**Project : Pizza Sales Analysis**

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**Problem Statement**

**KPI’s REQUIREMENT**

We need to analyze key indicators for our pizza sales data to gain insights into our business performance. Specifically, we want to calculate the following metrics:

1. Total Revenue: The sum of the total price of all pizza orders.
2. Average Order Value: The average amount spent per order, calculated by dividing the total revenue by the total number of orders.
3. Total Pizzas Sold: The sum of the quantities of all pizzas sold.
4. Total Orders: The total number of orders placed.
5. 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.

**CHARTS REQUIREMENT**

We would like to visualize various aspects of our pizza sales data to gain insights and understand key trends. We have identified the following requirements for creating charts:

**1. Daily Trend for Total Orders:** Create a bar chart that displays the daily trend of total orders over a specific time period. This chart will help us identify any patterns or fluctuations in order volumes on a daily basis.

**2. Montly Trend for Total Orders:** Create a line chart that illustrates the hourly trend of total orders throughout the day. This chart will allow us to identify peak hours or periods of high order activity.

**3. Percentage of Sales by Pizza Category:** 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.

**4. Percentage of Sales by Pizza Size:** Generate a pie chart that represents the percentage of sales attributed to different pizza sizes. This chart will help us understand customer preferences for pizza sizes and their impact on sales.

**5. Total Pizzas Sold by Pizza Category:** Create a funnel chart that presents the total number of pizzas sold for each pizza category. This chart will allow us to compare the sales performance of different pizza categories.

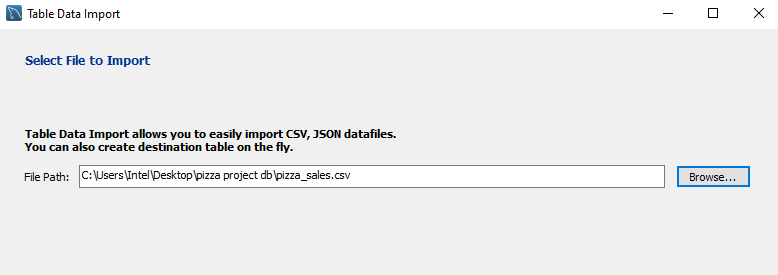
**6.** **Top 5 Best Sellers by Revenue, Total Quantity and Total Orders:** Create a bar chart highlighting the top 5 best-selling pizzas based on the Revenue, Total Quantity, Total Orders. This chart will help us identify the most popular pizza options.

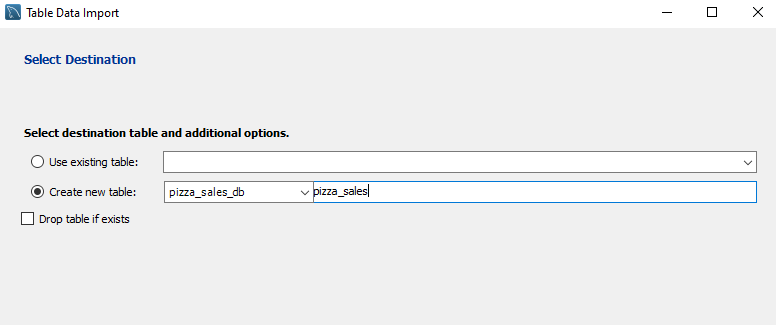
**7. Bottom 5 Best Sellers by Revenue, Total Quantity and Total Orders:** Create a bar chart showcasing the bottom 5 worst-selling pizzas based on the Revenue, Total Quantity, Total Orders. This chart will enable us to identify underperforming or less popular pizza options.

