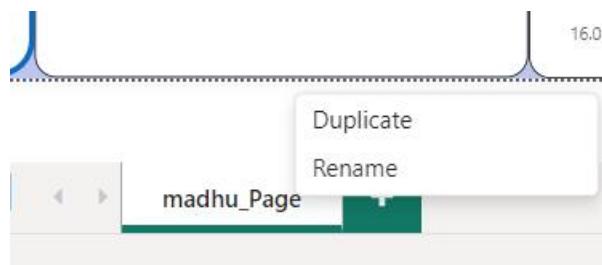


Power BI (Extension .pbix)

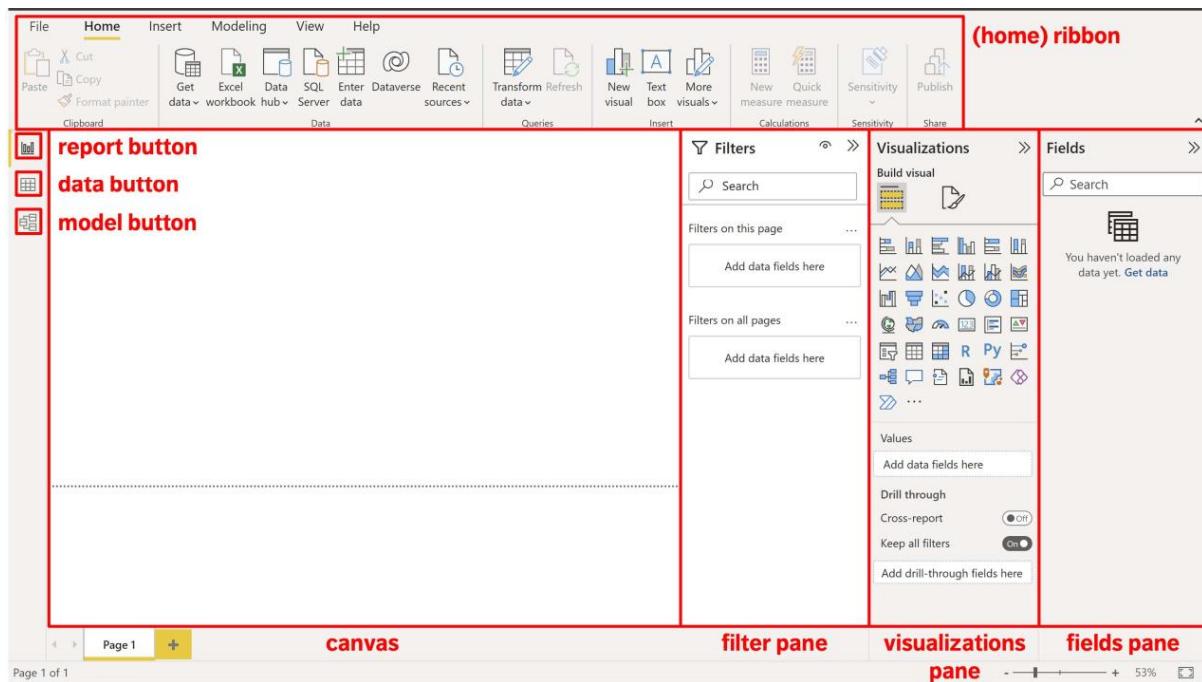
1. "Power BI is an end-to-end enterprise business intelligence tool. It supports various layouts and connects with many data sources, offering flexibility in data presentation and analysis."
2. "Power Query functions as an ETL (Extract, Transform, Load) engine, enabling filtering, sorting, and the addition of new columns, which are essential for data manipulation."
3. **Data Modelling in Power BI focuses on creating connections between tables, primarily involving two kinds of tables: Dimension (Primary) tables and Fact tables**
4. "DAX (Data Analysis Expressions) is the language used to create formulas in Power BI, while M-language is used for scripting in Power Query."
5. "Effective visuals, such as KPI cards and bar charts, combined with robust data modelling, are central to Power BI's capabilities in data analysis and reporting.

To make **duplicate page** and **Rename Page**

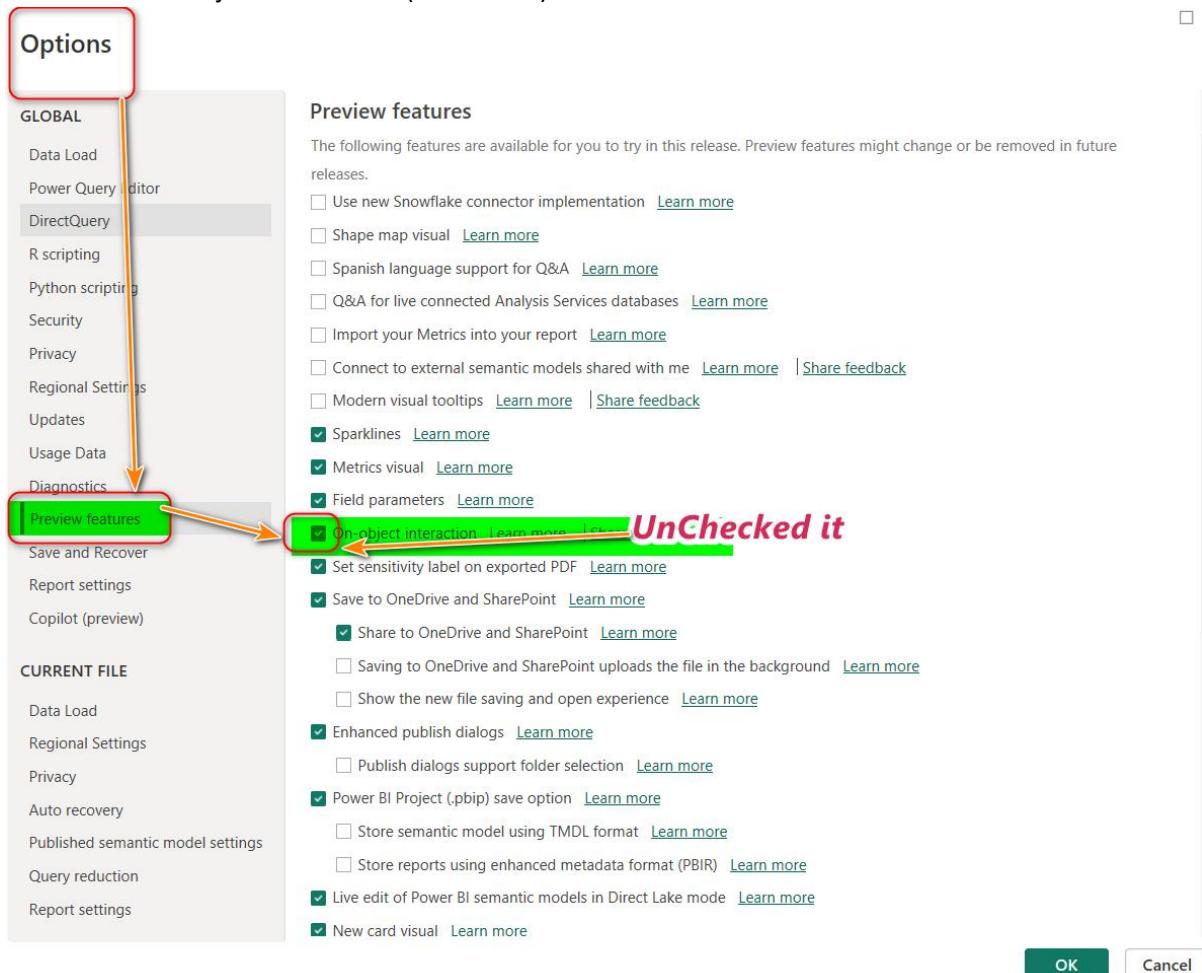
Right click on page then click on **duplicate** / **Rename Page**



- Power BI has options to work in **multiple layouts**.
- Power BI provides an option to connect with **multiple data sources**.
- **Report View** is the area to **create visuals**.
- **Table View** helps one to **check and modify the tables**.
- **Model View** helps one to **create the data model**



To change to different layout → GO to File → Options and Settings → Options → Preview Features → On Object Interaction (Uncheck it) this is new features



POWER Query:

Power Query is a powerful data transformation and preparation tool in Power BI, Excel, and other Microsoft tools. It enables users to connect to, clean, and transform data from various sources before visualizing it or conducting further analysis

It uses M Languages

Data Transform, Data Cleaning

- Filtering, Sorting, Replacing Values, and changing data types are the most commonly used operations.

Workflow in Power BI with Power Query

1. Load Data:

- Open Power BI Desktop.
- Use the "Get Data" button to choose your data source.
- Launch Power Query Editor to prepare the data.

2. Transform Data:

- Apply necessary transformations using the Query Editor.
- Steps are recorded in the "Applied Steps" pane, making them easy to edit or remove.

3. Load Data to Model:

- After transformation, load the cleaned data into the Power BI data model.
- The transformed data can then be used for visualizations and relationships.

Understanding of Data and Cleaning the Data

Open the power Bi

Go to Home → Get Data → Excel workbook → Select the file → select the sheet as required → To clean the data click on transform

This is also called ETL tool (Extract, Transform & Load)

For Data Cleaning Always Do Transform

Home

Get data

Common data sources

Select the sheet

We are cleaning the data so that click on transform

Load **Transform Data** **Cancel**

Applied Steps (Data Pipeline) in Power BI

Queries [2]

Sheet1

Rename the queries

Properties

Name: Sheet1

Applied Steps

Source, **Navigation**, **Promoted Headers**, **Changed Type**

Operation Steps we do

Can do, delete or undo the steps and also can rename

Change DataType

→ Click on Any Column on left side where ABC123 is shown

→ Change the dataType As per required (number, Date, Text, Binary, Percentage and So on)

Manage Columns Reduce Rows Sort Transform Combine AI Insights

e_orders",Kind="Table"]}[Data]

ABC123 FoodItem	ABC123 Price	ABC123 Bill_amt
Butter Chicken	250	500
Pepperoni Pizza	300	300
Pepperoni Pizza	300	300
Double Cheeseburger	499	499
Cheeseburger	499	497
Chicken Biryani	260	500
Chicken Biryani	260	500
Pepperoni Pizza	260	299
Hawaiian Pizza	159	318
Hawaiian Pizza	250	500
Veggie Burger	200	200
Chicken Biryani		
Paneer Tikka		

Filtering (Sorting Ascending, Desc, any number greater than 200 and so on)

→ Click on Any Colum on Right side where symbol of dropdown is shown

→ Will see lots of option for data sorting ascending, descending,

Right side of colum

Quantity	Price	Bill_amt	Deliverypartner_Id	DeliveryStatus	payment_method
2	250	500			
1	300	300			
1	300	300			
1	499	499			
3	349	104			
2	250	500			
2	250	500			
1	300	300			
1	299	299			
1	299	299			
2	159	318			
2	250	500			
1	200	200			
2	250	500			
1	399	399			
1	200	200			

Merge Column

1 - Power Query Editor

Step Two: Add Column → Step Three: Merge Columns

Step 1: Select all 3 columns which need to merge.

Step 4: Choose how to merge the selected columns. Separator: --Custom-- → Select Custom → Enter, from keyboard to separate date → Can give name of column here also → OK

	Transaction ID	Day	Month	Year	Day Name
1	1	9	10	2021	Sat
2	2	9	10	2021	Saturday
3	3	9	10	2021	Saturday
4	4	10	10	2021	Sunday
5				2021	Sunday
6				2021	Sunday
7				2021	Sun
8				2021	Monday
9				2021	Mon
10				2021	Monday
11				2021	Tuesday
12				2021	Tuesday
13				2021	Tuesday
14				2021	Wednesday
15		13	10	2021	Wednesday
16		13	10	2021	Wednesday

Double click and rename to Date Column

Click and change the data type to "Date" from text

Our operation step, we can rename it also and can remove or undo as well

Properties: Name: Sheet1

Applied Steps: Inserted Merged Column

Remove Column

After this we will see the new Column with merged name on last , We can rename the Column to Date and drag at front . That's all

And can delete the 3 unwanted column which we have merged

Select the 3 column → Right click → Remove Columns

Power BI Context Menu for 'Day Name' Column:

- Copy
- Remove Columns**
- Remove Other Columns
- Add Column From Examples...
- Remove Duplicates
- Remove Errors
- Replace Values...
- Fill
- Change Type
- Transform
- Merge Columns
- Sum

Null Values can solve by Replacing Values

To clean the problem like Sun, Sunday , Sat , Saturday in Day Coulumn can do by Two ways

Select the column name and Right click on it → Replace Values

Step one : Select the column name and Right click on it ==> Replace Values

Step two

Replace one value with another in the selected columns.

Value To Find: Sat
Replace With: Saturday

Advanced options:
 Match entire cell contents **Always Select this for exact match**
 Replace using special characters

Insert special character ▾

Similary Do for others days as well

OK

As it is in Date another way is

Select the Data Column → Add Column Menu → Date → Day → Name Of Day → Then Rename that column and bring after date column by simply dragging the colum

Untitled - Power Query Editor

The screenshot shows the Power Query Editor interface. The ribbon is active with the 'Add Column' tab selected. In the main area, there's a table with columns 'Transaction ID', 'Date', and 'Day Name'. The 'Date' column contains dates like '9/10/2021' and '10/10/2021'. The 'Day Name' column contains days of the week. To the right of the table, the 'Day' dropdown menu is open, showing options like 'Year', 'Month', 'Quarter', 'Week', 'Day', 'Subtract Days', 'Combine Date and Time', 'Earliest', 'Latest', and 'Name of Day'. The 'Name of Day' option is highlighted with a red box. A tooltip at the bottom right of the menu says: 'Create a new column containing the name of the day corresponding to each Date/Time value in the selected column.'

Operation Applied Steps Pipeline in Queries / Table

The screenshot shows the Power Query Editor with the 'Query Settings' pane open. The 'Name' field is highlighted with a red box and contains the text 'sales_data'. Below it, the text 'Give the name to Query' is displayed. On the left, the word 'Operations' is highlighted with a red box. A red arrow points from the 'Name' field to the 'Give the name to Query' text. Another red arrow points from the 'Operations' section to the 'APPLIED STEPS' pane, which is highlighted with a red border. The 'APPLIED STEPS' pane lists the following steps: Source, Navigation, Promoted Headers, Changed Type, Inserted Merged Column, Changed Type1, Renamed Columns, Reordered Columns, Removed Columns, Replaced Value, Inserted Day Name, and Reordered Columns1.

Merging (Number of row remain same we just added column)

Note We don't have customer name in the table_orders but the customer name is in Table_customers.

If we want to show customer name in table_orders we need to join the table based on the common entity i.e Cust_id which is primary key in Table_customers

In PowerQuery

Go to Home → Merge Queries → Merge Queries / Merge Queries as New

Then following Screen will appear

Merge

Select tables and matching columns to create a merged table.

table_orders *Step 1: left table*

Customer_Id	HotelName
2	Spice Paradise
3	Pizza Palace
2	Pizza Palace
1	Burger Bistro

table_customers *Step 2 : Right table*

Cust_Id	Customer_name
1	Rajes Kumar
2	Priti Sharma
3	Anjali Patel
4	Suresh Gupta

Step 3: Select the common Colum to join

Join Kind *Step 4: Join as per required, left,right, inner, outer*

Left Outer (all from first, matching from second)

Right Outer (all from second, matching from first)

Full Outer (all rows from both)

Inner (only matching rows)

Left Anti (rows only in first)

Right Anti (rows only in second)

Use fuzzy matching to perform the merge

▷ Fuzzy matching options

✓ The selection matches 4 of 4 rows from the first table.

OK Cancel

Output

Step 1: Click here to select Customer name

Output

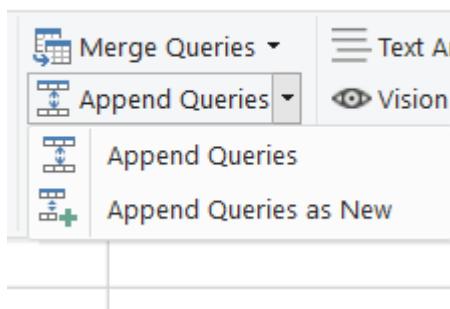
AB _C payment_method	AB _C table_customers.Customer_name
COD	Preeti Sharma
UPI	Preeti Sharma
Card	Rajesh Kumar
COD	Anjali Patel
UPI	Suresh Gupta
Card	Preeti Sharma
UPI	Anjali Patel
	Rajesh Kumar

This whole process is merge as the number of row remain the same only colum is added.

Append (when we have missing customer then we need to append the missing data of the customer, in such case we will do append two tables)

To Append (for missing values)

Go to Home → Append Queries → Append Queries/ Append Queries as New →



X

Append

Concatenate rows from two tables into a single table.

Two tables Three or more tables

Table to append

OK

Cancel

-
- Merging combines tables vertically based on one or more common columns.
 - Appending combines tables horizontally based on the column names and type.

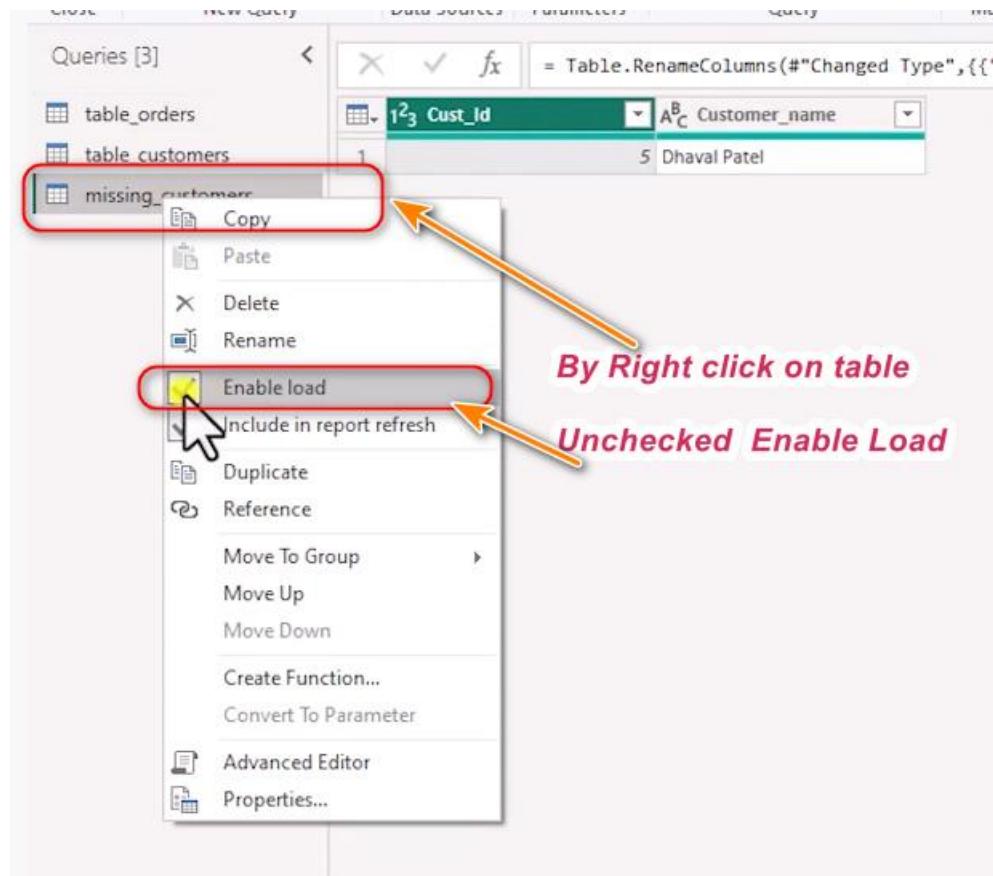
Best Practice

Naming the applied operational steps properly

Disabling the load for supporting table

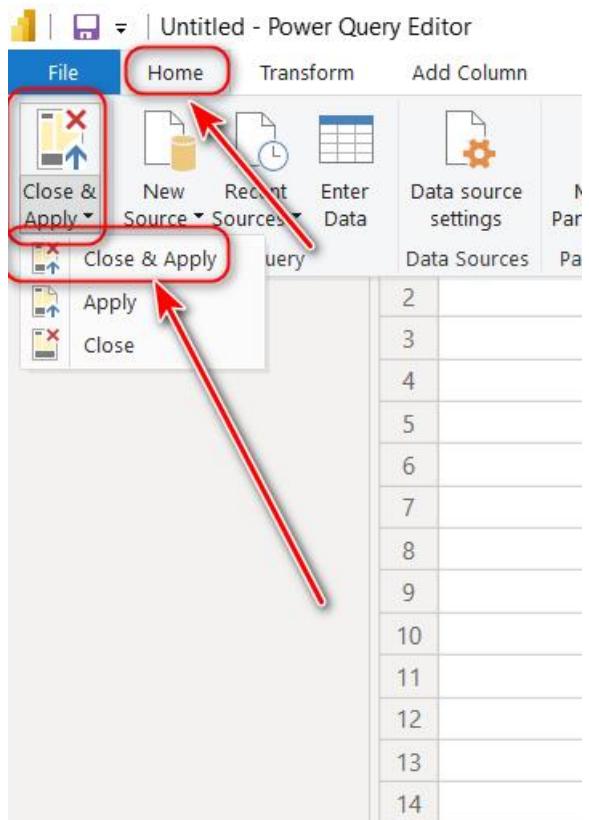
(if we don't need don't load that table) while save and apply/exit.)

