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BATCH: DA-TN-FNB01

DATASET TOPIC: PHARMA-HEALTHCARE
SALES DATA

TITLE: HEALTHCARE SALES
ANALYSIS

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DATASET: <https://github.com/sssingh/pharmaceutical-sales-analysis-powerbi?tab=readme-ov-file#dataset>

Data Cleaning using Power Query Editor

- 1. Data Imported**
- 2. Data Transformed into Power Query Editor**
- 3. Changed Data Type**
- 4. Formatted the Sales Team Column into Uppercase**
- 5. Checked Distinctive Values of All Column, to find out missing values or blank cells Using Filter Option**
- 6. Checked for Missing Values Using Column Quality**
- 7. Rounded Off Latitude Column**
- 8. Rounded Off Longitude Column**
- 9. Renamed Column Name from Price to Unit Price, Sales to Sales Amount**
- 10. Changed Data Type of “Sales Amount” into “Fixed Decimal Number”**
- 11. Calculated Average of Sales Amount to Check Sales Category**
- 12. Added Conditional Column Sales Category**
- 13. Changed the Data Type of “Sales Category” into Text**
- 14. Added Index Number from 1 for Reference**
- 15. Renamed Index Column into “Sales Reference ID”**
- 16. Changed Data Type of “Sales Reference ID” from Number into “Text”**
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- 21. Aggregated Sales Amount of Customers from Various Distributors**
- 22. Renamed Column into “Total Purchase Amount of Customers from Various Distributors”**
- 23. Changed Data Type into “Fixed Decimal Number”**
- 24. Sorted in Ascending Order to Check Customer's all Purchase Amount from Various Distributors**
- 25. Grouped Sales Amount by Product Name to Calculate Total Sales Amount by Product Name**
- 26. Grouped Total Number of Sales by Location**
- 27. Aggregated Total Sales Amount by Month and Year**
- 28. All transformations completed by using Power BI Power Query Editor.**
- 29. Close and Apply to load the data into Power BI.**

DAX and Visualization

DAX (Data Analysis Expressions)

1. Created a New Calculated Column Channel Type in Pharma Sales Data
2. Calculated Measures - Total Number of Sales
3. Created Calculated Table “Sales Details by Country”
4. Calculated Measure - Average Sales Amount
5. Calculated Measure - Total Sales Amount
6. Created a New Calculated Column Sales Team Details

Data Modeling

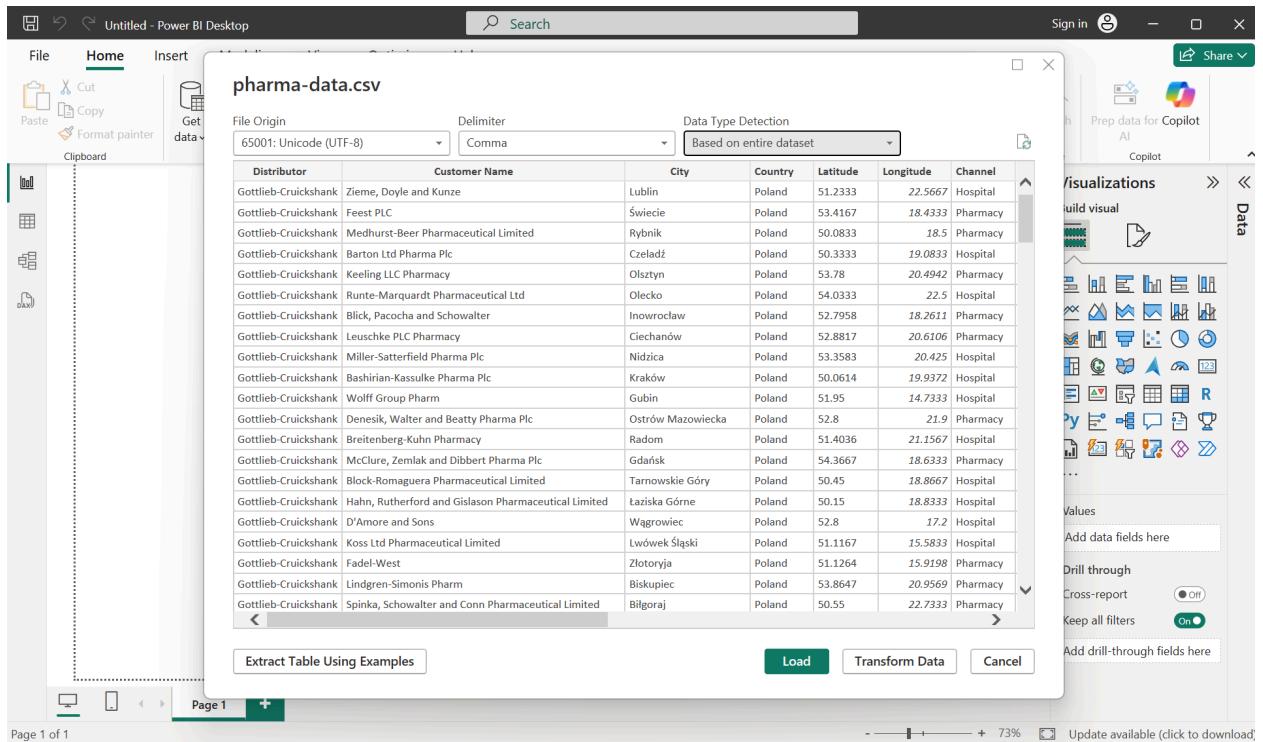
Data Visualization

1. Sales by Year and Channel
2. Sales by Country
3. Sales by Month and Year
4. Sales by Sub-Channel
5. Sales by Sales Team and Product Class
6. Sales by Managers
7. Cards - Total Sales Amount
8. Cards - Number of Sales
9. Slicer - Country
10. Slicer - Distributors
11. Slicer - Product Class

Data Cleaning using Power Query Editor

1. Data Imported

- Imported “pharma-data.csv” file into Power BI.
- Select “Based on Entire Dataset” under Data type detection.
- Click on “Transform Data” to open the table in Power BI Power Query Editor.

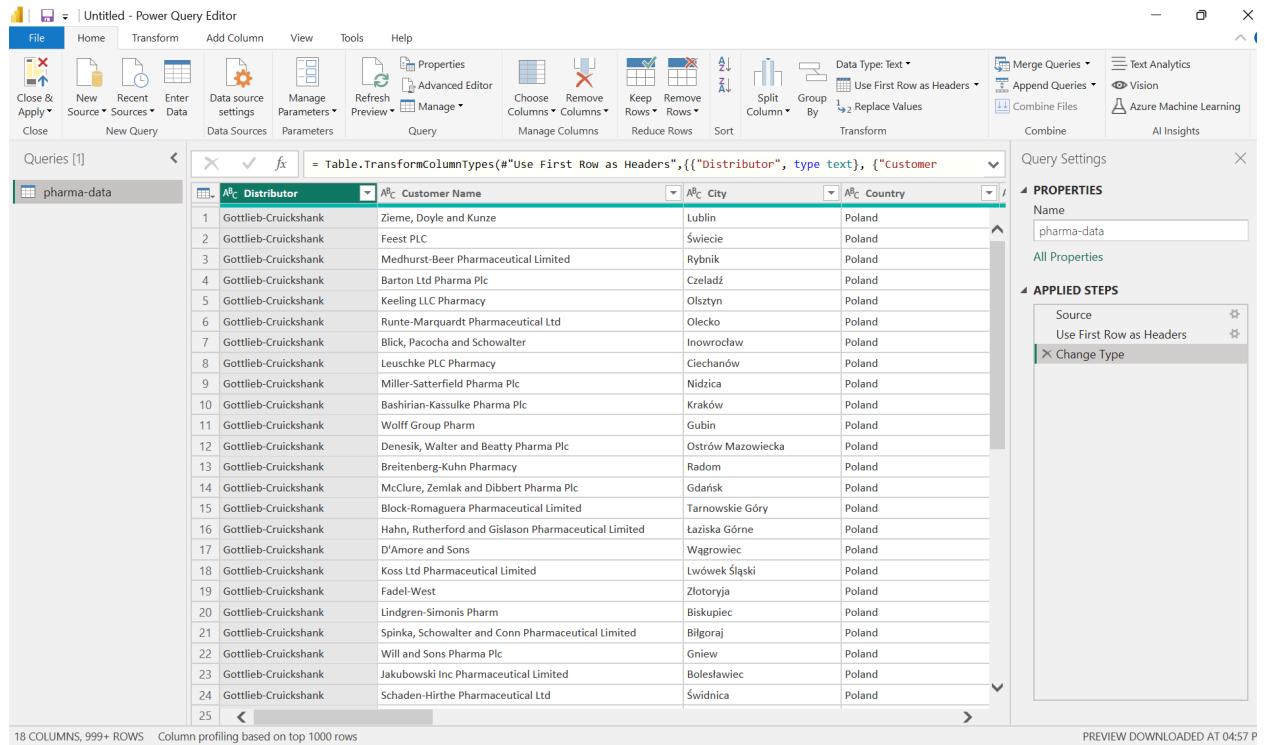


The screenshot shows the Power BI Desktop interface with the 'pharma-data.csv' file imported. The table has the following data:

Distributor	Customer Name	City	Country	Latitude	Longitude	Channel
Gottlieb-Cruickshank	Zieme, Doyle and Kunze	Lublin	Poland	51.2333	22.5667	Hospital
Gottlieb-Cruickshank	Feest PLC	Świecie	Poland	53.4167	18.4333	Pharmacy
Gottlieb-Cruickshank	Medhurst-Beer Pharmaceutical Limited	Rybnik	Poland	50.0833	18.5	Pharmacy
Gottlieb-Cruickshank	Barton Ltd Pharma Plc	Czeladź	Poland	50.3333	19.0833	Hospital
Gottlieb-Cruickshank	Keeling LLC Pharmacy	Olsztyn	Poland	53.78	20.4942	Pharmacy
Gottlieb-Cruickshank	Runte-Marquardt Pharmaceutical Ltd	Olecko	Poland	54.0333	22.5	Hospital
Gottlieb-Cruickshank	Blick, Pacocha and Schwaltzer	Inowrocław	Poland	52.7958	18.2611	Pharmacy
Gottlieb-Cruickshank	Leuschke PLC Pharmacy	Ciechanów	Poland	52.8817	20.6106	Pharmacy
Gottlieb-Cruickshank	Miller-Satterfield Pharma Plc	Nidzica	Poland	53.3583	20.425	Hospital
Gottlieb-Cruickshank	Bashirian-Kassulke Pharma Plc	Kraków	Poland	50.0614	19.9372	Hospital
Gottlieb-Cruickshank	Wolff Group Pharm	Gubin	Poland	51.95	14.7333	Hospital
Gottlieb-Cruickshank	Denesik, Walter and Beatty Pharma Plc	Ostrów Mazowiecka	Poland	52.8	21.9	Pharmacy
Gottlieb-Cruickshank	Breitenberg-Kuhn Pharmacy	Radom	Poland	51.4036	21.1567	Hospital
Gottlieb-Cruickshank	McClure, Zemlak and Dibbert Pharma Plc	Gdańsk	Poland	54.3667	18.6333	Pharmacy
Gottlieb-Cruickshank	Block-Romaguera Pharmaceutical Limited	Tarnowskie Góry	Poland	50.45	18.8667	Hospital
Gottlieb-Cruickshank	Hahn, Rutherford and Gislason Pharmaceutical Limited	Laziska Górske	Poland	50.15	18.8333	Hospital
Gottlieb-Cruickshank	D'Amore and Sons	Wągrowiec	Poland	52.8	17.2	Hospital
Gottlieb-Cruickshank	Koss Ltd Pharmaceutical Limited	Lwówek Śląski	Poland	51.1167	15.5833	Hospital
Gottlieb-Cruickshank	Fadel-West	Złotoryja	Poland	51.1264	15.9198	Pharmacy
Gottlieb-Cruickshank	Lindgren-Simonis Pharm	Biskupiec	Poland	53.8647	20.9569	Pharmacy
Gottlieb-Cruickshank	Spinka, Schowalter and Conn Pharmaceutical Limited	Bilgoraj	Poland	50.55	22.7333	Pharmacy

2. Data Transformed into Power Query Editor

- Transformed the Data Table into “Power Query Editor” to complete Data Cleaning and Transformation steps.



The screenshot shows the Microsoft Power Query Editor interface. The main area displays a table with 24 rows and 4 columns, labeled 'pharma-data'. The columns are 'Distributor', 'Customer Name', 'City', and 'Country'. The data consists of various Polish pharmaceutical companies and their locations. The 'Distributor' column contains names like 'Gottlieb-Cruickshank', 'Zieme, Doyle and Kunze', 'Lublin', and 'Poland'. The 'Customer Name' column contains names like 'Feest PLC', 'Świecie', 'Poland'. The 'City' column contains names like 'Medhurst-Beer Pharmaceutical Limited', 'Rybniak', 'Poland'. The 'Country' column contains names like 'Barton Ltd Pharma Plc', 'Czeladz', 'Poland'. The 'Properties' pane on the right shows the query name is 'pharma-data'. The 'Applied Steps' pane shows a single step: 'Change Type' under 'Source'.

Distributor	Customer Name	City	Country
Gottlieb-Cruickshank	Zieme, Doyle and Kunze	Lublin	Poland
Gottlieb-Cruickshank	Feest PLC	Świecie	Poland
Gottlieb-Cruickshank	Medhurst-Beer Pharmaceutical Limited	Rybniak	Poland
Gottlieb-Cruickshank	Barton Ltd Pharma Plc	Czeladz	Poland
Gottlieb-Cruickshank	Keeling LLC Pharmacy	Olsztyn	Poland
Gottlieb-Cruickshank	Runte-Marquardt Pharmaceutical Ltd	Olecko	Poland
Gottlieb-Cruickshank	Blick, Pacocha and Schowalter	Inowroclaw	Poland
Gottlieb-Cruickshank	Leuschke PLC Pharmacy	Ciechanow	Poland
Gottlieb-Cruickshank	Miller-Satterfield Pharma Plc	Nidzica	Poland
Gottlieb-Cruickshank	Bashirian-Kassulka Pharma Plc	Krakow	Poland
Gottlieb-Cruickshank	Wolff Group Pharm	Gubin	Poland
Gottlieb-Cruickshank	Denesik, Walter and Beatty Pharma Plc	Ostrów Mazowiecka	Poland
Gottlieb-Cruickshank	Breitenberg-Kuhn Pharmacy	Radom	Poland
Gottlieb-Cruickshank	McClure, Zemlak and Dilbert Pharma Plc	Gdansk	Poland
Gottlieb-Cruickshank	Block-Romaguera Pharmaceutical Limited	Tarnowskie Góry	Poland
Gottlieb-Cruickshank	Hahn, Rutherford and Gislason Pharmaceutical Limited	Taziska Górn	Poland
Gottlieb-Cruickshank	D'Amore and Sons	Wagrowiec	Poland
Gottlieb-Cruickshank	Koss Ltd Pharmaceutical Limited	Lwówek Śląski	Poland
Gottlieb-Cruickshank	Fadel-West	Złotoryja	Poland
Gottlieb-Cruickshank	Lindgren-Simonis Pharm	Biskupiec	Poland
Gottlieb-Cruickshank	Spinka, Schowalter and Conn Pharmaceutical Limited	Bilgoraj	Poland
Gottlieb-Cruickshank	Will and Sons Pharma Plc	Gniew	Poland
Gottlieb-Cruickshank	Jakubowski Inc Pharmaceutical Limited	Boleslawiec	Poland
Gottlieb-Cruickshank	Schaden-Hirthe Pharmaceutical Ltd	Świdnica	Poland

