PIZZA SALES DATA ANALYSIS PROJECT

Project Overview:

Analysing Sales Data For a Pizza Business To Gain Insights And Improve Decision-Making.

Project Objective:

Generate A comprehensive Pizza Sales Dynamic Dashboard's To Analyze And Visualize Sales Data For A Pizza Business.

Project Requirements:

- Problem Statement
- Data Source
- Software's Required

Problem Statement:

1. KPI'S Requirement
2. Chart's Requirement

KIP'S Requirement:

We Need To Analyze Key Performance Indicator's For Our Pizza Sales Data To Gain Insight's Into Our Business Performance.

A. Total Revenue

The Sum Of The Total Price Of All Pizza Orders

B. Average Order Value

The Average Amount Spent Per Order, Calculated By Dividing The Total Revenue By The Total Number Of Orders

C. Total Pizza Sold

The Sum Of The Quantities Of All Pizzas Sold

D. Total Orders

The Total Number Of Orders Placed

E. Average Pizzas Per Order

The Average Number Of Pizzas Sold Per Order, Calculated By Dividing The Total Number Of Pizzas Sold By The Total Number Of Orders

Chart's Requirement:

We Would Like To visualize Various Aspects Of Our Pizza Sales Data To Gain Insights And Understand Key Trends

F. Daily Trend For Total Orders

I Create A Bar Chart That Displays The Daily Trend Of Total Orders Over A Specific Time Period. This Chart Will Help To Identify any Patterns Or Fluctuations In Order Volumes On a Daily Basis.

G. Monthly Trend For Total Orders

I Create A line Chart that Illustrates The Hourly trend Of Total Orders throughout The Day. This Chart Will Allow To Identity Peak Hours Or Periods Of High Order Activity.

H. Percentage Of Sales By Pizza Category

I create A Pie Chart That Shows The Distribution Of sales across Different Pizza Categories. This Chart Will Provide Insights Into The Popularity Of various Pizza categories And Their Contribution To Overall Sales.

I. Percentage Of Sales By pizza Size

I Generate A Pie Chart That Represents The Percentage Of Sales Attributed To Different Pizza sales. This Chart will help Us To Understand customer Preferences For Pizza Sizes And Their Impact On Sales.

J. Total Pizza Sold By Pizza category

I Create A Funnel Chart That Represents The Total Number Of Pizzas Sold For Each Pizza category. This Chart will Allow To Compare The sales Performance Of Different Pizza Categories.

K. Top 5 Best Seller's By Revenue, Total Quantity and Total Order's

I Create A Bar Chart highlighting The Top 5 Best-selling Pizzas based On revenue ,Total Quantity and Total Orders. This Chart Will Help To identity The Most Popular Pizza Options.

L. Bottom 5 Worst Seller's By Revenue, Total Quantity and Total Order's

I Create A Bar Chart Showcasing The Top 5 Worst-selling Pizzas based On revenue ,Total Quantity and Total Orders. This Chart Will Help To identity The Most Popular Pizza Options.

Data Source:

The Data Collected From The Stakeholders Of Pizza Business

Data Collection Tool : MS excel

Software's Used:

Database : MY SQL

BI Tool : Microsoft Power BI

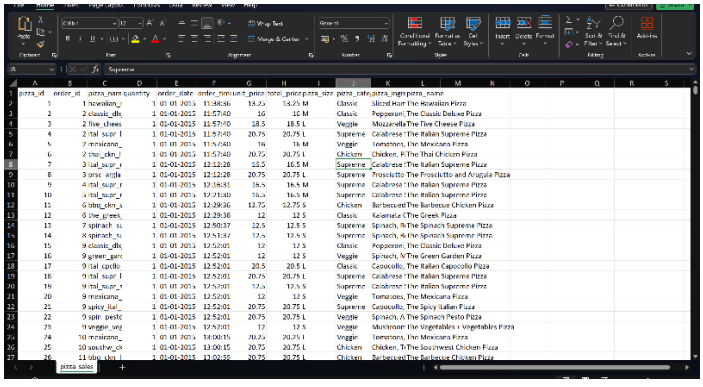
Project Process:

Step By Step Process:

1. Collecting the Data set
2. Importing Data set Into MYSQL Data base
3. Writing The SQL Queries To Evaluate The Values
4. Creating Report For MYSQL Server
5. Connect MYSQL Server To Power BI
6. Data Cleaning
7. Data Processing
8. Data Visualization
9. Final Dash Board

1.Collecting Data

The Data set collected From The pizza Business Stakeholder's In The Form Of Excel Sheets.