By Right click on table and Uncheck Enable Load



Final Step Close and Apply in Power Query

Finally Go to **Home Tab** ➔ **Close and Apply**



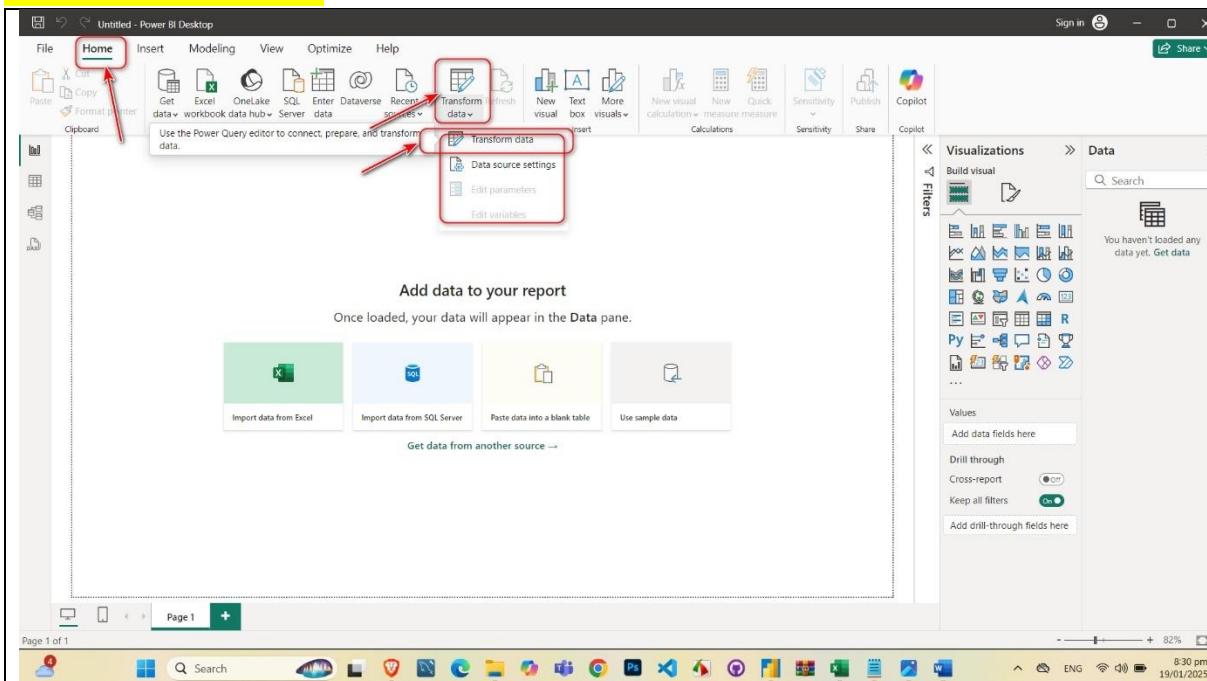
Create a Custom Calendar

Steps are given below

To Go to **Power Query in BI**

Open the BI

Home → Transform Data



Then In Power Query

Home → New Source → Blank Query

And Type formula in formula Section to generate calander

Transaction ID	Date	Brand	Units Sold	Price Per Unit
1	09-10-2021	Xiaomi	6	
2	09-10-2021	Vivo	6	
3	09-10-2021	Vivo	8	
4	10-10-2021	Xiaomi	5	
5	10-10-2021	OnePlus	3	
6	10-10-2021	Samsung	3	
7	10-10-2021	OnePlus	6	
8	11-10-2021	Apple	2	
9	11-10-2021	Vivo	6	
10	11-10-2021	Samsung	6	
11	12-10-2021	Samsung	8	
12	12-10-2021	Apple	7	
13	12-10-2021	Apple	8	
14	12-10-2021	Xiaomi	0	

=List

Parameters Parameters Query Columns Columns Rows Rows Column By

```
c = List.Dates()
```

n.Error: 0 arguments

```
=
```

ents=[List]

List.Dates(start as date, count as number, step as duration)

date

Generates a list of date values given an initial value, count, and incremental duration value.

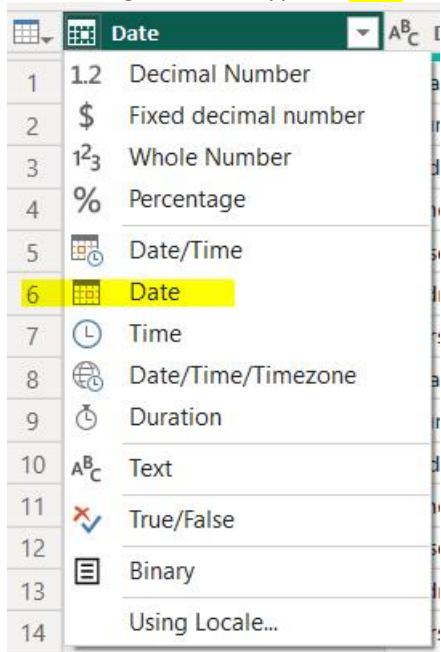
= List.Dates(#date(2021,1,1),1461,#duration(1,0,0,0))

Then Click on new produced transform tab → To table → Ok

Then the data will be converted to table and

Double click and rename the column name to Date as shown in figure below

Also change the datatype to date from ABC Text



Step one

Step two

Step three: Click on **To Table** Convert

Step four: Double click and rename the column name to Date

Step five: Click on OK

This is M language in PowerQuery, we use #.

1461 means number of day in 4 years ($365 \times 4 + 1 = 1461$);

1 added due to leap year 366 days in every 4 years

#duration(1,0,0,0) means day-1, hour-0, min-0, sec-0

To add days in next column of day select the date column

Go to Add Column Tab → Data → Day → Name of Day

Two

Three

Four

Five output Result

Step one: Select the column

Step two: Click on Add Column

Step three: Click on Date

Step four: Click on Name of Day

Step five: Click on OK

Create a new column containing the name of the day corresponding to each Date/Time value in the selected column.

Finally Give the name to query as shown in figure **Custom_Calander**

We can also see the **list of Operation we have done** below the query name as shown in figure .

We can undo or remove as per requirement

The screenshot shows the Power BI Query Editor interface. On the left, there's a table view with two columns: 'Date' and 'Day Name'. The 'Date' column contains dates from 1/01/2021 to 16/01/2021, and the 'Day Name' column contains corresponding day names. A red box highlights this table area. On the right, the 'Properties' pane is open, showing the 'Name' field set to 'Custom_Calander'. Below it, the 'Applied Steps' pane is also highlighted with a red box, listing the following steps:

- Source
- Converted to Table
- Renamed Columns
- Inserted Day
- Inserted Day Name
- Removed Columns

Red arrows point from the text annotations 'Rename the query name to Custom_Calander' and 'List of Operation we have done' to their respective locations in the Properties and Applied Steps panes.

Then Go to **Home Tab → Close & Apply**

Data Modelling - Create Relationship\

- Data Modelling is all about creating connections between tables.
- Two types of tables are **Primary (Dimension) tables** and **Fact Tables**

Data modelling is necessary when we have more than one table

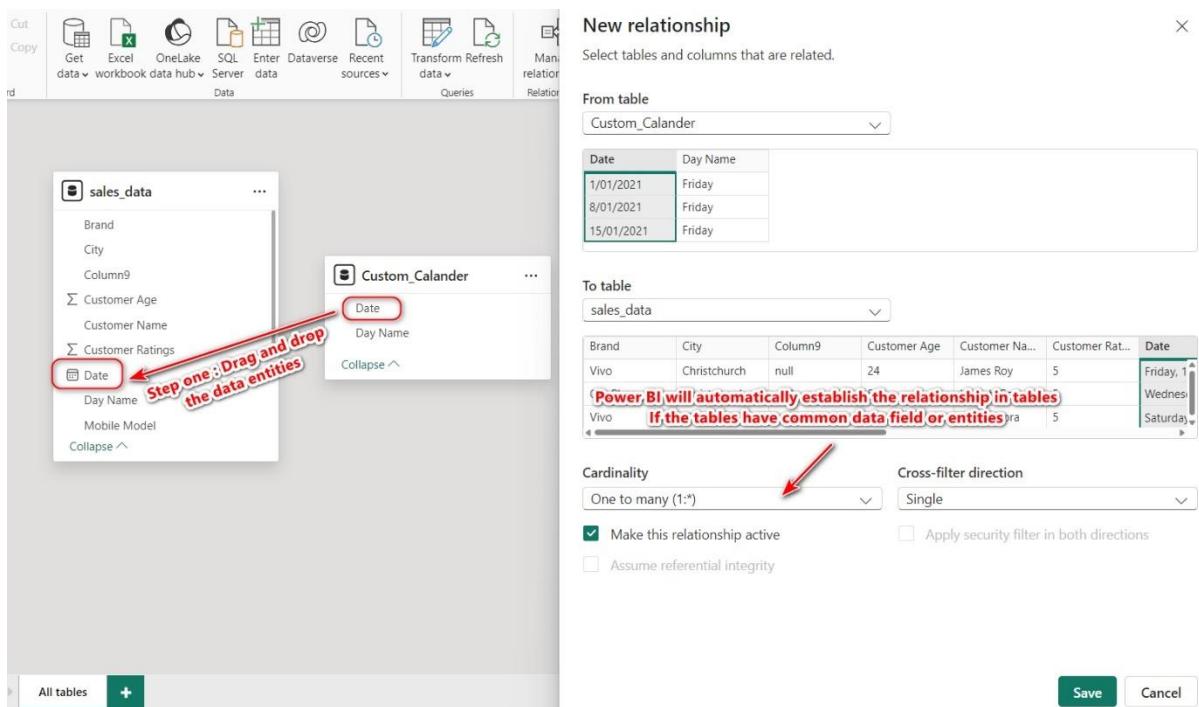
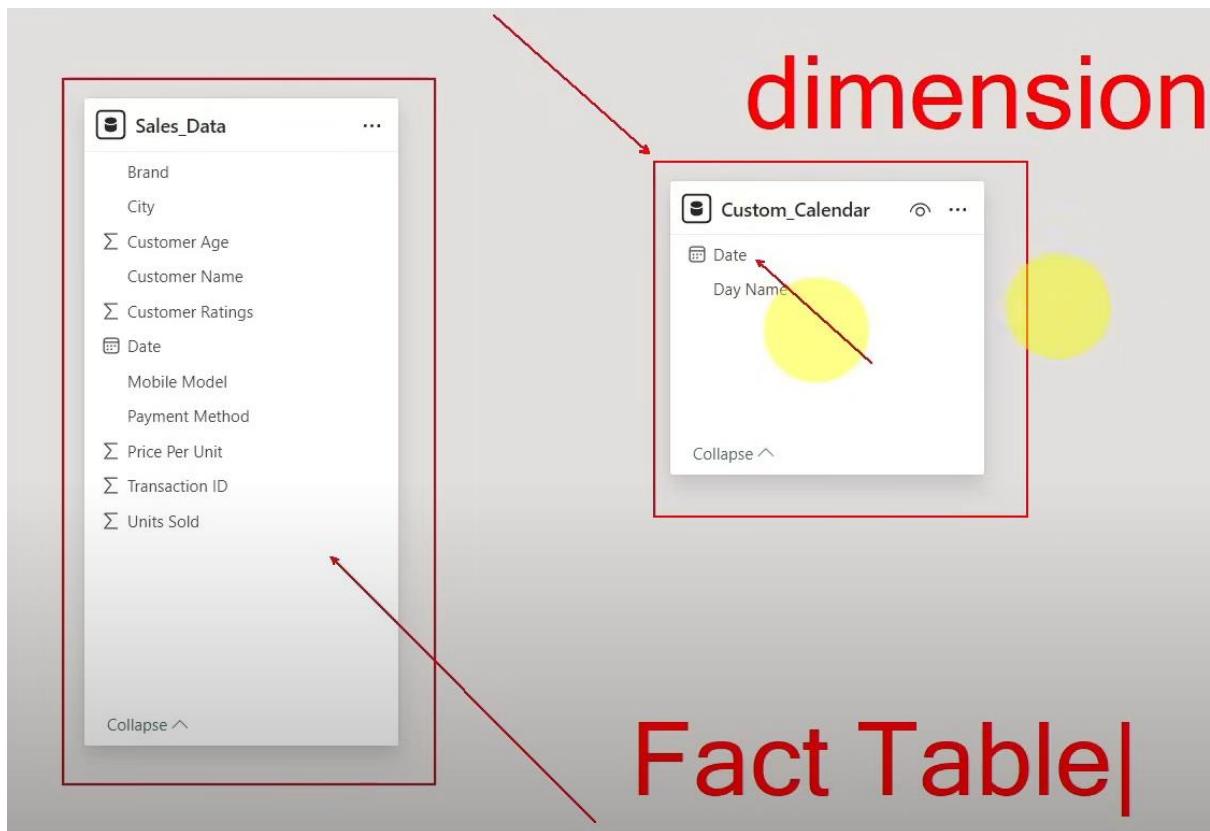
Dimension (Primary) and Fact / Data Table [Relationship one to many]

Dimension table have unique values and in fact/data tables values may be repeated

e.g Dimension table have unique data but in the fact table dates are repeated .i.e in the same ta 12 Dec 2024 there may be multiple sales of mobile [in one day lots of sales occur at shop]

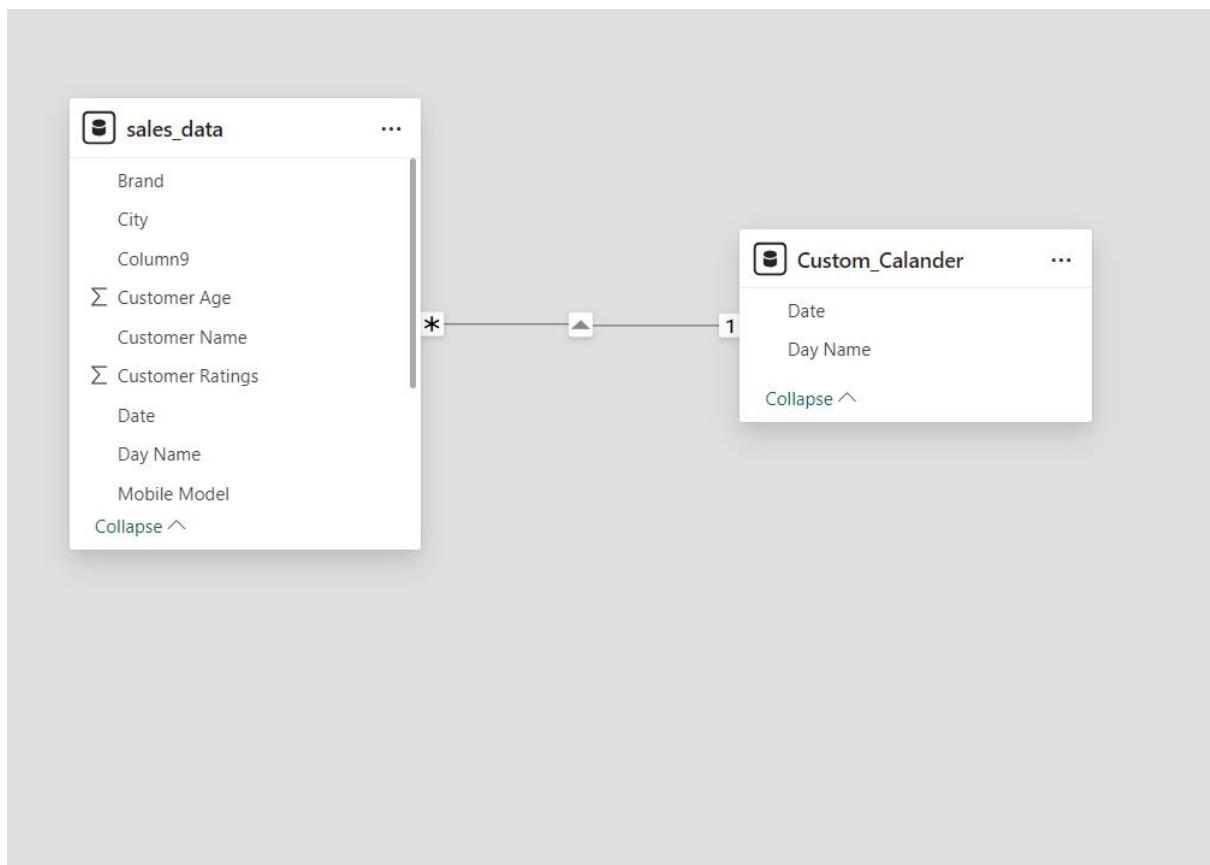
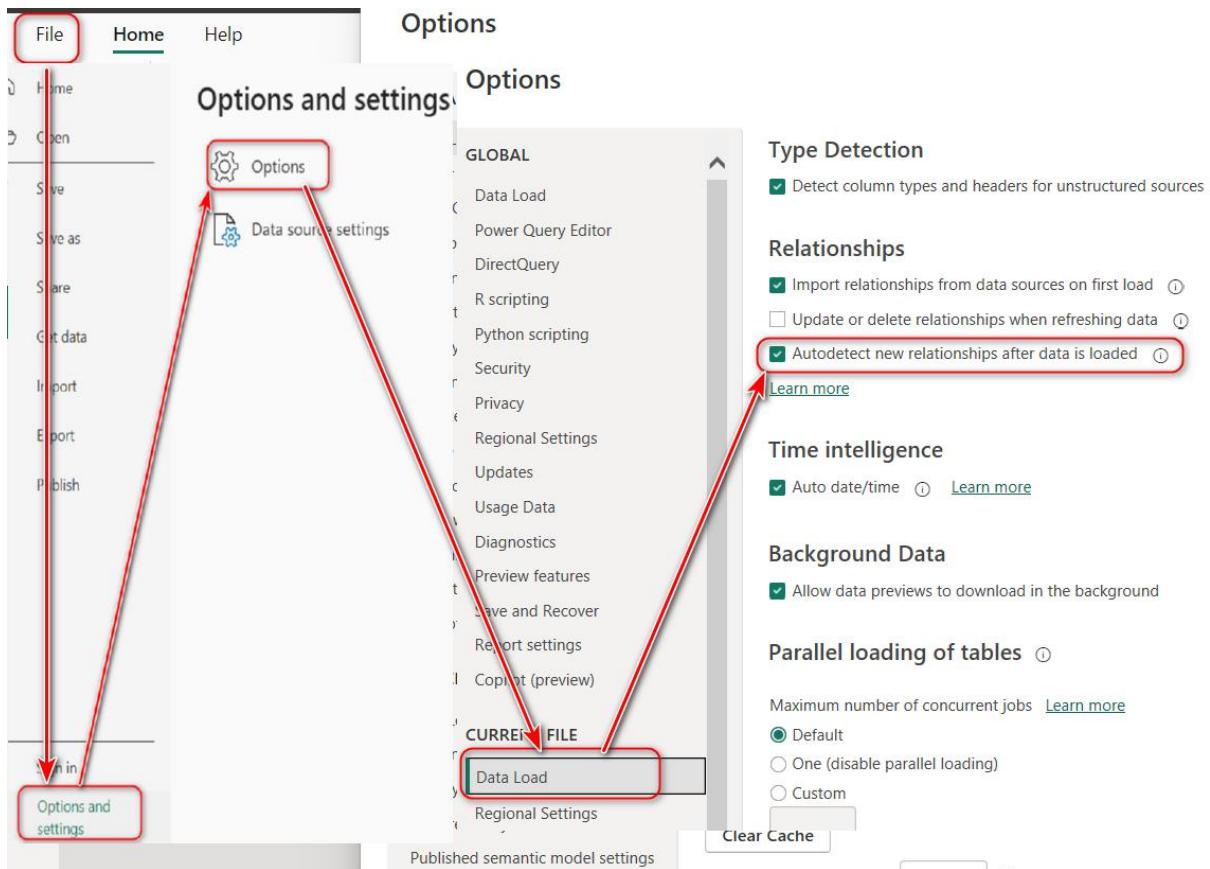
To establish the relationship drag and drop date filed from one table to another

Power BI will automatically establish the relationship in tables



To establish the relationship automatically

Go to file → Options and Settings → Options → Data Load → Checked on “**Autodetect new relationships after data is loaded**”



