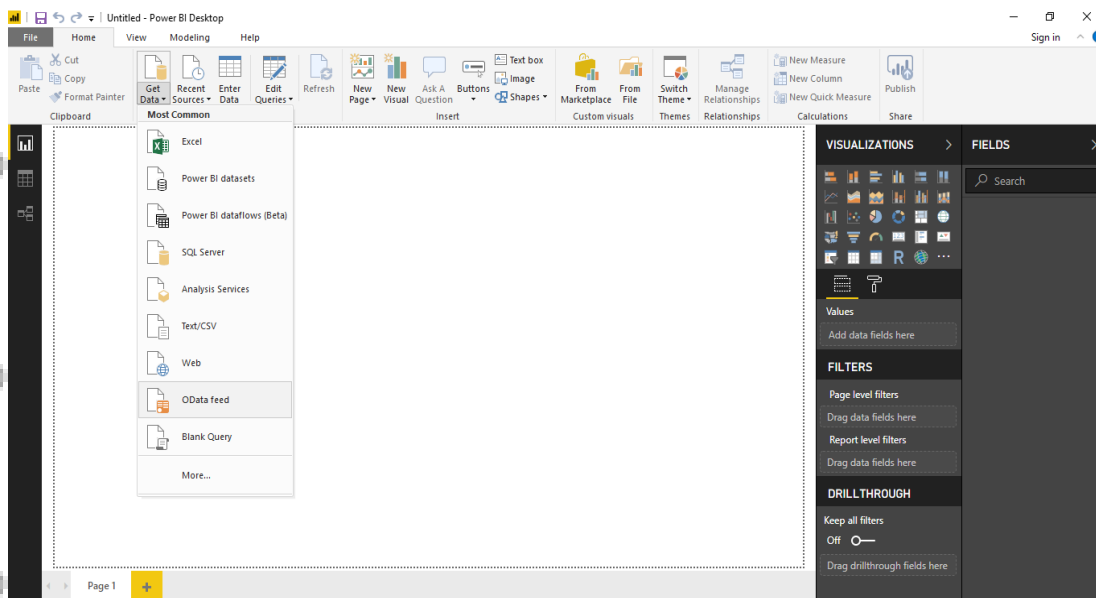


PRACTICAL 2

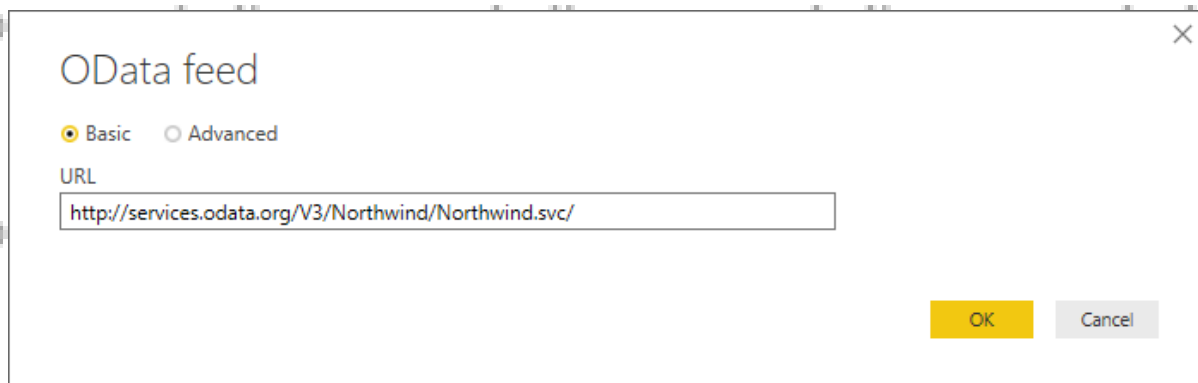
Perform the Extraction Transformation and Loading (ETL) process to construct the database in the Power BI.

