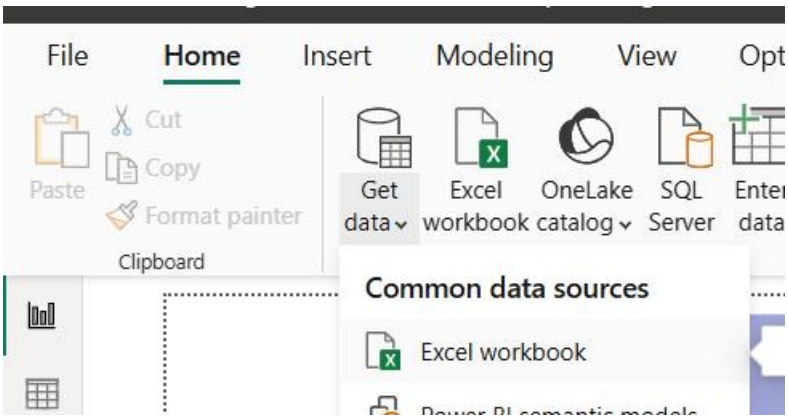
Assignment 5-Enterprise-Grade Power BI Report Design

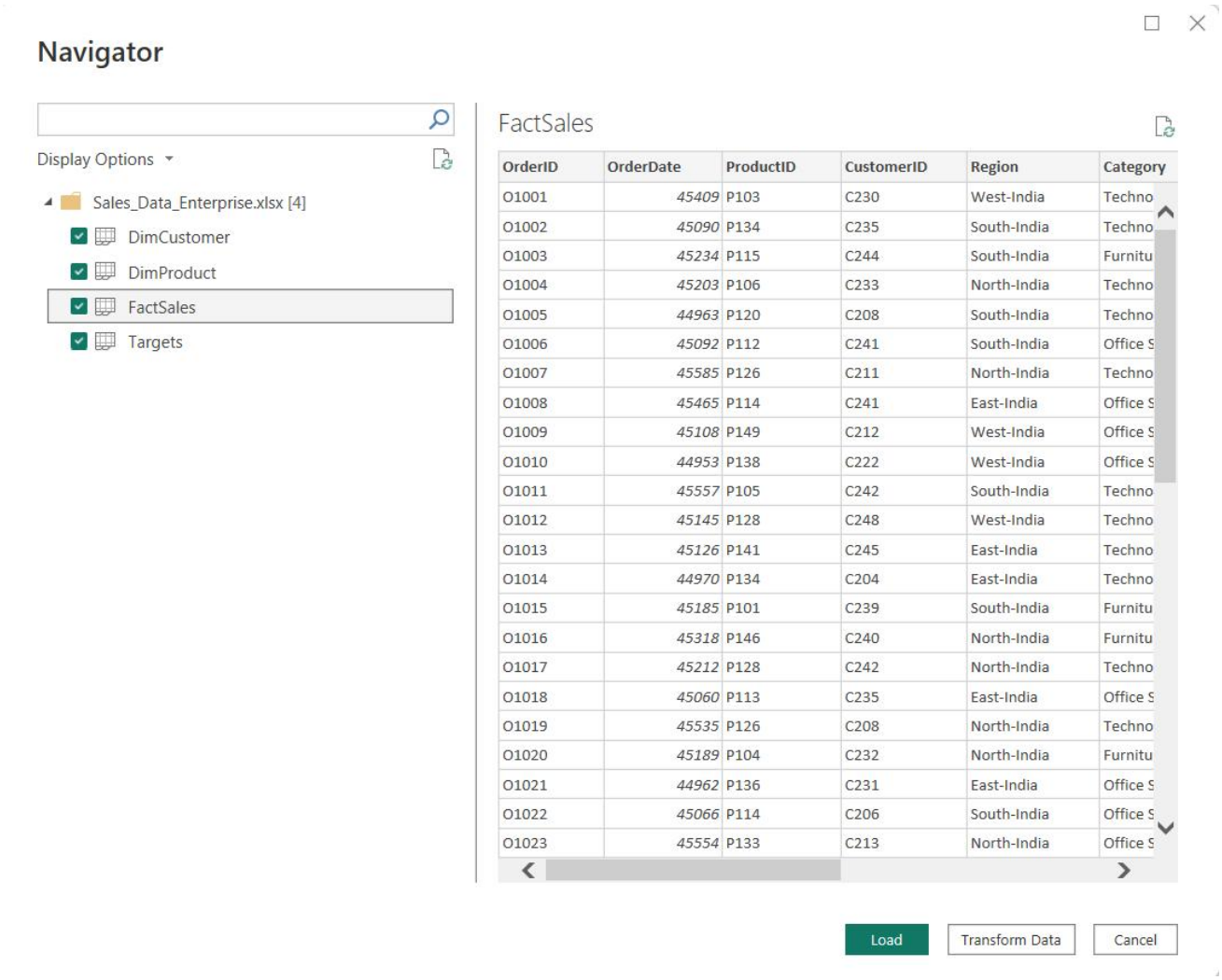
Step 1: create the dataset

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	OrderID	OrderDate	ProductID	CustomerI	Region	Category	SubCatego	SalesAmou	Profit	Quantity			
2	O1001	2024-04-27 0:00:00	P103	C230	West-India	Technolog	Accessorie	130496	22184	2			
3	O1002	2023-06-13 0:00:00	P134	C235	South-Indi	Technolog	Phones	136675	34168	11			
4	O1003	2023-11-04 0:00:00	P115	C244	South-Indi	Furniture	Chairs	190644	49567	3			
5	O1004	2023-10-04 0:00:00	P106	C233	North-Indi	Technolog	Phones	197380	53292	12			
6	O1005	2023-02-06 0:00:00	P120	C208	South-Indi	Technolog	Phones	180377	59524	11			
7	O1006	2023-06-15 0:00:00	P112	C241	South-Indi	Office Sup	Binders	157464	47239	8			
8	O1007	2024-10-20 0:00:00	P126	C211	North-Indi	Technolog	Accessorie	94393	14158	1			
9	O1008	2024-06-22 0:00:00	P114	C241	East-India	Office Sup	Binders	41232	12369	12			
10	O1009	2023-07-01 0:00:00	P149	C212	West-India	Office Sup	Binders	199653	21961	1			
11	O1010	2023-01-27 0:00:00	P138	C222	West-India	Office Sup	Paper	165510	31446	15			
12	O1011	2024-09-22 0:00:00	P105	C242	South-Indi	Technolog	Laptops	89134	17826	13			
13	O1012	2023-08-07 0:00:00	P128	C248	West-India	Technolog	Accessorie	71977	15115	11			
14	O1013	2023-07-19 0:00:00	P141	C245	East-India	Technolog	Accessorie	121360	12136	11			
15	O1014	2023-02-13 0:00:00	P134	C204	East-India	Technolog	Phones	163284	39188	10			
16	O1015	2023-09-16 0:00:00	P101	C239	South-Indi	Furniture	Bookcases	170667	29013	9			
17	O1016	2024-01-27 0:00:00	P146	C240	North-Indi	Furniture	Chairs	137035	23295	15			

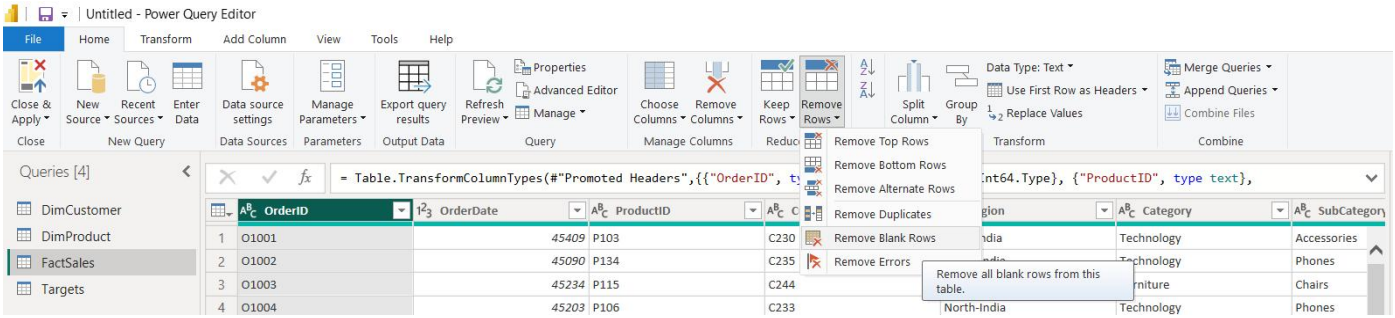
Step 2: open PowerBI Desktop and click on get data option there choose Excel Workbook and then load the data

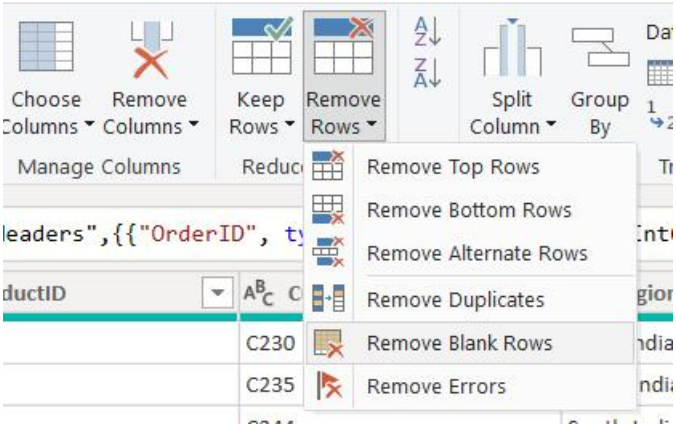


Step 3: now click on the location where the data is stored and then choose all the tables of the data and click on transform data