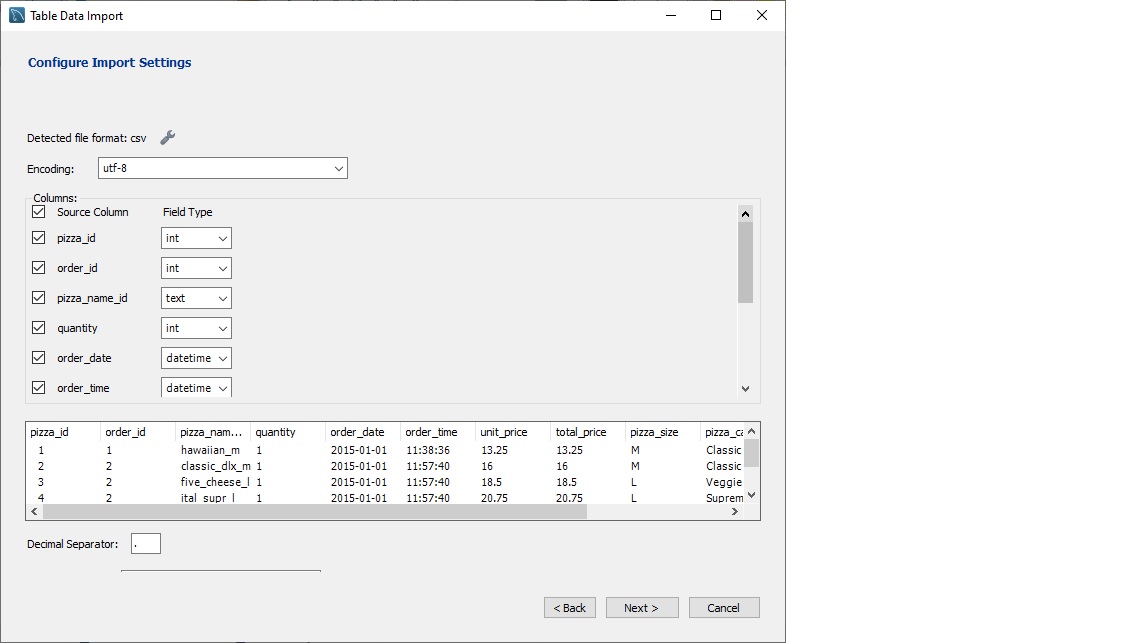
**Data Analysis using MySQL**

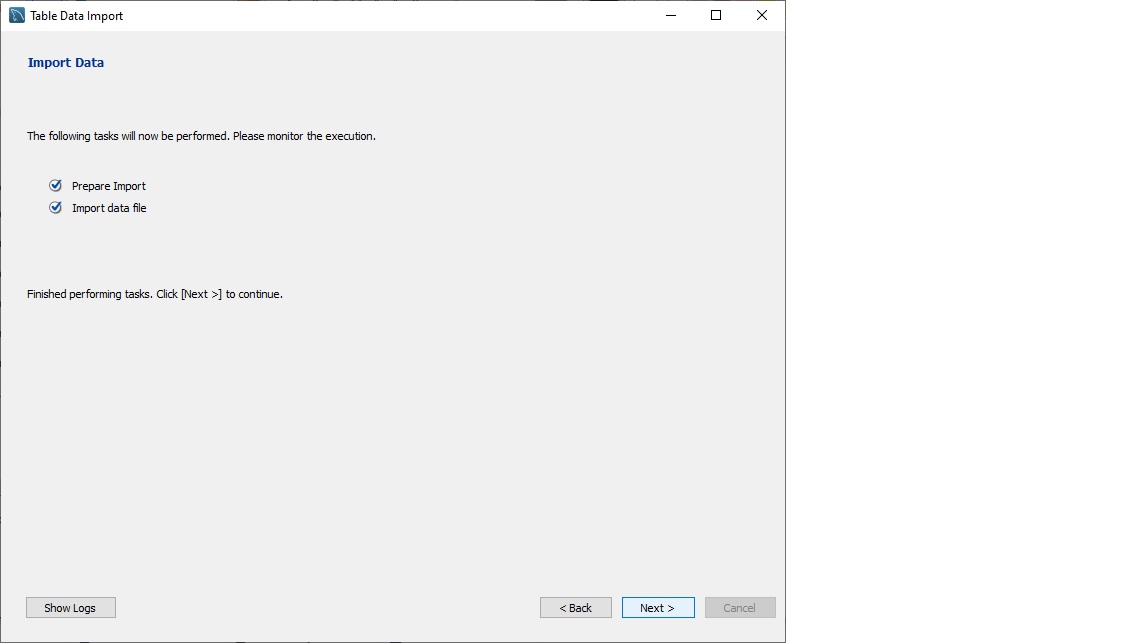
Utilized MySQL for data extraction and calculation of key metrics such as Total Revenue, Average Order Value, Total Pizzas Sold, Total Orders, and Average Pizzas Per Order.