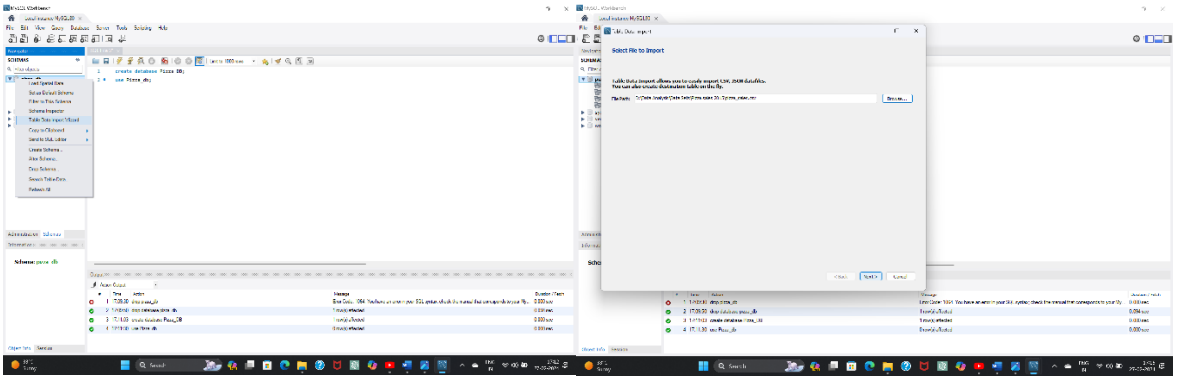
2.Importing Data set Into MYSQL Database

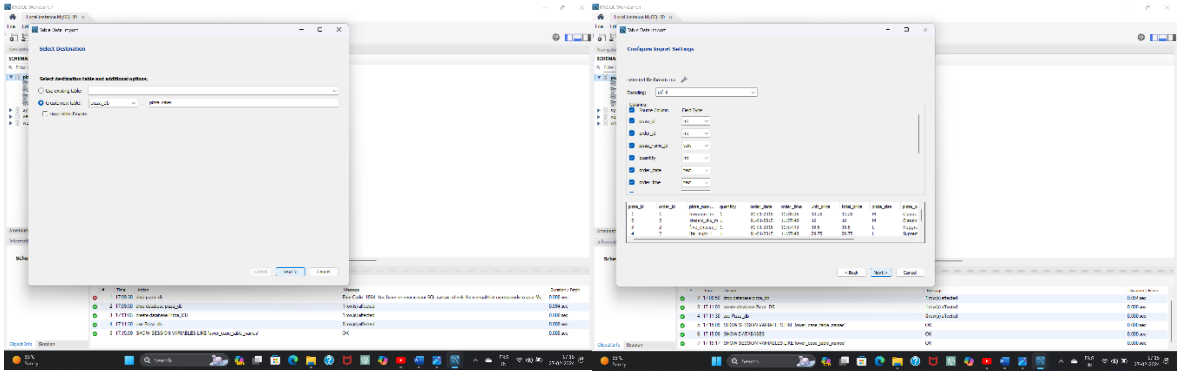
- To Import Dataset into The MYSQL Database, first We Need To create A New Database

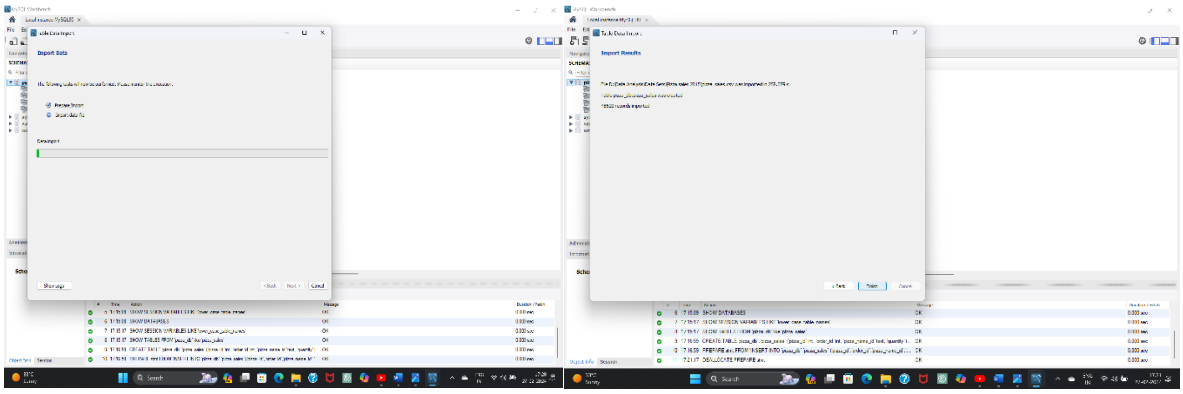
  Syntax: Create Database Database_name;