3. Changed Data Type

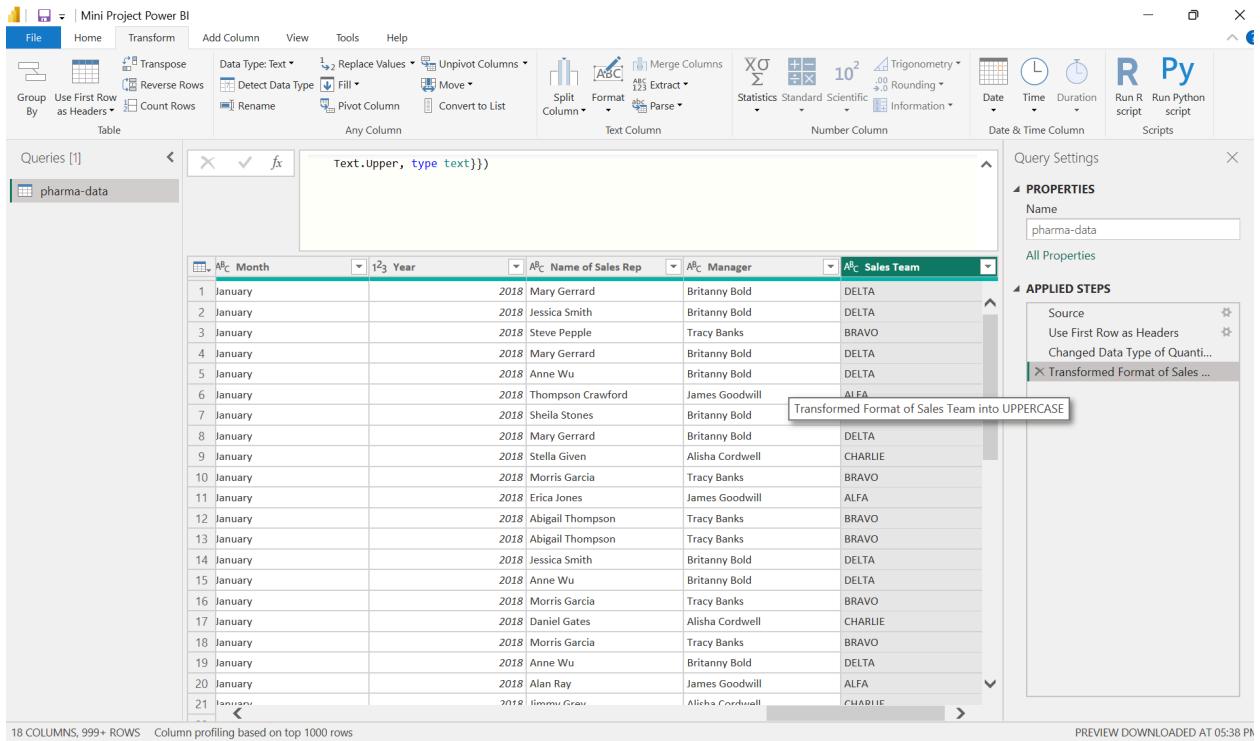
- Changed Data Type of Columns.
 - Latitude, Longitude, Quantity - Text into “Number”.
 - Price, Sales - Text into “Fixed Decimal Number” (Currency).
 - Year - Text to “Data and Time”.

```
= Table.TransformColumnTypes(#"Use First Row as Headers",{{"Distributor", type text}, {"Customer Name", type text}, {"City", type text}, {"Country", type text}, {"Latitude", type number}, {"Longitude", type number}, {"Channel", type text}, {"Sub-channel", type text}, {"Product Name", type text}, {"Product Class", type text}, {"Quantity", Int64.Type}, {"Price", Currency.Type}, {"Sales", Int64.Type}, {"Month", type text}, {"Year", Int64.Type}, {"Name of Sales Rep", type text}, {"Manager", type text}, {"Sales Team", type text}})
```

The screenshot shows the Microsoft Power BI desktop application. The ribbon menu is visible at the top with options like File, Home, Transform, Add Column, View, Tools, and Help. The 'Transform' tab is selected. The 'Queries [1]' pane on the left shows a single query named 'pharma-data'. The main area displays a table with columns: 'Quantity', 'Price', 'Sales', 'Month', and 'Year'. The 'Month' and 'Year' columns contain numerical values (2, 1, 2, 2, 2, etc.). The 'Transform' ribbon tab is active, showing various data manipulation tools. The 'Query Settings' pane on the right shows the query name 'pharma-data' and a list of applied steps, including 'Use First Row as Headers' and 'Changed Data Type of Quantity, Price, Sales and Year'.

4. Formatted the Sales Team Column into Uppercase

- Formatted the “Sales Team” Column from Propercase into “UPPERCASE”, to Highlight the “Sales Team”.



Queries [1] pharma-data

Text.Upper, type text}})

	Month	Year	Name of Sales Rep	Manager	Sales Team
1	January	2018	Mary Gerrard	Brittany Bold	DELTA
2	January	2018	Jessica Smith	Brittany Bold	DELTA
3	January	2018	Steve Pepper	Tracy Banks	BRAVO
4	January	2018	Mary Gerrard	Brittany Bold	DELTA
5	January	2018	Anne Wu	Brittany Bold	DELTA
6	January	2018	Thompson Crawford	James Goodwill	ALFA
7	January	2018	Sheila Stones	Brittany Bold	Transformed Format of Sales Team into UPPERCASE
8	January	2018	Mary Gerrard	Brittany Bold	DELTA
9	January	2018	Stella Given	Alisha Cordwell	CHARLIE
10	January	2018	Morris Garcia	Tracy Banks	BRAVO
11	January	2018	Erica Jones	James Goodwill	ALFA
12	January	2018	Abigail Thompson	Tracy Banks	BRAVO
13	January	2018	Abigail Thompson	Tracy Banks	BRAVO
14	January	2018	Jessica Smith	Brittany Bold	DELTA
15	January	2018	Anne Wu	Brittany Bold	DELTA
16	January	2018	Morris Garcia	Tracy Banks	BRAVO
17	January	2018	Daniel Gates	Alisha Cordwell	CHARLIE
18	January	2018	Morris Garcia	Tracy Banks	BRAVO
19	January	2018	Anne Wu	Brittany Bold	DELTA
20	January	2018	Alan Ray	James Goodwill	ALFA
21	January	2018	Jimmy Gray	Alisha Cordwell	CHARLIE

18 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 05:38 PM

Query Settings

PROPERTIES

Name: pharma-data

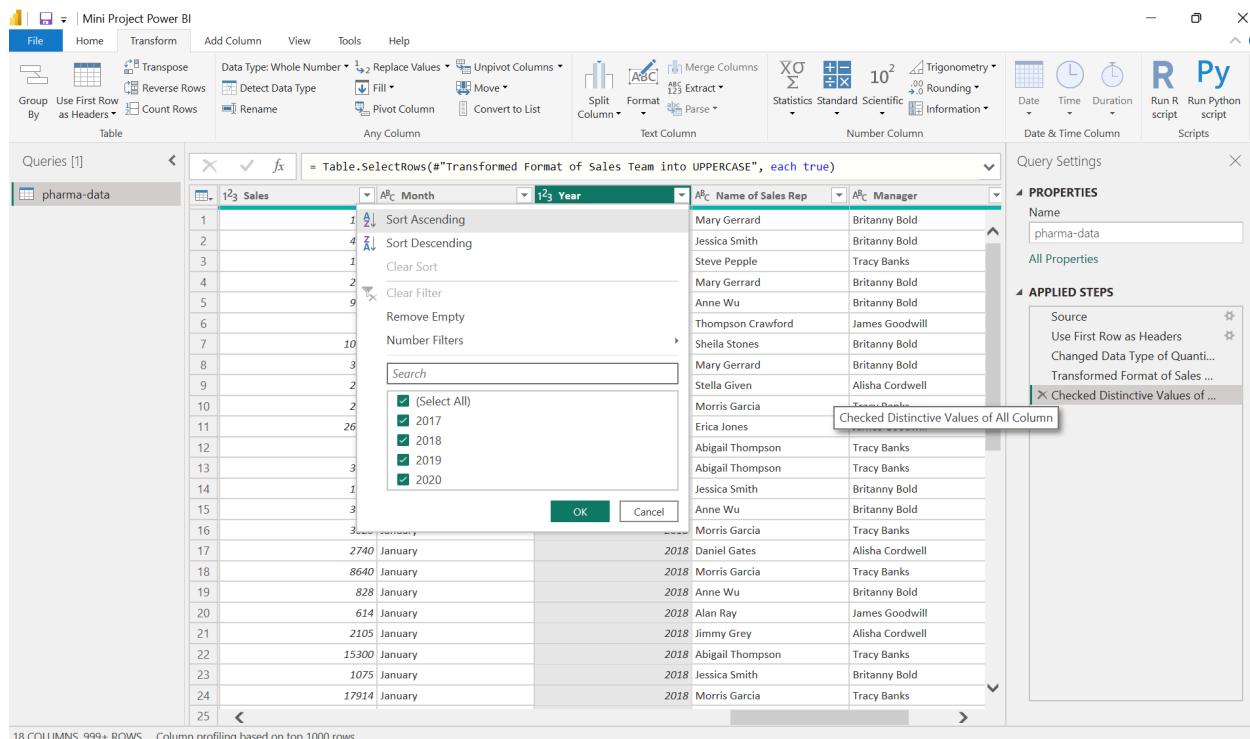
APPLIED STEPS

Source: Use First Row as Headers: Changed Data Type of Quant...

Transformed Format of Sales Team into UPPERCASE

5. Checked Distinctive Values of All Column, to find out missing values or blank cells Using Filter Option

- Checked Distinctive values of all Column, to find out the blank and null values using “Filter” option.
- Checked for Duplicate Values using “Filter and Sort” option.
- There is no Duplicate and Missing Values.



The screenshot shows the Power BI desktop interface with a query editor open. The query is named "pharma-data" and contains a table named "Sales". A context menu is open over the "Sales" table, specifically over the "Year" column. The menu is expanded to show the "Checked Distinctive Values of All Column" option, which is highlighted with a red box. The Power BI ribbon is visible at the top, and the "Transform" tab is selected. The "APPLIED STEPS" pane on the right shows a step named "Checked Distinctive Values of All Column".

6. Checked for Missing Values Using Column Quality

- Again Checked Missing Values and error values Using “Column Quality” Option.

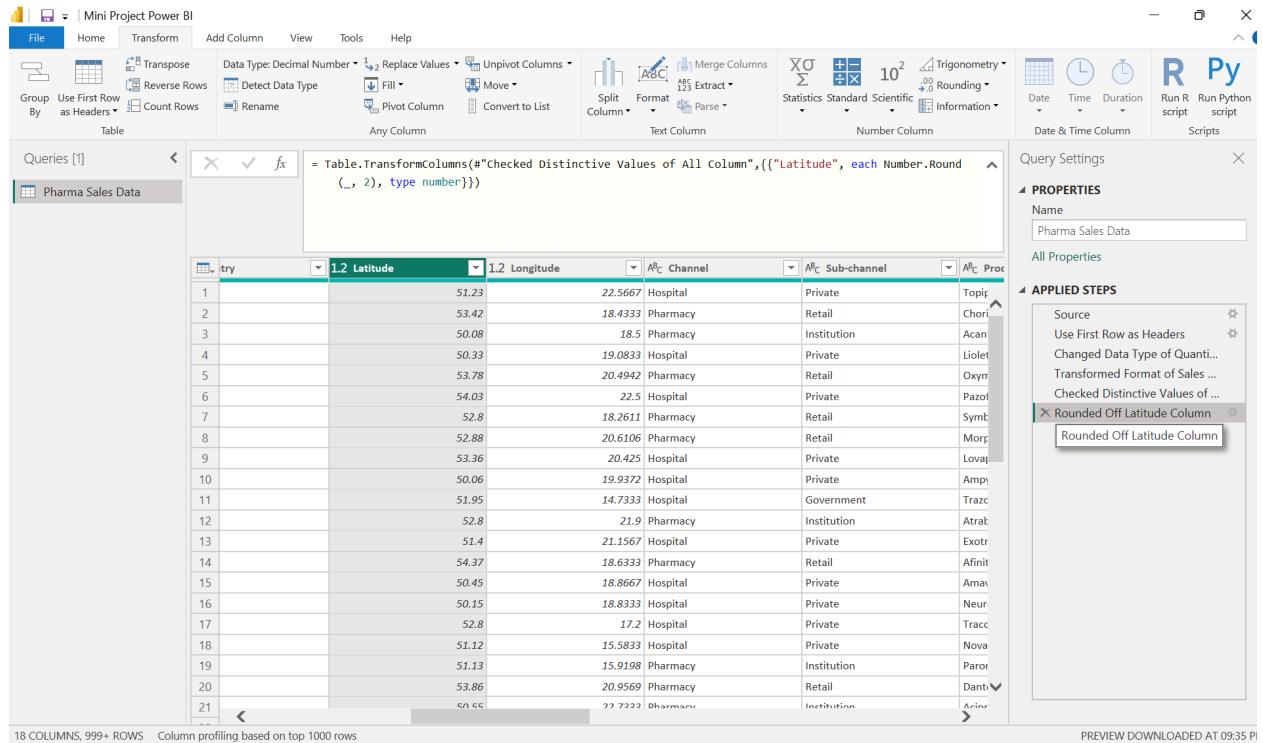
The screenshot shows the Power BI Query Editor interface. The 'pharma-data' query is selected. The 'View' tab is active, showing the 'Column Quality' settings. The 'Columns' pane displays a table with columns: Country, Latitude, Longitude, Channel, and Sub-channel. The 'Properties' pane on the right shows the query name 'pharma-data' and the applied step 'Checked Distinctive Values of ...'.

	Country	Latitude	Longitude	Channel	Sub-channel
1	Poland	51.2333	22.5667	Hospital	Private
2	Poland	53.4167	18.4333	Pharmacy	Retail
3	Poland	50.0833	18.5	Pharmacy	Institution
4	Poland	50.3333	19.0833	Hospital	Private
5	Poland	53.78	20.4942	Pharmacy	Retail
6	Poland	54.0333	22.5	Hospital	Private
7	Poland	52.7958	18.2611	Pharmacy	Retail
8	Poland	52.8817	20.6106	Pharmacy	Retail
9	Poland	53.3583	20.425	Hospital	Private
10	Poland	50.0614	19.9372	Hospital	Private
11	Poland	51.95	14.7333	Hospital	Government
12	Poland	52.8	21.9	Pharmacy	Institution
13	Poland	51.4036	21.1567	Hospital	Private
14	Poland	54.3667	18.6333	Pharmacy	Retail
15	Poland	50.45	18.8667	Hospital	Private
16	Poland	50.15	18.8333	Hospital	Private
17	Poland	52.8	17.2	Hospital	Private
18	Poland	51.1167	15.5833	Hospital	Private
19	Poland	51.1264	15.9198	Pharmacy	Institution
20	Poland	53.8647	20.9569	Pharmacy	Retail
21	Poland	50.55	22.7333	Pharmacy	Institution
22	Poland	53.8333	18.0333	Pharmacy	Private

7. Rounded Off Latitude Column

- Rounded Off “Latitude” Column with 2 Decimal Places.
- Select Latitude Column >> Transform >> Rounding >> Round >> Decimal Places 2

= Table.TransformColumns(#"Checked Distinctive Values of All Column",{{"Latitude", each Number.Round(_, 2), type number}})



The screenshot shows the Power BI Editor interface with the 'Transform' tab selected. The main area displays a table with columns: try, Latitude, Longitude, Channel, Sub-channel, and Proc. The 'Applied Steps' pane on the right lists the following steps:

- Source
- Use First Row as Headers
- Changed Data Type of Quant...
- Transformed Format of Sales ...
- Checked Distinctive Values of ...
- Rounded Off Latitude Column** (highlighted with a red box)

Below the table, the status bar indicates "18 COLUMNS, 999+ ROWS" and "Column profiling based on top 1000 rows".

8. Rounded Off Longitude Column

- Rounded Off “Longitude” Column with 2 Decimal Places.
- Select Longitude Column >> Transform >> Rounding >> Round >> Decimal Places 2

= Table.TransformColumns(#"Rounded Off Latitude Column",{{"Longitude", each Number.Round(_, 2), type number}})

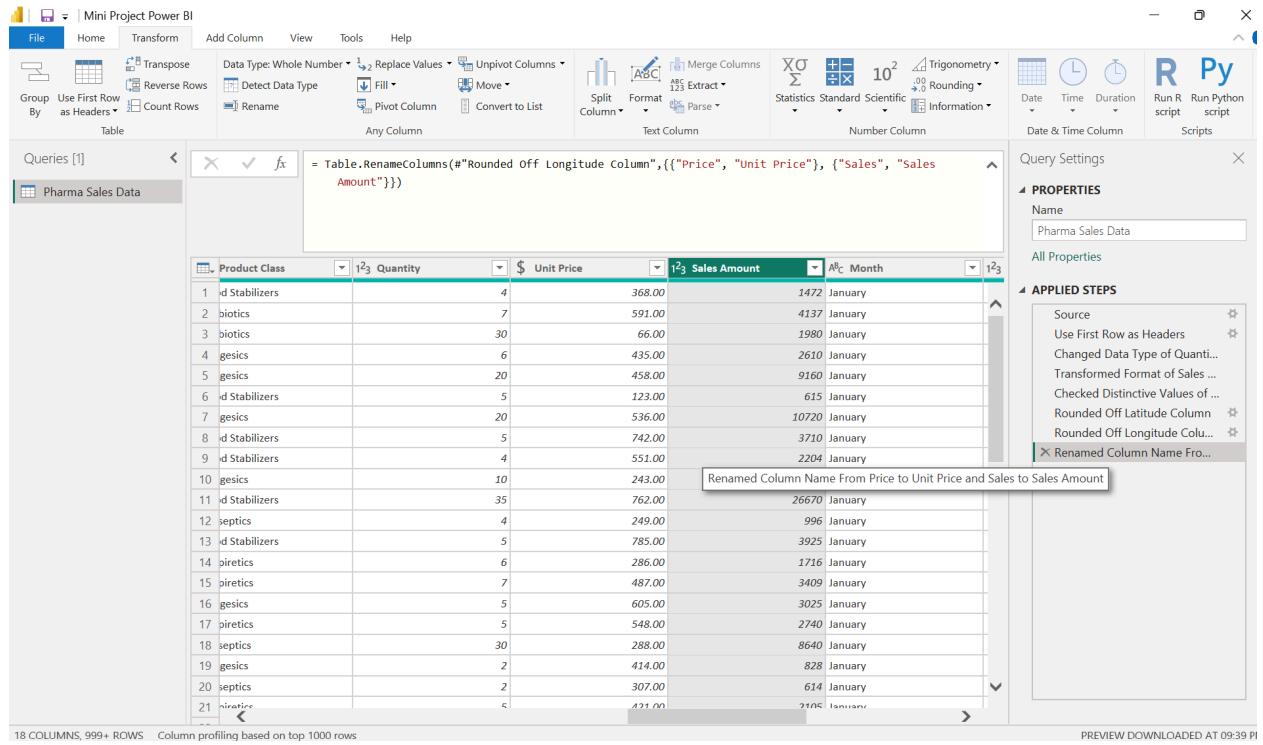
The screenshot shows the Power BI Query Editor with the following details:

- File** tab is selected.
- Transform** tab is active.
- Queries [1]** section shows a single query named "Pharma Sales Data".
- Code View** pane displays the M code: `= Table.TransformColumns(#"Rounded Off Latitude Column",{{"Longitude", each Number.Round(_, 2), type number}})`.
- Table View** pane shows a table with 21 rows and 7 columns. The columns are: try, 1.2 Latitude, 1.2 Longitude, AB_C Channel, AB_C Sub-channel, AB_C Proc, and AB_C Prod.
- Properties** pane shows the query name is "Pharma Sales Data".
- Applied Steps** pane shows the following steps:
 - Source
 - Use First Row as Headers
 - Changed Data Type of Quant...
 - Transformed Format of Sales ...
 - Checked Distinctive Values of ...
 - Rounded Off Latitude Column
 - Rounded Off Longitude Colu...
- Preview** pane shows the preview of the data.

