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Using Power BI

Power BI is a business analytics service by Microsoft. It aims to provide interactive visualizations and business intelligence capabilities with an interface simple enough for end users to create their own reports and dashboards. In this exercise using Power BI, you will:

Extract the "*Sales Report*", "Salesperson Information" and "Comm SalesPerson by Region" data from Excel.

Transform the data into a flat data set in which all the data for a specific sales order is on one row. Aggregate the commission in dollars for each salesperson by region.

Load the transformed data into Excel.

There are three streams of data for *LightJoin, Inc.* stored in an Excel workbook. The first stream, sales information is stored in a sheet titled "**Sales Report**". Notice that the column headings are in the sixth row.

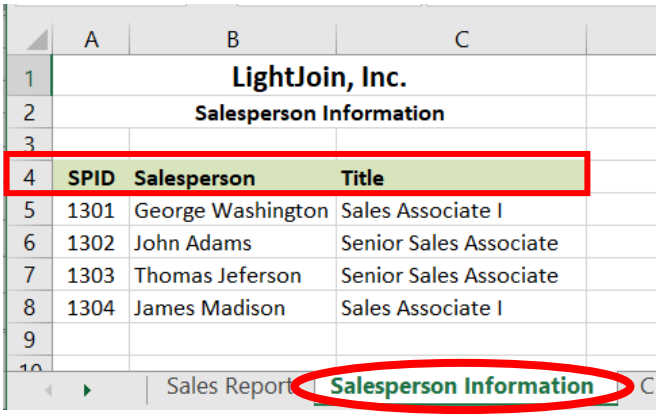
	A	B	C	D	E
1		LightJoin, Inc.			
2		Sales Report			
3					
4					
6	Sales Order #	Salesperson #	Region	Sales	
7	87082	1301	South	$119,423	
8	87083	1302	East	$321,989	
9	87084	1304	East	$155,882	
10	87085	1302	East	$282,097	
11	87086	1302	North	$305,319	
12	87087	1301	East	$111,512	
13	87088	1301	East	$308,051	
14	87089	1304	North	$ 96,069	

Introductio | Sales Report | alesperson Information

Notice that the last "Sales Order #" is 87175, and there are 94 rows of data (row 100 – row 6 = 94 rows).

6	Sales Order #	Salesperson #	Region	Sales
97	87172	1302	West	$154,798
98	87173	1304	North	$353,819
99	87174	1304	East	$256,322
100	87175	1303	North	$ 78,635

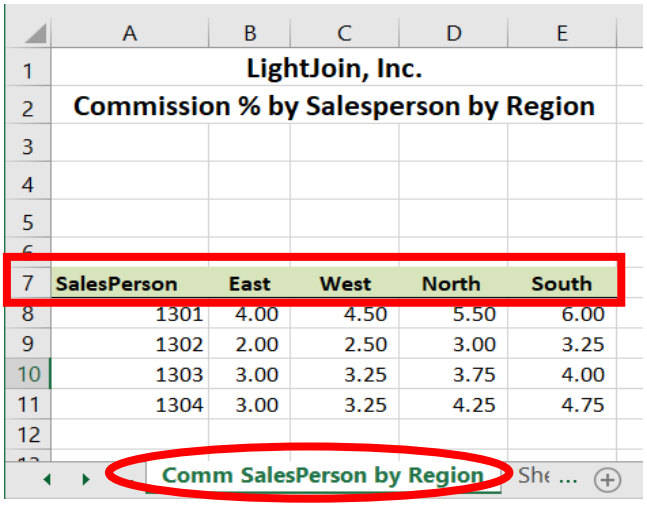
The second stream containing data regarding the Salesperson's name and title is stored in a sheet titled "**Salesperson Information**". Notice that the column headings are in the fourth row.



	A	B	C
1		**LightJoin, Inc.**	
2		**Salesperson Information**	
3			
4	**SPID**	**Salesperson**	**Title**
5	1301	George Washington	Sales Associate I
6	1302	John Adams	Senior Sales Associate
7	1303	Thomas Jeferson	Senior Sales Associate
8	1304	James Madison	Sales Associate I
9			

Sales Report | Salesperson Information | C

The third stream contains the commission percentage earned by the salesperson by region in which the sales were made. This data is stored in a sheet titled "**Comm SalesPerson by Region**". Notice that the column headings are in the seventh row.



	A	B	C	D	E
1		**LightJoin, Inc.**			
2		**Commission % by Salesperson by Region**			
3					
4					
5					
7	**SalesPerson**	**East**	**West**	**North**	**South**
8	1301	4.00	4.50	5.50	6.00
9	1302	2.00	2.50	3.00	3.25
10	1303	3.00	3.25	3.75	4.00
11	1304	3.00	3.25	4.25	4.75
12					

Comm SalesPerson by Region | She ...

The deliverable consists of two reports. One is a Commission in Dollars Report by Salesperson and the other a Commission in Dollars Report by Salesperson and Region. Both are to be loaded back into Excel.

	A	B
1	Salesperson	Commission Expense
2	George Harrison	$90,935.34
3	John Lennon	$226,149.84
4	Paul McCartney	$127,193.52
5	Ringo Starr	$274,189.61
6		

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	A	B	C	D	E	F
1	Salesperson	East	North	South	West	Total
2	George Harrison	$ 17,192.18	$ 26,615.28	$ 26,052.39	$ 21,075.49	$ 90,935.34
3	John Lennon	84,829.28	29,372.96	82,074.30	29,873.30	226,149.84
4	Paul McCartney	30,874.29	52,700.71	15,502.96	28,115.56	127,193.52
5	Ringo Starr	60,005.82	136,168.64	44,940.09	33,075.06	274,189.61
6	Total	$192,901.57	$244,857.59	$168,569.74	$112,139.41	$718,468.31
7						
8						

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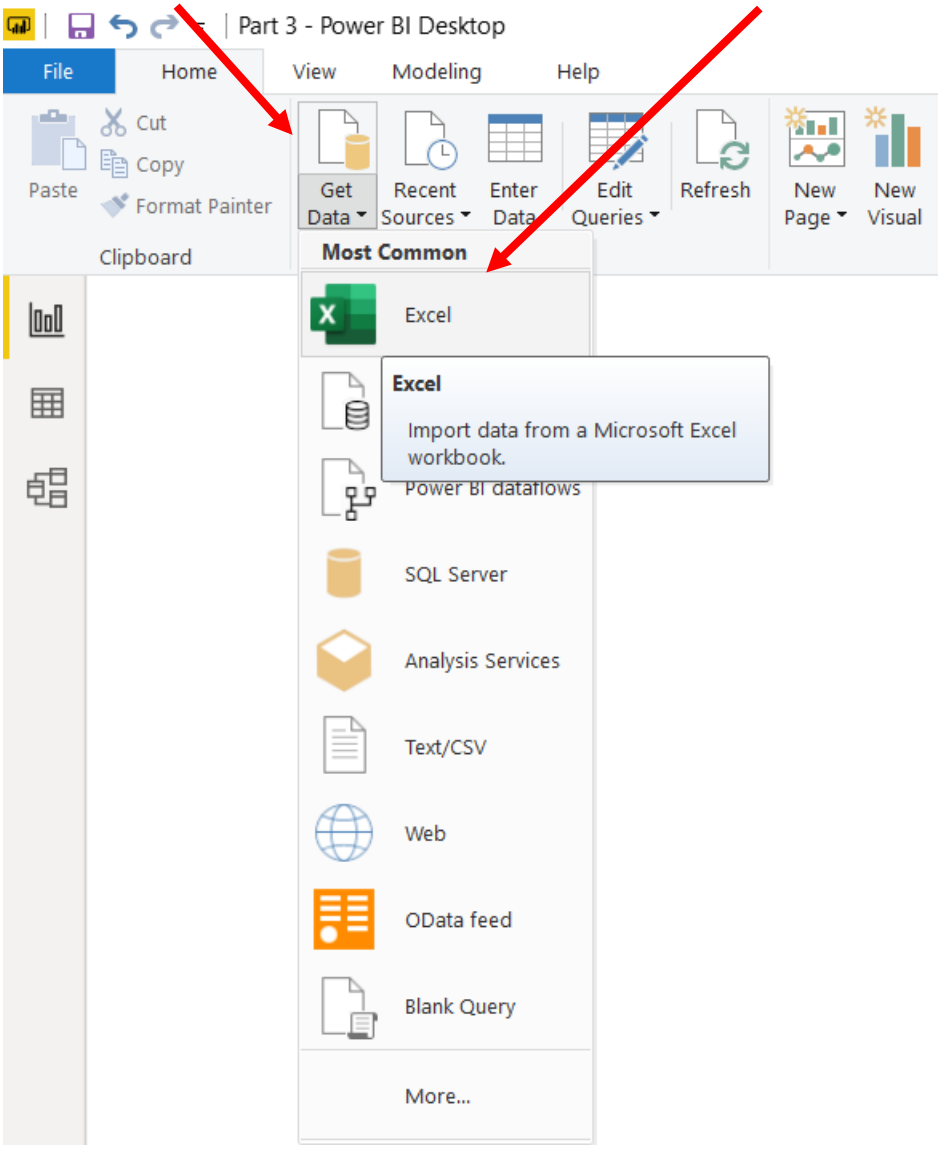
Start Power BI Desktop

There are four major parts to the Power BI tabs: Home, View, Modeling and Help.

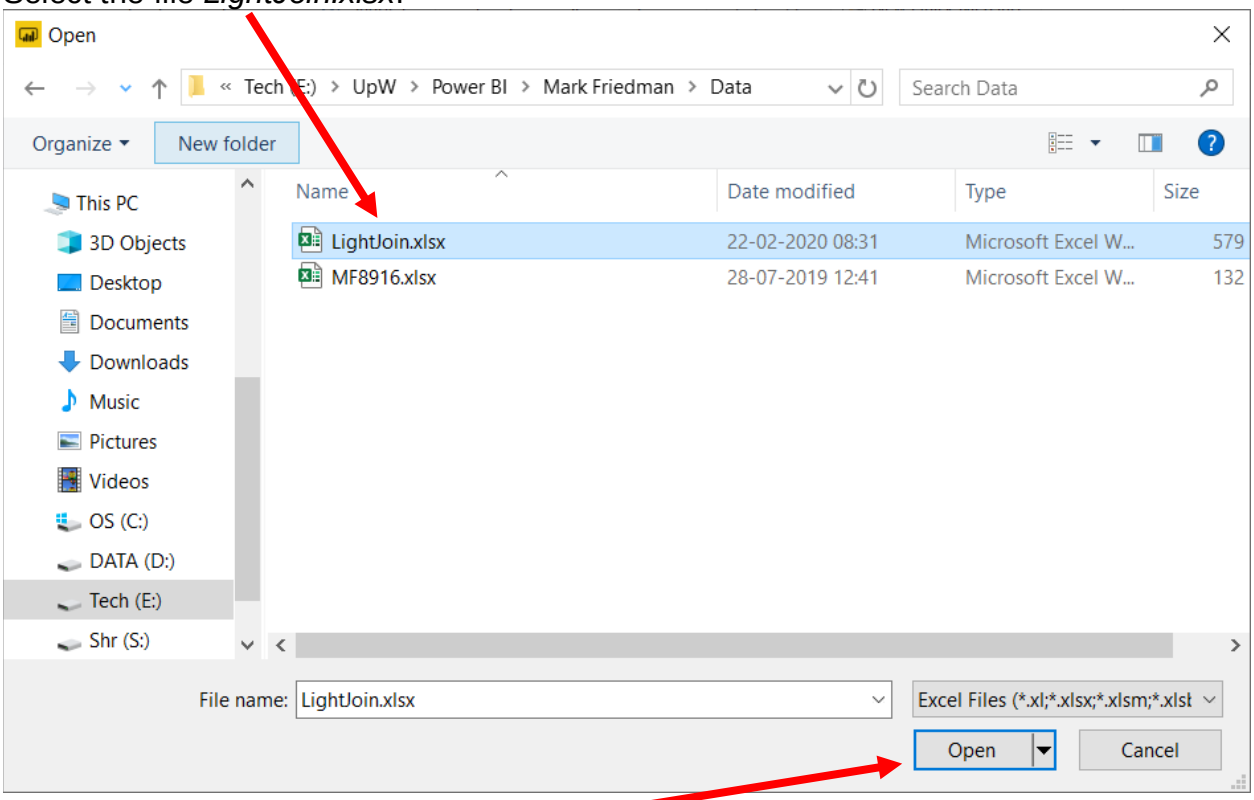
Operation 1: Get Data

Input the "Sales Report" from LightJoin.xlsx Excel data set.

Select "Get Data" under the home tab. Then select Excel from the drop-down

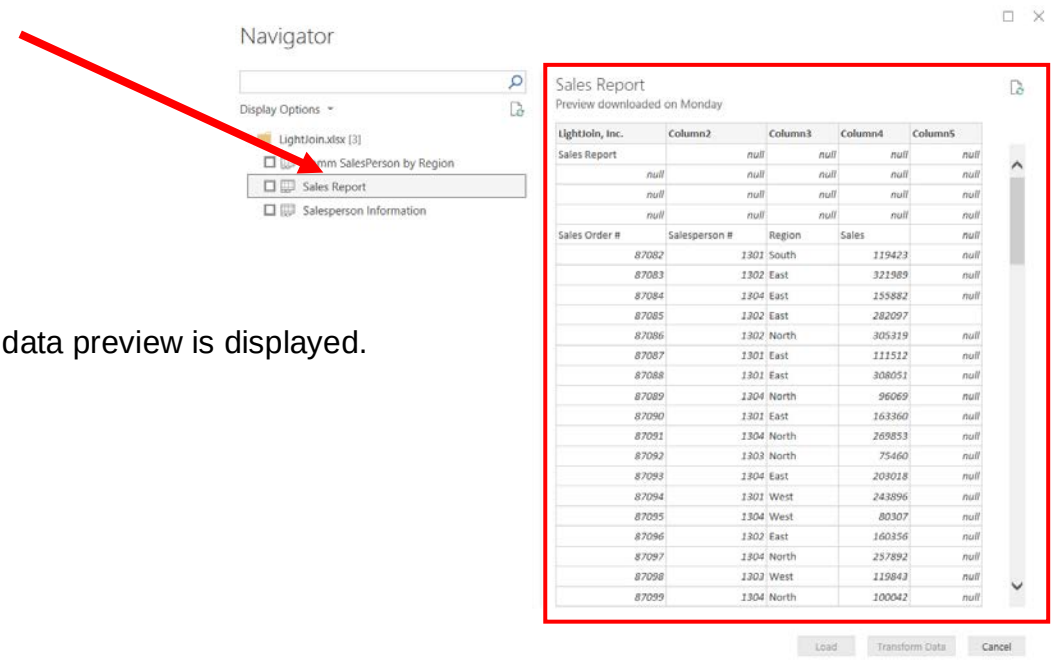


Select the file *LightJoin.xlsx*.



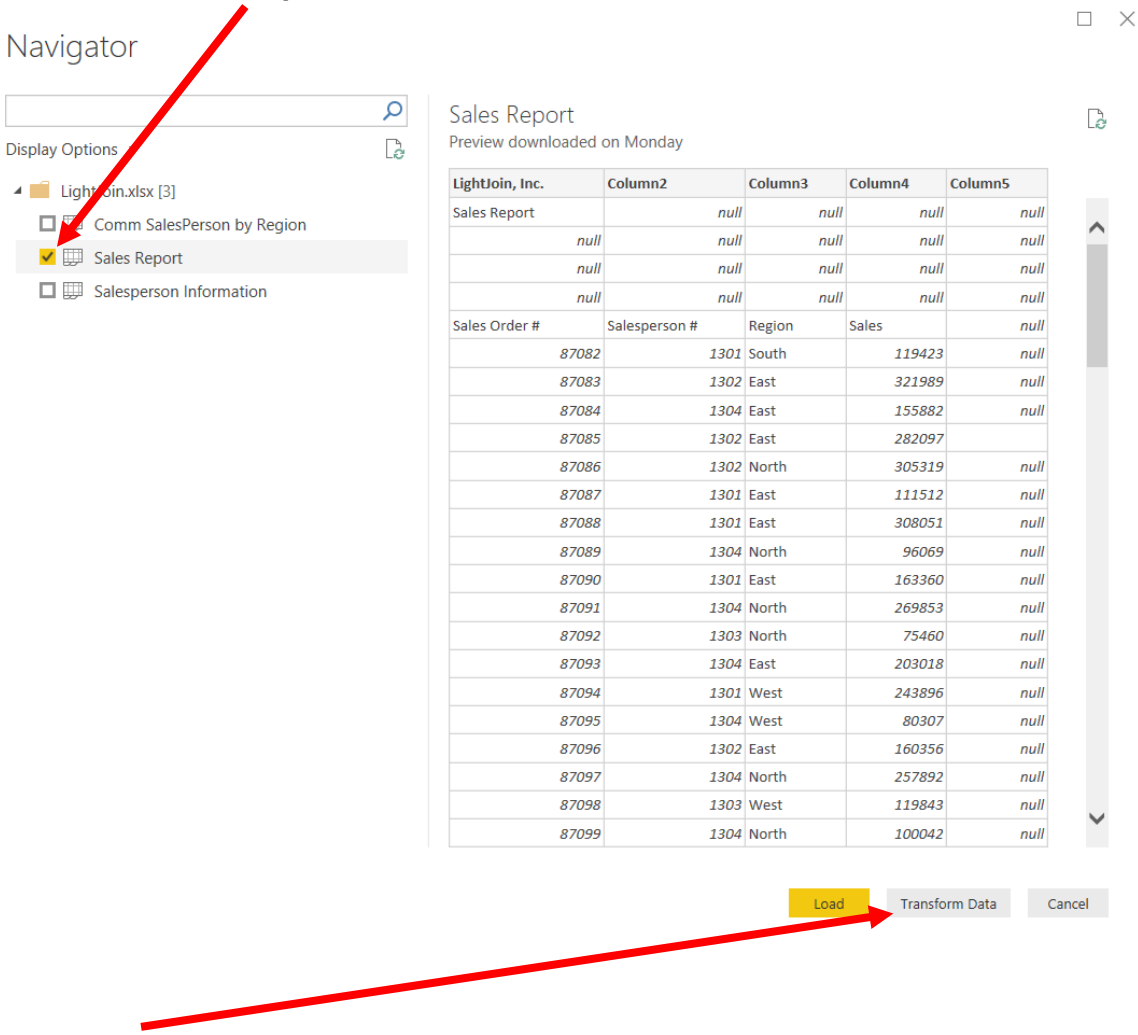
Select “Open”.

Highlight the desired sheet “Sales Report”**.** At this time the “Transform” button is not highlighted.