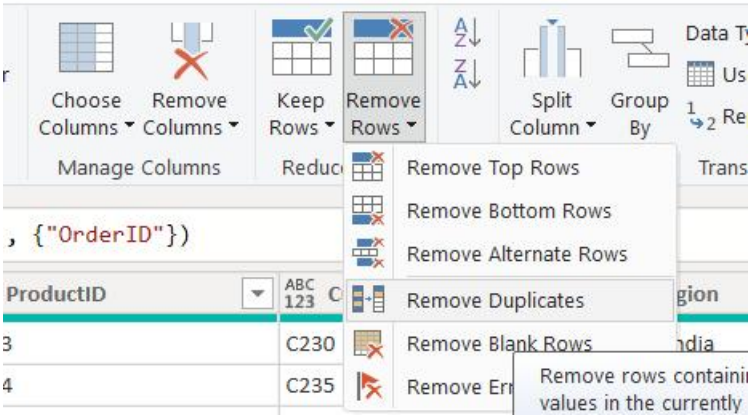


STEP 4: Remove missing values:
In the FactSales table, click on remove blank rows for the column orderID

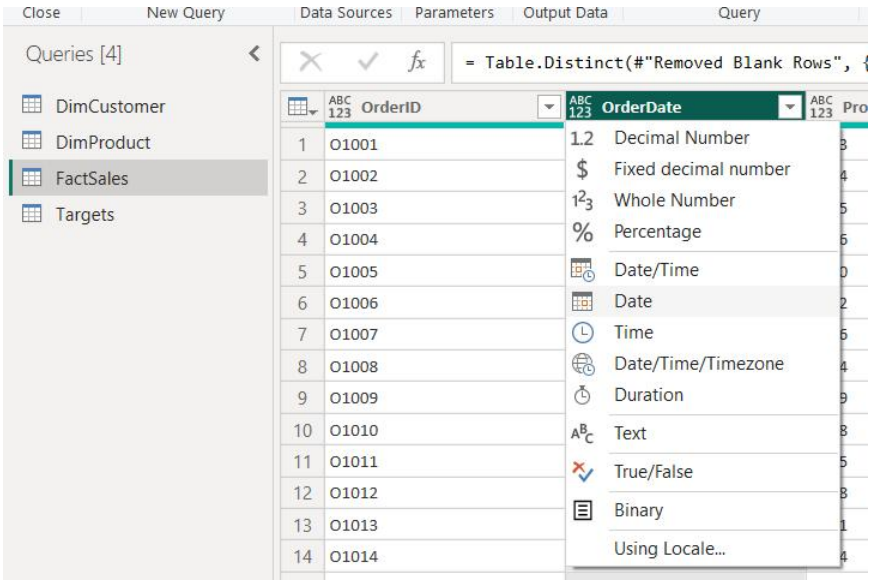


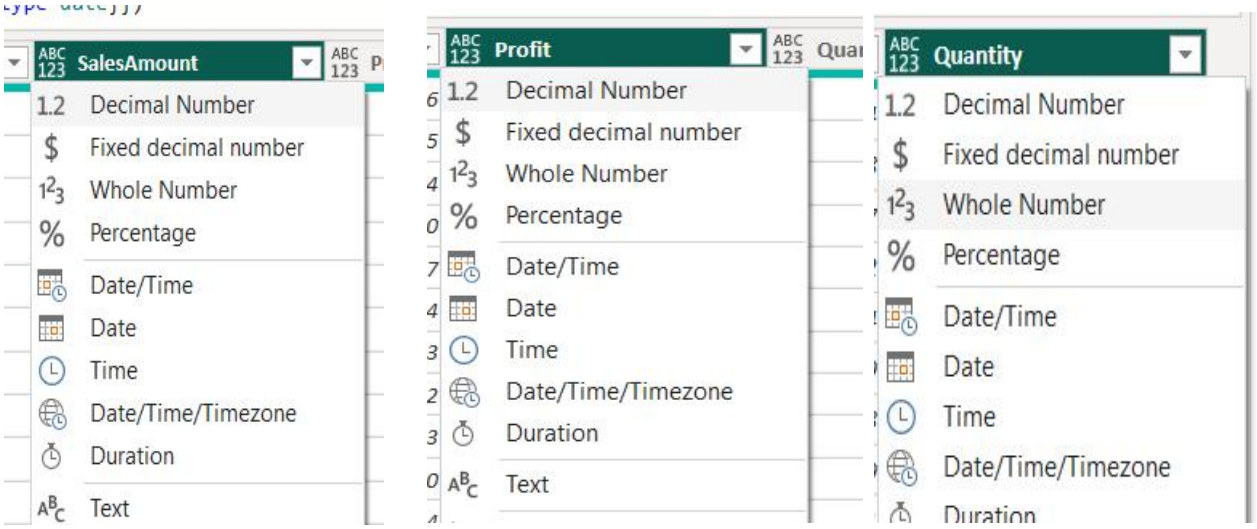


STEP 5: Remove duplicate values:



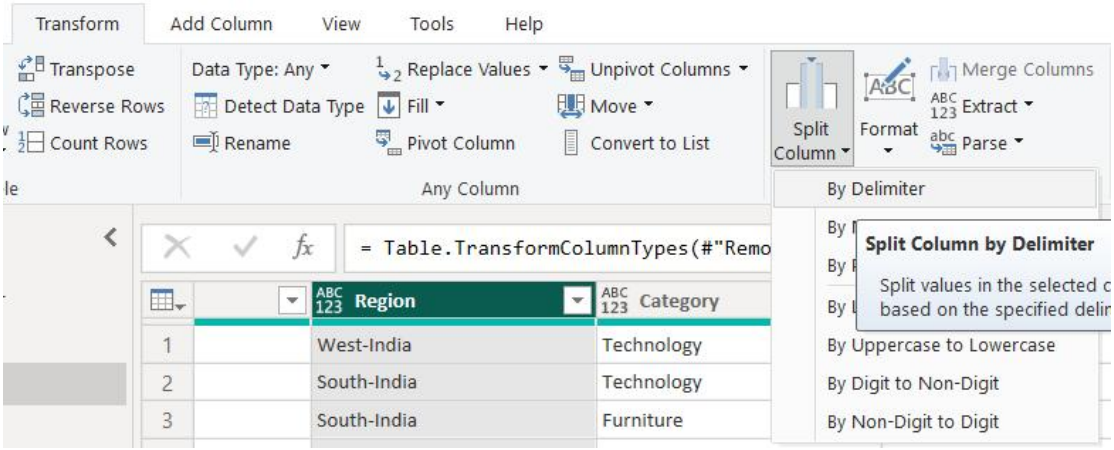
STEP 6: convert the datatype
OrderDate -> date
SalesAmount->decimal
Profit->decimal
Quantity->whole number

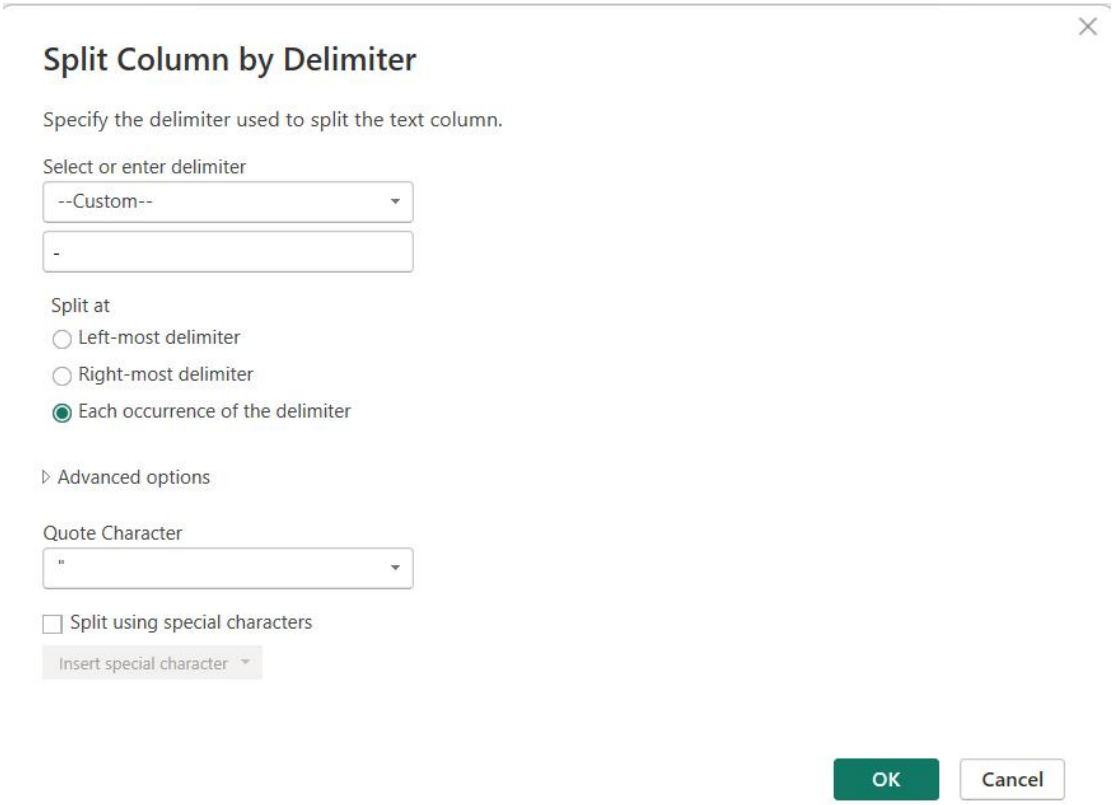




STEP 7: Split Region Column

In the transform tab, click on split column and then click - as delimiter





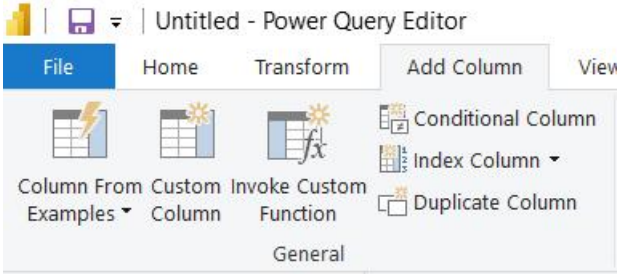
Now rename the
Region 1->ZONE
Region 2->country

