

Context

Introduction	2
Connecting to Excel	3 – 5
Connecting to Text/CSV	5 – 6
Handling multiple date fields	7 – 11
BI directional relationship	11 – 15
Connect to SQL Server	11 – 12
Create Relationship Automatically	16 – 18
Create Relationship Manually	18 – 19
Create Hierarchies	20 – 21
Power Query Introduction	21
Header Row Promotions	22 – 26
Create Query Group	26 – 27
Create Reference	28 – 29
Merge	29 – 30
Split Column	30 – 31
Replace	31 – 32
Fill Up	32 – 33
Custom Column	33 – 34
Append	34 – 36
Merge Queries	36 – 38
Parameters	39 – 44

Introduction

Microsoft Power BI is one of the most popular Data Visualization tools and Business Intelligence Tools, and this tutorial explains everything about it.

Power BI is a collection of connectors, apps, and software services that work together for business users to convert large junk data into more meaningful insights. Typically, an organization gets its data from Text, CSV files, Excel spreadsheets, databases, data warehouses, or the cloud.

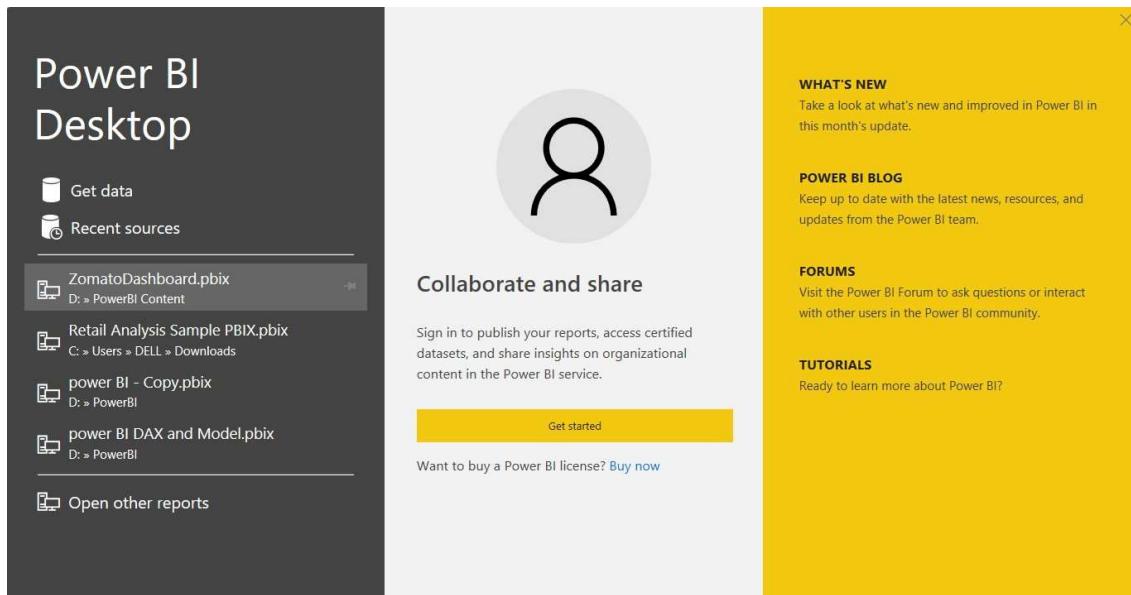
Microsoft Power BI lets you connect with all kinds of data sources to get your data. Transform data, model data, visualize (charts), and share them with anyone.

Microsoft Power BI is a cloud-based data analysis and analytics or reporting technology. It incorporates several powerful components, each having its own role in creating reports. For instance, connecting to data sources, data cleansing, analytics, calculations, sharing reports, consuming, etc.

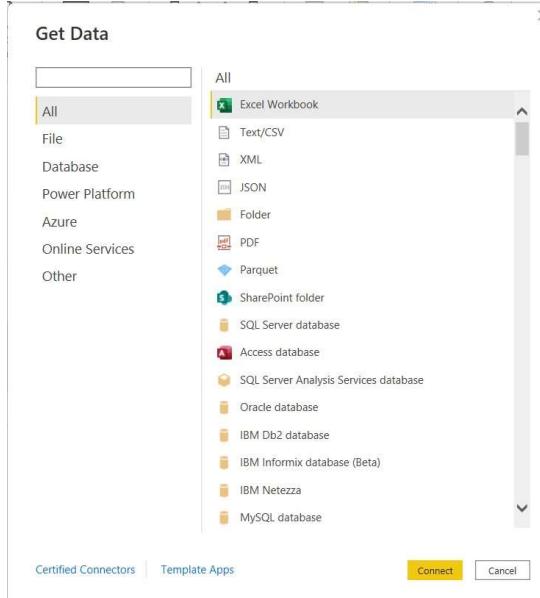
It also allows data analysts to publish reports for your organization. So that business users can access them using mobiles, tablets, etc. This Microsoft Power BI tutorial also explains these steps, so read this thoroughly to learn everything about this business intelligence tool.

Connecting to Excel

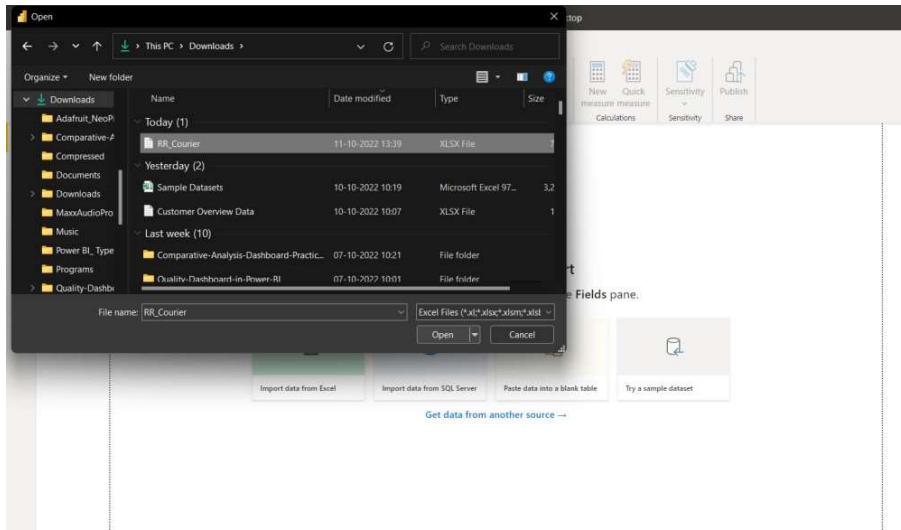
1. When you open the Power BI Desktop app you will see a window as below click Get Data option.



2. As this is an Excel file, select the **Excel Workbook** option from the drop-down list. Because our file is in Excel file format. And click connect.



- Select the file named **RR_Courier** file and click open.



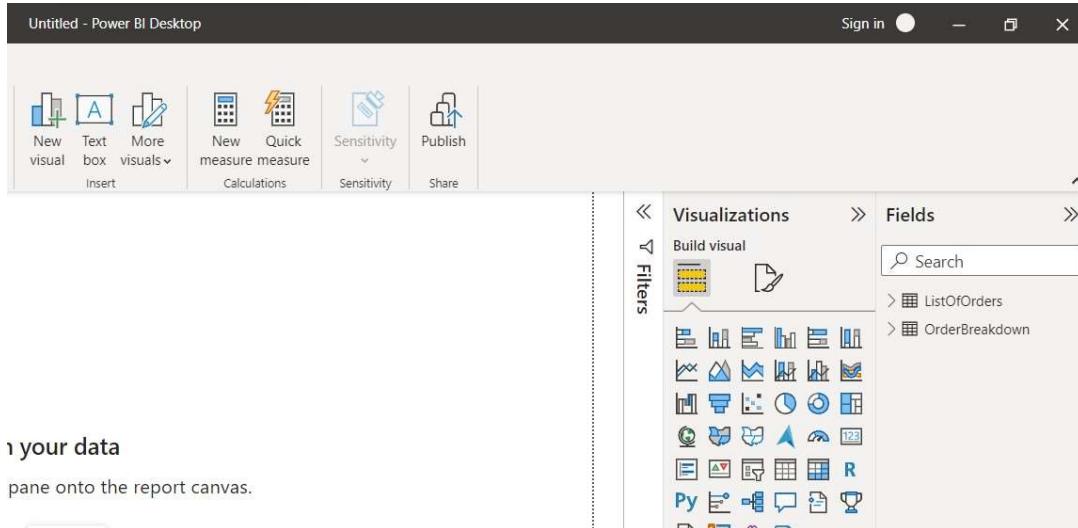
- After selecting the file and select tables in the file, data will be displayed in the below format.

Power BI detects the data type within each column. There are options to detect the data type based on the first 200 rows, based on the entire dataset or to not detect the data. Since our dataset is large and it will take time and resources to scan the complete dataset, we will leave the default option of selecting the dataset based on the first 200 rows

Order ID	Product Name
BN-2011-7407039	Enermax Note Cards, Premium
AZ-2011-9050313	Dania Corner Shelving, Traditional
AZ-2011-6674300	Binney & Smith Sketch Pad, Easy-Erase
BN-2011-2819714	Boston Markers, Easy-Erase
BN-2011-2819714	Eldon Folders, Single Width
AZ-2011-617423	Binney & Smith Pencil Sharpener, Water Color
AZ-2011-617423	Sanford Canvas, Fluorescent
AZ-2011-2918397	Bush Floating Shelf Set, Pine
AZ-2011-2918397	Accos Thumb Tacks, Assorted Sizes
AZ-2011-2918397	Smead Lockers, Industrial
BN-2011-3248724	Ikea Classic Bookcase, Metal
BN-2011-3248724	Binney & Smith Sketch Pad, Blue
AZ-2011-7053593	SAFCO Executive Leather Armchair, Red
AZ-2011-7053593	Binney & Smith Canvas, Blue
AZ-2011-6439906	Bevis Training Table, with Bottom Storage
AZ-2011-4827146	Boston Canvas, Fluorescent
AZ-2011-4827146	Smead Trays, Single Width
AZ-2011-6439906	Novimex File Folder Labels, Alphabetical
AZ-2011-6712797	Ibico Hole Reinforcements, Recycled
AZ-2011-2222024	Green Bar Note Cards, Multicolor
AZ-2011-9927716	Hon Chairmat, Adjustable
AZ-2011-5702370	Ikea Stackable Bookrack, Traditional
AZ-2011-5702370	Binney & Smith Canvas, Blue

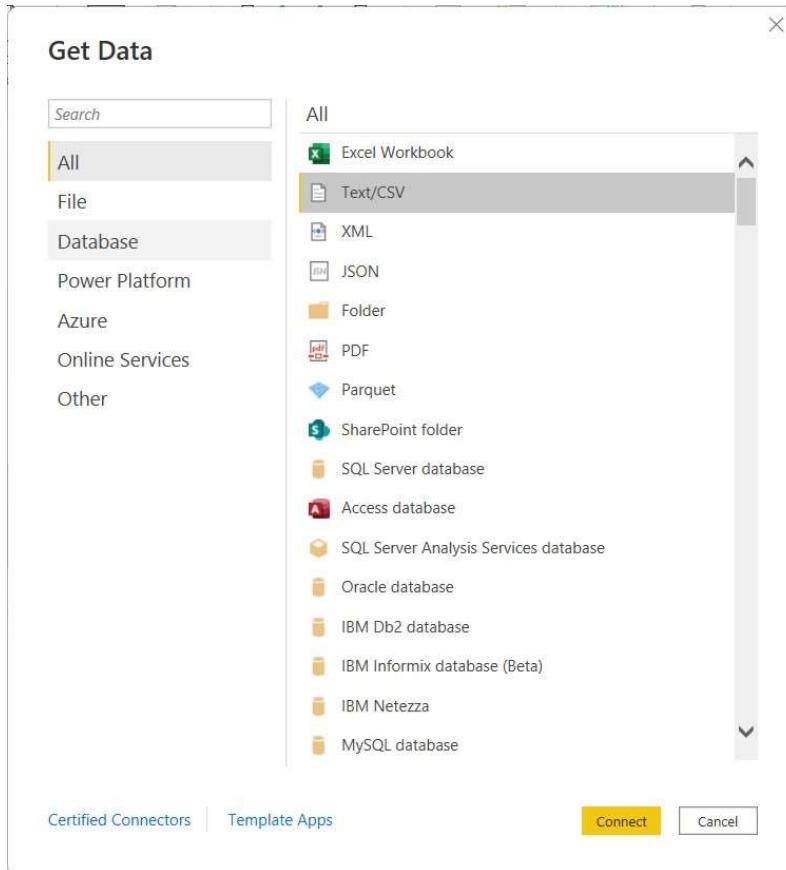
- Click on Load.

6. In the power bi desktop right side in the Fields section, it will show your three tables as shown below.

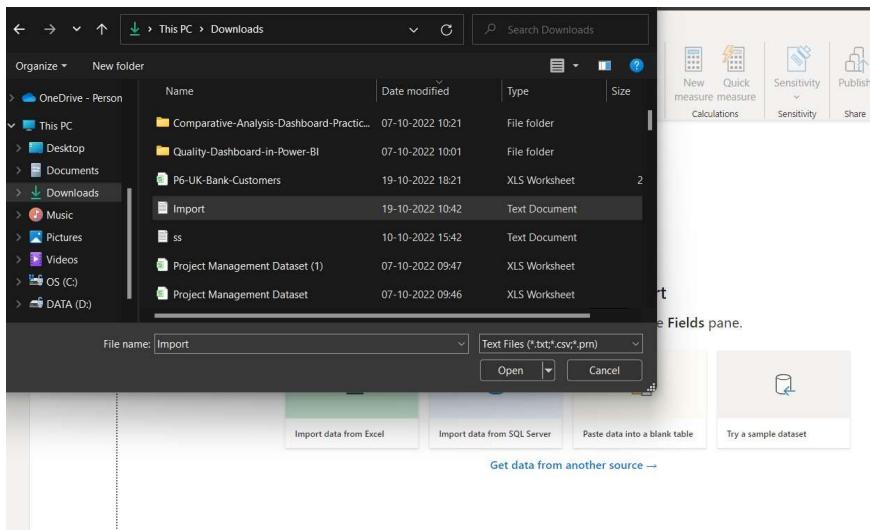


Connecting to Text

7. As this is a Text file, select the **Text/CSV** option from the drop-down list. Because our file is in Text file format. And click connect.