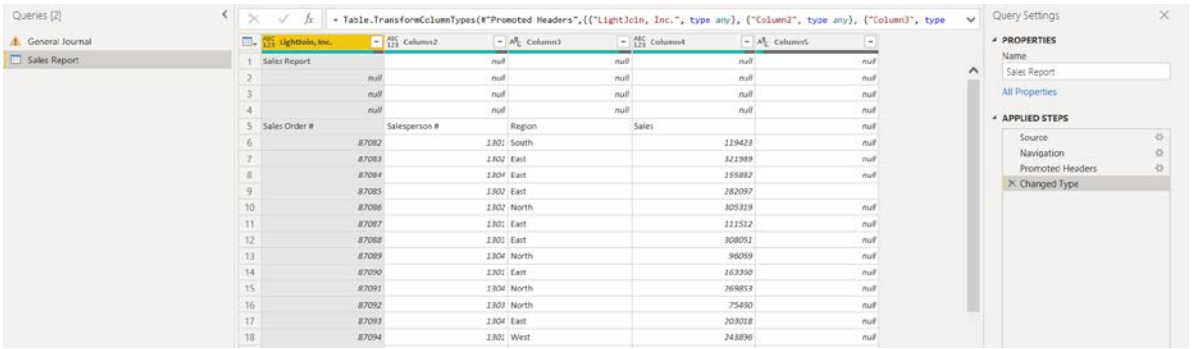
However, the data preview is displayed.

Double click on "**Sales Report**" or select the check box to the left of the sheet's name.



Select "Transform Data" and the "Power Query Editor" opens. Don't click on "Load" as that imports the data directly without an option for data transformation.

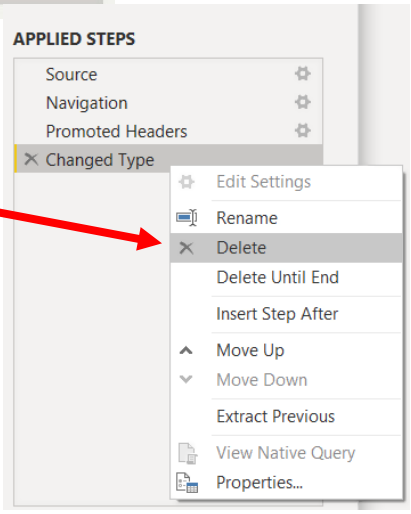
Now "Sales Report" query is inserted. After you perform a transformation, the changes are recoded in the "Applied Steps" section.



The program automatically added steps and it did not correctly find the row that contains the “Headers”.

Select “Changed Type”.

Right click and select “Delete”.



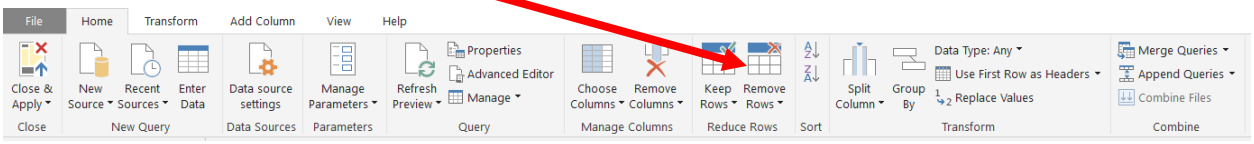
Delete the step “Promoted Headers”, leaving us with two steps.

Operation 2: Fix the Headers

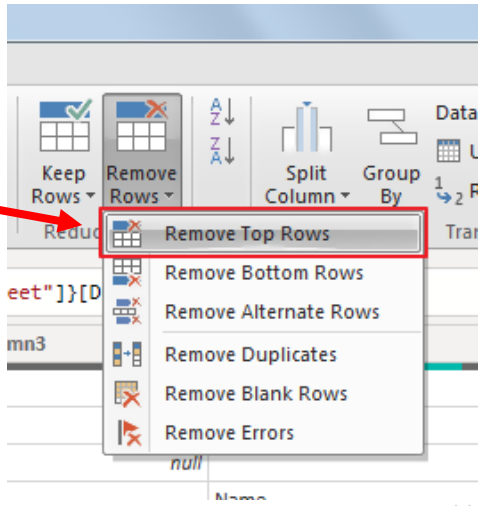
The field headers are in the sixth row of the source document. Remove the top five rows to move the headers to the first row and then make them to the Query Editors' headers

	Column1	Column2	Column3	Column4	Column5
1	LightJoin, Inc.	null	null	null	null
2	Sales Report	null	null	null	null
3	null	null	null	null	null
4	null	null	null	null	null
5	null	null	null	null	null
6	Sales Order #	Salesperson #	Region	Sales	null
7	87082	1301	South	119423	null
8	87083	1302	East	321989	null
9	87084	1304	East	155882	null

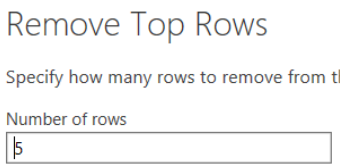
Select "Remove Rows".



Select "Remove Top Rows".



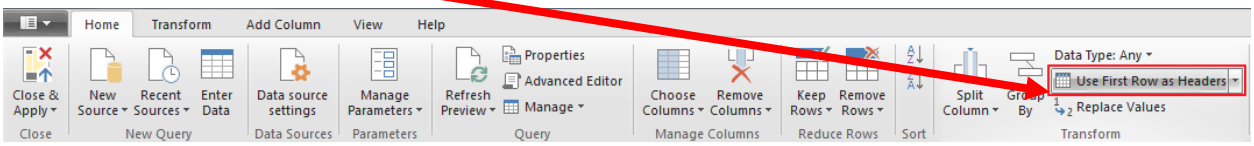
Enter a "5" to remove top five rows.



Then click OK.

	Column1	Column2	Column3	Column4	Column5
1	Sales Order #	Salesperson #	Region	Sales	null
2	87082	1301	South	119423	null
3	87083	1302	East	321989	null
4	87084	1304	East	155882	null
5	87085	1302	East	282097	
6	87086	1302	North	305319	null

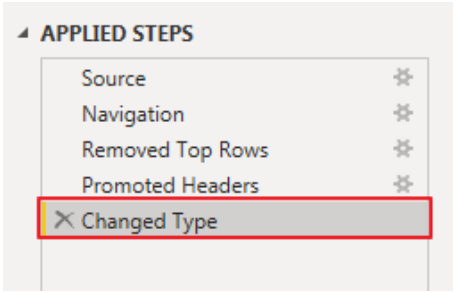
To make the first row the header, select “Use First Row as Headers”.



The transformed table would like this:

	Sales Order #	Salesperson #	Region	Sales	Column5
1	87082	1301	South	119423	null
2	87083	1302	East	321989	null
3	87084	1304	East	155882	null
4	87085	1302	East	282097	
5	87086	1302	North	305319	null
6	87087	1301	East	111512	null

After you perform a transformation, the changes are recorded in the “Applied Steps” section. If a step was incorrectly done, just delete the step redo.



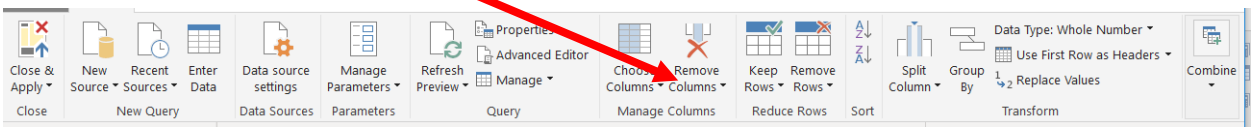
Operation 3: Clean up the columns

Remove extra columns

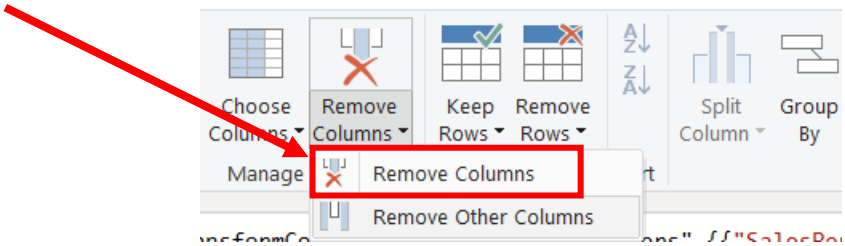
Select the extra column by clicking on the heading “Column5”.

	Sales Order #	Salesperson #	Region	Sales	Column5
1	87082	1301	South	119423	null
2	87083	1302	East	321989	null
3	87084	1304	East	155882	null
4	87085	1302	East	282097	
5	87086	1302	North	305319	null
6	87087	1301	East	111512	null
7	87088	1301	East	308051	null
8	87089	1304	North	96069	null
9	87090	1301	East	163360	null

Click on Remove Columns Drop-down



Select “Remove Columns”.



There are only four columns left in this table.

	Sales Order #	Salesperson #	Region	Sales
1	87082	1301	South	119423
2	87083	1302	East	321989
3	87084	1304	East	155882
4	87085	1302	East	282097
5	87086	1302	North	305319
6	87087	1301	East	111512
7	87088	1301	East	308051
8	87089	1304	North	96069
9	87090	1301	East	163360

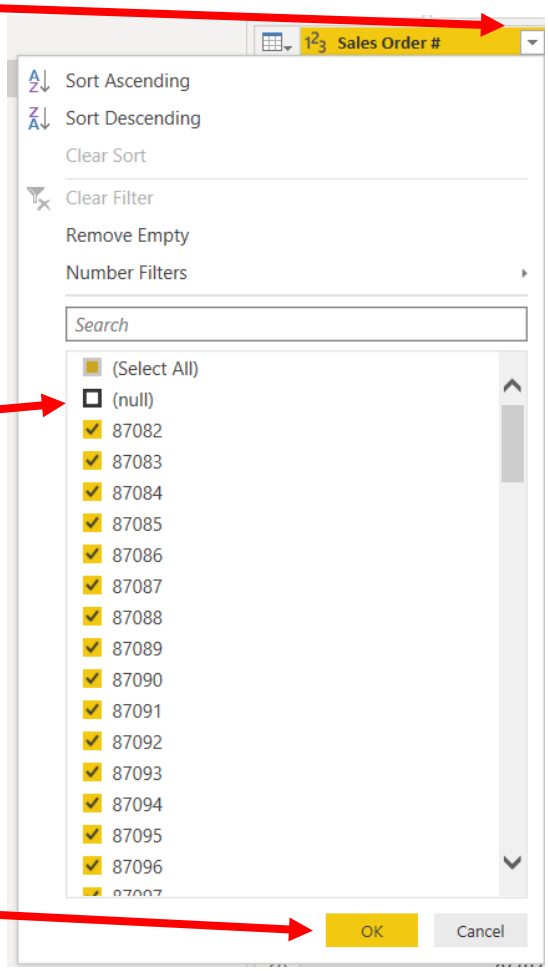
Operation 4 – Exclude rows that do not contain a valid entry for Sales Order

There are several rows that must be removed because they do not contain valid data in the "Sales Order #" column. Nothing is being deleted from the source document. The process will just exclude these rows from the Power BI table.

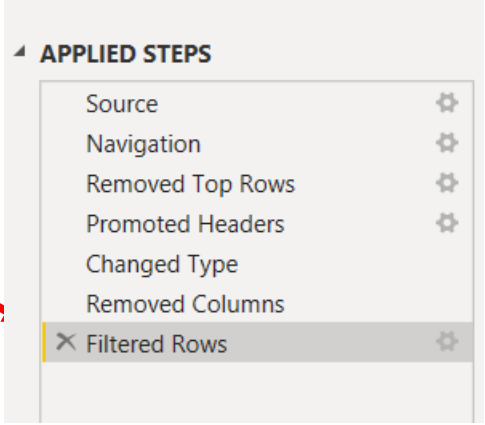
Click on the drop-down next to "Sales Order #".

Uncheck "null".

Click "OK".



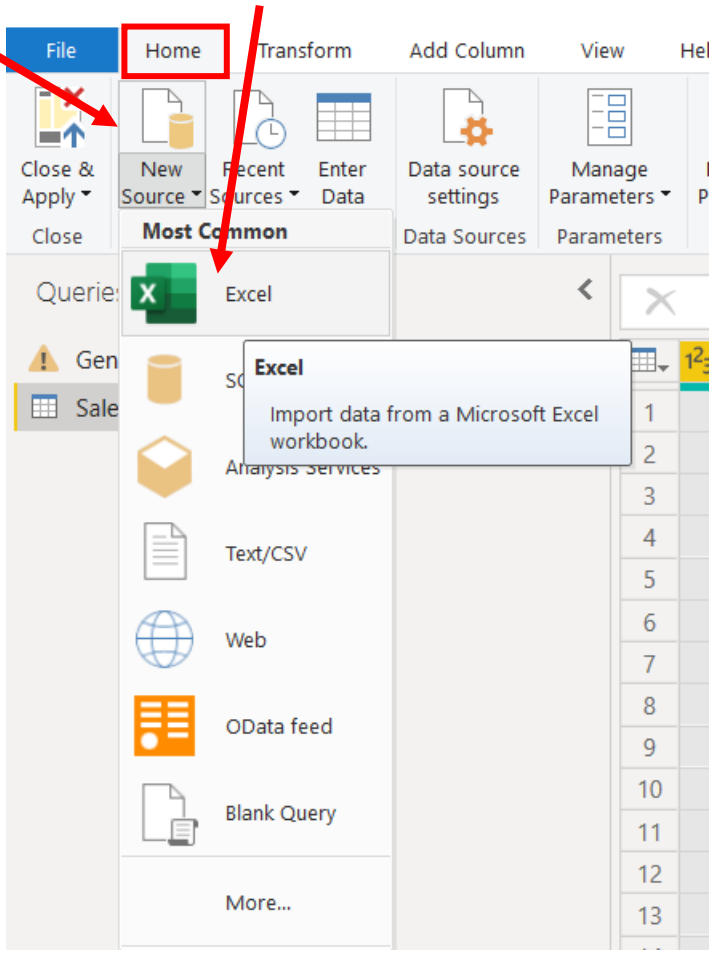
There are no longer any rows with nulls and Filtered Rows has been added to the "Applied Steps" section.



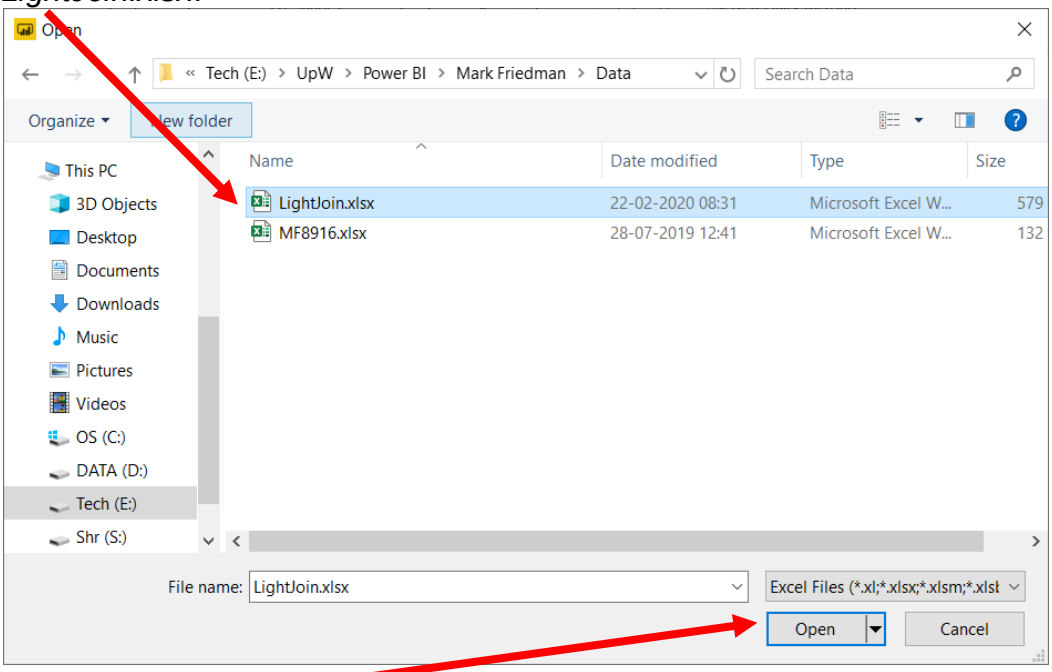
Operation 5: Get Data from New Source

Input the "Salesperson Information" from LightJoin Excel data set

Import other datasets from the Power Query Editor. Under Home tab, select "New Source", then select Excel from the drop-down.

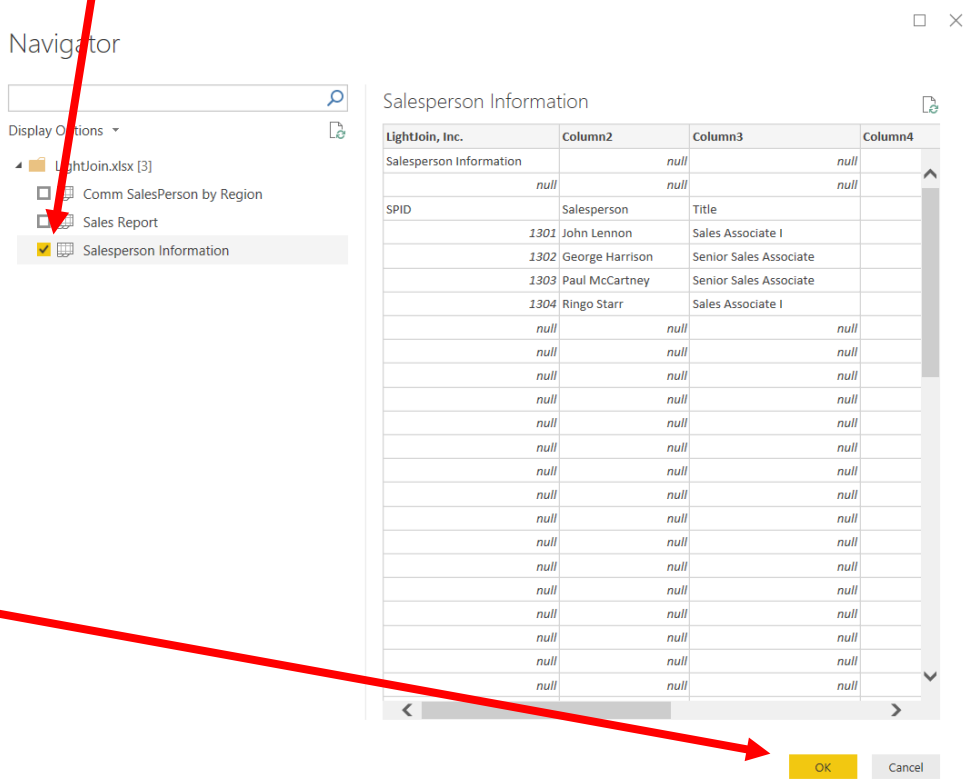


Select the file *LightJoin.xlsx*.



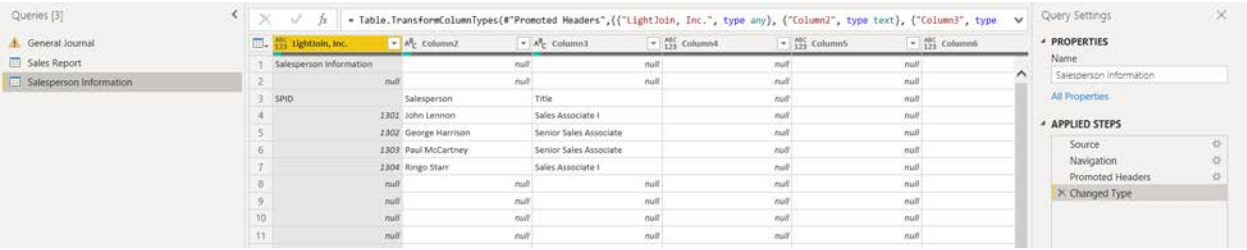
Select “Open”.

