

## Introduction & Data Transformation in Power BI

### What is POWER BI

Microsoft Power BI is a self-service business intelligence platform, which includes both desktop and web-based applications for connecting, modeling, and visualizing data.



"Images Speaks Better than Words."

### FEATURE OF POWER BI?

#### 1. Connect, transform and load millions of rows of data

- Access data from virtually anywhere (database tables, flat files, web, cloud services, folders, etc.), and create fully automated workflows to extract, transform and load data for analysis

#### 2. Build relational models to blend data from multiple sources

- Create table relationships to analyze holistic performance across an entire relational data model

#### 3. Define complex calculations using Data Analysis Expressions(DAX)

- Enhance datasets and enable advanced analytics with powerful and portable DAX expressions

#### 4. Bring data to life with interactive reports and dashboards

- Build professional-quality reports and dashboards with best-in-class visualization tools

#### 5. Develop a versatile, in-demand skill set

- Power BI is the industry leader in self-service BI, and the skills you build in this course will be highly transferrable

# Why We Use Power BI

## 1. Data Visualization:

- Power BI helps transform raw data into interactive and visually appealing reports and dashboards. It makes complex data easy to understand.

## 2. Integration:

- Power BI integrates seamlessly with various data sources like Excel, SQL Server, cloud services, and more, allowing you to consolidate and analyze data from different platforms.

## 3. Business Intelligence:

- With Power BI, you can gain insights into your business performance, track key metrics, and make data-driven decisions..

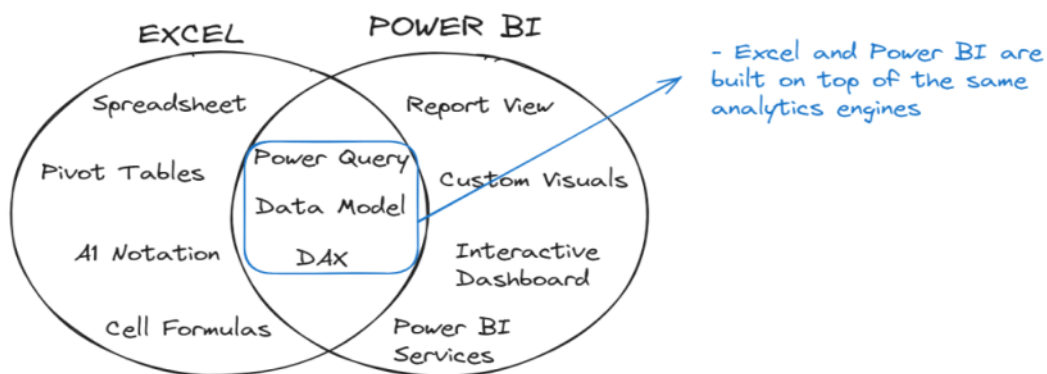
## 4. Real-time Data:

- You can connect to real-time data sources to ensure your reports and dashboards reflect the most up-to-date information.

## 5. User-Friendly Interface

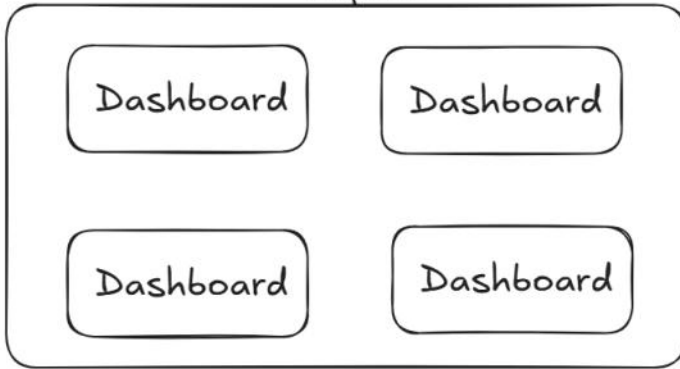
- The intuitive interface makes it accessible for users of all skill levels, from beginners to advanced analysts.

## EXCEL VS. POWER BI

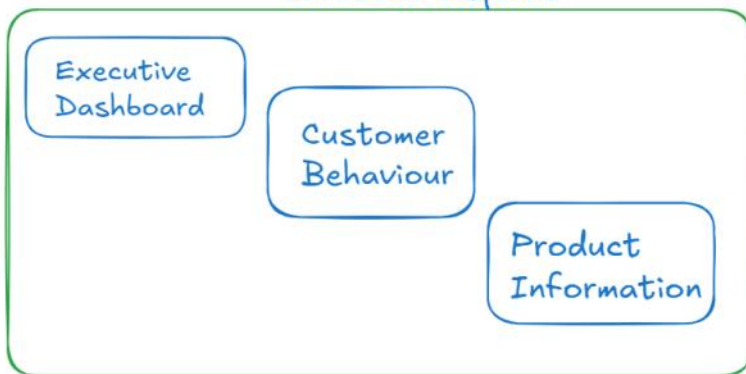


- Power BI takes the same data transformation and modeling capabilities and adds powerful visualization and publishing tools
- Transitioning is easy; you can import an entire data model directly from Excel!