Step 1: Open Power BI, Click on Get Data → OData Feed

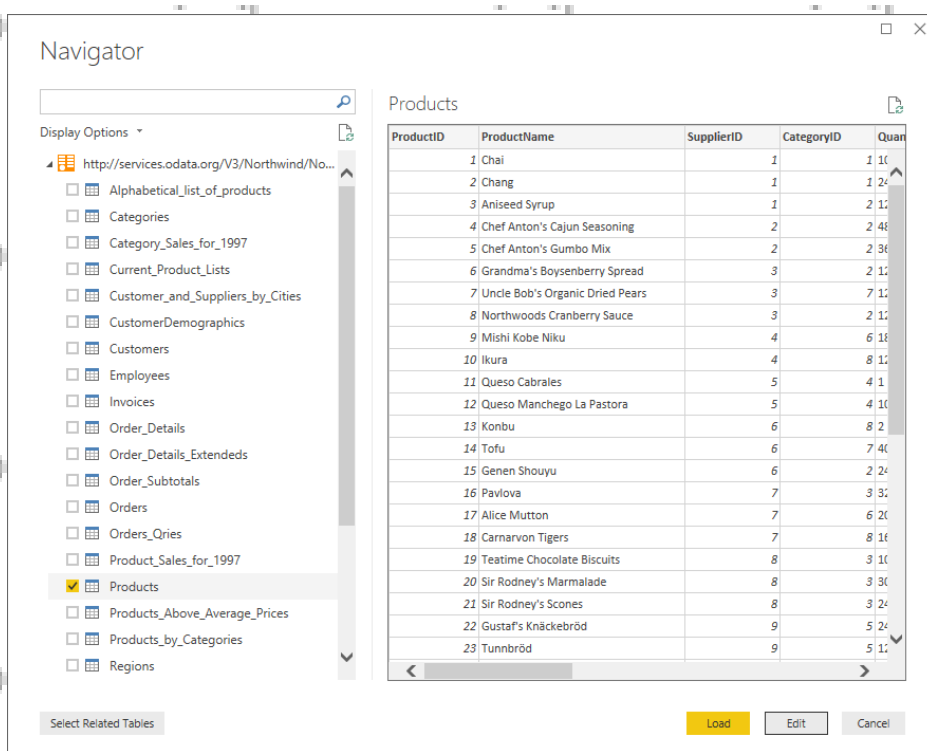


Paste Url : <http://services.odata.org/V3/Northwind/Northwind.svc/>

And Click OK

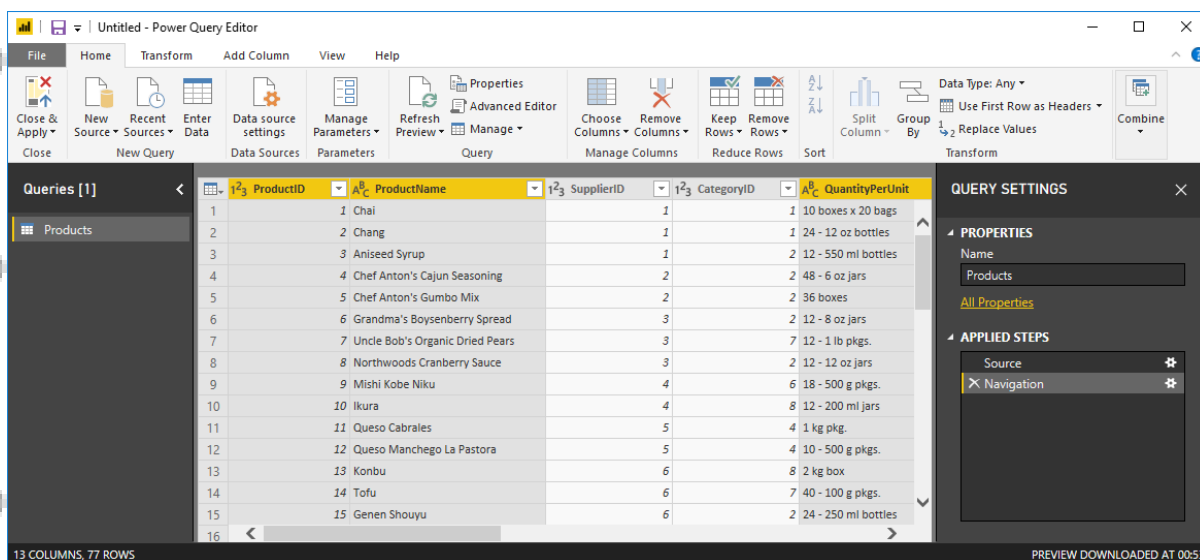


Step 2: Click on Check Box of Products table and then click on Edit

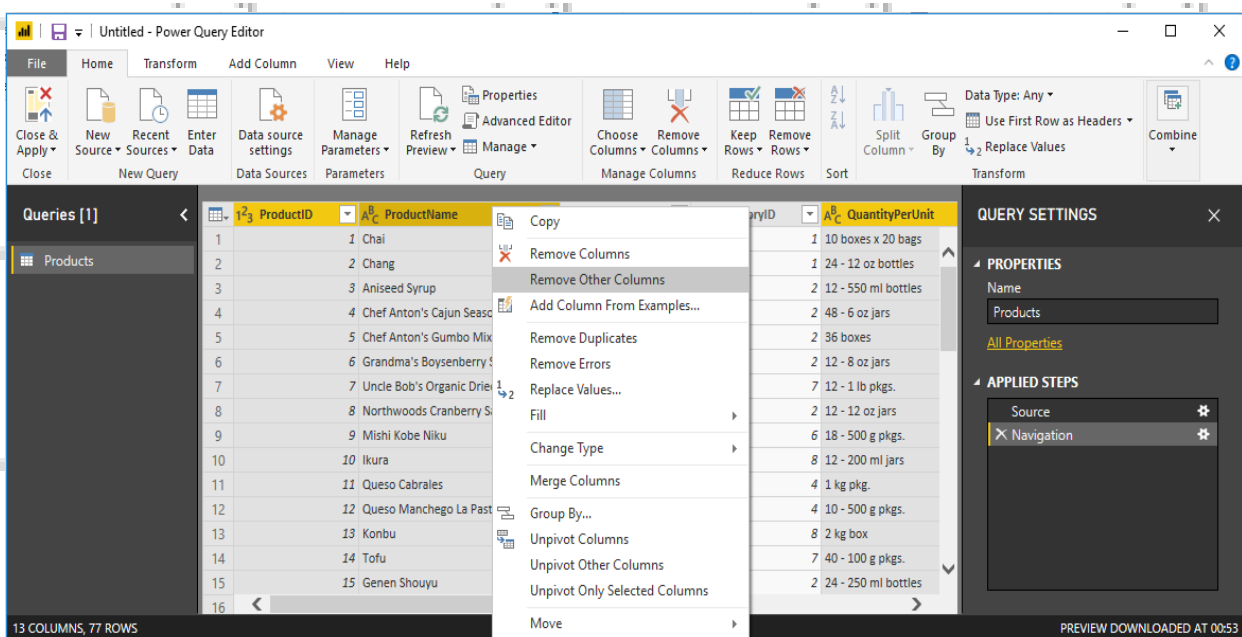


1) Remove other columns to only display columns of interest

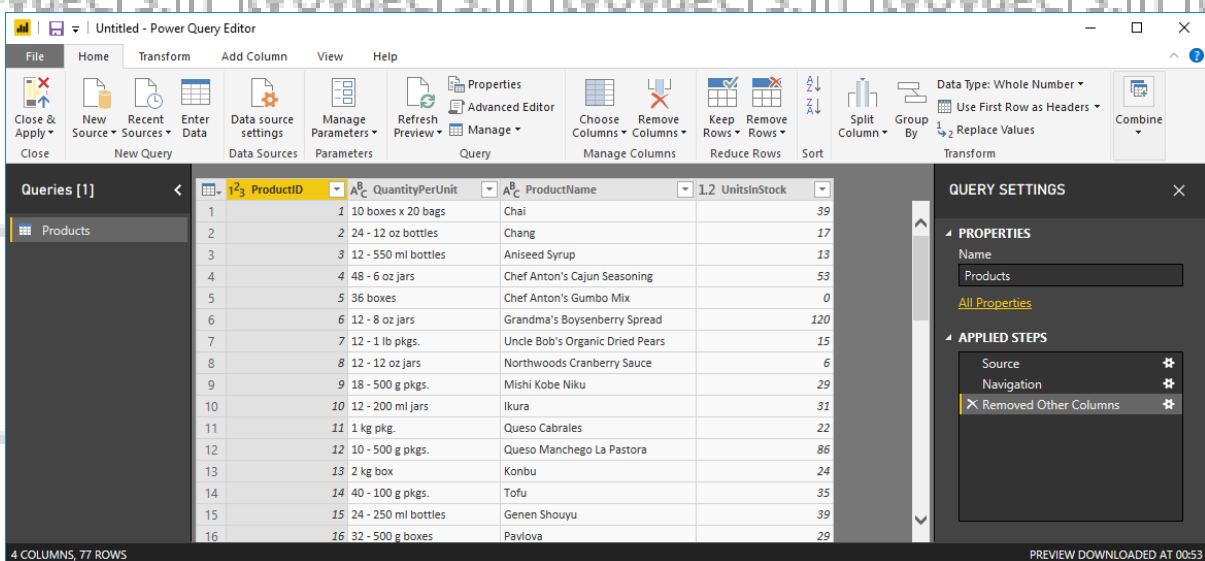
In Query Editor, select the ProductID, ProductName, QuantityPerUnit, and UnitsInStock columns (use Ctrl+Click to select more than one column, or Shift+Click to select columns that are beside each other).