  Create Database Pizza_DB;

- To Import the Dataset Into The Database, Right click on Database Name, Go To Table Data Import Wizard ,and Then Choose file That We want To Import Into Database.
- After a successful Import ,The Data Will Be Displayed In the Form Of A Table. We Can Retrieve The Table Data By Writing Queries.



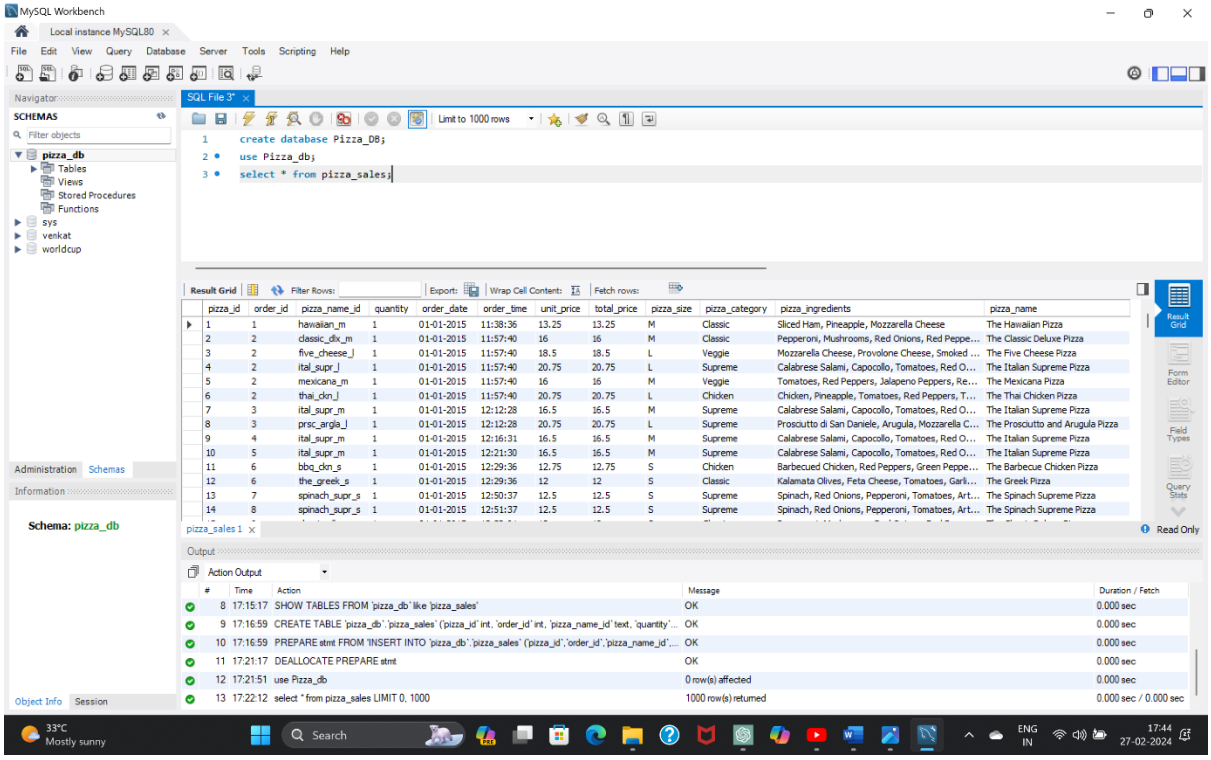




➢ After Importing, Retrieve The table data By Writing DQL Commands.

Syntax: Select * From Table_name;

Select * From Pizza_sales;

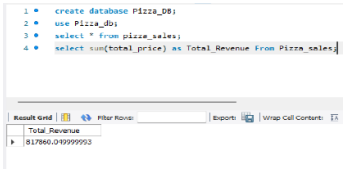


3.writing The Queries To Evaluate The Values

Here, I'm Writing SQL Queries Based On the Requirements To Evaluate The Values For Dashboards.

