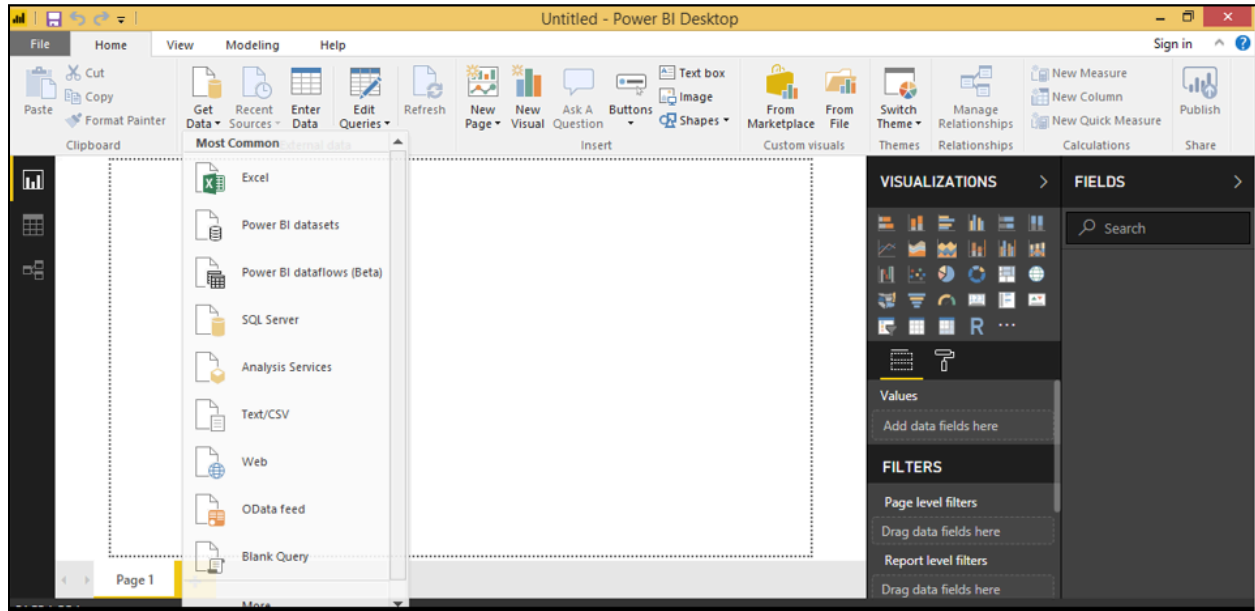


Practical No. 2

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

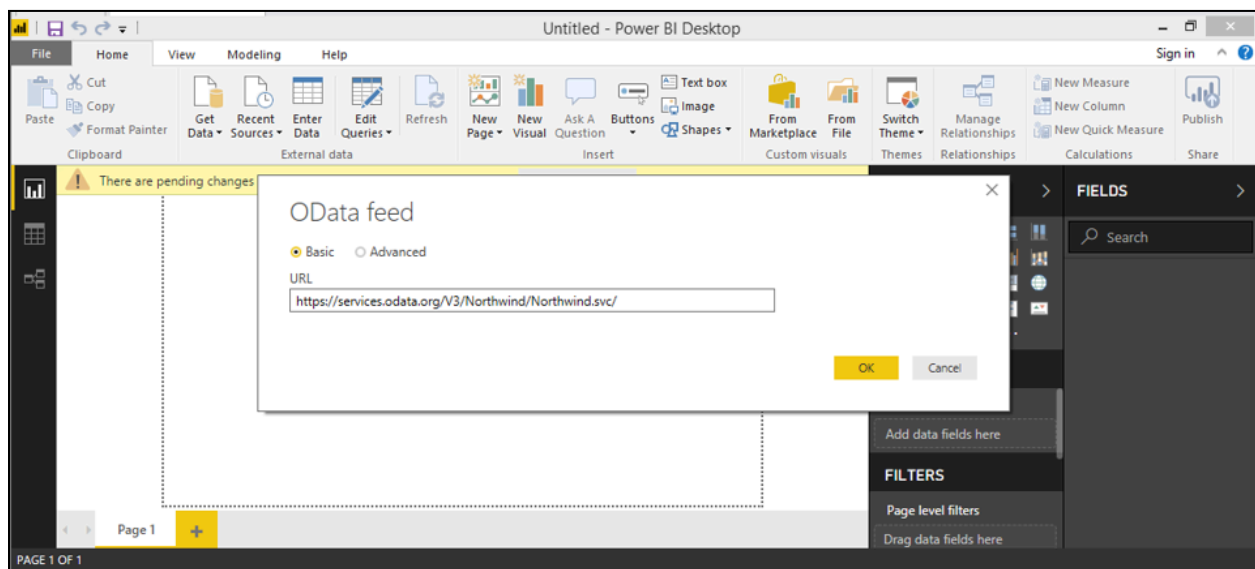
Steps to perform the practical:

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

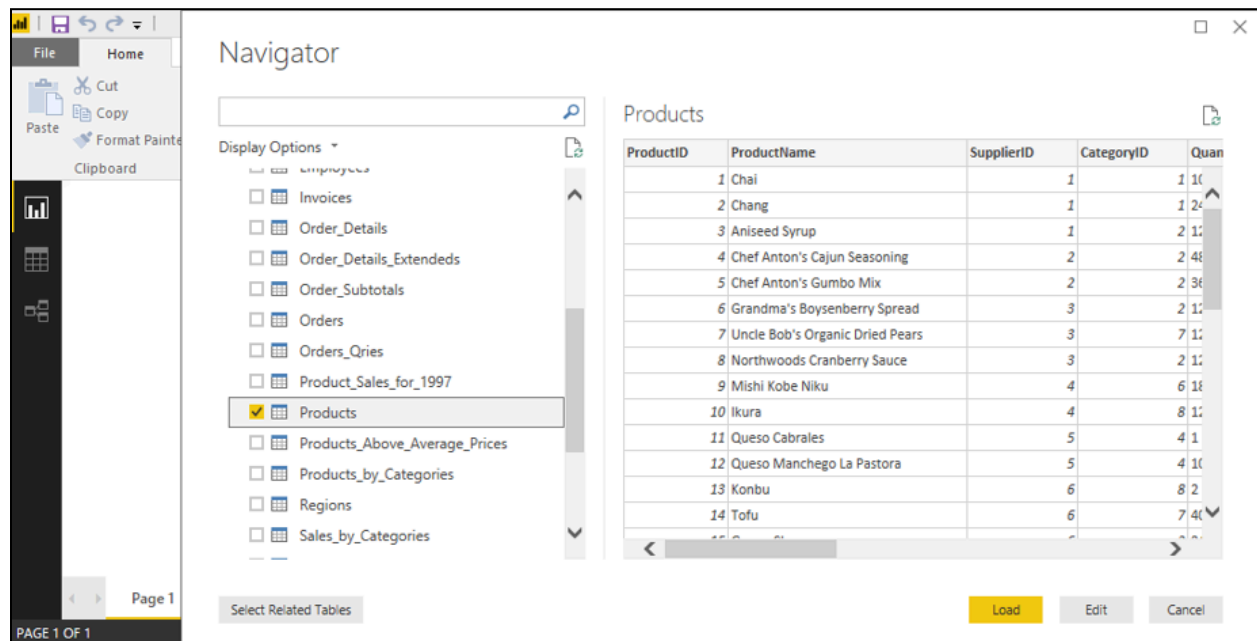


Step 2 : Paste URL as : <http://services.odata.org/V3/Northwind/Northwind.svc/>

Then Click on OK.