**DATA IMPORT**

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ANALYSIS OF DIFFERENT SQL STATEMENT ON DATA BASE

1. **KPI’s**

**CONVERT DATE (order\_date) COLUMN TO PROPER DATE FORMAT**

UPDATE pizza\_sales

SET order\_date = STR\_TO\_DATE(order\_date, '%d-%m-%Y');

**ALTER DATE (order\_date) COLUMN TO DATE DATA TYPE**

ALTER TABLE pizza\_sales

MODIFY COLUMN order\_date DATE;

**CONVERT TIME (order\_time) COLUMN TO PROPER DATE FORMAT**

UPDATE pizza\_sales

SET order\_time = STR\_TO\_DATE(order\_time, '%H:%i:%s');

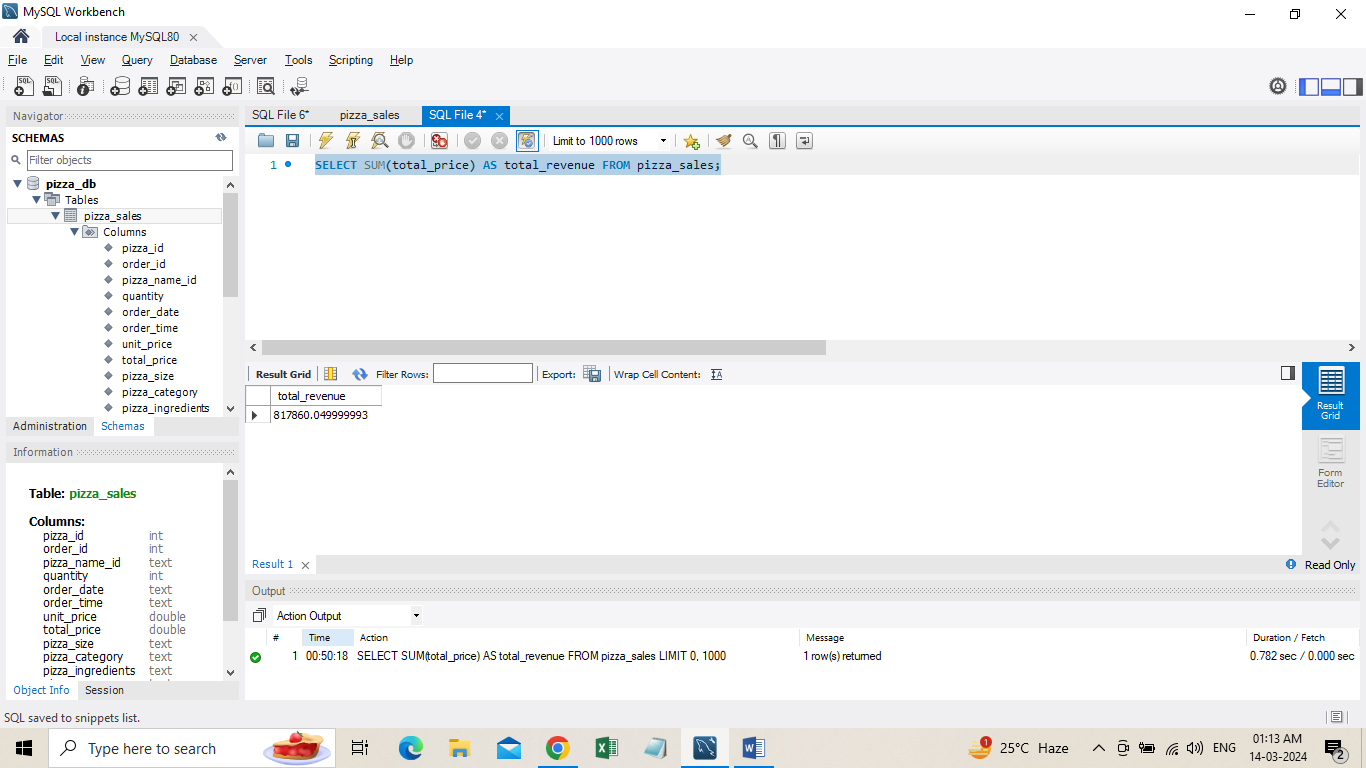
**ALTER TIME (order\_time) COLUMN TO DATE DATA TYPE**