8. Select the file named **Import** file and click open.



9. After selecting the file and select tables in the file, data will be displayed in the below format.

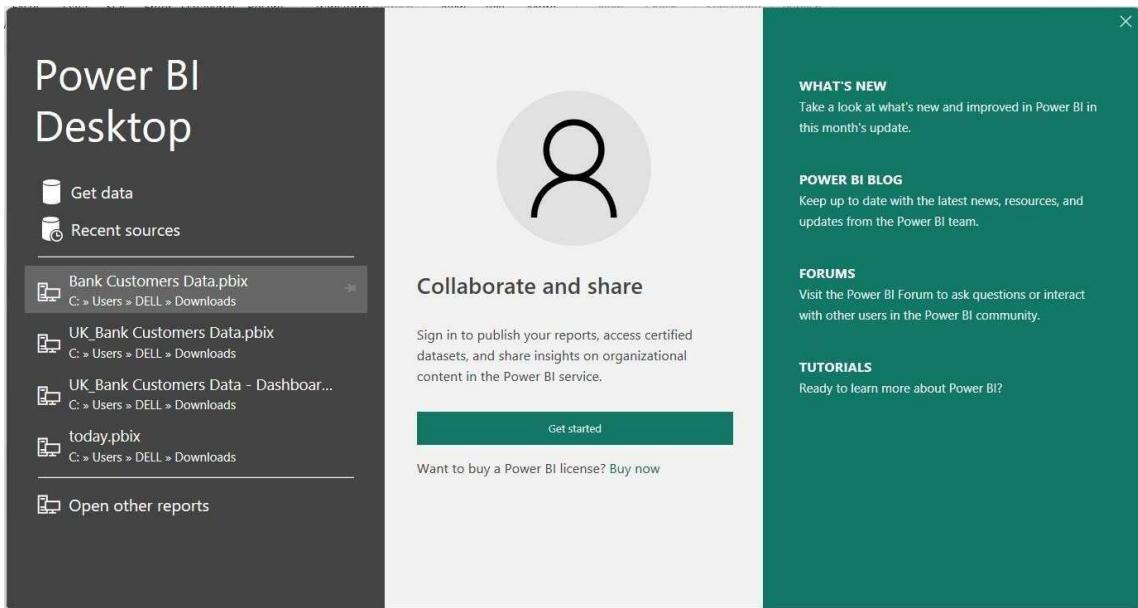
Power BI detects the data type within each column. There are options to detect the data type based on the first 200 rows, based on the entire dataset or to not detect the data. Since our dataset is large and it will take time and resources to scan the complete dataset, we will leave the default option of selecting the dataset based on the first 200 rows

GeographyKey	City	StateProvinceCode	StateProvinceName	CountryRegionCode	EnglishCountryRegionName	SpanishCountryName
1	Alexandria	NSW	New South Wales	AU	Australia	Australia
2	Coffs Harbour	NSW	New South Wales	AU	Australia	Australia
3	Darlinghurst	NSW	New South Wales	AU	Australia	Australia
4	Goulburn	NSW	New South Wales	AU	Australia	Australia
5	Lane Cove	NSW	New South Wales	AU	Australia	Australia
6	Lavender Bay	NSW	New South Wales	AU	Australia	Australia
7	Malabar	NSW	New South Wales	AU	Australia	Australia
8	Matraville	NSW	New South Wales	AU	Australia	Australia
9	Milsons Point	NSW	New South Wales	AU	Australia	Australia
10	Newcastle	NSW	New South Wales	AU	Australia	Australia
11	North Ryde	NSW	New South Wales	AU	Australia	Australia
12	North Sydney	NSW	New South Wales	AU	Australia	Australia
13	Port Macquarie	NSW	New South Wales	AU	Australia	Australia
14	Rhodes	NSW	New South Wales	AU	Australia	Australia
15	Silverwater	NSW	New South Wales	AU	Australia	Australia
16	Springwood	NSW	New South Wales	AU	Australia	Australia
17	St. Leonards	NSW	New South Wales	AU	Australia	Australia
18	Sydney	NSW	New South Wales	AU	Australia	Australia
19	Wollongong	NSW	New South Wales	AU	Australia	Australia
20	Brisbane	QLD	Queensland	AU	Australia	Australia

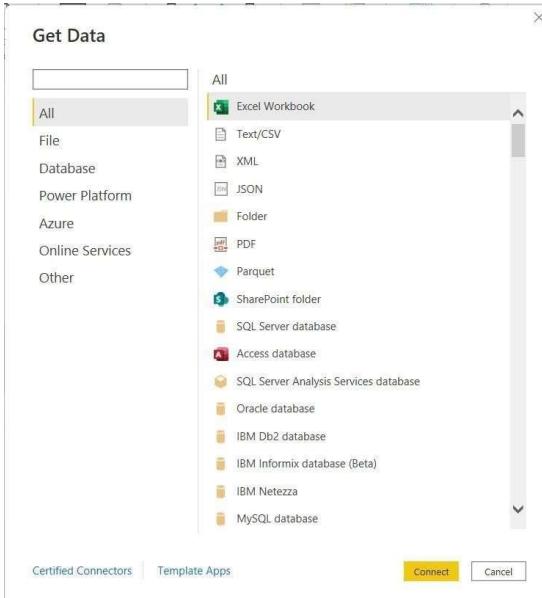
10. Click on Load

Connecting Data

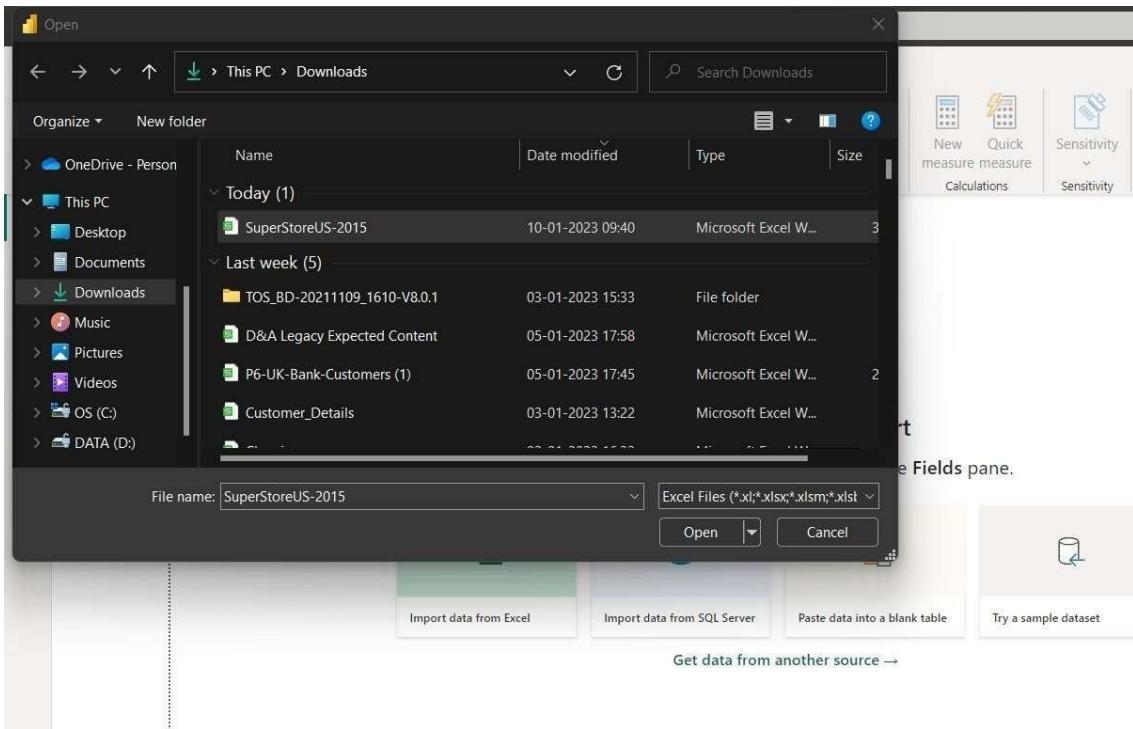
1. When you open the Power BI Desktop app you will see a window as below click Get Data option.



2. As this is an Excel file, select the **Excel Workbook** option from the drop-down list. Because our file is in Excel file format. And click connect.



- Select the file named **SuperStoreUS-2015** file and click open.



- After selecting the file and select tables in the file, data will be displayed in the below format.

The screenshot shows the 'Navigator' pane in Power BI. The 'Orders' table is selected. The table preview shows the following data:

Row ID	Order Priority	Discount	Unit Price	Shipping Cost	Custom
20847	High	0.01	2.84	0.93	
20228	Not Specified	0.02	500.98	26	
21776	Critical	0.06	9.48	7.29	
24844	Medium	0.09	78.69	19.99	
24846	Medium	0.08	3.28	2.31	
24847	Medium	0.05	3.28	4.2	
24848	Medium	0.05	3.58	1.63	
18181	Critical	0	4.42	4.99	
20925	Medium	0.01	35.94	6.66	
26267	High	0.04	2.98	1.58	
26268	High	0.05	115.99	2.5	
23890	High	0.05	26.48	6.93	
24063	Not Specified	0.07	12.99	9.44	
5890	High	0.05	26.48	6.93	
6062	Not Specified	0.08	5	3.39	
6063	Not Specified	0.07	12.99	9.44	
20631	High	0.06	55.48	14.3	
20632	High	0.02	1.68	1.57	

A note at the bottom left says 'The data in the preview has been truncated due to size limits.'

- Click on Load.

Handling multiple date fields

6. Create a Table with the following fields as shown below.
7. Set the Order Date and Ship Date as Count function.
8. If you used Order Date then it will return correct count for Orders, not for Ship.
9. If you used Ship Date then it will return correct count for orders shipped, not for Orders.

The screenshot shows a Power BI report interface. On the left, there is a table with three columns: Month, Count of Order Date, and Count of Ship Date. The data is as follows:

Month	Count of Order Date	Count of Ship Date
January	370	370
February	314	314
March	328	328
April	321	321
May	313	313
June	306	306
Total	1952	1952

On the right, the data model is displayed. It includes a 'Columns' section with three items: Order Date, Month, and two Count measures (Count of Order Date and Count of Ship Date). Each item has a dropdown arrow and an 'X' button next to it. Below the columns is a 'Drill through' section.

10. In order to solve this situation we created a calendar table and after that we made a relationship between both dates(Order date & Ship date) with Calendar Date.
11. Go to Data tab and click on New Table as shown below.

The screenshot shows the Power BI Data tab. The 'Table tools' ribbon is selected. A table named 'Orders' is currently selected. The 'Structure' group contains a 'Mark as date table' button. The 'Calendars' group contains a 'New measure' button. The 'Relationships' group contains a 'New table' button. The 'Calculations' group contains a 'New column' button.

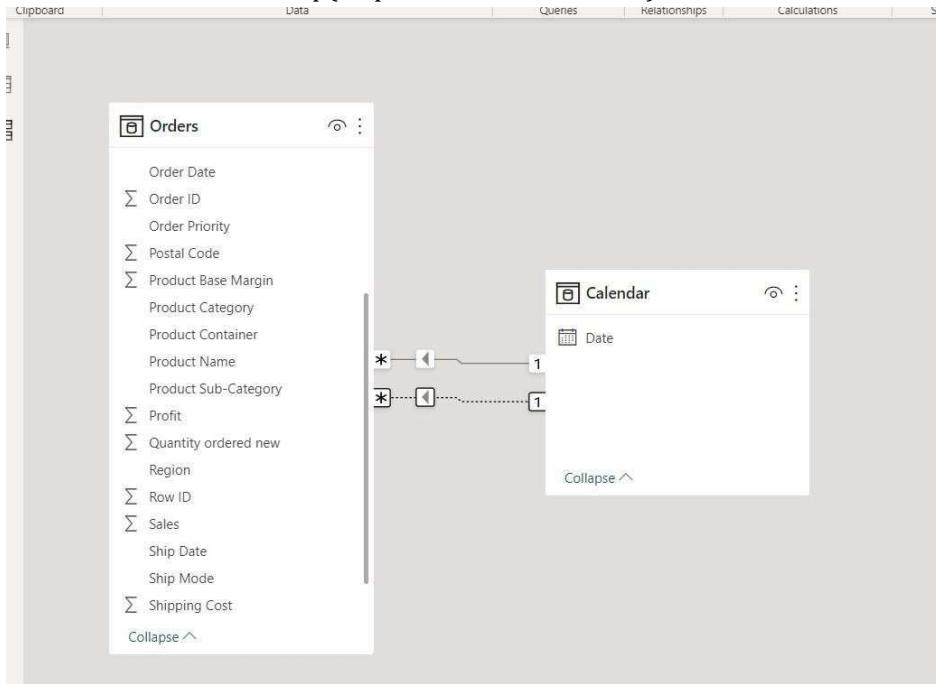
12. Create a calendar table using CALENDARAUTO Dax function.

The screenshot shows the Power BI Data tab. The 'Table tools' ribbon is selected. A table named 'Calendar' is currently selected. The 'Structure' group contains a 'Mark as date table' button. The 'Calendars' group contains a 'New measure' button. The 'Relationships' group contains a 'New table' button. The 'Calculations' group contains a 'New column' button. The formula bar at the top shows the DAX formula: 1 Calendar = CALENDARAUTO(). The data grid below shows a list of dates from January 1, 2015, to January 7, 2015.

13. Now create a relationship between Order date & Ship date to Calendar Date.

Active and In Active Relationship

14. Click on Model Tab > Drag Order date to Calendar Date > Drag Ship Date to Calendar Date
15. You can see the relationship in below screen shot but here you can active one relationship at a time.
16. You can see relationship with solid line(Order date to Calendar date) is Active and dotted line relationship(Ship date to Calendar date) is an Inactive.