9. Renamed Column Name from Price to Unit Price, Sales to Sales Amount

- Renamed the Column Name of “Price” into “Unit Price” and “Sales” into “Sales Amount” to Access easily.

= Table.RenameColumns(#"Rounded Off Longitude Column", {"Price", "Unit Price"}, {"Sales", "Sales Amount"})



The screenshot shows the Power BI Desktop interface with the 'Transform' tab selected. A query named 'Pharma Sales Data' is open, displaying the following M code:

```
= Table.RenameColumns(#"Rounded Off Longitude Column", {"Price", "Unit Price"}, {"Sales", "Sales Amount"})
```

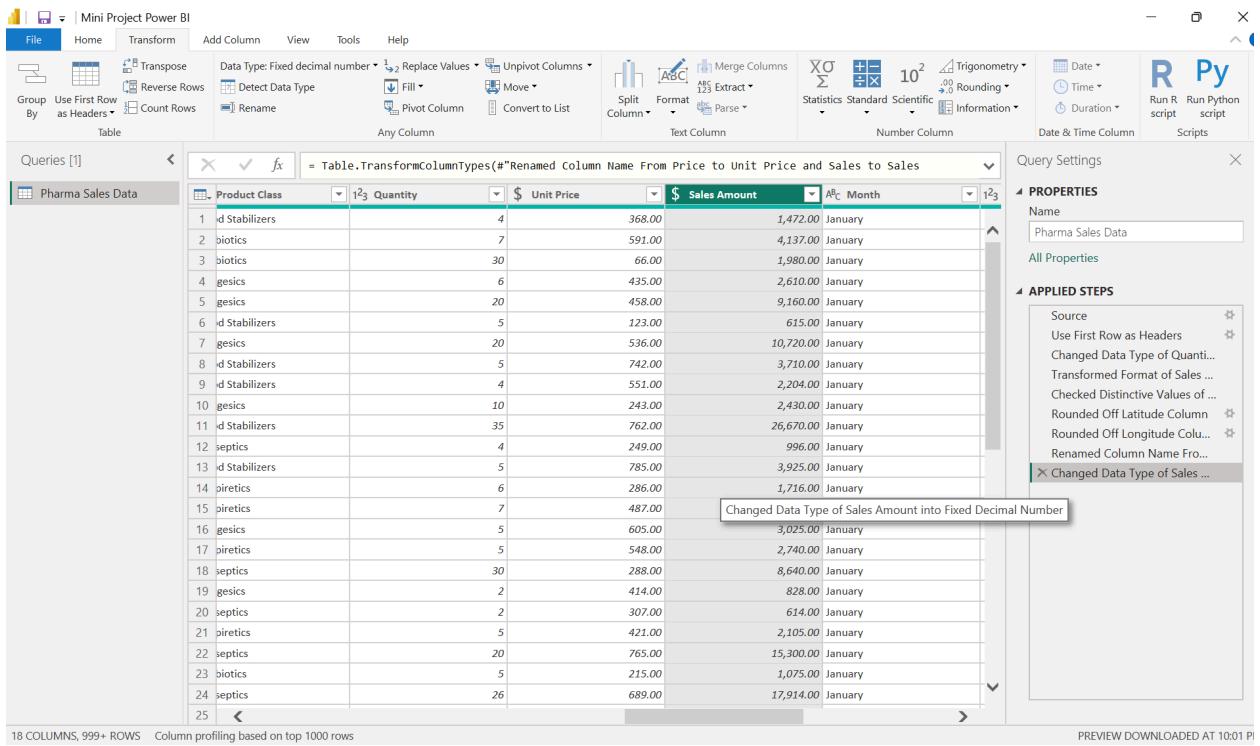
The data table contains the following columns and data:

Product Class	Quantity	Unit Price	Sales Amount	Month
1-d Stabilizers	4	368.00	1472	January
2-septics	7	591.00	4137	January
3-septics	30	66.00	1980	January
4-gesics	6	435.00	2610	January
5-gesics	20	458.00	9160	January
6-d Stabilizers	5	123.00	615	January
7-gesics	20	536.00	10720	January
8-d Stabilizers	5	742.00	3710	January
9-d Stabilizers	4	551.00	2204	January
10-gesics	10	243.00		
11-d Stabilizers	35	762.00	26670	January
12-septics	4	249.00	996	January
13-d Stabilizers	5	785.00	3925	January
14-piretics	6	286.00	1716	January
15-piretics	7	487.00	3409	January
16-gesics	5	605.00	3025	January
17-piretics	5	548.00	2740	January
18-septics	30	288.00	8640	January
19-gesics	2	414.00	828	January
20-septics	2	307.00	614	January
21-piretics	5	421.00	2105	January

The 'APPLIED STEPS' pane on the right shows the following steps:

- Renamed Column Name From Price to Unit Price and Sales to Sales Amount

10. Changed Data Type of “Sales Amount” into “Fixed Decimal Number”



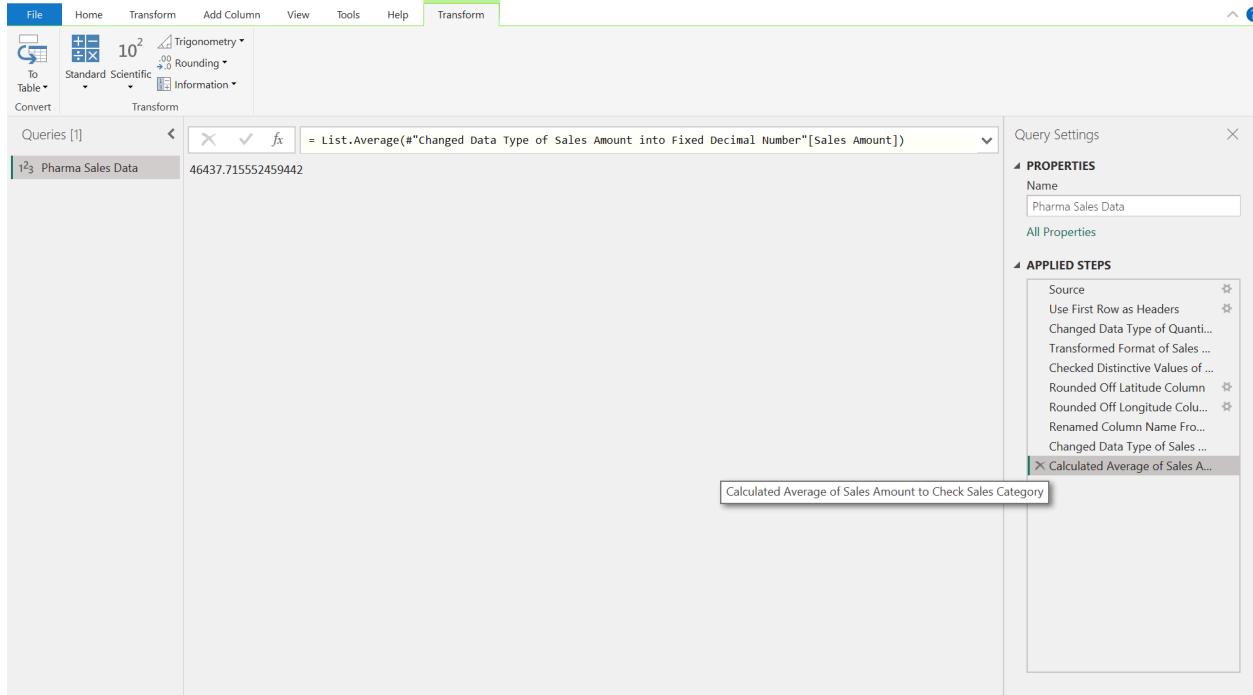
The screenshot shows the Power BI Editor interface with the 'Transform' tab selected. The main area displays a table named 'Pharma Sales Data' with 18 columns and 999+ rows. The 'Sales Amount' column is currently set to 'Text' type. A tooltip 'Changed Data Type of Sales Amount into Fixed Decimal Number' is visible over the column header. The 'APPLIED STEPS' pane on the right lists the transformation step: 'Changed Data Type of Sales Amount into Fixed Decimal Number'.

Product Class	Quantity	Unit Price	Sales Amount	Month
1-d Stabilizers	4	368.00	1,472.00	January
2-biotics	7	591.00	4,137.00	January
3-biotics	30	66.00	1,980.00	January
4-gesics	6	435.00	2,610.00	January
5-gesics	20	458.00	9,160.00	January
6-d Stabilizers	5	123.00	615.00	January
7-gesics	20	536.00	10,720.00	January
8-d Stabilizers	5	742.00	3,710.00	January
9-d Stabilizers	4	551.00	2,204.00	January
10-gesics	10	243.00	2,430.00	January
11-d Stabilizers	35	762.00	26,670.00	January
12-septics	4	249.00	996.00	January
13-d Stabilizers	5	785.00	3,925.00	January
14-piretcs	6	286.00	1,716.00	January
15-piretcs	7	487.00	3,025.00	January
16-gesics	5	605.00	2,740.00	January
17-piretcs	5	548.00	8,640.00	January
18-septics	30	288.00	828.00	January
19-gesics	2	414.00	614.00	January
20-septics	2	307.00	2,105.00	January
21-piretcs	5	421.00	15,300.00	January
22-septics	20	765.00	1,075.00	January
23-biotics	5	215.00	17,914.00	January
24-septics	26	689.00		
25				

11. Calculated Average of Sales Amount to Check Sales Category

- Calculated Average value of “Sales Amount” to create the “Sales Category” Column using Average of Sales Amount.
- Select Specific Column >> Transform >> Statistics >> Average.

= List.Average(#"Added Conditional Column Sales Category"[Sales Amount])



The screenshot shows the Microsoft Power Query Editor interface. The formula bar at the top contains the formula: = List.Average(#"Changed Data Type of Sales Amount into Fixed Decimal Number"[Sales Amount]). The result of the formula, 46437.715552459442, is displayed in the preview area. The 'Transform' tab is selected in the ribbon. The 'Applied Steps' pane on the right shows a list of steps taken to process the data, with the last step, 'Calculated Average of Sales Amount to Check Sales Category', highlighted. The 'Properties' pane shows the query name is 'Pharma Sales Data'.

12. Added Conditional Column Sales Category

- Added a New Conditional Column “Sales Category”, based on the Average value of “Sales Amount” Column.
- Add Column >> Conditional Column >> by created “If Condition” as follows,
 - If the “Sales Amount” is greater than or equal to “46437.715552459442” Then the output is “Above Average”.
 - If Else, Then the output is “Below Average”.

= Table.AddColumn(#"Changed Data Type of Sales Amount into Fixed Decimal Number", "Sales Category", each if [Sales Amount] >= 46437.715552459442 then "Above Average" else "Below Average")

File Home Transform Add Column View Tools Help

Column From Examples Column Invoke Custom Function General

Conditional Column Index Column Duplicate Column

Format From Text From Number From Date & Time

Merge Columns Extract Parse

Statistics Standard Scientific Rounding

Date Time Duration

Text Analytics Vision Azure Machine Learning

AI Insights

Queries [1]

123 Pharma Sales Data

= Table.AddColumn(#"Changed Data Type of Sales Amount into Fixed Decimal Number", "Sales Category", each if [Sales Amount] >= 46437.715552459442 then "Above Average" else "Below Average")

	Year	Name of Sales Rep	Manager	Sales Team	Sales Category
1	2018	Mary Gerrard	Brittany Bold	DELTA	Below Average
2	2018	Jessica Smith	Brittany Bold	DELTA	Below Average
3	2018	Steve Pepple	Tracy Banks	BRAVO	Below Average
4	2018	Mary Gerrard	Brittany Bold	DELTA	Below Average
5	2018	Anne Wu	Brittany Bold	DELTA	Below Average
6	2018	Thompson Crawford	James Goodwill	ALFA	Below Average
7	2018	Sheila Stones	Brittany Bold	DELTA	Below Average
8	2018	Mary Gerrard	Brittany Bold	DELTA	Below Average
9	2018	Stella Given	Alisha Cordwell	CHARLIE	Below Average
10	2018	Morris Garcia	Tracy Banks	BRAVO	Below Average
11	2018	Erica Jones	James Goodwill	ALFA	Below Average
12	2018	Abigail Thompson	Tracy Banks	BRAVO	Below Average
13	2018	Abigail Thompson	Tracy Banks	BRAVO	Below Average
14	2018	Jessica Smith	Brittany Bold	DELTA	Below Average
15	2018	Anne Wu	Brittany Bold	DELTA	Below Average
16	2018	Morris Garcia	Tracy Banks	BRAVO	Below Average
17	2018	Daniel Gates	Alisha Cordwell	CHARLIE	Below Average
18	2018	Morris Garcia	Tracy Banks	BRAVO	Below Average
19	2018	Anne Wu	Brittany Bold	DELTA	Below Average
20	2018	Alan Ray	James Goodwill	ALFA	Below Average
21	2018	Jimmy Gray	Alisha Cordwell	CHARLIE	Below Average

Query Settings

PROPERTIES

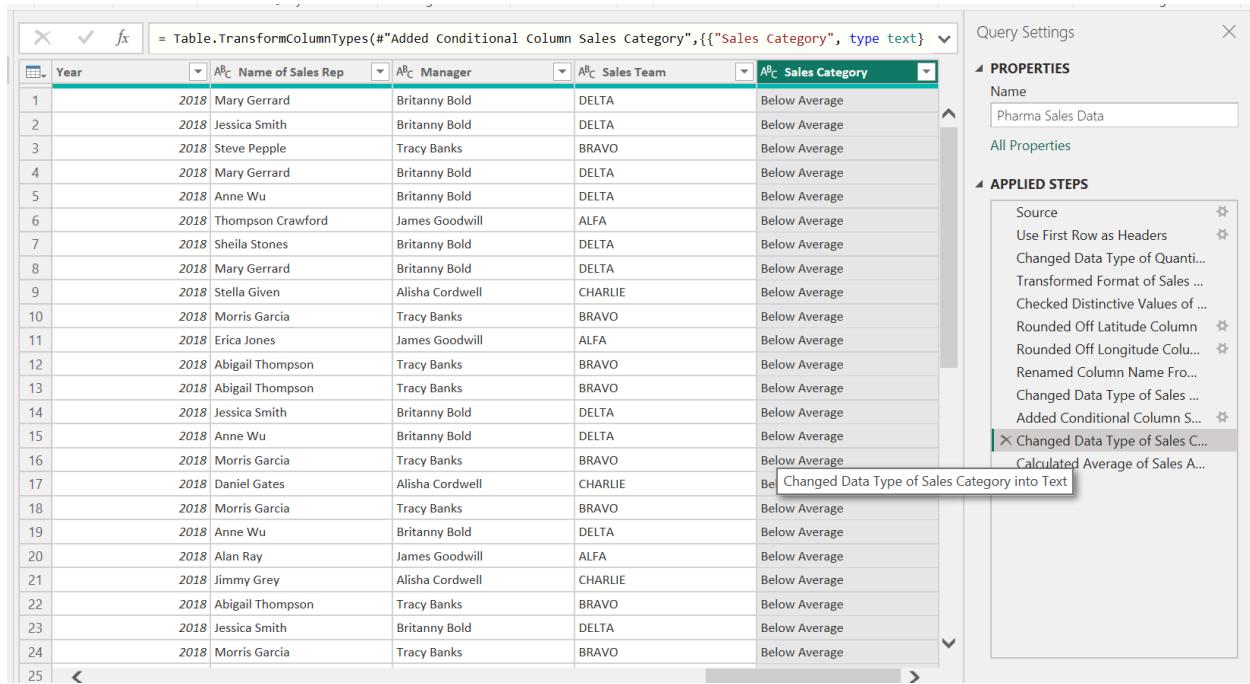
Name: Pharma Sales Data

APPLIED STEPS

- Source
- Use First Row as Headers
- Changed Data Type of Quant...
- Transformed Format of Sales ...
- Checked Distinctive Values of ...
- Rounded Off Latitude Column
- Rounded Off Longitude Colu...
- Renamed Column Name Fro...
- Changed Data Type of Sales ...
- Calculated Average of Sales A...
- Added Conditional Column Sales Category