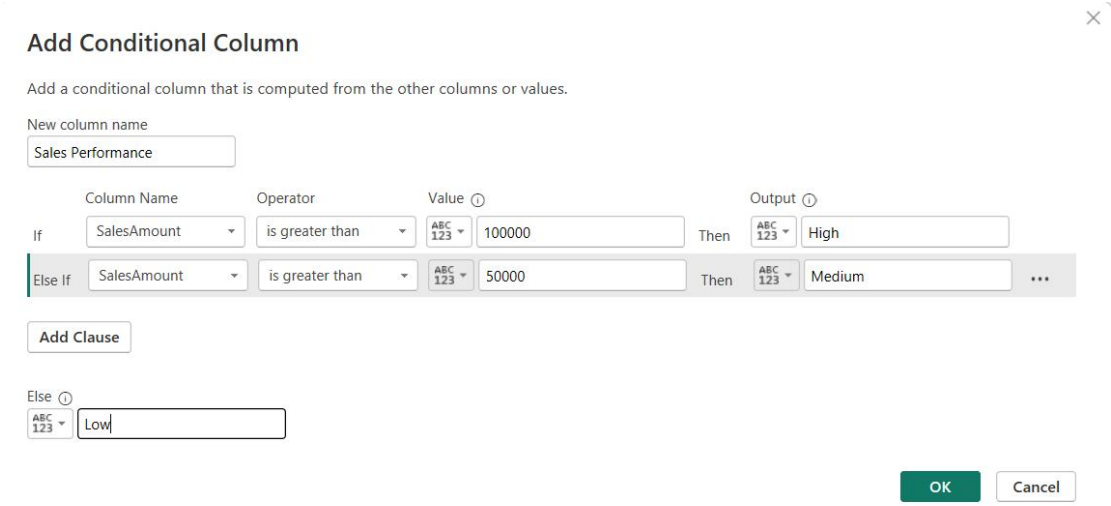
Region.1	Region.2
West	India
South	India
South	India
North	India
South	India
South	India
North	India
East	India

Zone	Country
West	India
South	India
South	India
North	India
South	India

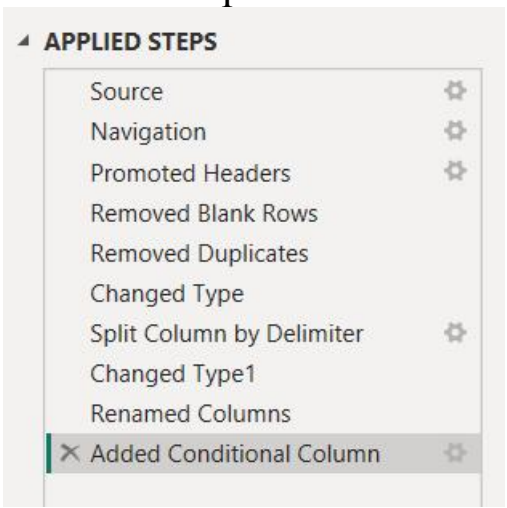
STEP 8:Create Conditional Column (Business Logic)
Add Column → Conditional Column
Name: Sales Performance

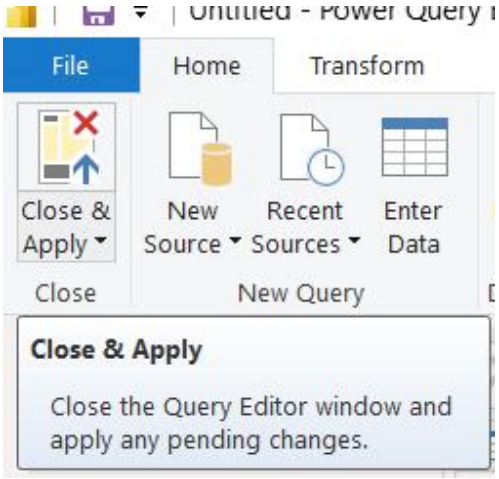
SalesAmount > 100000 → High
SalesAmount > 50000 → Medium
Else → Low



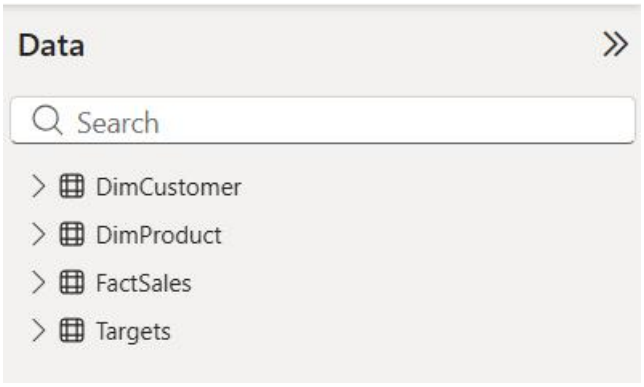


Followed steps :

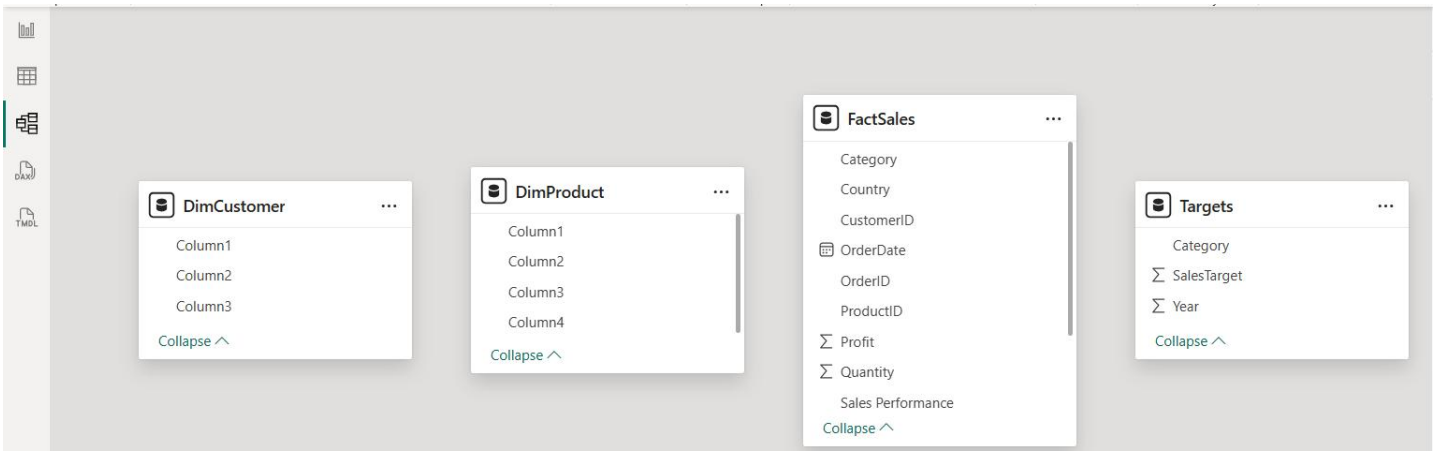




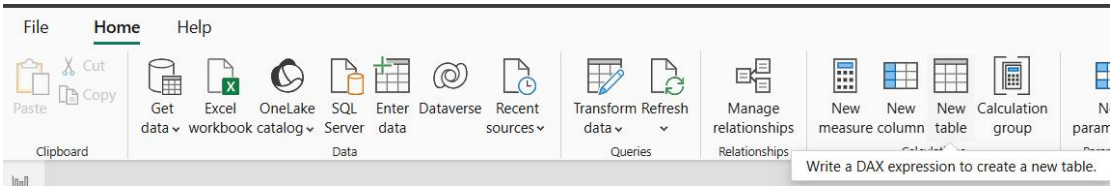
After close and apply the data will be loaded:



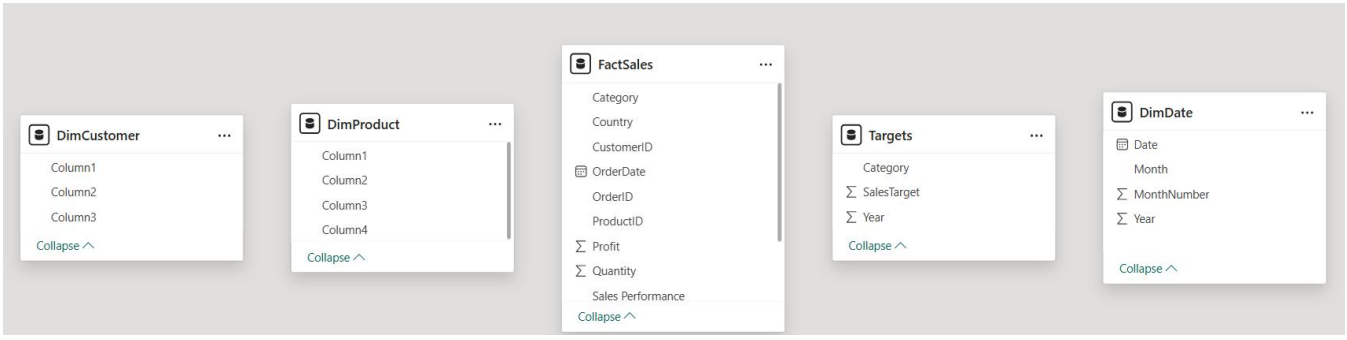
Model view:



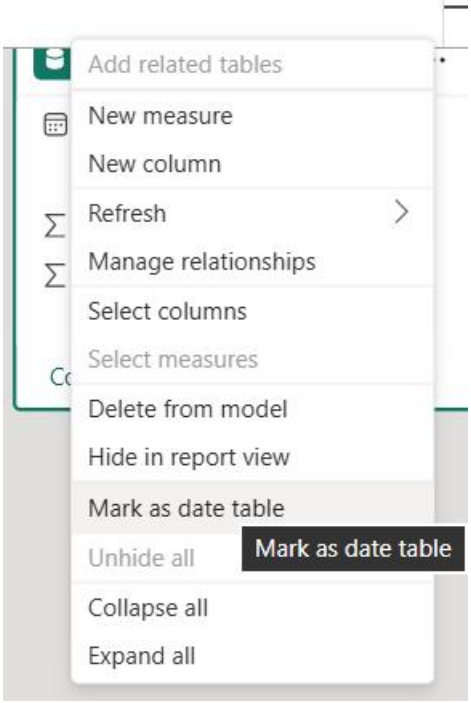
Now we create a new table called DimDate and now here we create the essential columns needed




```
1 DimDate =
2 ADDCOLUMNS(
3     CALENDAR (DATE(2023,1,1), DATE(2024,12,31)),
4     "Year", YEAR([Date]),
5     "Month", FORMAT([Date], "MMM"),
6     "MonthNumber", MONTH([Date])
7 )
8
```



Mark table as date table :



Relationships:

FactSales[OrderDate] → DimDate[Date]

FactSales[ProductID] → DimProduct[ProductID]

FactSales[CustomerID] → DimCustomer[CustomerID]

FactSales[Category] → Targets[Category]

New relationship

Select tables and columns that are related.

From table

FactSales

Category	Country	CustomerID	OrderDate	OrderID	ProductID	Profit
Technology	India	C230	27 April 2024	O1001	P103	22184
Technology	India	C235	13 June 2023	O1002	P134	34168
Furniture	India	C244	04 November ...	O1003	P115	49567

To table

DimDate

Date	Month	MonthNumber	Year
01-01-2023 0...	Jan	1	2023
02-01-2023 0...	Jan	1	2023
03-01-2023 0...	Jan	1	2023

Cardinality

Many to one (*:1)

Cross-filter direction

Single

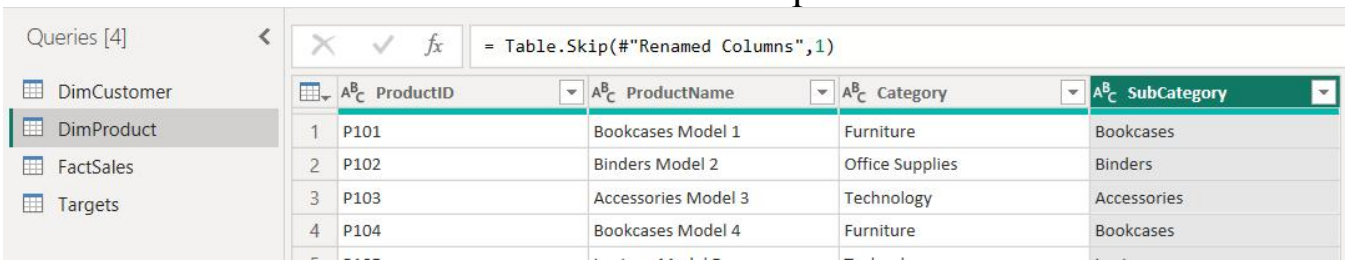
☑ Make this relationship active

☐ Apply security filter in both directions

☐ Assume referential integrity

Save Cancel

Renamed the columns to create the relationships



New relationship

Select tables and columns that are related.

From table

FactSales

Category	Country	CustomerID	OrderDate	OrderID	ProductID	Profit
Technology	India	C230	27 April 2024	O1001	P103	22184
Technology	India	C235	13 June 2023	O1002	P134	34168
Furniture	India	C244	04 November...	O1003	P115	49567

To table

DimProduct

Category	ProductID	ProductName	SubCategory
Furniture	P101	Bookcases M...	Bookcases
Office Supplies	P102	Binders Mode...	Binders
Technology	P103	Accessories ...	Accessories

Cardinality

Many to one (*:1)

Cross-filter direction

Single

- [x] Make this relationship active
- [ ] Apply security filter in both directions
- [ ] Assume referential integrity

Save Cancel

New relationship

Select tables and columns that are related.

From table

FactSales

Category	Country	CustomerID	OrderDate	OrderID	ProductID	Profit
Technology	India	C230	27 April 2024	O1001	P103	22184
Technology	India	C235	13 June 2023	O1002	P134	34168
Furniture	India	C244	04 November...	O1003	P115	49567

To table

DimCustomer

CustomerID	CustomerName	Segment
C201	Customer_1	Home Office
C202	Customer_2	Consumer
C203	Customer_3	Consumer

Cardinality

Many to one (*:1)

Cross-filter direction

Single

- [x] Make this relationship active
- [ ] Apply security filter in both directions
- [ ] Assume referential integrity

Save Cancel

New relationship

Select tables and columns that are related.

From table

Targets

Category	SalesTarget	Year
Furniture	223385	2023
Technology	398187	2023
Office Supplies	433174	2023

To table

DimProduct

Category	ProductID	ProductName	SubCategory
Furniture	P101	Bookcases M...	Bookcases
Office Supplies	P102	Binders Mode...	Binders
Technology	P103	Accessories ...	Accessories

Cardinality

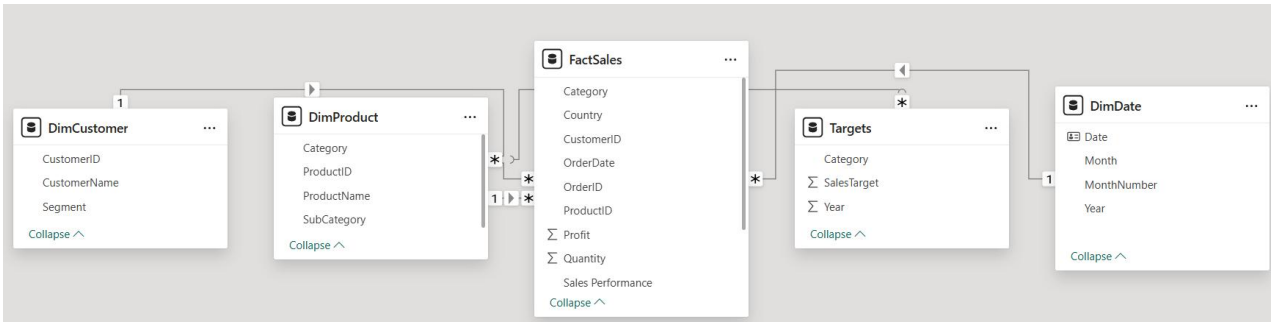
Many to many (*:*)

Cross-filter direction

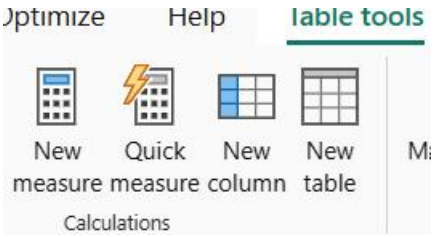
Both

- [x] Make this relationship active
- [ ] Apply security filter in both directions
- [ ] Assume referential integrity

Star schema:



Dax
Here, create a new measure




```
1  Total Sales = SUM(FactSales[SalesAmount])
```

```
1  Total Profit = SUM(FactSales[Profit])
2
```

```
1  Total Quantity = SUM(FactSales[Quantity])
2
```

```
Sales YTD =
TOTALYTD(
    [Total Sales],
    DimDate[Date]
)
```