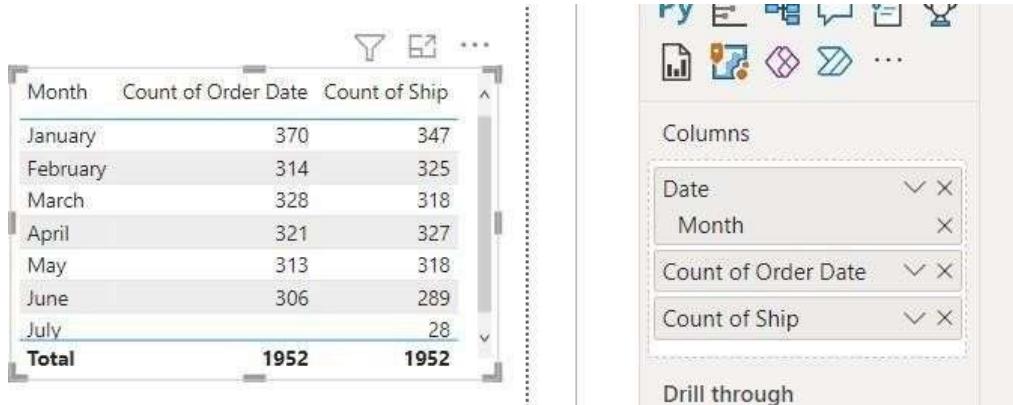
17. Now create a measure to count the number of orders shipped, here no need to create a measure for Orders count because Order date relationship is Active with Calendar date.

DAX: Count of Ship =

```
CALCULATE (
    COUNT ( Orders[Ship Date] ),
    USERELATIONSHIP ( Orders[Ship Date], 'Calendar'[Date] )
)
```

The screenshot shows the Power BI Measure editor. At the top, there are fields for 'Name' (set to 'Measure'), 'Name table' (set to 'Orders'), 'Format' (set to '\$%'), and 'Data category' (set to 'Uncategorized'). Below these are tabs for 'Structure' and 'Formatting'. The 'Structure' tab contains the DAX code: 'Count of Ship = CALCULATE (COUNT (Orders[Ship Date]), USERELATIONSHIP (Orders[Ship Date], 'Calendar'[Date]))'. The 'Formatting' tab shows options for currency (\$), percentage (%), and decimal places (00). The 'Properties' tab is visible on the far right.

18. Create a table drag and drop the following fields as shown below.

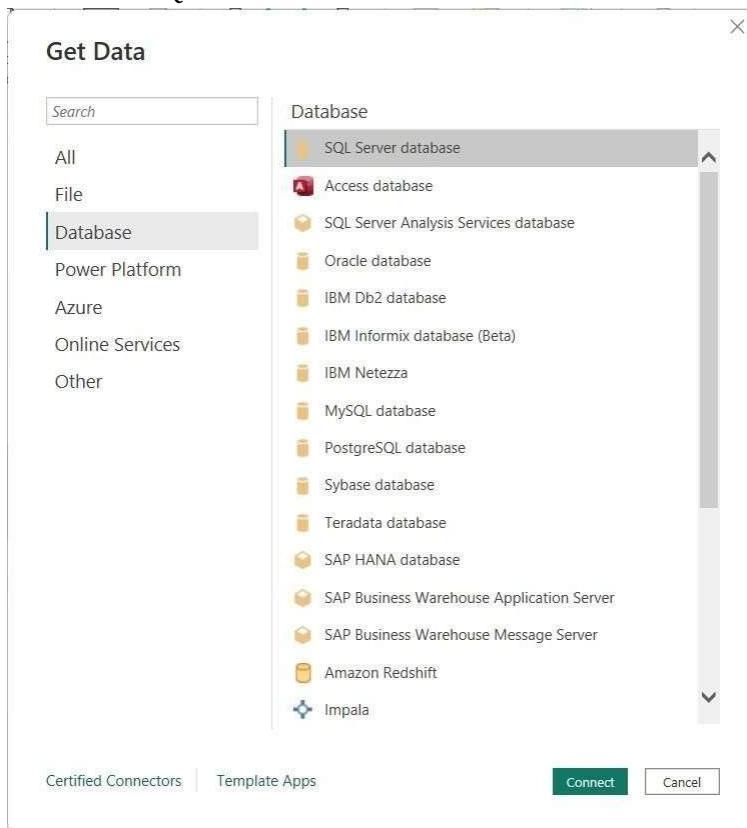


19. So, you can see above screenshot how we activate the "Ship date" column relationship with calendar date and got the result.

20. Save the file and Open Newfile.

BI directional relationship Connect to SQL Server

21. Click on SQL Server Database.



22. Click on connect.

23. And enter a server name for the connection.



24. Click Ok.

25. Click on the Database drop down and select tables.

26. Here we are using Adventureworks2020 database and DimCustomer, DimProduct, FactInternetSales tables.

Navigator

Display Options

DimOrganization
DimProduct
DimProductCategory
DimProductSubcategory
DimPromotion
DimReseller
DimSalesReason
DimSalesTerritory
DimScenario
emp
emp_dept
Emp1
Exp_Cloud_Target
Exp_Map_Target
Expression
FactCallCenter
FactCurrencyRate
FactFinance
FactInternetSales
FactInternetSalesReason

FactInternetSales
Preview downloaded on 04 November 2022

SalesOrderNumber	SalesOrderLineNumber	CustomerKey	ProductKey	OrderDate
SO43697		1	21768	310
SO43698		1	28389	346
SO43699		1	25863	346
SO43700		1	14501	336
SO43701		1	11003	346
SO43702		1	27645	311
SO43703		1	16624	310
SO43704		1	11005	351
SO43705		1	11011	344
SO43706		1	27621	312
SO43707		1	27616	312
SO43708		1	20042	330
SO43709		1	16351	313
SO43710		1	16517	314
SO43711		1	27606	314

The data in the preview has been truncated due to size limits.

Select Related Tables Load Transform Data Cancel

27. Click on Load.

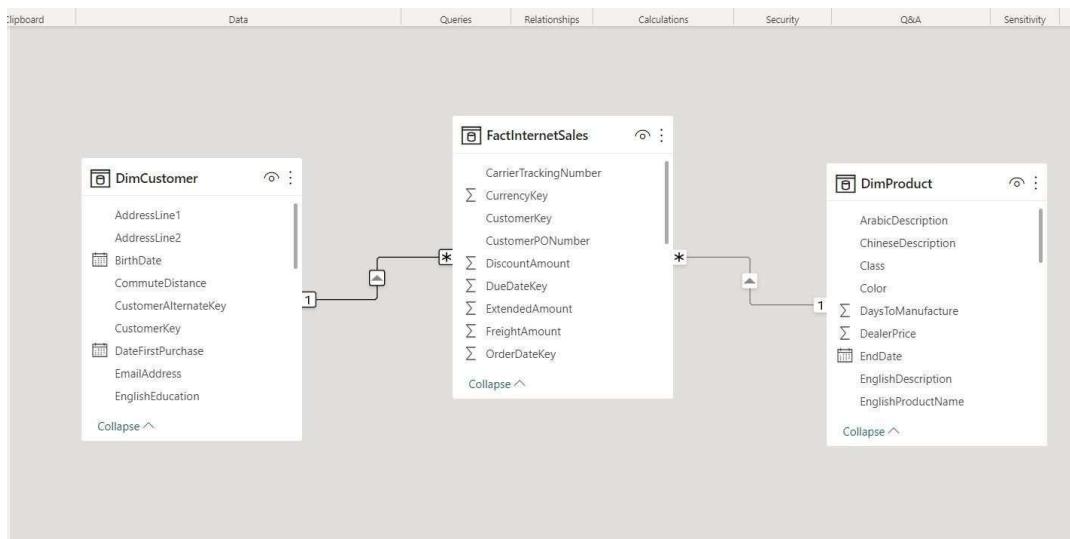
28. Drag and drop ProductKey (in the DimProduct table) using the EnglishEducation (in the DimCustomer), as below.
29. The result doesn't look correct! It shows 606 for every education category!

The screenshot shows a Power BI report interface. On the left is a table titled "EnglishEducation" with the following data:

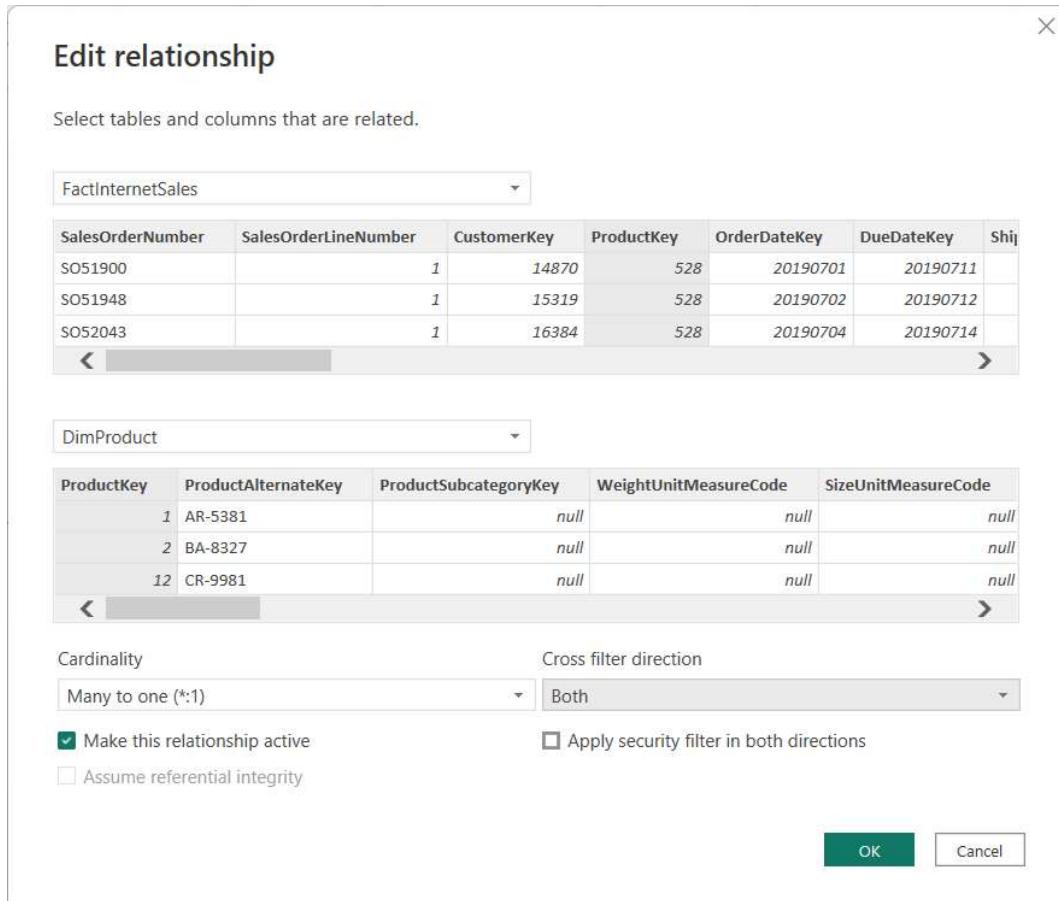
EnglishEducation	Count of ProductKey
Bachelors	606
Graduate Degree	606
High School	606
Partial College	606
Partial High School	606
Total	606

To the right is the "Columns" pane, which lists "EnglishEducation" and "Count of ProductKey" with their respective icons and dropdown menus. Below the columns pane is a "Drill through" button.

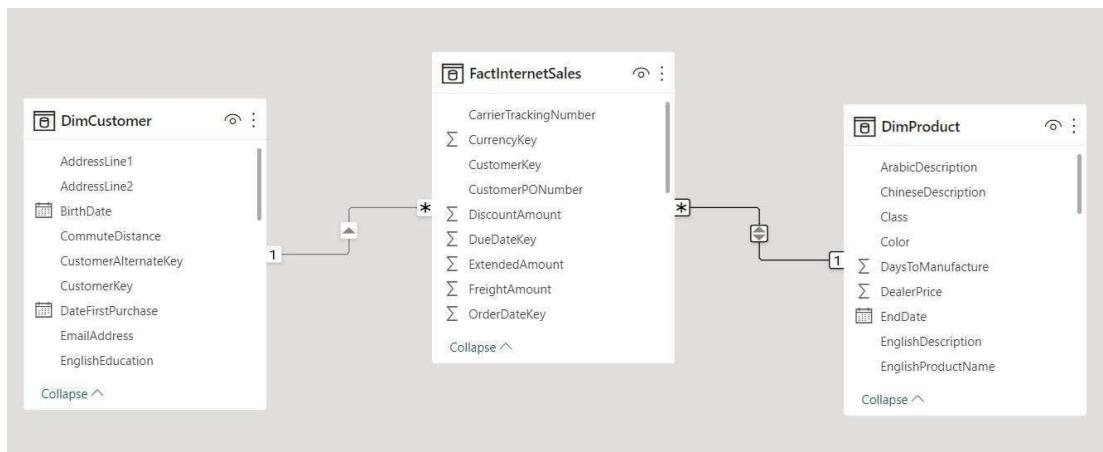
30. As you can see in the below screenshot, only filtering from DimProduct or DimCustomer to the FactInternetSales is allowed with the current direction of the relationship.
31. However, what we are trying to achieve in this example is a bit different.
32. We want to filter DimProduct based on the selection of Education in DimCustomer.



33. You do need to have a different direction in the relationship to get it working.
 34. Double-click on the relationship line between DimProduct and FactInternetSales and make it both directional.



35. The reason that both-directional relationship works here is that it will enable filtering towards DimProduct as the below screenshot.