Required DAX (Data Analysis Expressions) Calculations in Power BI

In Power BI, DAX (Data Analysis Expressions) is used to create custom calculations for your reports. Here are some common types of DAX calculations you might require:

How to use DAX formula in multiple line then use ➔ ALT + ENTER

1. Aggregations

These calculations summarize data. Examples:

- **Sum:**

```
Total Sales = SUM(Sales[Amount])
```

- **Average:**

```
Average Sales = AVERAGE(Sales[Amount])
```

- **Count:**

```
Count of Orders = COUNT(Sales[OrderID])
```

2. Filters

Apply conditions to your calculations:

- **Filtered Sum:**

```
Total Sales (2023) = CALCULATE(SUM(Sales[Amount]), Sales[Year] = 2023)
```

- **Exclude Values:**

```
Sales Excluding Returns = CALCULATE(SUM(Sales[Amount]), Sales[Status] <> "Returned")
```

3. Time Intelligence

Time-based calculations are common in reporting:

- **Year-to-Date (YTD):**

```
YTD Sales = TOTALYTD(SUM(Sales[Amount]), Calendar[Date])
```

- **Month-to-Date (MTD):**

```
MTD Sales = TOTALMTD(SUM(Sales[Amount]), Calendar[Date])
```

- **Year-over-Year Growth:**

```
YoY Growth = (SUM(Sales[Amount]) - CALCULATE(SUM(Sales[Amount]),  
SAMEPERIODLASTYEAR(Calendar[Date]))) / CALCULATE(SUM(Sales[Amount]),  
SAMEPERIODLASTYEAR(Calendar[Date]))
```

4. Calculated Columns

For row-level calculations:

- **Profit Margin:**

```
Profit Margin = (Sales[Profit] / Sales[Amount])
```

5. Ranking

Rank rows based on a measure:

- **Rank by Sales:**

```
Rank by Sales = RANKX(ALL(Sales[Customer]), SUM(Sales[Amount]),  
DESC, Dense)
```

6. Percentage of Total

Calculate the contribution of each item to the total:

- **% of Total Sales:**

```
% of Total Sales = DIVIDE(SUM(Sales[Amount]),  
CALCULATE(SUM(Sales[Amount]), ALL(Sales)))
```

7. Conditional Measures

Create measures based on conditions:

- **Dynamic Target Achievement:**

```
Target Achievement = IF(SUM(Sales[Amount]) >= Sales[Target],  
"Achieved", "Not Achieved")
```

8. Cumulative Totals

Track running totals over time:

- **Cumulative Sales:**

```
Cumulative Sales = CALCULATE(SUM(Sales[Amount]),  
    FILTER(ALL(Calendar[Date]), Calendar[Date] <= MAX(Calendar[Date])))
```

9. Key Performance Indicators (KPIs)

Track performance metrics:

- **Sales Variance:**

```
Sales Variance = SUM(Sales[Actual]) - SUM(Sales[Target])
```

10. Dynamic Measures

Measures that change based on slicer selection:

- **Dynamic Selection Measure:**

```
Selected Metric = SWITCH(SELECTEDVALUE(Metrics[Metric Name]),  
    "Total Sales", SUM(Sales[Amount]),  
    "Total Profit", SUM(Sales[Profit]),  
    "Profit Margin", DIVIDE(SUM(Sales[Profit]),  
    SUM(Sales[Amount])))
```

This Summation represent Numeric value

The screenshot shows the Power BI Data view. At the top, there are tabs for 'Tables' (which is selected) and 'Model'. Below the tabs is a search bar with the placeholder 'Search'. Under the search bar, there is a tree view of data sources: 'Custom_Calander' (with a plus sign) and 'sales_data' (with a minus sign). The main list contains the following items:

- City
- Column9
- \sum Customer Age
- Customer Name
- \sum Customer Ratings
- Date
- Day Name
- Mobile Model
- Payment Method
- \sum Price Per Unit
- \sum Transaction ID
- \sum Units Sold

In Power BI, measures are categorized as **explicit** or **implicit**, depending on how they are created and used.

Implicit Measures	Explicit Measures
<ul style="list-style-type: none"> Created automatically by Power BI when you drag a column (with numerical or aggregatable data) into a visualization. They perform a simple aggregation (e.g., SUM, AVERAGE, COUNT) based on the data type. 	<ul style="list-style-type: none"> Created manually using DAX formulas in Power BI to define custom calculations. Explicitly saved in the model as standalone measures.
Reusability Only in the visual where it's created	Reusable across the entire model
Customization Limited (e.g., aggregation type only)	Fully customizable using DAX formulas
Recommended Simple, quick aggregations	Advanced reporting and scalable models

Note We must be in report View then

Example of Implicit Measures(Automatic Drag and Drop)

Drag Card from visualization section or just double click on card

and

drag and drop any **value shown with summation in card** from Data Section or just select in data section

Note : The selected value can be edited Sum (Average,Minimum,Maximum,Count (Distinct),Count,Standard deviation,Variance,Median and more as per required)

by just click in Field shown in visualization section

Report view/First select

Step 2: Double Click on card or drag and drop here

Step 3: Select any summation type value

Step 4: Click on "Sum of Units Sold" and can change to sum, average, sd, median,and so on

Visualizations

Filters

Fields

Sum of Units Sold

Drill through

Cross-report

Keep all filters

Add drill-through fields here

Data

Custom_Calander

Brand

City

Column9

Customer Age

Customer Name

Customer Rating

Date

Day Name

Mobile Model

Payment Method

Price Per Unit

Transaction ID

Units Sold

Filters

Fields

Sum of Units Sold

Drill through

Cross-report

Keep all filters

Add drill-through fields here

Visualizations

Filters

Fields

Sum of Units Sold

Drill through

Cross-report

Keep all filters

Add drill-through fields here

Data

Remove field

Rename for this visual

Sum

Average

Minimum

Maximum

Count (Distinct)

Count

Standard deviation

Variance

Median

Show value as

New quick measure

Transaction ID

Units Sold

Example of Explicit Measures (by making formula)

The screenshot shows the Power BI interface with the 'Measure' tab selected. A red box highlights the formula bar where the formula `1 Madhu_Total_Qty = SUM(Column name)` is entered. A red circle highlights the text "Column name". A tooltip below the formula states: "Adds all the numbers in a column." To the right of the formula bar, a dropdown menu lists several options, with "sales_data" being the selected item. Below the formula bar, another dropdown menu shows "sales_data[Price Per Unit]" and "sales_data[Units Sold]". The bottom section of the screenshot shows the completed formula: `1 Madhu_Total_Qty = SUM(sales_data[Units Sold])`.

As before then can drag and drop can be used Similar to Implicit Measures

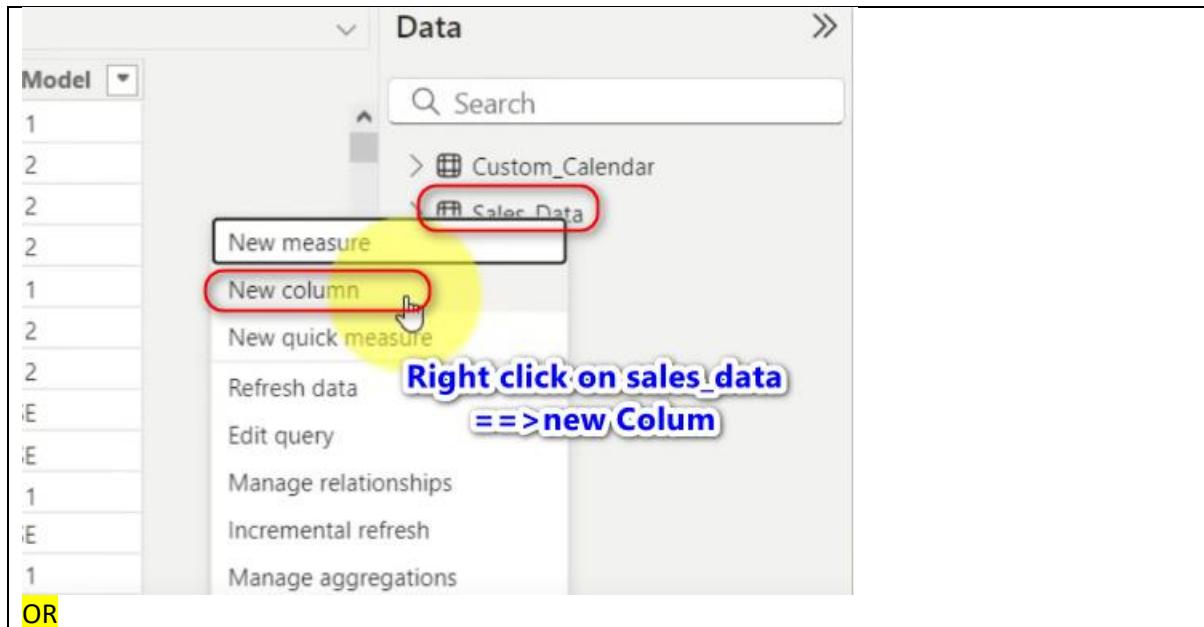
This screenshot illustrates the comparison between explicit and implicit measures. It shows two cards with the value "23K": one labeled "Sum of Units Sold" (labeled "From Implicit Measures Drag and Drop") and another labeled "Madhu_Total_Qty" (labeled "From Both method values comes the same"). A blue arrow points from the implicit measure card to the explicit measure card, with the text "From Both method values comes the same". Another blue arrow points from the explicit measure card back to the implicit measure card, with the text "New entities is added here". A third blue arrow points from the explicit measure card to the Power BI visualizations pane, with the text "From Explicit Measures By making our own formula Then we drag card here and drag our calculated value "Madhu_Total_Qty" here can be reused later". The right side of the screenshot shows the Power BI visualizations pane and the data source "sales_data" with various columns listed.

Note : To find total sales we need to multiply unit by unit price

Total Sales == unit sold * price per unit

To do that we need to create a new column , we we create a new column then automatically formula bar will be opened and we can type the formula there.

Add new colum by right click on any colum or right click on Sales_data



OR

A screenshot of the Power BI Data view. A context menu is open over the 'Units Sold' column of a table. The 'New column' option is highlighted and circled in red. A yellow box highlights the 'New column' option. Text overlays say 'Right click on Any Colum and add ==> New Column'.

Brand	Units Sold	Price	Customer Age	City	Payment	
apple	7		54	Delhi	UPI	
apple	4		21	Delhi	Cash	
apple	4		27	Delhi	Cash	
apple	2		36	Delhi	Credit Card	
apple	3		18	Delhi	Cash	
apple	6		28	Delhi	Debit Card	
apple	2		25	Delhi	Debit Card	
apple	6		55	Delhi	UPI	
apple	4		32	Delhi	UPI	
apple	2		21	Delhi	Credit Card	
apple	7		30	Delhi	Cash	
apple	9		44	Delhi	UPI	
apple	4		36	Delhi	Credit Card	
apple	8		30	Delhi	Cash	
apple	9		31	Delhi	Cash	
apple	9		28	Delhi	UPI	
apple	8	43832.02	34	Delhi	UPI	
apple	1	46160.2	Bina Siddiqui	58	Delhi	Debit Card
apple	4	14856.98	Sunita Mehta	24	Delhi	Cash
apple	4	66174.43	Yogesh Malhotra	49	Delhi	Debit Card
apple	4	66174.43	Sunil Verma	43	Delhi	Debit Card

Type formula

```
madhu_total_Sales = sales_data[Units Sold]*sales_data[Price Per Unit]
```

madhu_total_Sales = sales_data[Units Sold]*sales_data[Price Per Unit]

Mobile Model	madhu_total_Sales
5 Vivo S1	3684
5 OnePlus 8T	6656
5 Vivo Y51	10265
5 Galaxy Note 20	13632
5 Galaxy Note 20	1330
5 OnePlus 9	3243
5 Vivo S1	11389
5 OnePlus Nord	4744
5 MI 11	2372
5 Galaxy A51	1538
5 Vivo S1	9832
5 Vivo V20	5742
5 Redmi 9	8532
5 Vivo V20	10808
5 Vivo Y51	6232
5 Redmi Note 10	11803
5 OnePlus Nord	4739
5 iPhone SE	1820
5 Redmi Note 10	3786
5 Redmi 9	11808
5 Galaxy S21	1487
5 Galaxy A51	11902
5 iPhone 11	6201

Note: When we type formula by adding new column
Then madhu_total_sales entities added on sales_data table

Note

→ When we use DAX formula by **New Column** it creates the column on table thus increases the size of data

→ But we create by **New Measure** the column will not be created so no increase the data

To do that we can use sumx formula we calculated the total sales without creating

SUMX (table, expression) → SUMX(sales_data_table , unit * unit price)
Sumx will do sum of all column values
Gives total

Click on Sales_data → New Measure → then type formula

```
madhu_total_sales =SUMX(sales_data, sales_data[Units Sold]*sales_data[Price Per Unit])
```

Syntax popup
SUMX(table,expression)

returns the sum of an expression evaluated for each row in a table.

1 madhu_total_sales =SUMX(sales_data, sales_data[Units Sold]*sales_data[Price Per Unit])

Give any name ==sales_data_table , unit * unit price)

23K Sum of Units Sold
23K Madhu_Total_Qty
23M madhu_total_sales

The screenshot shows the Power BI interface with the following components:

- Measure Bar:** Shows the measure `madhu_total_sales` with the formula `=SUMX(sales_data, sales_data[Units Sold]*sales_data[Price Per Unit])`.
- Data View:** Displays a table with columns: ID, Date, Day Name, Brand, Units Sold, Price Per Unit, and Column9. Rows show data for Friday, 15 October 2021 (Vivo, 921), Wednesday, 20 October 2021 (Vivo, 832), and Saturday, 23 October 2021 (Vivo, 1150).
- Formatting Bar:** Shows the formula `madhu_total_sales =SUMX(sales_data, sales_data[Units Sold]*sales_data[Price Per Unit])`.
- Properties Panel:** Shows the field `madhu_total_sales` selected.
- Visualizations Panel:** Shows various chart and report icons.
- Fields Panel:** Shows fields like `Brand`, `City`, `Column9`, etc., and the selected field `madhu_total_sales`.

Lets Calculate

Total Transaction = COUNTROWS(table name)

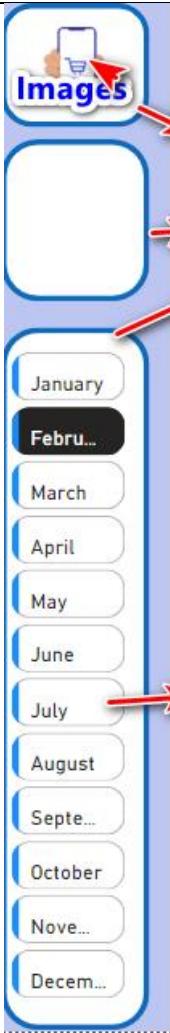
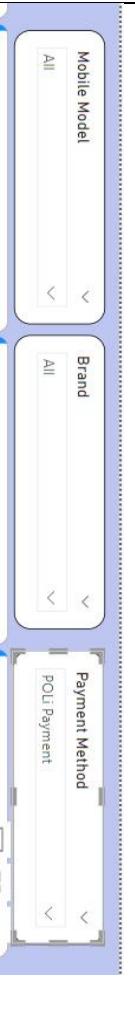
Right click on sales_data → new measure → type formula

Total Transaction = COUNTROWS(sales_data)

Average → Average(tablename with columnname)

Average_Price = AVERAGE(sales_data[Price Per Unit])

Learn Dashboard Creation in Power BI

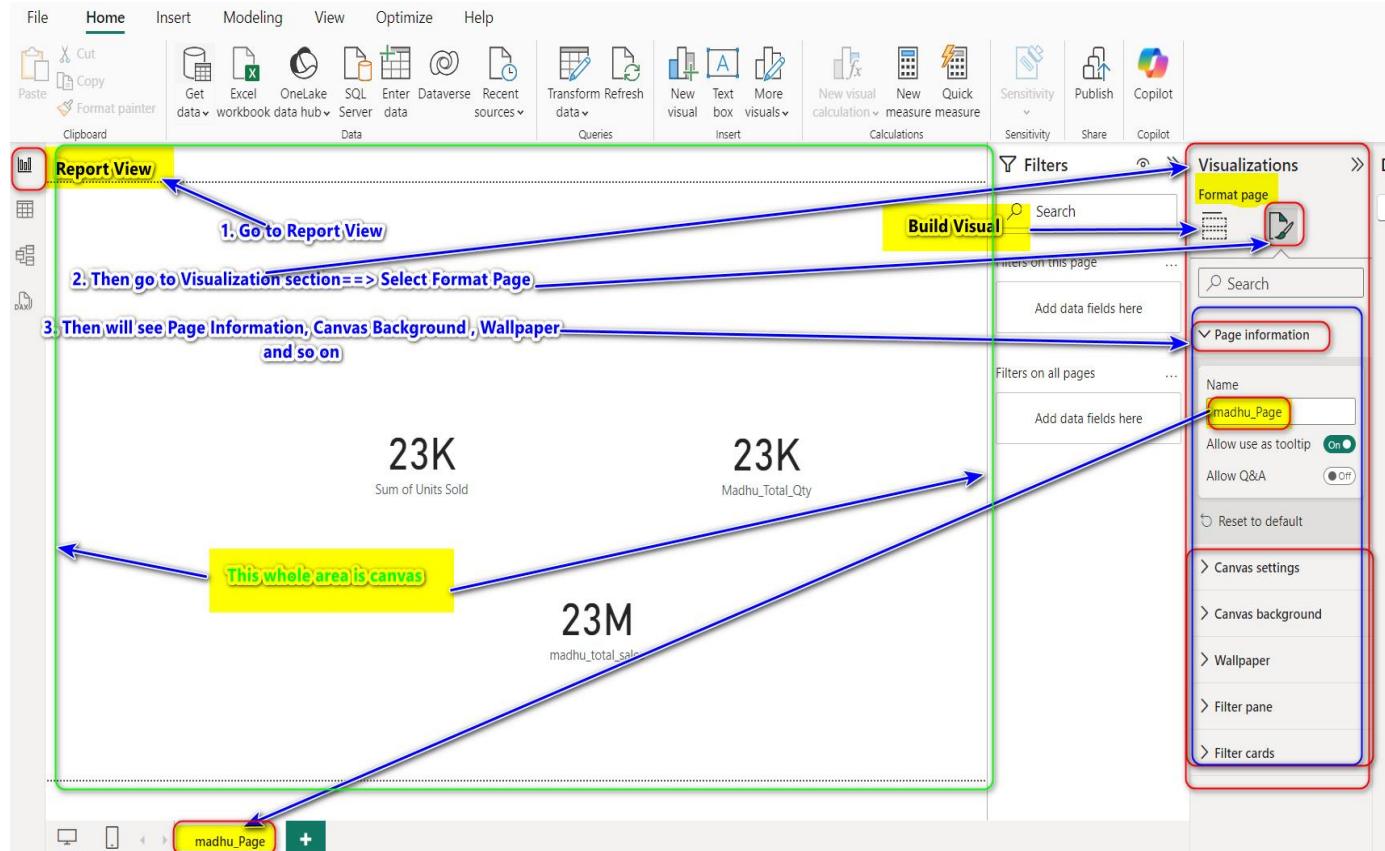
Add New Tile Slicer (for calender) and rectangular box from insert menu	New Data Card	old Slicer Now (filter) For mobile model, payment method, Brand
 <p>Insert Rectangular Shape</p> <p>New Tile Slicer for C</p>	 <p>Aver New Data Card</p> <p>Total_Transaction 291</p> <p>Total_Qty 2K</p>	 <p>Mobile Model</p> <p>Brand</p> <p>Payment Method</p> <p>POI/Payment</p>

Colour Combination as per the company profile / logo/ website

1. Go to **Report View**

2. Then go to **Visualization** section==> Select **Format Page**

3. Then will see Page Information, Canvas Background, Wallpaper, and so on



To insert anything in Canvas

Insert Rectangular Shape

Click on Insert→Elements (Shapes)