13. Changed the Data Type of “Sales Category” into Text

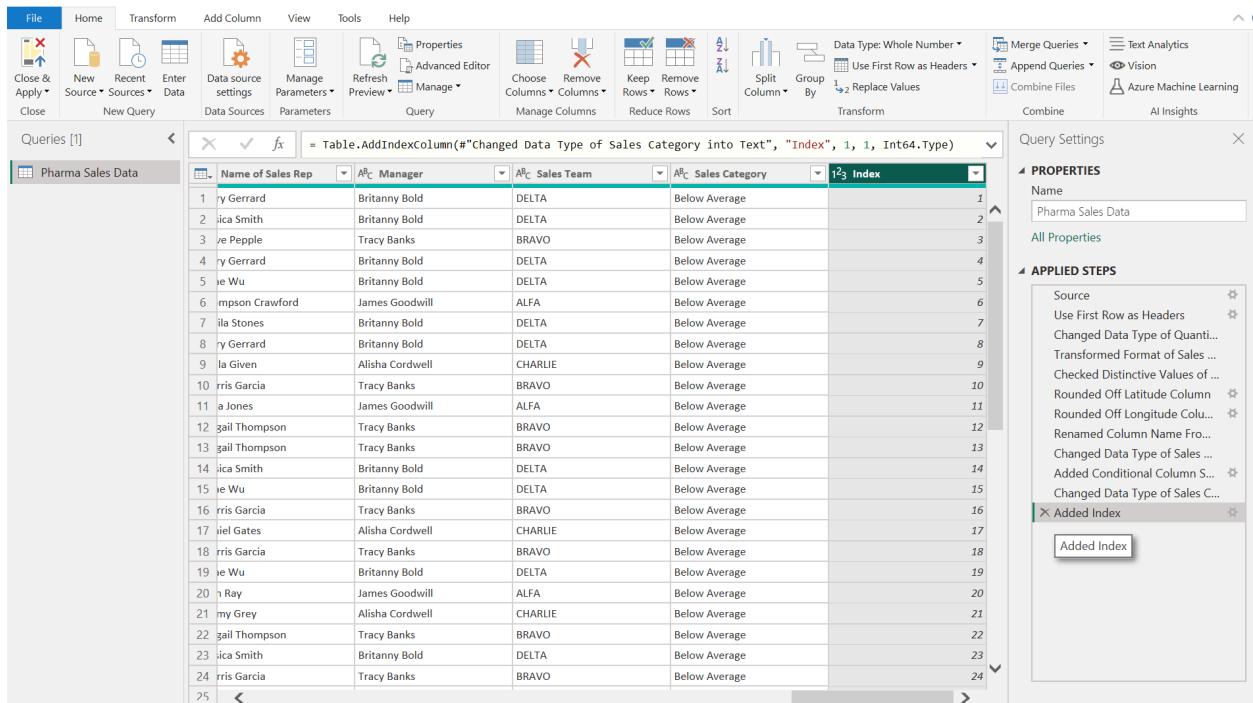
= Table.TransformColumnTypes(#"Added Conditional Column Sales Category",{{"Sales Category", type text}})



The screenshot shows the Power Query Editor interface. On the left is a table with 25 rows of data. The columns are: Year, Name of Sales Rep, Manager, Sales Team, and Sales Category. The Sales Category column contains values like 'Below Average', 'DELTA', and 'ALFA'. On the right, the 'APPLIED STEPS' pane is open, showing a list of transformations. The step 'Changed Data Type of Sales Category into Text' is highlighted with a green border. A tooltip for this step shows the full formula: = Table.TransformColumnTypes(#"Added Conditional Column Sales Category",{{"Sales Category", type text}}). Other steps listed include 'Source', 'Use First Row as Headers', 'Changed Data Type of Quant...', 'Transformed Format of Sales ...', 'Checked Distinctive Values of ...', 'Rounded Off Latitude Column', 'Rounded Off Longitude Colu...', 'Renamed Column Name Fro...', 'Changed Data Type of Sales ...', and 'Added Conditional Column S...'. The 'Properties' pane shows the query name 'Pharma Sales Data'.

14. Added Index Number from 1 for Reference

- Added Index Number from 1, to assign the unique ID for each sales for further transformations.



The screenshot shows the Microsoft Power BI Data Editor interface. The top ribbon has tabs for File, Home, Transform, Add Column, View, Tools, and Help. The Home tab is selected. The ribbon also includes icons for Close & Apply, New Source, Recent Sources, Enter Data, Data source settings, Manage Parameters, Refresh, Advanced Editor, Properties, Choose Columns, Remove Columns, Keep Rows, Remove Rows, Sort, Split Column, Group By, Data Type: Whole Number, Use First Row as Headers, Merge Queries, Append Queries, Combine Files, Text Analytics, Vision, Azure Machine Learning, and AI Insights. The main area shows a table titled "Pharma Sales Data" with columns: Name of Sales Rep, Manager, Sales Team, Sales Category, and Index. The Index column contains values from 1 to 24. The table is defined by the formula: `= Table.AddIndexColumn(#"Changed Data Type of Sales Category into Text", "Index", 1, 1, Int64.Type)`. The "APPLIED STEPS" pane on the right shows the steps taken: Source, Use First Row as Headers, Changed Data Type of Quantitative Column, Transformed Format of Sales Category, Checked Distinctive Values of Manager, Rounded Off Latitude Column, Rounded Off Longitude Column, Renamed Column Name From Manager to Manager, Changed Data Type of Sales Category, Added Conditional Column Sales Category, and Changed Data Type of Sales Category. The "Added Index" step is highlighted with a red box.

Name of Sales Rep	Manager	Sales Team	Sales Category	Index
Andy Gerrard	Brittany Bold	DELTA	Below Average	1
Aliza Smith	Brittany Bold	DELTA	Below Average	2
Steve Pepple	Tracy Banks	BRAVO	Below Average	3
Andy Gerrard	Brittany Bold	DELTA	Below Average	4
Steve Wu	Brittany Bold	DELTA	Below Average	5
Jameson Crawford	James Goodwill	ALFA	Below Average	6
Julia Stones	Brittany Bold	DELTA	Below Average	7
Andy Gerrard	Brittany Bold	DELTA	Below Average	8
Steve Given	Alisha Cordwell	CHARLIE	Below Average	9
Iris Garcia	Tracy Banks	BRAVO	Below Average	10
John Jones	James Goodwill	ALFA	Below Average	11
Gail Thompson	Tracy Banks	BRAVO	Below Average	12
Gail Thompson	Tracy Banks	BRAVO	Below Average	13
Aliza Smith	Brittany Bold	DELTA	Below Average	14
Steve Wu	Brittany Bold	DELTA	Below Average	15
Iris Garcia	Tracy Banks	BRAVO	Below Average	16
Michael Gates	Alisha Cordwell	CHARLIE	Below Average	17
Iris Garcia	Tracy Banks	BRAVO	Below Average	18
Steve Wu	Brittany Bold	DELTA	Below Average	19
John Ray	James Goodwill	ALFA	Below Average	20
Andy Grey	Alisha Cordwell	CHARLIE	Below Average	21
Gail Thompson	Tracy Banks	BRAVO	Below Average	22
Aliza Smith	Brittany Bold	DELTA	Below Average	23
Iris Garcia	Tracy Banks	BRAVO	Below Average	24
25				

15. Renamed Index Column into “Sales Reference ID”

Queries [1]

Pharma Sales Data

	Name of Sales Rep	Manager	Sales Team	Sales Category	Sales Reference ID
1	James Gerrard	Brittany Bold	DELTA	Below Average	1
2	Michael Smith	Brittany Bold	DELTA	Below Average	2
3	Robert Pepple	Tracy Banks	BRAVO	Below Average	3
4	James Gerrard	Brittany Bold	DELTA	Below Average	4
5	Paul Wu	Brittany Bold	DELTA	Below Average	5
6	John Thompson	James Goodwill	ALFA	Below Average	6
7	Paula Stones	Brittany Bold	DELTA	Below Average	7
8	James Gerrard	Brittany Bold	DELTA	Below Average	8
9	Sarah Given	Alisha Cordwell	CHARLIE	Below Average	9
10	Olivia Garcia	Tracy Banks	BRAVO	Below Average	10
11	David Jones	James Goodwill	ALFA	Below Average	11
12	Paul Thompson	Tracy Banks	BRAVO	Below Average	12
13	Paul Thompson	Tracy Banks	BRAVO	Below Average	13
14	Michael Smith	Brittany Bold	DELTA	Below Average	14
15	Paul Wu	Brittany Bold	DELTA	Below Average	15
16	Olivia Garcia	Tracy Banks	BRAVO	Below Average	16
17	Robert Gates	Alisha Cordwell	CHARLIE	Below Average	17
18	Olivia Garcia	Tracy Banks	BRAVO	Below Average	18
19	Paul Wu	Brittany Bold	DELTA	Below Average	19
20	John Ray	James Goodwill	ALFA	Below Average	20
21	Emily Grey	Alisha Cordwell	CHARLIE	Below Average	21
22	Paul Thompson	Tracy Banks	BRAVO	Below Average	22
23	Michael Smith	Brittany Bold	DELTA	Below Average	23
24	Olivia Garcia	Tracy Banks	BRAVO	Below Average	24
25					

Query Settings

Properties

Name: Pharma Sales Data

Applied Steps

- Source
- Use First Row as Headers
- Changed Data Type of Quantitative Column
- Transformed Format of Sales Category
- Checked Distinctive Values of Manager
- Rounded Off Latitude Column
- Rounded Off Longitude Column
- Renamed Column Name From Manager to Manager
- Changed Data Type of Sales Reference ID
- Added Conditional Column Sales Category
- Changed Data Type of Sales Category
- Added Index from 1 For Reference
- Renamed Index Column as Sales Reference ID

16. Changed Data Type of “Sales Reference ID” from Number into “Text”

Pharma Sales Data

Queries [1]

= Table.TransformColumnTypes(#"Renamed Index Column as Sales Reference ID",{{"Sales Reference ID",Text}})

	Name of Sales Rep	Manager	Sales Team	Sales Category	Sales Reference ID
1	Mary Gerrard	Britanny Bold	DELTA	Below Average	1
2	essica Smith	Britanny Bold	DELTA	Below Average	2
3	teve Pepple	Tracy Banks	BRAVO	Below Average	3
4	Mary Gerrard	Britanny Bold	DELTA	Below Average	4
5	Anne Wu	Britanny Bold	DELTA	Below Average	5
6	hompson Crawford	James Goodwill	ALFA	Below Average	6
7	heila Stones	Britanny Bold	DELTA	Below Average	7
8	Mary Gerrard	Britanny Bold	DELTA	Below Average	8
9	stella Given	Alisha Cordwell	CHARLIE	Below Average	9
10	orris Garcia	Tracy Banks	BRAVO	Below Average	10
11	rica Jones	James Goodwill	ALFA	Below Average	11
12	bigail Thompson	Tracy Banks	BRAVO	Below Average	12
13	bigail Thompson	Tracy Banks	BRAVO	Below Average	13
14	essica Smith	Britanny Bold	DELTA	Below Average	14
15	Anne Wu	Britanny Bold	DELTA	Below Average	15
16	orris Garcia	Tracy Banks	BRAVO	Below Average	16
17	aniel Gates	Alisha Cordwell	CHARLIE	Below Average	17
18	orris Garcia	Tracy Banks	BRAVO	Below Average	18
19	Anne Wu	Britanny Bold	DELTA	Below Average	19
20	an Ray	James Goodwill	ALFA	Below Average	20
21	immy Grey	Alisha Cordwell	CHARLIE	Below Average	21
22	bigail Thompson	Tracy Banks	BRAVO	Below Average	22
23	essica Smith	Britanny Bold	DELTA	Below Average	23
24	orris Garcia	Tracy Banks	BRAVO	Below Average	24
25					

Query Settings

Properties

Name: Pharma Sales Data

All Properties

Applied Steps

- Source
- Use First Row as Headers
- Changed Data Type of Quant...
- Transformed Format of Sales ...
- Checked Distinctive Values of ...
- Rounded Off Latitude Column ...
- Rounded Off Longitude Colu...
- Renamed Column Name Fro...
- Changed Data Type of Sales ...
- Added Conditional Column S...
- Changed Data Type of Sales C...
- Added Index from 1 For Refer...
- Renamed Index Column as Sa...

Changed Data Type of Sales Reference ID

17. Created a New Conditional Column Customer Segment to Categorize Customers

- Created a New Conditional Column “Customer Segment” to Categorize Customers based on the “Sales Amount”.
- Add Column >> Conditional Column >> by created “If Condition” as follows,
 - If the “Sales Amount” is greater than or equal to “10000000” Then the output is “Premium Customer”.
 - If the “Sales Amount” is greater than or equal to “1000000” Then the output is “Regular Customer”.
 - If Else, Then the output is “New Customer”.

Table.AddColumn(#"Changed Data Type of Sales Reference ID into Text", "Customer Segment", each if [Sales Amount] >= 10000000 then "Premium Customer" else if [Sales Amount] >= 1000000 then "Regular Customer" else "New Customer")

The screenshot shows the Power BI Query Editor with a single query named "Pharma Sales Data". The query consists of the following M code:

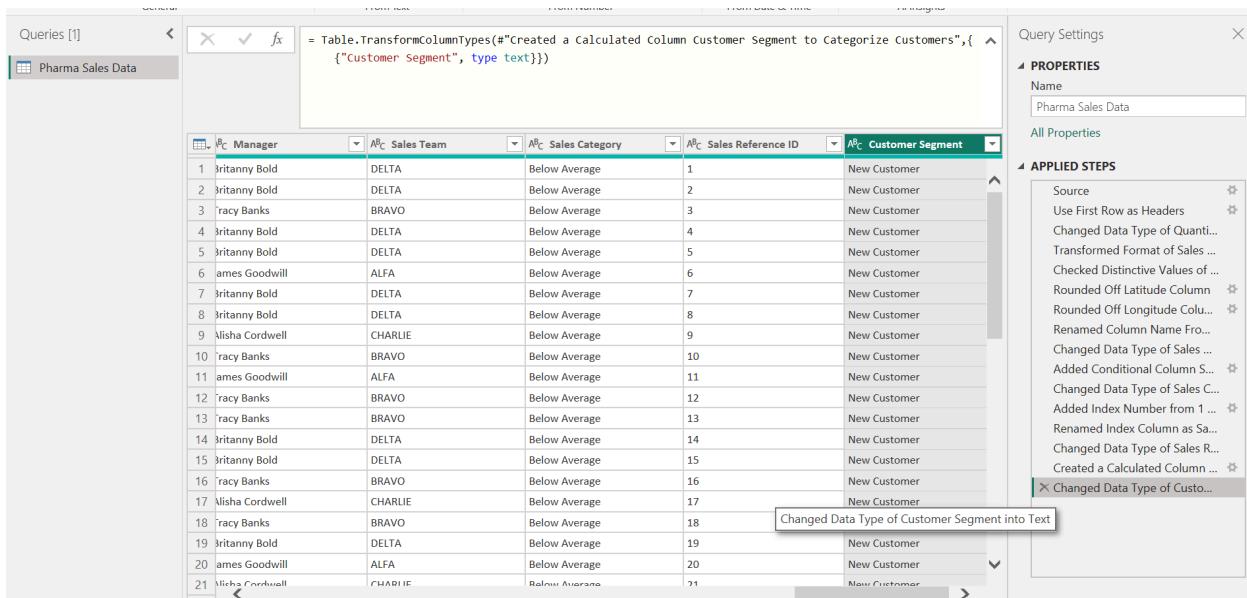
```
= Table.AddColumn(#"Changed Data Type of Sales Reference ID into Text", "Customer Segment", each if [Sales Amount] >= 10000000 then "Premium Customer" else if [Sales Amount] >= 1000000 then "Regular Customer" else "New Customer")
```

The "Customer Segment" column is highlighted with a tooltip: "Created a New Conditional Column Customer Segment to Categorize Customers by Type of Customer".