ALTER TABLE pizza\_sales

MODIFY COLUMN order\_time TIME;

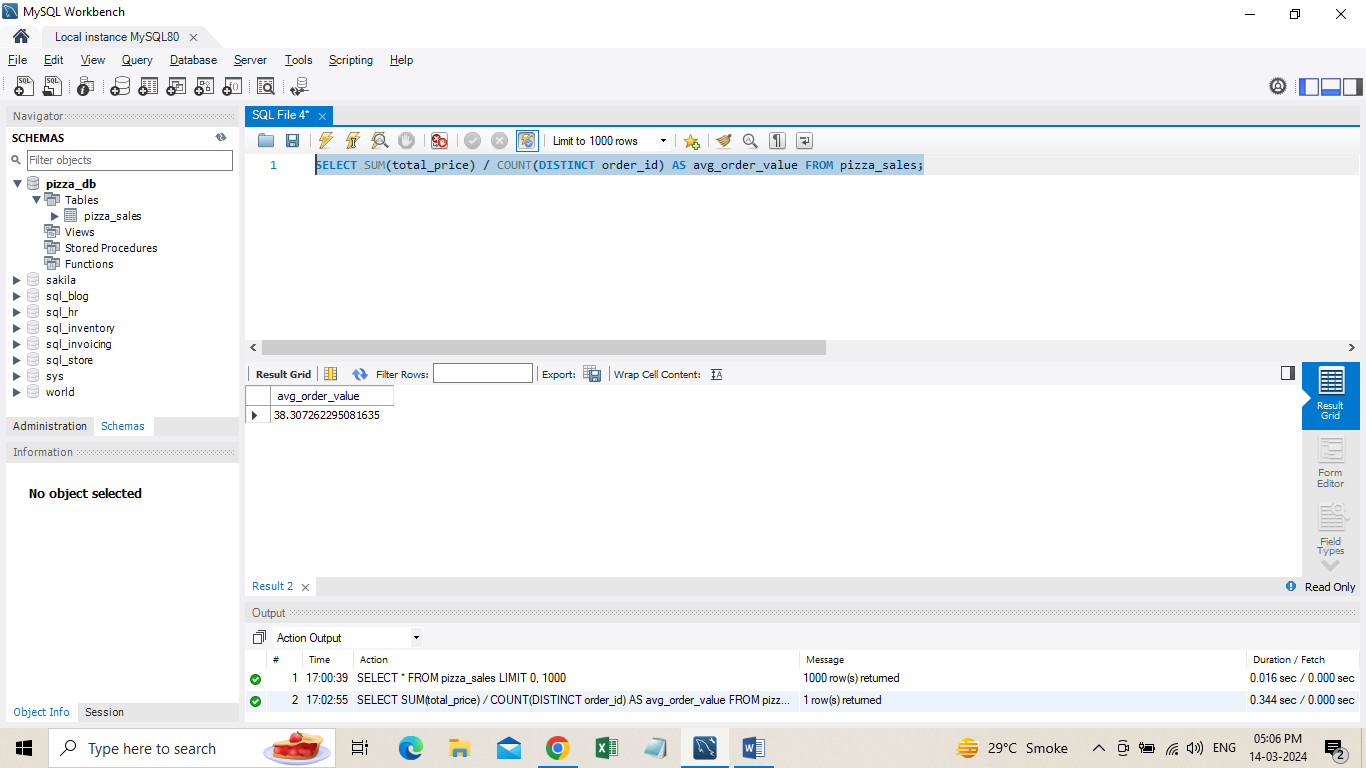
1. **Total Revenue:**

SELECT SUM(total\_price) AS total\_revenue FROM pizza\_sales;