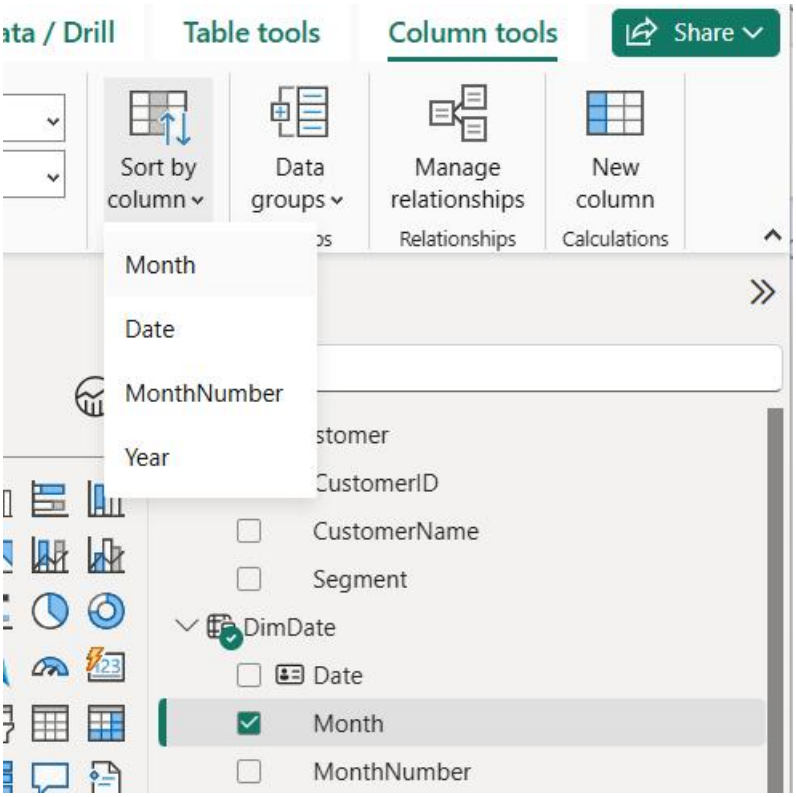
```
1  Sales LY =
2  CALCULATE(
3      [Total Sales],
4      SAMEPERIODLASTYEAR(DimDate[Date])
5  )
6
```

```
1  YoY Growth % =
2  DIVIDE(
3      [Total Sales] - [Sales LY],
4      [Sales LY]
5  )
6
```

```
1  Target Sales = SUM(Targets[SalesTarget])
2
```

```
Target Achievement % =
DIVIDE(
    [Total Sales],
    [Target Sales]
)
```

Here we are sorting the month by month number



Performing visuals:

PAGE 1: Executive Dashboard

- KPI Cards (Sales, Profit, YoY Growth)
- Donut Chart → Sales by Category
- Ribbon Chart → Category Rank Over Time
- Line Chart → Sales Trend (Monthly)

PAGE 2: Trend Analysis

- Line Chart (Sales & Profit)
- Line + Stacked Column Chart
- Shape Map → Sales by Region

PAGE 3: Product Performance

- Matrix (Category → Subcategory → Product)
- Conditional formatting
- Top N filters

EXECUTIVE DASHBOARD

View Product Details

Total Sales

11.99M

Total Sales

Help Q&A understand people better by adding synonyms. Add synonyms now

total sales by category

Showing results for *Fact sale category and total sales*

YoY Growth %

1.17

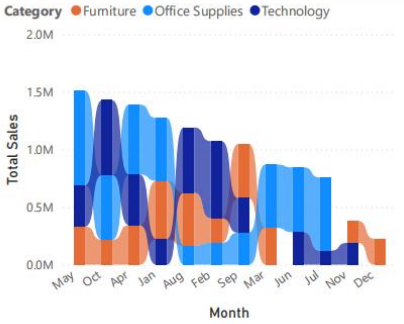
YoY Growth %

Total Profit

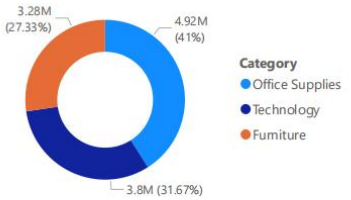
2.56M

Total Profit

Category Rank Over Time



Total Sales by Category



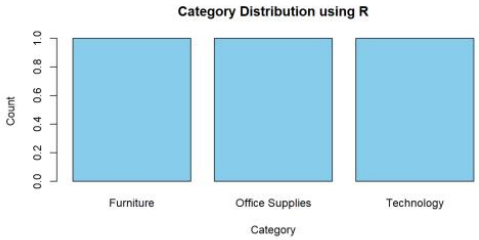
Monthly Sales Trend

TREND ANALYSIS

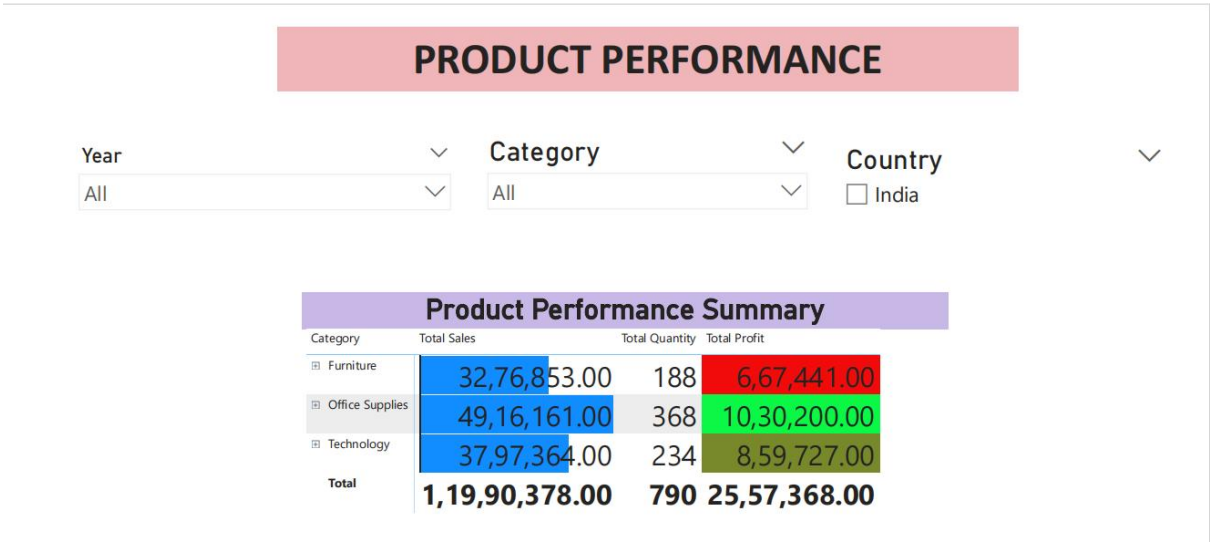
Actual vs Target Sales & Profit Trend

Sales by Region

Category



Sales & Profit Trend



performed conditional formatting on the visuals for the matrix:

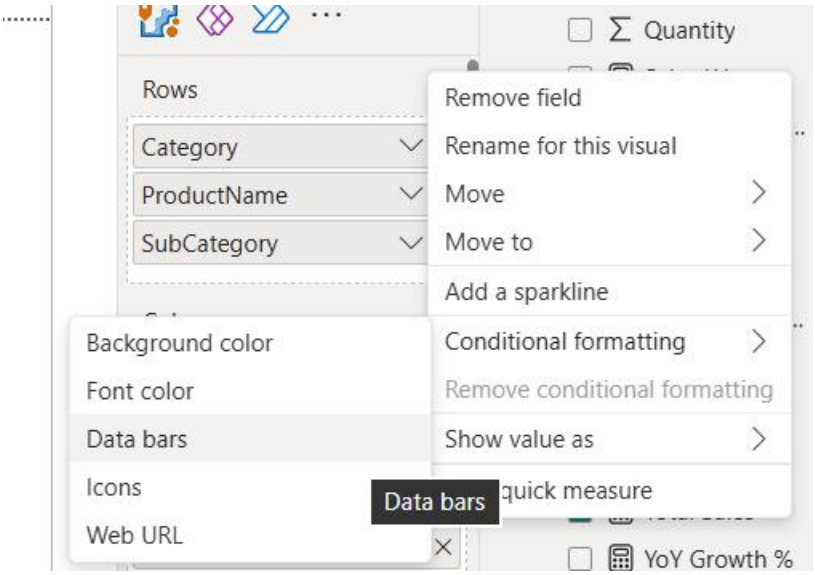
Matrix Formatting

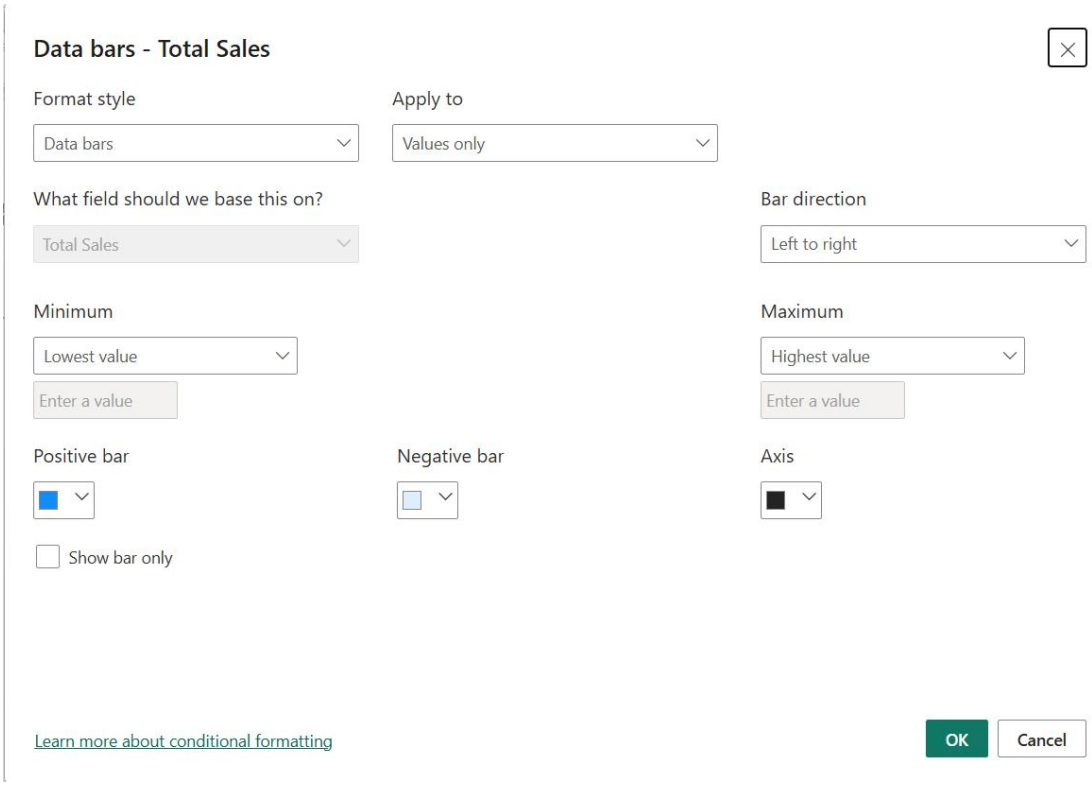
- Data bars for Sales
- Color scale for Profit
- Bold totals

Report-Level Filters

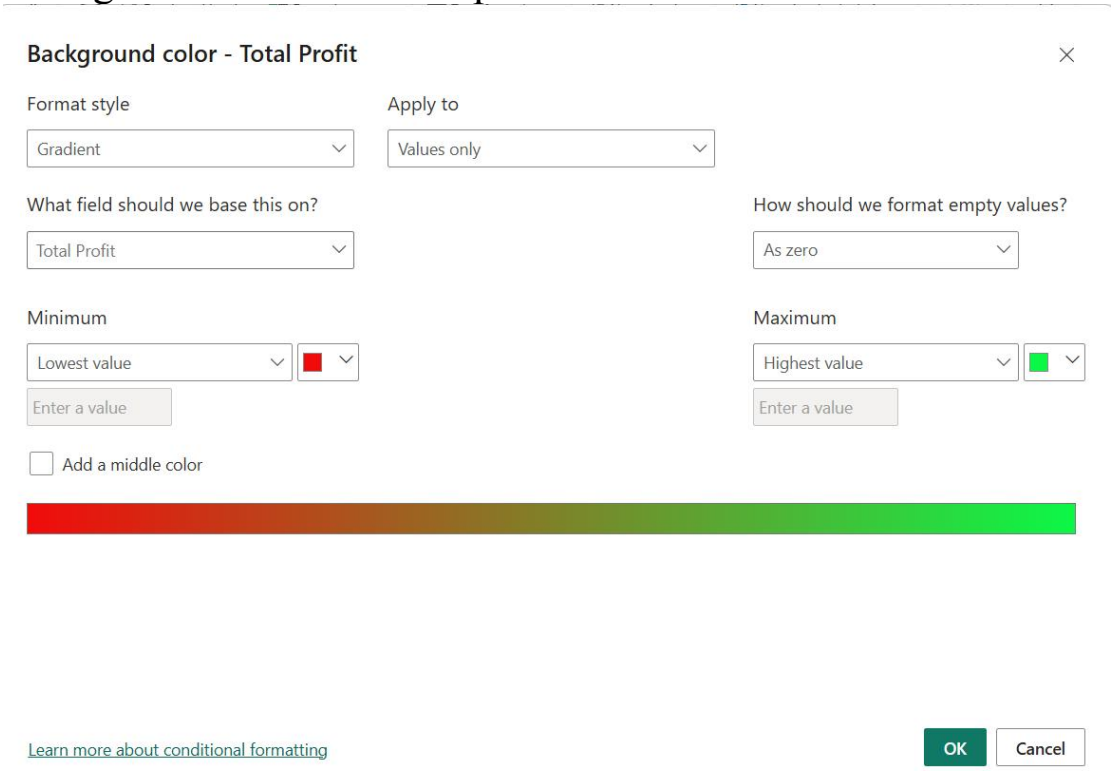
- Year
- Region
- Category

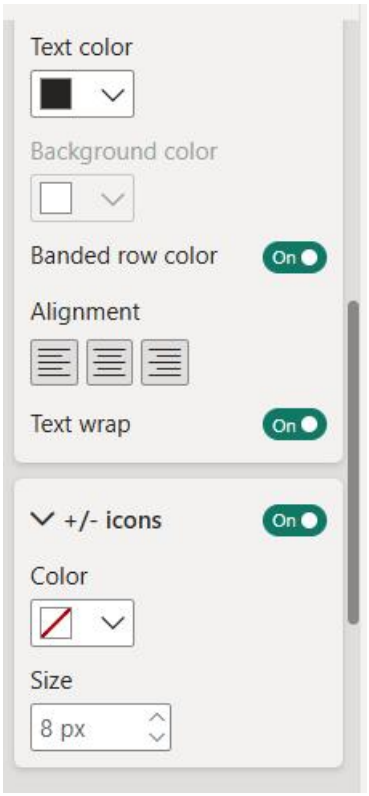
Applied once → affects all pages


Quantity
Rows
Category
ProductName
SubCategory
Remove field
Rename for this visual
Move
Move to
Add a sparkline
Conditional formatting
Remove conditional formatting
Show value as
quick measure
Background color
Font color
Data bars
Icons
Web URL
Data bars
YoY Growth %


Data bars - Total Sales
Format style
Data bars
Apply to
Values only
What field should we base this on?
Total Sales
Bar direction
Left to right
Minimum
Lowest value
Enter a value
Maximum
Highest value
Enter a value
Positive bar
Negative bar
Axis
Show bar only
Learn more about conditional formatting
OK
Cancel