## Report

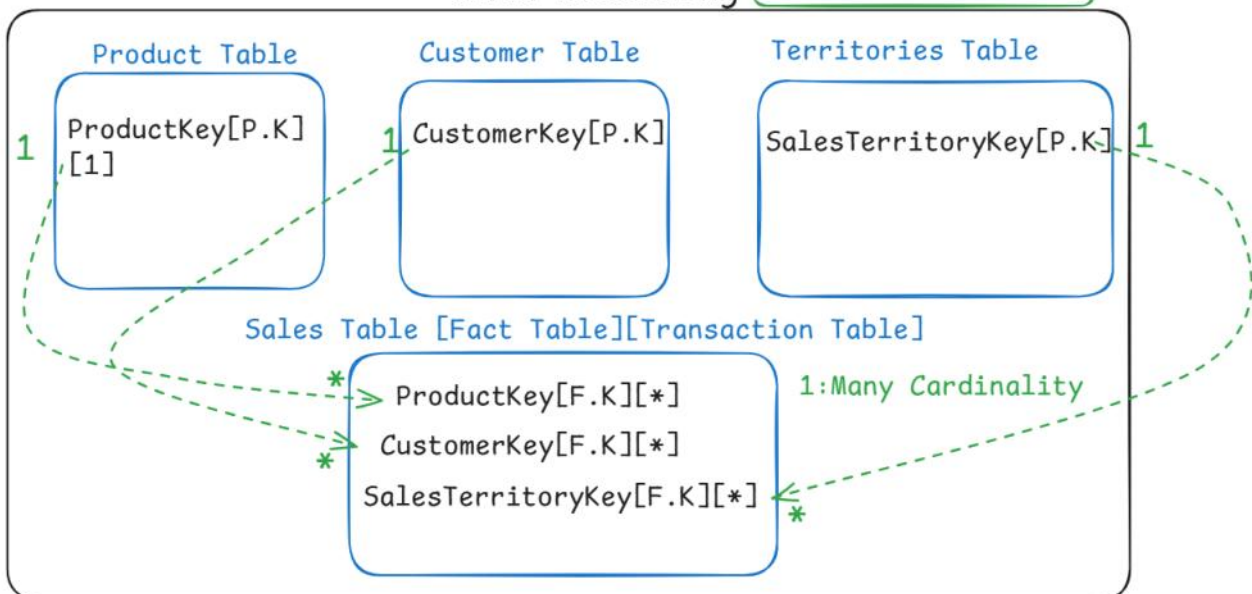


## Amazon Report



**DAX** - Data Analysis Expression that allow us to do Data Enhancement

## Data Modelling Relational Databases



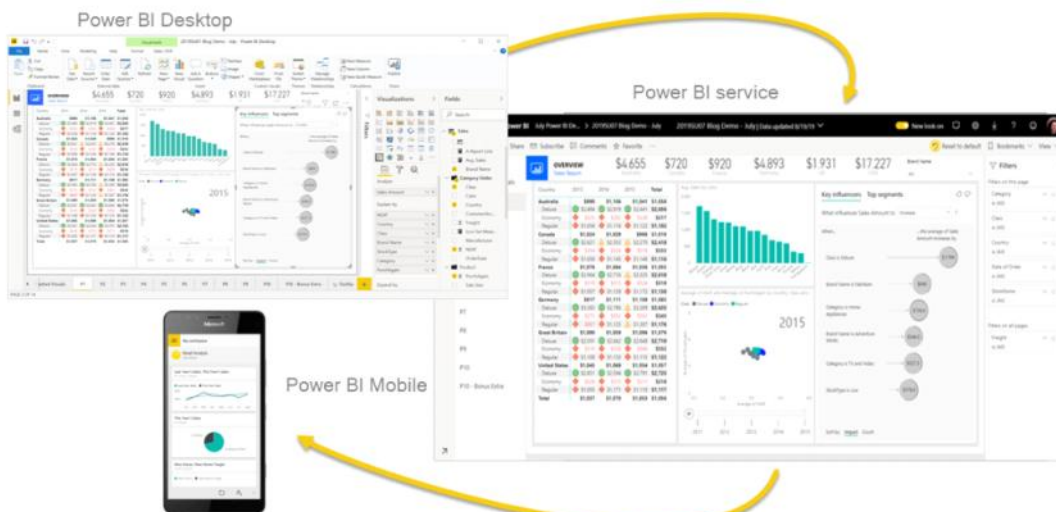
Merged Table

[All the information in one place]

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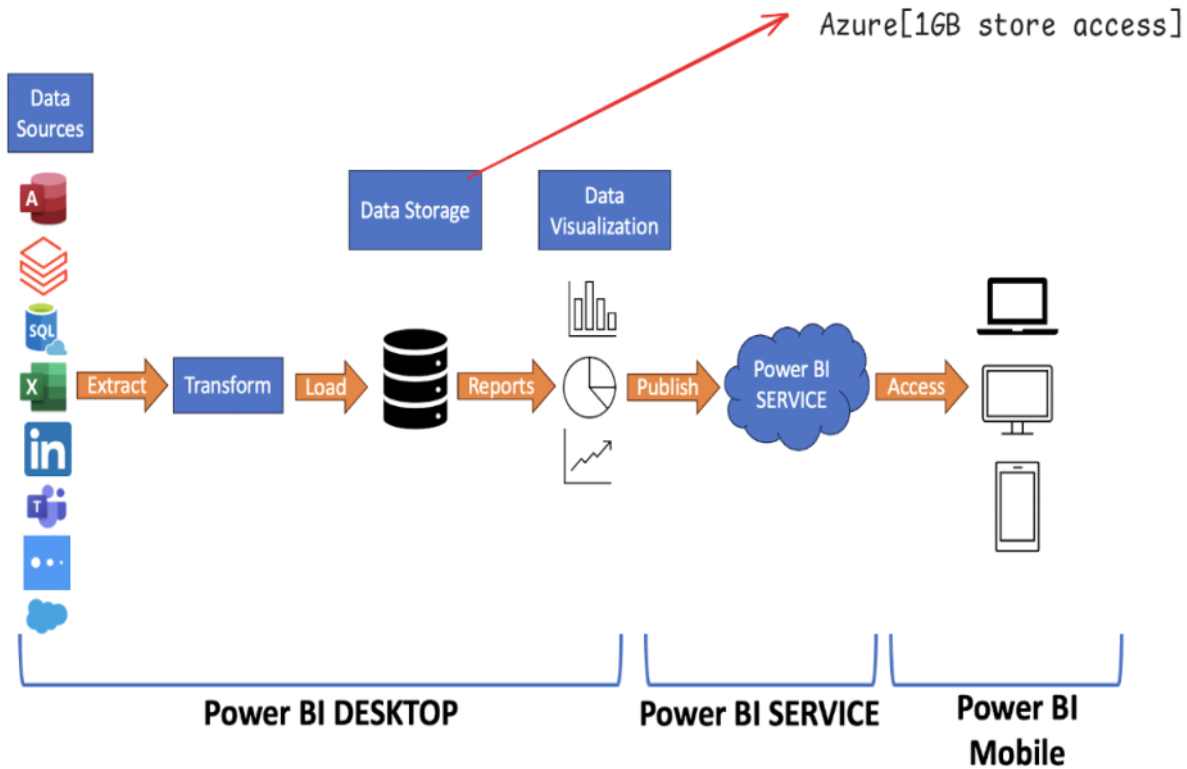
Not Recommended