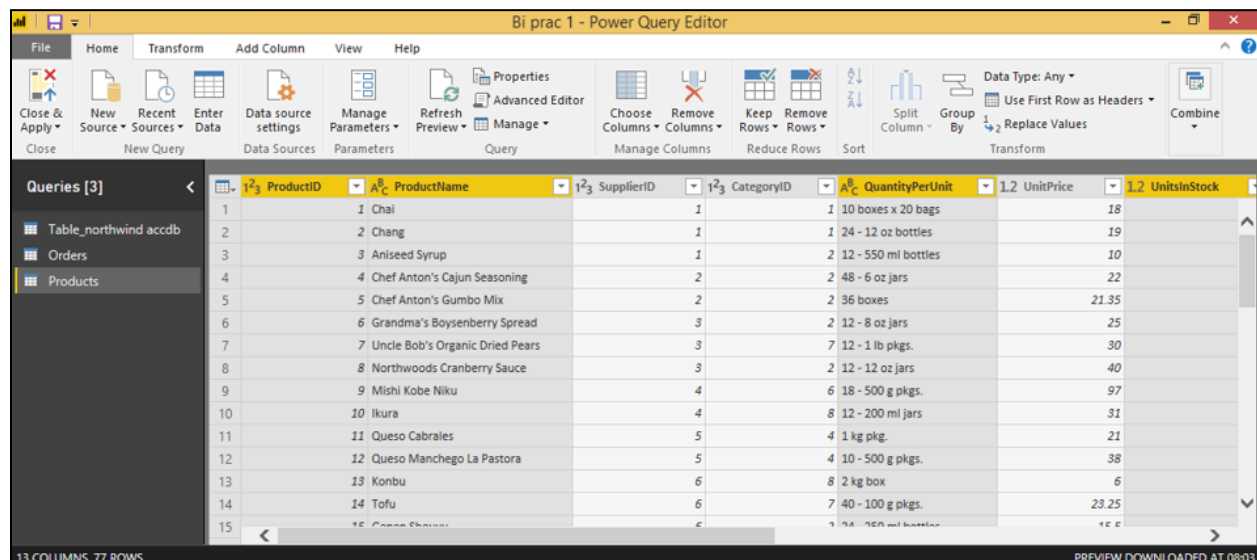


Step 3 : Select by checking the box of Products table and then Click on Edit.

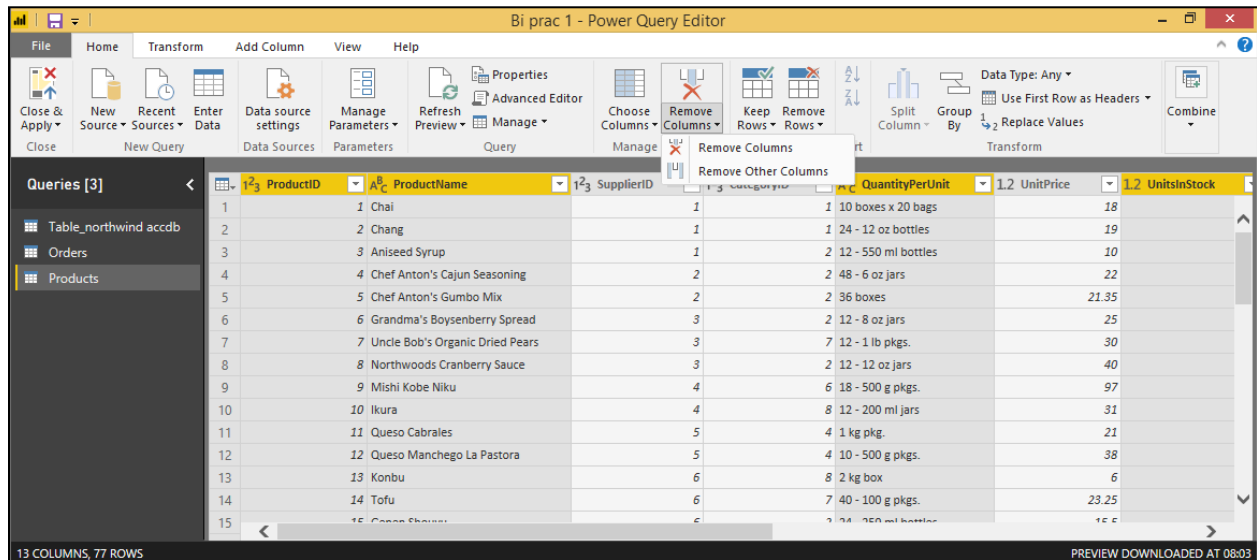


1) Remove other columns to only display columns of interest:

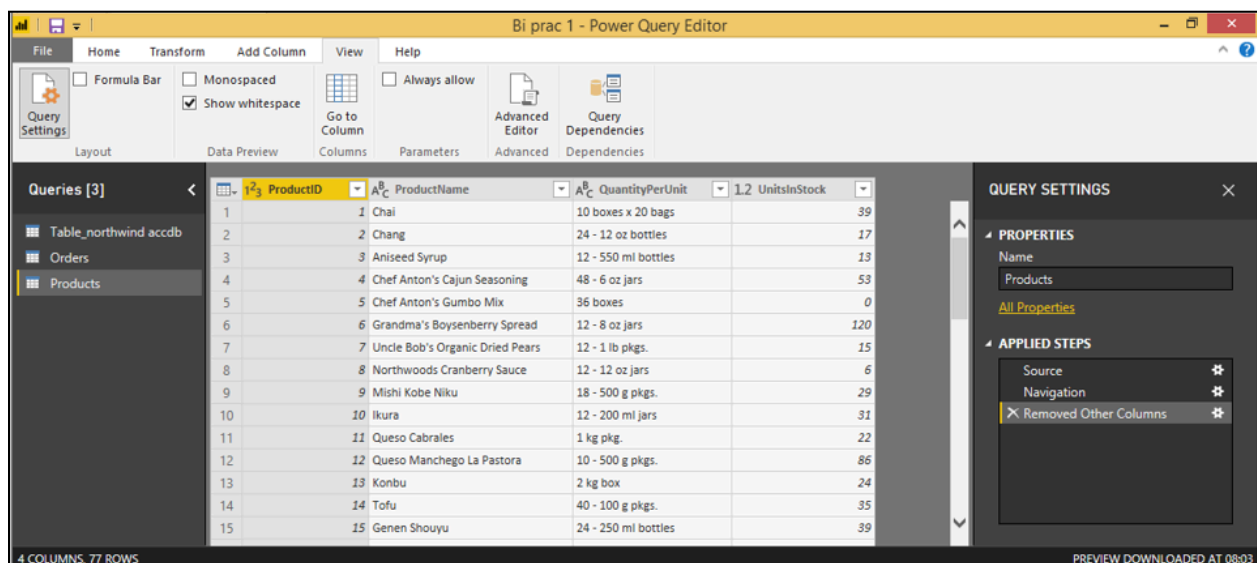
Step 1: In the Query Editor, select ProductID, ProductName, QuantityPerUnit, and UnitsInStock columns.



Step 2 : Select Remove Columns Remove Other Columns from the ribbon, or right-click on a column header and click Remove Other Columns.



Step 3 : After selecting Remove Other Columns only selected four columns are displayed other columns are discarded.