To Remove Background of any images

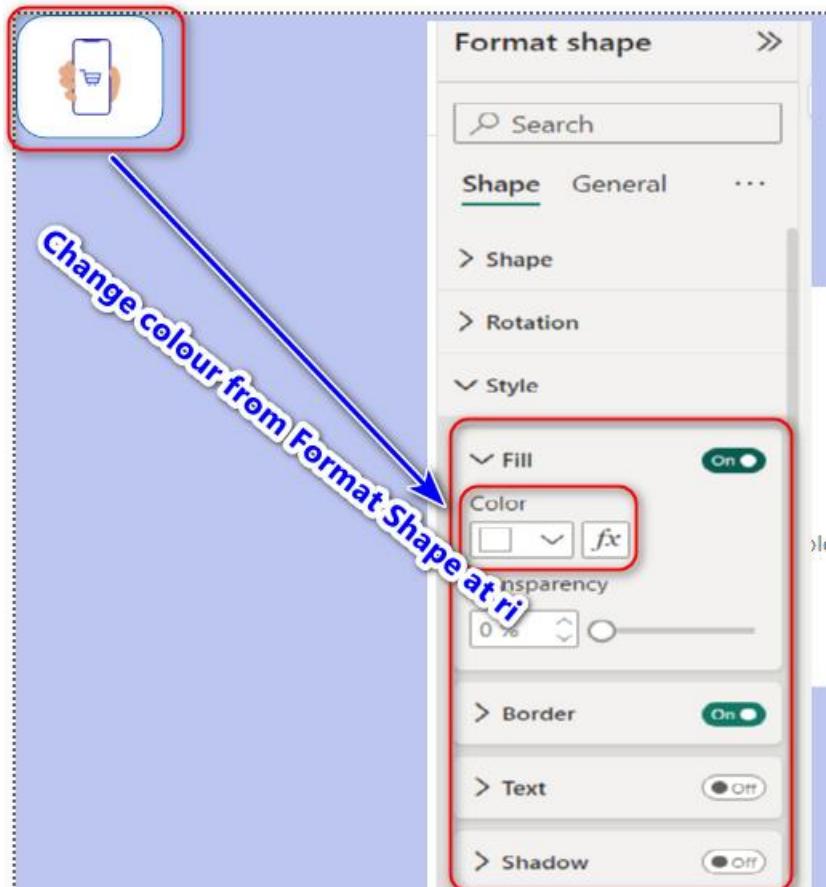
To remove the background and to convert to transparent images Go to www.remove.bg keep the photo in **png (Portable Network Graphic)** format

You can use colorPicker from Faststone Capture

To bring the shapes, images to front or back ,

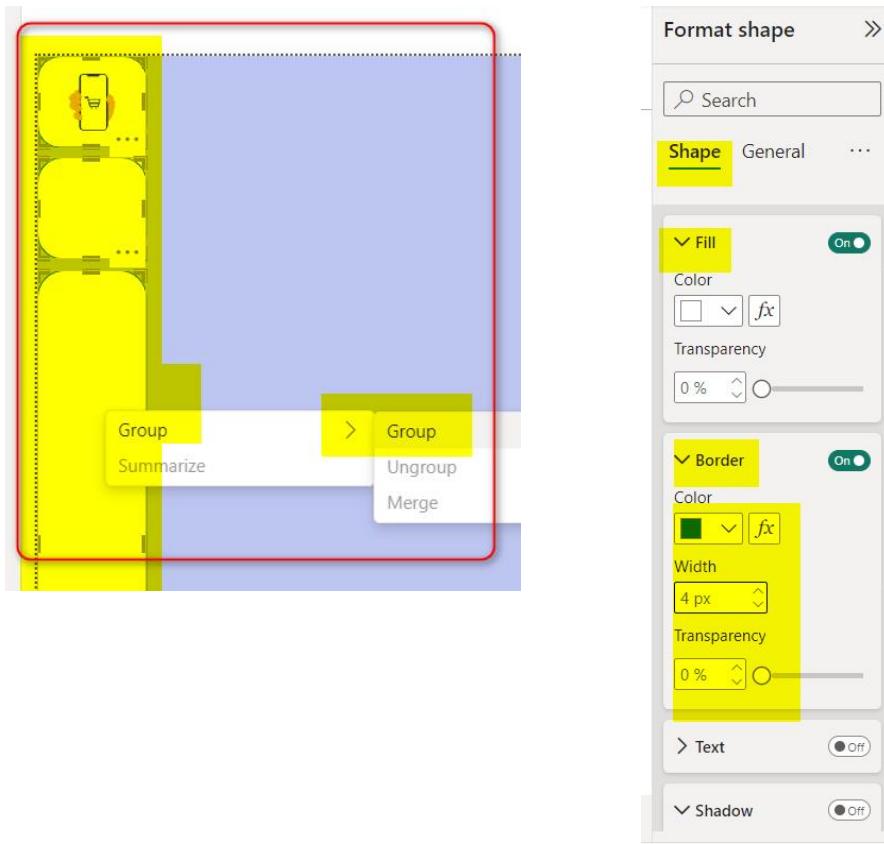
Simply select the images then go to Format → Bring Forward

Note we are inserting shapes rectangular and png transparent images



Simply do copy and paste the shapes

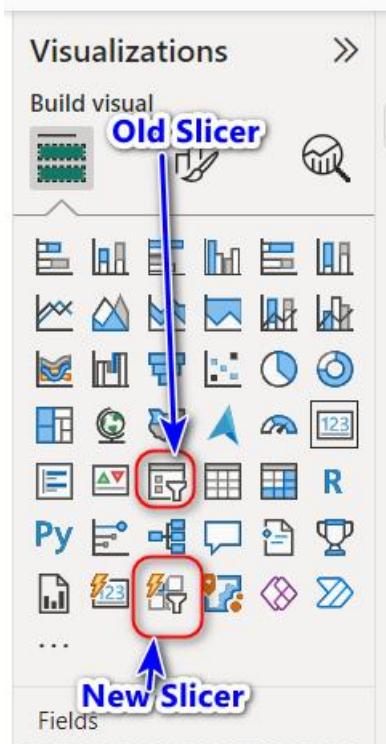
By selecting all the images / shapes we can also group them and give them border as well



Commonly Used Visuals

- **KPI cards, Bar / Pie Charts, Tables / Matrix and Slicers** are commonly used visuals.
 - One needs to **click the visuals** to **activate the visual settings**.
 - Use **Horizontal bar chart** to represent more than 3 categories.
-

Slicer (old Slicer and New Tile Slicer)



Add New Slicer

Insert the new slicer drag and drop the custom_calander → Date → Month on the slicer

The image shows the 'Data' pane on the right and a 'Tile Slicer' visualization on the left. The Data pane shows a hierarchy under 'Custom_Calander': Date (checked), Date Hierarc... (checked), Year (unchecked), Quarter (unchecked), Month (checked, highlighted with a red box), Day (unchecked), Day Name (unchecked). The 'Month' checkbox is highlighted with a red box. The Tile Slicer visualization shows a 4x3 grid of tiles labeled with abbreviations like J., F., M., A., M., J., etc.

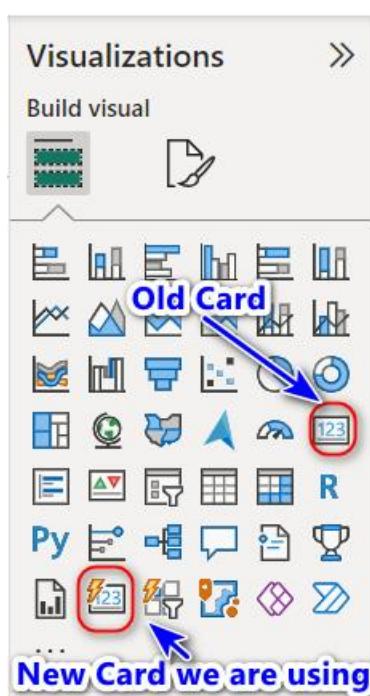
Select the slicer → Format Visual → layout → (Single Column, card, 12)

To remove the slicer title (i.e Month) → Go to visual format → General → Turn Off the title, effect(turn off background → to remove background colour)

To add Accent Bar :::: go to visual → Buttons → Accent bar

Card (New and Old)

We are now adding new card for KPI (Key Performance Indicator)



If need to remove Decimal point in KPI

step 1 : Select the entities where we don't need value after decimal

Step 2: Go to Measure Tool

Step 3: Select Auto to 0

The screenshot shows the Power BI desktop interface. In the top ribbon, the 'Measure tools' tab is selected. A red box highlights the 'Auto' button in the 'Format' dropdown under the 'General' section. Another red box highlights the 'Measure tools' icon in the ribbon. In the bottom right corner, the 'Visualizations' pane is open, showing a list of measures. The 'Average_Price' measure is selected, indicated by a red arrow pointing to its checkbox. The value '769.20M' is displayed in a card on the left, with a yellow box highlighting the '20' part. A blue arrow points from the text 'Put Zero here' to the 'Auto' button. The text 'step 1 : Select the entities where we don't need value after decimal' is overlaid in blue at the bottom of the visualization pane.

step 1 : Select the entities where we don't need value after decimal

Step 2: Go to Measure Tool

Step 3: Select Auto to 0

Average_Price = AVE[Data[Price Per Unit]]

Total_Sales
769.20M

Visualizations > Data

Average_Price

Customer Age
Customer Name
Customer Ratings
Mobile Model
Payment Method
Price Per Unit
Total_Quantity
Total_Sales
Transactions
Units Sold

Options available for New Data Card in Visual

Lets do setting one by one

Layout → single row, 4(as we want to keep 4 data)

Card → Rounded Rectangle, 10px, Accent bar give color, keep 6px

The screenshot shows the 'Format visual' pane for a 'Data card' in Power BI. The left sidebar has tabs for 'Visualizations', 'General', and 'Cards', with 'Cards' selected. Under 'Cards', there are sections for 'Layout' and 'Accent bar'. The 'Layout' section is expanded, showing 'Arrangement' set to 'Single row', 'Style' set to 'Cards', 'Max cards shown' set to 4, and 'Space between cards' set to 4 px. The 'Accent bar' section is also expanded, showing it is turned 'On' with 'Color' set to blue, 'Transparency' at 0%, and 'Width' at 6 px.

To remove Background

Go to General → Effect → Remove Background

Visualizations

To decrease space between data and values
Total_Sales 80k

Go to **callOut value** → **Label**
Change to 4px

Visualizations

Format visual

Visual General ...

> Properties

> Title (Off)

Effects

Background (Off)

Color (Color picker, fx)

Transparency (0 %, slider)

> Visual border (Off)

Visual General ...

Heading 4

Font

Segoe UI 12 (Font dropdown, size 12)

B **I** **U** (Bold, Italic, Underline icons)

Color (Color picker, fx)

Transparency (0 %, slider)

Position

Above Value

Space between label and ...

4 px

Text wrap (Off)

Search

To add images save the png images from the google related to sales
Select the **new card** → **Format your Visul** → **Images**

The screenshot shows the Power BI desktop interface. At the top, there's a ribbon with various tabs like GET, Excel, Create, etc. Below the ribbon, there's a toolbar with icons for clipboard, data, queries, and other functions. The main area displays a card visual with four metrics: Total_Sales (769M), Total_Quantity (19K), Transactions (4K), and Average_Price (40.11K). A red box highlights the 'Total_Sales' card. To the right, the 'Visualizations' pane is open, showing sections for Format visual, Layout, Callout values, Reference labels, Images, and Cards. A red arrow points from the 'Images' section in the Visualizations pane to the 'Total_Sales' field in the settings.

After selecting the images apply the setting for e.g for total sales

Series → Select Total_sales, browse the images of total sales with transparent background, make size to 70 to 80px

Similarly do for other 3

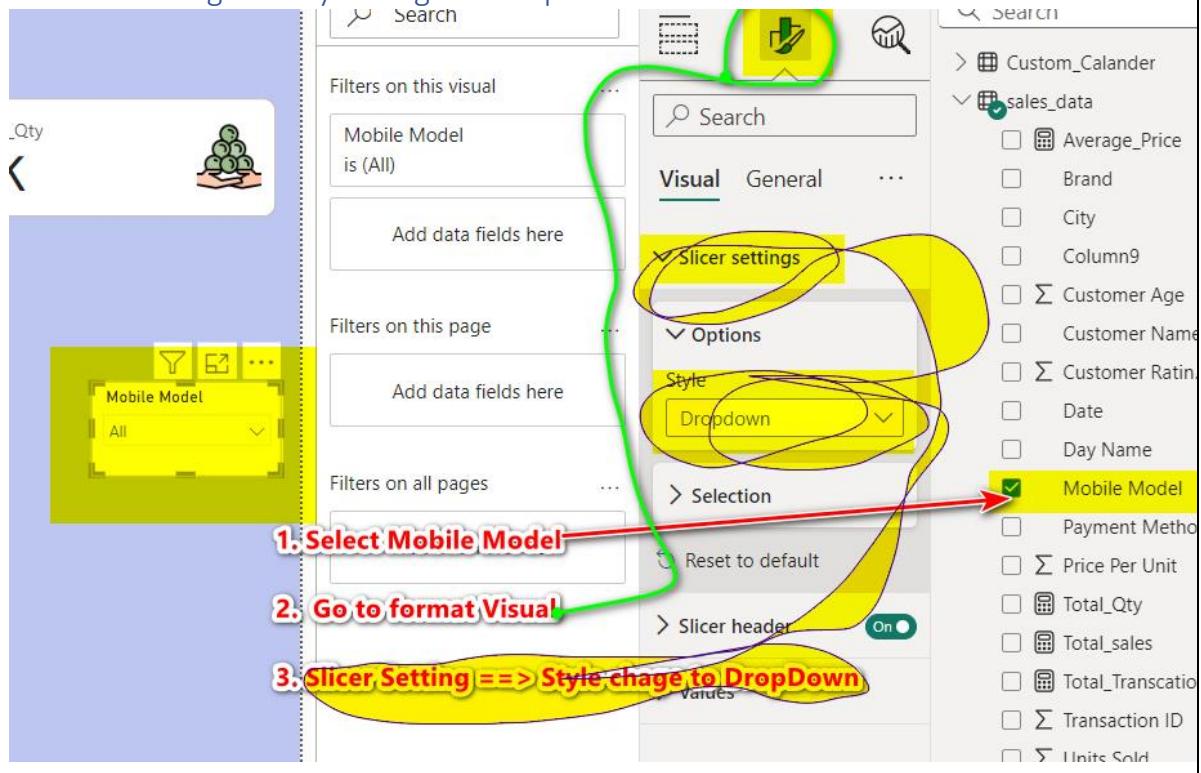
The screenshot shows the 'Format visual' settings for the 'Total_sales' series. The 'Image' section is selected, with 'total sales.png' chosen as the image file. The 'Size' field is set to 80 px. Other settings include Transparency (0 %) and Position (Right of text). The 'Vertical alignment' section shows three options. The 'Space between image an...' field is set to 4 px. The 'Size' field is highlighted with a red box.

Add old Slicer Now (filter) For mobile model, payment method

The screenshot shows the Power BI visualization editor interface. On the left, there is a visual card with the title "al_Transcation" and the value "91" next to a banknote icon. To its right is another card with the title "Total_Qty" and the value "2K" next to a stack of coins icon. Below these cards is a large yellow-highlighted area containing a list of items, each with a small square icon and some text. A red arrow points from the top right towards this yellow-highlighted area. On the far right, there is a context menu with various icons and sections:

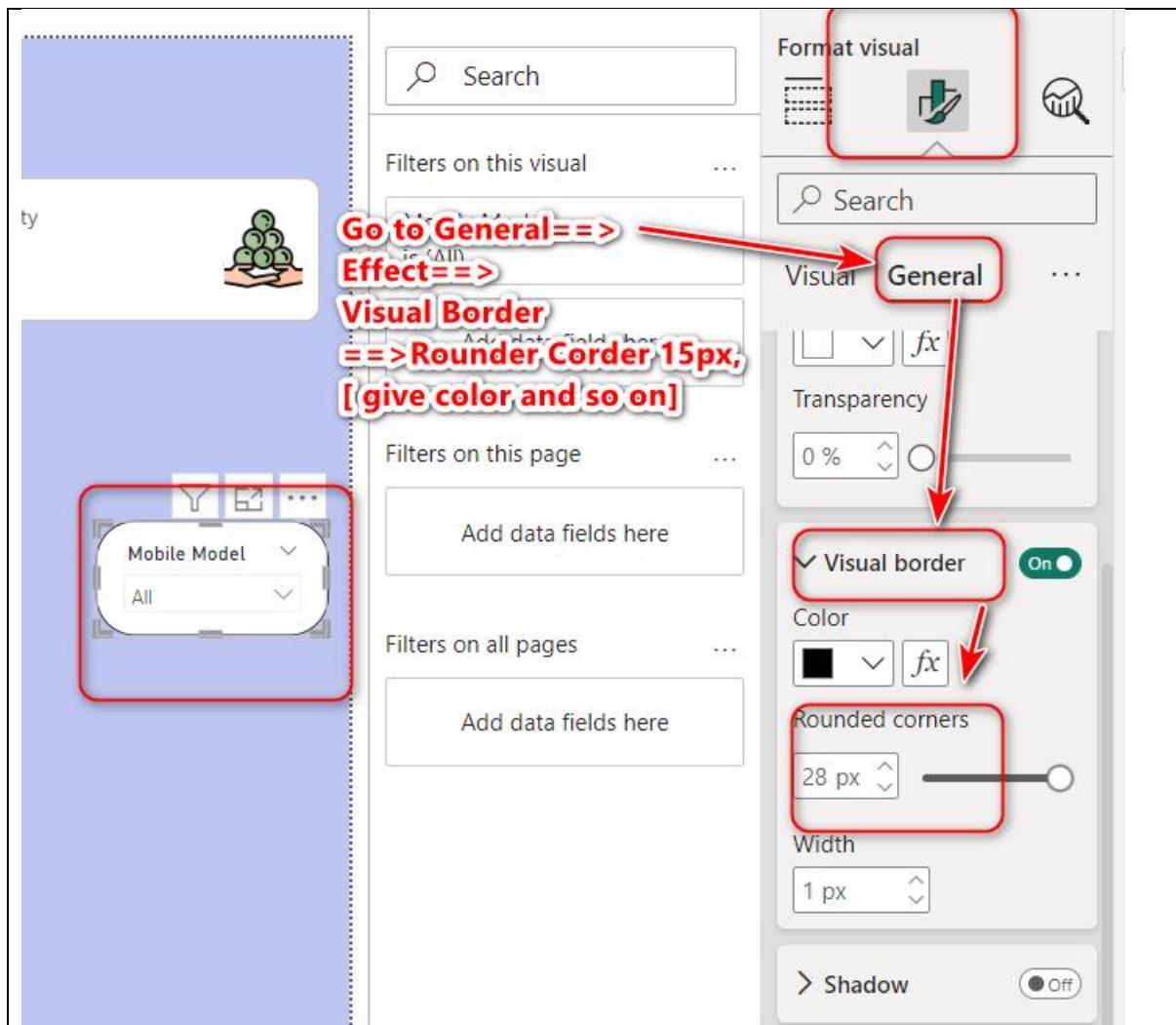
- Search
- Filters on this visual
- Add data fields here
- Filters on this page
- Add data fields here
- Filters on all pages
- Add data fields here
- Field
- Add data fields here
- Tooltip
- Keep all filters
- Drag tooltip fields here

1. Select Mobile Model
 2. Go to format Visual
 3. Slicer Setting ==> Style chage to DropDown



To Give Rectangular shaper to rounded

Go to General → Effect → Visual Border → Rounder Corder 15px, give color and so on



After making one slicer simply do copy paste to make another

Simply select the slicer then **do CTRL+C and CTRL +V**

The **remove** the field **mobile model** and add **brand, payment method** that's all

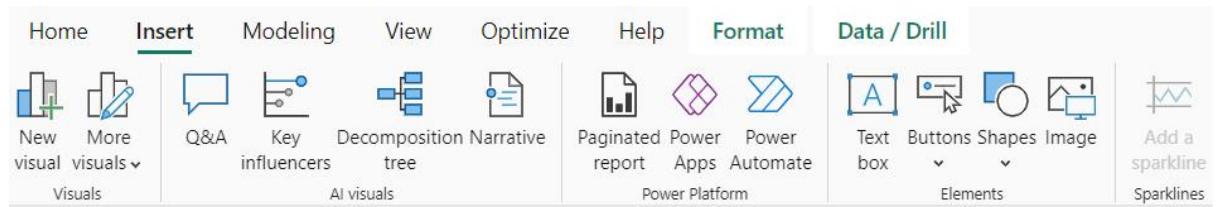


Similary Add the images of Filter and arrow icon at the top

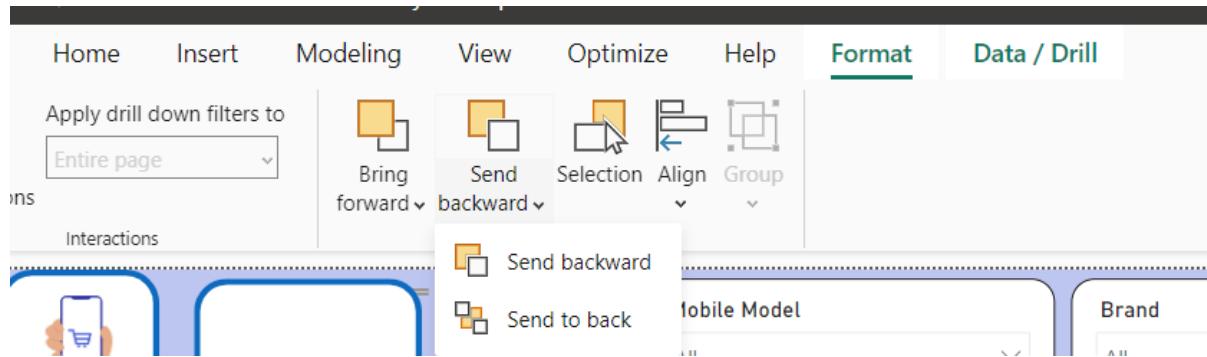
Infront of that just add textbox to write Mobile Dash Board

Steps:

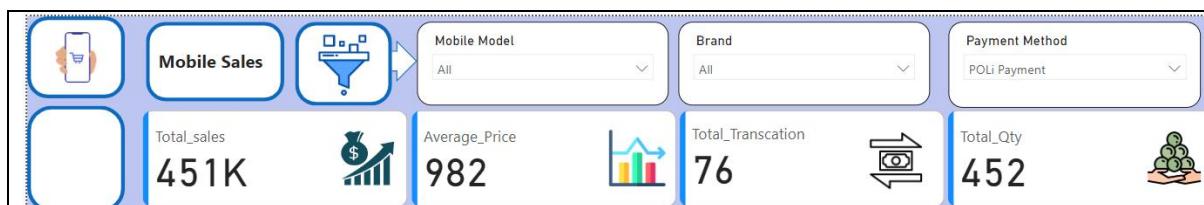
1. Just copy one **rectangular box**
2. Click on Insert (If TextBox, Images, shapes whatever we want)



3. To Bring the images Forward or Backward → Click on **Format** → Bring to **Forward / Backward**



Finally



Map and Filled Map

	<p>Before Adding Map Go to File → Options & Settings → Options → Global(Security) → Checked the Use Map and Filled Map</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p>Python scripting</p> <p>Security (highlighted)</p> <p>Privacy Regional Settings Updates Usage Data Diagnostics Preview features Save and Recover Report settings Copilot (preview)</p> <p>CURRENT FILE</p> <p>Data Load Regional Settings Privacy Auto recovery Published semantic model settings Query reduction Report settings</p> <p>Web Preview Warning Level: Moderate</p> <p>Data Extensions</p> <p>(Recommended) Only allow Microsoft certified (Not Recommended) Allow any extension to be used</p> <p>Custom visuals</p> <p>Show security warning when adding a custom</p> <p>ArcGIS for Power BI</p> <p>Use ArcGIS for Power BI</p> <p>Map and Filled Map visuals (highlighted)</p> <p>Use Map and Filled Map visuals</p> </div>
--	--

Just Add Map in Dashboard by clicking on Map

[Location, Legend, bubbleSize, latttute, Longitude]

After selecting Map → Go to Sales_data and drag drop or just checked city, total sales whatever we like to show

The screenshot shows the Power BI interface with a dashboard containing a map visualization and a card visualization.