Select Remove Columns > Remove Other Columns from the ribbon, or right-click on a column header and click Remove Other Columns



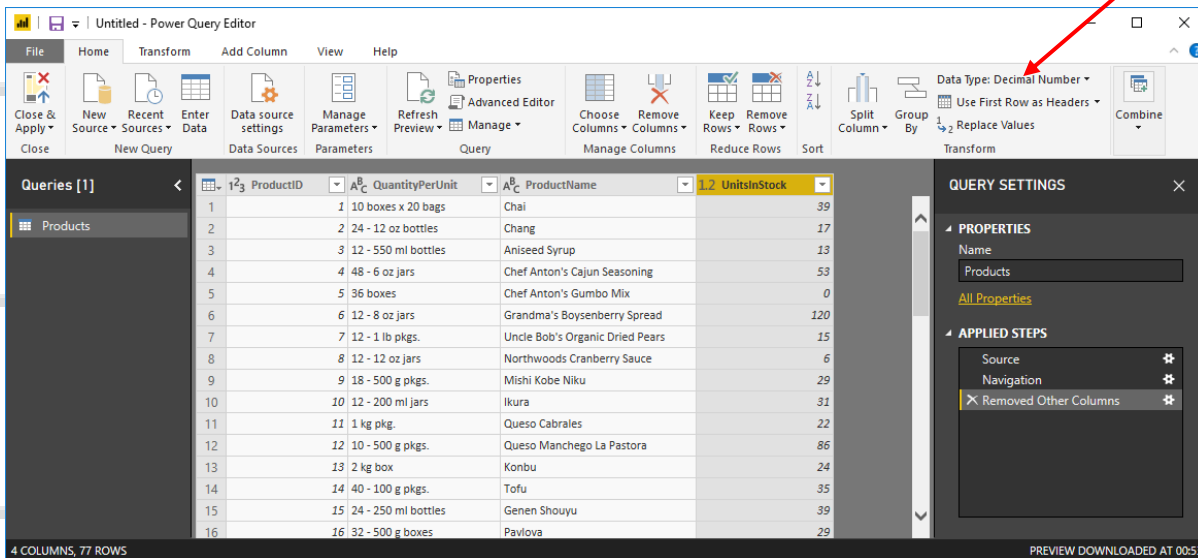
After selecting Remove Other Columns only selected four columns are displayed other columns are discarded.



2. Change the data type of the UnitsInStock column

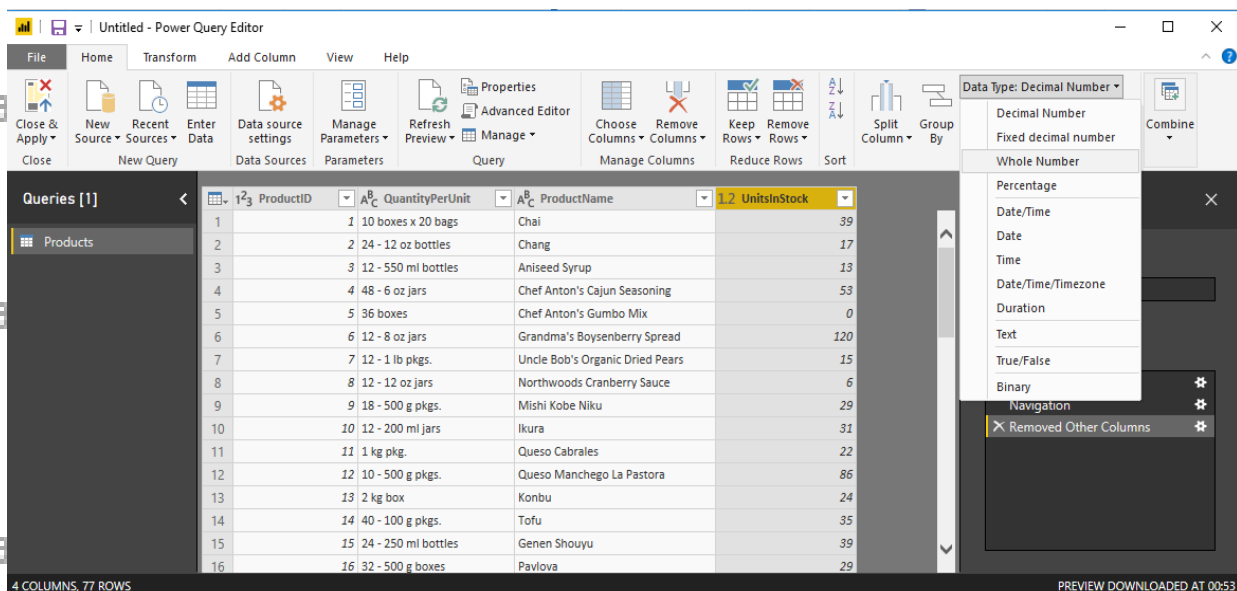
a) Select the UnitsInStock column.

Check if the data type of selected column is a Whole number

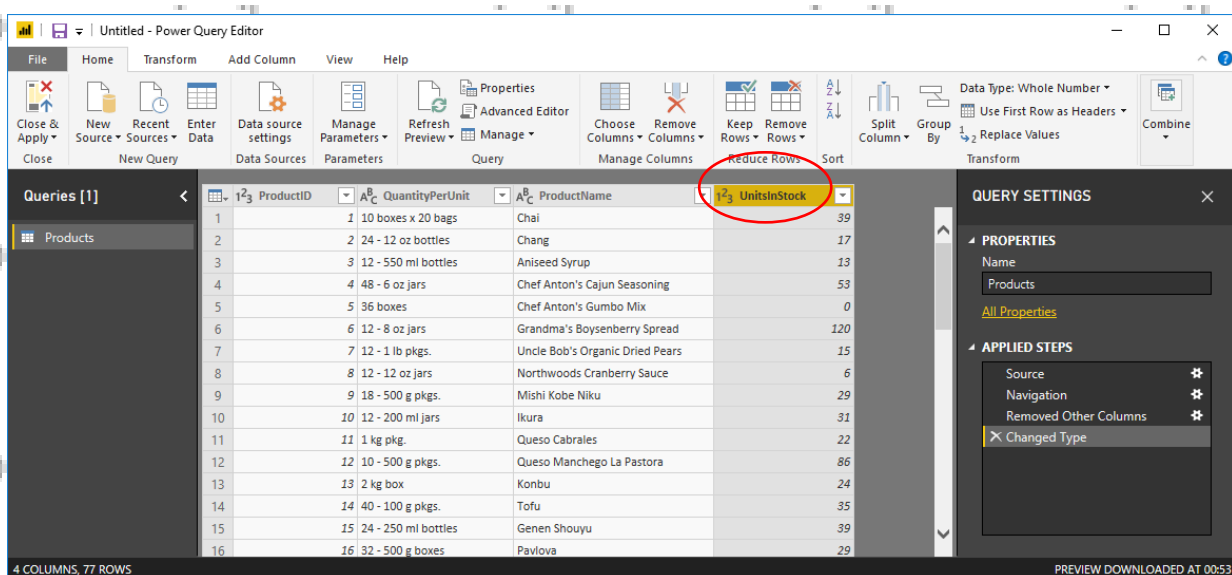


b) Select the Data Type drop-down button in the Home ribbon.

c) If not already a Whole Number, select Whole Number for data type from the drop down (the Data Type: button also displays the data type for the current selection).