36. Now you should see the result correctly in the table.

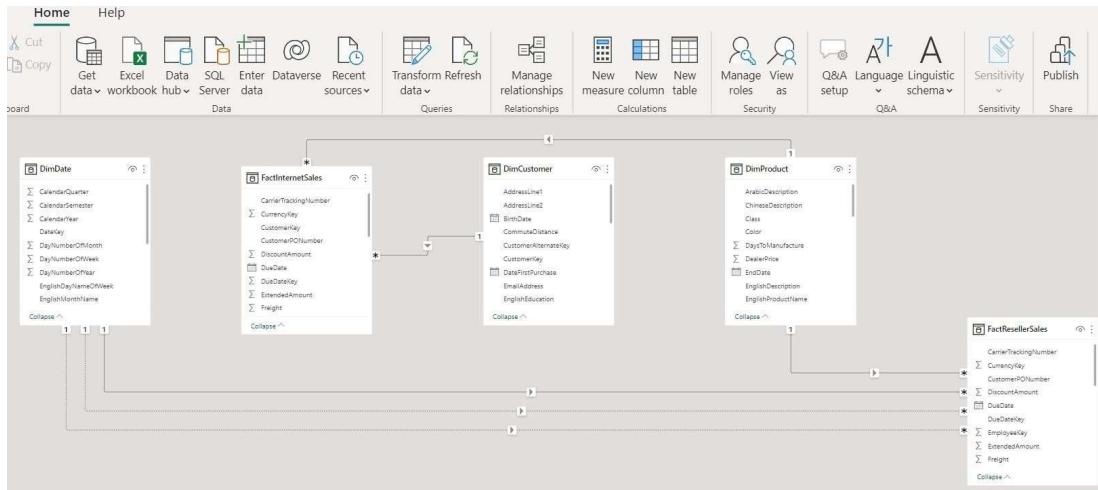
The screenshot shows a Power BI interface. On the left is a table visualization with the following data:

EnglishEducation	Count of ProductKey
Bachelors	158
Graduate Degree	155
High School	157
Partial College	158
Partial High School	153
Total	606

To the right of the table is a context menu with various icons and options. The 'Columns' section is expanded, showing the columns used in the table: 'EnglishEducation' and 'Count of ProductKey'. Below the columns is a 'Drill through' option.

Create Relationship Automatically

1. Load DimDate, FactInternetSales, DimCustomer, DimProduct and FactResellerSales table from the AdventureWorks2020.
2. You will see Relationships like below.



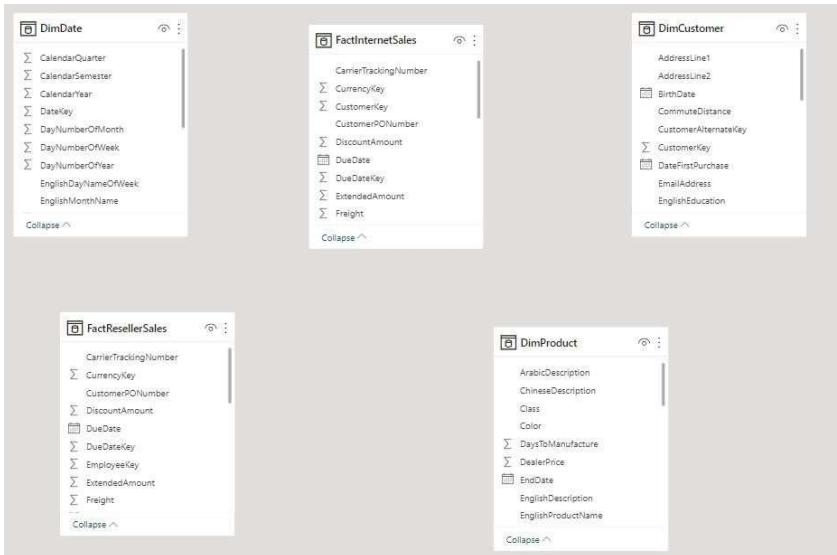
3. Now click on Manage Relationships option then select the relationship and click on delete option.

Manage relationships

Active	From: Table (Column)	To: Table (Column)
<input checked="" type="checkbox"/>	FactInternetSales (CustomerKey)	DimCustomer (CustomerKey)
<input checked="" type="checkbox"/>	FactInternetSales (ProductKey)	DimProduct (ProductKey)
<input checked="" type="checkbox"/>	FactResellerSales (DueDateKey)	DimDate (DateKey)
<input type="checkbox"/>	FactResellerSales (OrderDateKey)	DimDate (DateKey)
<input checked="" type="checkbox"/>	FactResellerSales (ProductKey)	DimProduct (ProductKey)
<input type="checkbox"/>	FactResellerSales (ShipDateKey)	DimDate (DateKey)

Close

4. Now we have removed all the relationships that we have in the power bi. Now we are going to create them as Automatically and Manually.



5. Now in the home tab click on Manage Relationship then click on Autodetect option as shown below.

Manage relationships

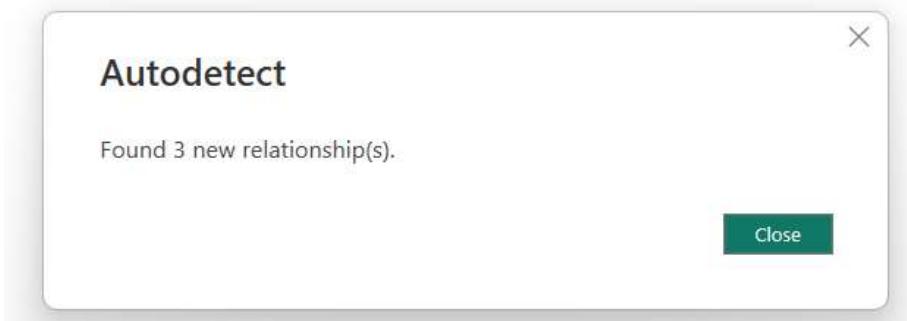
Active From: Table (Column) To: Table (Column)

There are no relationships defined yet.

New... Autodetect... Edit... Delete

Close

6. Here we have three auto relationships are there. Now click on close.



7. Here you can see the Relationships that created automatically.

Manage relationships

Active	From: Table (Column)	To: Table (Column)
<input checked="" type="checkbox"/>	FactInternetSales (CustomerKey)	DimCustomer (CustomerKey)
<input checked="" type="checkbox"/>	FactInternetSales (ProductKey)	DimProduct (ProductKey)
<input checked="" type="checkbox"/>	FactResellerSales (ProductKey)	DimProduct (ProductKey)

[New...](#) [Autodetect...](#) [Edit...](#) [Delete](#)

[Close](#)

Create Relationship Manually

1. Now click on New in the Manage Relationship as shown below

Manage relationships

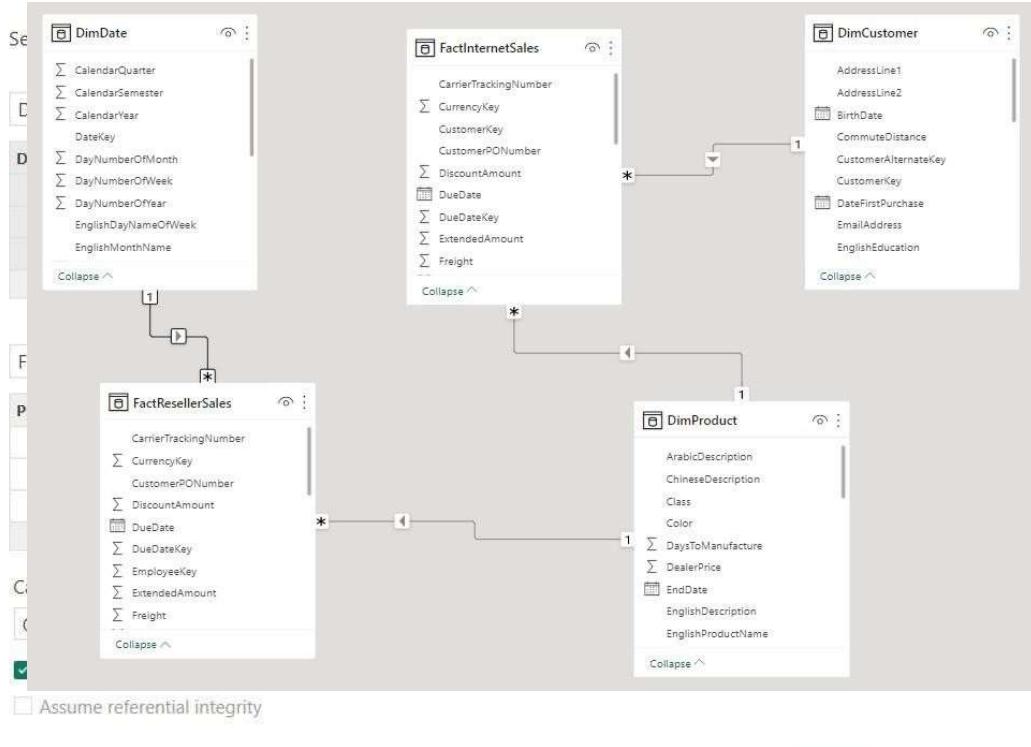
Active	From: Table (Column)	To: Table (Column)
<input checked="" type="checkbox"/>	FactInternetSales (CustomerKey)	DimCustomer (CustomerKey)
<input checked="" type="checkbox"/>	FactInternetSales (ProductKey)	DimProduct (ProductKey)
<input checked="" type="checkbox"/>	FactResellerSales (ProductKey)	DimProduct (ProductKey)

[New...](#) [Autodetect...](#) [Edit...](#) [Delete](#)

[Close](#)

2. Now select the first table as DimDate and select the DateKey column. Then for the second table select the FactResellerSales and select the OrderDateKey column. Based on the keys the cardinality and Cross filter direction generates automatically and now click Ok.

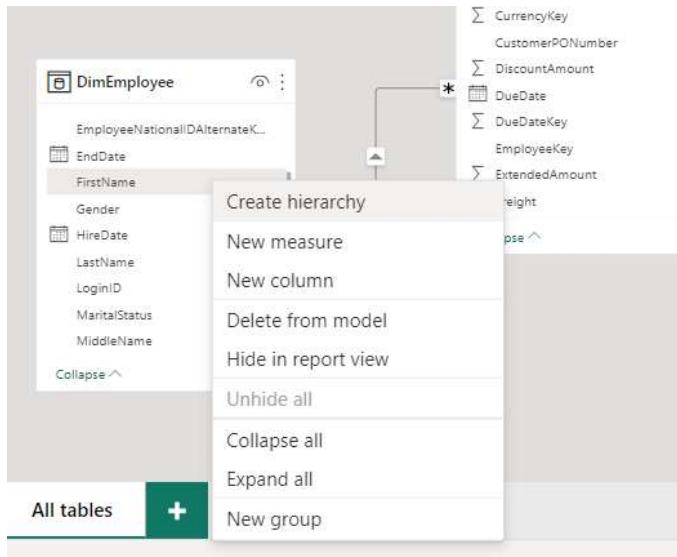
Create relationship



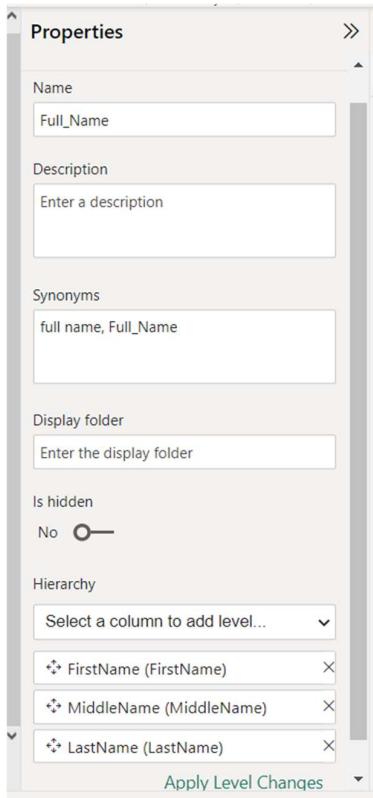
3. In the Data model you can see the relationship between the DimDate and FactResellerSales.

Create Hierarchies

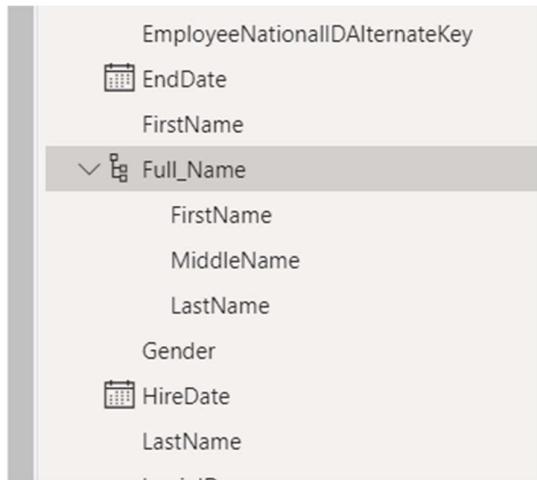
1. In this example we are using previous Data Modeling. Now we are going to create a hierarchy for FirstName, MiddleName and LastName in the DimEmployee table.
2. So, in the DimEmployee table right click on the Fist Name and click on Create hierarchy.



3. In the right side go to Properties give the Hierarchy name and in the Hierarchy tab select the MiddleName and LastName as shown below. Then click on Apply Level Change.