The "APPLIED STEPS" pane on the right lists the following steps:

- Source
- Use First Row as Headers
- Changed Data Type of Quantitative Columns
- Transformed Format of Sales Reference ID
- Checked Distinctive Values of Sales Reference ID
- Rounded Off Latitude Column
- Rounded Off Longitude Column
- Renamed Column Name From Sales Reference ID to Sales Reference ID
- Changed Data Type of Sales Reference ID
- Added Conditional Column Customer Segment
- Changed Data Type of Sales Reference ID
- Added Index Number from 1 to 25
- Renamed Index Column as Sales Reference ID
- Changed Data Type of Sales Reference ID
- Created a New Conditional Column Customer Segment to Categorize Customers by Type of Customer
- Merged City and Country Columns
- Renamed the Merged Column as Sales Reference ID

18. Changed Data Type of Customer Segment Column into Text



The screenshot shows the Power Query Editor interface with the following details:

- Queries [1]** is selected in the top-left corner.
- Pharma Sales Data** is the current query.
- Code View** is open, displaying the M code:

```
= Table.TransformColumnTypes(#"Created a Calculated Column Customer Segment to Categorize Customers", {{"Customer Segment", type text}})
```
- Table View** shows the data with the following columns and rows:

	Manager	Sales Team	Sales Category	Sales Reference ID	Customer Segment
1	Brittany Bold	DELTA	Below Average	1	New Customer
2	Brittany Bold	DELTA	Below Average	2	New Customer
3	Tracy Banks	BRAVO	Below Average	3	New Customer
4	Brittany Bold	DELTA	Below Average	4	New Customer
5	Brittany Bold	DELTA	Below Average	5	New Customer
6	James Goodwill	ALFA	Below Average	6	New Customer
7	Brittany Bold	DELTA	Below Average	7	New Customer
8	Brittany Bold	DELTA	Below Average	8	New Customer
9	Alisha Cordwell	CHARLIE	Below Average	9	New Customer
10	Tracy Banks	BRAVO	Below Average	10	New Customer
11	James Goodwill	ALFA	Below Average	11	New Customer
12	Tracy Banks	BRAVO	Below Average	12	New Customer
13	Tracy Banks	BRAVO	Below Average	13	New Customer
14	Brittany Bold	DELTA	Below Average	14	New Customer
15	Brittany Bold	DELTA	Below Average	15	New Customer
16	Tracy Banks	BRAVO	Below Average	16	New Customer
17	Alisha Cordwell	CHARLIE	Below Average	17	New Customer
18	Tracy Banks	BRAVO	Below Average	18	New Customer
19	Brittany Bold	DELTA	Below Average	19	New Customer
20	James Goodwill	ALFA	Below Average	20	New Customer
21	Alisha Cordwell	CHARLIE	Below Average	21	New Customer

- Query Settings** pane shows the query name is "Pharma Sales Data".
- Properties** pane shows the query name is "Pharma Sales Data".
- Applied Steps** pane shows the following steps:
 - Source
 - Use First Row as Headers
 - Changed Data Type of Quant...
 - Transformed Format of Sales ...
 - Checked Distinctive Values of ...
 - Rounded Off Latitude Column
 - Rounded Off Longitude Colu...
 - Renamed Column Name Fro...
 - Changed Data Type of Sales ...
 - Added Conditional Column S...
 - Changed Data Type of Sales C...
 - Added Index Number from 1 ...
 - Renamed Index Column as Sa...
 - Changed Data Type of Sales R...
 - Created a Calculated Column ...
 - Changed Data Type of Custo...** (highlighted)

19. Merged the City and Country Column to Create Location Column

- Merged the “City” and “Country” columns to create a new column “Location” in the format of “City, Country”.
- Add Column >> Merge Column >> Select Separator (,) >> OK.

The screenshot shows the Microsoft Power Query Editor interface. On the left, the 'Queries [1]' pane displays a single query named 'Pharma Sales Data'. The main area shows a table with five columns: 'Sales Team', 'Sales Category', 'Sales Reference ID', 'Customer Segment', and 'Merged'. The 'Merged' column contains text values representing the concatenation of 'City' and 'Country' from the previous columns. The 'Applied Steps' pane on the right lists the steps taken to create the 'Merged' column, with the last step being 'Merged City and Country Columns to Create Location Column' highlighted with a red box.

Sales Team	Sales Category	Sales Reference ID	Customer Segment	Merged
1 DELTA	Below Average	1	New Customer	Lublin, Poland
2 DELTA	Below Average	2	New Customer	Świecie, Poland
3 BRAVO	Below Average	3	New Customer	Rybnik, Poland
4 DELTA	Below Average	4	New Customer	Czeladź, Poland
5 DELTA	Below Average	5	New Customer	Olsztyn, Poland
6 ALFA	Below Average	6	New Customer	Olecko, Poland
7 DELTA	Below Average	7	New Customer	Inowrocław, Poland
8 DELTA	Below Average	8	New Customer	Ciechanów, Poland
9 CHARLIE	Below Average	9	New Customer	Nidzica, Poland
10 BRAVO	Below Average	10	New Customer	Kraków, Poland
11 ALFA	Below Average	11	New Customer	Gubin, Poland
12 BRAVO	Below Average	12	New Customer	Ostrów Mazowiecka, Poland
13 BRAVO	Below Average	13	New Customer	Radom, Poland
14 DELTA	Below Average	14	New Customer	Gdańsk, Poland
15 DELTA	Below Average	15	New Customer	Tarnowskie Góry, Poland
16 BRAVO	Below Average	16	New Customer	Łaziska Górska, Poland
17 CHARLIE	Below Average	17	New Customer	Wągrowiec, Poland
18 BRAVO	Below Average	18	New Customer	Lwówek Śląski, Poland
19 DELTA	Below Average	19	New Customer	Złotoryja, Poland
20 ALFA	Below Average	20	New Customer	Biskupiec, Poland
21 CHARLIE	Below Average	21	New Customer	Bielgoraj, Poland
22 BRAVO	Below Average	22	New Customer	Bolesławiec, Poland
23 DELTA	Below Average	23	New Customer	Świdnica, Poland
24 BRAVO	Below Average	24	New Customer	

Query Settings

Properties

Applied Steps

Merged City and Country Columns to Create Location Column

20. Renamed the Merged Column into “Location”

Queries [1]

Pharma Sales Data

	Sales Team	Sales Category	Sales Reference ID	Customer Segment	Location
1	DELTA	Below Average	1	New Customer	Lublin, Poland
2	DELTA	Below Average	2	New Customer	Świecie, Poland
3	RAVO	Below Average	3	New Customer	Rybnik, Poland
4	DELTA	Below Average	4	New Customer	Czeladź, Poland
5	DELTA	Below Average	5	New Customer	Olsztyn, Poland
6	ILFA	Below Average	6	New Customer	Olecko, Poland
7	DELTA	Below Average	7	New Customer	Inowrocław, Poland
8	DELTA	Below Average	8	New Customer	Ciechanów, Poland
9	CHARLIE	Below Average	9	New Customer	Nidzica, Poland
10	RAVO	Below Average	10	New Customer	Kraków, Poland
11	ILFA	Below Average	11	New Customer	Gubin, Poland
12	RAVO	Below Average	12	New Customer	Ostrów Mazowiecka, Poland
13	RAVO	Below Average	13	New Customer	Radom, Poland
14	DELTA	Below Average	14	New Customer	Gdańsk, Poland
15	DELTA	Below Average	15	New Customer	Tarnowskie Góry, Poland
16	RAVO	Below Average	16	New Customer	Laziska Górske, Poland
17	CHARLIE	Below Average	17	New Customer	Wągrowiec, Poland
18	RAVO	Below Average	18	New Customer	Lwówek Śląski, Poland
19	DELTA	Below Average	19	New Customer	Złotoryja, Poland
20	ILFA	Below Average	20	New Customer	Biskupiec, Poland
21	CHARLIE	Below Average	21	New Customer	Bilgoraj, Poland
22	RAVO	Below Average	22	New Customer	Gniew, Poland
23	DELTA	Below Average	23	New Customer	Bolesławiec, Poland
24	RAVO	Below Average	24	New Customer	Świdnica, Poland

Query Settings

PROPERTIES

Name: Pharma Sales Data

APPLIED STEPS

- Source
- Use First Row as Headers
- Changed Data Type of Quant...
- Transformed Format of Sales ...
- Checked Distinctive Values of ...
- Rounded Off Latitude Column
- Rounded Off Longitude Colu...
- Renamed Column Name Fro...
- Changed Data Type of Sales ...
- Added Conditional Column S...
- Changed Data Type of Sales C...
- Added Index Number from 1 ...
- Renamed Index Column as Sa...
- Changed Data Type of Sales R...
- Created a Calculated Column ...
- Changed Data Type of Custo...
- Merged City and Country Col...
- Renamed the Merged Column...
- Renamed the Merged Column into Location

21. Aggregated Sales Amount of Customers from Various Distributors

- Duplicated the “Pharma Sales Data” table and named as “Total Purchase Amount of Customers from Various Distributors”.
- Aggregated the “Total Sales Amount” by “Customers from Various Distributors” using Aggregation Function.
- Transform >> Group By >> Select Advance >> Select Grouping (Distributor) >> Add Grouping (Customer Name) >> Enter New Column Name >> Select Operation (Sum) >> Select Column (Sales Amount).

Queries [2]

Pharma Sales Data

Total Purchase Amount...

1.2 Total Sales by Customer Name

	Distributor	Customer Name	Total Sales
1	Gottlieb-Cruickshank	Zieme, Doyle and Kunze	180941
2	Gottlieb-Cruickshank	Feest PLC	150056
3	Gottlieb-Cruickshank	Medhurst-Beer Pharmaceutical Limited	401955
4	Gottlieb-Cruickshank	Barton Ltd Pharma Plc	310109
5	Gottlieb-Cruickshank	Keeling LLC Pharmacy	322199
6	Gottlieb-Cruickshank	Runte-Margardt Pharmaceutical Ltd	247789
7	Gottlieb-Cruickshank	Blick, Pacocha and Schowalter	286806
8	Gottlieb-Cruickshank	Leuschke PLC Pharmacy	138213
9	Gottlieb-Cruickshank	Miller-Satterfield Pharma Plc	469861
10	Gottlieb-Cruickshank	Bashirian-Kassulke Pharma Plc	533355
11	Gottlieb-Cruickshank	Wolff Group Pharm	195506
12	Gottlieb-Cruickshank	Denesik, Walter and Beatty Pharma Plc	85720
13	Gottlieb-Cruickshank	Breitenberg-Kuhn Pharmacy	101613
14	Gottlieb-Cruickshank	McClure, Zemlak and Dibbert Pharma Plc	108066
15	Gottlieb-Cruickshank	Block-Romaguera Pharmaceutical Limited	509586
16	Gottlieb-Cruickshank	Hahn, Rutherford and Gislason Pharmaceutical Limited	111177
17	Gottlieb-Cruickshank	D'Amore and Sons	156209
18	Gottlieb-Cruickshank	Koss Ltd Pharmaceutical Limited	322614
19	Gottlieb-Cruickshank	Fadel-West	197041
20	Gottlieb-Cruickshank	Lindgren-Simonis Pharm	261003
21	Gottlieb-Cruickshank	Spinka, Schowalter and Conn Pharmaceutical Limited	250439
22	Gottlieb-Cruickshank	Will and Sons Pharma Plc	141827
23	Gottlieb-Cruickshank	Jakubowski Inc Pharmaceutical Limited	83869
24	Gottlieb-Cruickshank	Schaden-Hirthe Pharmaceutical Ltd	383005
25	Gottlieb-Cruickshank	Mraz Group Pharmacy	

Query Settings

Properties

Name: Total Purchase Amount of Customers from Various Distributors

All Properties

Applied Steps

- Use First Row as Headers
- Changed Data Type of Qu...
- Transformed Format of Sal...
- Checked Distinctive Values...
- Rounded Off Latitude Col...
- Rounded Off Longitude C...
- Renamed Column Name f...
- Changed Data Type of Sal...
- Added Conditional Colum...
- Changed Data Type of Sal...
- Added Index Number fro...
- Renamed Index Column as...
- Changed Data Type of Sal...
- Created a New Condition...
- Changed Data Type of Cus...
- Merged City and Country ...
- Renamed the Merged Col...
- Aggregated Sales Amount...

22. Renamed Column into “Total Purchase Amount of Customers from Various Distributors”

Queries [2]

Pharma Sales Data

Total Purchase Amount...

Customer Name

1.2 Total Purchase Amount of Customers from Various Distributors...

Customer Name	Total Purchase Amount
Zieme, Doyle and Kunze	180941
Feest PLC	150056
Medhurst-Beer Pharmaceutical Limited	401955
Barton Ltd Pharma Plc	310109
Keeling LLC Pharmacy	322199
Runte-Marquardt Pharmaceutical Ltd	247789
Blick, Paococha and Schowalter	286806
Leuschke PLC Pharmacy	138213
Miller-Satterfield Pharma Plc	469861
Bashirian-Kassulke Pharma Plc	533355
Wolff Group Pharm	195506
Denesik, Walter and Beatty Pharma Plc	85720
Breitenberg-Kuhn Pharmacy	101613
McClure, Zemlak and Dibbert Pharma Plc	108066
Block-Romaguera Pharmaceutical Limited	509586
Hahn, Rutherford and Gislason Pharmaceutical Limited	111177
D'Amore and Sons	156209
Koss Ltd Pharmaceutical Limited	322614
Fadel-West	197041
Lindgren-Simonis Pharm	261003
Spinka, Schowalter and Conn Pharmaceutical Limited	250439
Will and Sons Pharma Plc	141827
Jakubowski Inc Pharmaceutical Limited	162503
Schaden-Hirthe Pharmaceutical Ltd	

Renamed Column into Total Purchase Amount of Customers from Various Distributors

Query Settings

PROPERTIES

Name: Total Purchase Amount of Customers from Various Distributors

APPLIED STEPS

- Use First Row as Headers
- Changed Data Type of Qu...
- Transformed Format of Sal...
- Checked Distinctive Values...
- Rounded Off Latitude Colu...
- Rounded Off Longitude C...
- Renamed Column Name F...
- Changed Data Type of Sal...
- Added Conditional Colum...
- Changed Data Type of Sal...
- Added Index Number fro...
- Renamed Index Column as...
- Changed Data Type of Sal...
- Created a New Conditiona...
- Changed Data Type of Cus...
- Merged City and Country ...
- Renamed the Merged Col...
- Aggregated Sales Amount...
- Renamed Column into Tot...
- Changed Type

23. Changed Data Type into “Fixed Decimal Number”

Queries [2]

Pharma Sales Data

Total Purchase Amount...

	Distributor	Customer Name	Total Purchase Amount
1	Koss	Abernathy Group	57,12
2	Gleason	Abernathy Group	2,13
3	Lockman	Abernathy Group	2,13
4	Crist Inc	Abernathy Group	5,00
5	Welch-Langworth	Abernathy Group	5,00
6	Lesch	Abernathy Group	1,13
7	Nader-Gaylord	Abernathy Group	1,13
8	Kozey-Emmerich	Abernathy Group	21,13
9	Rohan and Sons	Abernathy Group	1,13
10	Gerlach LLC	Abernathy Group	88,13
11	Bashirian-Kassulke	Abernathy Group	14,13
12	Daugherty-Rempel	Abernathy Group	24,13
13	Romaguera-Fay	Abernathy Group	1,13
14	Erdman	Abernathy Group	32,13
15	Carter-Conn	Abernathy Group Pharmaceutical Limited	1,13
16	Prohaska-Kuhic	Abernathy Group Pharmaceutical Limited	2,13
17	Rohan	Abernathy Group Pharmaceutical Limited	3,13
18	Stehr-Champlin	Abernathy Group Pharmaceutical Limited	5,13
19	Beier	Abernathy Group Pharmaceutical Limited	4,13
20	Smith Inc	Abernathy Group Pharmaceutical Limited	1,13
21	Cassin	Abernathy Group Pharmaceutical Limited	1,13
22	Rogahn-Klein	Abernathy Group Pharmaceutical Limited	1,13
23	Lindgren-Simonis Pharm	Abernathy Group Pharmaceutical Limited	1,13
24	Gottlieb-Cruickshank	Abernathy Group Pharmaceutical Limited	1,13

Query Settings

PROPERTIES

Name: Total Purchase Amount of Customers from Various Distributors

All Properties

APPLIED STEPS

- Changed Data Type of Qu...
- Transformed Format of Sal...
- Checked Distinctive Values...
- Rounded Off Latitude Col...
- Rounded Off Longitude C...
- Renamed Column Name F...
- Changed Data Type of Sal...
- Added Conditional Colum...
- Changed Data Type of Sal...
- Added Index Number fro...
- Renamed Index Column as...
- Changed Data Type of Sal...
- Created a New Conditiona...
- Changed Data Type of Cus...
- Merged City and Country ...
- Renamed the Merged Col...
- Aggregated Sales Amount...
- Renamed Column into Tot...
- Changed Data Type into Fi...
- Changed Data Type into Fixed Decimal Number in Ascending Order...

24. Sorted in Ascending Order to Check Customer's all Purchase Amount from Various Distributors

Queries [2]

Pharma Sales Data

Total Purchase Amount...

Table.Sort(#"Changed Data Type into Fixed Decimal Number",{{"Customer Name", Order.Ascending}})

Distributor Customer Name Total Purchase Amount of Customers from Various Distributors

	Distributor	Customer Name	Total Purchase Amount of Customers from Various Distributors
1	Koss	Abernathy Group	57.00
2	Gleason	Abernathy Group	2.00
3	Lockman	Abernathy Group	2,000.00
4	Crist Inc	Abernathy Group	5,000.00
5	Welch-Langworth	Abernathy Group	5,000.00
6	Lesch	Abernathy Group	88.00
7	Nader-Gaylord	Abernathy Group	14.00
8	Kozey-Emmerich	Abernathy Group	21.00
9	Rohan and Sons	Abernathy Group	32.00
10	Gerlach LLC	Abernathy Group	88.00
11	Bashirian-Kassulke	Abernathy Group	14.00
12	Daugherty-Rempel	Abernathy Group	24.00
13	Romaguera-Fay	Abernathy Group	1.00
14	Erdman	Abernathy Group	32.00
15	Carter-Conn	Abernathy Group Pharmaceutical Limited	2.00
16	Prohaska-Kuhic	Abernathy Group Pharmaceutical Limited	2.00
17	Rohan	Abernathy Group Pharmaceutical Limited	3,000.00
18	Stehr-Champlin	Abernathy Group Pharmaceutical Limited	5,000.00
19	Beier	Abernathy Group Pharmaceutical Limited	4,000.00
20	Smith Inc	Abernathy Group Pharmaceutical Limited	1,000.00
21	Cassin	Abernathy Group Pharmaceutical Limited	1,000.00
22	Rogahn-Klein	Abernathy Group Pharmaceutical Limited	1,000.00
23	Lindgren-Simonis Pharm	Abernathy Group Pharmaceutical Limited	1,000.00
24	Gottlieb-Cruickshank	Abernathy Group Pharmaceutical Limited	1,000.00
25			

Sorted in Ascending Order to Check all Customers Purchase Amount

Query Settings

PROPERTIES

Name: Total Purchase Amount of Customers from Various Distributors

APPLIED STEPS

- Changed Data Type of Qu...
- Transformed Format of Sal...
- Checked Distinctive Values...
- Rounded Off Latitude Colu...
- Rounded Off Longitude C...
- Renamed Column Name F...
- Changed Data Type of Colu...
- Added Conditional Colum...
- Changed Data Type of Sal...
- Added Index Number fro...
- Renamed Index Column as...
- Changed Data Type of Sal...
- Created a New Conditiona...
- Changed Data Type of Cus...
- Merged City and Country ...
- Renamed the Merged Col...
- Aggregated Sales Amount...
- Renamed Column into Tot...
- Changed Data Type into Fi...
- Sorted in Ascending Order...