Double click on “**Salesperson Information**” or select the check box to the left of the sheet’s name.



Then Click “OK”.

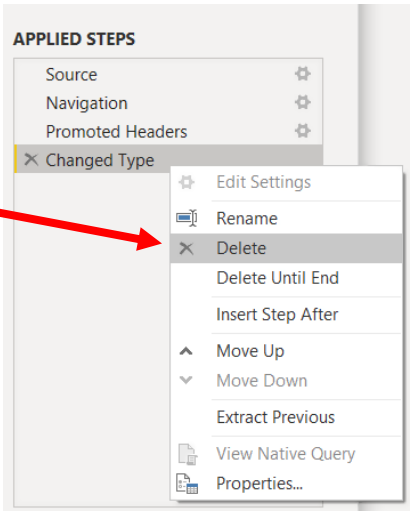
The “SalesPerson Information” query is inserted. After a transformation is performed the changes are recoded in the “Applied Steps” section.



The program automatically added steps as it attempted to locate the headers. The program did not correctly find the row that contains the headers therefore, two steps must be deleted.

Select “Changed Type”.

Right click and select “Delete”.



Delete the step “Promoted Headers”, leaving us with two steps.

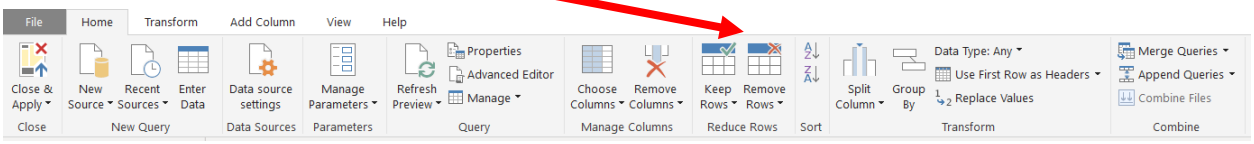

APPLIED STEPS
Source
Navigation

Operation 6: Fix the Headers

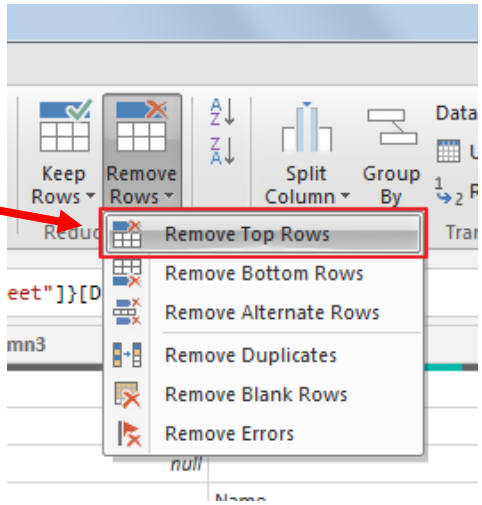
The field headers are in the fourth row of the source document. Remove the top three rows to move the headers to the first row and then assign that row as the headers.

	Column1	Column2	Column3	Column4	Column5	Column6
1	LightJoin, Inc.	null	null	null	null	
2	Salesperson Information	null	null	null	null	
3	null	null	null	null	null	
4	SPID	Salesperson	Title	null	null	
5	1301	John Lennon	Sales Associate I	null	null	
6	1302	George Harrison	Senior Sales Associate	null	null	
7	1303	Paul McCartney	Senior Sales Associate	null	null	
8	1304	Ringo Starr	Sales Associate I	null	null	
9	null	null	null	null	null	
10	null	null	null	null	null	
11	null	null	null	null	null	

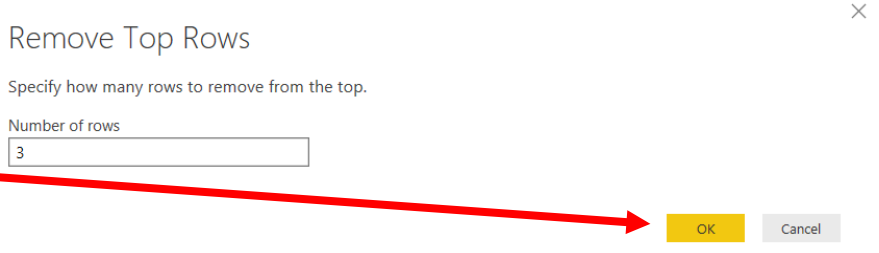
Select “Remove Rows”.



Select “Remove Top Rows”.



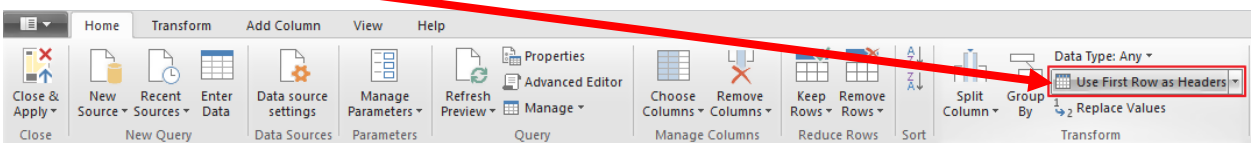
Enter a “3” to remove top five rows.



Then click OK.

	Column1	Column2	Column3	Column4	Column5	Column6
1	SPID	Salesperson	Title	null	null	
2	1301	John Lennon	Sales Associate I	null	null	
3	1302	George Harrison	Senior Sales Associate	null	null	
4	1303	Paul McCartney	Senior Sales Associate	null	null	
5	1304	Ringo Starr	Sales Associate I	null	null	
6	null	null	null	null	null	
7	null	null	null	null	null	

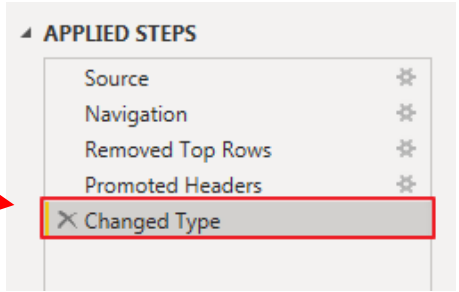
To make the first row in the current data as header, select “Use First Row as Headers”.



T

	SPID	Salesperson	Title	Column4	Column5	Column6
1	1301	John Lennon	Sales Associate I	null	null	
2	1302	George Harrison	Senior Sales Associate	null	null	
3	1303	Paul McCartney	Senior Sales Associate	null	null	
4	1304	Ringo Starr	Sales Associate I	null	null	
5	null	null	null	null	null	
6	null	null	null	null	null	
7	null	null	null	null	null	

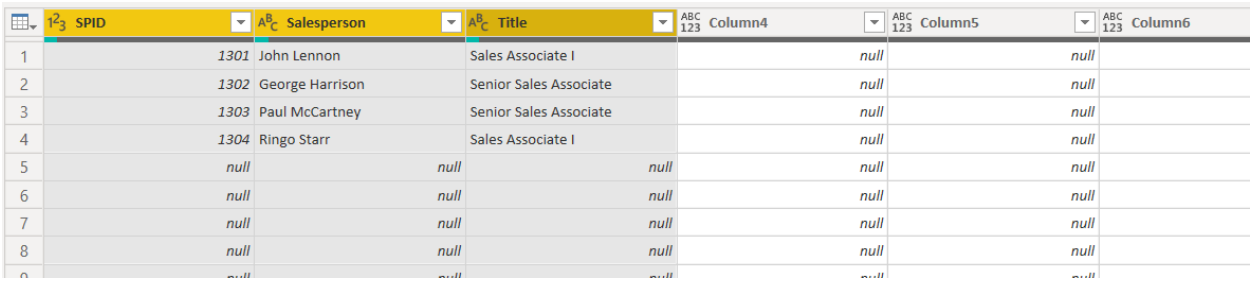
After a transformation is performed the changes are recorded in the “Applied Steps” section. If a step was incorrectly completed, just delete the step redo.



Operation 7: Clean up the columns

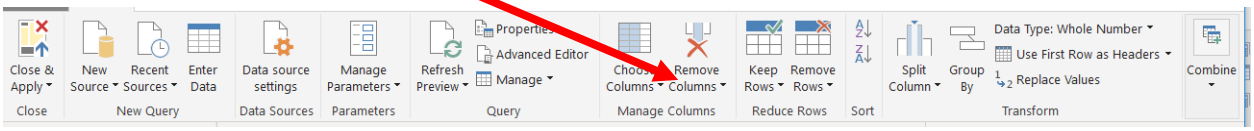
Remove extra columns and rename the columns

Select the columns that contain data by clicking on the heading “SPID” and then hold down the “Shift” key, and at the same time, clicking on the heading “Title”.

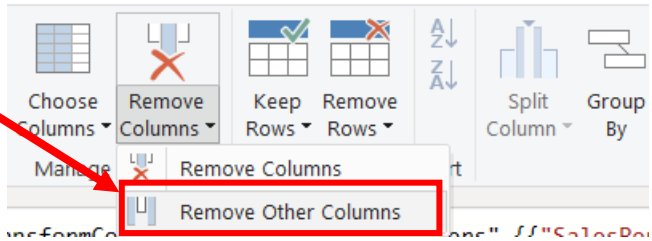


	SPID	Salesperson	Title	Column4	Column5	Column6
1	1301	John Lennon	Sales Associate I	null	null	
2	1302	George Harrison	Senior Sales Associate	null	null	
3	1303	Paul McCartney	Senior Sales Associate	null	null	
4	1304	Ringo Starr	Sales Associate I	null	null	
5	null	null	null	null	null	
6	null	null	null	null	null	
7	null	null	null	null	null	
8	null	null	null	null	null	

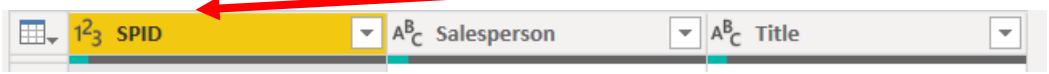
Click on the “Remove Columns” Drop-down.



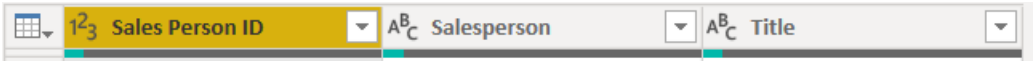
Select “Remove Other Columns”.



To rename the first column heading, double click on “SPID”.



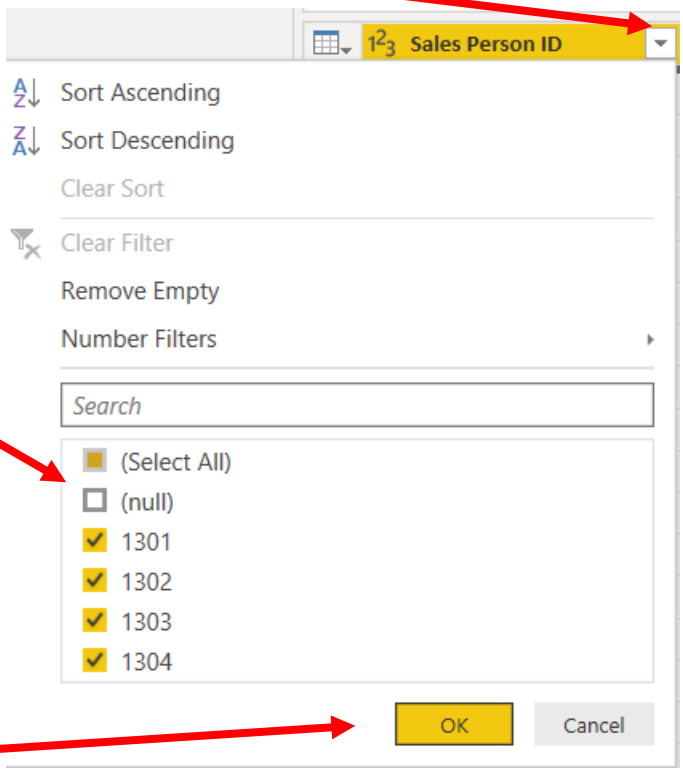
Type “Sales Person ID” and press enter.



Operation 8 – Exclude rows that do not contain a number for "Sales Person ID"

There are several rows that do not contain valid data in the "Sales Person ID" column, and which must be removed. Nothing is being deleted from the source document. This will just exclude rows from the Power BI table.

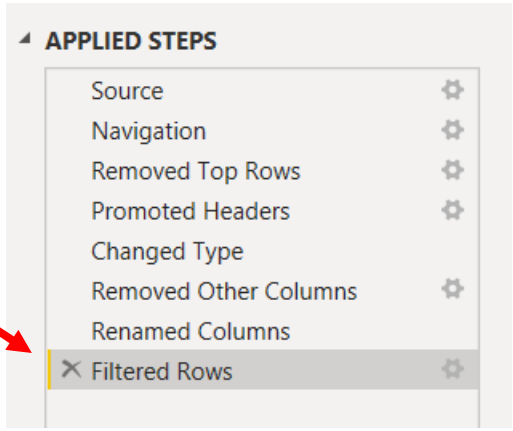
Click on the drop-down in the "Sales Person ID" column heading.



Uncheck "null".

Click "OK".

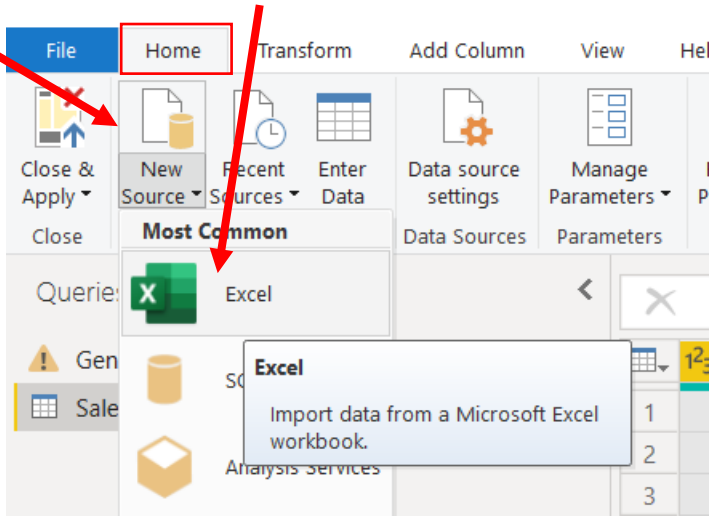
Notice that there are no longer any rows with nulls and Filtered Rows has been added to the "Applied Steps" section.



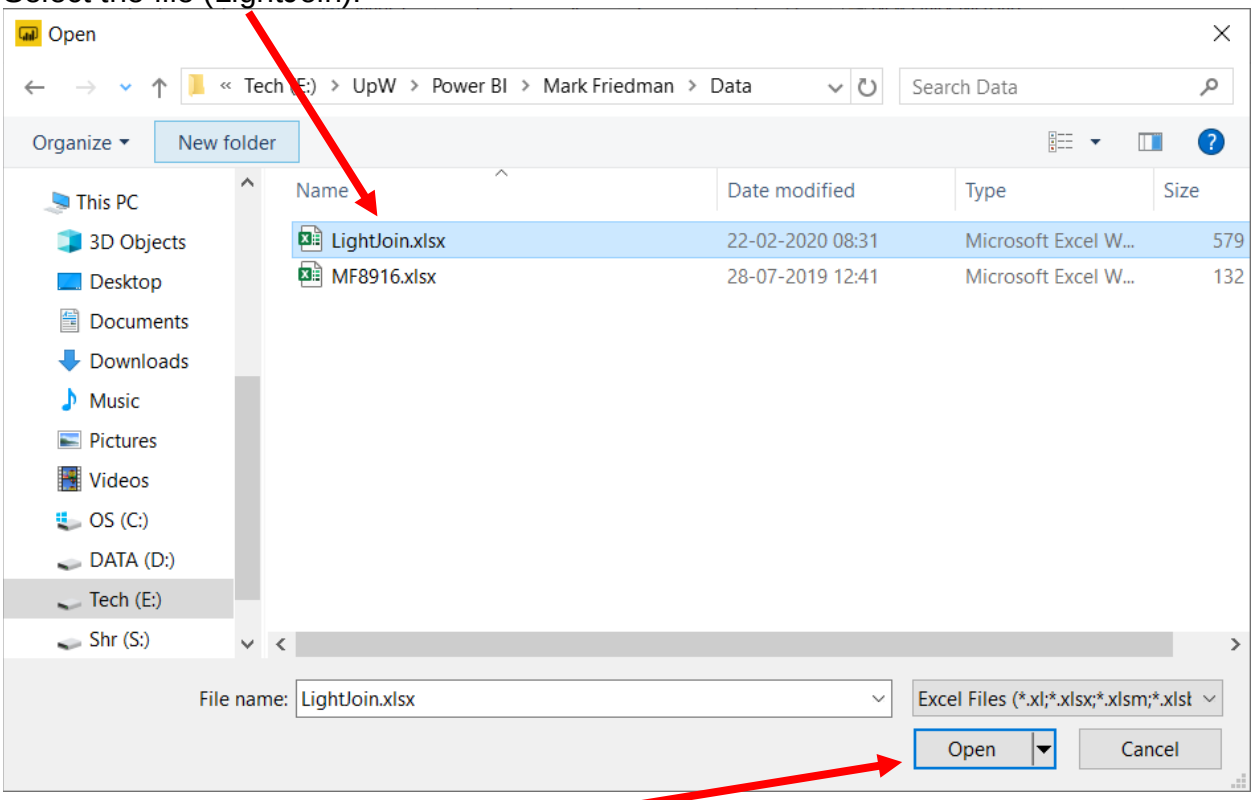
Operation 9: Get Data from New Source

Input the "Comm SalesPerson by Region" from the *LightJoin* Excel data set.

You can import other datasets from the Power Query Editor. Under the "Home" tab, select "New Source". Then select Excel from the drop-down

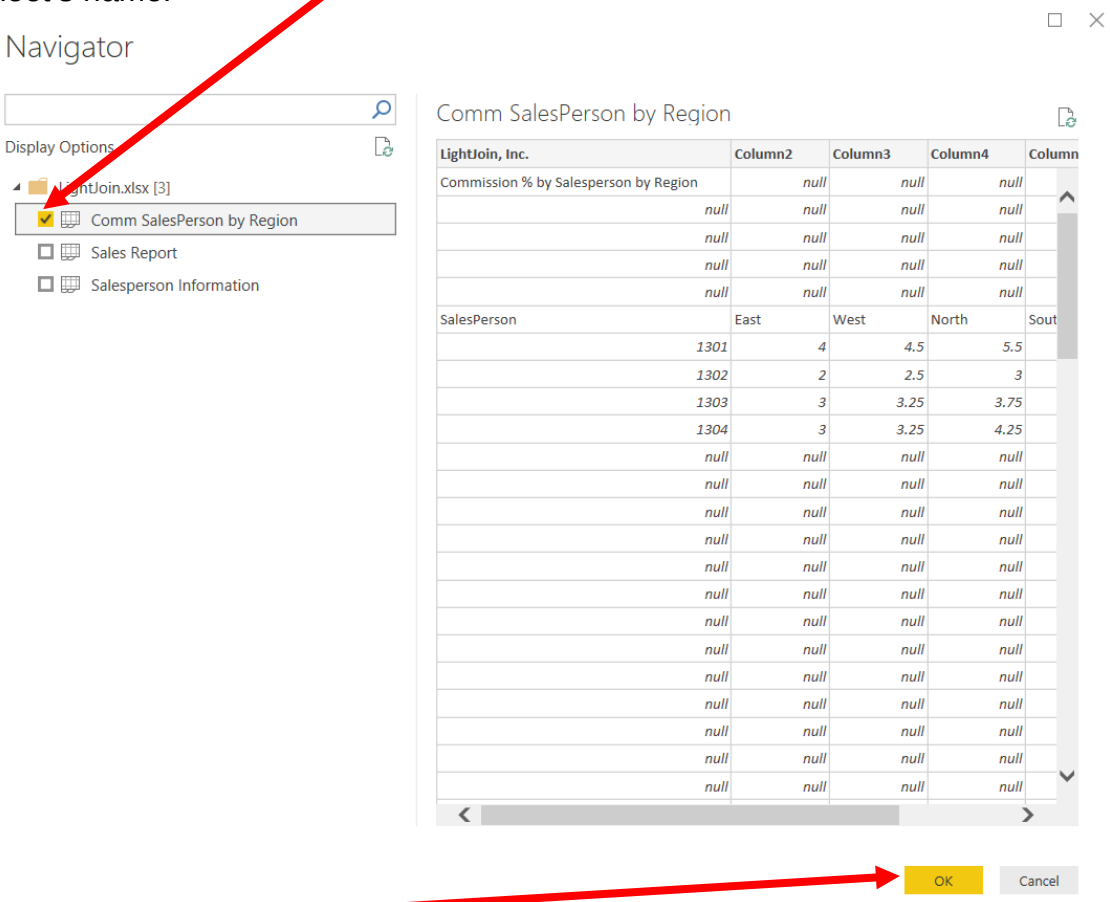


Select the file (LightJoin).