4. Here in the fields you can see the Full_Name hierarchy as shown below.



Introduction

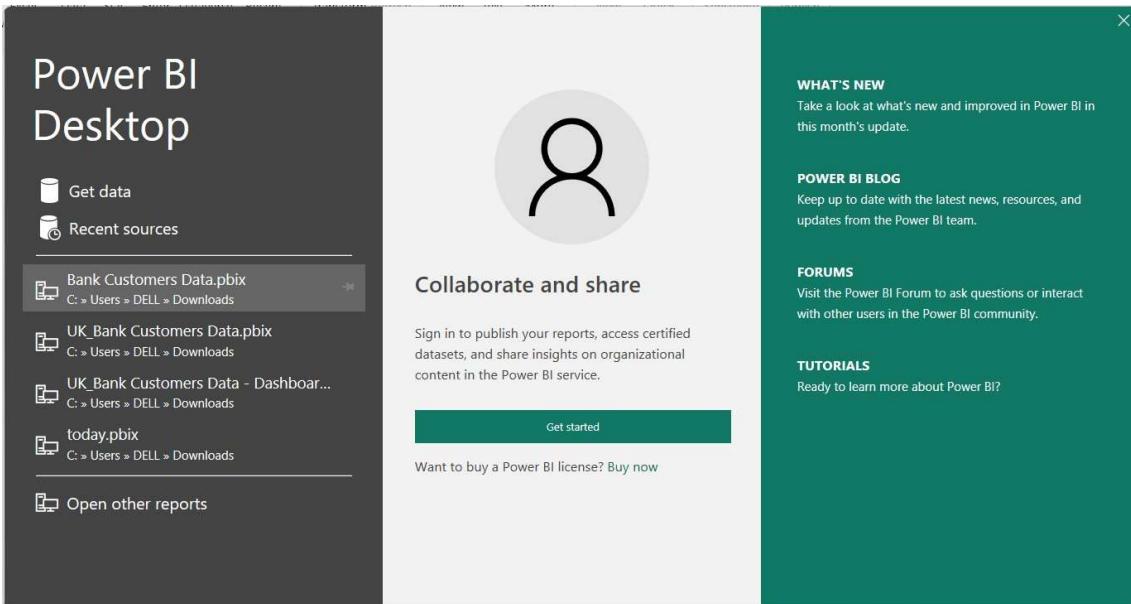
The Power Query combines connecting to different data sources, getting data or tables from those, transforming them as per the requirements, and loading them into the dataset. The first two steps connecting and getting tables can be done by the “Get Data” option in the Home tab. Then, when you click on the “Edit Queries” option, you have the chance to transform tables as per your need. And it is a place where you have to apply all data transformations because it happens before data loads into Power BI.

The Power Query user interface

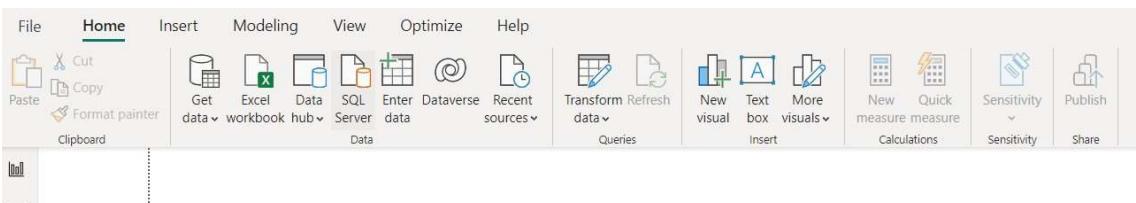
1. Transformation Options: The Menu has different tabs, and by default, it opens with the Home tab with frequently used items. And each tab has other options for performing data transformations.
2. Formula Pane: It is the place where you have to write a BI DAX query to transform data or data modelling. Or edit or alter the existing formula to clean the data.
3. Data Preview: It displays the data (rows and columns) inside the selected table. It doesn't display all the records, but it shows a preview to get an idea of its data.
4. Queries Pane: List of all the tables available in a dataset. It divides the columns into dimensions, measures, and other queries (for unknown tables).
5. Query Settings Pane: It has two options: you can change the properties of the selected column or undo/redo the applied steps to it. Because it keeps a record of each step, you have taken in data transformation. So, while applying the transformation, if you have made any mistakes or want to change something, you can use this pane to remove those steps at any point.

Connecting Data

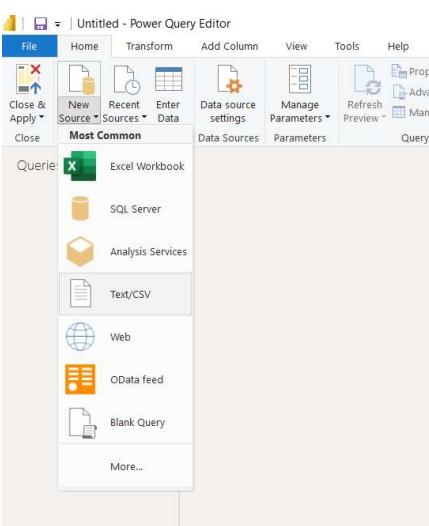
1. When you open the Power BI Desktop app you will see a window as below click Get Data option.



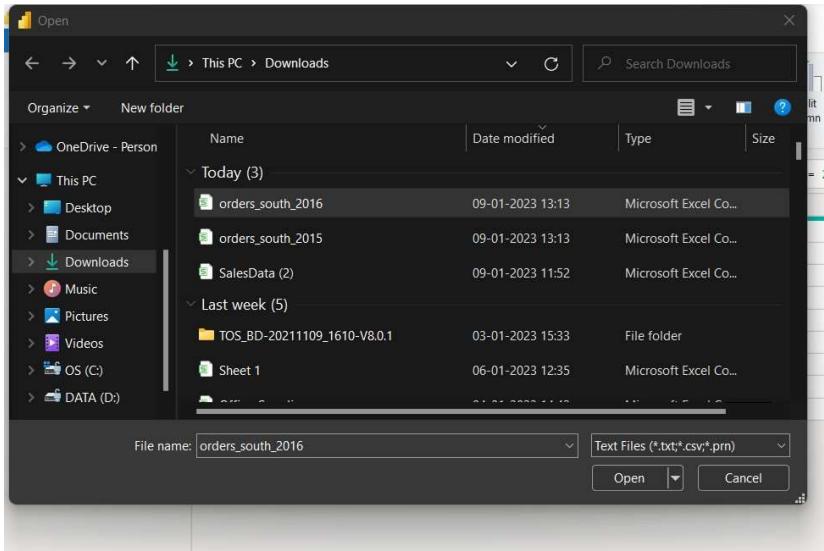
2. Click on close and click on Transform data to open a power query window.



3. To load a Data, click on New Source drop down button and click on Text/CSV because our file is CSV.



4. Select the file from the local system here we want to load two files.
5. We cannot load multiple files at a time so now we are loading orders_south_2016



6. The Data will be displayed in the below format click on Ok.

orders_south_2016.csv

File Origin: 1252: Western European (Windows) | Delimiter: Comma | Data Type Detection: Based on first 200 rows

Sales	Quantity	Profit	Discount	Region	State	Row ID	Order ID	Order Date	Ship Date	Ship Mode
957.5775	5	-383.031	0.45	South	Florida	4	US-2016-108966	10/11/2016 0:00	10/18/2016 0:00	Standard Class
22.368	2	2.5164	0.2	South	Florida	5	US-2016-108966	10/11/2016 0:00	10/18/2016 0:00	Standard Class
831.936	8	-114.3912	0.2	South	Tennessee	73	US-2016-134026	4/26/2016 0:00	5/2/2016 0:00	Standard Class
97.04	2	1.213	0.2	South	Tennessee	74	US-2016-134026	4/26/2016 0:00	5/2/2016 0:00	Standard Class
72.784	1	-18.196	0.2	South	Tennessee	75	US-2016-134026	4/26/2016 0:00	5/2/2016 0:00	Standard Class
200.984	7	62.8075	0.2	South	North Carolina	84	CA-2016-149734	9/3/2016 0:00	9/8/2016 0:00	Standard Class
157.794	1	-115.7156	0.17	South	Tennessee	119	US-2016-136476	4/5/2016 0:00	4/10/2016 0:00	Standard Class
161.568	2	-28.2744	0.2	South	Tennessee	229	US-2016-145436	2/28/2016 0:00	3/4/2016 0:00	Standard Class
389.696	8	43.8408	0.2	South	Tennessee	230	US-2016-145436	2/28/2016 0:00	3/4/2016 0:00	Standard Class
375.4575	3	-157.0095	0.45	South	Florida	385	US-2016-168935	11/27/2016 0:00	12/2/2016 0:00	Standard Class
83.976	3	-1.0497	0.2	South	Florida	386	US-2016-168935	11/27/2016 0:00	12/2/2016 0:00	Standard Class
105.42	2	51.6558	0	South	Arkansas	496	CA-2016-134782	12/27/2016 0:00	12/31/2016 0:00	Standard Class
2.74	1	0.7398	0	South	Georgia	507	CA-2016-145352	3/16/2016 0:00	3/22/2016 0:00	Standard Class
8.34	3	2.1684	0	South	Georgia	508	CA-2016-145352	3/16/2016 0:00	3/22/2016 0:00	Standard Class
46.74	3	11.685	0	South	Georgia	509	CA-2016-145352	3/16/2016 0:00	3/22/2016 0:00	Standard Class
6354.95	5	3177.475	0	South	Georgia	510	CA-2016-145352	3/16/2016 0:00	3/22/2016 0:00	Standard Class
152.94	3	41.2938	0	South	Kentucky	539	CA-2016-134894	12/7/2016 0:00	12/11/2016 0:00	Standard Class
283.92	4	70.98	0	South	Kentucky	540	CA-2016-134894	12/7/2016 0:00	12/11/2016 0:00	Standard Class
70.98	1	4.9686	0	South	Kentucky	587	CA-2016-128139	7/3/2016 0:00	7/9/2016 0:00	Standard Class
294.93	3	144.5157	0	South	Kentucky	588	CA-2016-128139	7/3/2016 0:00	7/9/2016 0:00	Standard Class

Extract Table Using Examples | OK | Cancel

7. As you can our data is loaded in our Power Query as shown below.

8. In the same way load orders_south_2015 file also.

Header Row Promotions

9. Now click on the orders_south_2015 query.

10. As you can the Data is not clear there are no heading the heading are present in 3rd row.

11. So, we need to remove top 3 rows to get headings in the first row.

12. Go to Home tab and click on the Remove rows dropdown and click on Remove top rows.

13. A small window will appear and add number of rows you want to remove.

14. In our case we want to remove 2 so type 2 as shown below.



15. Click OK.

16. Now you see the top 2 rows has been removed and we got our heading in the 1st row.

17. Now to get the headers from the 1st row. Click on Use first row as headers option in the Home tab as shown below.

18. Now we got our Headers as shown below.

The screenshot shows the Power Query Editor interface with the 'Transform' tab selected. A step named 'Promoted Headers' is applied to the 'Sales' column. The data table contains the following columns: Sales, Quantity, Profit, Discount, Region, State, and Row ID. The 'Region' and 'State' columns are highlighted in blue, indicating they are now headers. The 'Applied Steps' pane on the right lists the steps: Source, Changed Type, Removed Top Rows, Promoted Headers, and Changed Type1.

19. In the left hand side, you will see Applied Steps. These are very useful to track “Number of transformations with data”, and any time you can return the previous state to using applied steps.

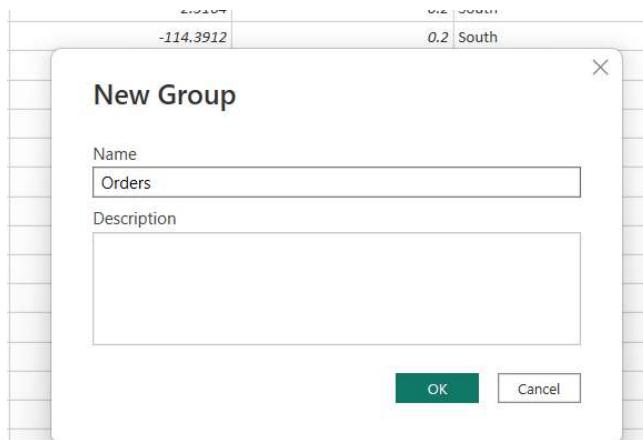
The screenshot shows the 'Query Settings' dialog box. Under the 'APPLIED STEPS' section, the 'Changed Type1' step is selected. Other steps listed include 'Source', 'Changed Type', 'Removed Top Rows', and 'Promoted Headers'.

Create Query Group

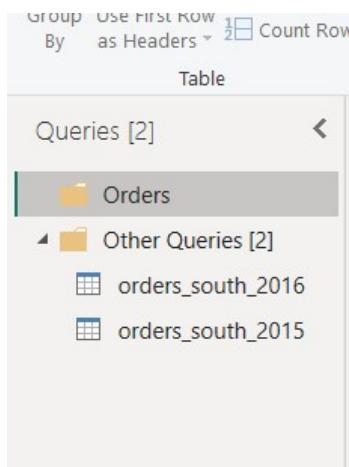
20. Right click on the Empty space on the left side and click on New Group to create a group.

The screenshot shows a context menu open on the left sidebar of the Power Query Editor. The 'New Group...' option is highlighted in the menu.

21. Give the group name and click OK as shown below.

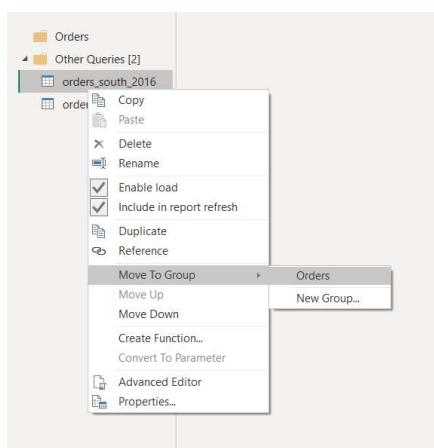


22. Now you can see our group has been created.



23. Now we need to move our orders_south_2016 table to Orders group.

24. So, right click on the table click on Move to group and select the outgroup.



25. Now our table has been moved to orders group.

Create Reference

26. Now we need create a reference table for the orders_south_2016.
27. Right click on the table and click on Reference as shown below.

The screenshot shows the Power BI desktop interface with the 'Queries [2]' pane open. A table named '1.2 Sales' is selected. In the context menu, the 'Reference' option is highlighted. The menu also includes other options like Copy, Paste, Delete, Rename, Enable load, Include in report refresh, Duplicate, Move To Group, Move Up, Move Down, Create Function..., Convert To Parameter, Advanced Editor, and Properties... .

28. Now we have a Reference table. Whatever changes we made in original table it automatically changes in Reference table also.

The screenshot shows the Power BI desktop interface with the 'Queries [3]' pane open. Under the 'Orders [2]' section, there are two entries: 'orders_south_2016' and 'orders_south_2016 (2)'. The '(2)' entry is likely the reference table created from the original table.