High Computational [Effecting my CPU]  
- Less Efficient [High Time Complexity]

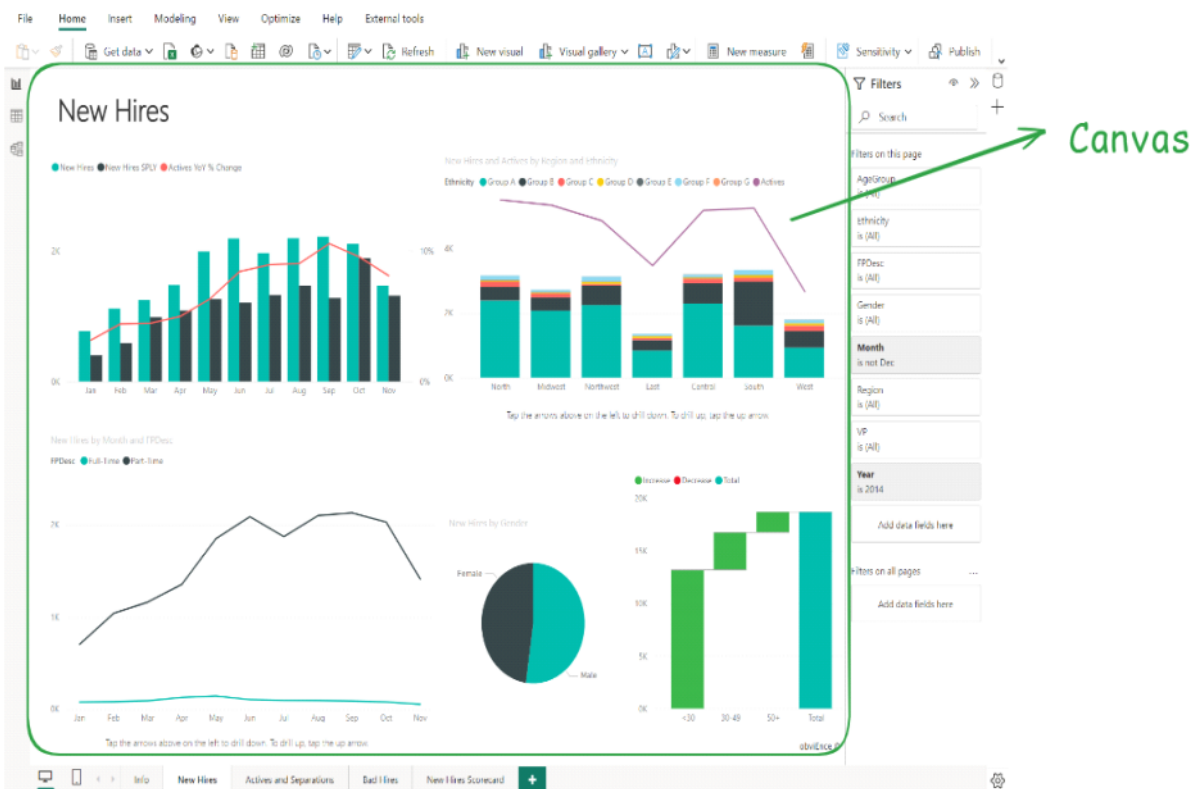


### Workflow of Power BI

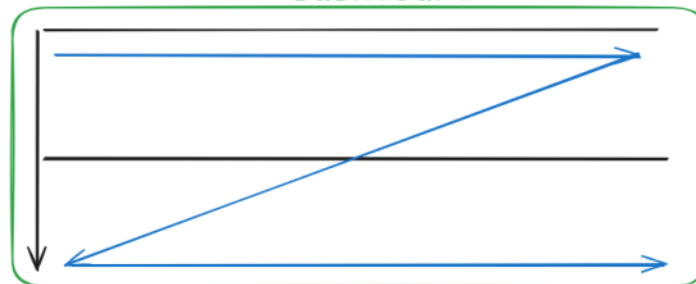
- Step0 : Understand the requirement of a stakeholder > Collect some data
- Step1 : Connecting Tables Using Get Data [Fetching Information] from various Source.
- Step2 : Transform the data [P.Q.E] -> And load it to the Front End. [Multiple Tables]
- Step3 : Data Modelling allow you to connect Dimension Table [Unique] with Fact [Transaction - where the key[F.K exist] and repeats] Table.
- Step4 : Data Enhancement [Feature Engineering] using DAX [Calculated Column , Measures].
- Step5 : Report View for building Dashboard [where Visualization happens].
- Step6 : Publish it for the stakeholder.
- Step7 : Switch from Desktop View To Mobile View.



Create visualizations in a report







Health of the business

- Scorecard
- KPI
- Slicers

What is the number of orders in the last hour?  
Which cities are performing better week over week?  
How is the new campaign impacting sales?  
Has the conversion rate improved in the last month?