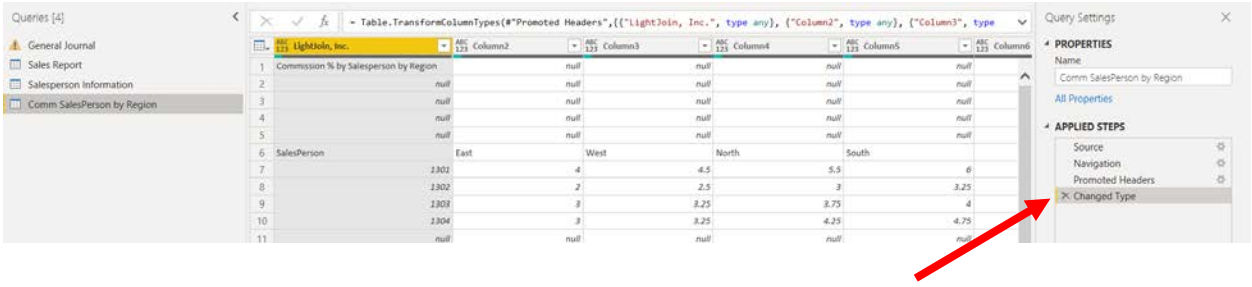
Select "Open".

Double click on "**Comm SalesPerson by Region**" or select the check box to the left of the sheet's name.



Select "OK" and the data gets loaded into the Power Query editor window.

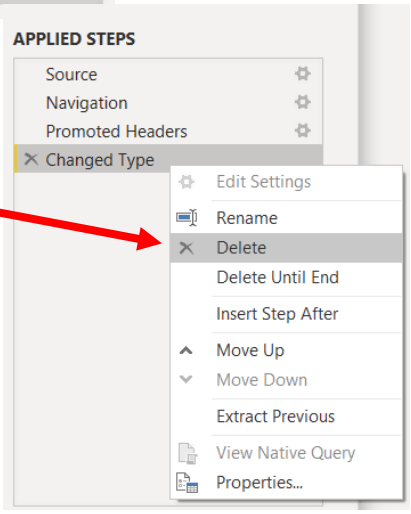
The "Comm SalesPerson by Region" query is now inserted. After a transformation is performed the changes are recoded in the "Applied Steps" section.



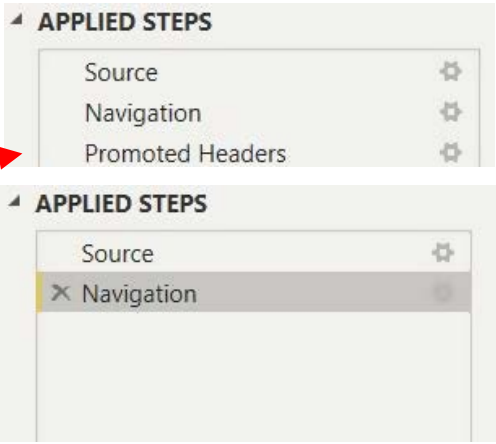
The program automatically added steps and it did not correctly find the row that contains the “Headers”.

Select “Changed Type”.

Right click and select “Delete”.



Delete the step “Promoted Headers”, leaving us with two steps.

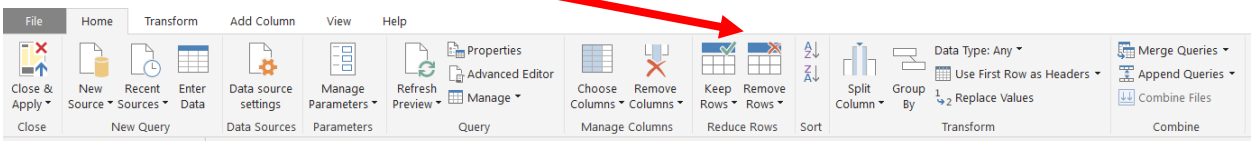


Operation 10: Fix the Headers

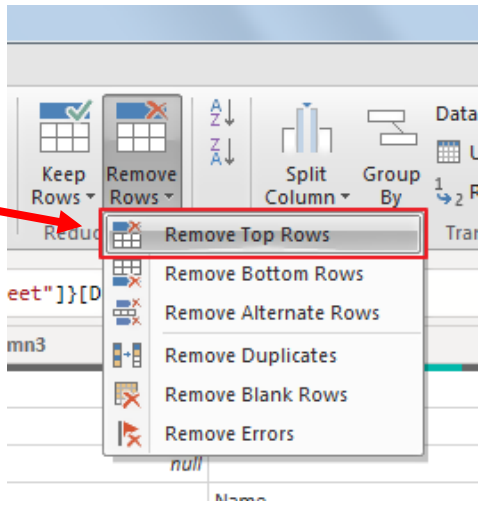
The field headers are in the seventh row of the source document. Remove the top six rows to move the headers to the first row and then make them to the Query Editors' headers.

	Column1	Column2	Column3	Column4	Column5	Column6
1	LightJoin, Inc.	null	null	null	null	
2	Commission % by Salesperson by Region	null	null	null	null	
3	null	null	null	null	null	
4	null	null	null	null	null	
5	null	null	null	null	null	
6	null	null	null	null	null	
7	SalesPerson	East	West	North	South	
8	1301	4	4.5	5.5	6	
9	1302	2	2.5	3	3.25	
10	1303	3	3.25	3.75	4	
11	1304	3	3.25	4.25	4.75	
12	null	null	null	null	null	
13	null	null	null	null	null	
14	null	null	null	null	null	

Select "Remove Rows".

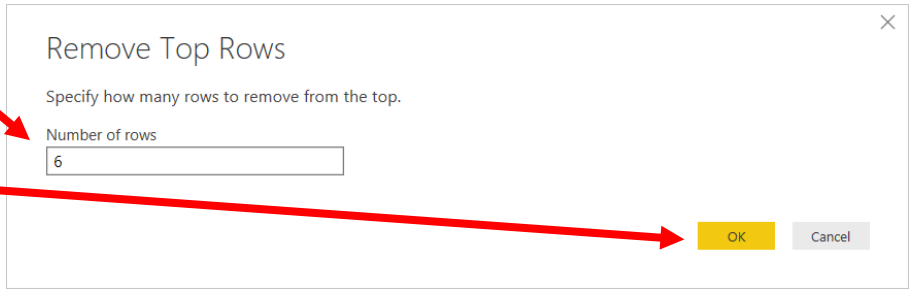


Select "Remove Top Rows".



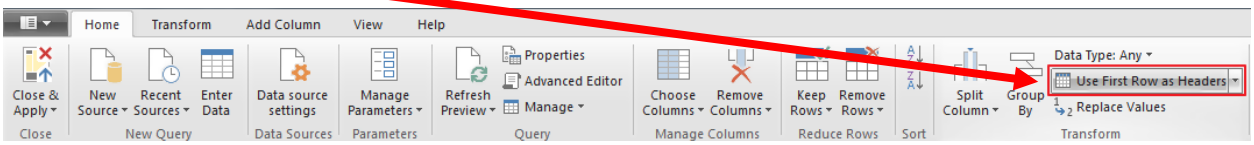
Enter a "6" to remove top six rows.

Then click OK



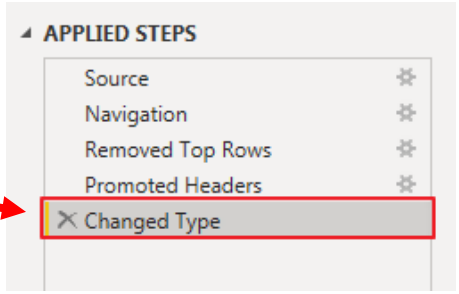
	Column1	Column2	Column3	Column4	Column5	Column6
1	SalesPerson	East	West	North	South	
2	1301	4	4.5	5.5	6	
3	1302	2	2.5	3	3.25	
4	1303	3	3.25	3.75	4	
5	1304	3	3.25	4.25	4.75	

To make the first row in the current data the header, select “Use First Row as Headers”.



	SalesPerson	East	West	North	South	Column6
1	1301	4	4.5	5.5	6	
2	1302	2	2.5	3	3.25	
3	1303	3	3.25	3.75	4	
4	1304	3	3.25	4.25	4.75	
5	null	null	null	null	null	
6	null	null	null	null	null	

After you perform a transformation, the changes are recorded in the “Applied Steps” section. If a step was incorrectly done, just delete the step redo.



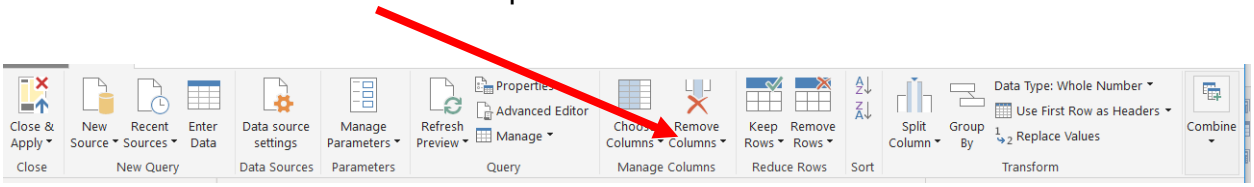
Operation 11: Clean up the columns:

Remove extra columns and rename the columns

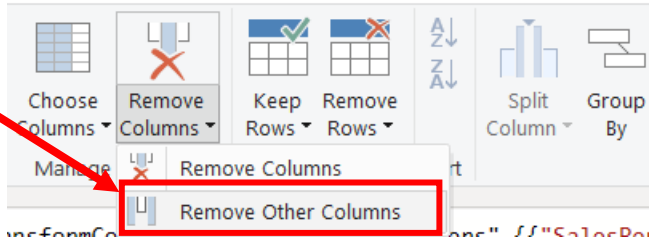
Select the columns “SalesPerson” up until “South” by clicking on the heading “SalesPerson”. Hold down the shift key and at the same time click on the column heading “South”.

	SalesPerson	East	West	North	South	Column6
1	1301	4	4.5	5.5	6	
2	1302	2	2.5	3	3.25	
3	1303	3	3.25	3.75	4	
4	1304	3	3.25	4.25	4.75	
5	null	null	null	null	null	
6	null	null	null	null	null	
7	null	null	null	null	null	

Click on the “Remove Columns” drop-down.

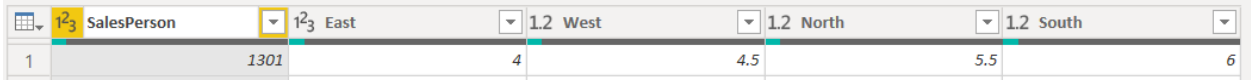


Select “Remove Other Columns”.

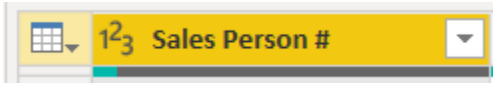


Double click on “SalesPerson” and rename it by typing “Sales Person #” and pressing the enter key.

.



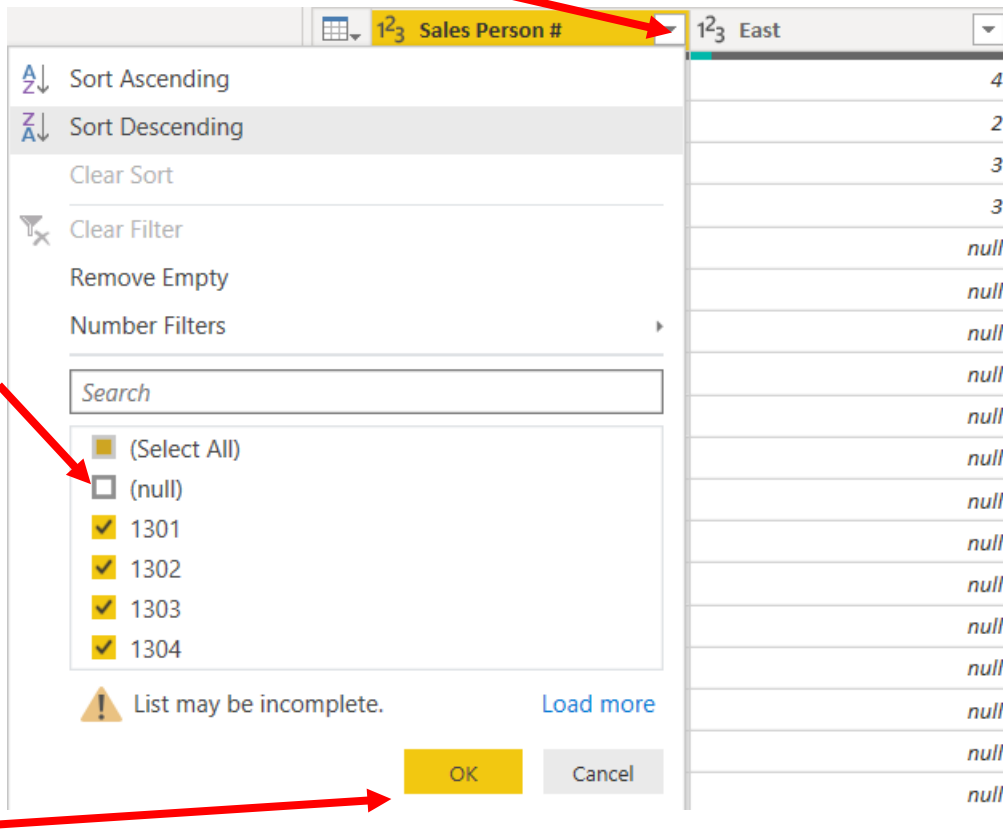
	SalesPerson	East	West	North	South
1	1301	4	4.5	5.5	6



Operation 12 – Exclude rows that do not contain a number for "Sales Person #"

There are several rows that do not contain valid data in the "Sales Person #" column, which can be removed. Nothing is being deleted from the source. This will just exclude records from the final table.

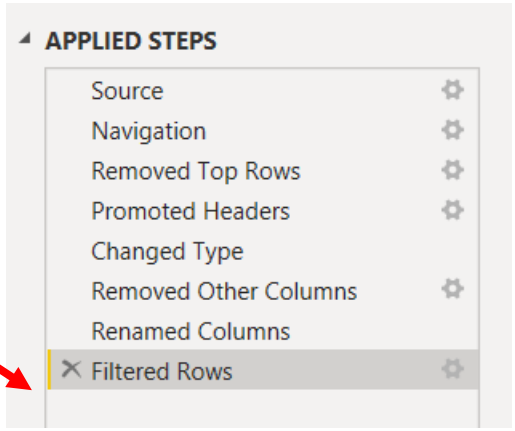
Click on the drop-down in the "Sales Person #" column.



Uncheck "null".

Click "OK".

There are no rows with nulls and a Filtered Rows is added to the Applied steps section.



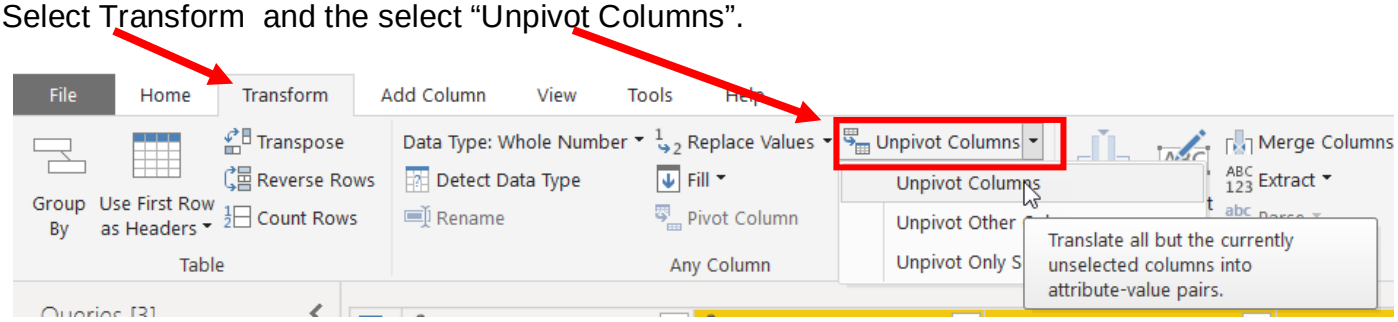
Operation 13: Unpivot columns

Unpivot all the data in the "Region" column producing a table of commission for every combination of "Sales Person #" and "Region".

Select East, West, North and South. You can do that by clicking on East, then press Shift and South together

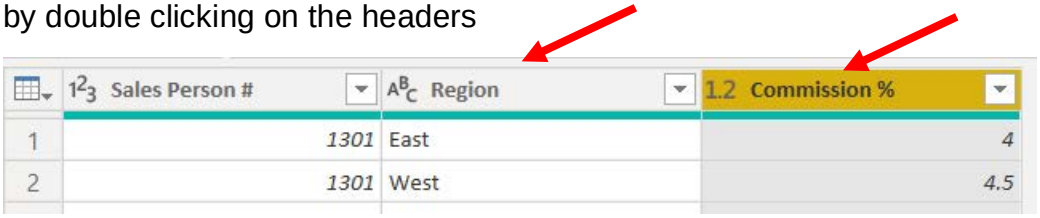
	Sales Person #	East	West	North	South
1	1301	4	4.5	5.5	6
2	1302	2	2.5	3	3.25
3	1303	3	3.25	3.75	4
4	1304	3	3.25	4.25	4.75

Select Transform and the select "Unpivot Columns".