Map Visualization: The map shows New Zealand with four data points labeled Auckland, Wellington, Christchurch, and Dunedin. A callout box contains the text: "After selecting Map Go to Sales_data and drag drop or just checked city, total sales whatever we like to show".

Card Visualization: The card displays "Total_Qty" with the value "452" and an icon of a stack of coins.

Data Source: The "Data" pane shows the "sales_data" table with the following columns:

- Average_Price
- Brand
- City** (selected)
- Total_Qty** (selected)
- Total_sales** (selected)
- Customer_Age
- Customer_Name
- Customer_Rating
- Date
- Day_Name
- Mobile_Model
- Payment_Method
- Price_Per_Unit
- Total_Transactions
- Transaction_ID
- Units_Sold

Map Settings: In the "Bubble size" section of the map's settings, "Total_sales" is selected.

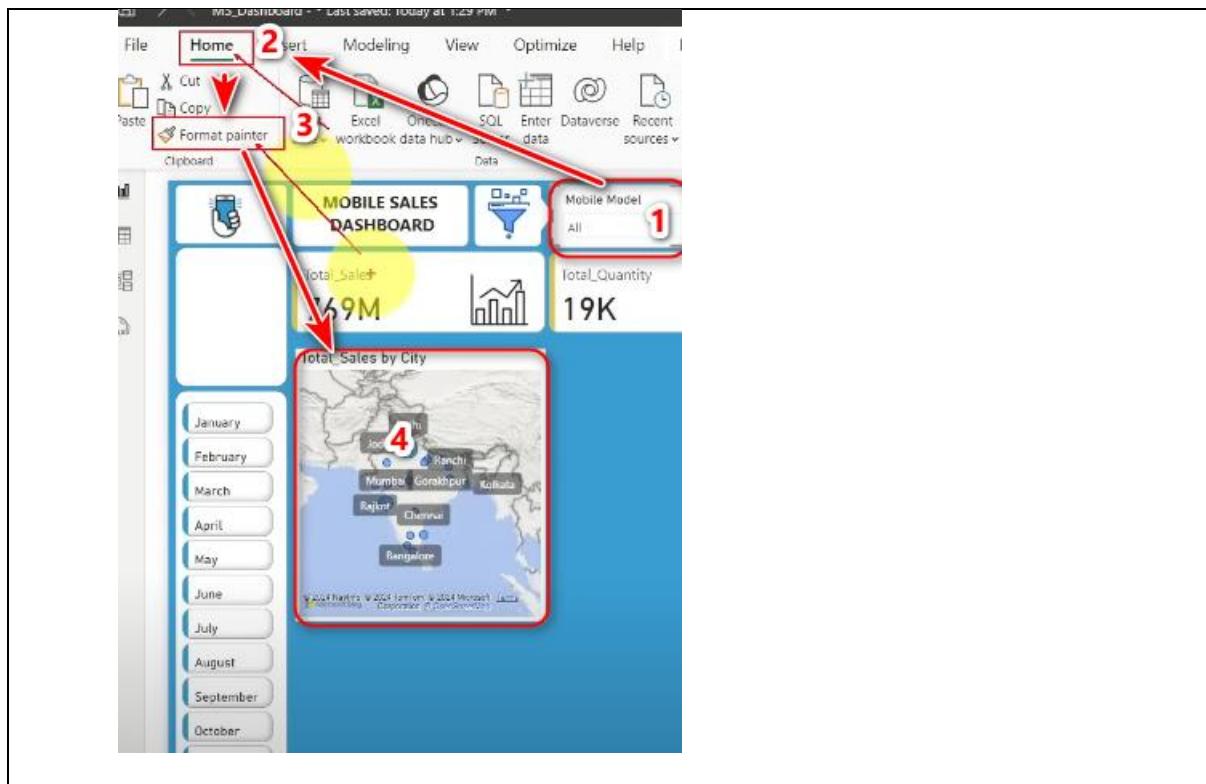
More Settings for Map:

- Turn OFF show labels
- Turn ON Category Labels

The screenshot shows a Power BI report interface. On the left, there is a map of New Zealand with cities labeled: Auckland, Wellington, Christchurch, and Dunedin. A summary card at the top displays "Total_Qty" with the value "452" and a green icon of coins. To the right is the "Visualizations" pane, which includes a "Format visual" ribbon tab (highlighted with a red box) and a search bar. Below the ribbon are two tabs: "Visual" (highlighted with a red box) and "General". Under "Visual", the "Map settings" section is expanded, showing options like "Style" (set to "Road"), "Show labels" (set to "Off"), and "Category labels" (set to "On"). Other sections include "Controls", "Legend", "Bubbles", and "Category labels". The "General" tab contains sections for "Properties", "Title" (on), "Effects", "Data format", "Header icons" (on), "Toolips" (on), and "Alt text". Red arrows point from the "Visual" tab in the ribbon to the "Visual" tab in the pane, and from the "Category labels" section in the "Visual" pane back to the "Category labels" section in the "General" pane.

To apply same format as that of filter / slicer “Mobile Model”

1. Select the slicer of “**Mobile Model**”
2. **Go to Home** → **Format Painter**
3. Then click on Map



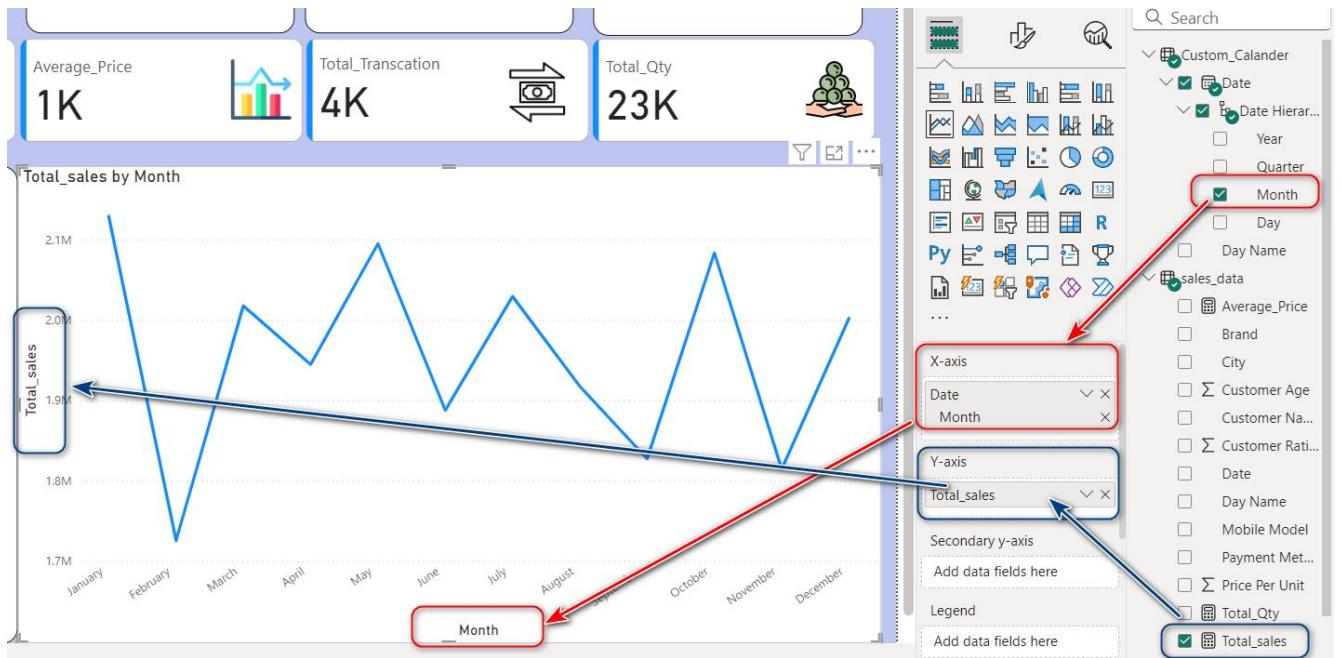
Line Chart



Just click on Line Chart to Insert

→ add **Date** in x -axis from **Custom_Calander** (Note you can keep only month remove other from data or as per require keep data),

→ add **Total_Quantity** in y -axis from **Sales_data**,

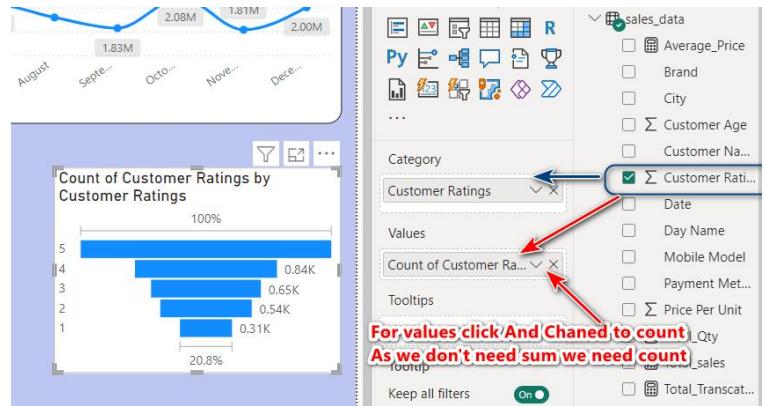
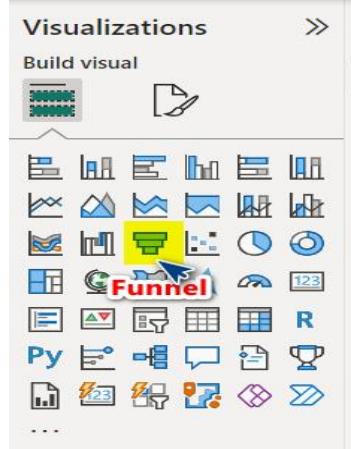


More Setting in LineChart

Format your Visual → Visual →	<p>→ Data label on (Will show the values at line chart) Then Values ON, Background ON</p> <p>→ X-axis (month) → Can turn OFF values and Titles</p> <p>→ Y-axis(Total_Sales) → Can turn OFF values and Titles</p> <p>→ Markers → Show All Category ON</p> <p>→ Line → Line Style (solid, dash, dot) (Linear, Smooth)</p> <p>→ Color → color (change to any color)</p>
Format your Visual → General →	<p>→ Title ON (can Change Text, change Alignment, formatting)</p> <p>→ Effect → Visual Border → Rounder Corder 15px, give color and so on</p> <p>(To apply rounded formatting → Click on any formateed shape → Home/Format Painter → Click on Req . shape to format)</p>

Funnel (Based on Customer Rating)

Just Click on Funnel that's all



In Category → Drag and Drop Customer Rating

In Values also → Drag and Drop Customer Rating But it shows the sum so click on value downarrow and change it to count so we will get total number of counting.

Now we try to change rating into **3 category poor, average and best** by using DAX formula

Right Click in Sales_data → Add new Column

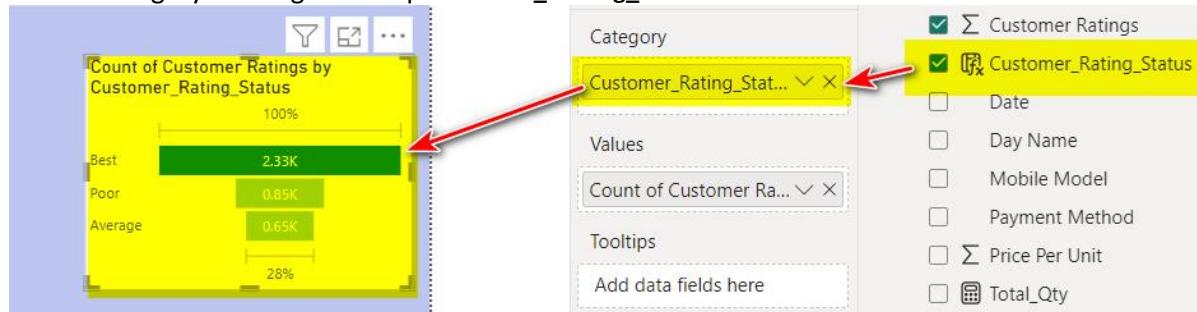
Customer Rating = `IF(sales_data[Customer Ratings]>=4, "Best")`

ALT + Enter to make area for DAX Formula larger

Using if condition inside if (nested if)

```
Customer_Rating_Status = IF(sales_data[Customer Ratings]>=4, "Best" ,  
IF(sales_data[Customer Ratings]>2, "Average", "Poor"))
```

Now in category → Drag and Drop Customer_Rating_Status



If don't like to keep values after decimal

Go to Format Your Visual → Visual → Values → Values Decimal places → 0

The dashboard displays three visualizations:

- Funnel Chart:** "Total_Qty" with a value of 14K. It shows a funnel with green circles representing the flow of items.
- Line Chart:** A line graph showing monthly values from September to December: 1.16M, 1.09M, 1.28M, 1.30M, and 1.37M.
- Bar Chart:** "Count of Customer Ratings by Customer_Rating_Status". The chart shows the count for Best (2K), Poor (1K), Average (1K), and a total of 28%.

Format visual

Search:

Visual General ...

Data Value

Values

Font: Segoe UI 10 **B** *I* U

Color:

Display units: Auto

Value decimal places: 0

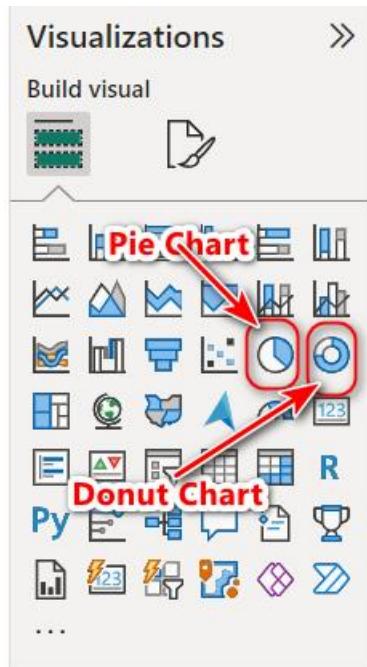
Percentage decimal places: Auto

Background: Off

To Edit the title of funnel
Go to Format Your Visual → General → Title → text (Customer Ratings Status)

The chart has been modified to show the title "Customer Ratings Status" in a yellow box above the bars.

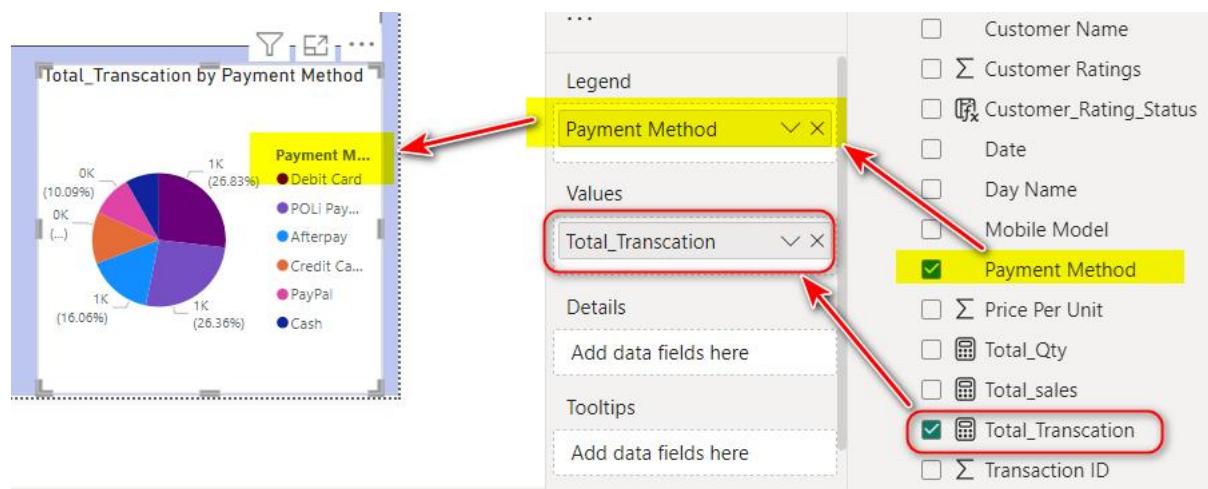
Pie Chart / Donut Chart



We will show transaction by payment method in Pie-chart

Legend → Payment Method

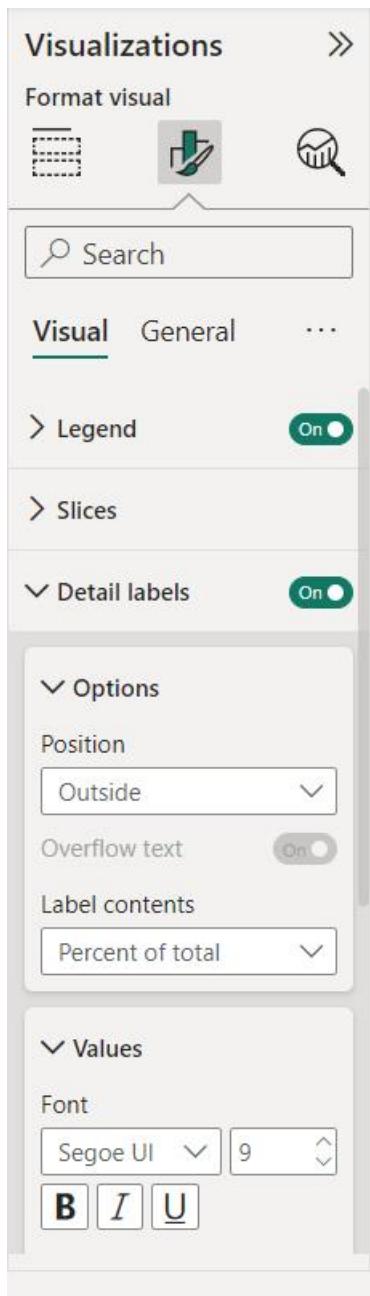
Values → Transaction



Click on format Printer and set it

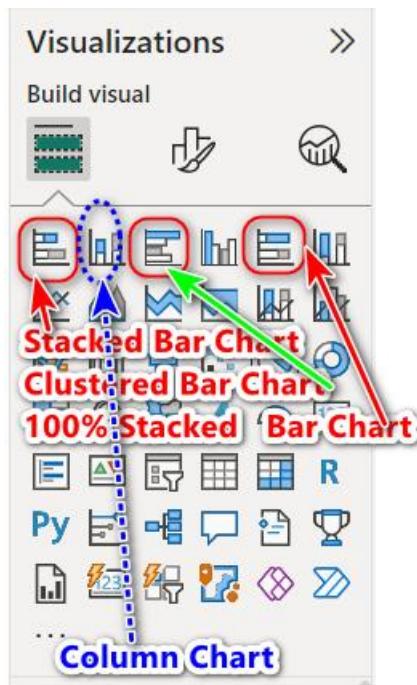
To show percentage in pie chart

General → Details Labels → Label Contents → Percentage of Total



Bar Chart

We will use the bar chart for Total Sales by Model

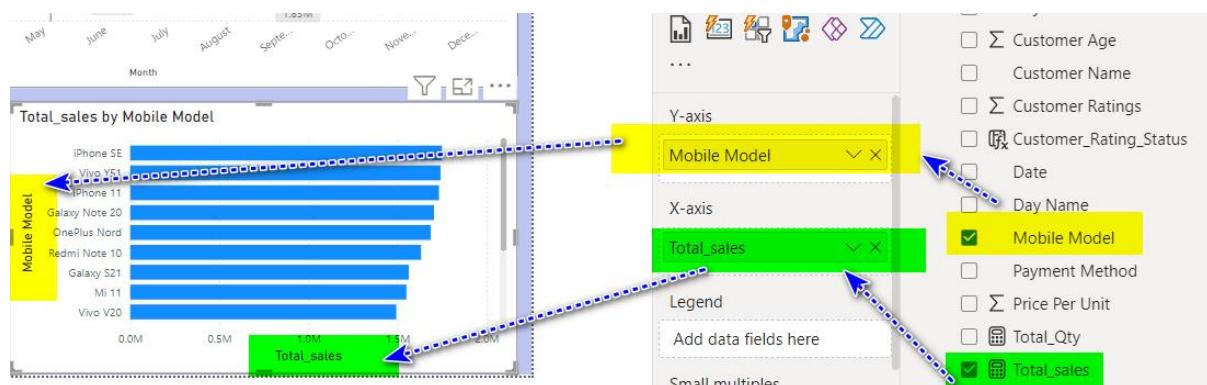


We used Clustered Bar chart here

X-axis → Total Sales

Y-axis → Mobile Model

Apply similar format by **Format Painter**



Just want to show top 5 How to apply filter?