29. For Example, go to orders_south_2016 original table and Row ID column as shown.

The screenshot shows the Power BI desktop interface with the 'Queries [3]' pane open. The 'orders_south_2016' table is selected. The 'Row ID' column is selected, and a context menu is open. The 'Remove' option is highlighted, along with other options like Copy, Remove Other Columns, Duplicate Column, Add Column From Examples..., Remove Duplicates, Remove Errors, Change Type, Transform, Replace Values..., Replace Errors..., Group By..., Fill, Unpivot Columns, Unpivot Other Columns, Unpivot Only Selected Columns, Rename..., Move, Drill Down, and Add as New Query.

30. Now go to our Reference table and check the Row ID has been removed or not.

31. Here it is Removed.

	Order ID	State	Order Date	Ship Date
1	US-2016-108966	Florida	10/11/2016 0:00	10/18/2016 0:00
2	US-2016-108966	Florida	10/11/2016 0:00	10/18/2016 0:00
3	US-2016-134026	Tennessee	4/26/2016 0:00	5/2/2016 0:00
4	US-2016-134026	Tennessee	4/26/2016 0:00	5/2/2016 0:00
5	US-2016-134026	Tennessee	4/26/2016 0:00	5/2/2016 0:00
6	CA-2016-149734	North Carolina	9/3/2016 0:00	9/8/2016 0:00
7	US-2016-136476	Tennessee	4/5/2016 0:00	4/10/2016 0:00
8	US-2016-145436	Tennessee	2/28/2016 0:00	3/4/2016 0:00
9	US-2016-145436	Tennessee	2/28/2016 0:00	3/4/2016 0:00
10	US-2016-168935	Florida	11/27/2016 0:00	12/2/2016 0:00
11	US-2016-168935	Florida	11/27/2016 0:00	12/2/2016 0:00
12	CA-2016-134782	Arkansas	12/2/2016 0:00	12/31/2016 0:00

Merge

32. We need to Merge City and postal code columns. So, select both the columns and right click on it click on the Merge columns option as shown below.

The screenshot shows a table with columns 'City' and 'Postal Code'. A context menu is open over these two columns, with 'Merge Columns' selected. Other options like 'Copy', 'Remove Columns', and 'Change Type' are also visible.

33. A small window will appear enter how you want to merge and separator and give a new column name as shown below.

The dialog box is titled 'Merge Columns'. It asks 'Choose how to merge the selected columns.' Under 'Separator', there is a dropdown set to '--Custom--' with a '-' character in the input field. Below that, there is a 'New column name (optional)' field containing 'Address'. At the bottom are 'OK' and 'Cancel' buttons.

34. Click Ok.

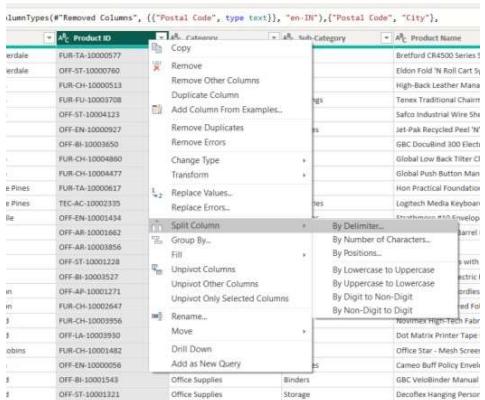
35. Now you can see we have a new column as Address that been created by merging the City and Postal code columns.

Address	Product ID
33311 - Fort Lauderdale	FUR-TA-1000057
33311 - Fort Lauderdale	OFF-ST-1000076C
38109 - Memphis	FUR-CH-1000051
38109 - Memphis	FUR-FU-1000370I
38109 - Memphis	OFF-ST-10004123
27707 - Durham	OFF-EN-1000092
37620 - Bristol	OFF-BI-10003650
38401 - Columbia	FUR-CH-1000486I
38401 - Columbia	FUR-CH-1000447
33024 - Pembroke Pines	FUR-TA-1000061
33024 - Pembroke Pines	TEC-AC-1000233S
72701 - Fayetteville	OFF-EN-1000143
30318 - Atlanta	OFF-AR-1000166
30318 - Atlanta	OFF-AR-1000385I
30318 - Atlanta	OFF-ST-10001228
30318 - Atlanta	OFF-BI-10003527
42420 - Henderson	OFF-AP-1000127
42420 - Henderson	FUR-CH-1000264
40475 - Richmond	FUR-CH-1000395
40475 - Richmond	OFF-LA-1000393C
31088 - Warner Robins	FUR-CH-1000148

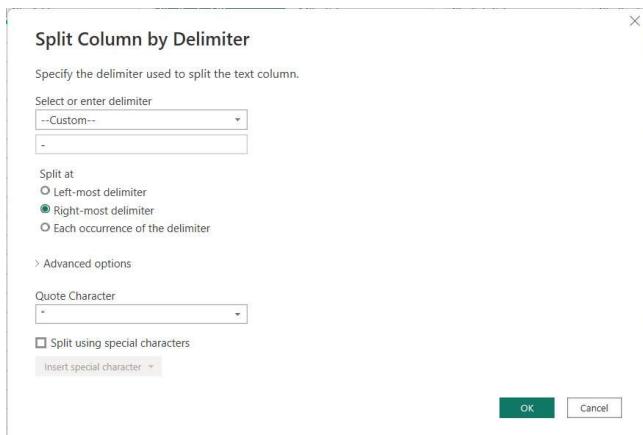
SPLIT COLUMN

36. In orders_south_2016 table we need to split the Product Id column.

37. Right click on it and click on Split column by delimiter as shown below.



38. A small window will open give the properties for the splitting as shown below.



39. Click Ok.

40. Now you can see we have splitted the columns as shown below.

A _c Product ID.1	I ₂ Product ID.2	A _c Cate
FUR-TA	10000577	Furniture
OFF-ST	10000760	Office Su
FUR-CH	10000513	Furniture
FUR-FU	10003708	Furniture
OFF-ST	10004123	Office Su
OFF-EN	10000927	Office Su
OFF-BI	10003650	Office Su
FUR-CH	10004860	Furniture
FUR-CH	10004477	Furniture
FUR-TA	10000617	Furniture
TEC-AC	10002335	Technolo
OFF-EN	10001434	Office Su
OFF-AR	10001662	Office Su
OFF-AR	10003856	Office Su
OFF-ST	10001228	Office Su
OFF-BI	10003527	Office Su

41. Remove the Product ID.1 and rename the Product ID.2 as Product ID

SPLITTER ,{"Product ID.1", "Product ID.2", "Product ID"}},

A _c Address	A _c Product ID.1	A _c Category
3311 - Fort Lauderdale	FUR-TA	Furniture
3311 - Fort Lauderdale	OFF-ST	Office Supplies
8109 - Memphis	FUR-CH	Furniture
8109 - Memphis	FUR-FU	Furniture
8109 - Memphis	OFF-ST	Office Supplies
7707 - Durham	OFF-EN	Office Supplies
7620 - Bristol	OFF-BI	Office Supplies
8401 - Columbia	FUR-CH	Furniture
8401 - Columbia	FUR-CH	Furniture
3024 - Pembroke Pines	FUR-TA	Furniture
3024 - Pembroke Pines	TEC-AC	Technology
2701 - Fayetteville	OFF-EN	Office Supplies
0318 - Atlanta	OFF-AR	Office Supplies
0318 - Atlanta	OFF-AR	Office Supplies
0318 - Atlanta	OFF-ST	Office Supplies
0318 - Atlanta	OFF-BI	Office Supplies
2420 - Henderson	OFF-AP	Office Supplies
2420 - Henderson	FUR-CH	Furniture
0475 - Richmond	FUR-CH	Furniture
0475 - Richmond	OFF-LA	Office Supplies
1088 - Warner Robins	FUR-CH	Furniture
9203 - Columbia	OFF-EN	Office Supplies
3223 - Richmond	OFF-BI	Office Supplies

Right-click context menu for Product ID.2:

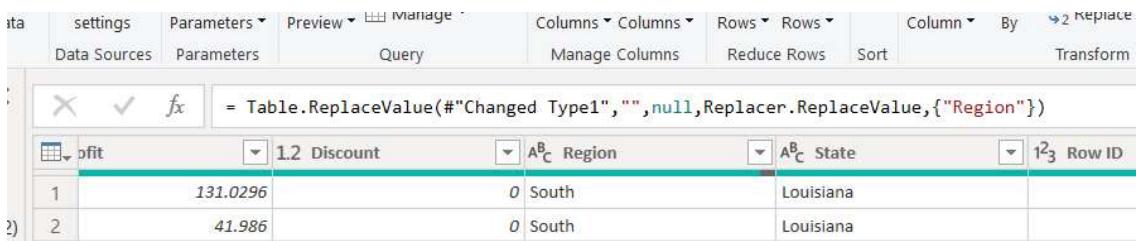
- Remove
- Remove Other Columns
- Duplicate Column
- Add Column From Examples...
- Remove Duplicates
- Remove Errors
- Change Type
- Transform
- Replace Values...
- Replace Errors...
- Split Column
- Group By...
- Fill
- Unpivot Columns
- Unpivot Other Columns
- Unpivot Only Selected Columns
- Rename...
- Move
- Drill Down
- Add as New Query

Replace

42. Now go to orders_south_2015 table you can see in the region there are some blanks rows are present we need to replace those with null using M-Language.

I ₂ Discount	A _c Region	A _c State
131.0296	0	Louisiana
41.588	0	Louisiana
.25	0	Louisiana
-12.432	0.7	North Carolina
22.298	0.2	Florida
5.432	0.2	Florida
3.464	0.2	Florida
9.768	0.2	North Carolina
-3.6892	0.7	Florida
-18.585	0.2	Florida
3.4048	0.2	North Carolina
1.3	0.2	Florida
3.7743	0.2	Florida
17.847	0.2	Florida
5.1408	0.2	Florida
-5.5338	0.7	Florida
-31.6712	0.7	Florida
47.8752	0.2	Florida
163.1898	0	Mississippi
8.8714	0	Mississippi
9.3212	0	Mississippi
14.5014	0	Virginia
74.0532	0	Virginia
10.3152	0	Virginia
3.6288	0.2	North Carolina
18.7695	0.2	North Carolina
2.2024	0.2	North Carolina

43. Click on fx and type the code as shown below.



The screenshot shows the Power BI Data Editor interface. A query step is selected with the formula: `= Table.ReplaceValue(#"Changed Type1", "", null, Replacer.ReplaceValue, {"Region"})`. The preview pane shows two rows of data:

	1.2 Discount	A ^B _C Region	A ^B _C State	1 ² ₃ Row ID
1	131.0296	0 South	Louisiana	
2	41.986	0 South	Louisiana	

44. Now observe the column the empty space has been replaced with null value as shown below.



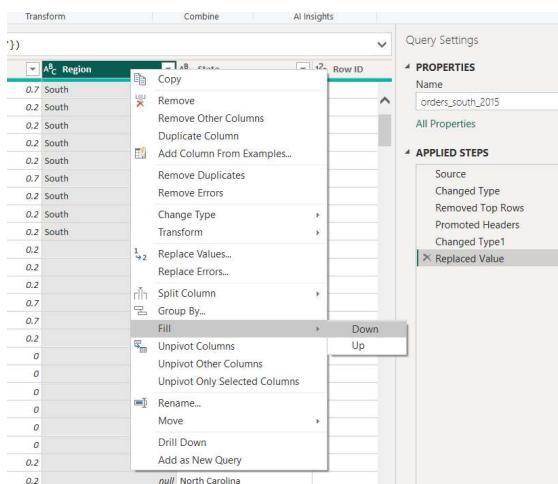
The screenshot shows the Power BI Data Editor interface. The 'Region' column is filled with null values. The preview pane shows the following data:

	A ^B _C Region	A ^B _C State
0.7	South	North Carolina
0.2	South	Florida
0.2	South	Florida
0.2	South	Florida
0.2	South	North Carolina
0.7	South	Florida
0.2	South	Florida
0.2	South	North Carolina
0.2	South	Florida
0.2	null	Florida
0.2	null	Florida
0.2	null	Florida
0.7	null	Florida
0.7	null	Florida
0.2	null	Florida
0	null	Mississippi
0	null	Mississippi
0	null	Mississippi
0	null	Virginia
0	null	Virginia
0	null	Virginia
0.2	null	North Carolina
0.2	null	North Carolina
0.2	null	North Carolina
0	null	Louisiana
0	South	Louisiana
0	South	Louisiana

Fill Up

45. Now we will fill up these values using fill down option The fill down operation takes a column and traverses through the values in it to fill any null values in the next rows until it finds a new value.

46. Right click on the column and click on fill and click on down option as shownbelow.



The screenshot shows the Power BI Data Editor interface. A context menu is open over the 'Region' column, with the 'Fill' option selected. A submenu shows 'Down' and 'Up' options. The preview pane shows the data with the 'Region' column filled down:

	A ^B _C Region	A ^B _C State
0.7	South	North Carolina
0.2	South	Florida
0.2	South	Florida
0.2	South	Florida
0.2	South	North Carolina
0.7	South	Florida
0.2	South	Florida
0.2	South	North Carolina
0.2	South	Florida
0.2	null	Florida
0.2	null	Florida
0.2	null	Florida
0.7	null	Florida
0.7	null	Florida
0.2	null	Florida
0	null	Mississippi
0	null	Mississippi
0	null	Mississippi
0	null	Virginia
0	null	Virginia
0	null	Virginia
0.2	null	North Carolina
0.2	null	North Carolina
0.2	null	North Carolina
0	null	Louisiana
0	South	Louisiana
0	South	Louisiana

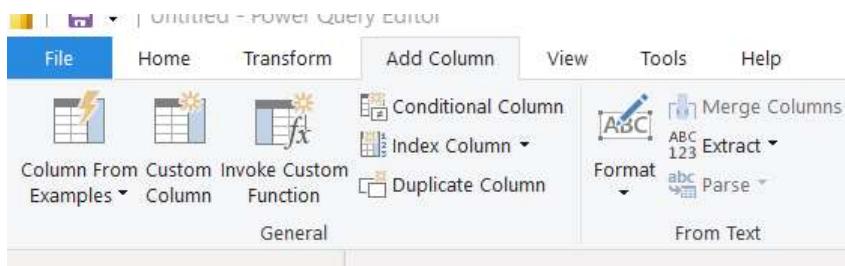
47. Now observe our column there are no null values present in our column.