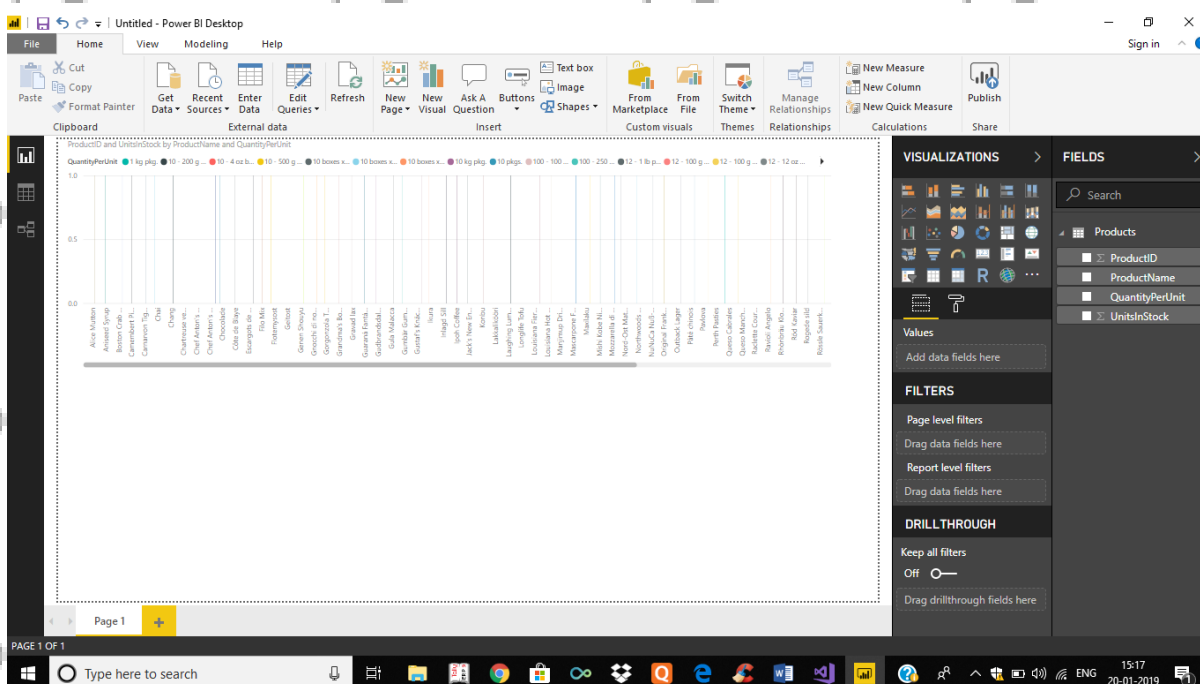


After clicking on Whole number, you can see the changed Datatype in column header of UnitsInStock.



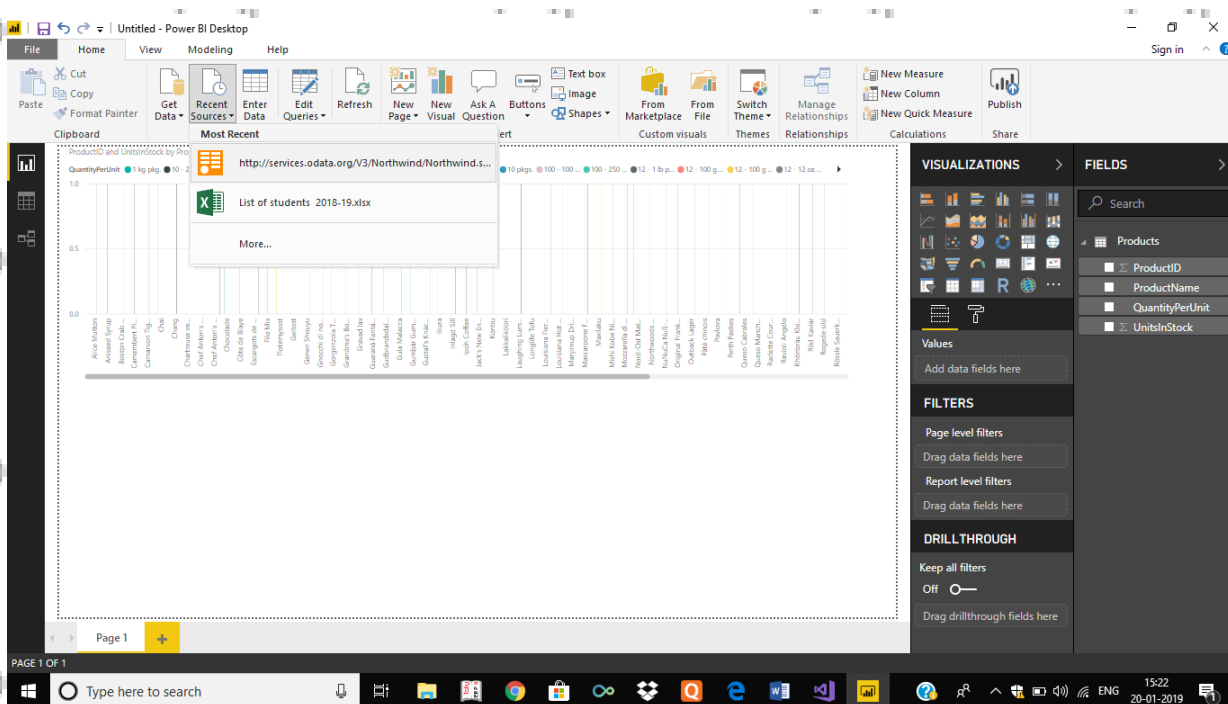
After above step, close query editor and click on Yes to save changes.

Now you can view fields of Products table on right side, check all the fields of table to get representation in charts form.