Steps

1. Select the bar chart
2. Click on Filter (If filter don't appear Click on View Menu Bar → Filter)
3. Select the Mobile Model and Expand it

Filter Type : **Top N**

Show Item : **Top 5**

By Values → Drag and Drop **Total_Sales** Here and click on Apply

Area Chart

We want to show total sales by Day in Area Chart

Copy and paste the same Bar Chart

→ Click on copied Bar chart → Go to Visualizations → Select Area Chart → That's All

X- Axis → Day Name

Y-Axis → Total Sales

The screenshot shows the Power BI desktop interface with the following steps highlighted:

- 1. Copy Paste chart here**: A red box highlights a bar chart titled "Total_sales by Mobile Model" in the visual area.
- 2. Select the copied chart**: A red box highlights the copied bar chart in the visual area.
- 3. Select the Area Chart**: A red box highlights the "Area" icon in the "Visualizations" pane.
- 4. Drag and Drop Date Name and Total Sales**: Red arrows point from the "Day Name" field in the "X-axis" section and the "Total_sales" field in the "Y-axis" section to the respective fields in the "Data" pane, indicating they are being selected for the new area chart.

The interface includes various filters, a performance monitor, and a data pane on the right containing fields like "Custom_Calander", "Date", "Day Name", "Mobile Model", "Payment Method", etc.

Table



We want to **Show Brand, Total Sales, Transaction, Total Quantity**

Select the table and drag and drop "**Show Brand, Total Sales, Transaction, Total Quantity**" from Sales_data to table Column. That's all and Apply the format by **format Painter**

Brand	Total_sales	Total_Transcation	Total_Qt
Apple	4973480	783	487
OnePlus	4594082	768	460
Samsung	4617003	775	456
Vivo	4726120	766	471
Xiaomi	4561930	743	459
Total	23472615	3835	2336

Visualizations

Build visual

Columns

Brand	X
Total_sales	X
Total_Transcation	X
Total_Qty	X

Tooltip

Keep all filters

Drag tooltip fields here

Data

Search

Custom_Calander

Date
Day Name

sales_data

Average_Price
Brand
City
 \sum Customer Age
Customer Name
 \sum Customer Ratings
Customer_Rating_St
Date
Day Name
Mobile Model
Payment Method
 \sum Price Per Unit
Total_Qty
Total_sales
Total_Transcation
 \sum Transaction ID
 \sum Units Sold

Edit Interaction in Power BI

Note for Line chart every filter / slicer is working but the slicer on left hand side based on Month is not working . When we select the month e.g. Feb its just showing one dot in Feb only not a line chart.



So that we need **Edit Interaction** and when we select that month “there shouldn’t any effect on line Chart”

Go to **Format → Edit Interaction**

After selecting “Edit Inteaction” we will see 2 options (1. Filter ; 2. None) in every **Build Visual** line “Table, linechart, card “ and so on

The screenshot shows the Microsoft Power BI ribbon with the "Format" tab selected. A red arrow points from the "Edit interactions" icon in the ribbon to a line chart in the dashboard below. The line chart has a red box around its "Total_sales" measure. Another red arrow points from the text "1. After Clicking Edit Interaction Select this Slicer4" to a slicer in the dashboard. A third red arrow points from the text "2. Disable the options of Line Chart" to the chart itself. A green box highlights the "Disable here" option on the chart's context menu.

1. After Clicking Edit Interaction Select this Slicer4

2. Disable the options of Line Chart

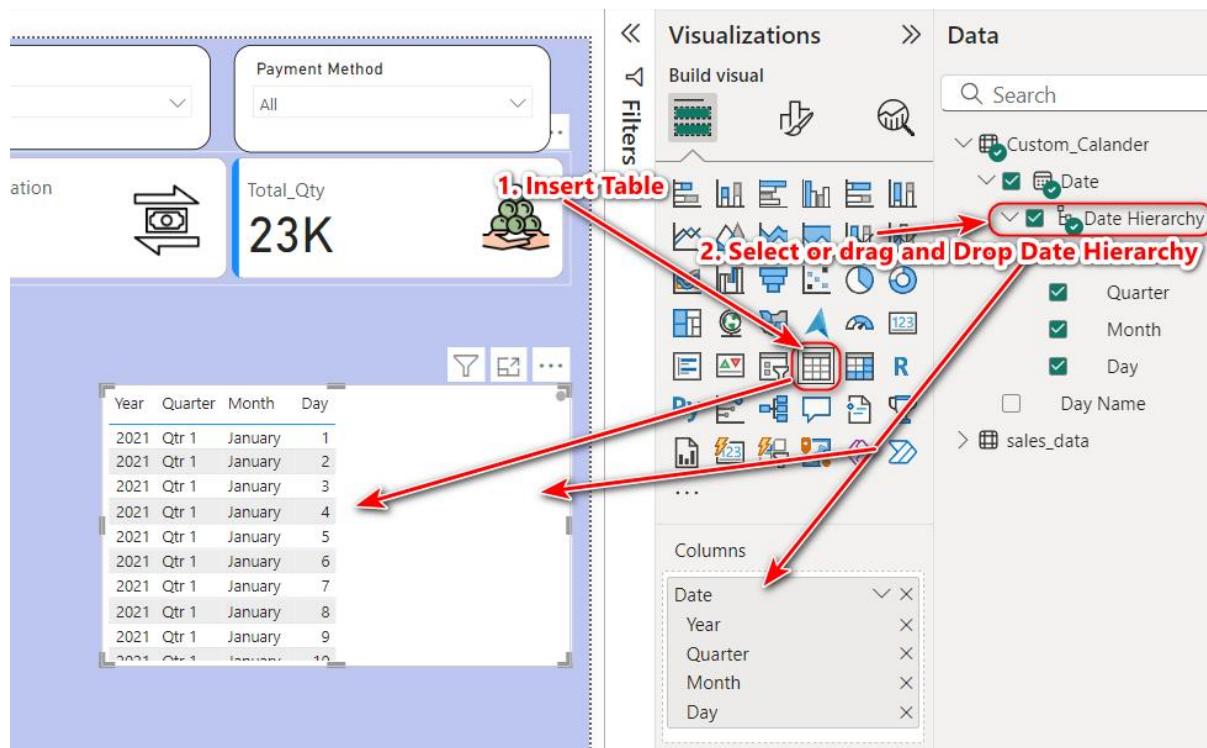
Disable here

MTD QTD and YTD DAX Functions

In Power BI, DAX (Data Analysis Expressions) provides functions to calculate Month-to-Date (MTD), Quarter-to-Date (QTD), and Year-to-Date (YTD) values. These calculations are **useful for analyzing cumulative performance over different periods.**

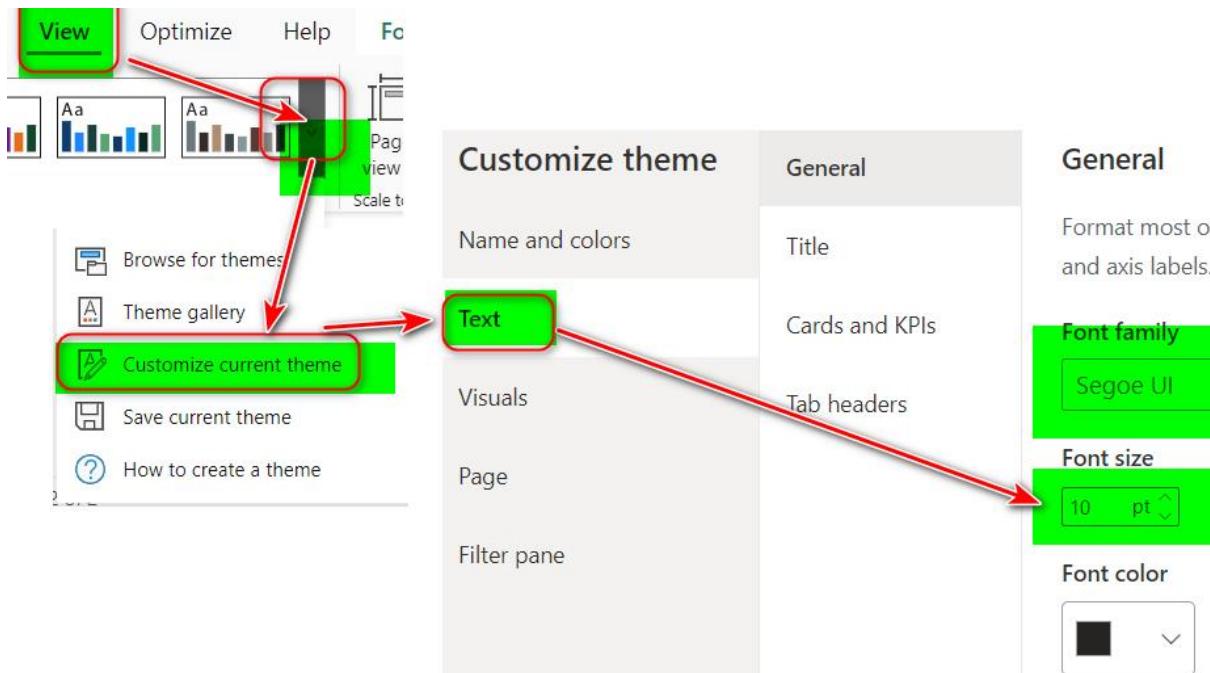
Note Formula for MTD, QTD and YTD is same just change name only in PowerBI

First Insert table. Then Drag and drop all Date Hierarchy.



To Change Font Size

View → Expand Theme → Customize Current Theme → Text → General → Font Size → 14



Just to change table value then **Visual** → **Values** → 14

The screenshot shows a Power BI report with a table visualization on the left and a visualizations pane on the right. The table visualization displays data for 'Total_Qty' (23K) and a date range from January 1 to January 10, 2021. The visualizations pane on the right is open, showing the 'Format visual' settings for a selected visual. The 'Values' section is highlighted with a green box. In this section, the 'Font' is set to 'Segoe UI' and the 'Font size' is set to '14'. Other options include 'Text color' (black) and 'Background color' (white). The pane also includes sections for 'Style presets', 'Grid', and other general settings.

Year	Quarter	Month	Day
2021	Qtr 1	January	1
2021	Qtr 1	January	2
2021	Qtr 1	January	3
2021	Qtr 1	January	4
2021	Qtr 1	January	5
2021	Qtr 1	January	6
2021	Qtr 1	January	7
2021	Qtr 1	January	8
2021	Qtr 1	January	9
2021	Qtr 1	January	10

1. MTD (Month-to-Date)

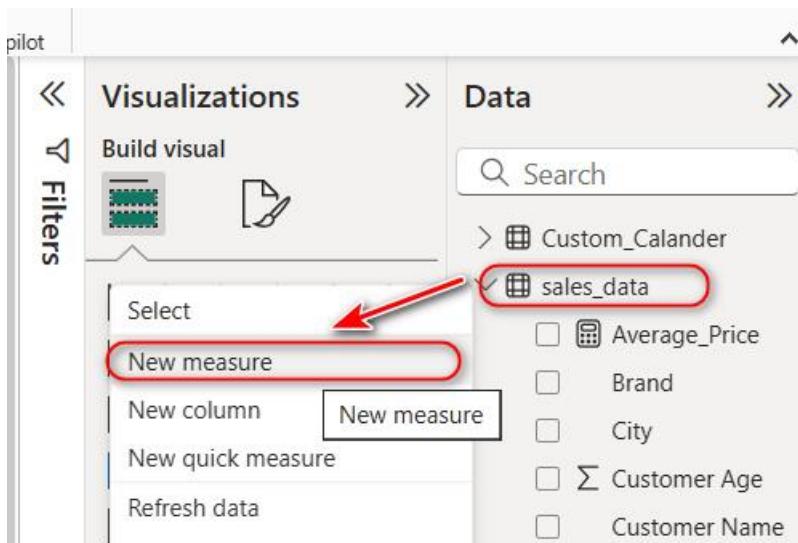
Calculates the cumulative value from the start of the current month to the current date.

DAX Function:

```
MTD_Sales = TOTALMTD (
    [Total Sales],           -- Measure or expression to aggregate
    'Date'[Date]            -- Date column from your date table
)
```

- **TOTALMTD:** Computes the total from the start of the month to the current date.

Steps : Right Click on Sales_data → New Measure



Syntax



Expression: for what → Total sales ? or total order → or total transaction → and so on

Here we will calculate total sales

Dates: Take date from custom calender where we use date then type.[Date] .

Filter: is optional

```
MTD = TOTALMD([Total_sales],Custom_Calander[Date].[Date])
```

To give comma in any Data

Select the data → Go to Measure Tool → Select comma

→ Select Auto to 0 for no decimal value

MTD is cumulative Sum added based on each day

The screenshot shows the Power BI interface with the following annotations:

- Measure tools tab:** The 'Measure tools' tab is highlighted.
- Format section:** The 'Format' section is highlighted, showing the 'Type' dropdown set to 'Whole number' with '0' decimal places. A red box labeled 'To add comma Sign' points to the thousands separator in the dropdown. Another red box labeled 'no value after decimal' points to the decimal separator.
- Data grid:** The data grid shows a table with columns: Year, Quarter, Month, Day, Total_sales, and MTD. The MTD column shows the cumulative sum of sales from day 1 to the current day. Red boxes highlight specific cells:
 - Cell 12 (Day 10): 23632
 - Cell 13 (Day 11): 36,626
 - Cell 14 (Day 12): 63,223
 - Cell 15 (Day 13): 78,570
 - Cell 16 (Day 14): 91,412
 - Cell 17 (Day 15): 119,533
 - Cell 18 (Day 16): 139,246
 - Cell 19 (Day 17): 148,917
 - Cell 20 (Day 18): 169,608
 - Cell 21 (Day 19): 186,167
 - Cell 22 (Day 20): 205,127
 - Cell 23 (Day 21): 222,968
 - Cell 24 (Day 22): 247,411
 - Cell 25 (Day 23): 261,796
 - Cell 26 (Day 24): 296,930
 - Cell 27 (Day 25): 327,078
 - Cell 28 (Day 26): 348,116
 - Cell 29 (Day 27): 363,857
- Annotations on the grid:**
 - A red box labeled 'MTD is cumulative Sum added based on each day' is placed over the first few rows.
 - A red box labeled 'Cumulative SUM' is placed over the last few rows.
 - Handwritten calculations are shown in the grid:
 - 12994 + 23632 = 36,626
 - 36,626 + 26597 = 63,223

When new month start it will start summing from day 1 of that month doesn't add based on previous month

Year	Quarter	Month	Day	Total_Sales	MTD
2021	Qtr 4	October	21	837800	7925682
2021	Qtr 4	October	22	106493	8432174
2021	Qtr 4	October	23	773331	9205505
2021	Qtr 4	October	24	473861	9679366
2021	Qtr 4	October	25	10140977	
2021	Qtr 4	October	26	635027	10776004
2021	Qtr 4	October	27	887252	11663256
2021	Qtr 4	October	28	388130	12051386
2021	Qtr 4	October	29	907664	13059051
2021	Qtr 4	October	30	647361	13706412
2021	Qtr 4	October	31	71481	14420433
2021	Qtr 4	November	1	1380818	1380848
2021	Qtr 4	November	2	609335	1990183
2021	Qtr 4	November	3	433823	2424006
2021	Qtr 4	November	4	1074104	3498110
2021	Qtr 4	November	5	626875	4124984
2021	Qtr 4	November	6	633113	4758098

2. QTD (Quarter-to-Date)

Note Formula for MTD, QTD and YTD is same just change name only in PowerBI

Calculates the cumulative value from the start of the current quarter to the current date.

DAX Function:

```
QTD_Sales = TOTALQTD(
    [Total Sales],           -- Measure or expression to aggregate
    'Date'[Date]            -- Date column from your date table
)
```

- **TOTALQTD:** Computes the total from the start of the quarter to the current date.

Just Change M to Q in formula to change MTD to QTD and remove days from filter and just keep month only

Similarly for YTD

MTD	<code>MTD = TOTALMD([Total_sales],Custom_Calander[Date].[Date])</code>
QTD	<code>QTD = TOTALQTD([Total_sales],Custom_Calander[Date].[Date])</code>
YTD	<code>YTD = TOTALYTD([Total_sales],Custom_Calander[Date].[Date])</code>

Home Insert Modeling View Optimize Help Format Data / Drill Table tools Measure tools

QTD \$% Format Whole number Data category Uncategorized New measure Quick measure Calculations

Structure Formatting Properties

Back to report

1 QTD = TOTAL(QTD([Total_sales],Custom_Calender([Date]),[Date]))

Year Quarter Month Day Total_sales YTD QTD MTD

Year	Quarter	Month	Day	Total_sales	YTD	QTD	MTD
2021	Qtr 4	October	9	12994	12,994	12994	12994
2021	Qtr 4	October	10	23632	36,626	36626	36626
2021	Qtr 4	October	11	26597	63,223	63223	63223
2021	Qtr 4	October	12	15347	78,570	78570	78570
2021	Qtr 4	October	13	15347	78,570	78570	78570
2021	Qtr 4	October	14	28121	119,533	119533	119533
2021	Qtr 4	October	15	19713	139,246	139246	139246
2021	Qtr 4	October	16	9671	148,917	148917	148917
2021	Qtr 4	October	17	20691	169,608	169608	169608
2021	Qtr 4	October	18	16559	186,167	186167	186167
2021	Qtr 4	October	19	18960	205,127	205127	205127
2021	Qtr 4	October	20	17841	222,968	222968	222968
2021	Qtr 4	October	21	24443	247,411	247411	247411
2021	Qtr 4	October	22	14385	261,796	261796	261796
2021	Qtr 4	October	23	35134	296,930	296930	296930
2021	Qtr 4	October	24	30148	327,078	327078	327078
2021	Qtr 4	October	25	21038	348,116	348116	348116
2021	Qtr 4	October	26	15741	363,857	363857	363857
Total				23472615	6,077,299	180458	

Visualizations Build visual Filters

Columns Date Year Quarter Month Day Total_sales YTD QTD MTD

Tooltip Keep all filters

The screenshot shows a Microsoft Power BI interface. At the top, there's a ribbon with Home, Insert, Modeling, View, Optimize, Help, Format, Data / Drill, Table tools, and Measure tools. Below the ribbon, there are several input fields: 'QTD' in a text box, 'Format' dropdown set to 'Whole number', 'Data category' dropdown set to 'Uncategorized', and 'Measure tools' buttons for 'New measure' and 'Quick measure'. A green box highlights the formula bar with the formula '1 QTD = TOTAL(QTD([Total_sales],Custom_Calender([Date]),[Date]))'. Red arrows point from this formula to the 'Day' column header in the table and to the 'Day' filter in the 'Columns' pane. The main area displays a table with columns: Year, Quarter, Month, Day, Total_sales, YTD, QTD, and MTD. The data shows sales figures for October 2021. The 'Columns' pane on the right lists Date, Year, Quarter, Month, Day, Total_sales, YTD, QTD, and MTD, with the 'Day' column currently selected. The 'Visualizations' pane on the right shows various chart and report options.