City

All

Area

All

Slot

All

City type

All

### City trend

### Hourly trend

City	OrdersCurrent	Orders SDLWST	% growth current vs SDLWST	Orders Yest ST	% Growth Current VS Yest ST	Orders Yest LWST	% Growth Yest ST VS Yest LWST	Overall Orders SDLW	Overall Orders Yest	Overall Orders
Kota	11,748	11,408	2.98%	11,043	6.38%	10,146	8.84%	11,890	11,556	10
Kozhikode	1,966	1,845	6.56%	1,781	10.39%	1,835	-2.94%	1,886	1,829	1
Kurnool	811	955	-15.08%	857	-5.37%	830	3.25%	969	879	1
Lucknow	19,670	19,523	0.75%	17,669	11.32%	17,538	0.75%	20,488	18,599	18
Ludhiana	4,420	4,191	5.46%	3,495	26.47%	3,530	-0.99%	4,283	3,565	3
Madurai	5,603	5,628	-0.44%	4,636	20.86%	4,500	3.02%	5,764	4,760	4
Mangaluru	3,391	3,337	1.62%	2,725	24.44%	2,776	-1.84%	3,401	2,786	2
Manipal	3,210	2,835	13.23%	2,875	11.65%	2,534	13.46%	2,930	2,970	2
Meerut	843	1,067	-11.62%	843	18.86%	833	-1.20%	1,083	890	1
<b>Total</b>	<b>1,192,851</b>	<b>1,173,673</b>	<b>1.63%</b>	<b>1,023,577</b>	<b>16.54%</b>	<b>982,273</b>	<b>4.20%</b>	<b>1,245,153</b>	<b>1,094,767</b>	<b>1,049</b>

Last Refreshed Half an Hour Ago

Last Refreshed Half an Hour Ago

City

Search

City Launch Version

Search

Area

Search

Business Classifier

Search

Parent Name

Search

Parent ID

Search

Select Flag

0 ☐

1 ☐

SM Name

Search

Rest Category

Search

Rest Area Category

Search

Rest Name

Search

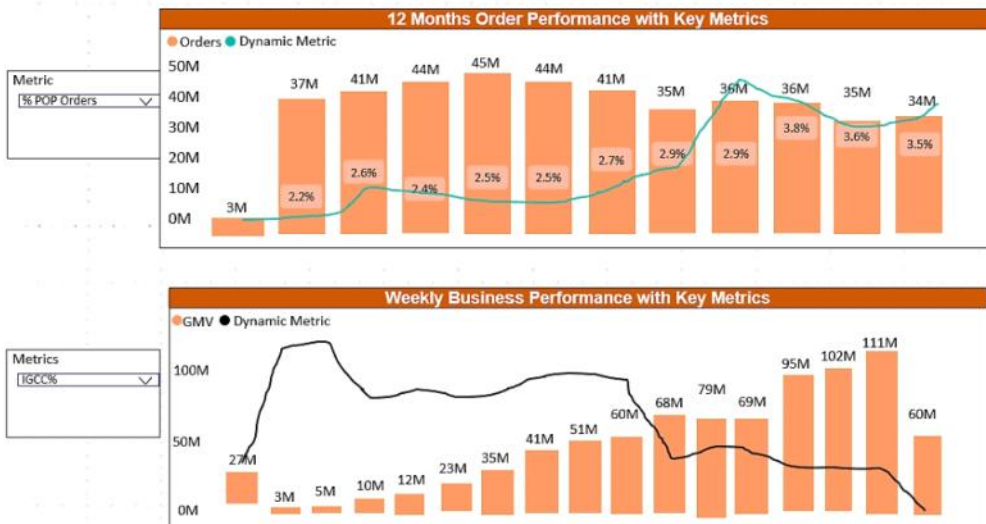
Rest ID

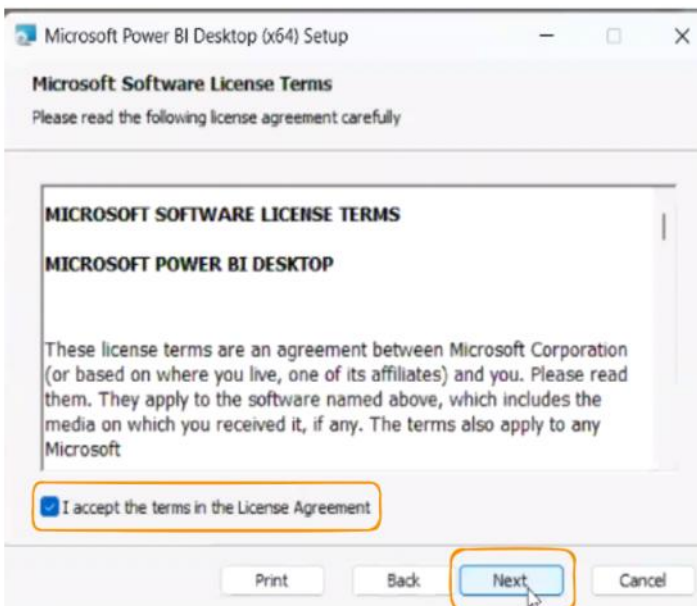
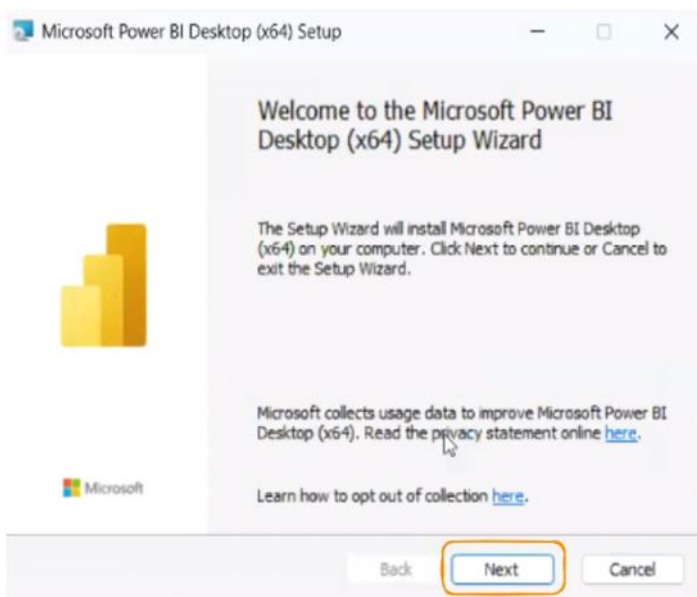
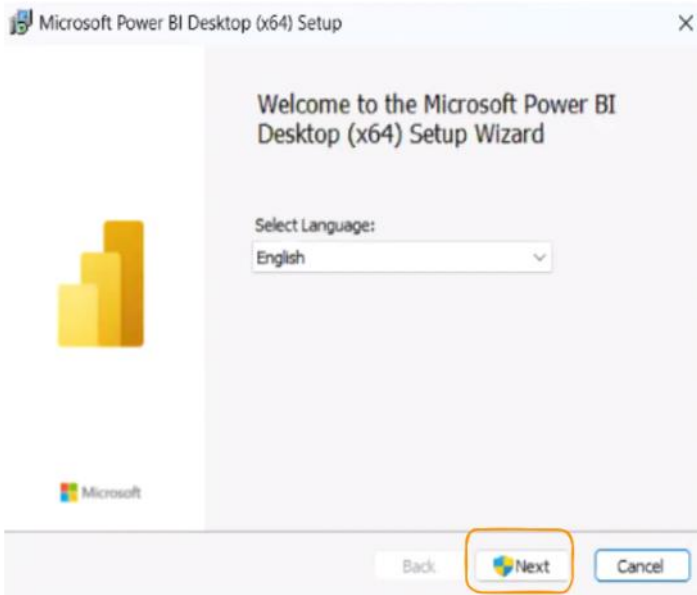
Search