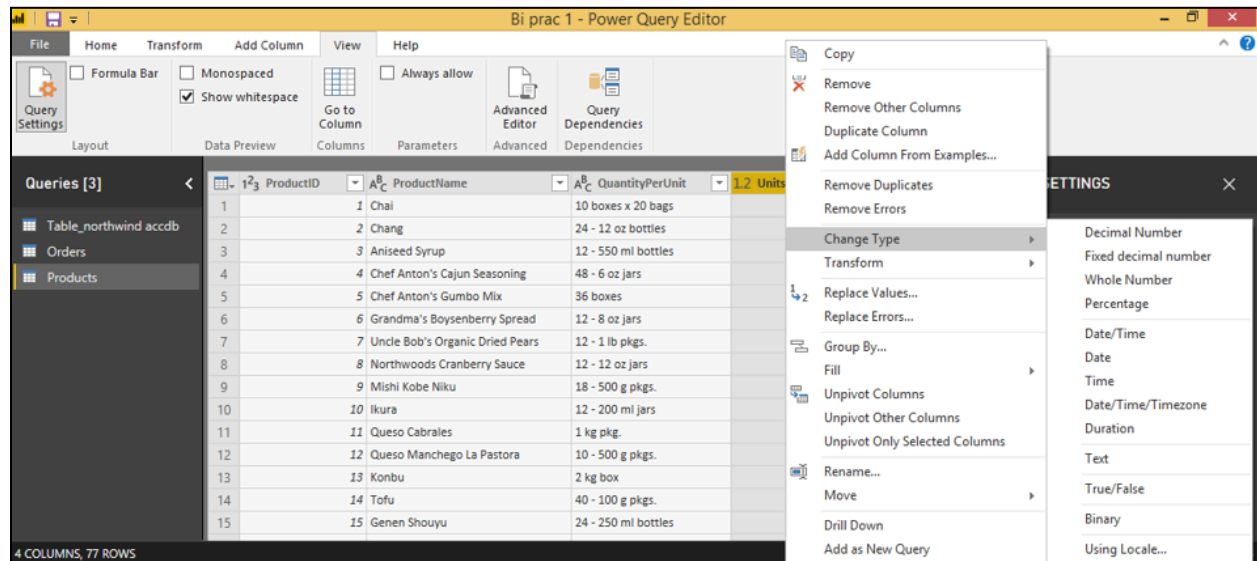


2) Change the data type of the UnitsInStock column.

Step 1 : Select the UnitsInStock column.

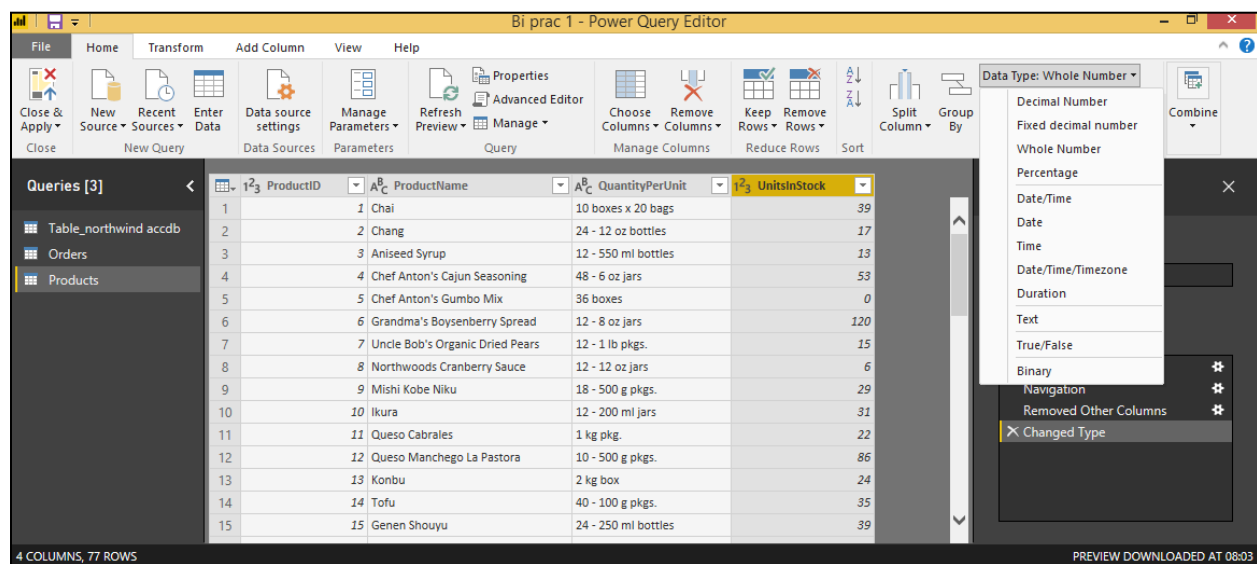
Step 2 : Right-click on a column header and select the Change Type from the drop-down.

Step 3 : Change it and select Whole Number as Data Type from the drop-down.



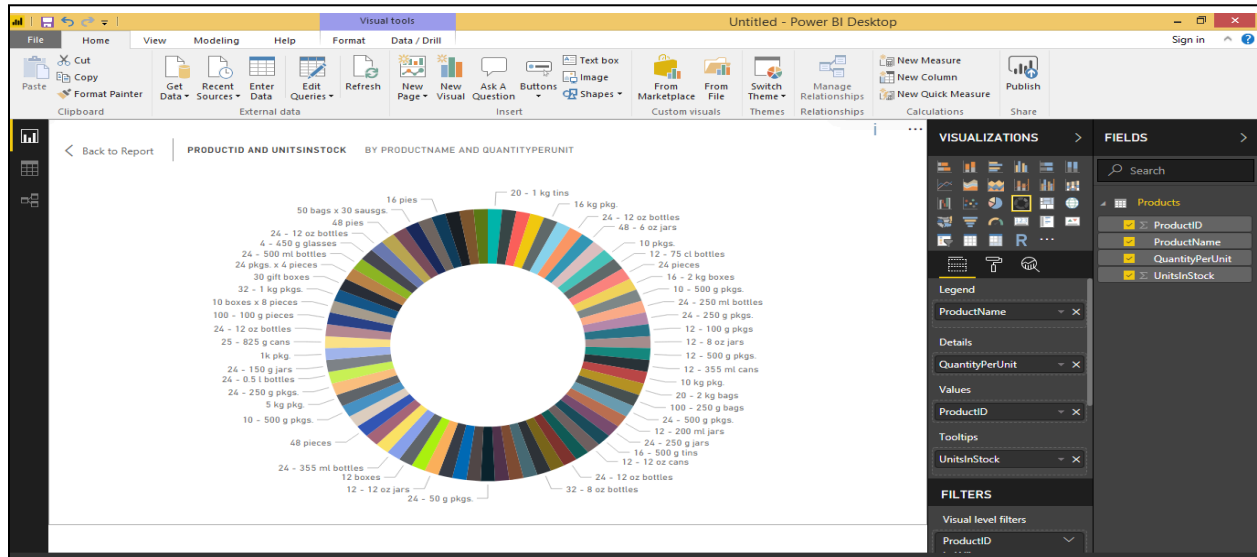
Step 4 : You can also change Data Type by Select the Data Type drop-down button in the Home ribbon, Then Change it and select Whole Number as Datatype from the drop-down.

Step 5 : After Clicking on Whole Number, you can see the changed Data Type in column header of UnitsInStock.