Note : It will add data only from one quarter

When next Quater comes

then it will start adding from

stating day and month of that Quarter

Year	Quarter	Month	Total_Sales	QTD
2021	Qtr 4	October	14420433	14420433
2021	Qtr 4	November	21883370	36303803
2021	Qtr 4	December	22511717	58815520
2022	Qtr 1	January	22774652	22774652
2022	Qtr 1	February	19564976	42339628
2022	Qtr 1	March	24606558	66946186
2022	Qtr 2	April	19316054	19316054
2022	Qtr 2	May	22951960	42268014
2022	Qtr 2	June	21681046	63949060
2022	Qtr 3	July	24729729	24729729
2022	Qtr 3	August	23118280	47848009
2022	Qtr 3	September	18746360	66594369
2022	Qtr 4	October	21973397	21973397
2022	Qtr 4	November	21976663	43950059
2022	Qtr 4	December	20550166	64500226
2023	Qtr 1	January	23581848	23581848
2023	Qtr 1	February	18857456	42439304
2023	Qtr 1	March	20449997	62889301

**Note : It will add data only from one quarter
When next Quarter comes
then it will start adding from
stating day and month of that Quarter**

3. YTD (Year-to-Date)

Calculates the cumulative value from the start of the current year to the current date.

DAX Function:

```
YTD_Sales = TOTALYTD(
    [Total Sales],           -- Measure or expression to aggregate
    'Date'[Date],           -- Date column from your date table
    "12/31"                 -- Optional fiscal year-end (default is December
31)
)
```

- **TOTALYTD:** Computes the total from the start of the year to the current date. You can specify the fiscal year-end if it's not December 31.

Year	Quarter	Total_Sales	YTD
2021	Qtr 4	58815520	58815520
2022	Qtr 1	66946186	66946186
2022	Qtr 2	63949060	130895246
2022	Qtr 3	66594369	197489615
2022	Qtr 4	64500226	261989840
2023	Qtr 1	62889301	62889301
2023	Qtr 2	64392563	127281863
2023	Qtr 3	62957202	190239065
2023	Qtr 4	63075154	253314219
2024	Qtr 1	66187436	66187436
2024	Qtr 2	64058249	130245686
2024	Qtr 3	58557474	188803159
2024	Qtr 4	6282249	195085408
Total		769204988	195085408

Note in YTD
Add from Q1 to Q4
of particular year only

Add based on year

Same

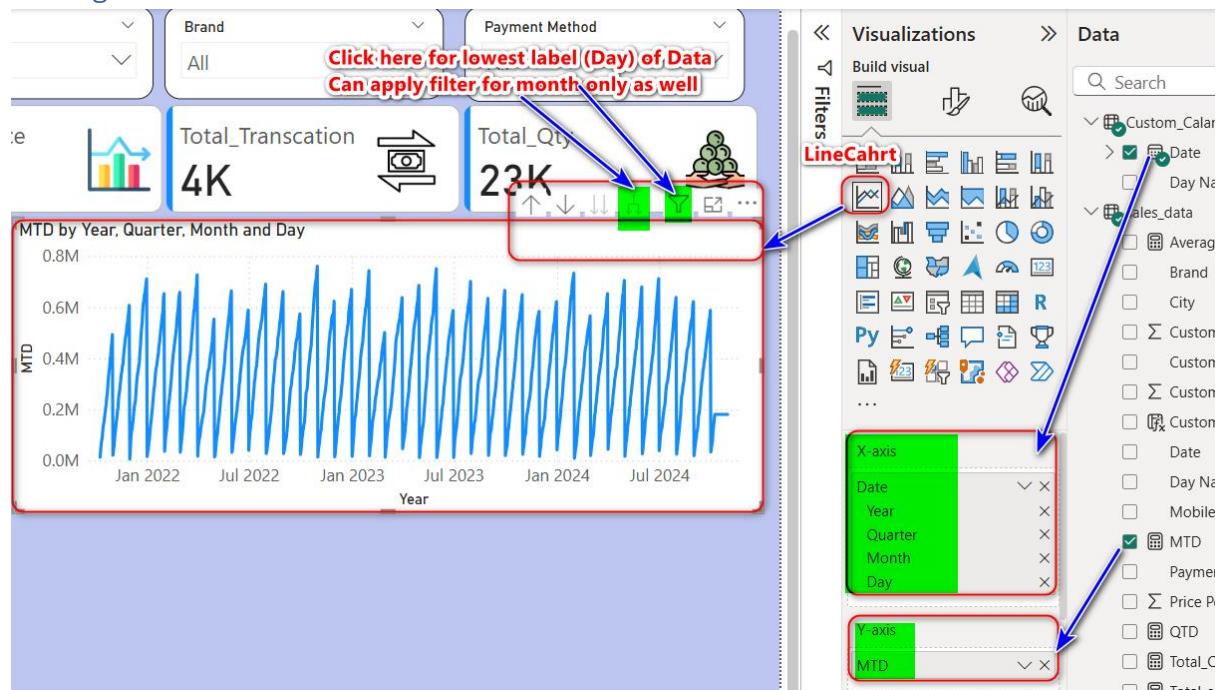
Additional Considerations:

- **Date Table Requirement:** These functions require a properly configured date table. Ensure the table:
 - Includes a continuous range of dates.
 - Is marked as a "Date Table" in Power BI.
 - Has a single column designated as the "Date" column.
- **Custom Time Periods:** If your organization follows custom fiscal periods (e.g., 4-4-5 calendar), you may need to use `DATESMTD`, `DATESQTD`, and `DATESYTD` to calculate cumulative totals with more flexibility.

```
Custom_YTD_Sales = CALCULATE (
    [Total Sales],
```

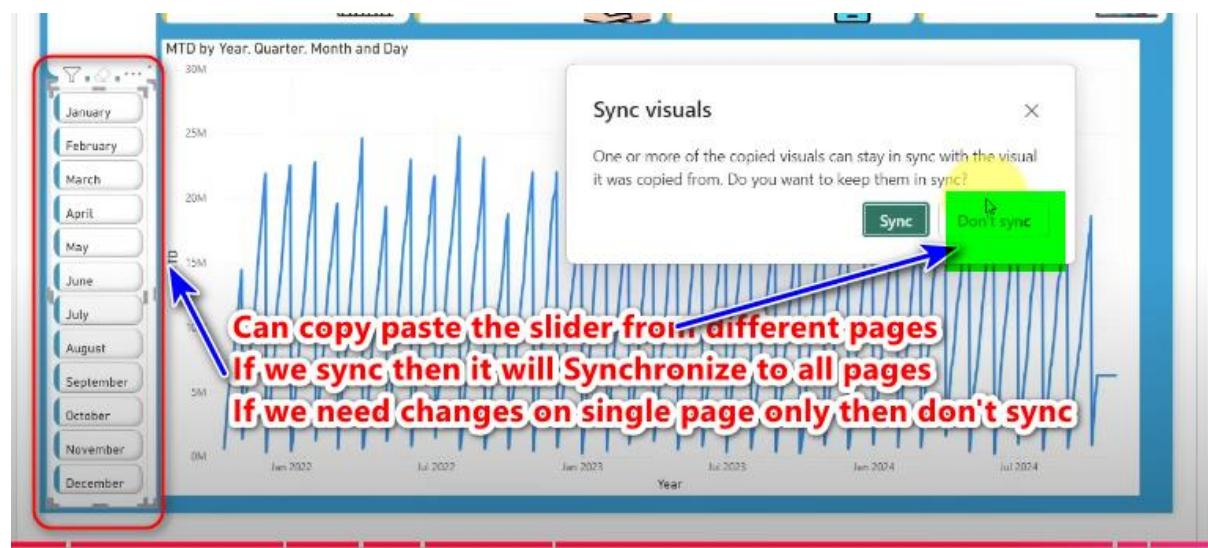
```
    DATESYTD('Date'[Date], "06/30") -- Example: Fiscal year ends on  
June 30  
)
```

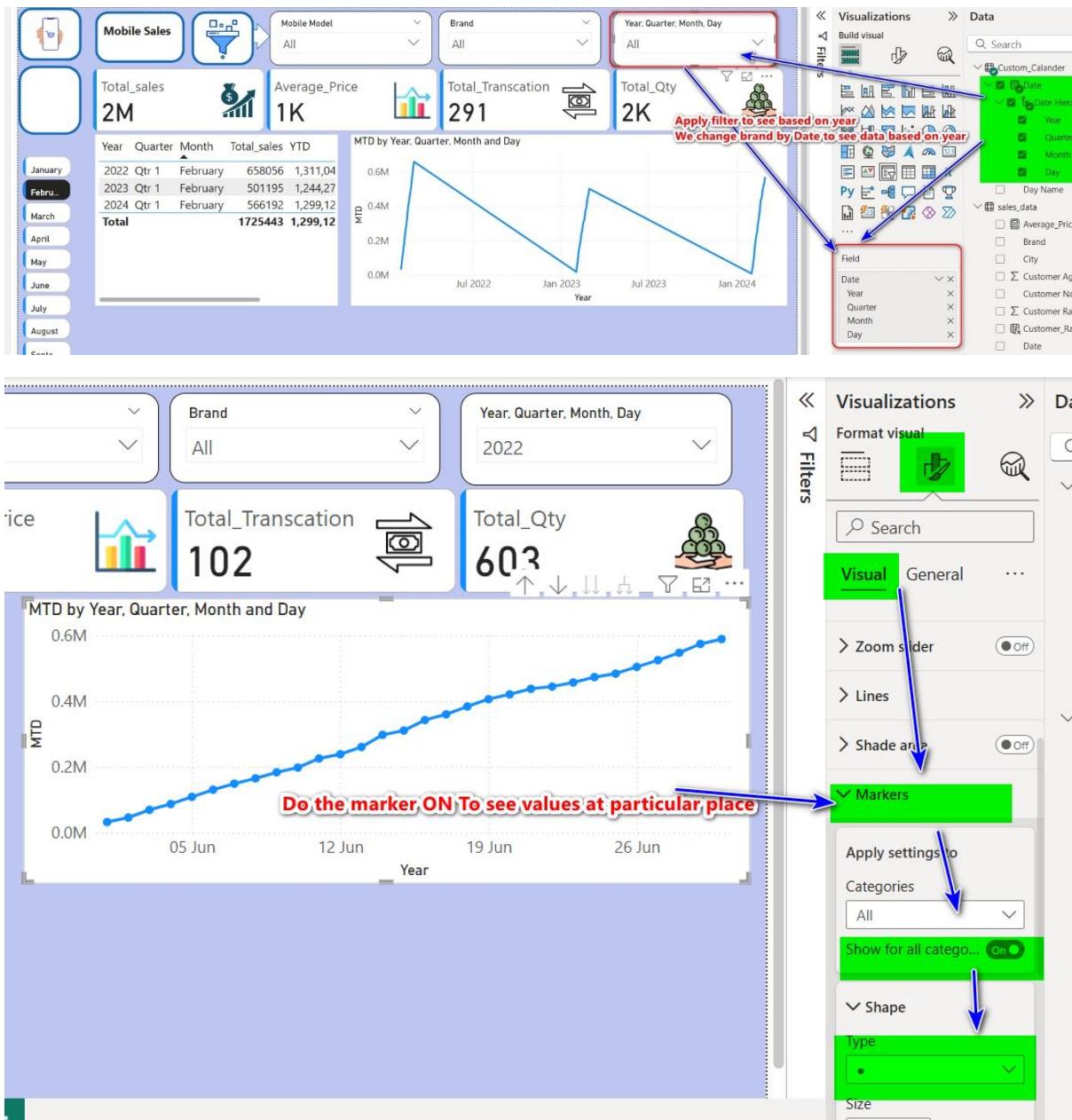
Adding Line Chart for MTD



Can copy paste the slider from different pages → If we sync then it will Synchronize to all pages →

If we need changes on single page only then don't sync





Same Period Last Page

Copy and paste the details of MTD dash board in another page

It is useful to compare the data of sales in last year and this year based on particular month . E.g The business is running very low in June, July at Cromwell. Lets compare the sales data of June, Junly from 2021, 2022, and 2023 and estimate about 2024 , 2025

To add new DAX formula

Go to Sales_data → RightClick → New Measure (And write the Dax formula for Same Period Last Year)

```
Same Period Last Year = CALCULATE([Total_sales],
SAMEPERIODLASTYEAR(Custom_Calander[Date].[Date]))
How to use DAX formula in multiple line then use ➔ ALT + ENTER
```

We use calculate formula

Syntax of Calculate Calculate (Expression, filter) Expression → Total_sales Filter we use SAMEPERIODLASTYEAR	<p>% CALCULATE(Expression, [Filter1], ...) Evaluates an expression in a context modified by filters. = CALCULATE(Same Period Last Year = CALCULATE([Total_sales], SAMEPERIODLASTYEAR(Dates)) Mobile Sales</p>	SAMEPERIODLASTYEAR(Dates) Return a set of dates in the current selection from the previous year. SAMEPERIODLASTYEAR(& ADDCOLUMNS
Syntax of SAME_PERIOD_LAST_YEAR SAMEPERIODLASTYEAR(date)		

Same Period last year o December

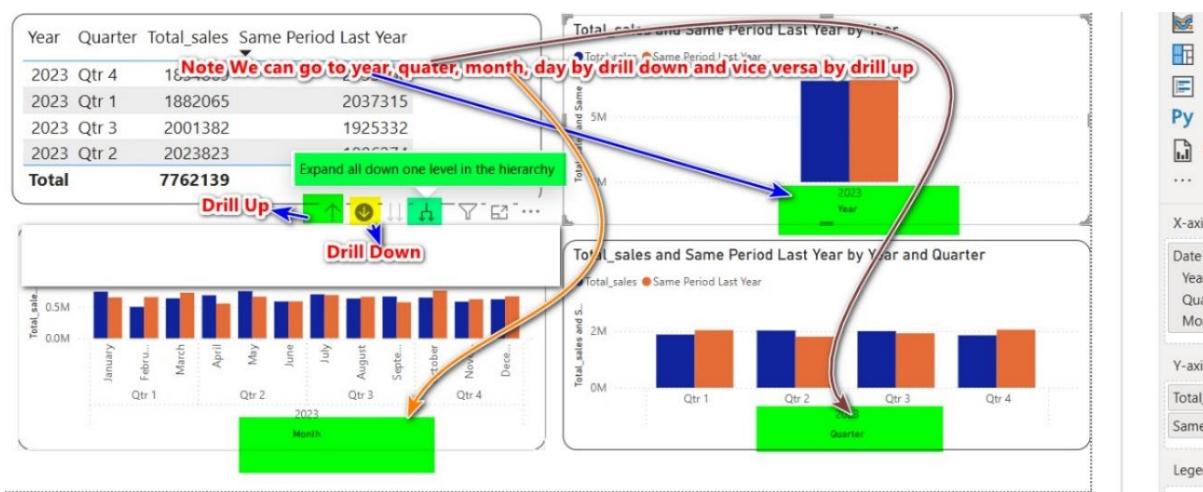
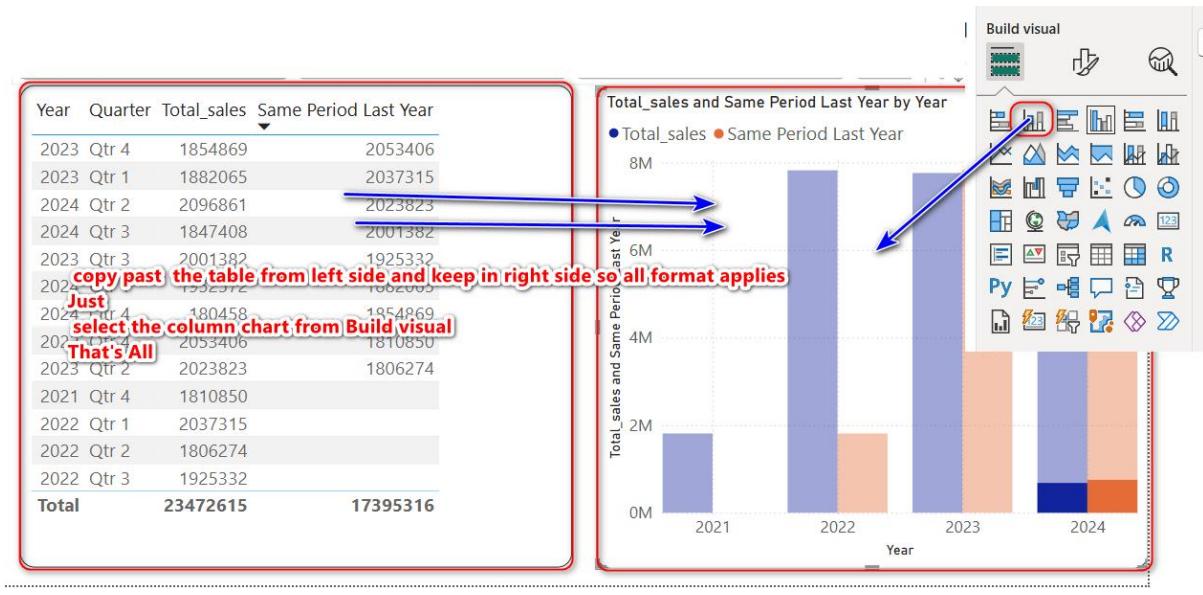
Year	Quarter	Month	Total_sales	Same Period Last Year
2022	Qtr 4	December	669630	710602
2023	Qtr 4	December	622021	669630
2024	Qtr 4	December		622021
2021	Qtr 4	December	710602	
Total			2002253	2002253

Year	Quarter	Total_sales	Same Period Last Year
2023	Qtr 4	1854869	2053406
2023	Qtr 1	1882065	2037315
2024	Qtr 2	2096861	2023823
2024	Qtr 3	1847408	2001382
2023	Qtr 3	2001382	1925332
2024	Qtr 1	1952572	1882065
2024	Qtr 4	180458	1854869
2022	Qtr 4	2053406	1810850
2023	Qtr 2	2023823	1806274
2021	Qtr 4	1810850	
2022	Qtr 1	2037315	
2022	Qtr 2	1806274	
2022	Qtr 3	1925332	
Total		23472615	17395316

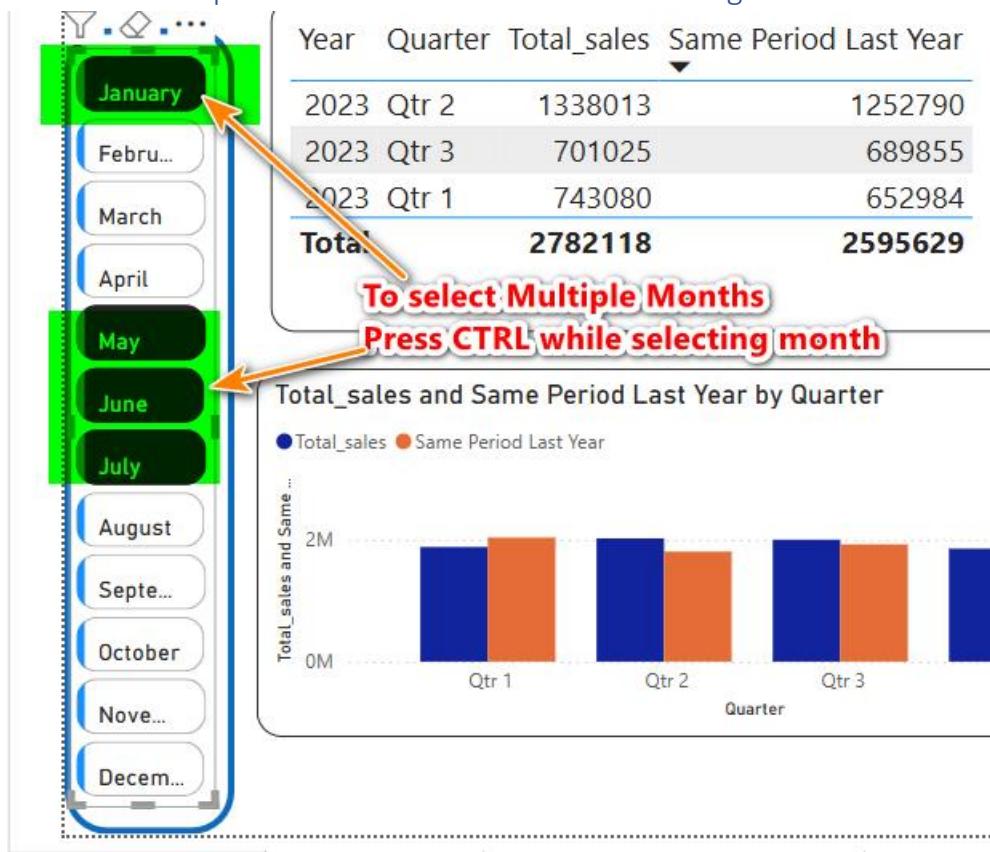
Compare the sale between last year and the current year