Discount	Region	State
0	South	Louisiana
0	South	Louisiana
0	South	Louisiana
0.7	South	North Carolina
0.2	South	Florida
0.2	South	Florida
0.2	South	Florida
0.2	South	North Carolina
0.2	South	Florida
0.7	South	Florida
0.2	South	Florida
0	South	Miccicinni

Custom Column

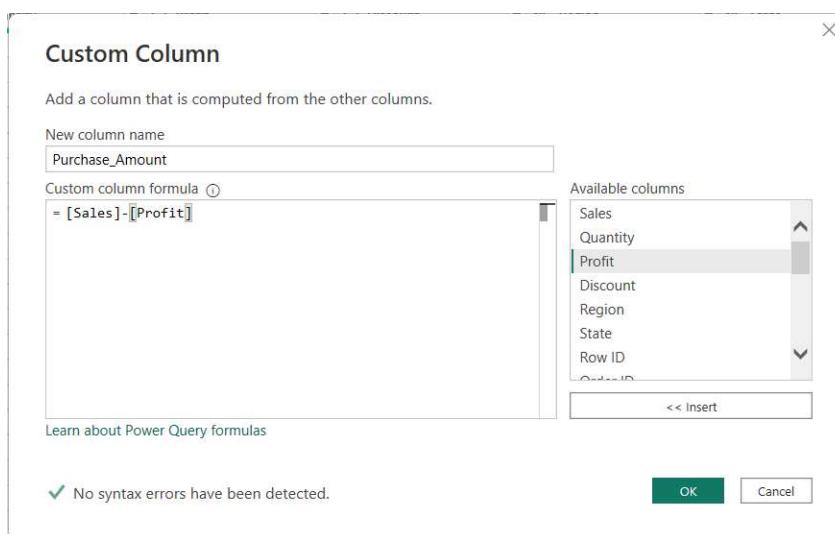
48. Now we need to find purchase amount using custom column option.

49. Select orders_south_2015 table. Go to Add column tab and click on Custom column as shown below.



50. A small will open here we need to give the new column name and formula.

51. Here we are using sales and profit columns to find a purchase column give the expression as shown below.



52. Click Ok.

53. Now in the table a new column has been added as shown below.

54. Now save the file as PowerQuery1.

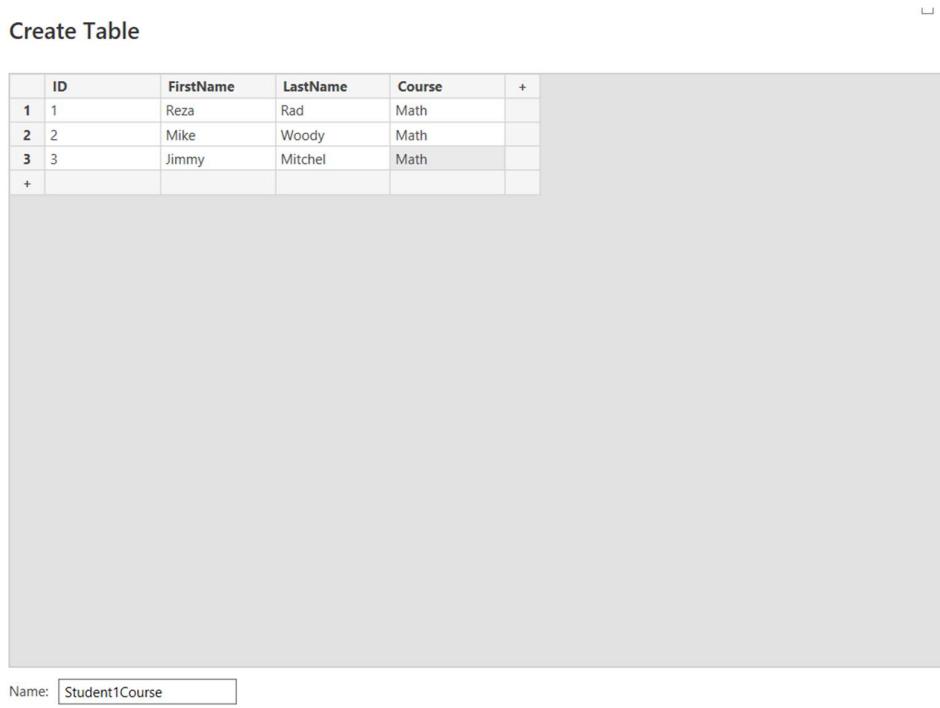
	ABC 123	Purchase_Amount
obile)		372.9304
\$/2 Keyboard		107.964
em for Binding Systems		21.75
one		31.08
		156.086
		101.088
		6.0996
1 Pen Style Fluorescent Highlighters, 4/Pack		29.304
nder Dividers		8.5012
cetooth Keyboard		266.385
nt Highlighters		16.0512
er IR Commercial Upright Vacuum, Replacement...		11.7
crylic Frame		9.3537
r Stand		124.929
k Accessory, Wood Photo Frame, Mahogany		40.5552

Append (Union all)

1. Open the power bi desktop and click on Enter data.



2. Enter the data and give the table name as shown below.



3. Now create another table with the following data and name as shown below.

Create Table

	ID	FirstName	LastName	Course
1	10	Shaun	Mitchel	English
2	11	Mary	Stuart	English
3	2	Mike	Woody	Math

 Below the table, the 'Name:' field contains 'Course2Student'. At the bottom are 'Load', 'Edit', and 'Cancel' buttons."/>

4. Now in the Home tab click on Transform Data as shown below.



5. To append these queries, Click on one of them and click on Append Queries and click on Append Queries as New option from the Combine section of Home tab in Query Editor

ID	FirstName	LastName	Course
1	Reza	Rad	Math
2	Mike	Woody	Math
3	Jimmy	Mitchel	Math

 The Home tab ribbon is visible at the top of the editor."/>

6. Give the first and second table as shown below. Then click Ok.

Append

Concatenate rows from two tables into a single table.

Two tables Three or more tables

First table

Student1Course

Second table

Course2Student

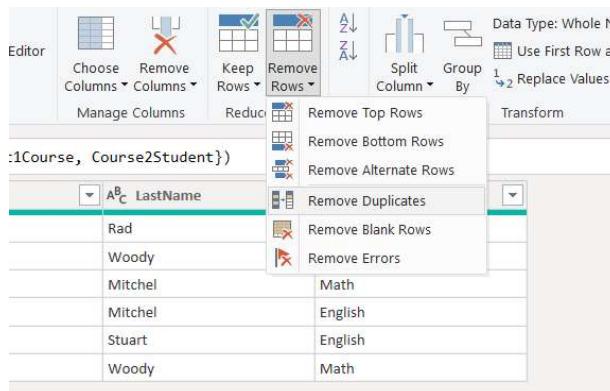
OK Cancel

7. As you can see from the Append query table, we combine the both tables.

ID	FirstName	LastName	Course
1	Reza	Rad	Math
2	Mike	Woody	Math
3	Jimmy	Mitchel	Math
10	Shaun	Mitchel	English
11	Mary	Stuart	English
2	Mike	Woody	Math

8. In the above append table we have a Duplicate row. Append Queries will NOT remove duplicates. You have to use Group By or Remove Duplicate Rows to get rid of duplicates.

9. In the Home tab click on the Remove rows drop down and click on the Remove duplicates.

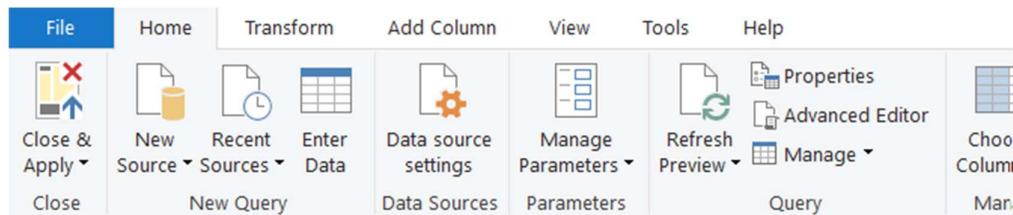


10. Now we have removed our Duplicate rows.

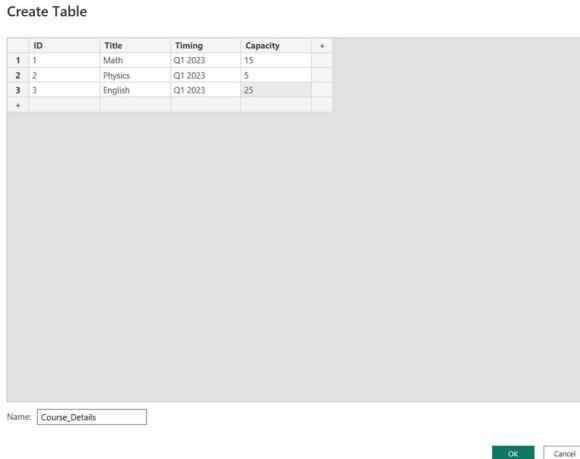
ID	FirstName	LastName	Course
1	Reza	Rad	Math
2	Mike	Woody	Math
3	Jimmy	Mitchel	Math
10	Shaun	Mitchel	English
11	Mary	Stuart	English

Merge Queries

1. In the Home tab click on Enter Data option as shown below.



2. Enter the following data and table name as shown below.



3. We are going to combine Course_Details query with the Appended result of courseXstudents to see which students are part of which course with all details in each row, I need to use Merge Queries.
4. In the Home click on Merger Queries drop down and click on Merge Queries as New.

ID	Title	Timing	Capacity
1	Math	Q1 2023	15
2	Physics	Q1 2023	5
3	English	Q1 2023	25

5. Select the Course_Details table and Title column. Then select the Append1 and Course. Then set the Join kind as Left Outer as shown below.

Merge

Select tables and matching columns to create a merged table.

ID	Title	Timing	Capacity
1	Math	Q1 2023	15
2	Physics	Q1 2023	5
3	English	Q1 2023	25

ID	FirstName	LastName	Course
1	Reza	Rad	Math
2	Mike	Woody	Math
3	Jimmy	Mitchel	Math
10	Shaun	Mitchel	English
11	Mary	Stuart	English

Join Kind

Left Outer (all from first, matching from second)

Use fuzzy matching to perform the merge

Fuzzy matching options

The selection matches 2 of 3 rows from the first table.

OK Cancel

6. This is our merged query table as shown below.

Queries [5]

	i^2_3 ID	A^B_C Title	A^B_C Timing	i^2_3 Capacity	Append1
1	1	Math	Q1 2023		15 Table
2	2	Physics	Q1 2023		5 Table
3	3	English	Q1 2023		25 Table

7. Now click on Expand column icon and expand Append1 to all underneath table structure.

i^2_3 NestedJoin(Course_Details, {"Title"}, Append1, {"Course"}, "Append1", JoinKind.LeftOuter)

	i^2_3 ID	A^B_C Title	A^B_C Timing	i^2_3 Capacity	Append1
1	1	Math	Q1 2023		
2	2	Physics	Q1 2023		
3	3	English	Q1 2023		

Expand Aggregate

- Expand
- Aggregate

- (Select All Columns)
- ID
- FirstName
- LastName
- Course

Use original column name as prefix

OK Cancel

8. Values in the rows only appear in matching criteria. First three rows are students of Math course, then two students for the English course, and because there is no student for Physics course you will see null values for students columns.

i^2_3 ExpandedTableColumn(Source, "Append1", {"ID", "FirstName", "LastName", "Course"}, {"Append1.ID", "Append1.FirstName", "Append1.LastName"})

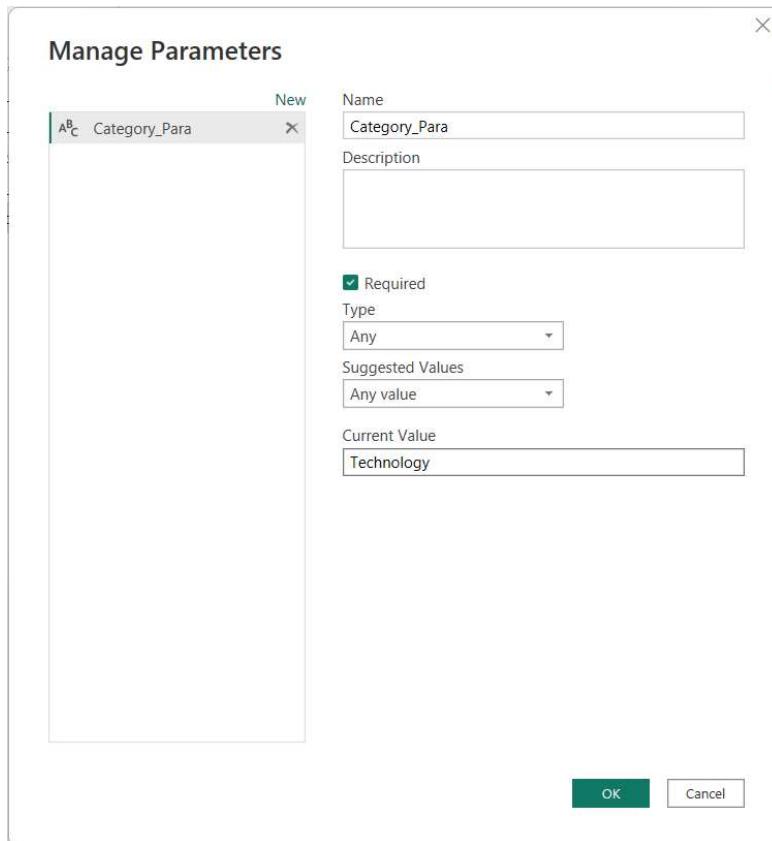
	i^2_3 ID	A^B_C Title	A^B_C Timing	i^2_3 Capacity	i^2_3 Append1.ID	A^B_C Append1.FirstName	A^B_C Append1.LastName
1	1	Math	Q1 2023	15	1	Reza	Rad
2	1	Math	Q1 2023	15	2	Mike	Woody
3	1	Math	Q1 2023	15	3	Jimmy	Mitchel
4	3	English	Q1 2023	25	10	Shaun	Mitchel
5	3	English	Q1 2023	25	11	Mary	Stuart
6	2	Physics	Q1 2023	5	null	null	null

Parameter

1. Now we are creating parameter based on category column so click on the order_south_2015 and select category column Go to Home tab and click on the Manage Parameter drop down and click on New parameter.