25. Grouped Sales Amount by Product Name to Calculate Total Sales Amount by Product Name

- Duplicated the “Pharma Sales Data” table and named as “Total Sales Amount by Product Name”.
- Transform >> Group By >> Select the Specific Column (Product Name) >> Select Operation (Sum) >> Select Column (Sales Amount).
- Changed Data Type into “Fixed Decimal Number”.

Queries [3]

Pharma Sales Data

Total Purchase Amount...

Total Sales Amount by P...

= Table.TransformColumnTypes(#"Grouped Sales Amount by Product Name",{{"Total Sales Amount by Product Name",Type.Decimal}})

	Product Name	Total Sales Amount by Product Name
1	Topipizole	3,58,59,024.00
2	Choriotrisin	6,94,71,436.00
3	Acantaine	71,81,328.00
4	Liofetine Refliruax	4,84,08,105.00
5	Oxymotroban Fexoformin	5,77,84,486.00
6	Pazofenac	1,50,22,482.00
7	Symbitrim	8,36,13,856.00
8	Morphizolid Tianalin	8,46,69,620.00
9	Lovapur	5,59,47,989.00
10	Ampysin	2,42,72,541.00
11	Trazobalamin	8,29,90,190.00
12	Atrabin Alkerotec	2,93,49,879.00
13	Exotropin Empizine	6,63,74,105.00
14	Afinitasol	3,43,94,360.00
15	Amavirase	8,62,94,452.00
16	Neuropogen Empibax	9,17,51,275.00
17	Tracdomide	6,85,14,796.00
18	Novakyn Tracprox	3,08,08,800.00
19	Paronium Atracustone	4,03,16,976.00
20	Dantoccept Ferurenone	5,32,61,430.00
21	Aciprex	5,01,44,889.00
22	Diroxolol	5,90,41,170.00
23	Saprodeine Zanprosyn	2,21,15,330.00
24	Magnemunex	8,59,25,190.00
25	Pitodomide	32,21,208.00

Query Settings

PROPERTIES

Name: Total Sales Amount by Product Name

All Properties

APPLIED STEPS

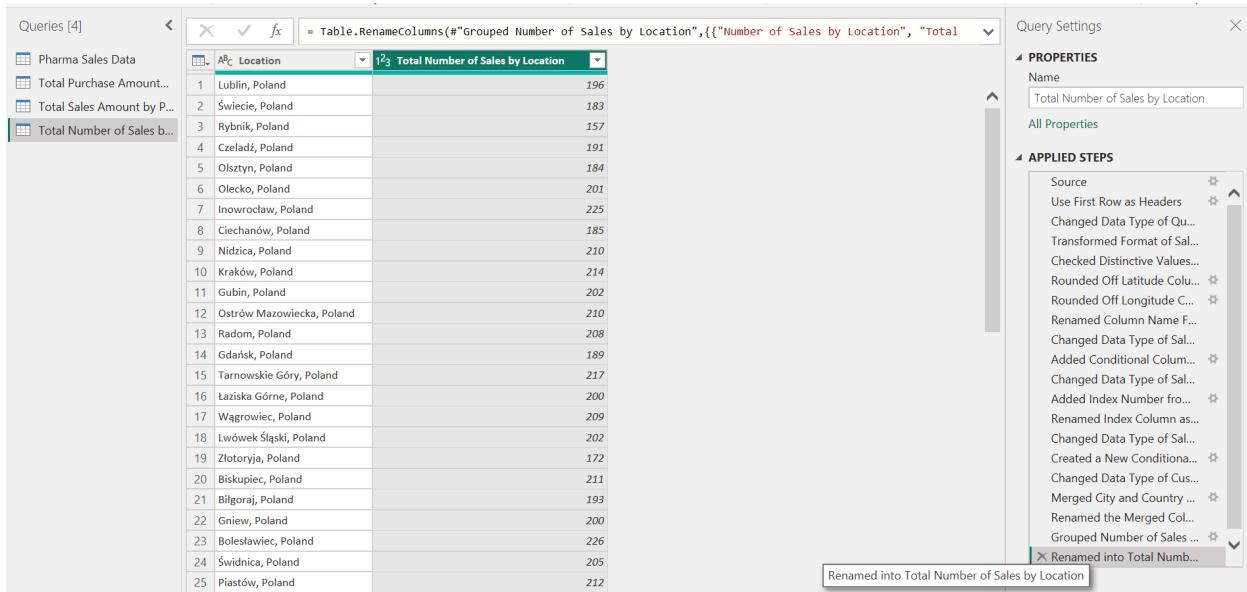
- Source
- Use First Row as Headers
- Changed Data Type of Qu...
- Transformed Format of Sal...
- Checked Distinctive Values...
- Rounded Off Latitude Colu...
- Rounded Off Longitude C...
- Renamed Column Name F...
- Changed Data Type of Sal...
- Added Conditional Colum...
- Changed Data Type of Sal...
- Added Index Number fro...
- Renamed Index Column as...
- Changed Data Type of Sal...
- Created a New Conditiona...
- Changed Data Type of Cus...
- Merged City and Country ...
- Renamed the Merged Col...
- Grouped Sales Amount by ...
- Changed Data Type into Fi...

Grouped Sales Amount by Product Name

Changed Data Type into Fi...

26. Grouped Total Number of Sales by Location

- Duplicated the “Pharma Sales Data” table and named as “Total Number of Sales by Location”.
- Transform >> Group By >> Select the Specific Column (Location) >> Select Operation (Count Distinctive Rows).



Queries [4]

	Location	Total
1	Lublin, Poland	196
2	Świecie, Poland	183
3	Rybnik, Poland	157
4	Czeladź, Poland	191
5	Olsztyn, Poland	184
6	Olecko, Poland	201
7	Inowrocław, Poland	225
8	Ciechanów, Poland	185
9	Nidzica, Poland	210
10	Kraków, Poland	214
11	Gubin, Poland	202
12	Ostrów Mazowiecka, Poland	210
13	Radom, Poland	208
14	Gdańsk, Poland	189
15	Tarnowskie Góry, Poland	217
16	Łaziska Górska, Poland	200
17	Wągrowiec, Poland	209
18	Lwówek Śląski, Poland	202
19	Złotorja, Poland	172
20	Biskupiec, Poland	211
21	Biłgoraj, Poland	193
22	Gniew, Poland	200
23	Bolesławiec, Poland	226
24	Świdnica, Poland	205
25	Piastów, Poland	212

Query Settings

PROPERTIES

Name: Total Number of Sales by Location

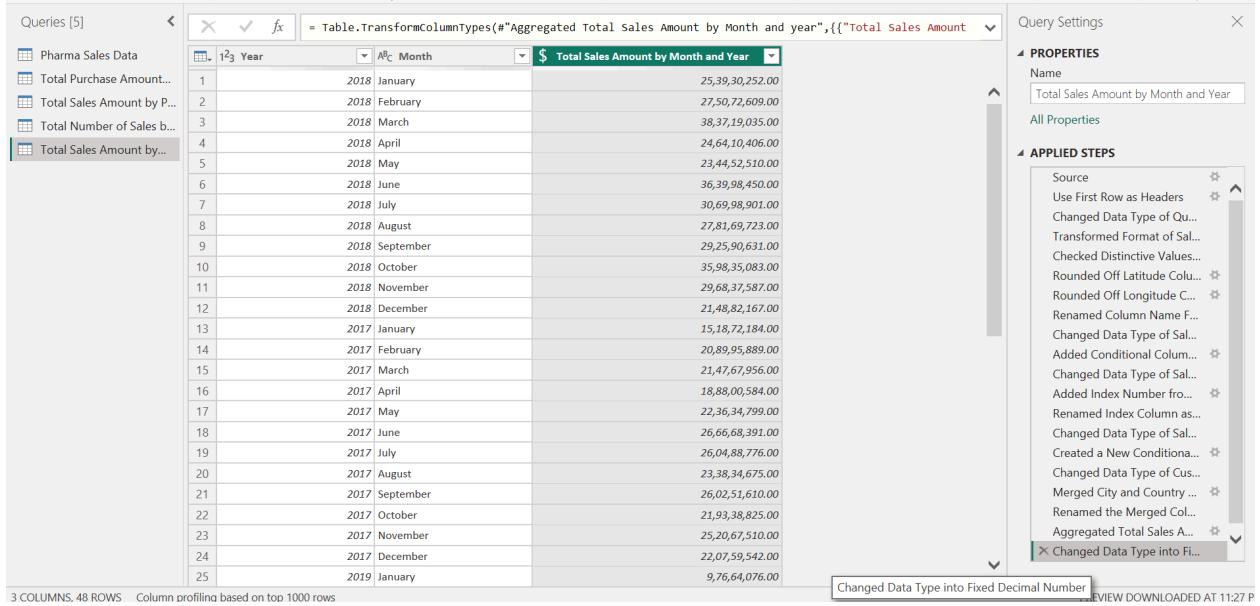
APPLIED STEPS

- Source
- Use First Row as Headers
- Changed Data Type of Qu...
- Transformed Format of Sal...
- Checked Distinctive Values...
- Rounded Off Latitude Colu...
- Rounded Off Longitude C...
- Renamed Column Name F...
- Changed Data Type of Sal...
- Added Conditional Colum...
- Changed Data Type of Sal...
- Added Index Number fro...
- Renamed Index Column as...
- Changed Data Type of Sal...
- Created a New Conditiona...
- Changed Data Type of Cus...
- Merged City and Country ...
- Renamed the Merged Col...
- Grouped Number of Sales ...

Renamed into Total Number of Sales by Location

27. Aggregated Total Sales Amount by Month and Year

- Duplicated the “Pharma Sales Data” table and named as “Total Sales Amount by Month and Year”.
- Transform >> Group By >> Select Advance >> Select Grouping (Year) >> Add Grouping (Month) >> Enter New Column Name >> Select Operation (Sum) >> Select Column (Sales Amount).
- Changed Data Type into “Fixed Decimal Number”.



Queries [5]

	Year	Month	Total Sales Amount by Month and Year
1	2018	January	25,39,30,252.00
2	2018	February	27,50,72,609.00
3	2018	March	38,37,19,035.00
4	2018	April	24,64,10,406.00
5	2018	May	23,44,52,510.00
6	2018	June	36,39,98,450.00
7	2018	July	30,69,98,901.00
8	2018	August	27,81,69,723.00
9	2018	September	29,25,90,631.00
10	2018	October	35,98,35,083.00
11	2018	November	29,68,37,587.00
12	2018	December	21,48,82,167.00
13	2017	January	15,18,72,184.00
14	2017	February	20,89,95,889.00
15	2017	March	21,47,67,956.00
16	2017	April	18,88,00,584.00
17	2017	May	22,36,34,799.00
18	2017	June	26,66,68,391.00
19	2017	July	26,04,88,776.00
20	2017	August	23,38,34,675.00
21	2017	September	26,02,51,610.00
22	2017	October	21,93,38,825.00
23	2017	November	25,20,67,510.00
24	2017	December	22,07,59,542.00
25	2019	January	9,76,64,076.00

3 COLUMNS, 48 ROWS Column profiling based on top 1000 rows

Query Settings

PROPERTIES

APPLIED STEPS

Source
Use First Row as Headers
Changed Data Type of Qu...
Transformed Format of Sal...
Checked Distinctive Values...
Rounded Off Latitude Colu...
Rounded Off Longitude C...
Renamed Column Name F...
Changed Data Type of Sal...
Added Conditional Colum...
Changed Data Type of Sal...
Added Index Number fro...
Renamed Index Column as...
Changed Data Type of Sal...
Created a New Conditiona...
Changed Data Type of Cus...
Merged City and Country ...
Renamed the Merged Col...
Aggregated Total Sales A...
Changed Data Type into Fi...

Changed Data Type into Fixed Decimal Number

- All transformations completed by using Power BI Power Query Editor.
- Close and Apply to load the data into Power BI.

DAX and Visualization

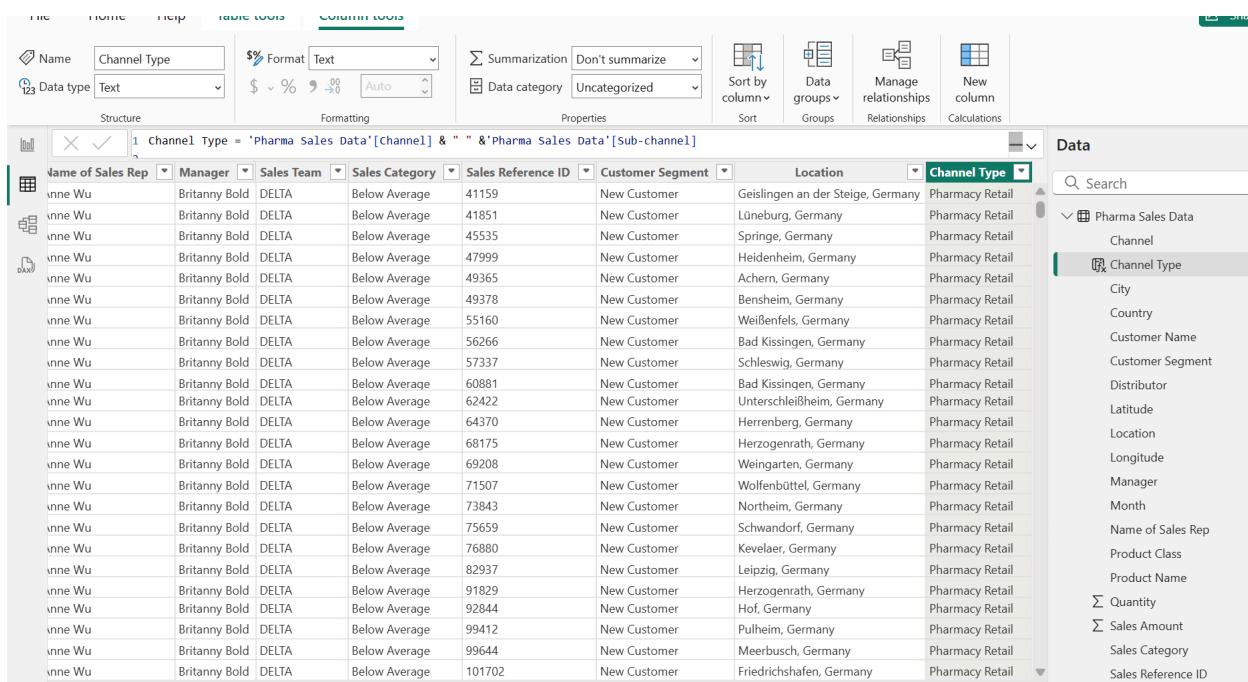
- Loaded the Tables from Power Query Editor by using Close & Apply Button.
- Formatted “Unit Price” and “Total Sales Amount” Columns from Currency into “Decimal Number”.
- Checked Data type of all Columns.
- Checked Summarization status for all Numerical Columns.

DAX (Data Analysis Expressions)

1. Created a New Calculated Column Channel Type in Pharma Sales Data

- Created a New Calculated Column in Pharma Sales Data Table.
- Combined the “Channel” and “Sub-Channel” Columns into a Single Column “Channel Type”, by using following DAX Formula

Channel Type = 'Pharma Sales Data'[Channel] & " " &'Pharma Sales Data'[Sub-channel]

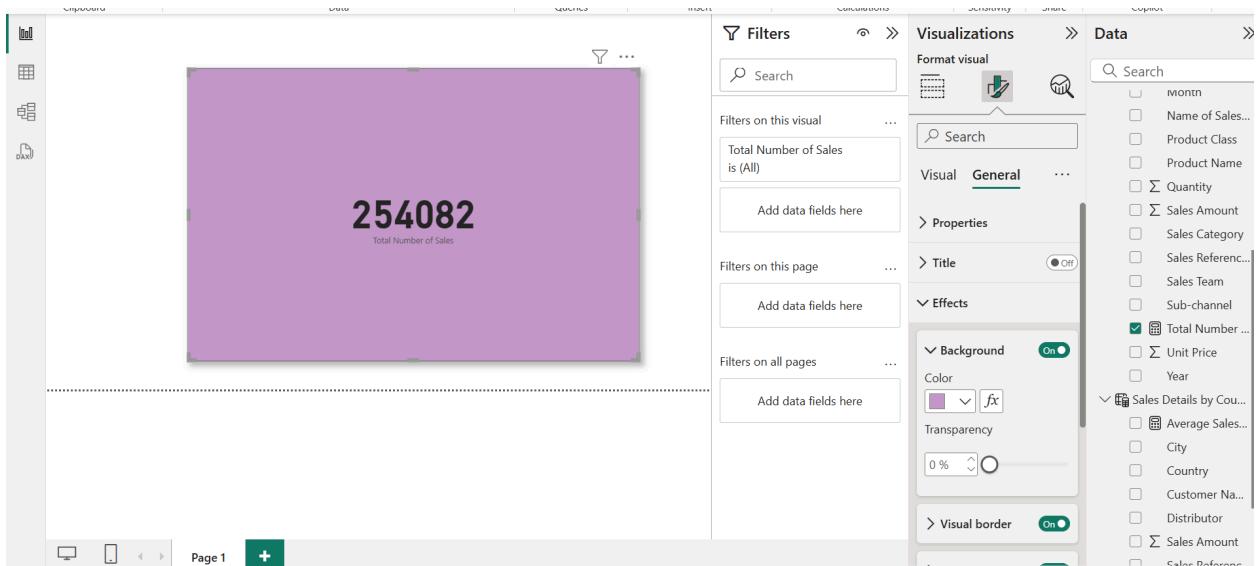


The screenshot shows the Power BI Data View ribbon with the 'Column Tools' tab selected. A calculated column named 'Channel Type' is being created, with the formula '1 Channel Type = 'Pharma Sales Data'[Channel] & " " &'Pharma Sales Data'[Sub-channel]' entered. The formula bar also shows the formula '1 Channel Type = 'Pharma Sales Data'[Channel] & " " &'Pharma Sales Data'[Sub-channel]'. The ribbon also displays the 'Data' pane on the right, which lists various columns and their properties.