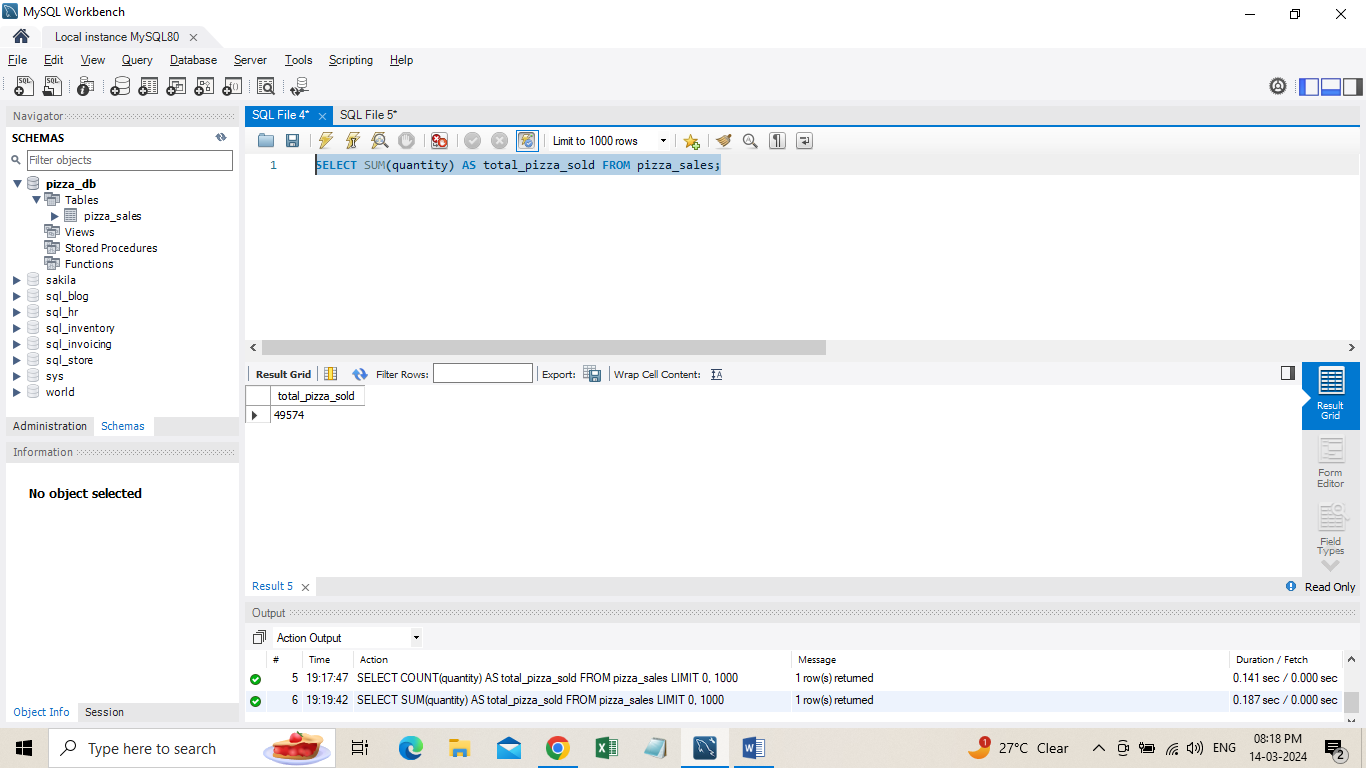
**2**. **Average Order Value:**

SELECT SUM(total\_price) / COUNT(DISTINCT order\_id) AS avg\_order\_value FROM pizza\_sales;