1. Total Revenue

select sum(total_price) as Total_Revenue From Pizza_sales;



2. Average Order Value

select sum(total_price)/count(distinct order_id) as Avg_Order_vaule From pizza_sales;

```
6 •  select sum(total_price)/count(distinct order_id) as Avg_Order_vaule From pizza_sales;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Avg_Order_vaule
38.307262295081635

3. Total Pizza Sold

select sum(quantity) as Total_pizza_sold from pizza_sales;

```
7 •  select sum(quantity) as Total_pizza_sold from pizza_sales;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Total_pizza_sold
49574

4. Total Orders

select count(distinct order_id) as Total_Orders from pizza_sales;

```
8 •  select count(distinct order_id) as Total_Orders from pizza_sales;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Total_Orders
21350

5. Average Pizza Per Order

select cast(sum(quantity) as decimal(10,2)) / cast(count(distinct order_id) as decimal(10,2)) as Avg_pizza_per_order from pizza_sales;

```
9  select cast(sum(quantity) as decimal(10,2)) / cast(count(distinct order_id) as decimal(10,2))
10  as Avg_pizza_per_order from pizza_sales;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Avg_pizza_per_order
2.321967

6. Daily Trend For Total Orders

select dayname(order_date) as Order_day,count(distinct order_id) as Total_orders from pizza_sales group by dayname(order_date);

```
3  select dayname(order_date) as Order_day,count(distinct order_id) as Total_orders from pizza_sales
4  group by dayname(order_date);
5
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Order_day	Total_orders
Friday	3538
Monday	2794
Saturday	3158
Sunday	2624
Thursday	3239
Tuesday	2973
Wednesday	3024

7. Monthly Trend For Total Orders

select monthname(order_date) as Month_Name,count(distinct order_id) as Total_orders from pizza_sales group by monthname(order_date);

```
5  select monthname(order_date) as Month_Name,count(distinct order_id) as Total_orders from pizza_sales group by monthname(order_date);
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Month_Name	Total_orders
April	1799
August	1841
December	1680
February	1685
January	1845
July	1935
June	1773
March	1840
May	1853
November	1792
October	1646
September	1661

8. Percentage of sales By Pizza category

select pizza_category,sum(total_price) *100 / (select sum(total_price) from pizza_sales) as Totalcategory_percentage from pizza_sales group by pizza_category;

```
6 •  select pizza_category,sum(total_price) *100 / (select sum(total_price) from pizza_sales)
7    as Totalcategory_percentage from pizza_sales group by pizza_category;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

pizza_category	Totalcategory_percentage
Classic	26.9059602556699
Veggie	23.682590927384783
Supreme	25.45631126009884
Chicken	23.955137556847493

select pizza_category,sum(total_price) as Total_Revenue,sum(total_price) *100 / (select sum(total_price) from pizza_sales where month(order_date) in (1,2,3,4)) as Totalcategory_percentage from pizza_sales where month(order_date) in (1,2,3,4) group by pizza_category;

```
6 •  select pizza_category,sum(total_price) as Total_Revenue,sum(total_price) *100 / (select sum(total_price) from pizza_sales
7     where month(order_date) in (1,2,3,4))
8    as Totalcategory_percentage from pizza_sales where month(order_date) in (1,2,3,4) group by pizza_category;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

pizza_category	Total_Revenue	Totalcategory_percentage
Classic	72888.89999999998	26.593363854078166
Veggie	65830.59999999951	24.018157751485695
Supreme	69611.8000000001	25.39772072204851
Chicken	65755.5	23.990757672386845

9. Percentage of sales By Pizza Size

select pizza_size,sum(total_price) as Total_Revenue,sum(total_price) *100 / (select sum(total_price) from pizza_sales) as Totalcategory_percentage from pizza_sales group by pizza_size;

```
10 •  select pizza_size,sum(total_price) as Total_Revenue,sum(total_price) *100 / (select sum(total_price) from pizza_sales)
11     as Totalcategory_percentage from pizza_sales group by pizza_size;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

pizza_size	Total_Revenue	Totalcategory_percentage
M	249382.25	30.492044451859723
L	375318.7000000087	45.8903329487743
S	178076.49999999843	21.773468455880682
XL	14076	1.7210768517181052
XXL	1006.6000000000005	0.12307729176892906

10. Total Pizza Sold By Pizza category

select pizza_category,count(distinct order_id) as Totalpizza_sold from pizza_sales group by pizza_category;