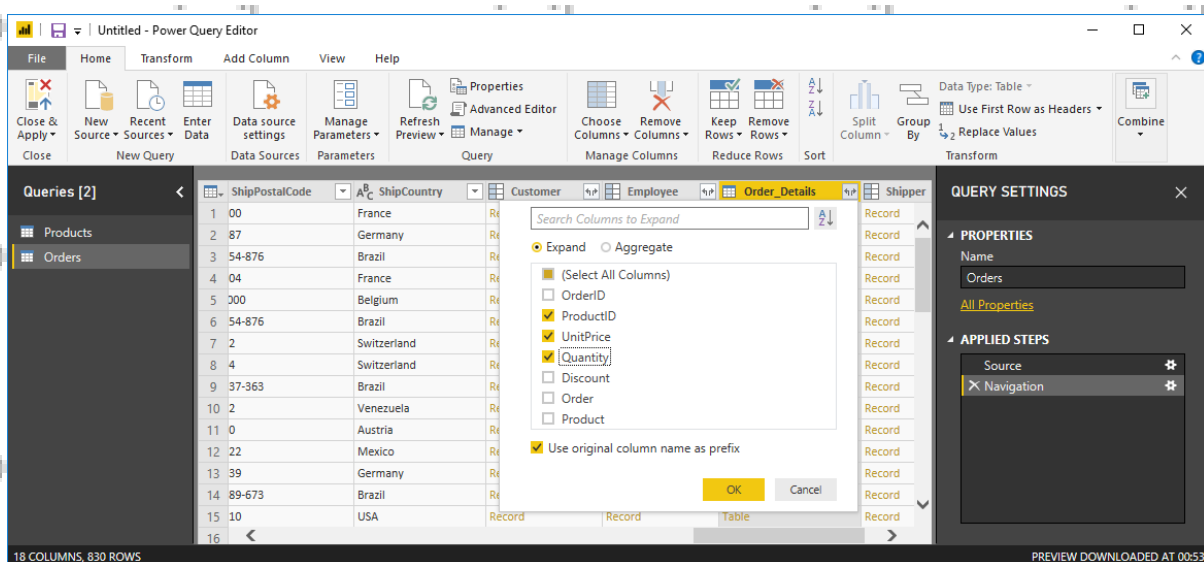
3. Expand the Orders table

Once You have loaded a data source, you can click on Recent Sources to select desired table (Orders).

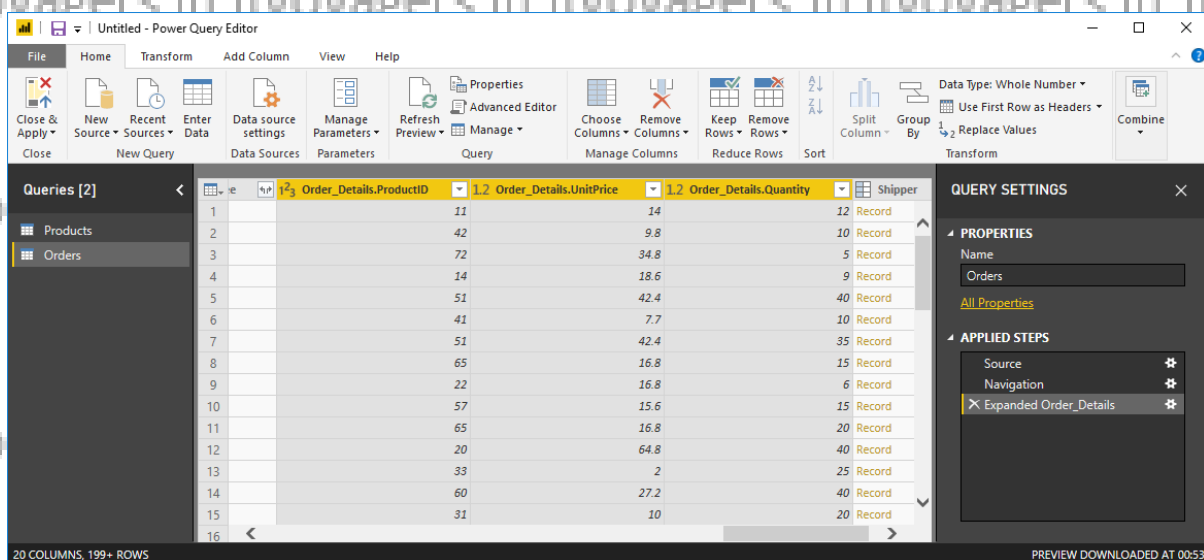


After selecting the URL, Navigator window will appear from which you can select Orders table.

Click on Edit.



After clicking on OK following screen appears with combined columns



4. Calculate the line total for each Order_Details row

Power BI Desktop lets you to create calculations based on the columns you are importing, so you can enrich the data that you connect to. In this step, you create a Custom Column to calculate the line total for each Order_Details row.

Calculate the line total for each Order_Details row:

a) In the Add Column ribbon tab, click Add Custom Column.

Untitled - Power Query Editor

File Home Transform Add Column View Help

Column From Examples Custom Column Invoke Custom Function Duplicate Column General

Conditional Column Index Column Format Merge Columns Extract Parse From Text Statistics Standard Scientific Rounding Information From Number Date Time Duration From Date & Time

Queries [2] Products Orders

	Order_Details.ProductID	Order_Details.UnitPrice	Order_Details.Quantity	Shipper
1	11	14	12	Record
2	42	9.8	10	Record
3	72	34.8	5	Record
4	14	18.6	9	Record
5	51	42.4	40	Record
6	41	7.7	10	Record
7	51	42.4	35	Record
8	65	16.8	15	Record
9	22	16.8	6	Record
10	57	15.6	15	Record
11	65	16.8	20	Record
12	20	64.8	40	Record
13				

20 COLUMNS, 199+ ROWS

PREVIEW DOWNLOADED AT 00:53

QUERY SETTINGS

PROPERTIES

Name
Orders

APPLIED STEPS

Source
Navigation
X Expanded Order_Details

- b) In the Custom Column dialog box, in the Custom Column Formula textbox, enter **[Order_Details.UnitPrice] * [Order_Details.Quantity]** by selecting from available columns and click on insert for each column.
- c) In the New column name textbox, enter **LineTotal**.
- d) Click OK.

Custom Column

New column name
LineTotal

Custom column formula:
= [Order_Details.UnitPrice]*[Order_Details.Quantity]

Available columns:
EmpPostalCode
ShipCountry
Customer
Employee
Order_Details.ProductID
Order_Details.UnitPrice
Order_Details.Quantity
Shipper

<< Insert

[Learn about Power BI Desktop formulas](#)

✓ No syntax errors have been detected.

OK Cancel

Power Query Editor window showing a query with the following columns: uctID, 1.2 Order_Details.UnitPrice, 1.2 Order_Details.Quantity, Shipper, and LineTotal. The 'LineTotal' column is highlighted in yellow. The 'QUERY SETTINGS' pane on the right shows the 'APPLIED STEPS' list with 'Added Custom' selected.

uctID	1.2 Order_Details.UnitPrice	1.2 Order_Details.Quantity	Shipper	LineTotal
1	11	14	12 Record	168
2	42	9.8	10 Record	98
3	72	34.8	5 Record	174
4	14	18.6	9 Record	167.4
5	51	42.4	40 Record	1696
6	41	7.7	10 Record	77
7	51	42.4	35 Record	1484
8	65	16.8	15 Record	252
9	22	16.8	6 Record	100.8
10	57	15.6	15 Record	234
11	65	16.8	20 Record	336
12	20	64.8	40 Record	2592
13	33	2	25 Record	50
14	60	27.2	40 Record	1088
15	31	10	20 Record	200

5. Rename and reorder columns in the query

In this step you finish making the model easy to work with when creating reports, by renaming the final columns and changing their order.

a) In Query Editor, drag the LineTotal column to the left, after ShipCountry.