	Sales Person #	Attribute	Value
1	1301	East	4
2	1301	West	4.5
3	1301	North	5.5
4	1301	South	6
5	1302	East	2
6	1302	West	2.5
7	1302	North	3
8	1302	South	3.25
9	1303	East	3
10	1303	West	3.25
11	1303	North	3.75
12	1303	South	4
13	1304	East	3
14	1304	West	3.25
15	1304	North	4.25
16	1304	South	4.75

Rename the columns “Attribute” & “Value” to “Region” & “Commission %” respectively by double clicking on the headers



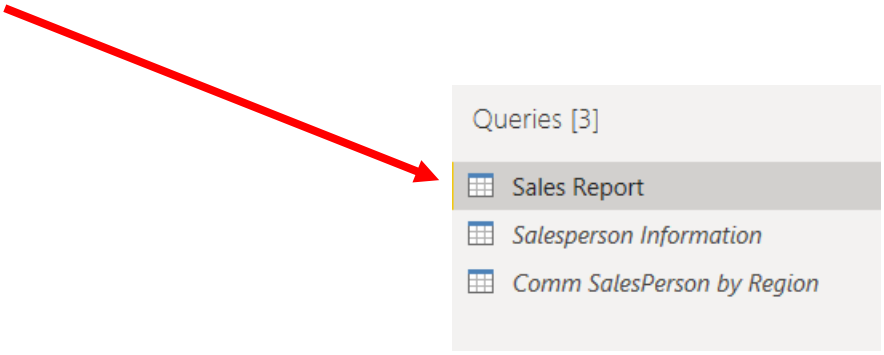
	Sales Person #	Region	Commission %
1	1301	East	4
2	1301	West	4.5

The data in the “Commission %” column is a decimal and you will use it accordingly while computing the Commission for each Salesperson.

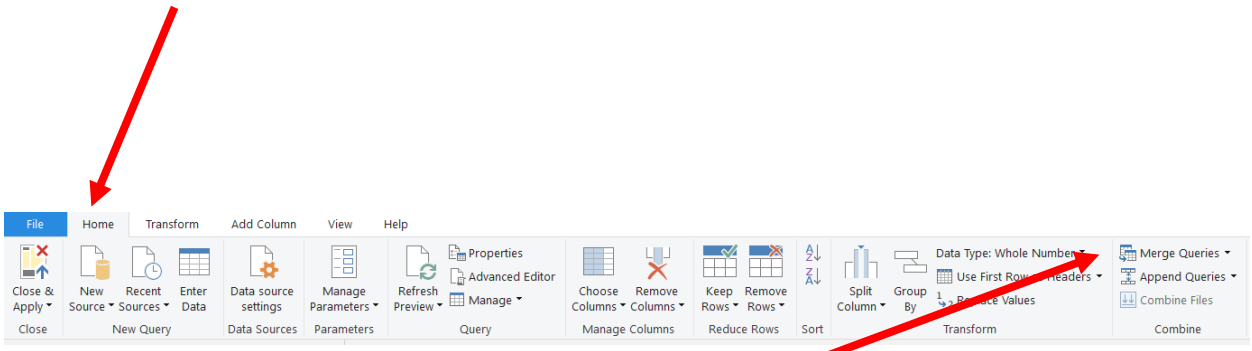
Operation 14: Merge datasets.

Combining the data from the "Sales Report" query with the "Salesperson Information" query.

We will merge the data sets two at a time. Data Set 1 mergers with Data Set 2 to form Data Set 1&2. Data Set 1&2 is then merged with Data Set 3 to form Data Set 1&2&3. Start with the "Sales Report" query by navigating to "Queries and selecting "Sales Report".

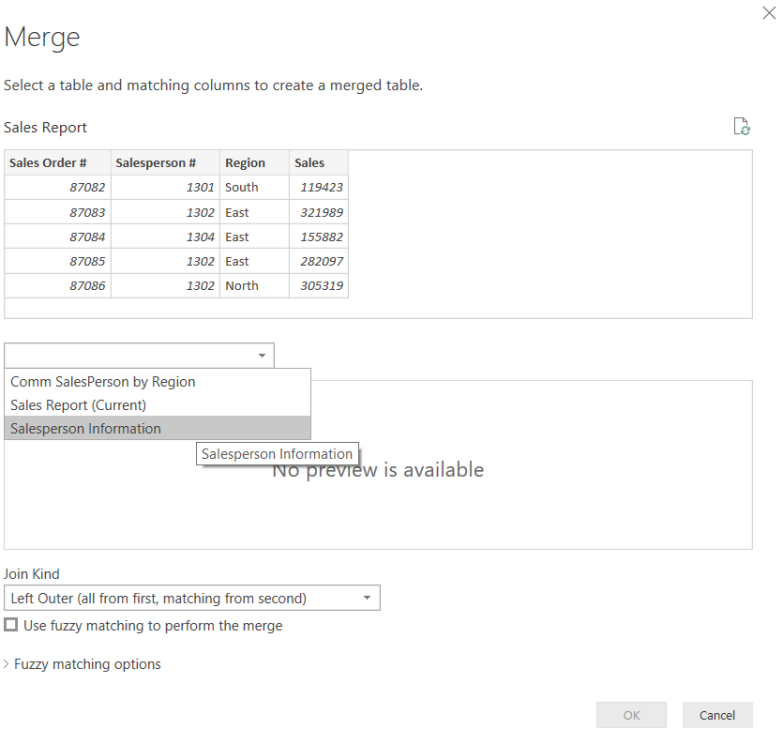


On the "Home" tab



select "Merge Queries".

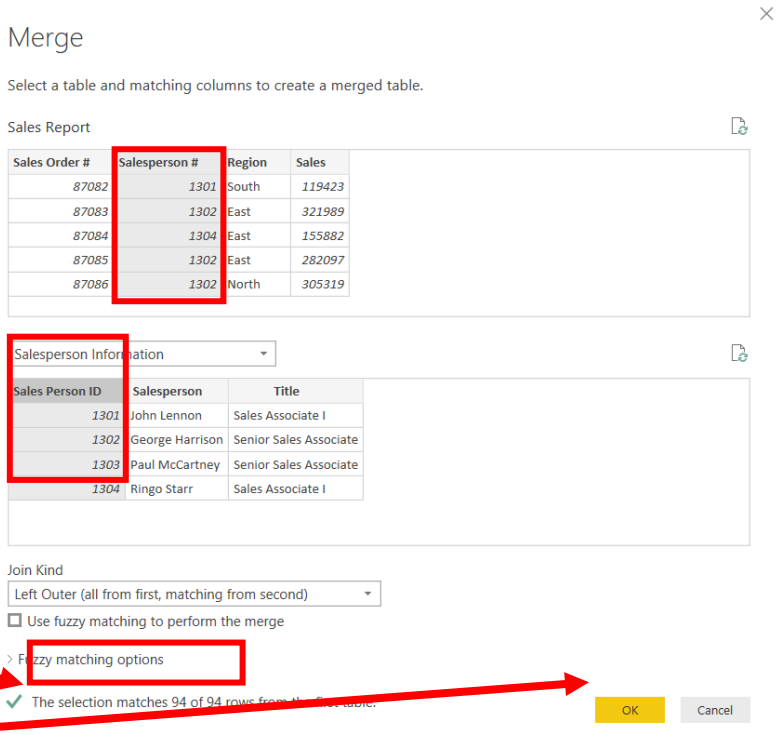
By default, the current query will be the first table.



Select the second table, “Salesperson Information” from the drop-down.

Make the selection of the common field(s) between the two tables.

In this case, it would be “Salesperson #” from the first dataset

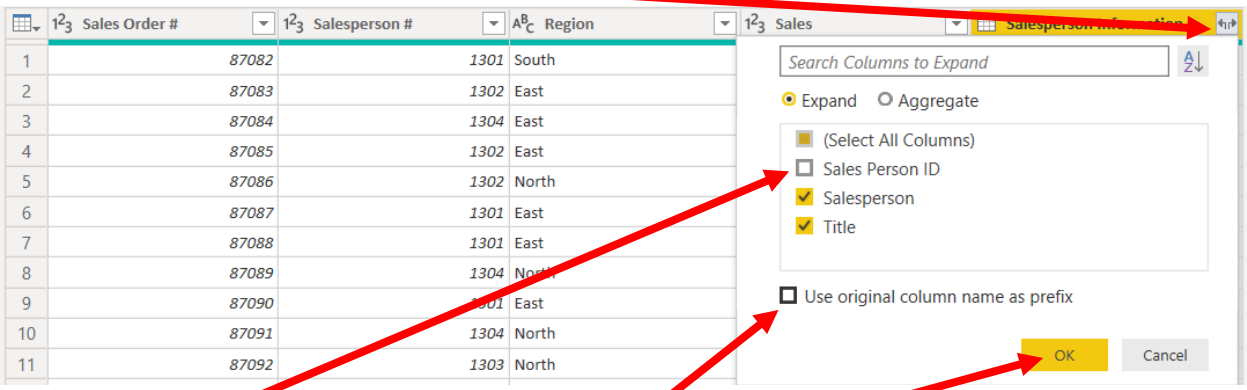


and “Sales Person ID” from the second dataset.

The number of matches is reported, 94 of 94.

Click OK.

This will add a new column called “Salesperson Information”. Click on the button next to the header.



	Sales Order #	Salesperson #	Region
1	87082	1301	South
2	87083	1302	East
3	87084	1304	East
4	87085	1302	East
5	87086	1302	North
6	87087	1301	East
7	87088	1301	East
8	87089	1304	North
9	87090	1301	East
10	87091	1304	North
11	87092	1303	North

Uncheck “Sales Person ID” and uncheck “Use original column name as prefix” then click OK.

This will load the two new columns “Salesperson” and “Title”.

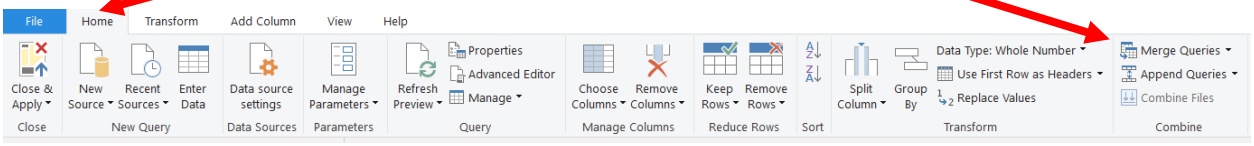
	Sales Order #	Salesperson #	Region	Sales	Salesperson	Title
1	87082	1301	South	119423	John Lennon	Sales Associate I
2	87083	1302	East	321989	George Harrison	Senior Sales Associate
3	87085	1302	East	282097	George Harrison	Senior Sales Associate
4	87086	1302	North	305319	George Harrison	Senior Sales Associate
5	87084	1304	East	155882	Ringo Starr	Sales Associate I
6	87087	1301	East	111512	John Lennon	Sales Associate I
7	87088	1301	East	308051	John Lennon	Sales Associate I

Operation 15: Merge datasets.

Combining the data from the "Sales Report" query and the "Comm SalesPerson by Region" query.

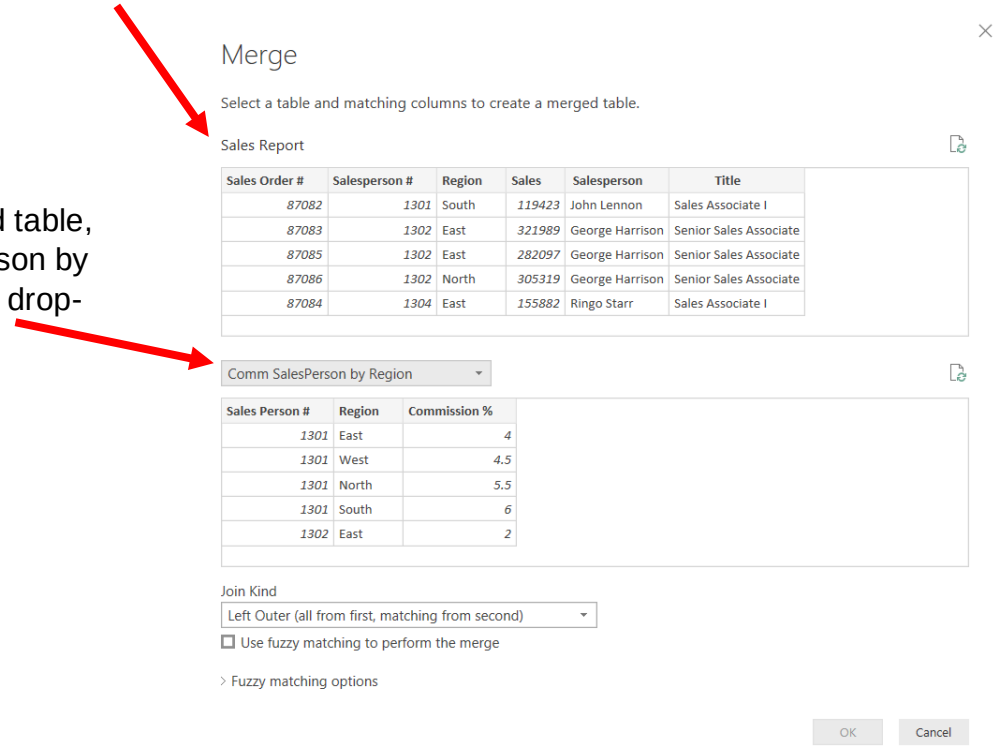
The unique key that is common to both queries is a combination of "Sales Person ID" and "Region".

To initiate the join, on the Home tab, select "Merge Queries" .



By default, the current query, "Sales Report", will be the first table.

Select the second table, "Comm SalesPerson by Region", from the drop-down.



To select two columns as the joining condition, first select the first column then Ctrl+ Click on the second column. The order of selection is also very important. For this use case you will select the "Salesperson ID" first followed by "Region".

Select “Salesperson #” and “Region” from the first table.

Sales Report

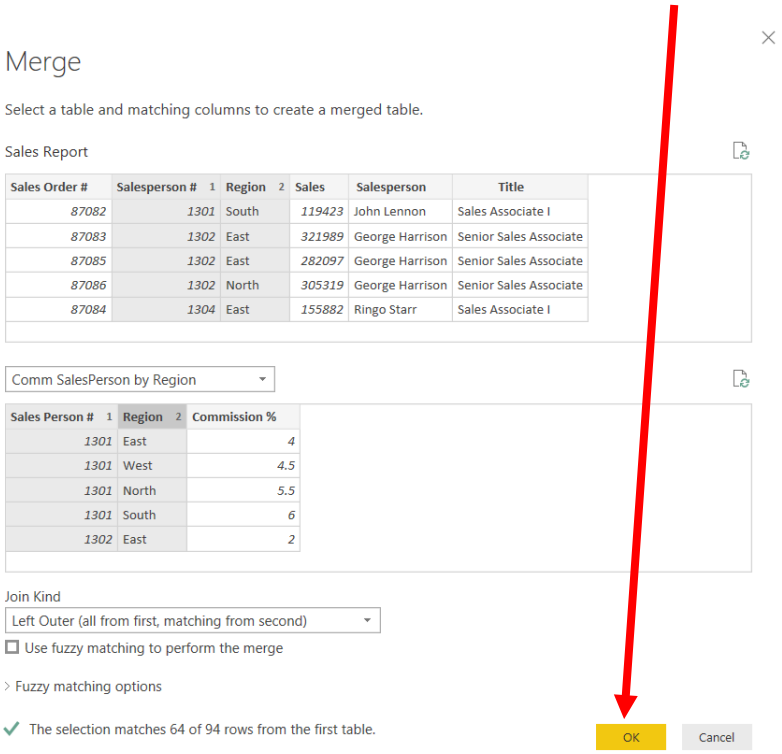
Sales Order #	Salesperson # 1	Region 2	Sales	Salesperson	Title
87082	1301	South	119423	John Lennon	Sales Associate I
87083	1302	East	321989	George Harrison	Senior Sales Associate
87085	1302	East	282097	George Harrison	Senior Sales Associate
87086	1302	North	305319	George Harrison	Senior Sales Associate
87084	1304	East	155882	Ringo Starr	Sales Associate I

From the second table select “Sales Person #” and “Region”.

Comm SalesPerson by Region

Sales Person # 1	Region 2	Commission %
1301	East	4
1301	West	4.5
1301	North	5.5
1301	South	6
1302	East	2

Once the selection from both tables is completed, Click OK.



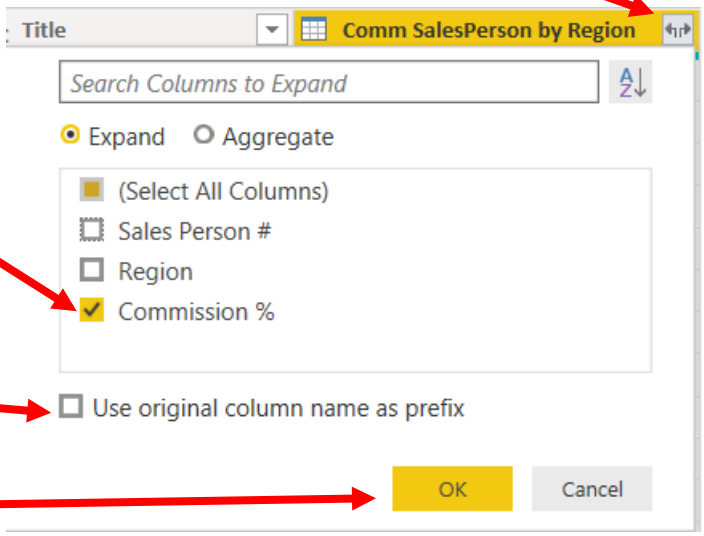
This will add a new column called “Comm SalesPerson by Region”.

Click on the button next to the header.

Uncheck all columns except “Commission %” and

uncheck “Use original column name as prefix”,

then click OK



This will load the new column “Commission %”.

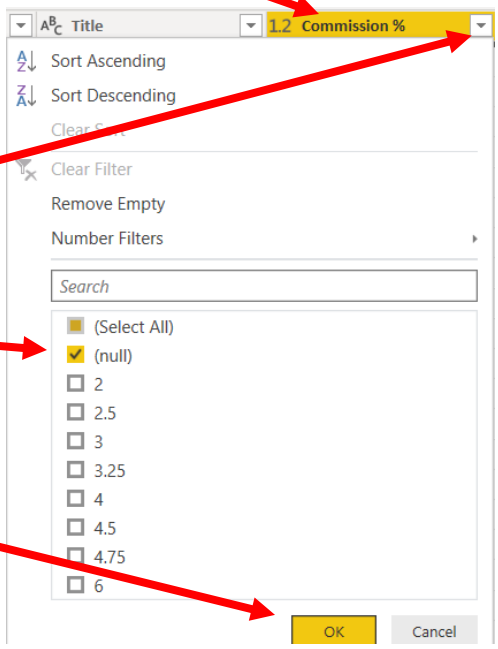
	Salesperson #	Region	Sales	Salesperson	Title	Commission %
1	7082	1301 South	119423	John Lennon	Sales Associate I	6
2	7087	1301 East	111512	John Lennon	Sales Associate I	4
3	7088	1301 East	308051	John Lennon	Sales Associate I	4
4	7090	1301 East	163360	John Lennon	Sales Associate I	4
5	7083	1302 East	321989	George Harrison	Senior Sales Associate	2
6	7085	1302 East	282097	George Harrison	Senior Sales Associate	2
7	7096	1302 East	160356	George Harrison	Senior Sales Associate	2
8	7094	1301 West	243896	John Lennon	Sales Associate I	4.5
9	7086	1302 North	305319	George Harrison	Senior Sales Associate	null
10	7084	1304 East	155882	Ringo Starr	Sales Associate I	3
11	7093	1304 East	203018	Ringo Starr	Sales Associate I	3
12	7089	1304 North	96069	Ringo Starr	Sales Associate I	null

There are certain “Commission %” values that contain “null”.