Refresh Date

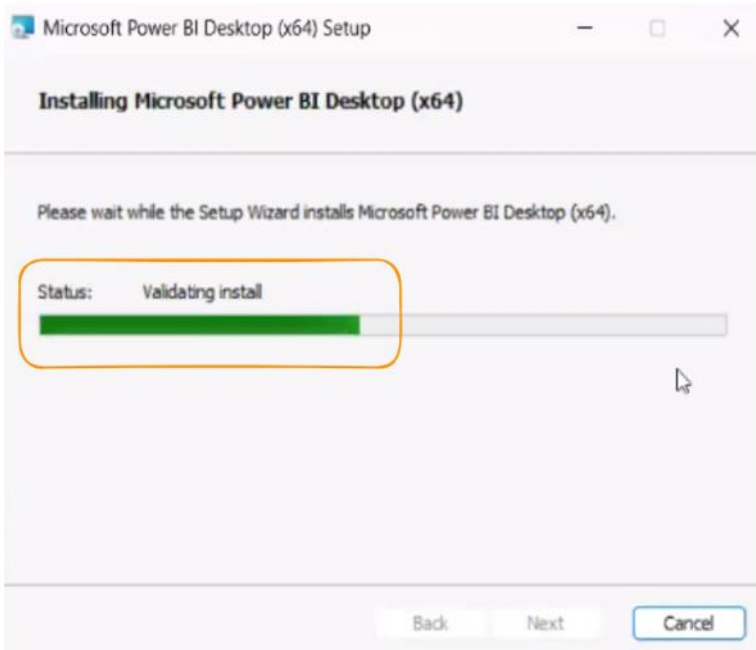
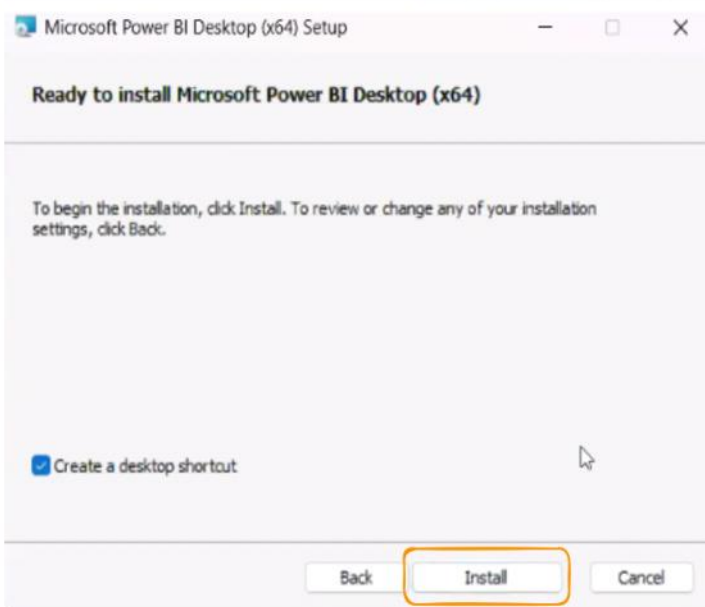
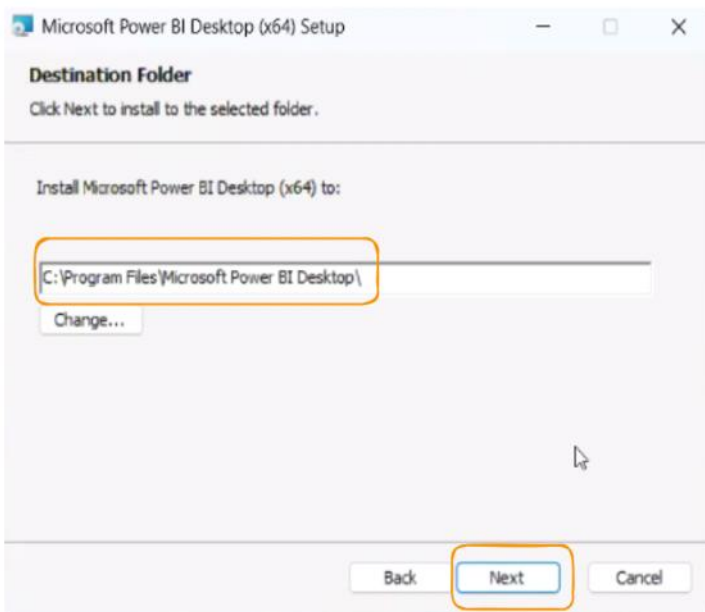
Wednesday, August 10, 2021

