** (or) **Double-click** the Logical Table to go to the Physical layer

Tableau Public - Book1

File Data Window Help

Connections

Sample - Superstore\_2021

Sheets

Use Data Interpreter

Data Interpreter might be able to clean your Microsoft Excel workbook.

Orders

People

Returns

Orders

People

Returns

New Union

Orders+ (Sample - Superstore\_2021)

Filters 0 | Add

Orders

Open...

Rename

Remove

Field names are in first row

Generate field names automatically

Convert to Union...

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	Country/Region	City	State
1	CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kent
2	CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kent
3	CA-2020-138688	12-06-2020	16-06-2020	Second Class	DV-13045	Darrin Van Huff	Corporate	United States	Los Angeles	Calif
4	US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Flori
5	US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Flori
6	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
7	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
8	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
9	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
10	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
11	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
12	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
13	CA-2021-114412	15-04-2021	20-04-2021	Standard Class	AA-10480	Andrew Allen	Consumer	United States	Concord	Nort

Tableau Public - Book1

File Data Window Help

Connections

Sample - Superstore\_2021

Sheets

Use Data Interpreter

Data Interpreter might be able to clean your Microsoft Excel workbook.

Orders

Orders is made of 1 table.

Orders

21 fields 9994 rows

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	Country/Region	City	State
1	CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kent
2	CA-2020-152156	08-11-2020	11-11-2020	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kent
3	CA-2020-138688	12-06-2020	16-06-2020	Second Class	DV-13045	Darrin Van Huff	Corporate	United States	Los Angeles	Calif
4	US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Flori
5	US-2019-108966	11-10-2019	18-10-2019	Standard Class	SO-20335	Sean O'Donnell	Consumer	United States	Fort Lauderdale	Flori
6	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
7	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
8	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
9	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
10	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
11	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
12	CA-2018-115812	09-06-2018	14-06-2018	Standard Class	BH-11710	Brosina Hoffman	Consumer	United States	Los Angeles	Calif
13	CA-2021-114412	15-04-2021	20-04-2021	Standard Class	AA-10480	Andrew Allen	Consumer	United States	Concord	Nort

# STEPS TO CREATE A RELATIONSHIP AND A JOIN

**Step 9:** Drag the second table **Returns table** to the canvas.  
This forms an **Inner Join** by default

Tableau Public - Book1

File Data Window Help

Connections [Add](#)

Sample - Superstore\_2021  
Microsoft Excel

Sheets [p](#)

☐ Use Data Interpreter  
Data Interpreter might be able to clean your Microsoft Excel workbook.

Orders  
People  
Returns  
Orders  
People  
Returns  
New Union

Orders+ (Sample - Superstore\_2021)

Filters  
0 [Add](#)

Orders is made of 2 tables. ⓘ

Orders Returns1

Join

Inner Left Right Full Outer

Data Source Returns1

Order ID = Order ID (Return...

100 rows

#	Order ID	Order Date	Ship Mode	Customer ID	Customer Name	Segment	Country/Region	City	State
19	CA-2018-143336	27-08-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
19	CA-2018-143336	27-08-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
19	CA-2018-143336	27-08-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
20	CA-2018-143336	27-08-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
20	CA-2018-143336	27-08-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
20	CA-2018-143336	27-08-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
21	CA-2018-143336	27-08-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
21	CA-2018-143336	27-08-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
21	CA-2018-143336	27-08-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
56	CA-2020-111682	17-06-2020	First Class	TB-21055	Ted Butterfield	Consumer	United States	Troy	New
56	CA-2020-111682	17-06-2020	First Class	TB-21055	Ted Butterfield	Consumer	United States	Troy	New
56	CA-2020-111682	17-06-2020	First Class	TB-21055	Ted Butterfield	Consumer	United States	Troy	New
56	CA-2020-111682	17-06-2020	First Class	TB-21055	Ted Butterfield	Consumer	United States	Troy	New

Data Source Sheet 1

# STEPS TO CREATE A RELATIONSHIP AND A JOIN

**Step 10:** Now we see both Order and Returns table as one single flattened physical table

Tableau Public - Book1

File Data Window Help

Connections [Add](#)

Sample - Superstore\_2021  
Microsoft Excel

Sheets [p](#)

☐ Use Data Interpreter  
Data Interpreter might be able to clean your Microsoft Excel workbook.

Orders  
People  
Returns  
Orders  
People  
Returns  
New Union

Orders+ (Sample - Superstore\_2021)

Filters  
0 [Add](#)