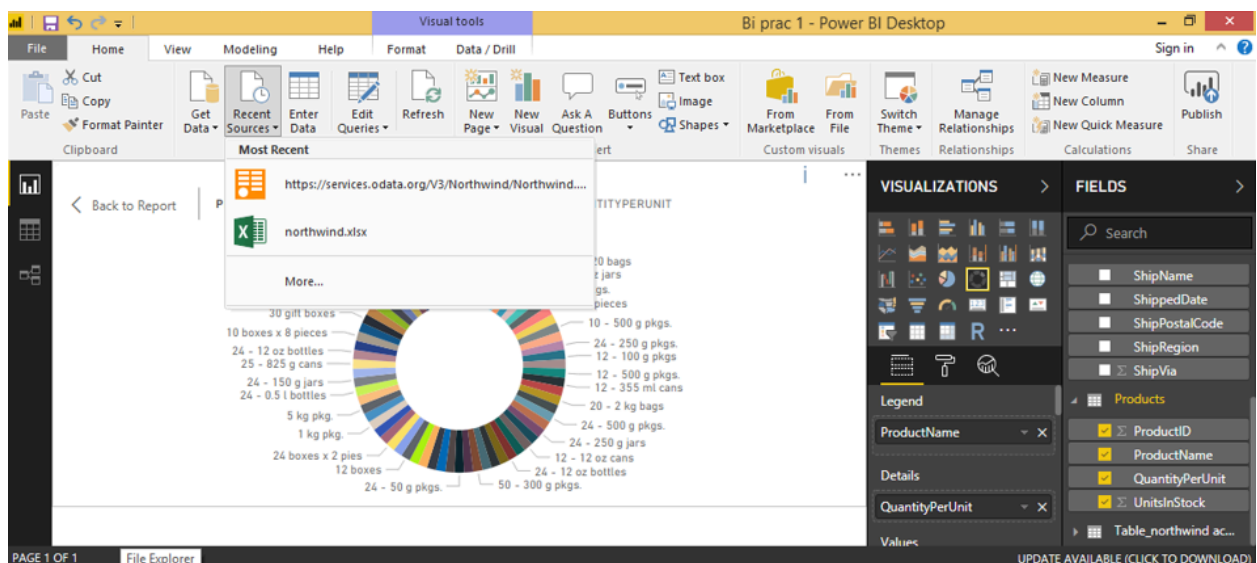
Step 6 : After the above step, close the query editor and click on Yes to save changes.

Step 7 : Now you can view the fields of the Products table on the right side, check all the fields of the table to get representation in charts form.

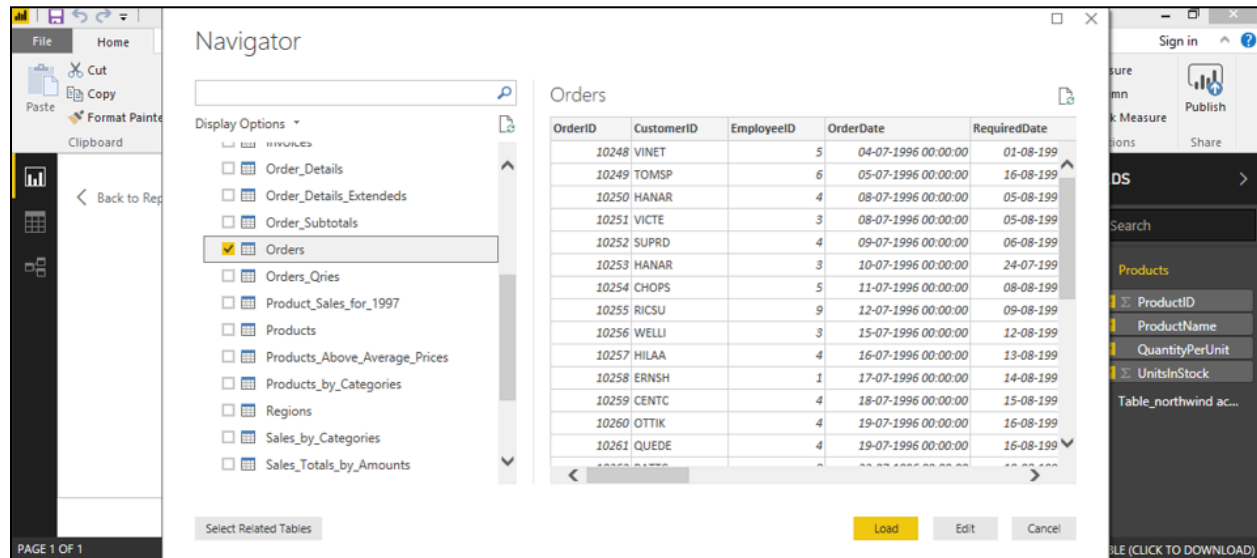


3) Expand the Orders Table

Step 1 : Once you have loaded a data source, you can click on Recent Sources to select the desired table (Orders).



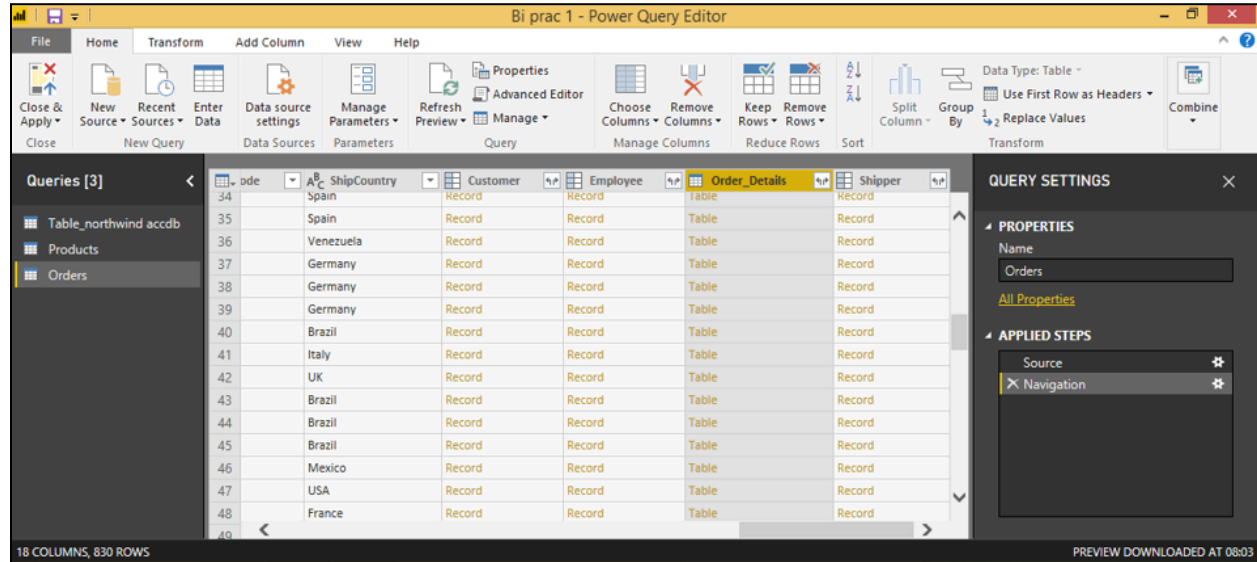
Step 2 : After selecting the URL, a Navigator window will appear from which you can select the Orders table. Click on Edit.