Power Query Editor window showing the query after reordering. The columns are: ShipPostalCode, ShipCountry, LineTotal, Customer, and Employee. The 'LineTotal' column is highlighted in yellow. The 'QUERY SETTINGS' pane on the right shows the 'APPLIED STEPS' list with 'Reordered Columns' selected.

ShipPostalCode	ShipCountry	LineTotal	Customer	Employee
1 null	51100 France	168 Record	Record	Record
2 null	51100 France	98 Record	Record	Record
3 null	51100 France	174 Record	Record	Record
4 null	44087 Germany	167.4 Record	Record	Record
5 null	44087 Germany	1696 Record	Record	Record
6 05454-876	Brazil	77 Record	Record	Record
7 05454-876	Brazil	1484 Record	Record	Record
8 05454-876	Brazil	252 Record	Record	Record
9 null	69004 France	100.8 Record	Record	Record
10 null	69004 France	234 Record	Record	Record
11 null	69004 France	336 Record	Record	Record
12 null	B-6000 Belgium	2592 Record	Record	Record
13 null	B-6000 Belgium	50 Record	Record	Record
14 null	B-6000 Belgium	1088 Record	Record	Record
15 05454-876	Brazil	200 Record	Record	Record

b) Remove the Order_Details. prefix from the Order_Details.ProductID, Order_Details.UnitPrice and Order_Details.Quantity columns, by double-clicking on each column header, and then deleting that text from the column name.

21 COLUMNS, 999+ ROWS

PREVIEW DOWNLOADED AT 00:53

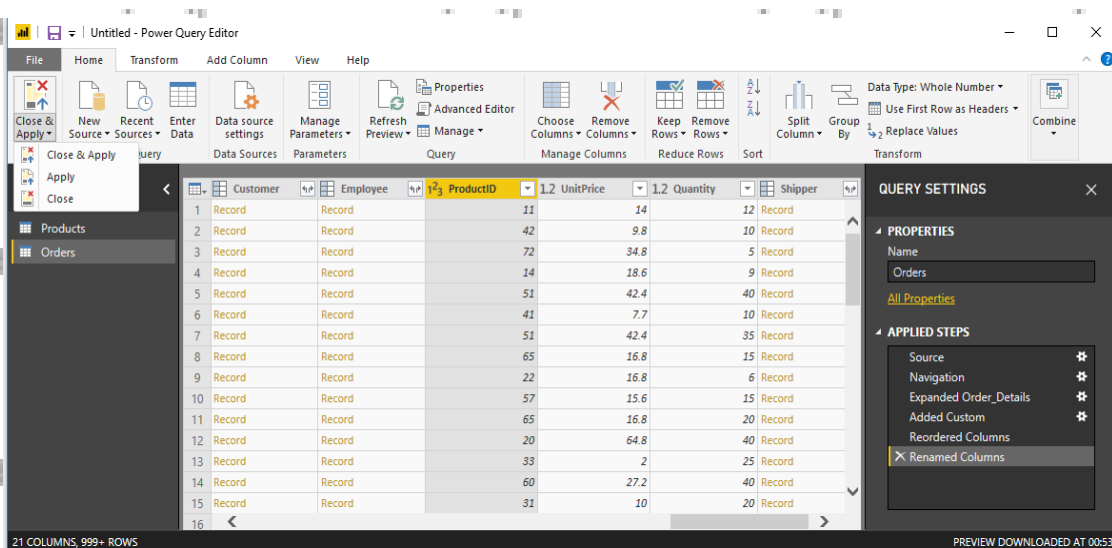
6. Combine the Products and Total Sales queries

Power BI Desktop does not require you to combine queries to report on them. Instead, you can create relationships between datasets. These relationships can be created on any column that is common to your datasets.

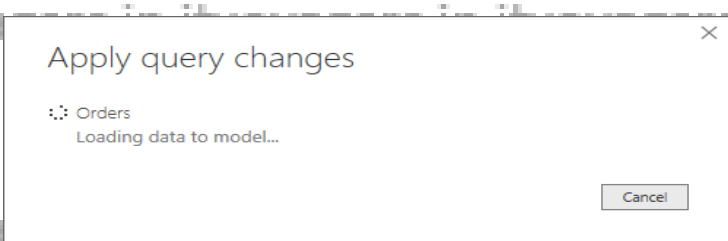
We have Orders and Products data that share a common 'ProductID' field, so we need to ensure there's a relationship between them in the model we're using with Power BI Desktop. Simply specify in Power BI Desktop that the columns from each table are related (i.e. columns that have the same values). Power BI Desktop works out the direction and cardinality of the relationship for you. In some cases, it will even detect the relationships automatically.

In this task, you confirm that a relationship is established in Power BI Desktop between the Products and Total Sales queries

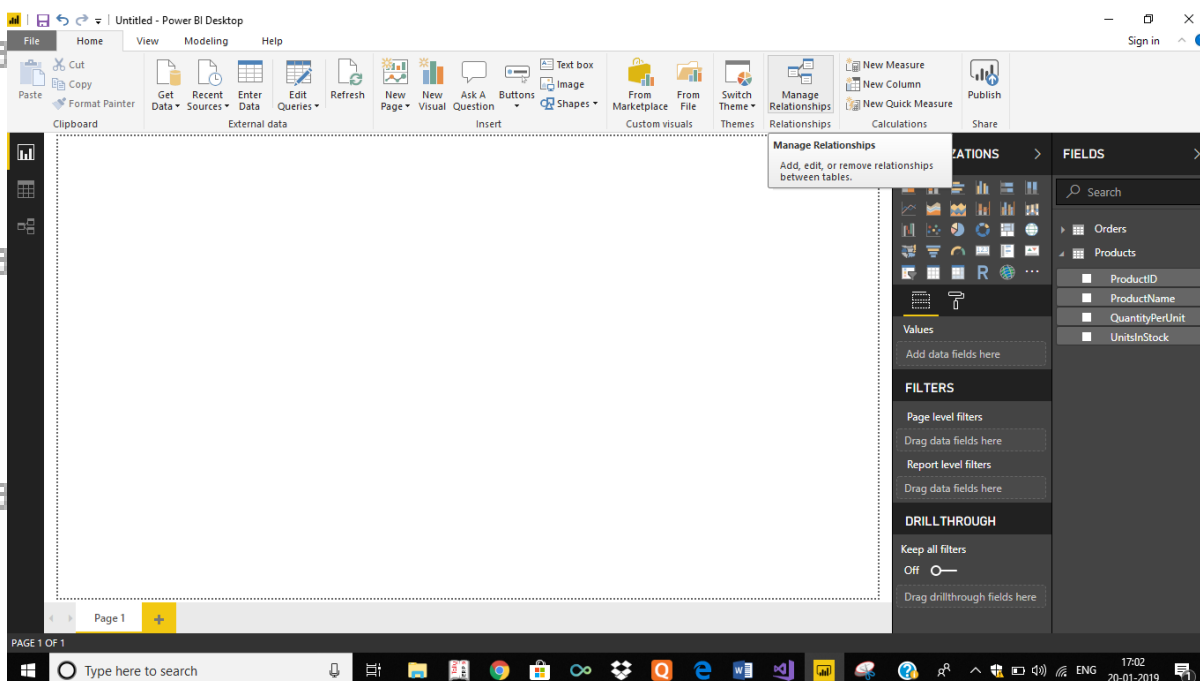
Step 1: Confirm the relationship between Products and Total Sales 1. First, we need to load the model that we created in Query Editor into Power BI Desktop. From the Home ribbon of Query Editor, select Close & Apply.