This means there is no sale in last year in that quarter, month, or day

Can compare that in any Column chart just copy past and select the column chart from Build visual

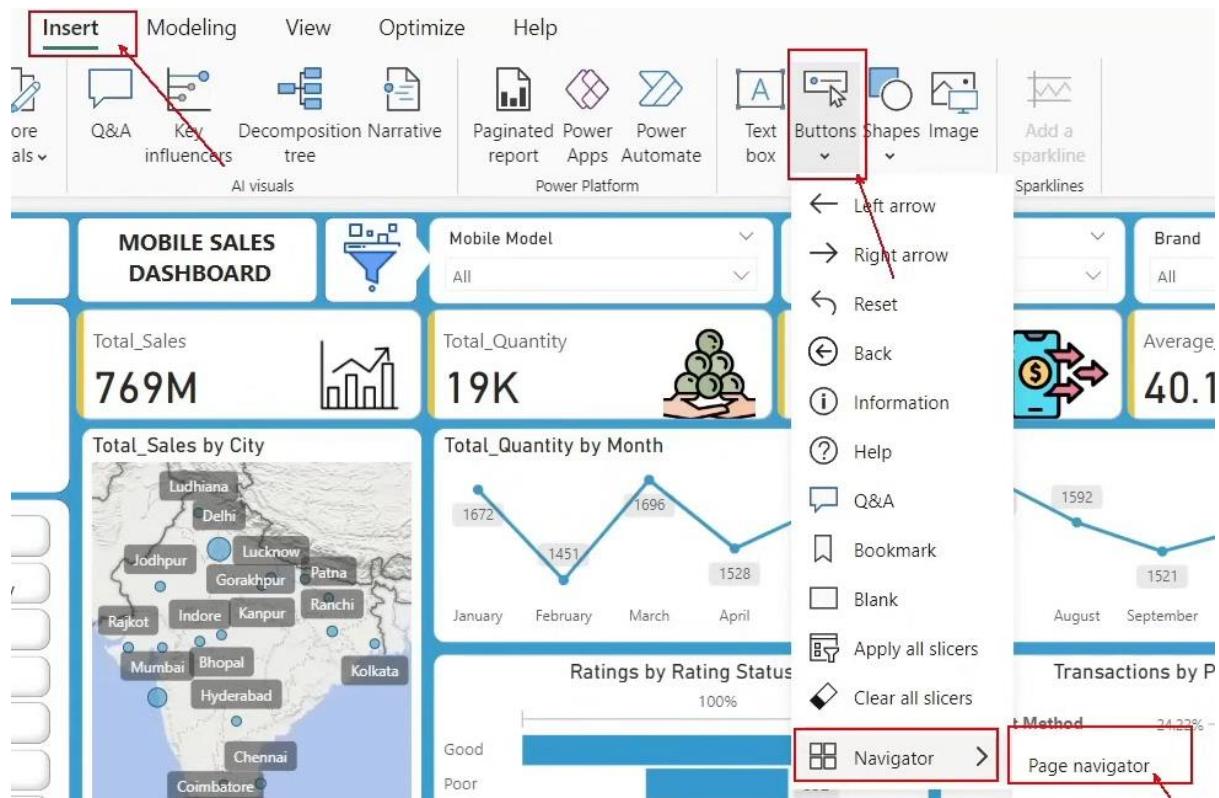


To select Multiple Months Press CTRL while selecting month



To Add Navigator / Buttons

Go to Insert Menu → Buttons → Navigator → Page Navigator



Note Sometimes will only come **one page only** In that case

Go To Format Navigator → Pages → Options → Turn on all options Specially **Show ToolTip Pages**.
Then **all the available pages will be shown**.

The screenshot shows a Tableau dashboard with several components:

- Top Left:** Two dropdown filters: "Brand" set to "Apple" and "Payment Method" set to "All".
- Top Right:** Two summary measures: "Total_Transcation" (19) with a cash icon and "Total_Qty" (118) with a stack of coins icon.
- Middle Top:** A horizontal navigation bar with three items: "Dashboard Page" (highlighted with a red box), "MTD Page", and "Same Period Last Page".
- Middle Center:** A horizontal bar chart titled "Total_sales by Mobile Model" showing sales for "iPhone SE" across months from April to December. The Y-axis ranges from 0K to 100K.
- Middle Bottom:** A line chart titled "Total_sales by Day Name" showing sales over the week. The Y-axis ranges from 0K to 50K.
- Left Sidebar:** A legend for "Payment Method" with items: Afterpay (pink dot) and Debit ... (blue dot).
- Right Sidebar:** The "Format navigator" panel with the following sections:
 - Visual:** Contains "Search" input, "Shape", "Rotation", and "Style" sections.
 - Pages:** Contains "Show hidden pages" (On), "Show tooltip pages" (On), and "Show all by default" (On) buttons, all highlighted with red boxes.
 - Options:** Contains "Show" and "Reset to default" buttons.
 - Grid layout:** Contains "Grid layout" button.

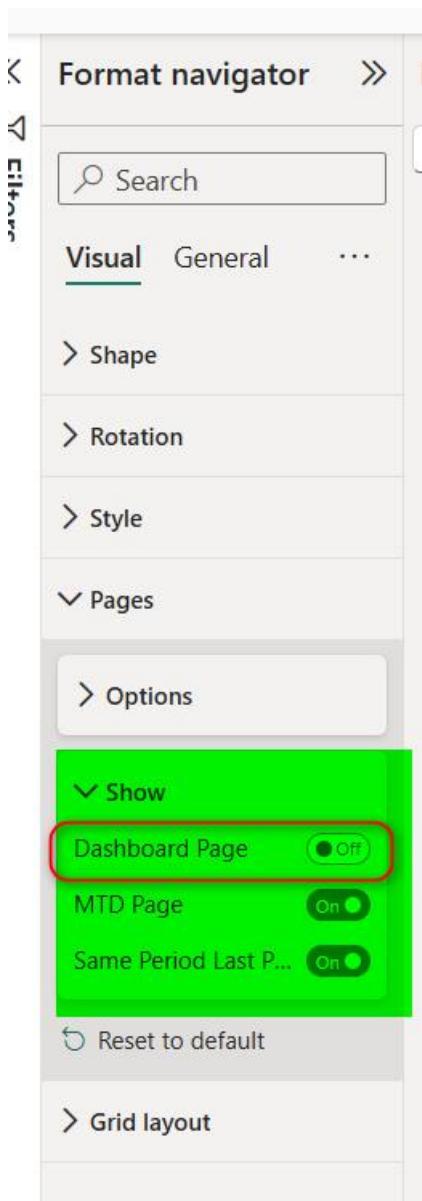
It comes by default in horizontal .

We can go to Format Navigator → Grid Layout → orientation → **Vertical**, horizontal, Grid (we can choose as per requirement)

The screenshot shows a Power BI dashboard with two main cards and a chart area. The top section includes filters for Brand (All) and Date (Year, Quarter, Month, Day, 2023). Below are two summary cards: "Total_Transcation" (435) with a banknote icon and "Total_Qty" (3K) with a stack of coins icon. A chart titled "Total_sales and Same Period Last Year by Year" displays sales volume for January, May, June, and July across three years (2023, 2022, 2021). A tooltip over the chart says "Same Period Last Page" and "By Default comes in Horizontal Change to Vertical". The Format navigator on the right shows the "Grid layout" settings under "Visual" mode, specifically the "Orientation" dropdown which is set to "Vertical" and has options for "Grid", "Vertical", and "Horizontal".

If we are in Dashboard then we won't need button for Dashboard, We need only buttons for MTD and Same Period Last Year so that .

[Go to Show ➔ Dashboard Page Turn Off](#)



To Give Rounded Shape Go to Shapes → Rounded Rectangle	To change Colour while hovering and accent bar	
<p>Shape</p> <p>Rounded Rectangle</p> <p>Rounded Corners</p> <p>25 %</p> <p>Reset to default</p>	<p>Style</p> <p>Apply settings to</p> <p>State Hover</p> <p>> Text</p> <p>> Fill</p> <p>Accent bar On</p> <p>Color (highlighted)</p> <p>Transparency</p>	

Similarly copy that button in different page MTD, and Same Period last year and Turn off pages as per requirement.

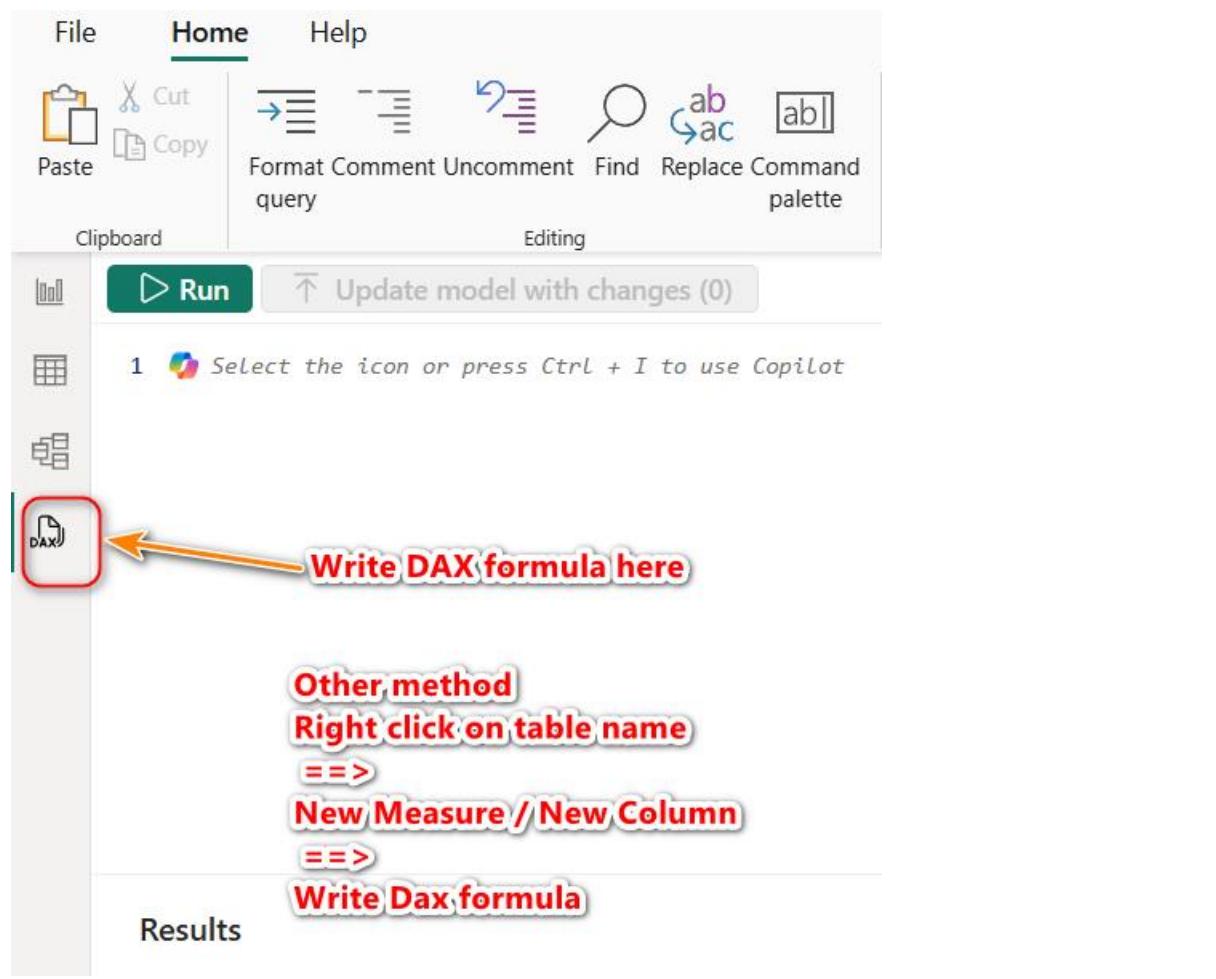
How to click on buttons

To use these Pages while pressing **we need to press control button** but after uploading online it doesn't required.

DAX Query

DAX (**Data Analysis Expressions**) is used to create custom calculations for your reports.

How to use DAX formula in multiple line then use ➔ **ALT + ENTER**



To Show top 100 data based on / certain criteria

Right Click on Sales_Data ➔ Quick Queries ➔ Show top 100 rows ➔

Clipboard Editing Copilot

Run Update model with changes (0)

```

10
11
12
13
14
15
16
17
18
19
20
21
22
23
) ORDER BY 'sales_data'[Transaction ID] ASC

```

Right Click on Sales Data => Quick Queries => Show top 100 rows

Will show top 100 data

Results Result 1 of 1 Copy

	sales_data[Transaction ID]	sales_data[Date]	sales_data[Day Name]	sales_data[Brand]	sales_data[Units Sold]	sales_data[Price Per Unit]	sales...
1	1	10/9/2021 12:00:00 AM	Saturday	Xiaomi	3	254	Rober...
2	2	10/9/2021 12:00:00 AM	Saturday	Vivo	2	264	Sunitz...
3	3	10/9/2021 12:00:00 AM	Saturday	Vivo	8	1463	Charl...
4	4	10/10/2021 12:00:00 AM	Sunday	Xiaomi	3	639	Olivia...
5	5	10/10/2021 12:00:00 AM	Sunday	OnePlus	8	1204	Sunitz...
6	6	10/10/2021 12:00:00 AM	Sunday	Samsung	8	931	Mich...

Share feedback Data

Tables Model

Search

Show top 100 rows Quick queries

Show column statistics Define new measure Define all measures in this table Define all measures in this model

Refresher Incremental refresh

Manage relationships Manage aggregations

Σ Cust Select columns Date Select measures

fx Cust Day Rename Mot: Delete from model

MTC Hide in report view Payr Mark as date table

Price Unhide all

EVALUATE

```

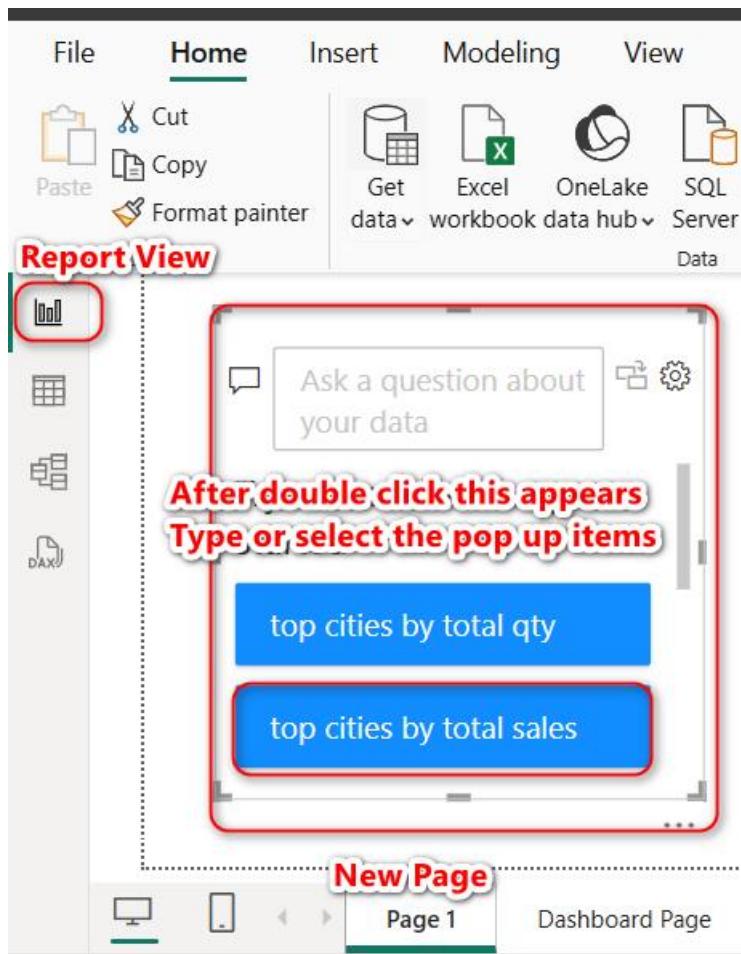
SELECTCOLUMNS(
    TOPN(
        100,
        'sales_data',
        'sales_data'[Transaction ID],
        ASC
    ),
    'sales_data'[Transaction ID],
    'sales_data'[Date],
    'sales_data'[Day Name],
    'sales_data'[Brand],
    'sales_data'[Units Sold],
    'sales_data'[Price Per Unit],
    'sales_data'[Customer Name],
    'sales_data'[Customer Age],
    'sales_data'[City],
    'sales_data'[Payment Method],
    'sales_data'[Customer Ratings],
    'sales_data'[Mobile Model],
    'sales_data'[Customer_Rating_Status]
)
ORDER BY 'sales_data'[Transaction ID] ASC

```

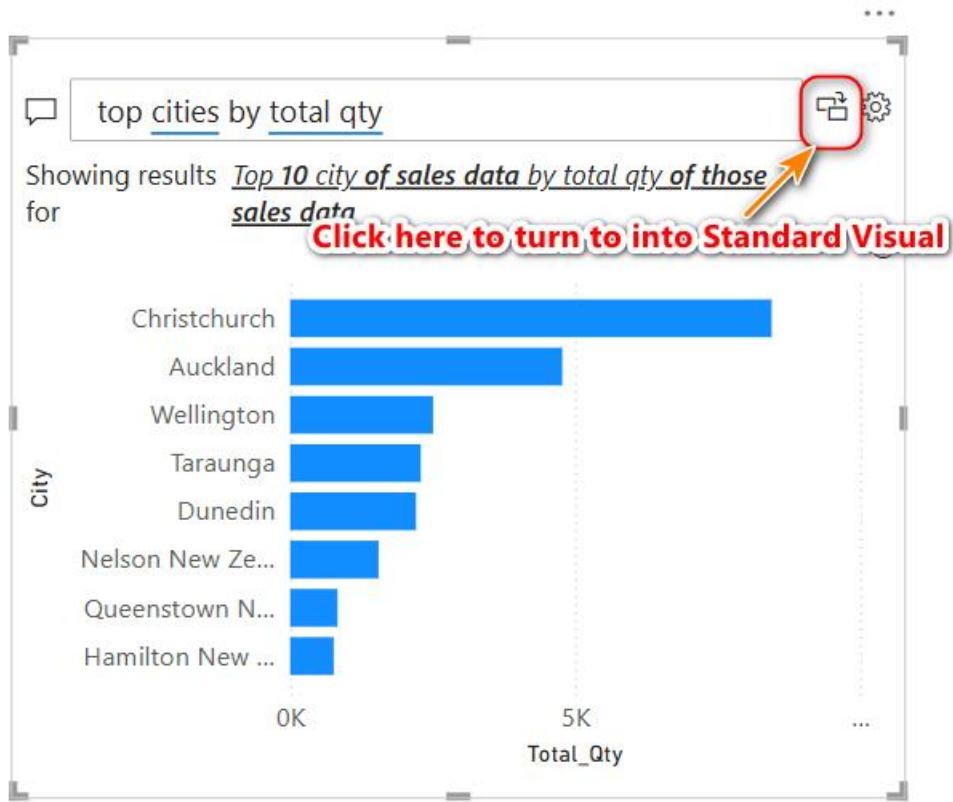
Similar to SQL practice more

Search by BI Intelligence

Go to Report View → Create the new Page → On middle or anywhere else in page double click
→ Then you can type of select the option available there.



Can change QA to standard visual



Certificate

<http://certificate.skillcourse.in/30-days-power-bi-micro-course/>

<https://certificate.skillcourse.in/wp-content/uploads/qsm-certificates/135-328-3152b6f54e92733f0b03c33bf2a5d20a-18-90.pdf>