Operation 16: Review the "Commission %" Column

Some of the rows do not have a valid result in the "Commission %" column. There must be differences between the data from the two queries that inhibit a match. Generally, we would look for different spellings or spaces.

We can review the "Commission %" column to determine which rows have nulls. Select the "Commission %" column.

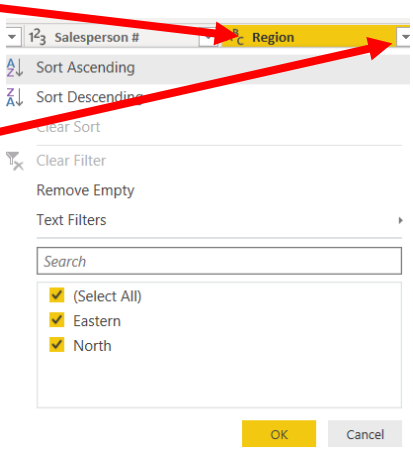


Left click on the drop-down

select only the "null" value

And click OK.

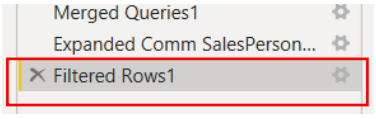
Select the "Region" column.



Left click on the drop-down to apply the filter.

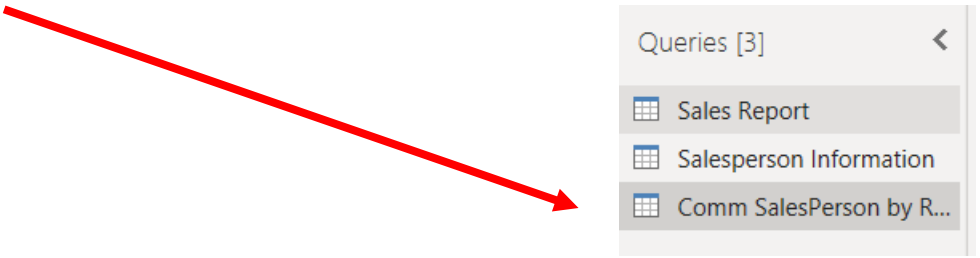
The values present are Eastern and North. There is something that caused those rows not to be joined.

Delete the last "Filtered Rows 1" step



The other query with which we are attempting to join is “Comm SalesPerson by Region”.

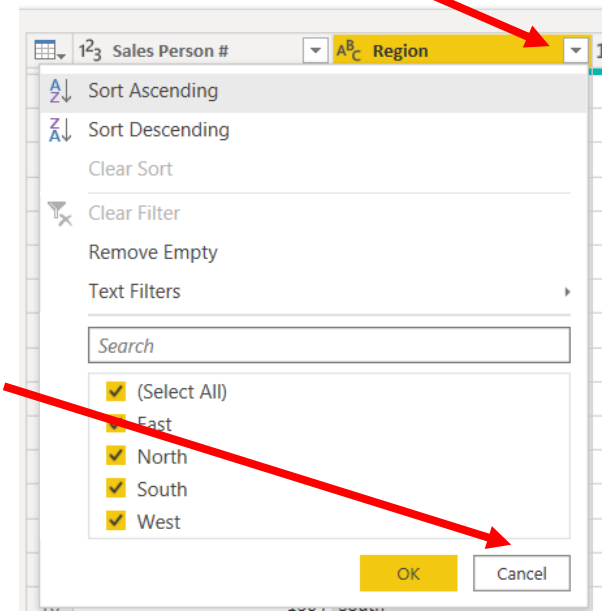
Switch to the “Comm SalesPerson by Region” query.



Select the “Region” drop-down and review the unique values.

There are only four unique values and “Eastern” is not one of them. “Eastern” which appears in “Sales Report” query should have been coded as “East”.

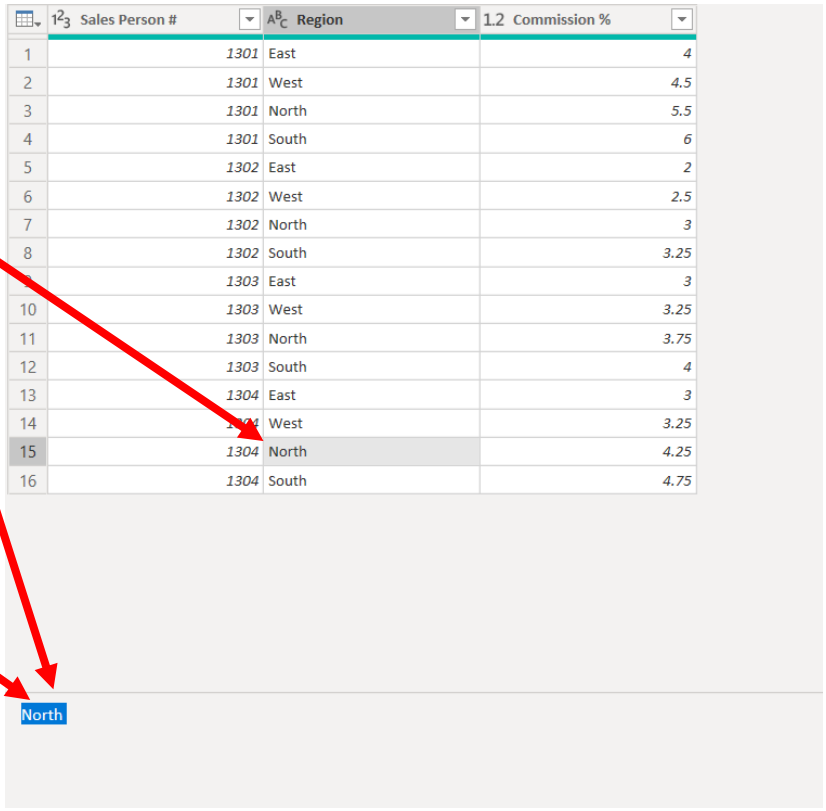
Select Cancel to close the “Region” drop-down.



Before we leave the “Comm SalesPerson by Region” query, there was a problem with the data “North” in the column “Region”.

Select one of the “North” values and the selected value is shown at the bottom.

Double click on the word to select the entire piece of data.



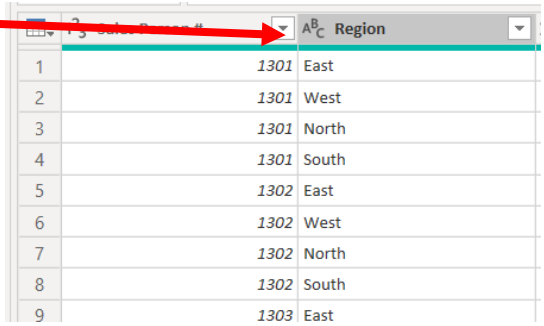
	Sales Person #	Region	Commission %
1	1301	East	4
2	1301	West	4.5
3	1301	North	5.5
4	1301	South	6
5	1302	East	2
6	1302	West	2.5
7	1302	North	3
8	1302	South	3.25
9	1303	East	3
10	1303	West	3.25
11	1303	North	3.75
12	1303	South	4
13	1304	East	3
14	1304	West	3.25
15	1304	North	4.25
16	1304	South	4.75

Notice that there is an extra space highlighted along with the word “North”

One data set contains “North” and the other data set contains “North “,with a space. The extra space in the “Comm SalesPerson by Region” query prevents the rows from being joined.

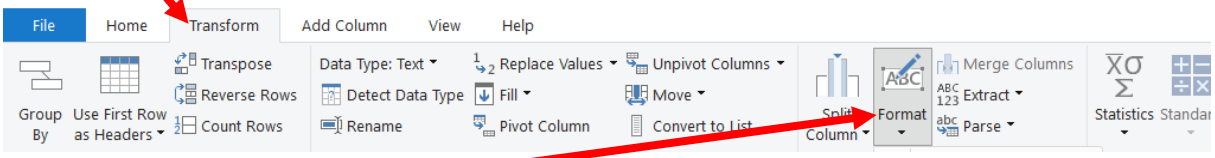
.

Select “Region” column.



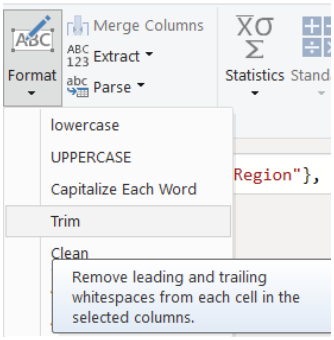
	Region
1	East
2	West
3	North
4	South
5	East
6	West
7	North
8	South
9	East

Select Transform.



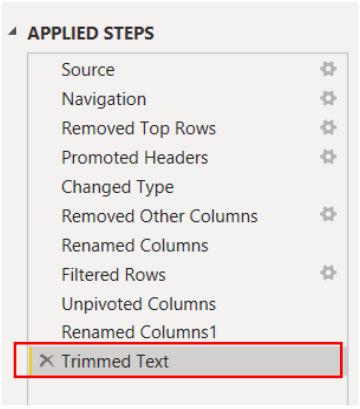
Select Format.

Select Trim.

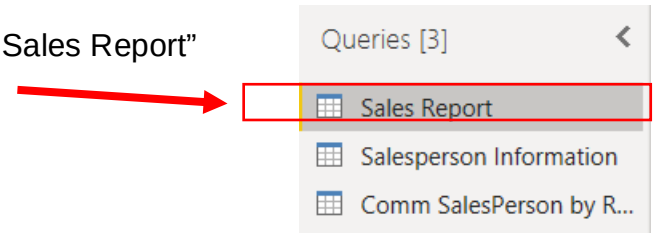


This will remove the extra spaces in the text.

The new step is automatically recorded in the Applied Steps.

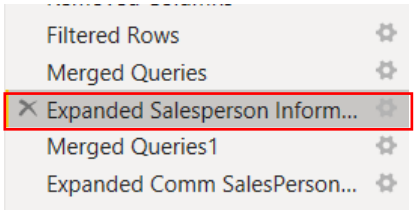


Return to “Sales Report” query.



Before the two data sets are merged the column “Region” must be corrected by replacing the value “Eastern” with “East”.

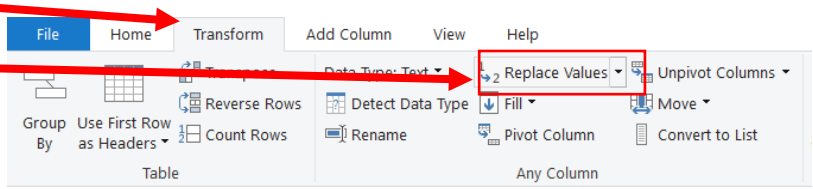
Select the **Expanded Salesperson Information** step.



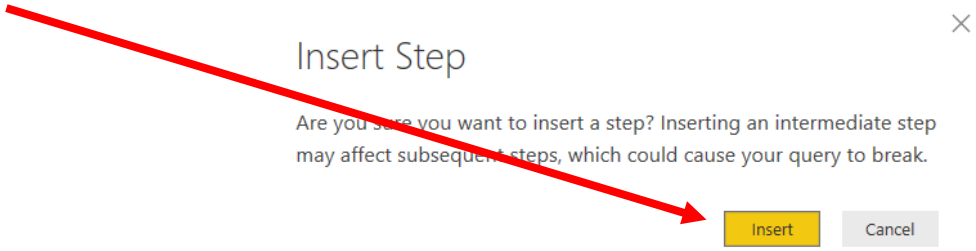
Select the column “Region”

	Sales Order #	Salesperson #	Region	Sales
1	87082	1301	South	119423
2	87083	1302	East	321989
3	87085	1302	East	282097
4	87086	1302	North	305319
5	87084	1304	East	155882
6	87087	1301	East	111512
7	87088	1301	East	308051
8	87089	1304	North	96069

Select Transform and then select Replace Values.

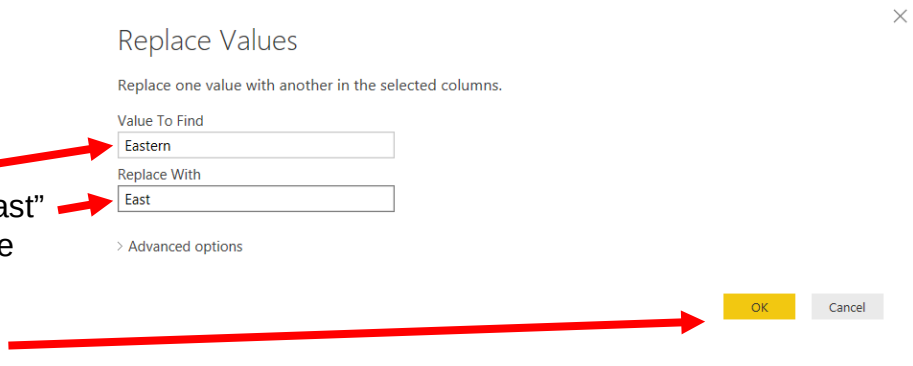


Select insert to confirm that you want to proceed with inserting a step between already existing steps.

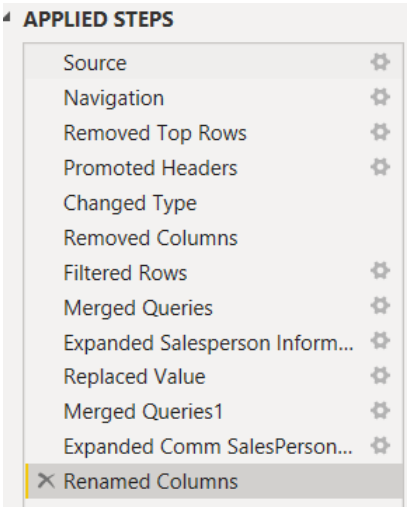


Type “Eastern” as the “Value to Find” and “East” as the value to “Replace With”.

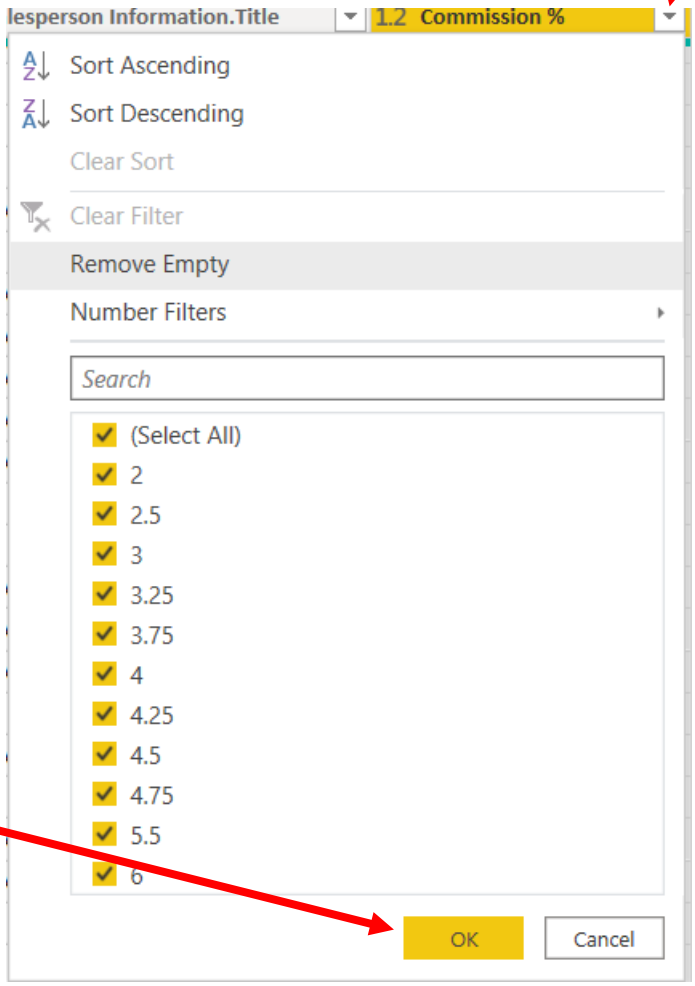
Select OK to confirm.



This will replace all the “Eastern” values with “East”.



Left click on the “Commission %” drop-down arrow to verify that all the null values have been eliminated and that “Commission %” has correctly populated all the rows.



Select OK.

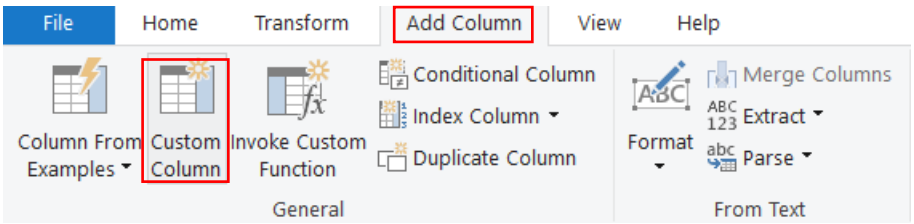
.

Operation 17: Creating calculation column.

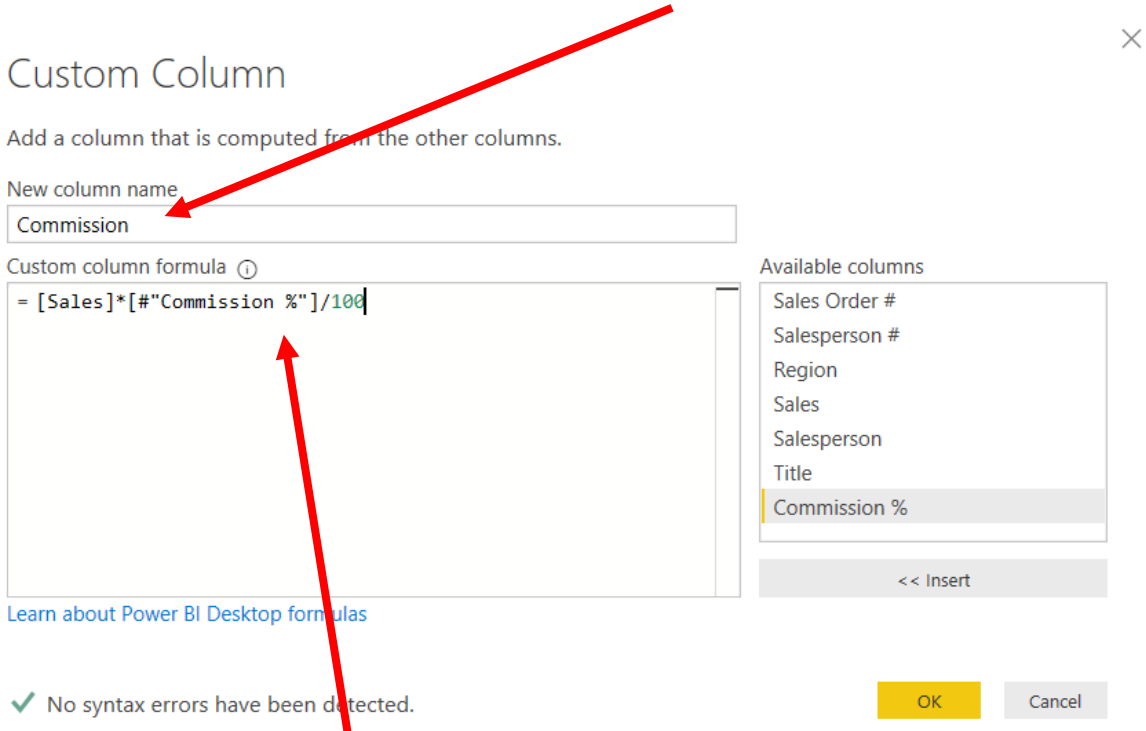
Create a Commission column based on the "Commission %" and Sales columns

Commission can be calculated as Sales * Commission % / 100. To do this operation add a column.