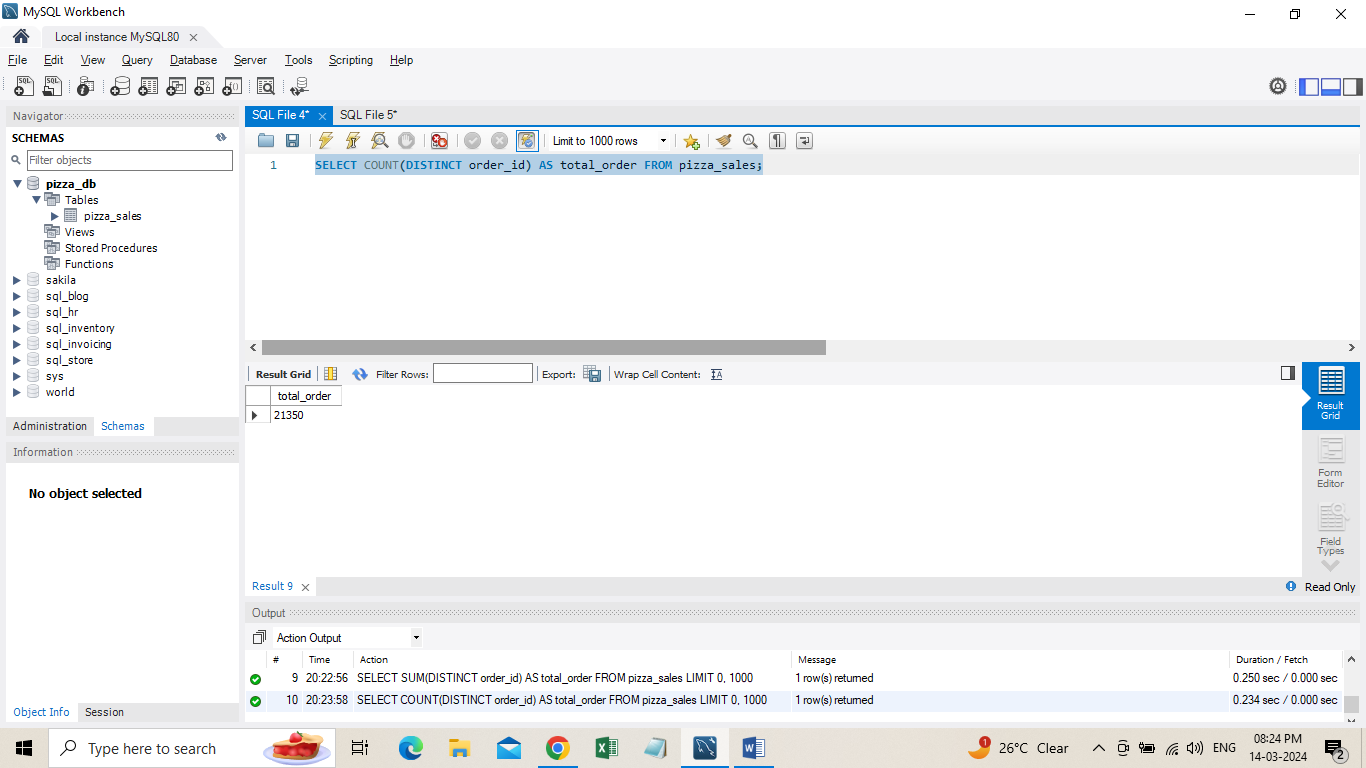
1. **Total Pizza Sold**

SELECT SUM(quantity) AS total\_pizza\_sold FROM pizza\_sales;