```
12 •  select pizza_category,count(distinct order_id) as Totalpizza_sold from pizza_sales
13    group by pizza_category;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

pizza_category	Totalpizza_sold
Chicken	8536
Classic	10859
Supreme	9085
Veggie	8941

11. Top 5 Best Seller's By Revenue, Total Quantity and Total Order's

select pizza_name,sum(total_price) as Total_Revenue from pizza_sales group by Pizza_name order by Total_Revenue desc limit 5;

```
14 •  select pizza_name,sum(total_price) as Total_Revenue from pizza_sales
15    group by Pizza_name
16    order by Total_Revenue desc
17    LIMIT 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

pizza_name	Total_Revenue
The Thai Chicken Pizza	43434.25
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41409.5
The Classic Deluxe Pizza	38180.5
The Spicy Italian Pizza	34831.25

select pizza_name,sum(quantity) as Total_Quantity from pizza_sales group by Pizza_name order by Total_Quantity desc limit 5;

```
22 •  select pizza_name,sum(quantity) as Total_Quantity from pizza_sales
23    group by Pizza_name
24    order by Total_Quantity desc
25    limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

pizza_name	Total_Quantity
The Classic Deluxe Pizza	2453
The Barbecue Chicken Pizza	2432
The Hawaiian Pizza	2422
The Pepperoni Pizza	2418
The Thai Chicken Pizza	2371

select pizza_name,count(distinct order_id) as Total_orders from pizza_sales group by Pizza_name order by Total_orders desc limit 5;

```
22 •  select pizza_name,count(distinct order_id) as Total_orders from pizza_sales
23    group by Pizza_name
24    order by Total_orders desc
25    limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

pizza_name	Total_orders
The Classic Deluxe Pizza	2329
The Hawaiian Pizza	2280
The Pepperoni Pizza	2278
The Barbecue Chicken Pizza	2273
The Thai Chicken Pizza	2225

12. Bottom 5 Worst Seller's By Revenue, Total Quantity and Total Order's

select pizza_name,sum(total_price) as Total_Revenue from pizza_sales group by Pizza_name order by Total_Revenue asc limit 5;

```
18 •  select pizza_name ,sum(total_price) as Total_Revenue from pizza_sales
19    group by pizza_name
20    order by Total_Revenue asc
21    limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

pizza_name	Total_Revenue
The Brie Carre Pizza	11588.4999999999
The Green Garden Pizza	13955.75
The Spinach Supreme Pizza	15277.75
The Mediterranean Pizza	15360.5
The Spinach Pesto Pizza	15596

select pizza_name,sum(quantity) as Total_Quantity from pizza_sales group by Pizza_name order by Total_Quantity asc limit 5;

```
22 •  select pizza_name,sum(quantity) as Total_Quantity from pizza_sales
23    group by Pizza_name
24    order by Total_Quantity asc
25    limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

pizza_name	Total_Quantity
The Brie Carre Pizza	490
The Mediterranean Pizza	934
The Calabrese Pizza	937
The Spinach Supreme Pizza	950
The Soppressata Pizza	961

select pizza_name,count(distinct order_id) as Total_orders from pizza_sales group by Pizza_name order by Total_orders asc limit 5;

```
22 •  select pizza_name,count(distinct order_id) as Total_orders from pizza_sales
23    group by Pizza_name
24    order by Total_orders asc
25    limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