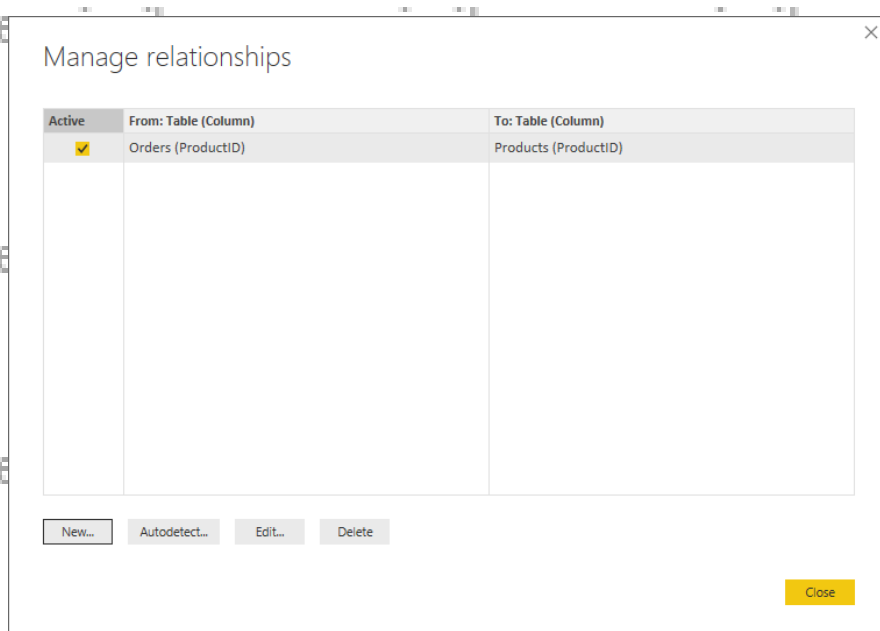
Step 2: Power BI Desktop loads the data from the two queries.



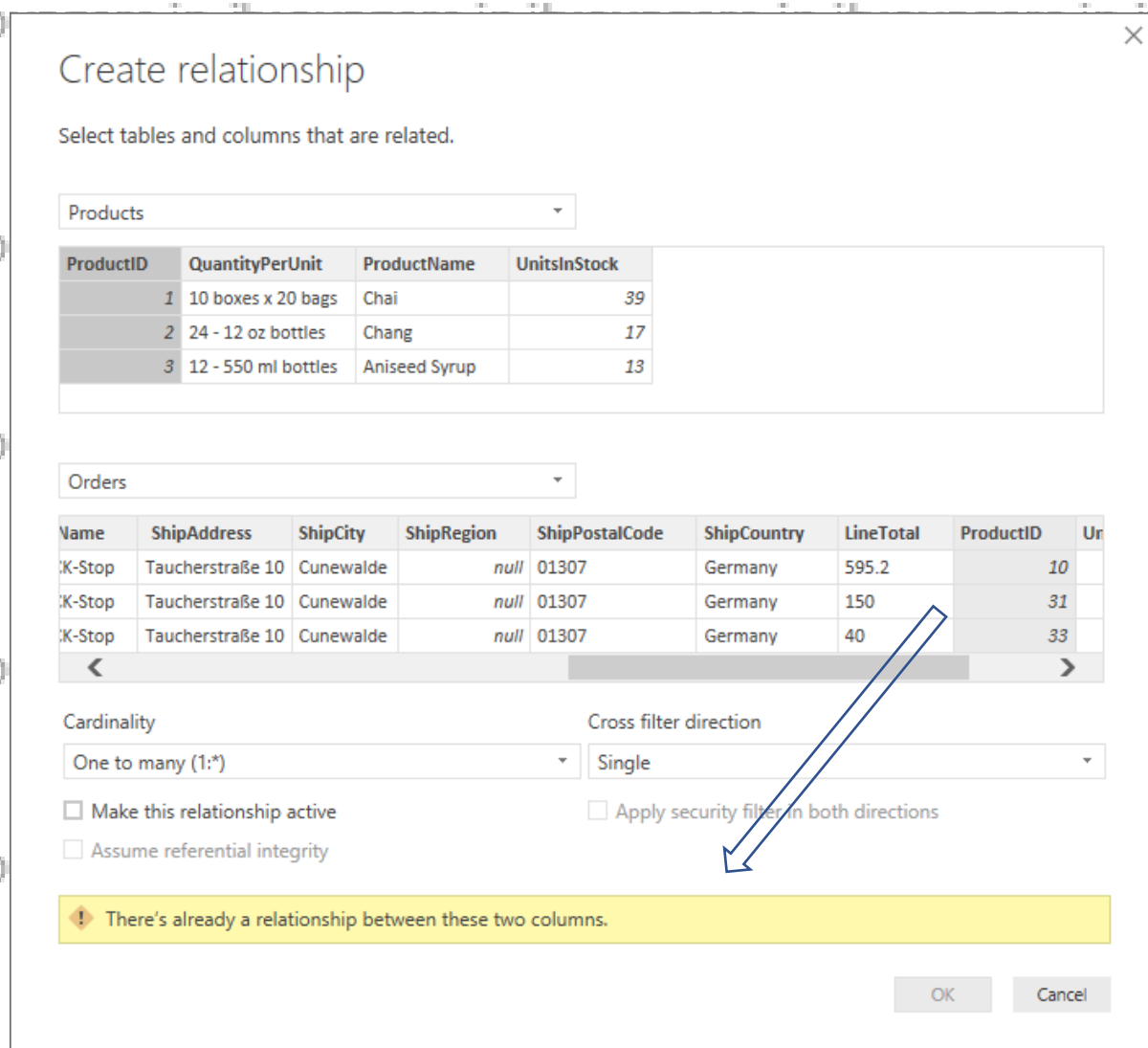
Step 3: Once the data is loaded, select the Manage Relationships button Home ribbon