Step 3 : Query Editor will appear:

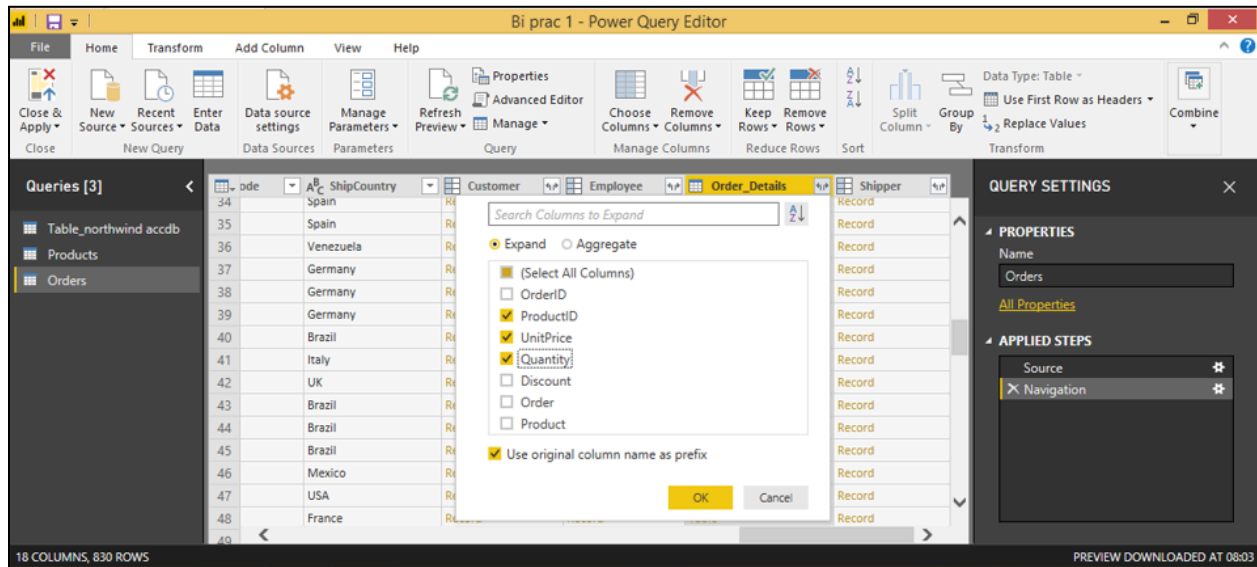
a. In the Query View, scroll to the Order_Details column.

b. In the Order_Details column, select the Expand Icon.

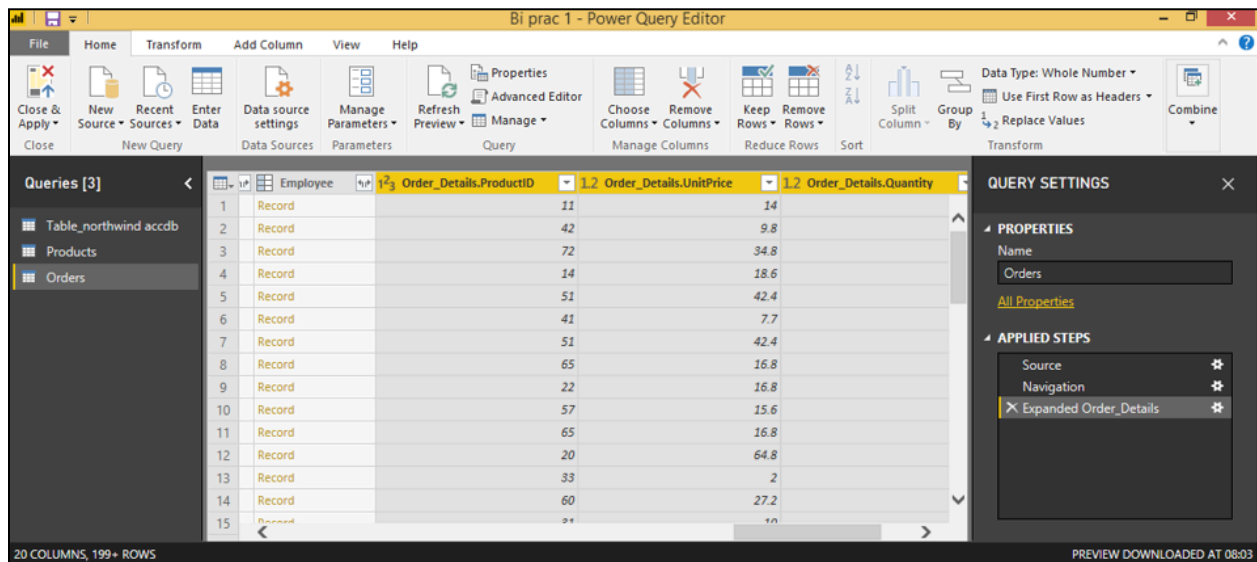


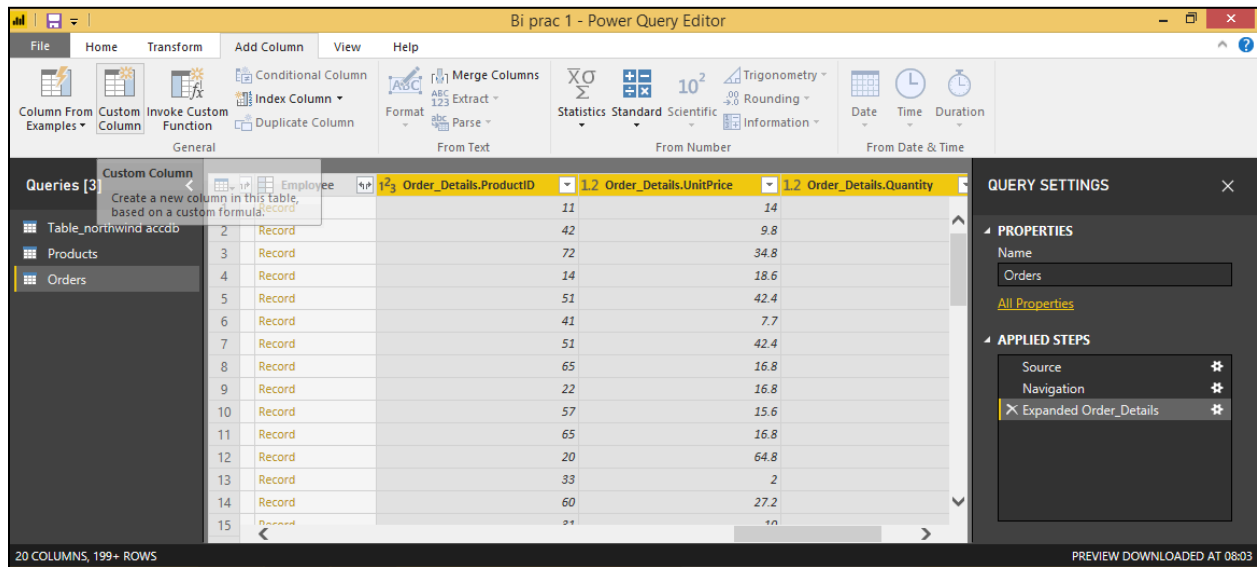
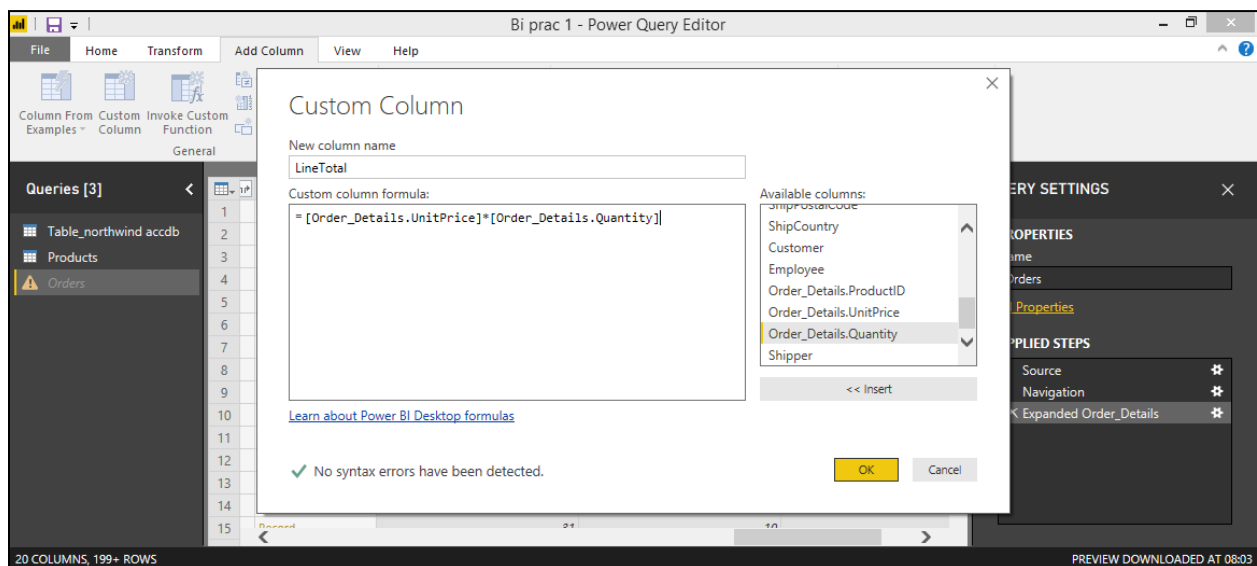
c. In the Expand drop-down:

- i. Select (Select All Columns) to clear all columns.
- ii. Select ProductID, UnitPrice and Quantity.
- iii. Click OK.



iv. After clicking on OK following screen appears with combined columns:



4) Calculate the line total for each Order_Details row.**Step 1 :** In the Add Column ribbon tab, Click Add Custom Column.**Step 2 :** In the Custom Column dialog box, in the Custom Column Formula textbox, Enter:Enter: $[\text{Order_Details.UnitPrice}] * [\text{Order_Details.Quantity}]$ **Step 3 :** By selecting from available columns and clicking on insert for each column.**Step 4 :** In the New Column name textbox, Enter: LineTotal.**Step 5 :** Click OK.

Untitled - Power Query Editor

Queries [3]: Table_northwind accdb, Products, Orders

ctID	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
16	39	14.4	42 Record	604.8
17	49	16	40 Record	640

21 COLUMNS, 999+ ROWS

PREVIEW DOWNLOADED AT 08:00

5) Rename and reorder columns in the query:

Step 1 : In the Query Editor, drag the LineTotal column to the left, after ShipCountry.

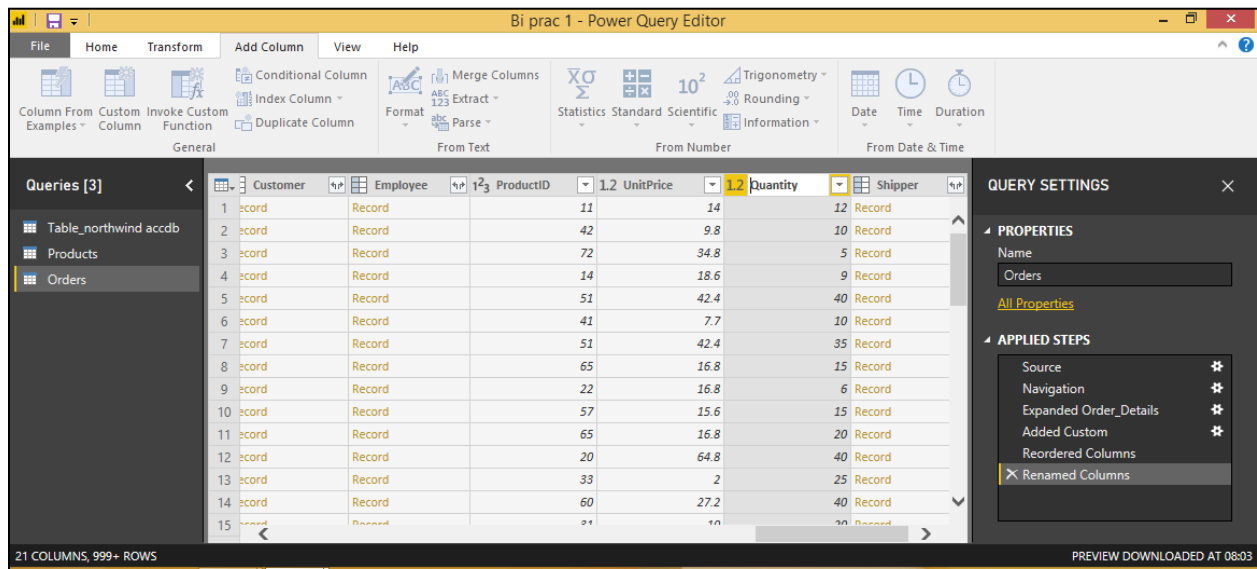
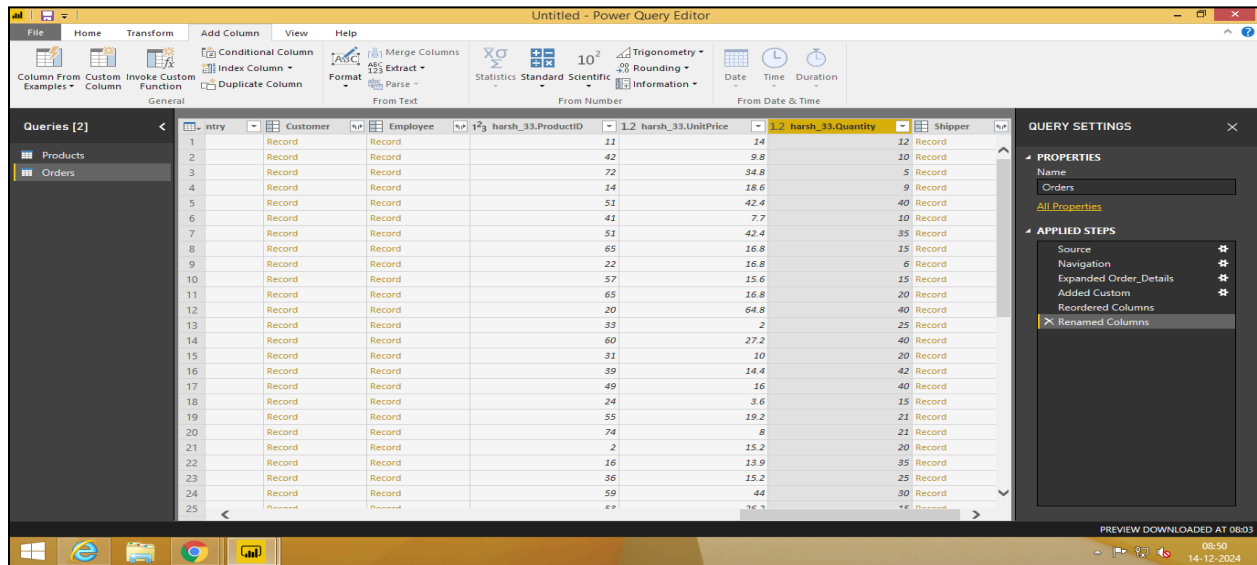
Untitled - Power Query Editor

Queries [3]: Table_northwind accdb, Products, Orders

	ShipPostalCode	LineTotal	ShipCountry	Customer	Employee
1	null 51100	168	France	Record	Record
2	null 51100	98	France	Record	Record
3	null 51100	174	France	Record	Record
4	null 44087	167.4	Germany	Record	Record
5	null 44087	1696	Germany	Record	Record
6	05454-876	77	Brazil	Record	Record
7	05454-876	1484	Brazil	Record	Record
8	05454-876	252	Brazil	Record	Record
9	null 69004	100.8	France	Record	Record
10	null 69004	234	France	Record	Record
11	null 69004	336	France	Record	Record
12	null B-6000	2592	Belgium	Record	Record
13	null B-6000	50	Belgium	Record	Record
14	null B-6000	1088	Belgium	Record	Record
15	05454-876	200	Brazil	Record	Record
16	05454-876	604.8	Brazil	Record	Record
17	05454-876	640	Brazil	Record	Record

PREVIEW DOWNLOADED AT 08:00

Step 2 : Right-click on a column header and click on Rename option, and Rename the column name.