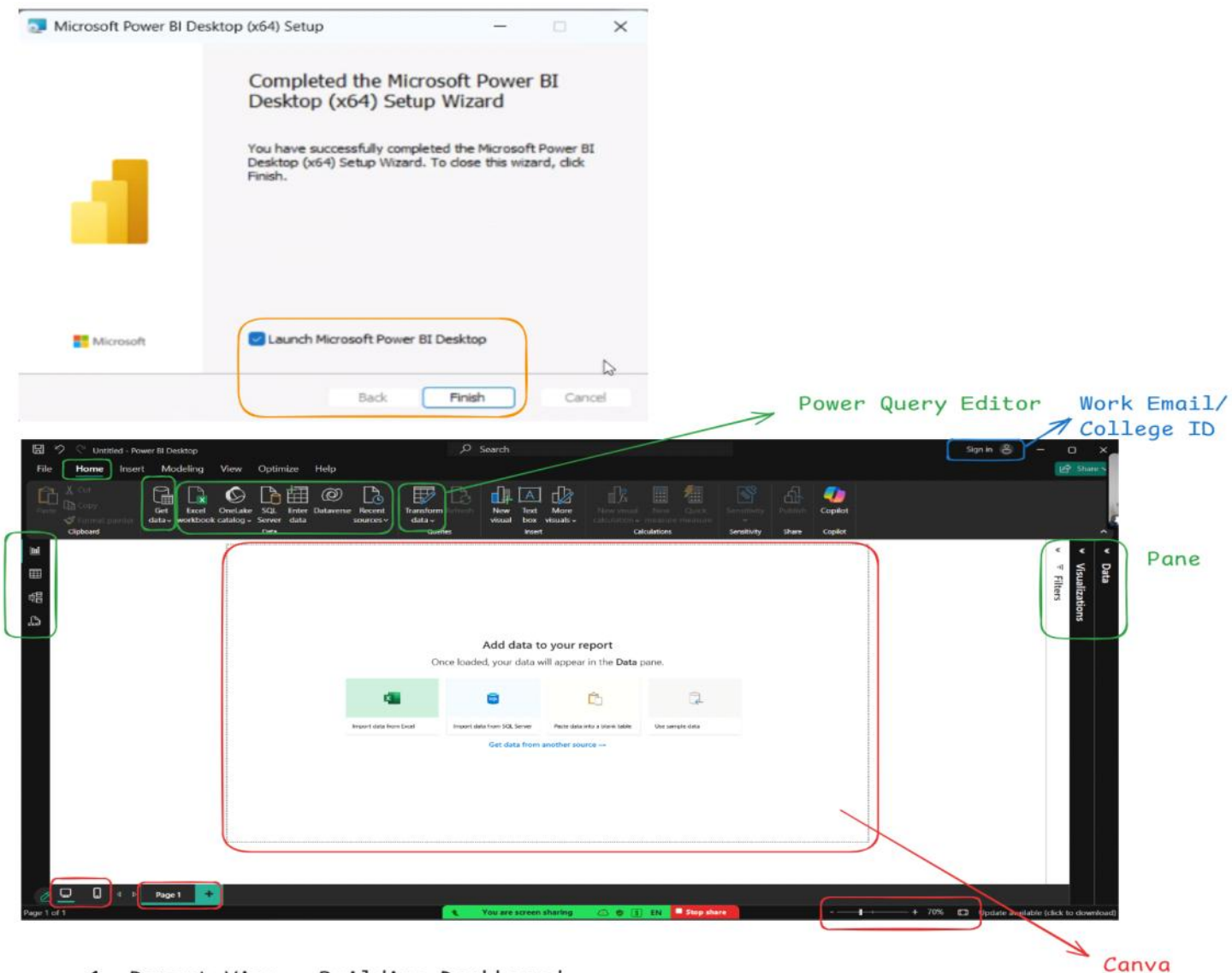
NOW() - Current Timestamp  
TODAY()