2. Calculated Measures - Total Number of Sales

- Created a Calculated measure to Calculate Sales Count in the “Pharma Sales Data” by using following DAX Formula,

Total Number of Sales = COUNTROWS('Pharma Sales Data')



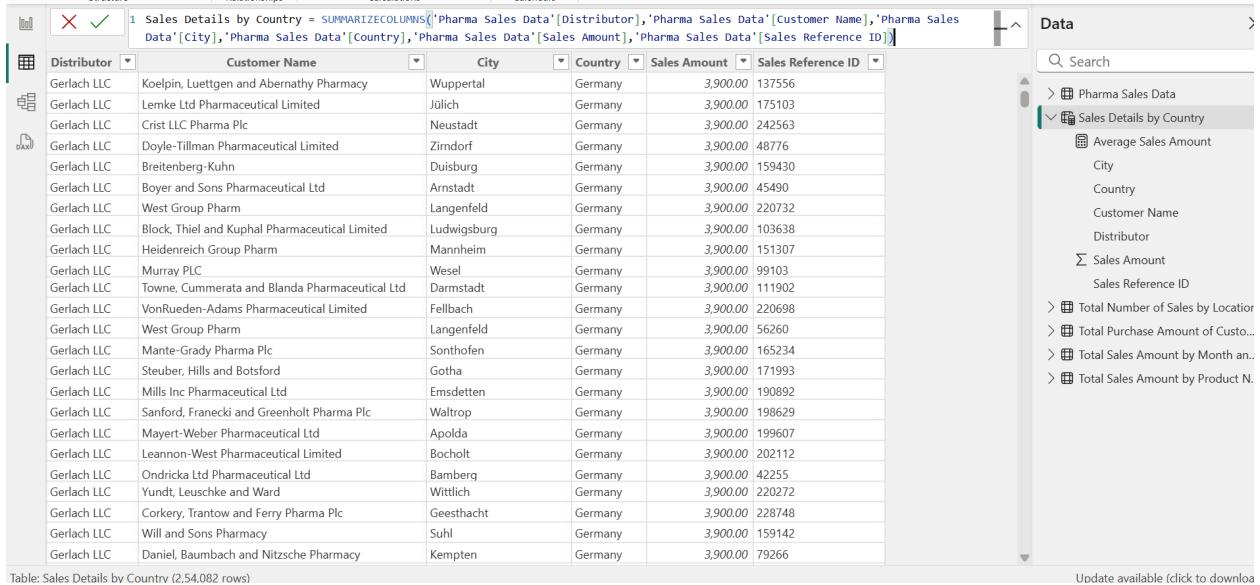
3. Created Calculated Table “Sales Details by Country”

- Created a New Calculated Table “Sales Details by Country” by using following DAX formula

Sales Details by Country = SUMMARIZECOLUMNS('Pharma Sales Data'[Distributor],'Pharma Sales Data'[Customer Name],'Pharma Sales Data'[City],'Pharma Sales Data'[Country],'Pharma Sales Data'[Sales Amount],'Pharma Sales Data'[Sales Reference ID])

- Formatted Sales Amount into “Decimal Number”.

1 Sales Details by Country = SUMMARIZECOLUMNS('Pharma Sales Data'[Distributor],'Pharma Sales Data'[Customer Name],'Pharma Sales Data'[City],'Pharma Sales Data'[Country],'Pharma Sales Data'[Sales Amount],'Pharma Sales Data'[Sales Reference ID])



The screenshot shows the Power BI Data View interface. On the left is a table with columns: Distributor, Customer Name, City, Country, Sales Amount, and Sales Reference ID. The table contains 2,54,082 rows of data. On the right is a Data pane showing the context of the table, including the source table 'Pharma Sales Data' and the calculated table 'Sales Details by Country'. The 'Sales Details by Country' table is expanded, showing its columns: Average Sales Amount, City, Country, Customer Name, Distributor, Sales Amount, Sales Reference ID, Total Number of Sales by Location, Total Purchase Amount of Custo..., Total Sales Amount by Month an..., and Total Sales Amount by Product N. The 'Sales Amount' column is highlighted with a yellow background.

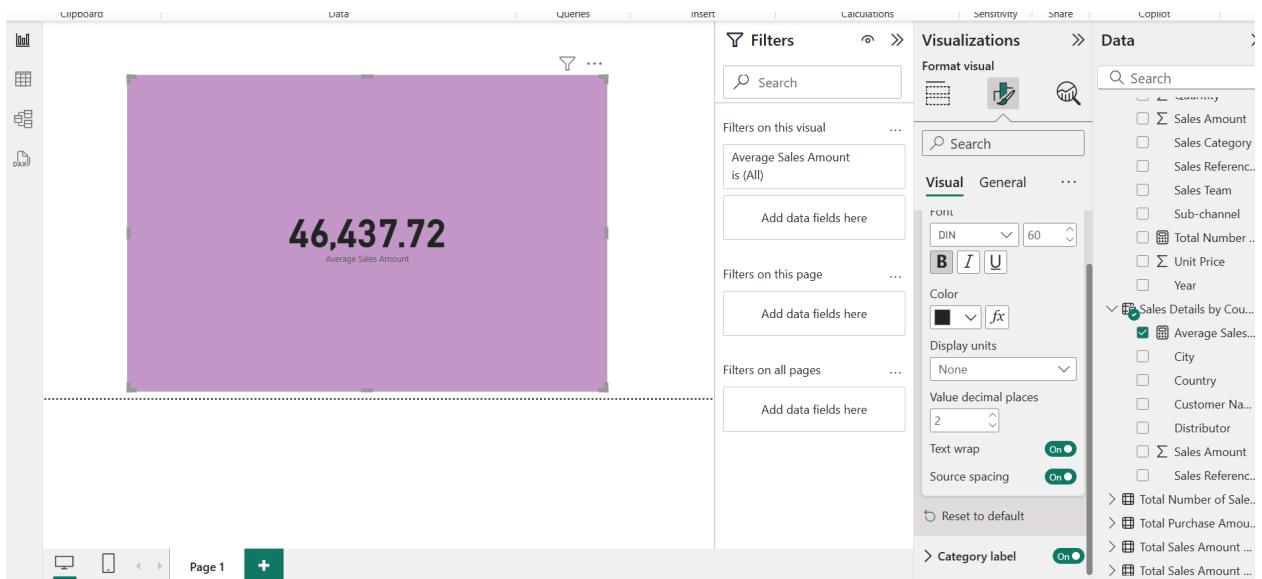
Table: Sales Details by Country (2,54,082 rows)

Update available (click to download)

4. Calculated Measure - Average Sales Amount

- Created a Calculated Measure to Calculate “Average Sales Amount” by using following DAX Formula

Average Sales Amount = AVERAGE('Sales Details by Country'[Sales Amount])

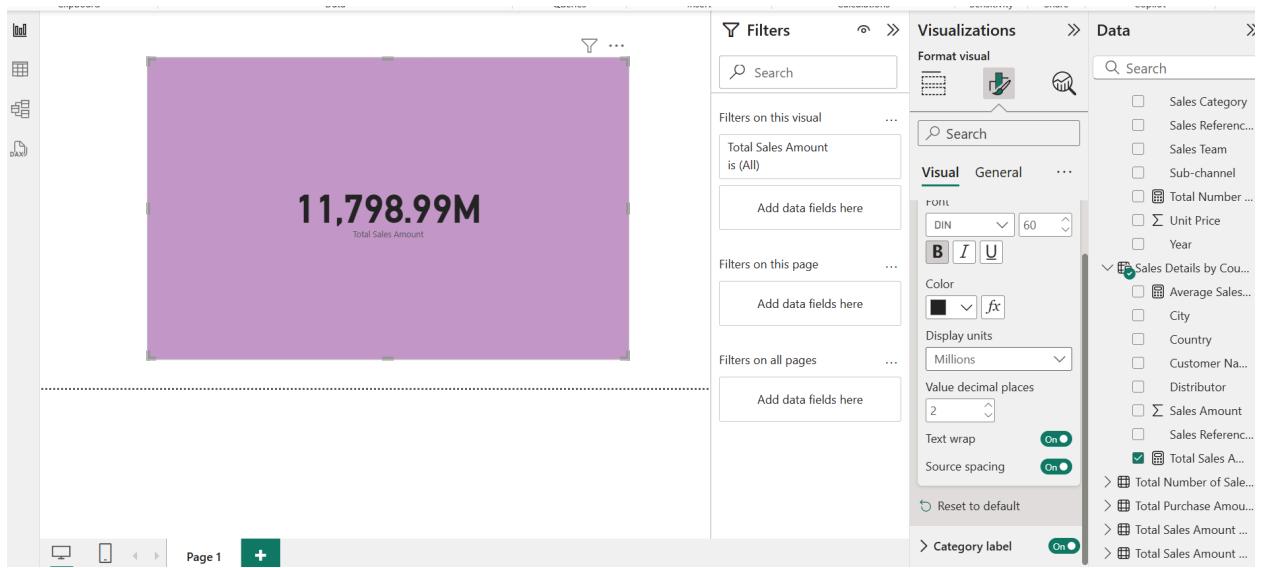


The screenshot shows the Power BI desktop interface. A single value visual is displayed in the center, showing the value **46,437.72** with the label **Average Sales Amount** below it. The ribbon at the top has the 'Data' tab selected. The 'Data' pane on the right is open, showing a list of measures. The measure **Average Sales Amount** is selected, indicated by a green checkmark. Other measures listed include Sales Amount, Sales Category, Sales Reference, Sales Team, Sub-channel, Total Number, Unit Price, and Year. The 'Visualizations' pane on the right also shows the selected measure.

5. Calculated Measure - Total Sales Amount

- Created a Calculated Measure to Calculate “Total Sales Amount” by using following DAX Formula

Total Sales Amount = SUM('Sales Details by Country'[Sales Amount])

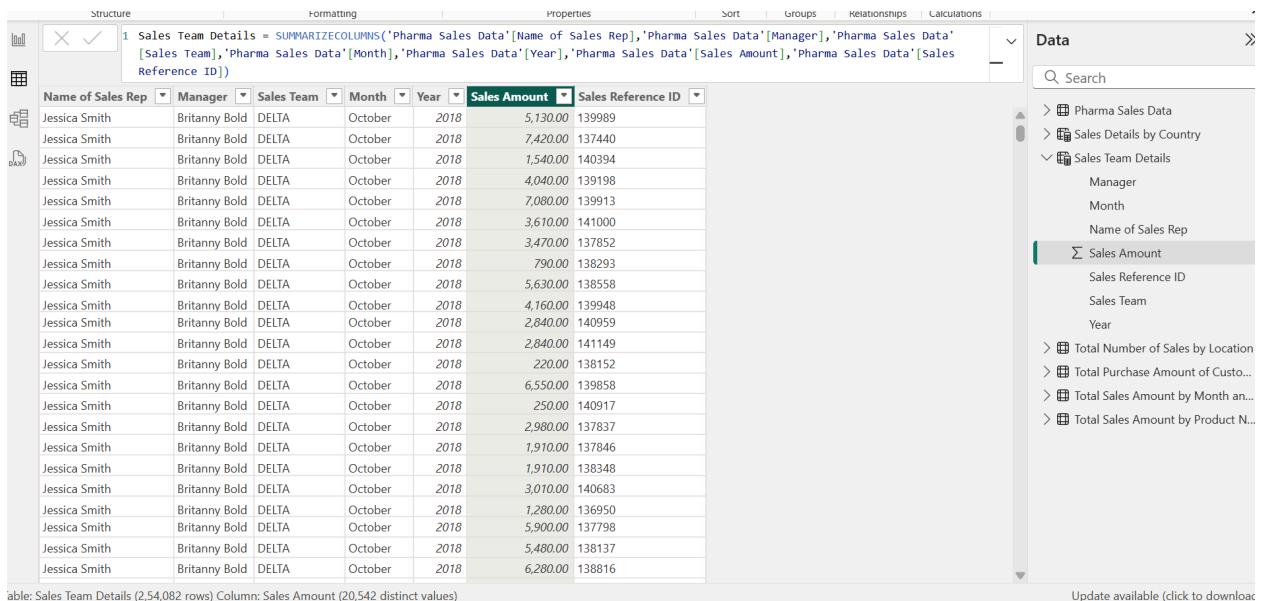


6. Created a New Calculated Column Sales Team Details

- Created a New Calculated Column “Sales Team Details” by using following DAX Formula,

Sales Team Details = SUMMARIZECOLUMNS('Pharma Sales Data'[Name of Sales Rep],'Pharma Sales Data'[Manager],'Pharma Sales Data'[Sales Team],'Pharma Sales Data'[Month],'Pharma Sales Data'[Year],'Pharma Sales Data'[Sales Amount],'Pharma Sales Data'[Sales Reference ID])

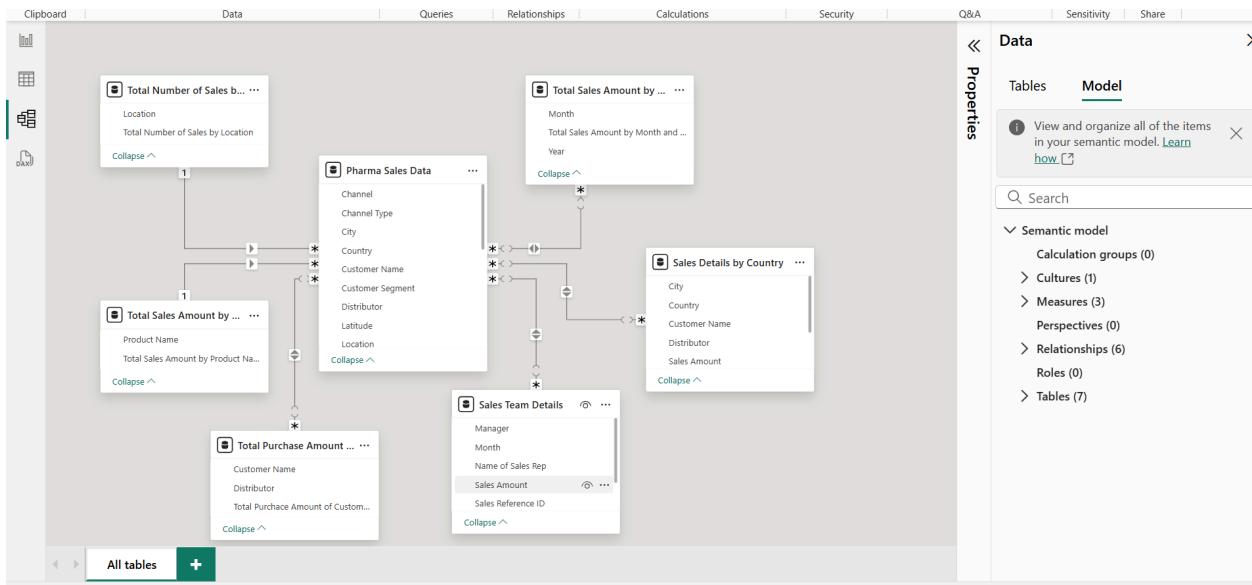
- Formatted the Sales Amount Column from Currency into Decimal Number.



The screenshot shows the Power BI Data View interface. The main area displays a table titled 'Sales Team Details' with the following columns: Name of Sales Rep, Manager, Sales Team, Month, Year, Sales Amount, and Sales Reference ID. The table contains 2,54,082 rows. The 'Sales Amount' column is currently set to 'Currency' format. The 'Data' pane on the right shows the structure of the data, including relationships to 'Pharma Sales Data' and various summary measures like 'Total Number of Sales by Location' and 'Total Sales Amount by Month and Product'.