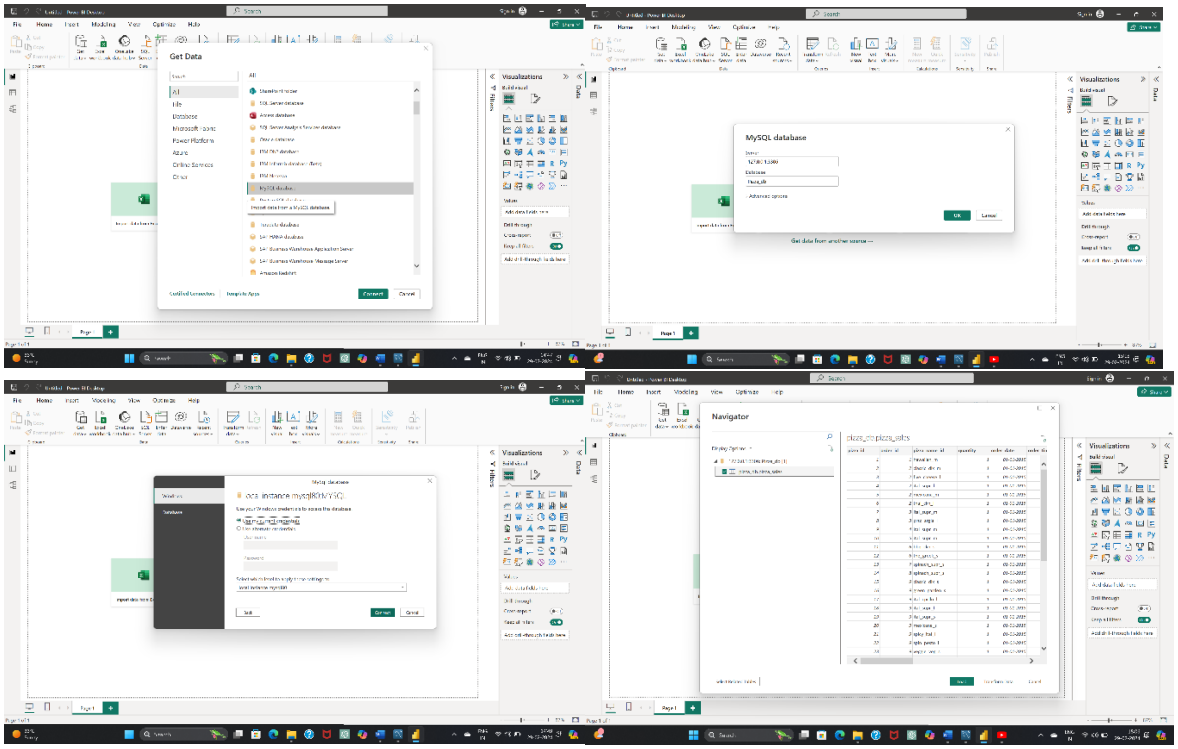
pizza_name	Total_orders
The Brie Carre Pizza	480
The Mediterranean Pizza	912
The Calabrese Pizza	918
The Spinach Supreme Pizza	918
The Chicken Pesto Pizza	938

4.Creating Report For MYSQL Server

Now, Save All The Queries That We Wrote To Evaluate the Values With The Dashboards. Create a Report For MYSQL Queries

5.Connect MYSQL Server With Power BI

- For That, Open Power BI, Go to Get Data and Select MYSQL Database Then, Make a Connection With MYSQL Database



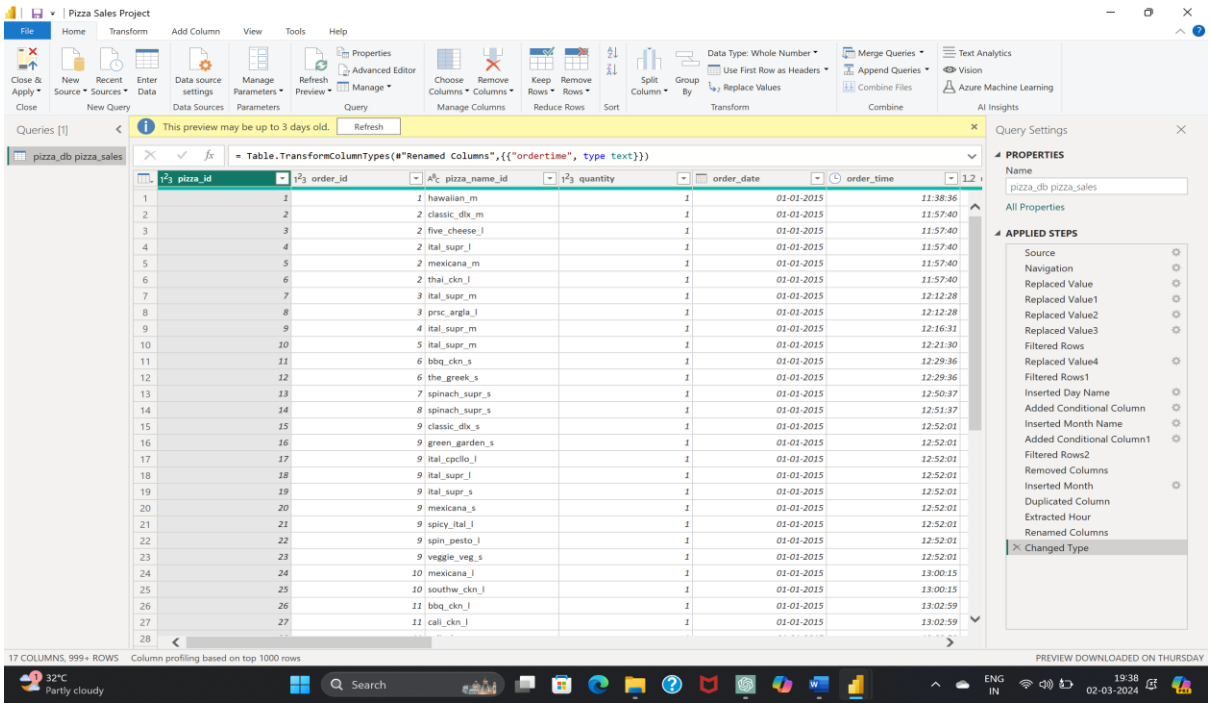
- After Completion of Connection we can Load Or Transform Data Based On Requirement