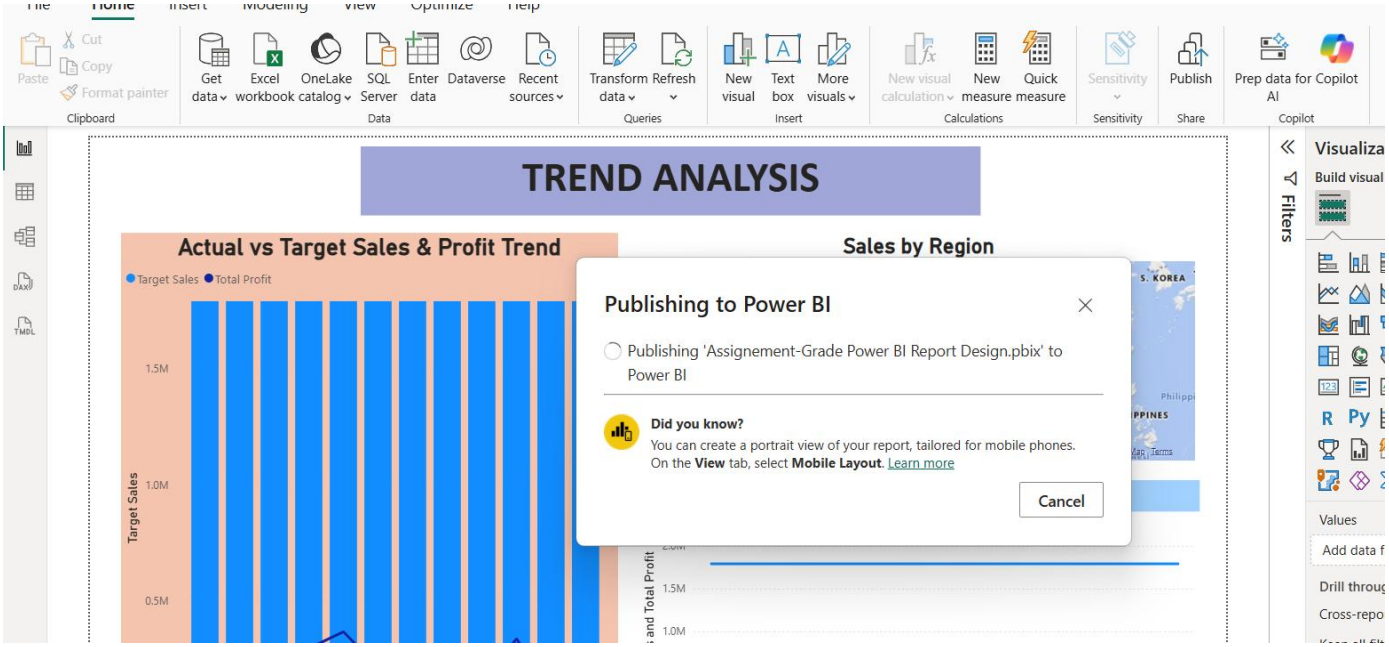
Changed the color for total profit

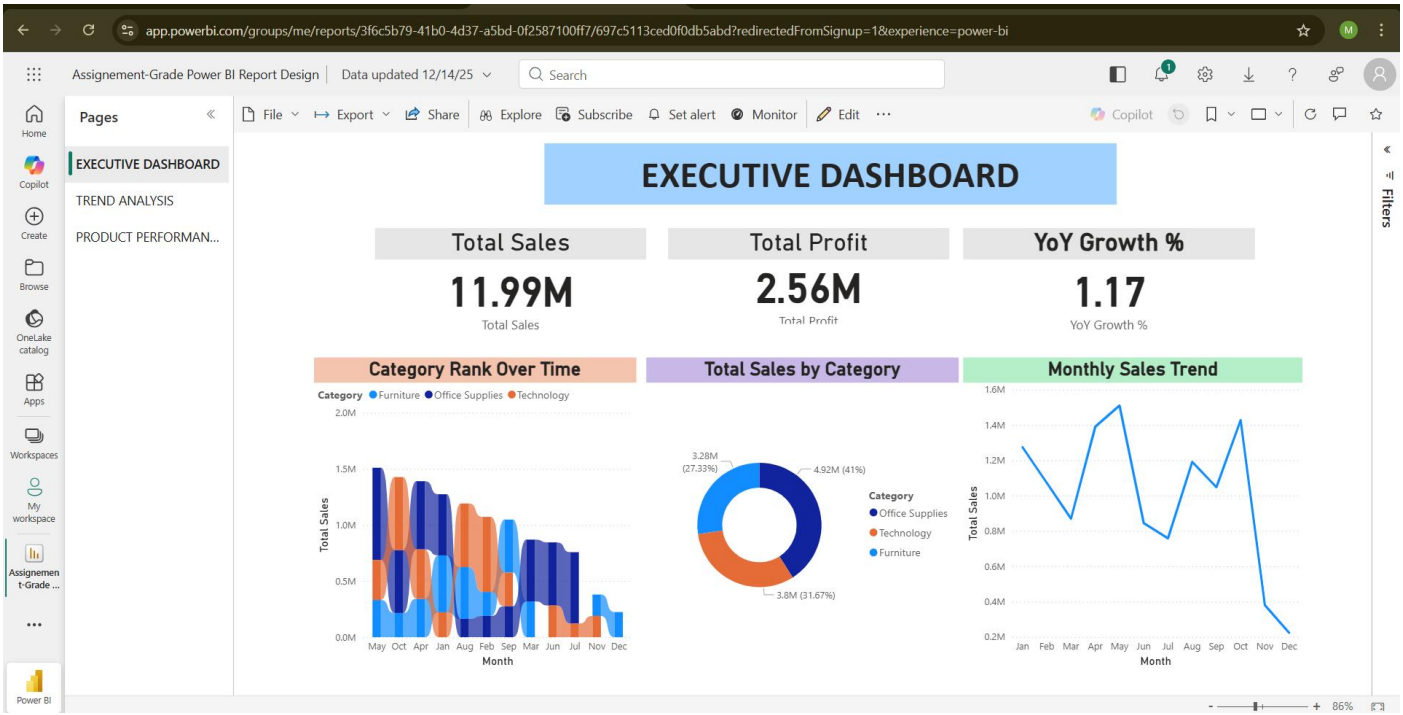


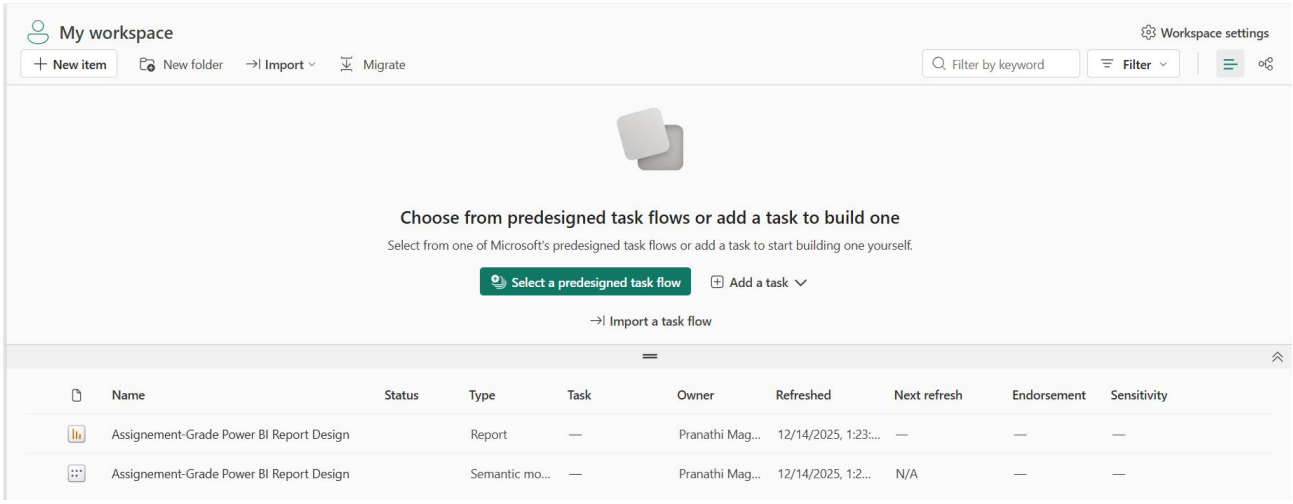


Dashboard Creation & Actions

1. Publish to Power BI Service
2. Pin visuals to Dashboard
3. Create **Dashboard Actions**
    - Click KPI → Navigate to detail page
4. Enable **Q&A visual**
5. Set alerts on KPIs