Name of Sales Rep	Manager	Sales Team	Month	Year	Sales Amount	Sales Reference ID
Jessica Smith	Brittany Bold	DELTA	October	2018	5,130.00	139989
Jessica Smith	Brittany Bold	DELTA	October	2018	7,420.00	137440
Jessica Smith	Brittany Bold	DELTA	October	2018	1,540.00	140394
Jessica Smith	Brittany Bold	DELTA	October	2018	4,040.00	139198
Jessica Smith	Brittany Bold	DELTA	October	2018	7,080.00	139913
Jessica Smith	Brittany Bold	DELTA	October	2018	3,610.00	141000
Jessica Smith	Brittany Bold	DELTA	October	2018	3,470.00	137852
Jessica Smith	Brittany Bold	DELTA	October	2018	790.00	138293
Jessica Smith	Brittany Bold	DELTA	October	2018	5,630.00	138558
Jessica Smith	Brittany Bold	DELTA	October	2018	4,160.00	139948
Jessica Smith	Brittany Bold	DELTA	October	2018	2,840.00	140959
Jessica Smith	Brittany Bold	DELTA	October	2018	2,840.00	141149
Jessica Smith	Brittany Bold	DELTA	October	2018	220.00	138152
Jessica Smith	Brittany Bold	DELTA	October	2018	6,550.00	139858
Jessica Smith	Brittany Bold	DELTA	October	2018	250.00	140917
Jessica Smith	Brittany Bold	DELTA	October	2018	2,980.00	137837
Jessica Smith	Brittany Bold	DELTA	October	2018	1,910.00	137846
Jessica Smith	Brittany Bold	DELTA	October	2018	1,910.00	138348
Jessica Smith	Brittany Bold	DELTA	October	2018	3,010.00	140683
Jessica Smith	Brittany Bold	DELTA	October	2018	1,280.00	136950
Jessica Smith	Brittany Bold	DELTA	October	2018	5,900.00	137798
Jessica Smith	Brittany Bold	DELTA	October	2018	5,480.00	138137
Jessica Smith	Brittany Bold	DELTA	October	2018	6,280.00	138816

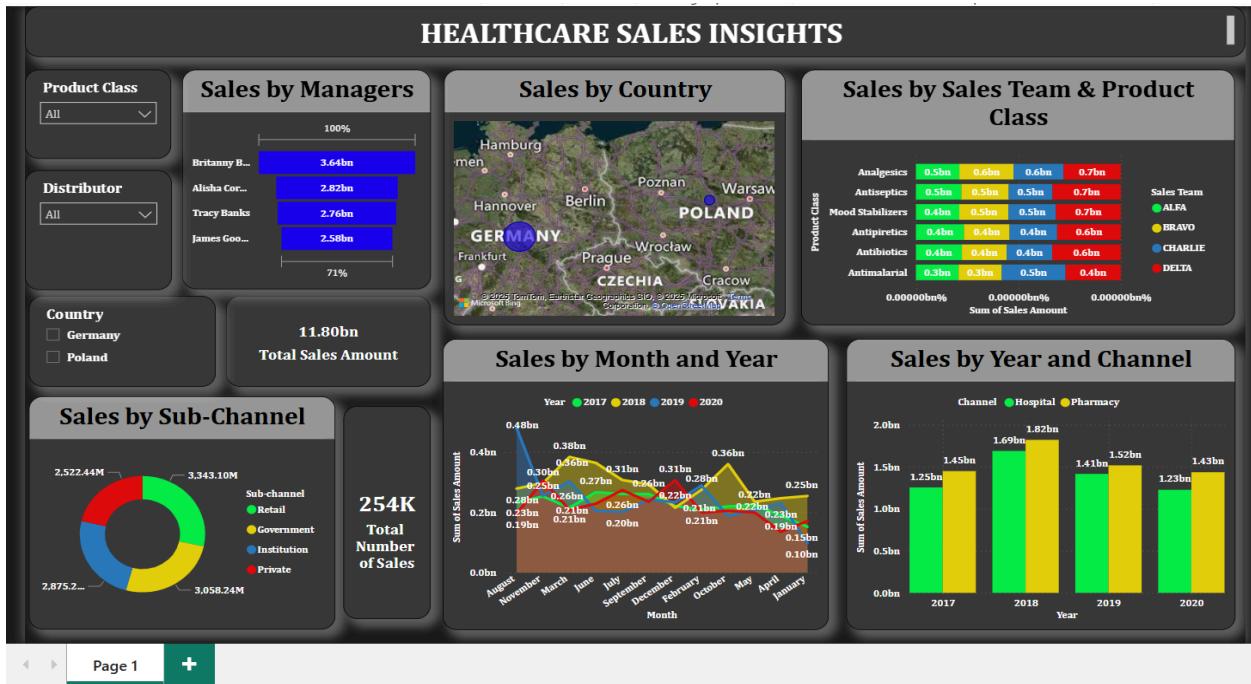
Data Modeling



Data Visualization

- View >> Select Theme >> Custom Theme
- Insert Text box to Create Title of Report “HEALTHCARE SALES INSIGHTS”

HEALTHCARE SALES INSIGHTS REPORT



Power BI Mini Project Report View - pdf

<https://drive.google.com/file/d/1AI8yGWRCzNLtSVFHVyCnovUE6fHtRDLD/view?usp=sharing>

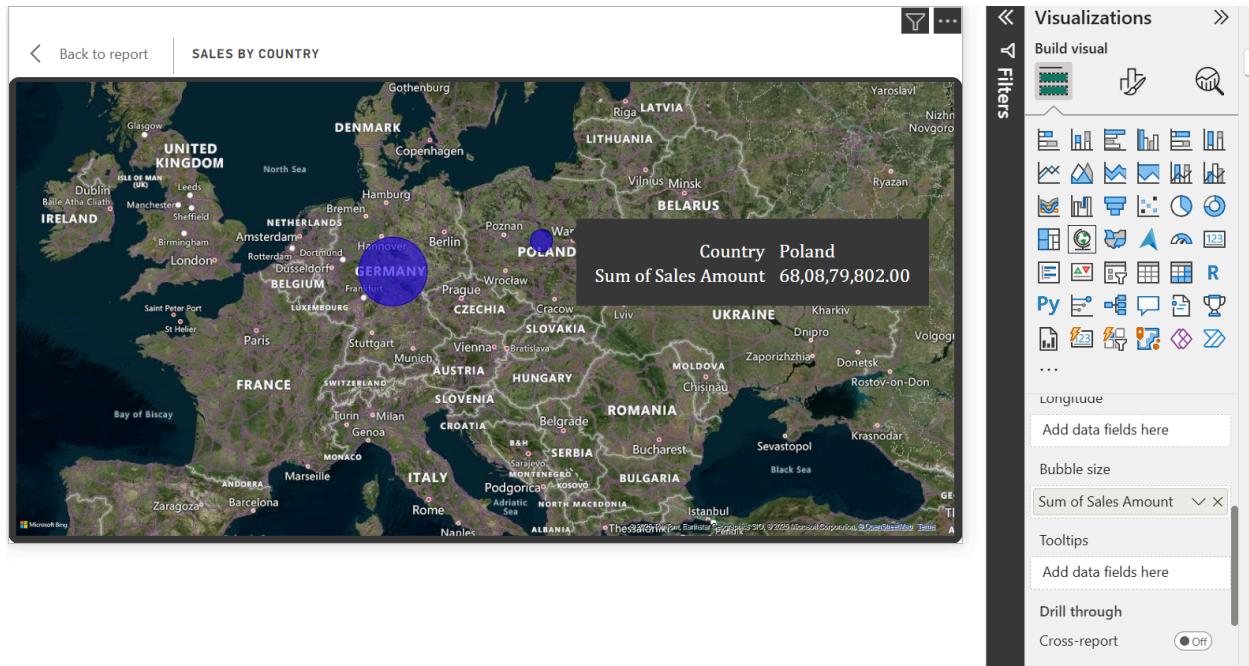
1. Sales by Year and Channel:

- Compare the Total Sales by two different Channels, Hospital and Pharmacy and by Every Year (2017,2018,2019,2020) using Clustered Column Chart.
- X-Axis = Year
- Y-Axis = Sum of Sales Amount
- Legend = Channel



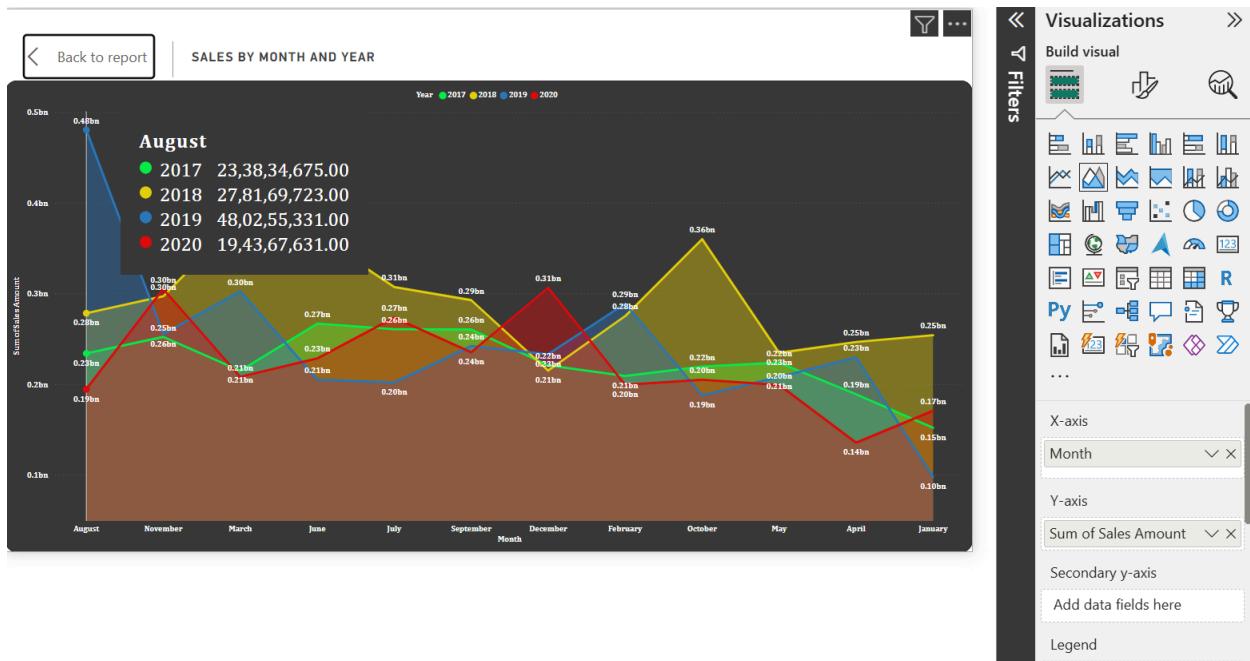
2. Sales by Country

- Visualize Total Sales on a Map by Country to Identify Regional Sales Patterns.
- Location - Country
- Bubble Size - Sum of Sales Amount



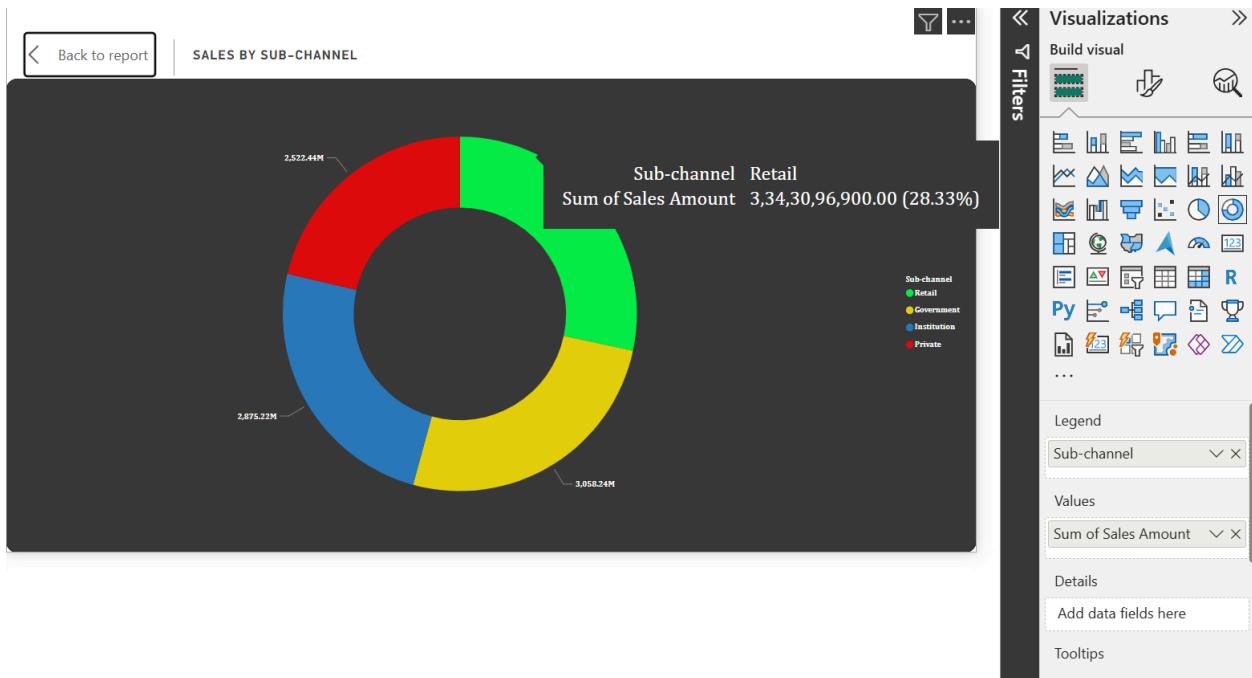
3. Sales by Month and Year

- Show the Total Sales by Month and Year using Area Chart.
- X-Axis = Month
- Y-Axis = Sum of Sales Amount
- Legend = Year



4. Sales by Sub-Channel

- Analyze the Total Sales by each Sub-channel of Customers using a Donut Chart.
- Legend = Sub-channel
- Values = Sum of Sales Amount



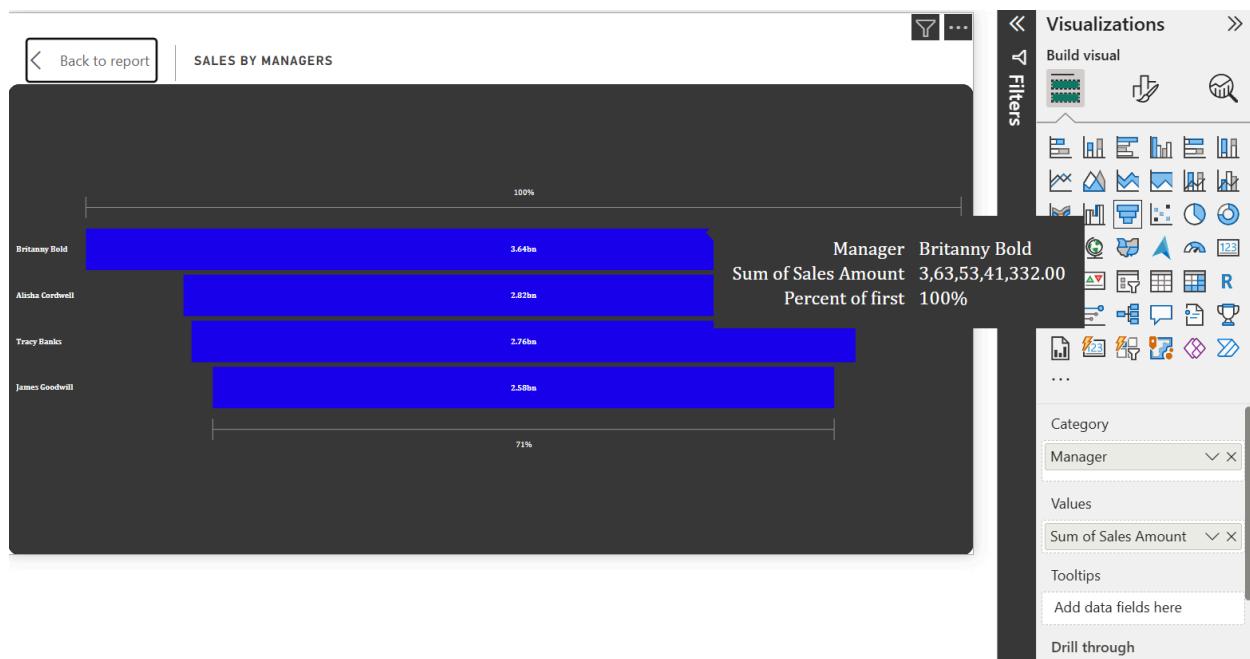
5. Sales by Sales Team and Product Class

- Analyze the overall Sales done by Every Sales Team in All Product Class using 100% Stacked Bar Chart.
- X-Axis = Sum of Sales Amount
- Y-Axis = Product Class
- Legend = Sales Team



6. Sales by Managers

- Analyze Total Sales done by Managers to Identify Top Contributors in Sales using Funnel Chart.
- Category = Manager
- Values = Sum of Sales Amount



7.Cards - Total Sales Amount

- Created Cards to Display the Total Sales Amount.
- For Quick Comparison and Analysis.

8. Cards - Number of Sales

- Created a Cards to Display the Total Number of Sales.
- For Quick Comparison and Analysis.

9. Slicer - Country

- Created a Slicer - Country.
- Slicer connected with all Visuals to slice the data dynamically across all visuals by Country.
- Helps in quick and flexible data exploration.

10. Slicer - Distributors

- Created a Slicer - Distributors.
- Slicer connected with all Visuals to slice the data dynamically across all visuals by Various Distributors.
- Helps in quick and flexible data exploration.

11. Slicer - Product Class

- Created a Slicer - Product Class.
- Slicer connected with all Visuals to slice the data dynamically across all visuals by Various Product Class.
- Helps in quick and flexible data exploration.