6.Data Cleaning &Processing

- After Loading Data Into PowerBI By Using The Power Query Editor, We Perform DAX(Data Analysis Express) For Data cleaning and Processing
- These Are Some Of DAX Formulas written for Data Visualization

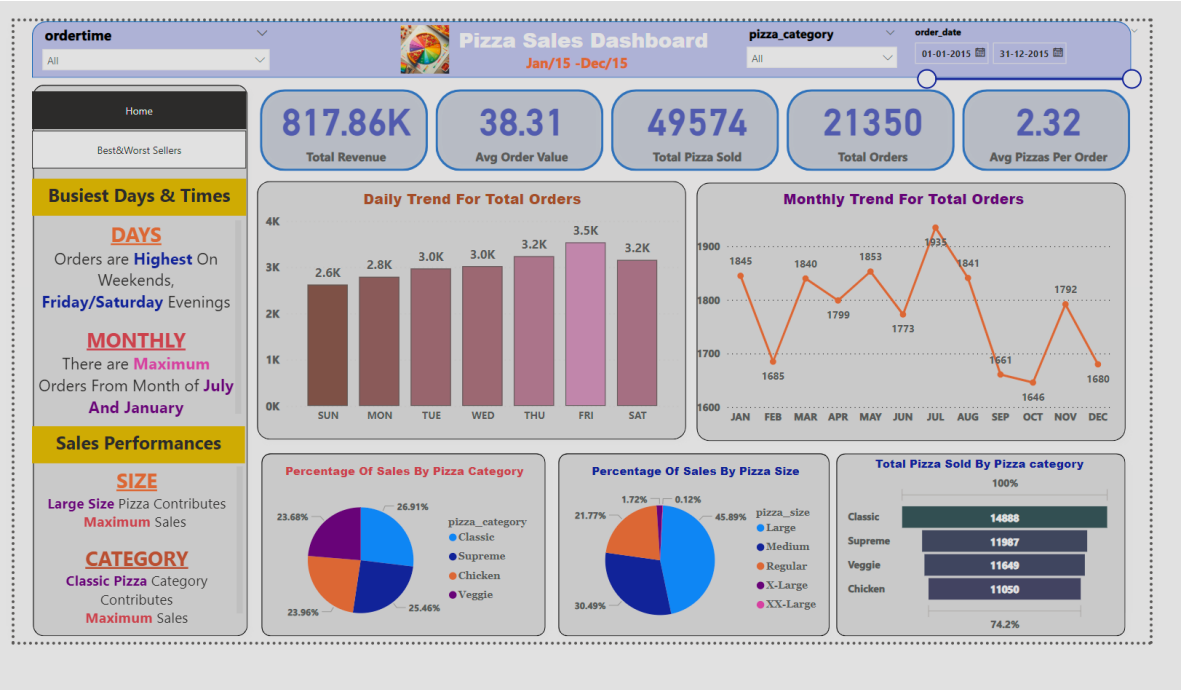
1. Total Orders = DISTINCTCOUNT('pizza_db pizza_sales'[order_id])
2. Total Pizza Sold = sum('pizza_db pizza_sales'[quantity])
3. Total Revenue = sum('pizza_db pizza_sales'[total_price])
4. Avg Pizzas Per Order = [Total Pizza Sold]/[Total Orders]
5. Avg Order Value = [Total Revenue]/[Total Orders]