The screenshot shows the Power BI desktop interface. The ribbon at the top has tabs like File, Home, Transform, Add Column, View, Tools, and Help. The 'Manage Parameters' option is highlighted in the 'Tools' section. Below the ribbon, there's a 'Queries [4]' pane on the left containing 'Orders [2]', 'orders_south_2016', 'orders_south_2016 (2)', and 'Other Queries [2]'. The main area shows a table with columns 'AB_C' and 'City'. The first row has '1' in the AB_C column and 'Monroe' in the City column. A context menu is open over the table, with 'New Parameter' selected. The status bar at the bottom right shows '#Fj 123 Post'.

2. A small window will appear. Give a parameter name and properties and current value as Technology as shown below.



3. Click Ok.
4. Right click on the category column and click on Add as New Query.

A screenshot of the Power BI Query Editor. The 'Category' column is selected, and a context menu is open. The menu includes options like Copy, Remove, Remove Other Columns, Duplicate Column, Add Column From Examples..., Remove Duplicates, Remove Errors, Change Type, Transform, Replace Values..., Replace Errors..., Split Column, Group By..., Fill, Unpivot Columns, Unpivot Other Columns, Unpivot Only Selected Columns, Rename..., Move, Drill Down, and Add as New Query. The 'Add as New Query' option is highlighted with a gray background.

5. Now the column has converted to list and copied in a new query.

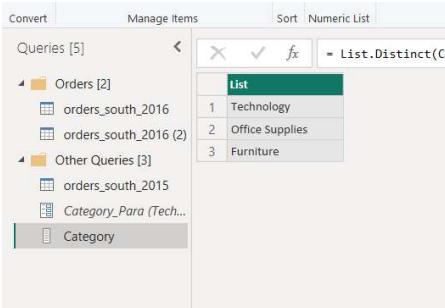
A screenshot of the Power BI 'Queries [5]' pane. The 'Category' query is expanded, showing a list of 12 items. The list is as follows:

	Category
1	Technology
2	Technology
3	Technology
4	Office Supplies
5	Technology
6	Office Supplies
7	Office Supplies
8	Office Supplies
9	Office Supplies
10	Technology
11	Office Supplies
12	Office Supplies

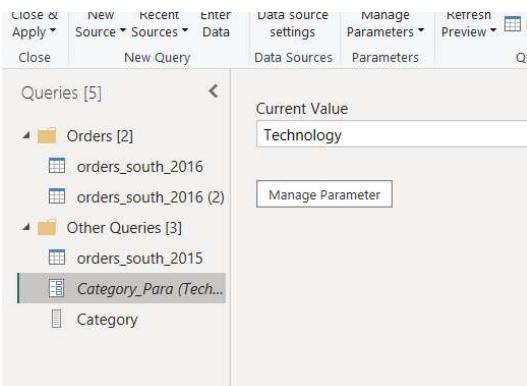
6. Now remove the duplicates from the list as shown below.

A screenshot of the Power BI 'Queries [5]' pane. The 'Category' query is expanded, showing a list of 19 items. A context menu is open over the list, with 'Remove Duplicates' highlighted. Other options in the menu include Copy Entire List, To Table, Replace Values..., Sort Ascending, Sort Descending, Keep Top Items..., Keep Range of Items..., Remove Top Items..., and Remove Alternate Items... .

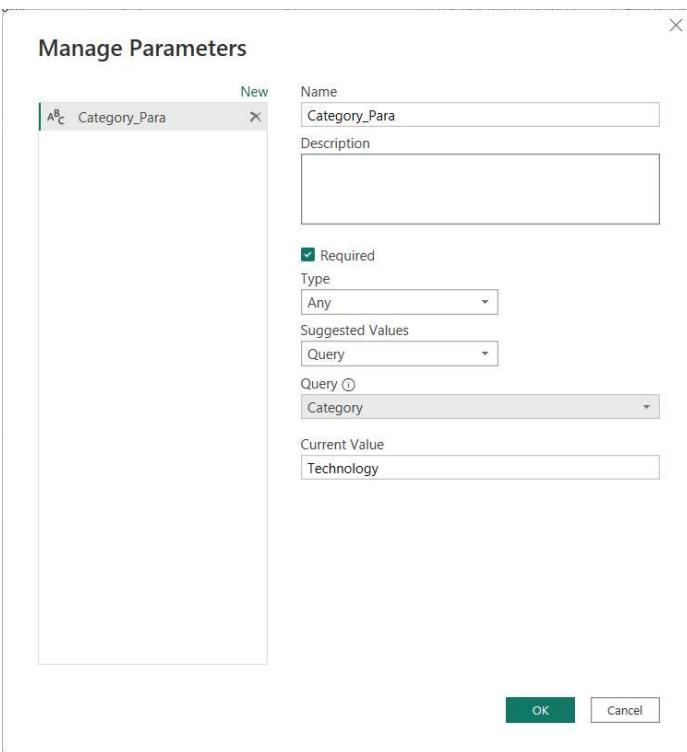
7. These are all the categories we have in our list base we are creating a dynamic parameter.



8. Now got Category_Para and click on Manage parameter as shown below.

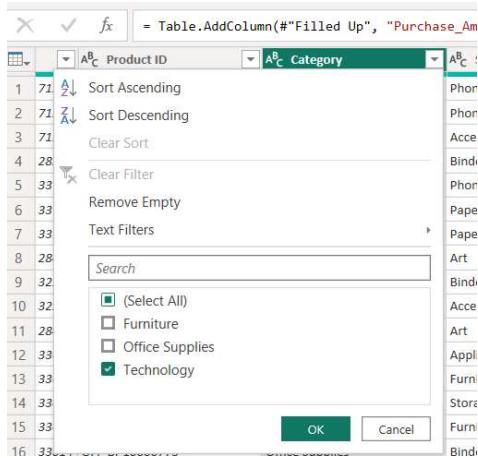


9. Select Suggested values as Query and select the Query as shown below.



10. Click Ok.

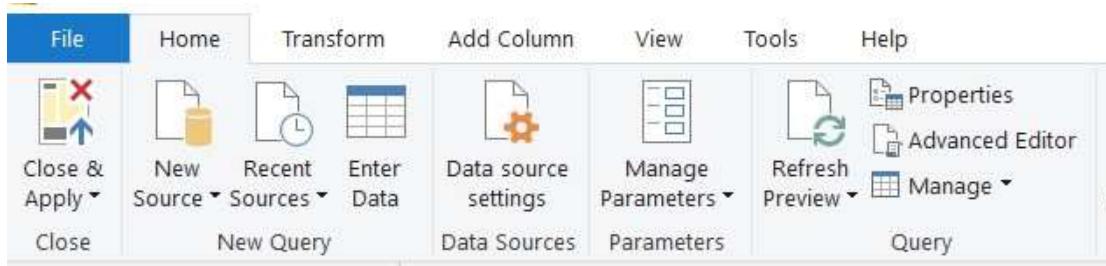
11. Now go to orders_south_2015 table filter the category column with only Technology as shown.



12. The whole table is showing for only Technology category only.

	Product ID	Category	Sub-Category	Product Name
1	71203	Technology	Phones	AT&T TR1909W
2	71203	Technology	Phones	Nokia Lumia 521 (T-Mobile)
3	71203	Technology	Accessories	HP Standard 104 key PS/2 k
4	33710	Technology	Phones	AT&T 1070 Corded Phone
5	32216	Technology	Accessories	Belkin QODE FastFit Bluetoo
6	39212	Technology	Accessories	NETGEAR AC1750 Dual Ban
7	22980	Technology	Phones	Konftel 250 Conference pho
8	27511	Technology	Accessories	SanDisk Cruzer 32 GB USB F
9	71111	Technology	Accessories	Plantronics S12 Corded Tele
10	23464	Technology	Phones	Plantronics Voyager Pro Leg
11	72401	Technology	Phones	Apple iPhone 5C
12	31204	Technology	Accessories	Memorex Froggy Flash Driv
13	31204	Technology	Accessories	Maxell 74 Minute CD-R Spri
14	32725	Technology	Phones	Wilson SignalBoost 841262
15	30076	Technology	Accessories	Logitech 910-002974 M325

13. Click on Advanced editor in the Home tab.



14. In the editor remove the Technology text and give the parameter name that we created before.

```

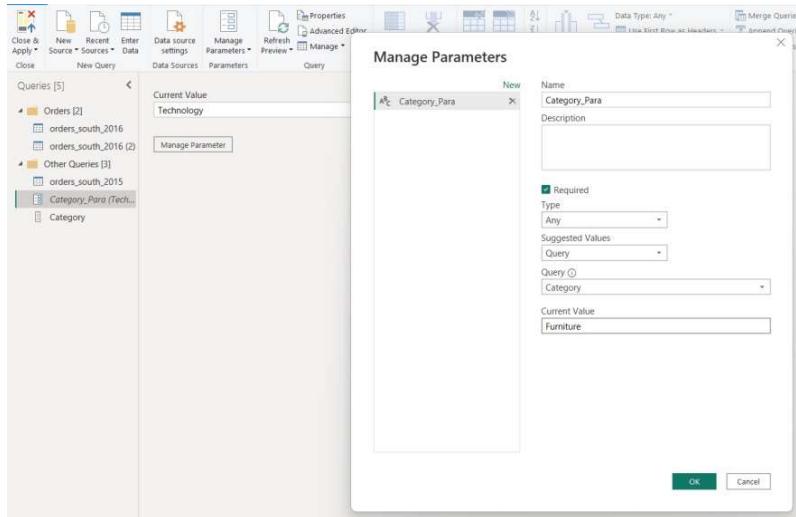
let
    Source = Csv.Document(File.Contents("C:\Users\DELL\Downloads\orders_south_2015.csv"),[Delimiter=",", Columns=21, Encoding=1252, QuoteStyle=QuoteStyleNone]),
    #"Changed Type" = Table.TransformColumnTypes(Source,{{"Column1", type text}, {"Column2", type text}, {"Column3", type text}, {"Column4", type text}, {"Column5", type number}, {"Column6", type number}, {"Column7", type number}, {"Column8", type number}, {"Column9", type number}, {"Column10", type number}, {"Column11", type number}, {"Column12", type number}, {"Column13", type number}, {"Column14", type number}, {"Column15", type number}, {"Column16", type number}, {"Column17", type number}, {"Column18", type number}, {"Column19", type number}, {"Column20", type number}, {"Column21", type number}),
    #"Removed Top Rows" = Table.Skip(#"Changed Type",2),
    #"Promoted Headers" = Table.PromoteHeaders(#"Removed Top Rows", [PromoteAllScalars=true]),
    #"Changed Type1" = Table.TransformColumnTypes(#"Promoted Headers",{{"Sales", type number}, {"Quantity", Int64.Type}, {"Profit", type number}, {"Category", type text}}),
    #"Replaced Value" = Table.ReplaceValue(#"Changed Type1","",null,Replace.ReplaceValue,{"Region"}),
    #"Filled Up" = Table.FillUp(#"Replaced Value",{"Region"}),
    #"Added Custom" = Table.AddColumn(#"Filled Up", "Purchase_Amount", each [Sales]-[Profit]),
    #"Filtered Rows" = Table.SelectRows(#"Added Custom", each ([Category] = Category_Para))
in
    #"Filtered Rows"

```

No syntax errors have been detected.

Done Cancel

15. To test the parameter, go to Manage parameter and change the current value as Furniture.



16. Now go to orders_south_2015 table the data is automatically changed to furniture category.

The screenshot shows the Power BI Data Editor interface with the title bar "Queries [5]". On the left, the "Orders [2]" section contains "orders_south_2016" and "orders_south_2016 (2)". The "Other Queries [3]" section contains "orders_south_2015", "Category_Para (Furn...)", and "Category". The "orders_south_2015" query is currently selected, indicated by a blue border around its icon and name. The main area displays a table with 20 rows of data. The table has columns: "Postal Code", "Product ID", "Category", and "Sub". The "Category" column contains values like "Furniture" and "Furnishi", while the "Sub" column contains values like "Furniture", "Tables", and "Chairs". The table is defined by the formula: `= Table.SelectRows(#"Added Custom", each ([Category] = Category))`.

	Postal Code	Product ID	Category	Sub
1	33614	FUR-FU-10004020	Furniture	Furnishi
2	33614	FUR-FU-10001756	Furniture	Furnishi
3	22980	FUR-FU-10004071	Furniture	Furnishi
4	33710	FUR-FU-10004306	Furniture	Furnishi
5	22153	FUR-FU-10000965	Furniture	Furnishi
6	72401	FUR-FU-10003194	Furniture	Furnishi
7	72401	FUR-CH-10002331	Furniture	Chairs
8	22801	FUR-TA-10001932	Furniture	Tables
9	22801	FUR-TA-10000617	Furniture	Tables
10	35630	FUR-CH-10000513	Furniture	Chairs
11	22801	FUR-TA-10004534	Furniture	Tables
12	28205	FUR-FU-10000629	Furniture	Furnishi
13	33178	FUR-TA-10001857	Furniture	Tables
14	36116	FUR-CH-10003774	Furniture	Chairs
15	72209	FUR-FU-10001935	Furniture	Furnishi
16	38671	FUR-TA-10001039	Furniture	Tables
17	22304	FUR-FU-10004587	Furniture	Furnishi
18	22304	FUR-FU-10001847	Furniture	Furnishi
19	33012	FUR-FU-10004270	Furniture	Furnishi
20	32216	FUR-FU-10004270	Furniture	Furnishi