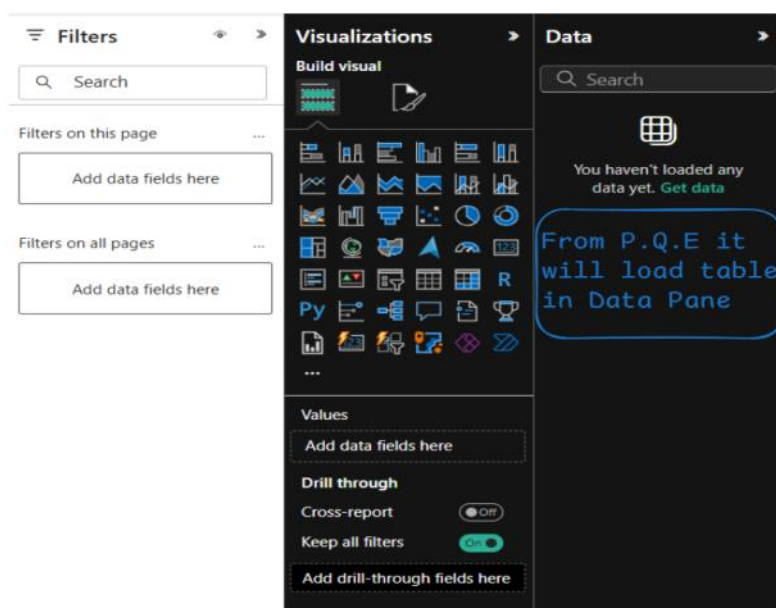


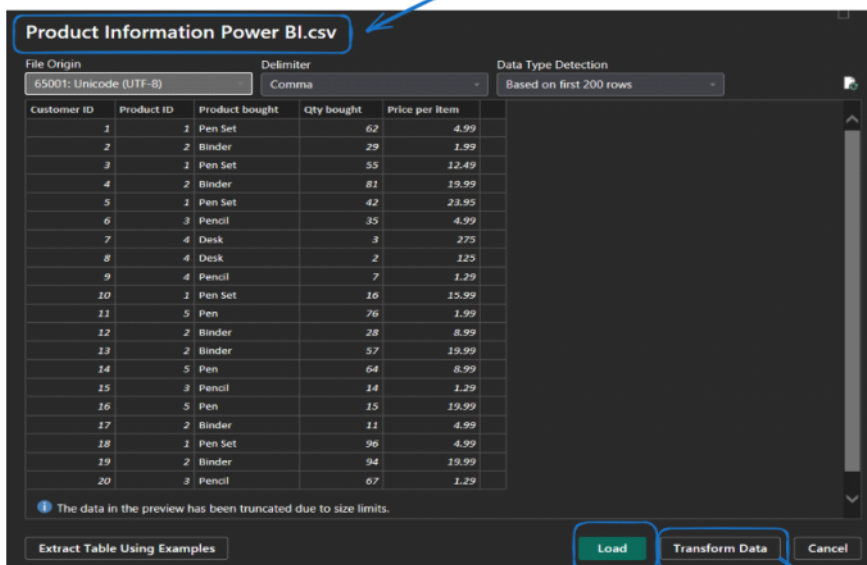
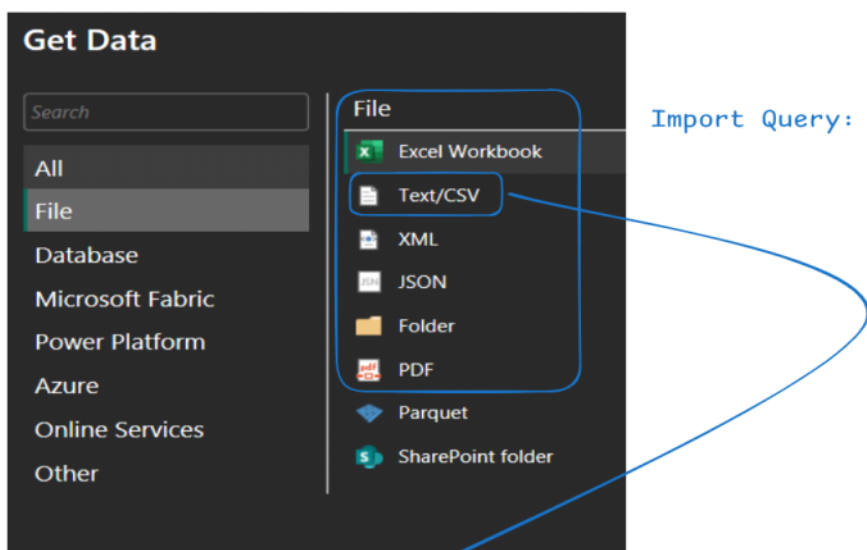
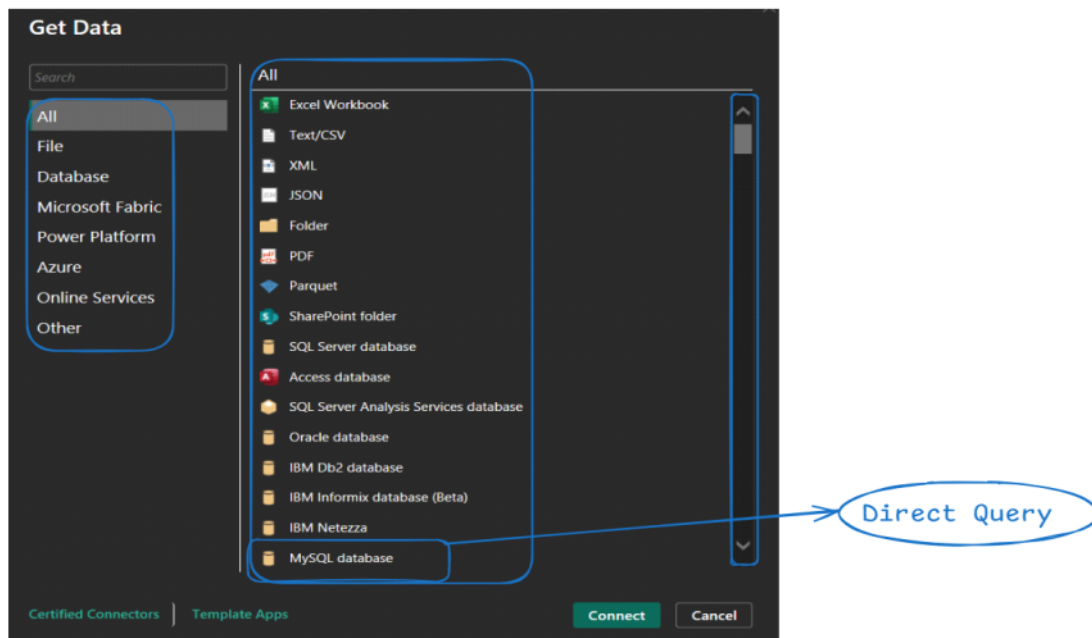