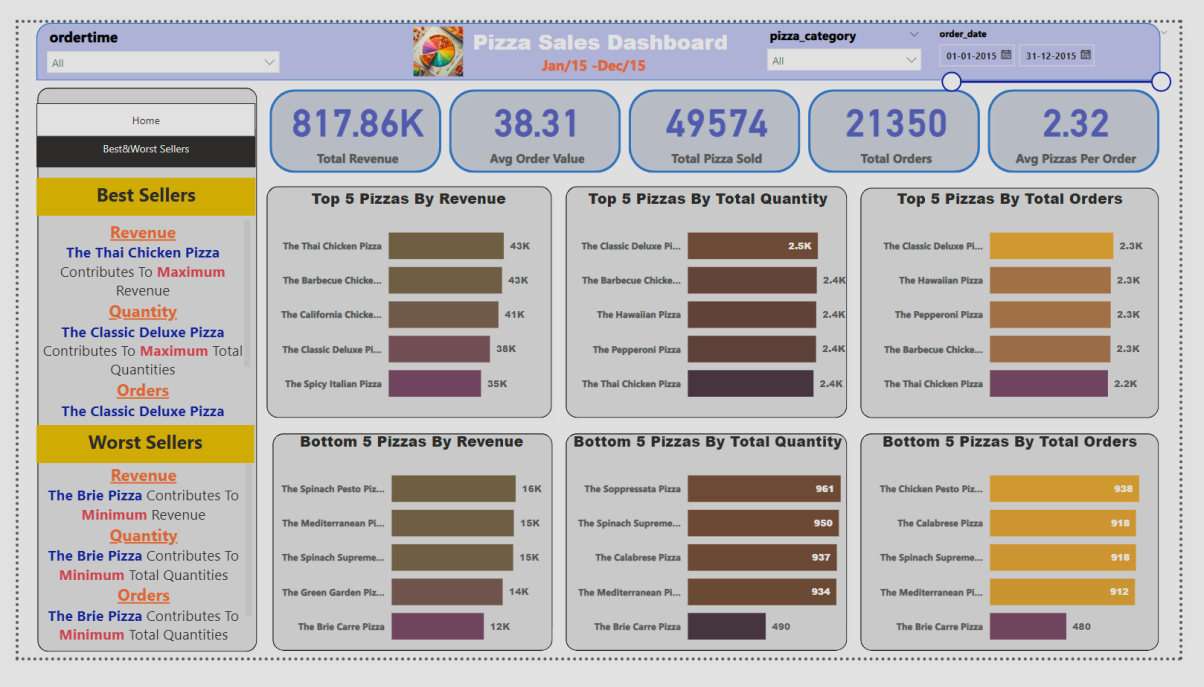
6. Order Day = upper(LEFT('pizza_db pizza_sales'[Day Name],3))
7. Order Month = upper(LEFT('pizza_db pizza_sales'[Month Name],3))



8.Data Visualization

- After Cleaning And Processing The Data According To The Requirements of Business Stakeholders, Prepare Dashboards' For a Pizza Business To Gain Insights And Improve Decision-Making





Conclusion:

Overall Performance:

- The pizza sales data reveals a total revenue of **817.86K** with an average order value of **38.31**. This indicates a healthy financial performance.
- A total of **49,574 pizzas** were sold, resulting in **21,350 orders**. On average, each order contains **2.32 pizzas**.
- The Thai Chicken Pizza is the highest revenue-generating item, contributing significantly to the total revenue of **817.86K**.
- The Classic Deluxe Pizza is popular in terms of quantity sold and total orders placed
- On average, each order contains approximately **2.32 pizzas**.

Busiest Days and Times:

- **Weekends**, particularly **Friday and Saturday evenings**, witness the highest order volumes. It's crucial to allocate resources effectively during these peak hours.
- The months of **July and January** consistently show the maximum number of orders. Seasonal trends should be considered for inventory planning.

Sales Performances:

- **Large size pizzas** contribute significantly to overall sales. Focusing on promoting this category could yield further growth.
- The **classic pizza** category also plays a substantial role in sales.