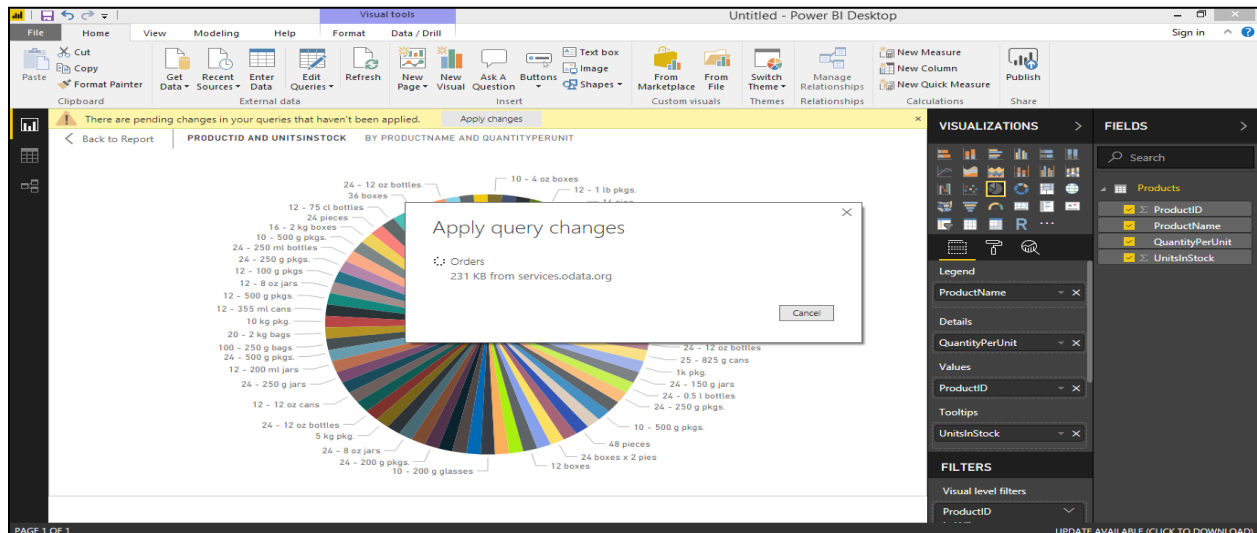


6) Combine the Products and Total Sales queries:

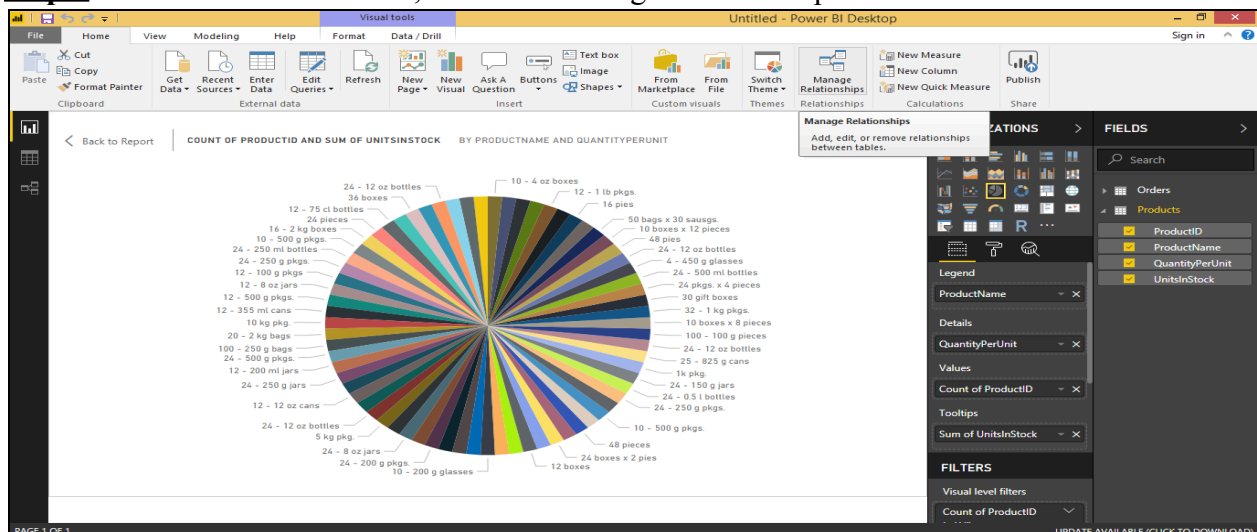
Step 1 : Confirm the relationship between Products and Total Sales, first we need to load the model that we created in the Query Editor into Power BI Desktop. From the Home ribbon of Query Editor → Select Close & Apply.

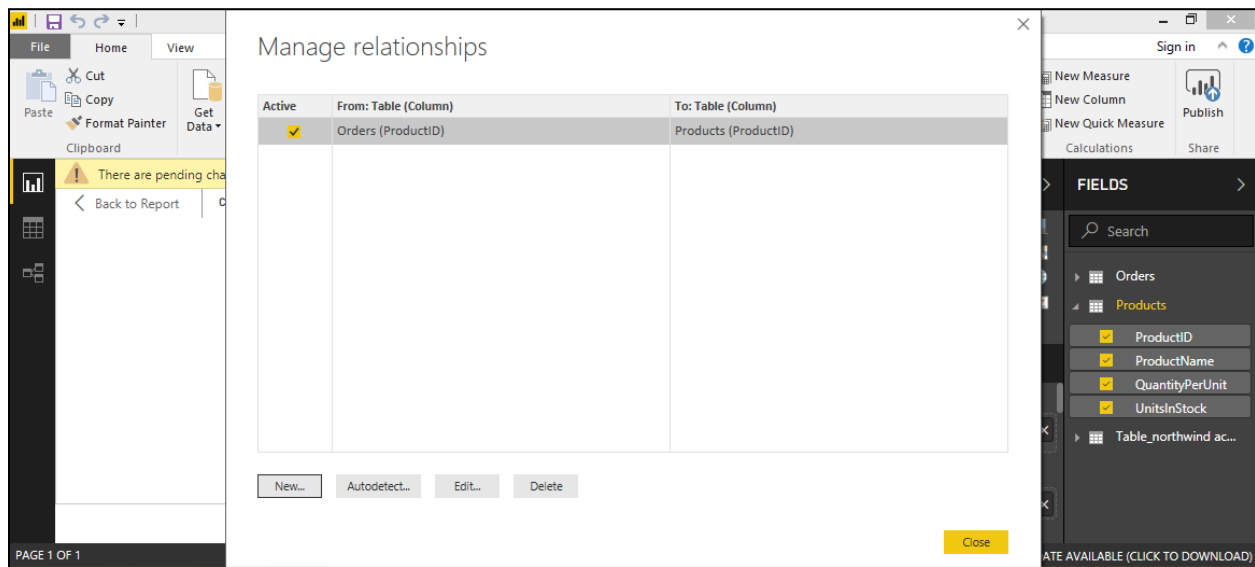
The screenshot shows the Microsoft Power Query Editor interface. The ribbon at the top includes File, Home, Transform, Add Column, View, and Help. The 'Transform' ribbon is active, showing options like Close & Apply, New Source, Recent Sources, Enter Data, Data source settings, Manage Parameters, Refresh Preview, Advanced Editor, Choose Columns, Remove Columns, Keep Rows, Remove Rows, Sort, Split Column, and Group By. A tooltip for 'Close & Apply' is visible, stating 'Close the Query Editor window and apply any pending changes.' The main area displays a table with columns: Employee, ProductID, UnitPrice, Quantity, and Shipper. The table contains 15 rows of data. On the right, the 'QUERY SETTINGS' pane is open, showing 'PROPERTIES' (Name: Orders) and 'APPLIED STEPS' (Source, Navigation, Expanded Order_Details, Added Custom, Reordered Columns, and Renamed Columns). The status bar at the bottom indicates '21 COLUMNS, 999+ ROWS' and 'PREVIEW DOWNLOADED AT 08:00'.