Click on Custom Column under Add Column tab



In the pop-up give the new column a name like "Commission"



Then enter the following formula in the Custom Column formula section:

[Sales]*[#"Commission %"]/100

Then Click OK.

This will add a **Commission** Column at the end of the dataset.

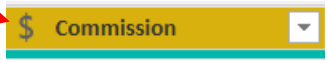
Right click on the column header.

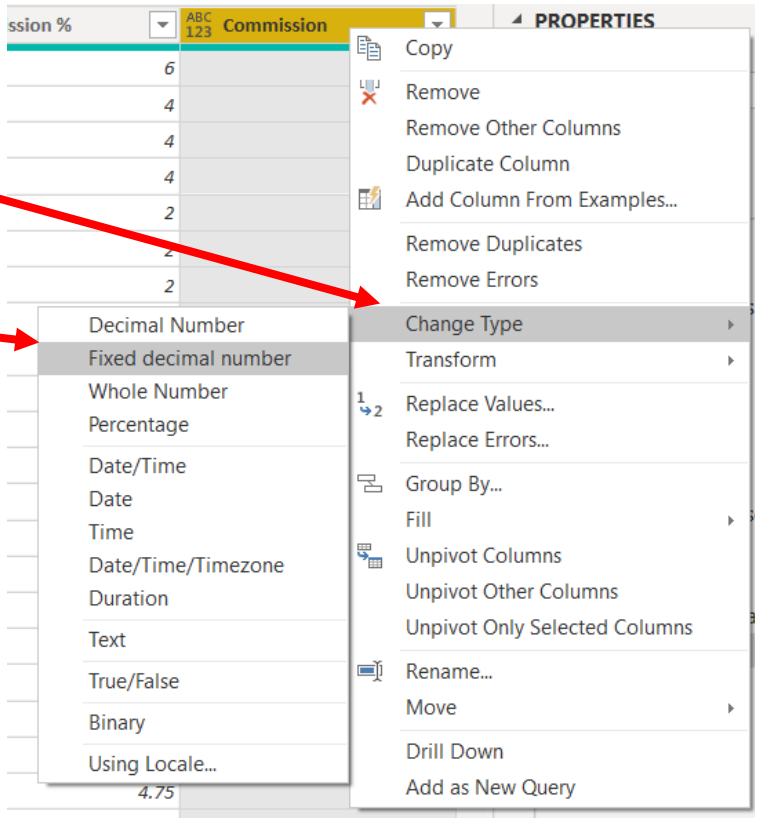
Select Change Type.

Then, select Fixed decimal number.

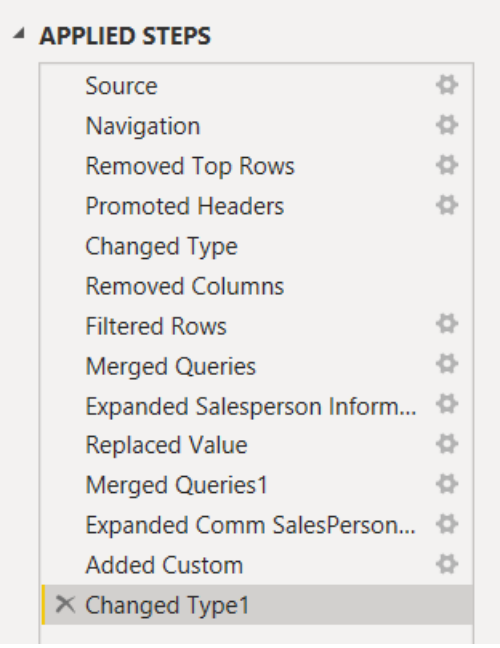
This will change the data type of the column to have dollar values.

The updated column header would indicate the $ sign next to the column name indicating that the change is effective.





All the steps are captured in Applied Steps.



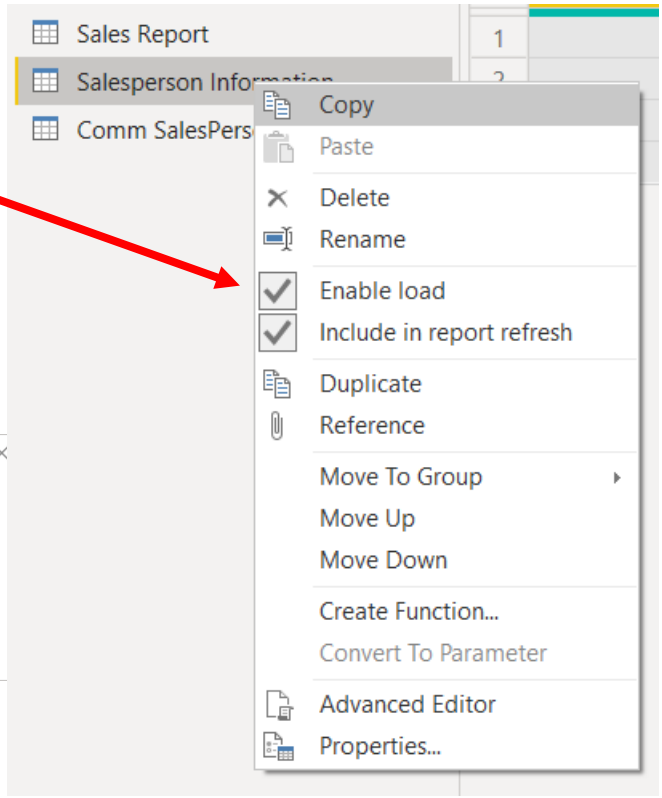
Operation 18: Data Load

Loading only relevant data to the front end.

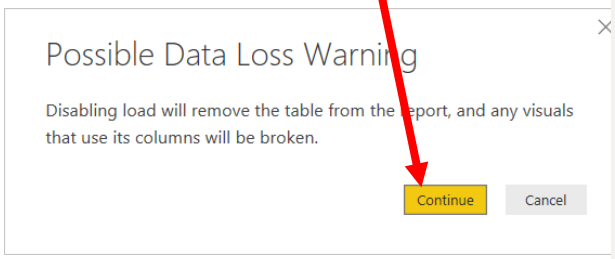
Now all the information needed from the three datasets is combined into the Sales Report data set. The other 2 datasets should not be loaded to the Power BI front end.

To disable a load, right click on the query you want to disable.

Uncheck Enable load



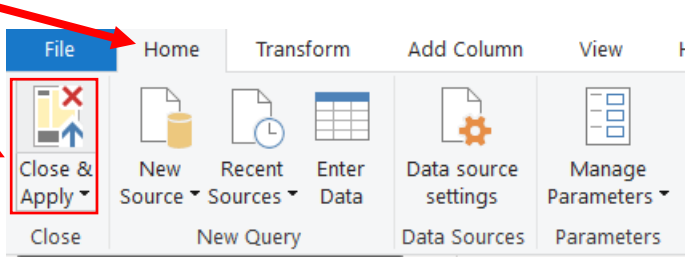
You might see a warning message indicating that there is a possibility of data loss, click Continue.



Repeat the same procedure of disabling load for “Comm SalesPerson by Region” dataset.

Select Home, and then

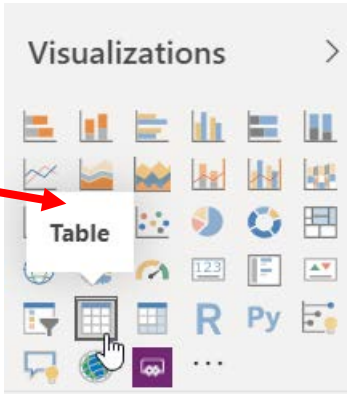
Select Close & Apply.



This loads the “Sales Report” data onto the front end of Power BI.

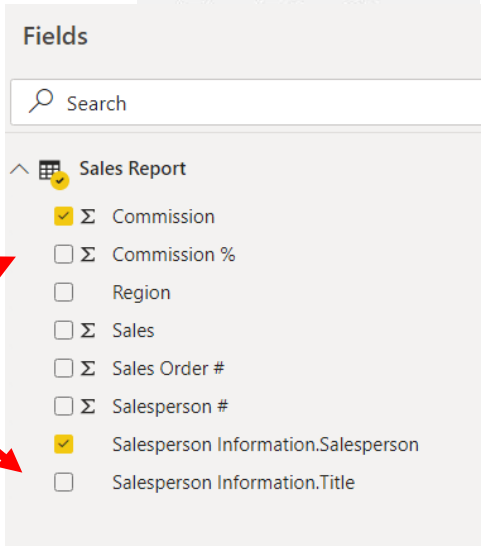
Operation 19: Create a "Table Visual"

Click on the Table icon under the Visualization section to add a table.



The order in which you select the fields determines their location in the Table. First select the **Salesperson field**

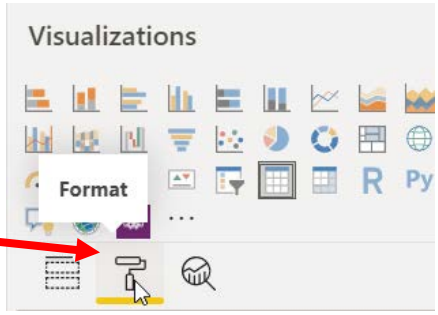
and then select the **Commission** field.



This creates a Total Commission for Salesperson report.

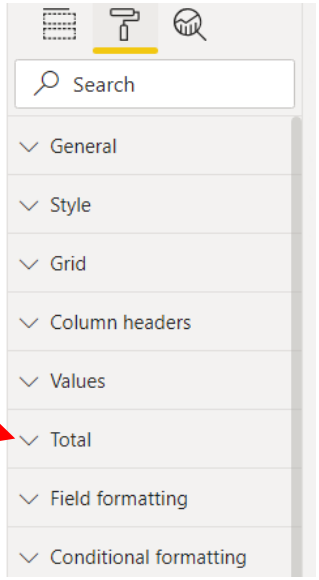
Salesperson	Commission
George Harrison	$90,935.35
John Lennon	$2,26,149.85
Paul McCartney	$1,27,193.51
Ringo Starr	$2,74,189.60

After adding the table, you can do some formatting changes. Select the table and click on the Format tool.

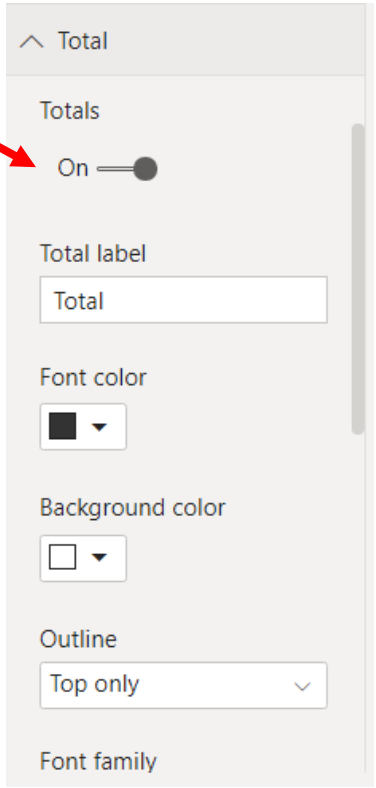


With this, you will be able to edit the various properties of the table:

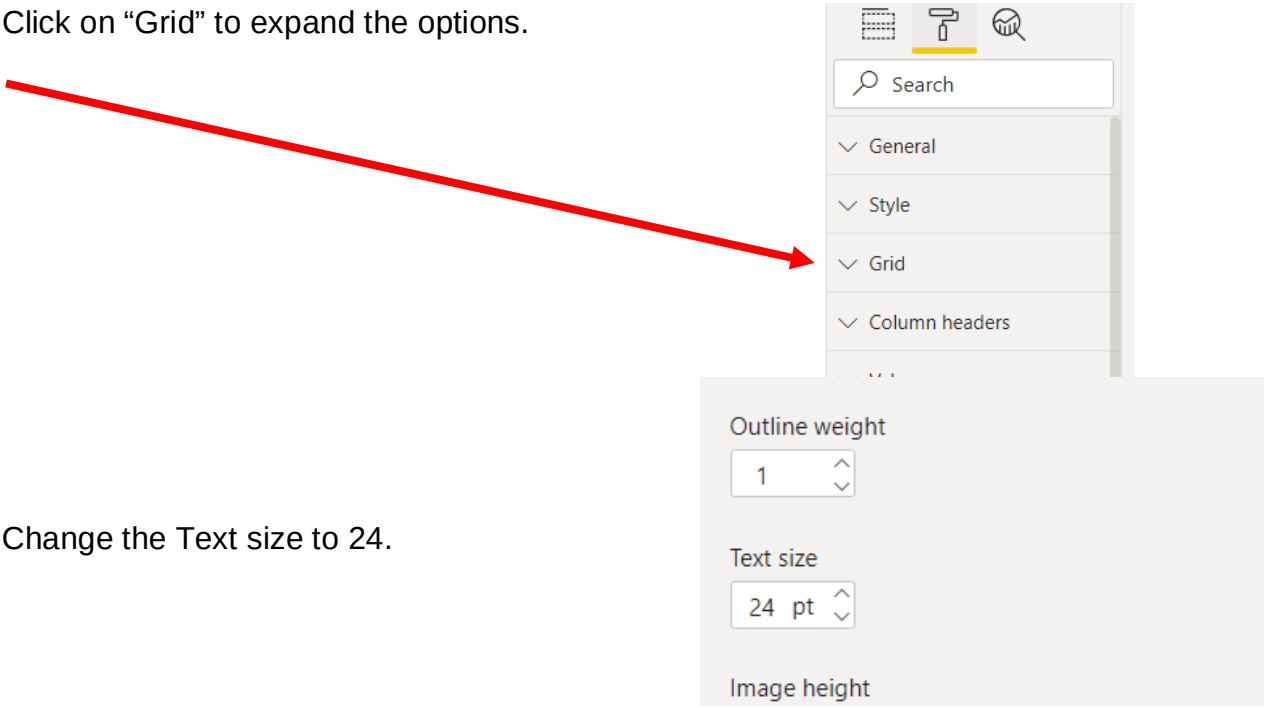
Click on “Total” to expand the same



Toggle “On” under Totals to “Off”.

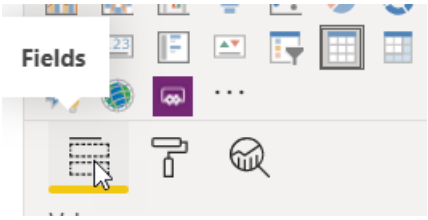


Click on “Grid” to expand the options.

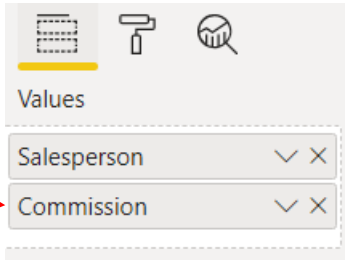


Change the Text size to 24.

Return to Fields section by clicking on the Fields icon next to formatting.



You can double click on any field to rename the field.



Double click on Commission
and rename it “Commission Expense”
then click Enter.

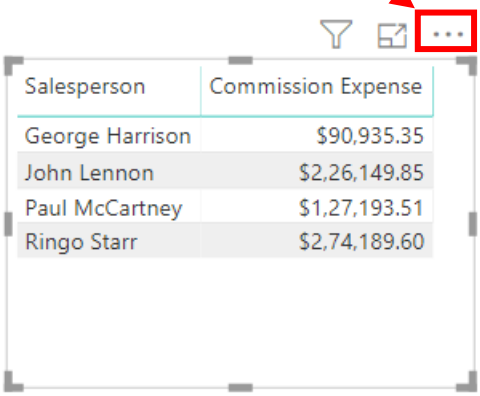
And then rename Salesperson.

The update table should look like the following:

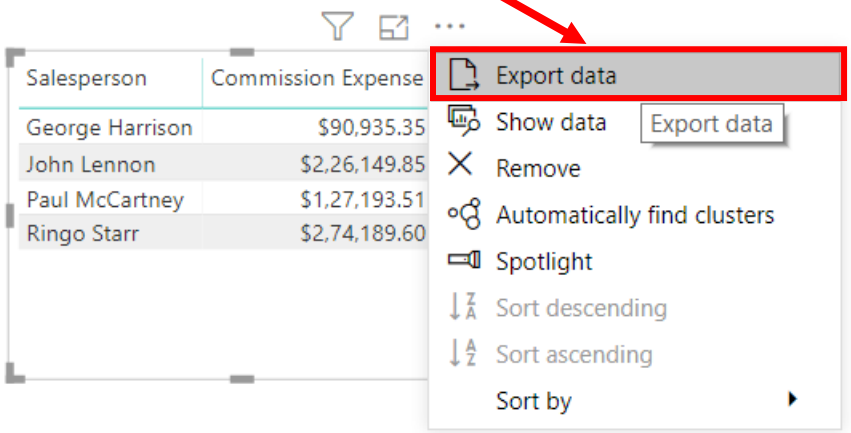
Salesperson	Commission Expense
George Harrison	$90,935.35
John Lennon	$226,149.845
Paul McCartney	$127,193.505
Ringo Starr	$274,189.5975

Operation 20: Exporting data to Excel

Select the table and notice that you get **More Options** indicated by 3 dots (**…**) on the top right or the bottom right of the table.

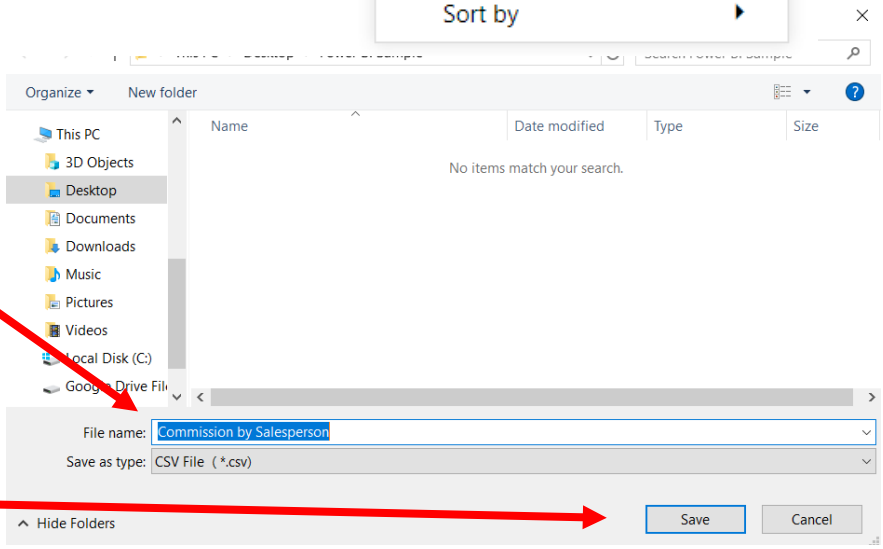


Click on the More Options and select “Export Data”.