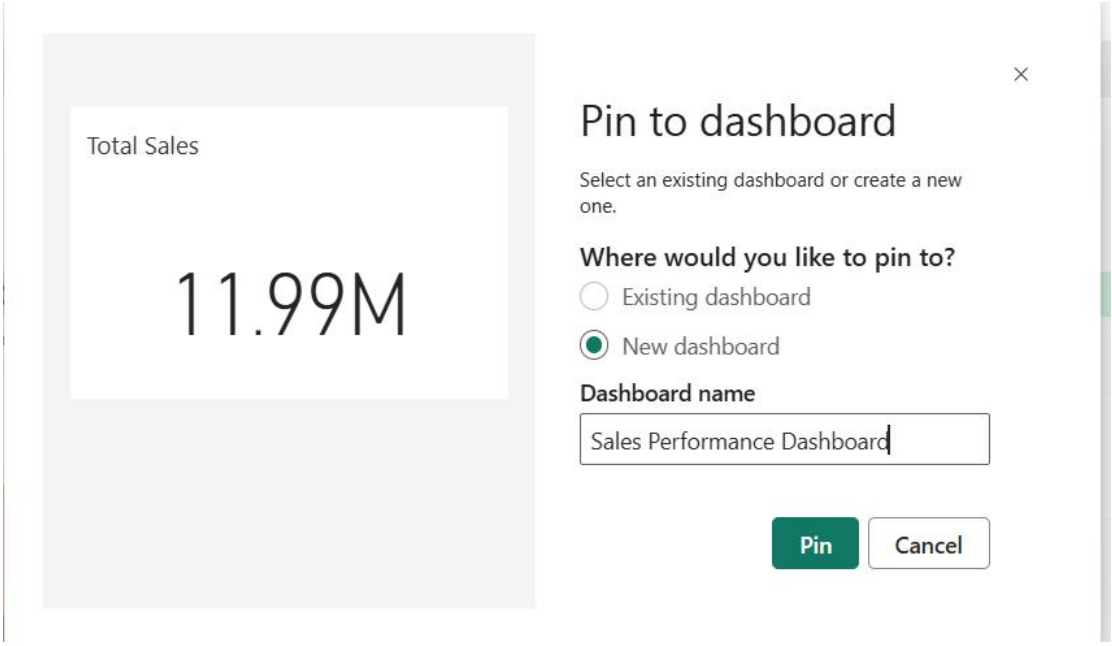


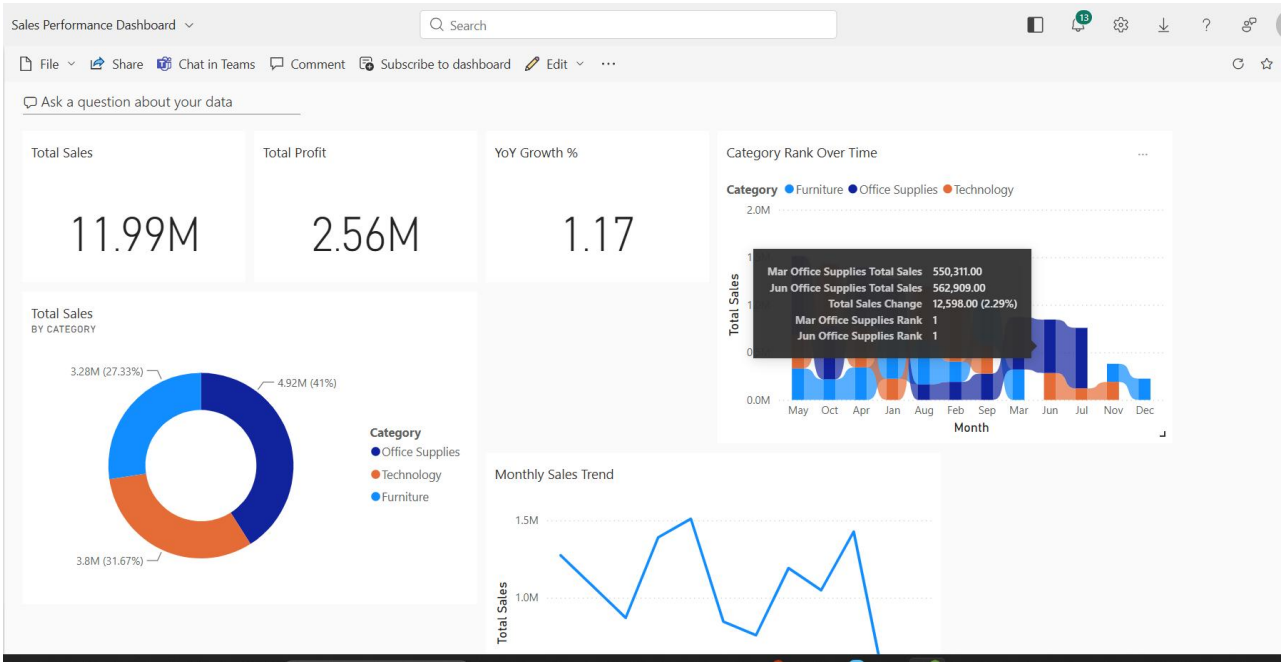




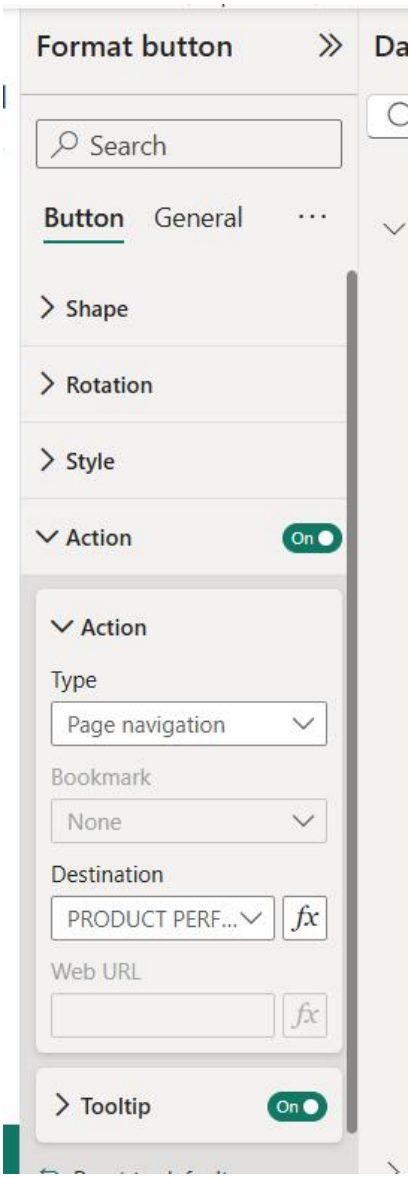
Pin visuals to Dashboard:

Initially we create a new dashboard and next when we pin the others we pin in the existing dashboard itself

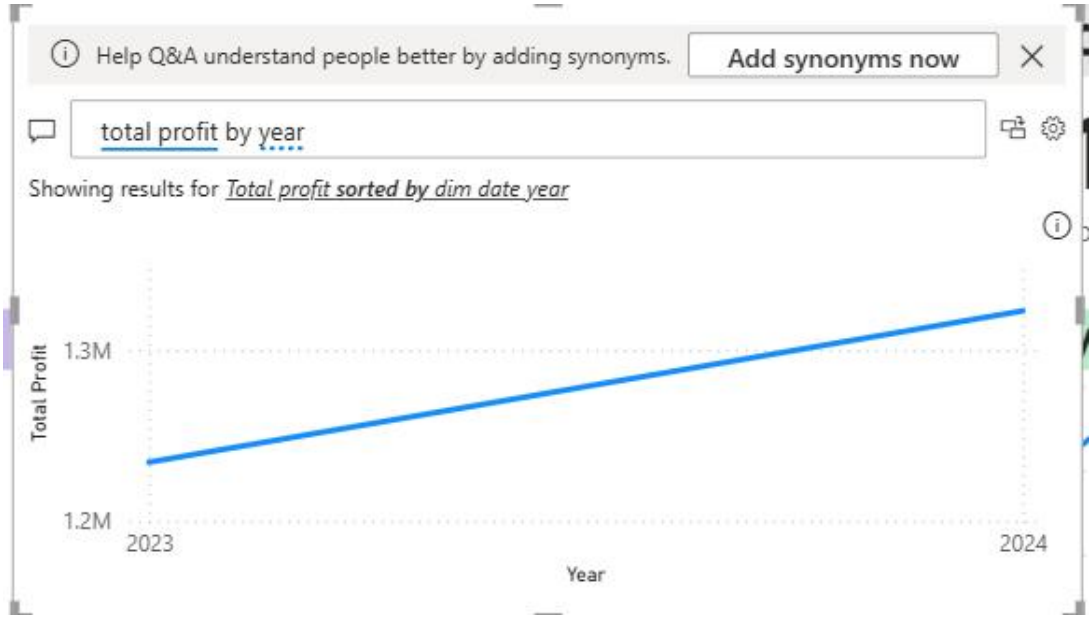




Add the button for navigation

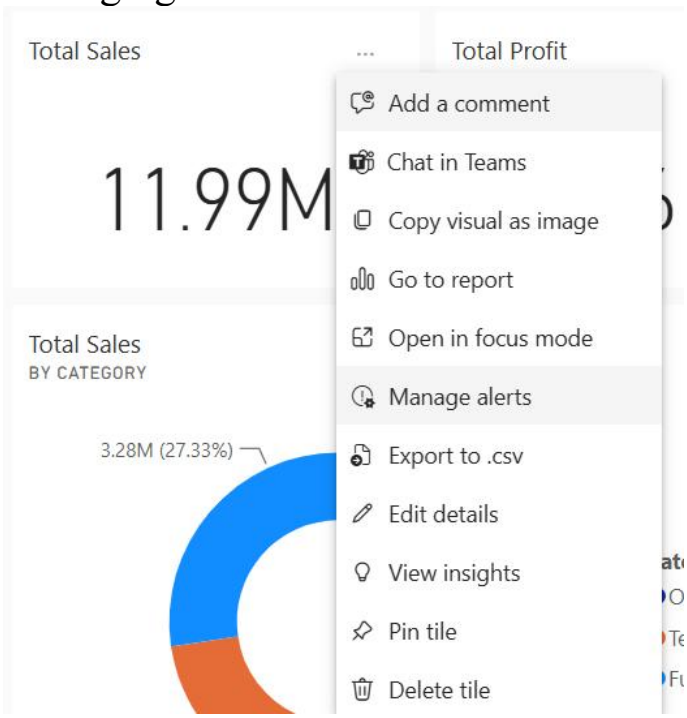


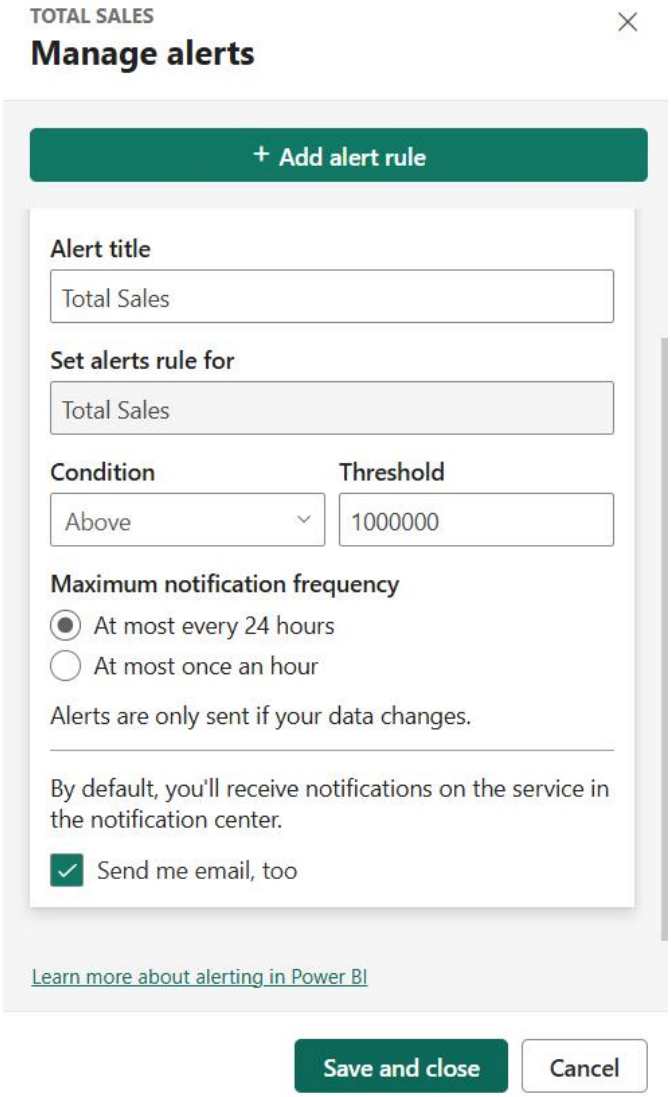
Q/A query:


Help Q&A understand people better by adding synonyms.
Add synonyms now
total profit by year
Showing results for Total profit sorted by dim date year
Total Profit
1.3M
1.2M
2023
2024
Year


Help Q&A understand people better by adding synonyms.
Add synonyms now
total sales by category
Showing results for Fact sale category and total sales
Category
Office Supplies
Technology
Furniture
0M
2M
4M
Total Sales

Managing Alerts:





Advanced Visuals
Using R scripts