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

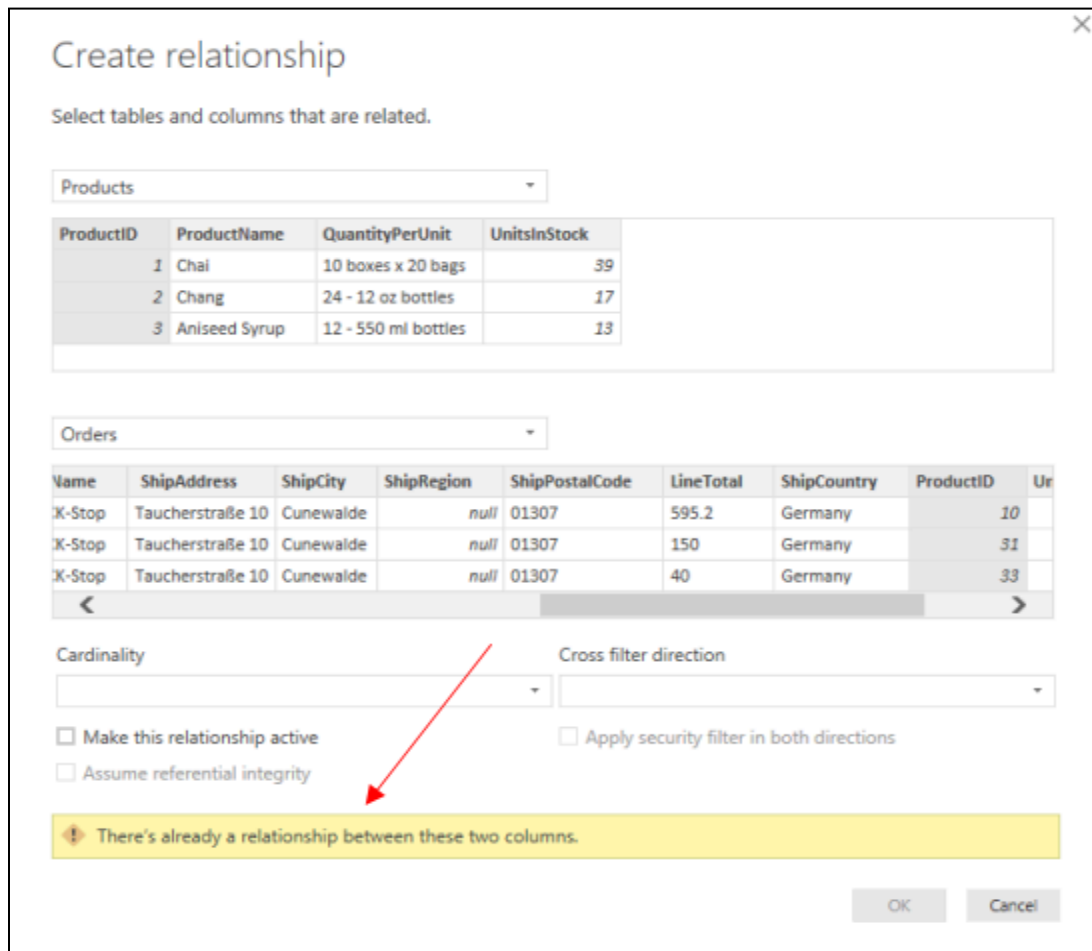


Step 3 : Once the data is loaded, select the Manage Relationships button at Home Ribbon.

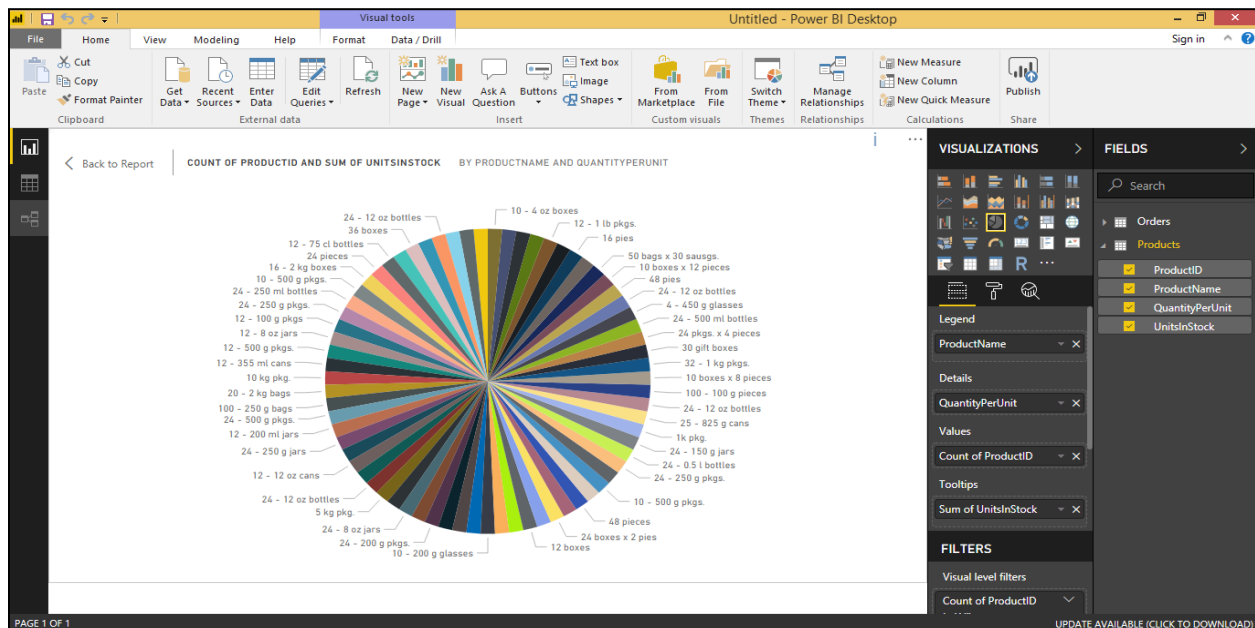


Step 4 : Select the New Button.

Step 5 : When we attempt to create a 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