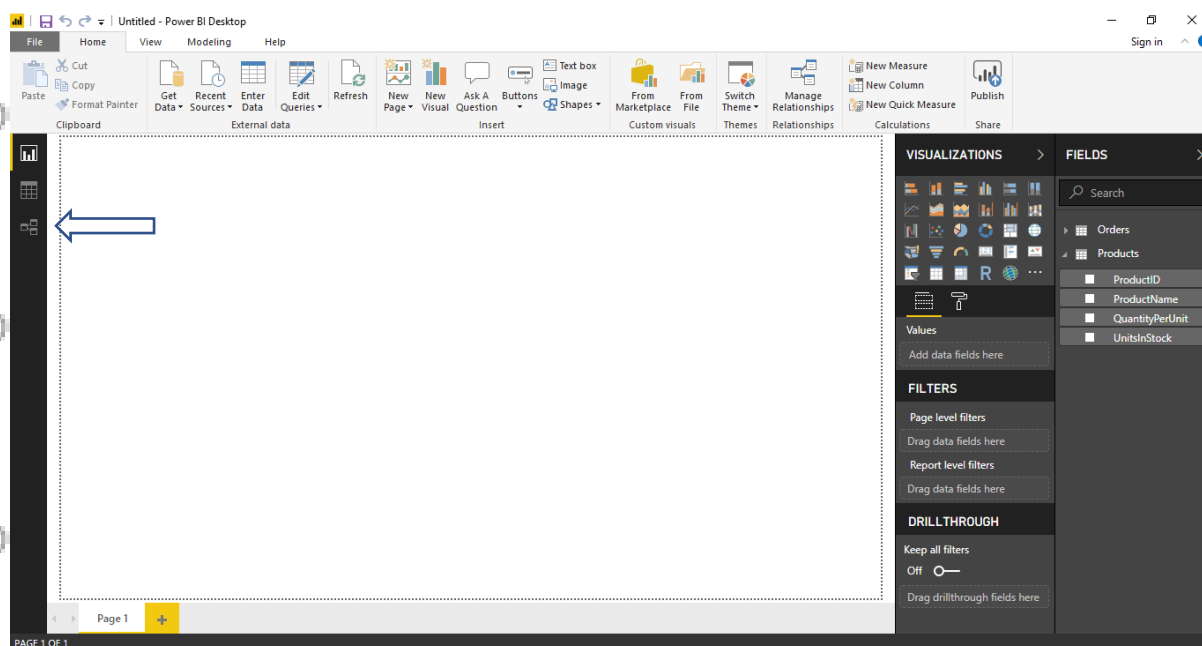
Step 4. Select the New... button



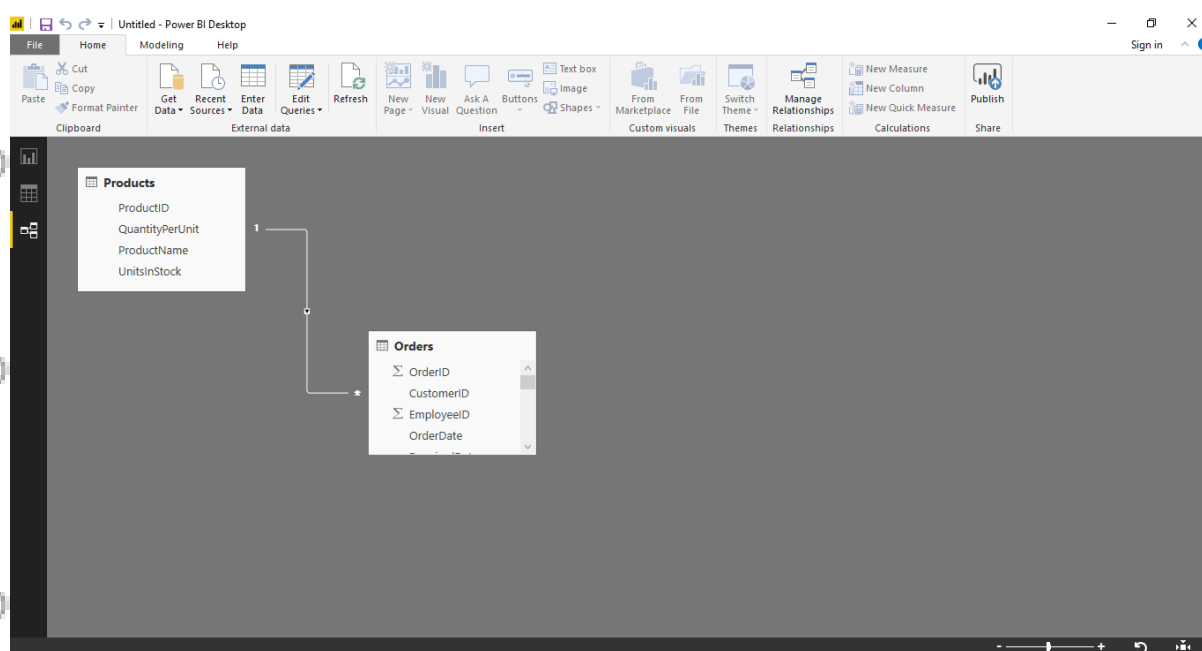
Step 5: When we attempt to create the relationship, we see that one already exists! As shown in the Create Relationship dialog (by the shaded columns), the ProductsID fields in each query already have an established relationship.



Step 6: Select Cancel, and then select Relationship view in Power BI Desktop.



Step 7: We see the following, which visualizes the relationship between the queries.



Step 8: When you double-click the arrow on the line that connects the two queries, an Edit Relationship dialog appears.

×

Edit relationship

Select tables and columns that are related.

Orders

OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate	ShippedDate	ShipVia	F
10273	QUICK	3	05-08-1996 00:00:00	02-09-1996 00:00:00	12-08-1996 00:00:00	3	
10273	QUICK	3	05-08-1996 00:00:00	02-09-1996 00:00:00	12-08-1996 00:00:00	3	
10273	QUICK	3	05-08-1996 00:00:00	02-09-1996 00:00:00	12-08-1996 00:00:00	3	

Products

ProductID	QuantityPerUnit	ProductName	UnitsInStock
1	10 boxes x 20 bags	Chai	39
2	24 - 12 oz bottles	Chang	17
3	12 - 550 ml bottles	Aniseed Syrup	13

Cardinality

Many to one (*:1)

Cross filter direction

Single

☒ Make this relationship active

☐ Assume referential integrity

☐ Apply security filter in both directions

OK

Cancel

Step 9: No need to make any changes, so we'll just select Cancel to close the Edit Relationship dialog.