Orders is made of 2 tables. ⓘ

Orders Returns1

Orders 23 fields 3226 rows 100 rows

ID	Abc Orders Category	Abc Orders Sub-Category	Abc Orders Product Name	# Orders Sales	# Orders Quantity	# Orders Discount	# Orders Profit	Abc Returns1 Returned (Returns1)	Abc Returns1 Order ID (Returns1)
0003056	Office Supplies	Art	Newell 341	8.560	2	0.000000	2.4824	Yes	CA-2018-143336
0003056	Office Supplies	Art	Newell 341	8.560	2	0.000000	2.4824	Yes	CA-2018-143336
0003056	Office Supplies	Art	Newell 341	8.560	2	0.000000	2.4824	Yes	CA-2018-143336
10001949	Technology	Phones	Cisco SPA 501G IP Phone	213.480	3	0.200000	16.0110	Yes	CA-2018-143336
10001949	Technology	Phones	Cisco SPA 501G IP Phone	213.480	3	0.200000	16.0110	Yes	CA-2018-143336
10001949	Technology	Phones	Cisco SPA 501G IP Phone	213.480	3	0.200000	16.0110	Yes	CA-2018-143336
0002215	Office Supplies	Binders	Wilson Jones Hanging View B...	22.720	4	0.200000	7.3840	Yes	CA-2018-143336
0002215	Office Supplies	Binders	Wilson Jones Hanging View B...	22.720	4	0.200000	7.3840	Yes	CA-2018-143336
0002215	Office Supplies	Binders	Wilson Jones Hanging View B...	22.720	4	0.200000	7.3840	Yes	CA-2018-143336
0000604	Office Supplies	Storage	Home/Office Personal File C...	208.560	6	0.000000	52.1400	Yes	CA-2020-111682
0000604	Office Supplies	Storage	Home/Office Personal File C...	208.560	6	0.000000	52.1400	Yes	CA-2020-111682
0000604	Office Supplies	Storage	Home/Office Personal File C...	208.560	6	0.000000	52.1400	Yes	CA-2020-111682
0000604	Office Supplies	Storage	Home/Office Personal File C...	208.560	6	0.000000	52.1400	Yes	CA-2020-111682

Data Source Sheet1

# STEPS TO CREATE A RELATIONSHIP AND A JOIN

**Step 11:** Click on the **X** mark to exit from the **Physical layer**

Orders+ (Sample - Superstore\_2021)

Filters  
0 | Add

Orders is made of 2 tables. ⓘ

Orders



Returns1





# STEPS TO CREATE A RELATIONSHIP AND A JOIN

**Step 12:** Now we are back in the **Logical layer canvas**

We are seeing the **Physical layer join** shown as a **Venn diagram** within the **Orders Logical Table**

Tableau Public - Book1

File Data Window Help

Connections [Add](#)

Sample - Superstore\_2021  
Microsoft Excel

**Sheets**

☐ Use Data Interpreter  
Data Interpreter might be able to clean your Microsoft Excel workbook.

Orders  
People  
Returns  
Orders  
People  
Returns  
New Union

Orders+ (Sample - Superstore\_2021)

Filters  
0 | [Add](#)

Orders — Returns

Orders 23 fields 3226 rows 100 rows

# Orders Row ID	Abc Orders Order ID	Orders Order Date	Orders Ship Date	Abc Orders Ship Mode	Abc Orders Customer ID	Abc Orders Customer Name	Abc Orders Segment	Orders Country/Region	Orders City	Orders State
19	CA-2018-143336	27-08-2018	01-09-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
19	CA-2018-143336	27-08-2018	01-09-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
19	CA-2018-143336	27-08-2018	01-09-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
20	CA-2018-143336	27-08-2018	01-09-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
20	CA-2018-143336	27-08-2018	01-09-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
20	CA-2018-143336	27-08-2018	01-09-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
21	CA-2018-143336	27-08-2018	01-09-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
21	CA-2018-143336	27-08-2018	01-09-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
21	CA-2018-143336	27-08-2018	01-09-2018	Second Class	ZD-21925	Zuschuss Donatelli	Consumer	United States	San Francisco	Calif
56	CA-2020-111682	17-06-2020	18-06-2020	First Class	TB-21055	Ted Butterfield	Consumer	United States	Troy	New
56	CA-2020-111682	17-06-2020	18-06-2020	First Class	TB-21055	Ted Butterfield	Consumer	United States	Troy	New
56	CA-2020-111682	17-06-2020	18-06-2020	First Class	TB-21055	Ted Butterfield	Consumer	United States	Troy	New
56	CA-2020-111682	17-06-2020	18-06-2020	First Class	TB-21055	Ted Butterfield	Consumer	United States	Troy	New

Data Source Sheet 1

# RELATIONSHIPS (LOGICAL TABLES) VERSUS JOINS (PHYSICAL TABLES)

RELATIONSHIPS	JOINS
Defined between <b>logical tables</b> in the <b>Relationship canvas</b> (logical layer)	Defined between <b>physical tables</b> in the <b>Join/Union canvas</b> (physical layer)
Don't require the join type to be defined	Require join planning and join type
Act like <b>containers for tables</b> that are <b>joined or unioned</b>	Are <b>merged</b> into their <b>logical table</b>
Only <b>data relevant</b> to the <b>viz</b> is <b>queried</b> . Cardinality and referential integrity settings can be adjusted to optimize queries.	<b>Run as part of every query</b>
<b>Level of detail</b> is at the <b>aggregate for the viz</b>	<b>Level of detail</b> is at the <b>row level</b> for the <b>single table</b>
Join types are automatically formed by Tableau based on the context of analysis. Tableau determines the necessary joins based on the measures and dimensions in the viz	Join types are static and fixed in the data source, regardless of analytical context. Joins and unions are established prior to analysis and don't change
<b>Rows are not duplicated</b>	<b>Merged table data can result in duplication</b>
Unmatched records are included in aggregates, unless explicitly excluded	Unmatched records are omitted from the merged data
Create independent domains at multiple levels of detail	Support scenarios that require a single table of data, such as extract filters and aggregation