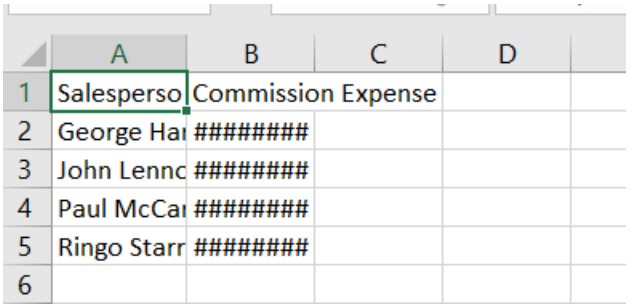
Add the name of the file.

Select Save



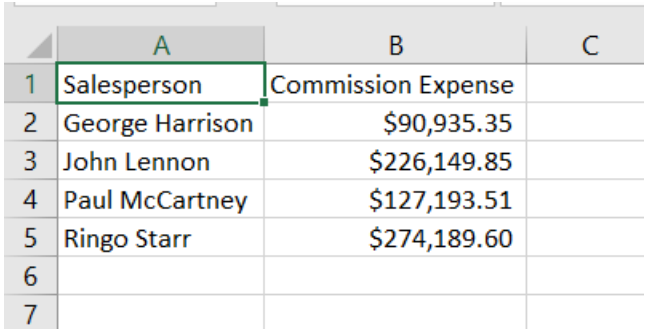
Navigate to the location and double click to open the CSV file you just saved.

You'll notice that the data from the visual is exported into CSV.



	A	B	C	D
1	Salesperso	Commission Expense		
2	George Hai	########		
3	John Lennc	########		
4	Paul McCai	########		
5	Ringo Starr	########		
6				

Change the columns' widths and formats.

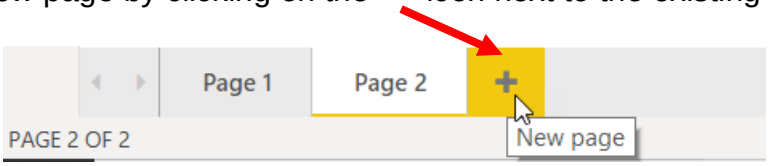


	A	B	C
1	Salesperson	Commission Expense	
2	George Harrison	$90,935.35	
3	John Lennon	$226,149.85	
4	Paul McCartney	$127,193.51	
5	Ringo Starr	$274,189.60	
6			
7			

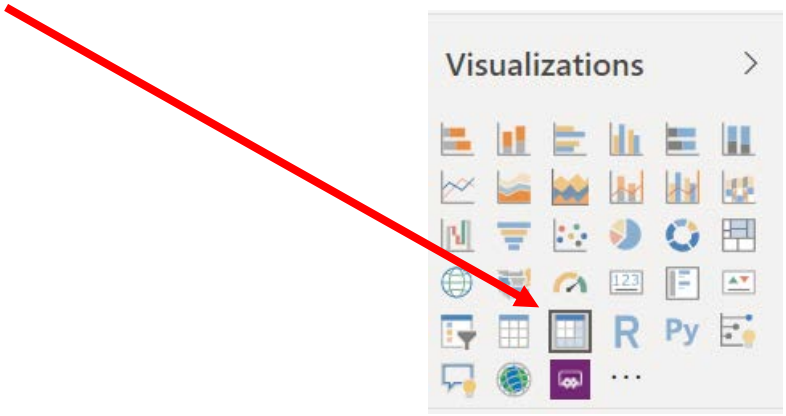
Save the file as an Excel file by using File/Save As, and then select the location and the appropriate name.

Operation 21: Create a Matrix visual

Add a new page by clicking on the "**+**" icon next to the existing pages at the bottom.



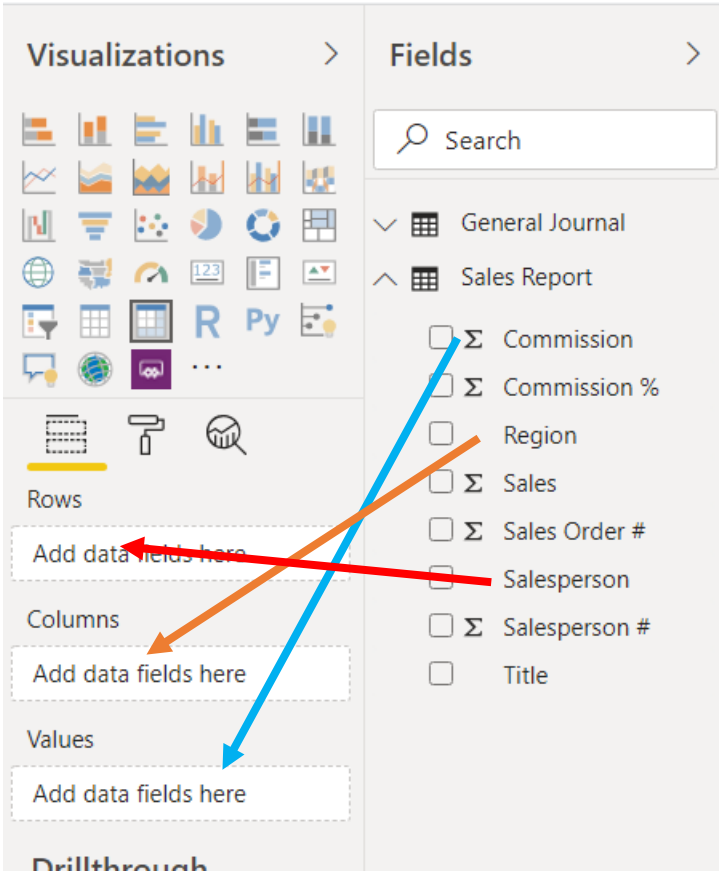
Click on the Matrix icon under the Visualization section to add a Matrix.



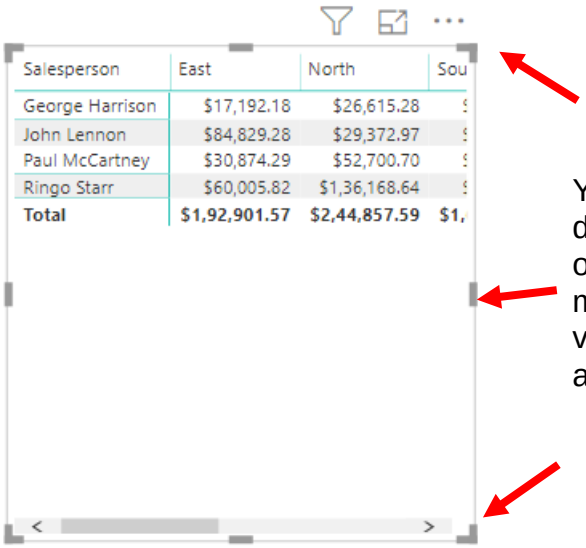
Once the visual is inserted, drag and drop

1. **Salesperson to Rows**
2. **Region to Columns**
3. **Commission to Values**

as indicated in the diagram.



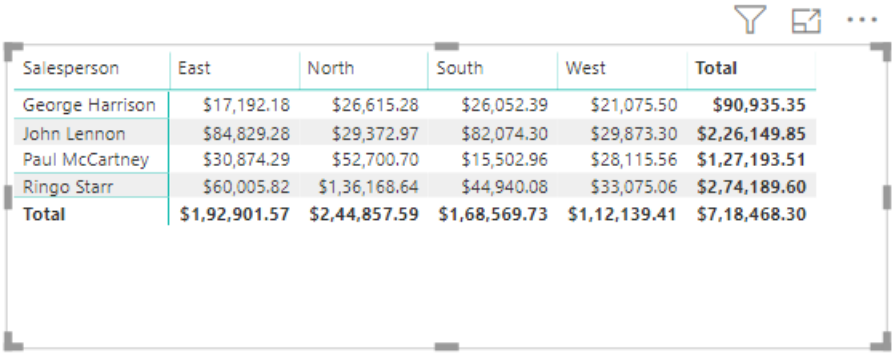
This creates a summary Matrix providing commission for each Salesperson by Region.



Salesperson	East	North	Sou
George Harrison	$17,192.18	$26,615.28	
John Lennon	$84,829.28	$29,372.97	
Paul McCartney	$30,874.29	$52,700.70	
Ringo Starr	$60,005.82	$1,36,168.64	
Total	**$1,92,901.57**	**$2,44,857.59**	**$1,**

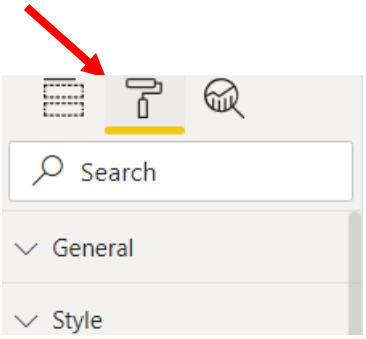
You can resize the visual by clicking and dragging on any of the movement shapes on the visuals edge. Use any of the movement shapes on the right edge of the visual to adjust the size of the visual to fit all the info represented

The adjusted visual should look like the following:



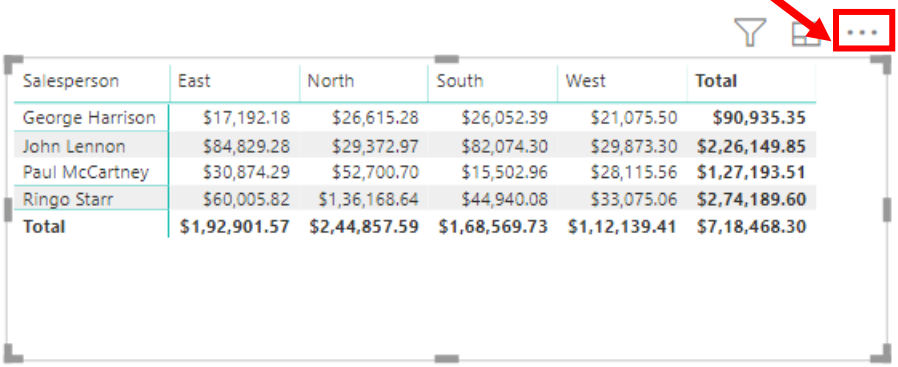
Salesperson	East	North	South	West	Total
George Harrison	$17,192.18	$26,615.28	$26,052.39	$21,075.50	**$90,935.35**
John Lennon	$84,829.28	$29,372.97	$82,074.30	$29,873.30	**$2,26,149.85**
Paul McCartney	$30,874.29	$52,700.70	$15,502.96	$28,115.56	**$1,27,193.51**
Ringo Starr	$60,005.82	$1,36,168.64	$44,940.08	$33,075.06	**$2,74,189.60**
Total	**$1,92,901.57**	**$2,44,857.59**	**$1,68,569.73**	**$1,12,139.41**	**$7,18,468.30**

Explore the formatting section and make formatting changes if necessary. These changes will not be imported into Excel.



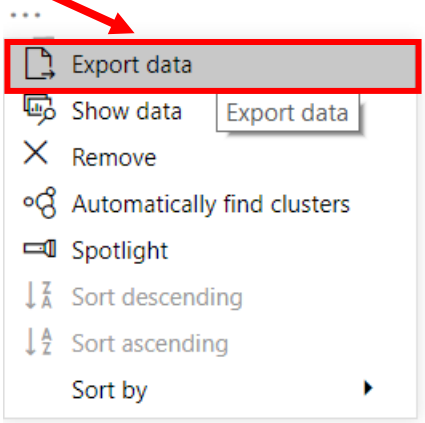
Operation 22: Exporting data to Excel

Select the table and notice that you get **More Options** indicated by 3 dots (**…**) on the top right or the bottom right of the table visual.

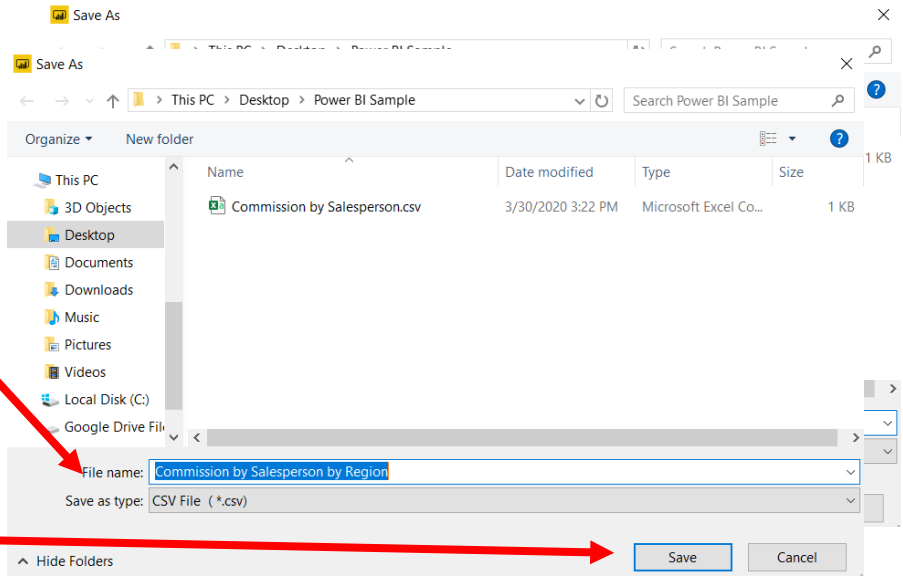


Salesperson	East	North	South	West	Total
George Harrison	$17,192.18	$26,615.28	$26,052.39	$21,075.50	$90,935.35
John Lennon	$84,829.28	$29,372.97	$82,074.30	$29,873.30	$2,26,149.85
Paul McCartney	$30,874.29	$52,700.70	$15,502.96	$28,115.56	$1,27,193.51
Ringo Starr	$60,005.82	$1,36,168.64	$44,940.08	$33,075.06	$2,74,189.60
Total	**$1,92,901.57**	**$2,44,857.59**	**$1,68,569.73**	**$1,12,139.41**	**$7,18,468.30**

Click on the More Options and select “Export Data”.



Add the name of the file



Select Save

Navigate to the location and double click to open the CSV file you just saved.

The exported table in Excel would like the following:

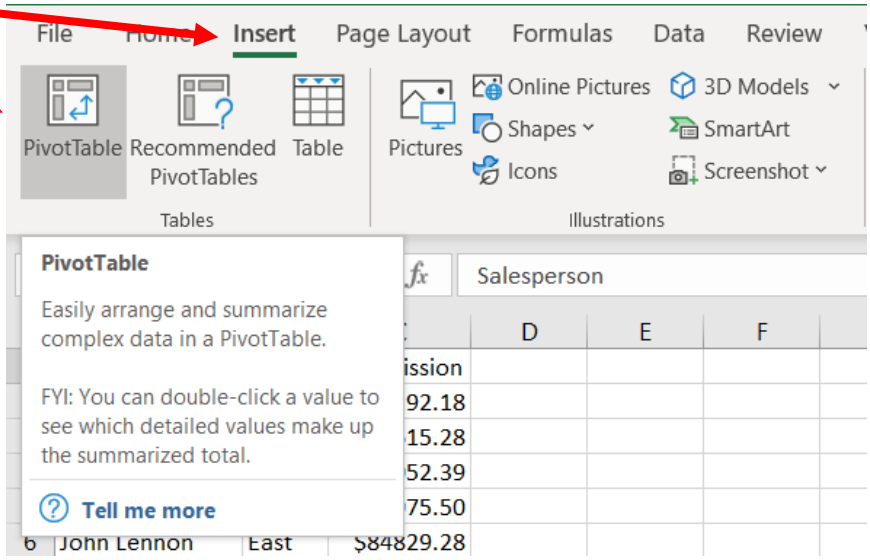
	A	B	C
1	Salesperson	Region	Commission
2	George Harrison	East	$17192.18
3	George Harrison	North	$26615.28
4	George Harrison	South	$26052.39
5	George Harrison	West	$21075.50
6	John Lennon	East	$84829.28
7	John Lennon	North	$29372.97
8	John Lennon	South	$82074.30
9	John Lennon	West	$29873.30
10	Paul McCartney	East	$30874.29
11	Paul McCartney	North	$52700.70
12	Paul McCartney	South	$15502.96
13	Paul McCartney	West	$28115.56
14	Ringo Starr	East	$60005.82
15	Ringo Starr	North	$136168.64
16	Ringo Starr	South	$44940.08
17	Ringo Starr	West	$33075.06

Once the data is available in the above format, you need to insert a Pivot table to represent the data in the required format.

Select any cell in the data range. Say you select cell A1

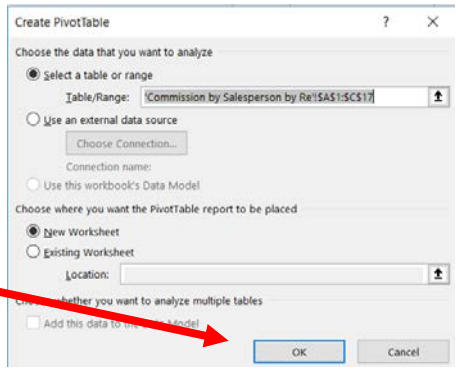
Select Insert

Select Pivot table



This will insert a Pivot Table in a new sheet. Pivot tables help summarize the data in various formats.

Select OK

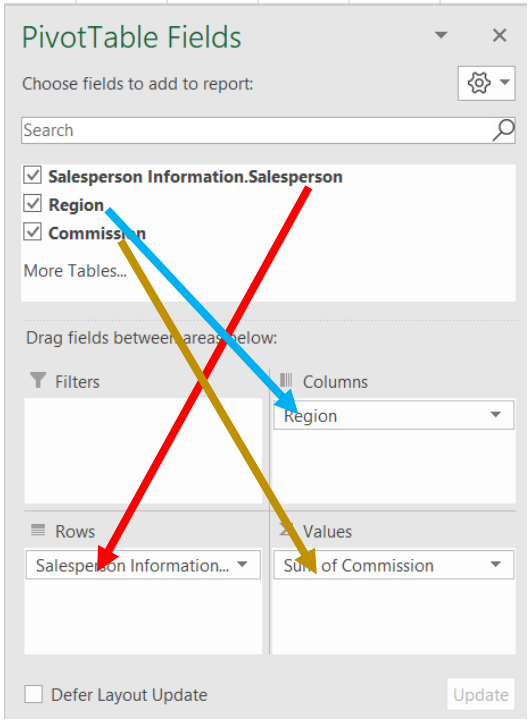


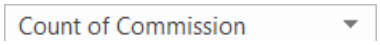
Once a Pivot table is inserted, the Pivot Table Fields are displayed .

Drag the fields

1. **Salesperson to Rows**
2. **Region to Columns** and
3. **Commission to Values**

as indicated in the diagram.



If the 

appears instead of the "Sum of Commission", left click on Count of Commissions, select Value. Field Setting Sum then OK.

This summarizes the data in the following format:

Row Labels	East	North	South	West	Grand Total
George Harrison	17192.18	26615.28	26052.39	21075.5	90935.35
John Lennon	84829.28	29372.97	82074.3	29873.3	226149.85
Paul McCartney	30874.29	52700.7	15502.96	28115.56	127193.51
Ringo Starr	60005.82	136168.64	44940.08	33075.06	274189.6
Grand Total	**192901.57**	**244857.59**	**168569.73**	**112139.42**	**718468.31**

Save and close Excel and Power BI Desktop.