1. Report View : Building Dashboard
2. Table View/Data View : It show the data loaded into tabular form.
3. Model View : Connecting different tables via [P.K and F.K]



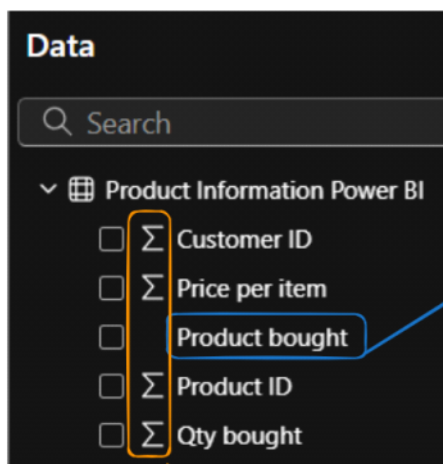
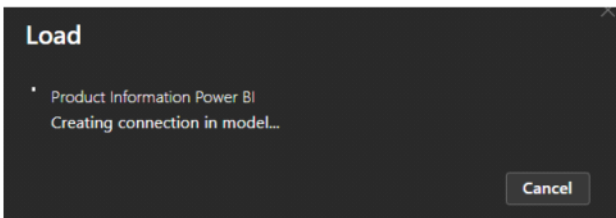
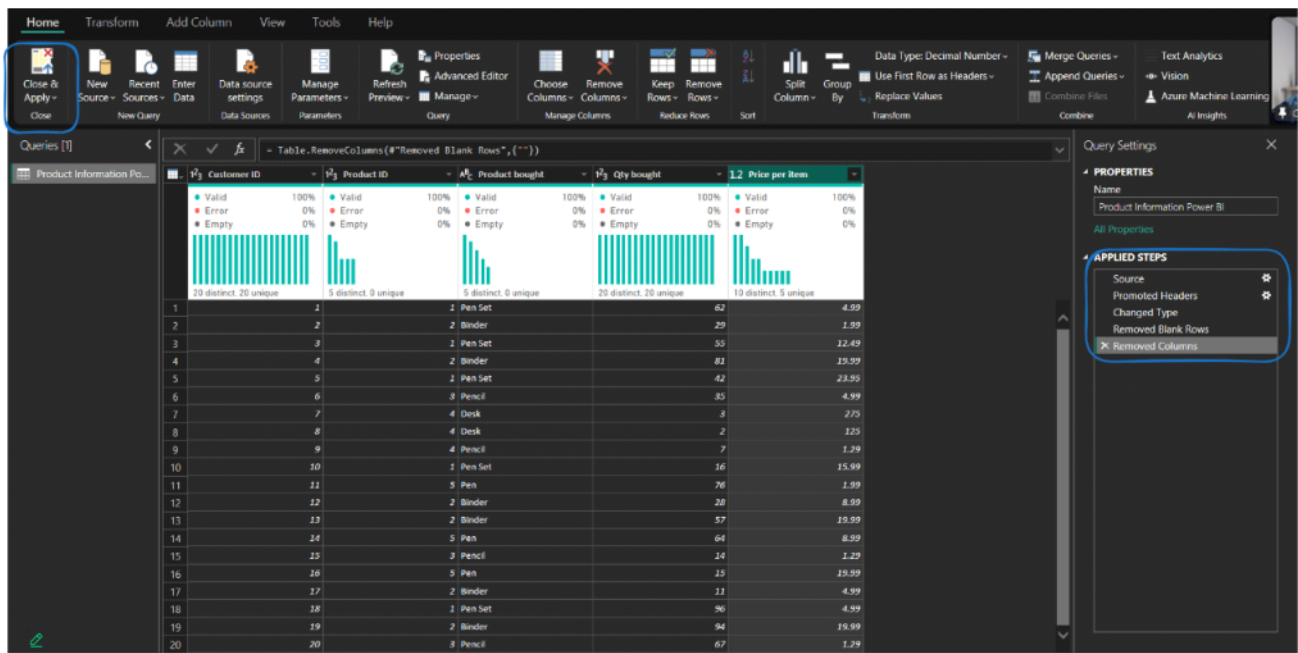


Power BI Front End:

1. Report View
2. Data View
3. Model View

Back End:

1. Power Query Editor.



Categorical Column [Group By]

Numerical Columns : "Aggregation" [Count, Min, Max, Sum, Average]

Customer ID	Product ID	Product bought	Qty bought	Price per item
1	1	Pen Set	62	4.99
2	2	Binder	29	1.99
3	1	Pen Set	55	12.49
4	2	Binder	81	19.99
5	1	Pen Set	42	23.95
6	3	Pencil	35	4.99
7	4	Desk	3	275
8	4	Desk	2	125
9	4	Pencil	7	1.29
10	1	Pen Set	16	15.99
11	5	Pen	76	1.99
12	2	Binder	28	8.99
13	2	Binder	57	19.99
14	5	Pen	64	8.99
15	3	Pencil	14	1.29
16	5	Pen	15	19.99
17	2	Binder	11	4.99
18	1	Pen Set	96	4.99
19	2	Binder	94	19.99
20	3	Pencil	67	1.29

Visualizations

Build visual

Rows

Product bought

Columns

Add data fields here

Values

Sum of Qty bought

Sum of Price per item

Drill through

Data

Search

Remove field

Rename for this visual

Move

Move to

Add a sparkline

Conditional formatting

Remove conditional formatting

Sum

Average

Minimum

Maximum

Count (Distinct)

Count

Standard deviation

Variance

Median

Show value as

New quick measure

Product bought	Sum of Qty bought	Sum of Price per item
Binder	300	75.94
Desk	5	400.00
Pen	155	30.97
Pen Set	271	62.41
Pencil	123	8.86
<b>Total</b>	<b>854</b>	<b>578.18</b>