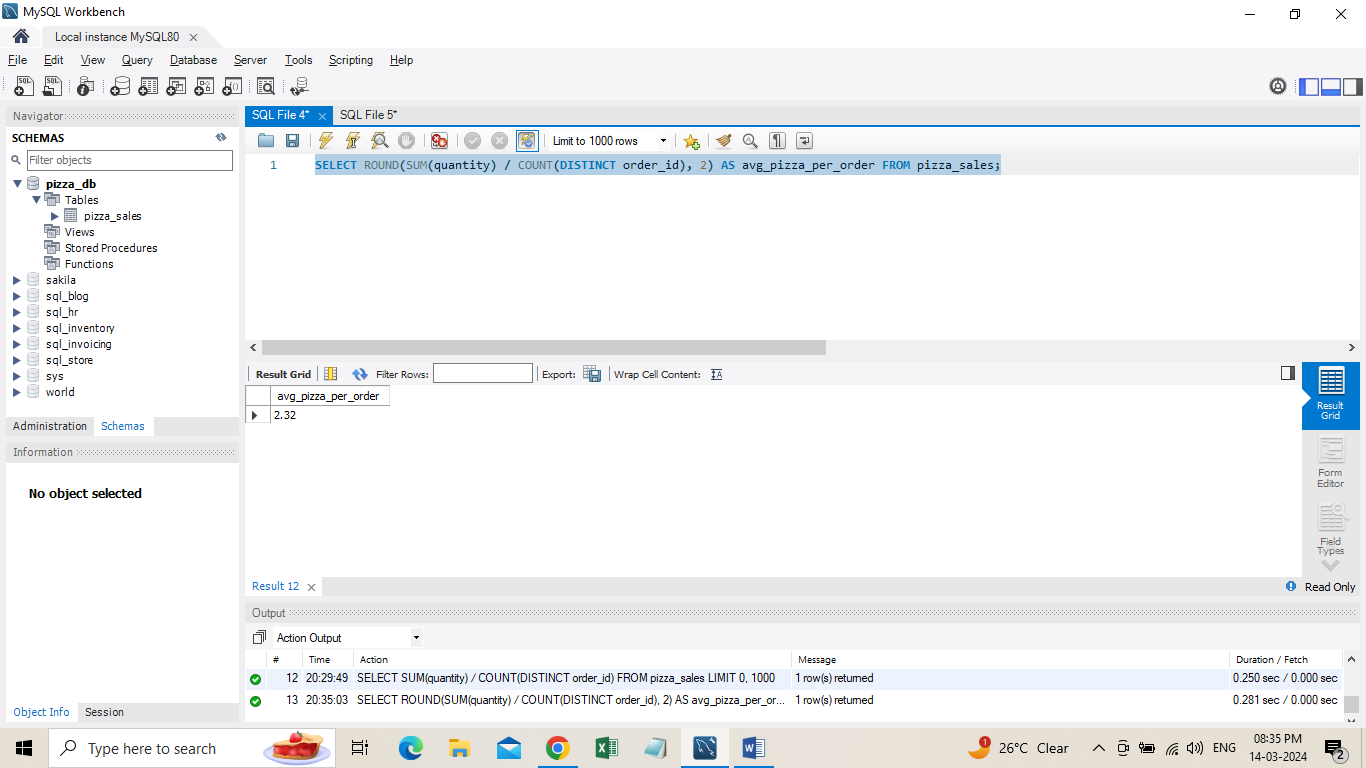
1. **Total Orders**

SELECT COUNT(DISTINCT order\_id) AS total\_order FROM pizza\_sales;



1. **Average Pizzas Per Order**

SELECT ROUND(SUM(quantity) / COUNT(DISTINCT order\_id), 2) AS avg\_pizza\_per\_order FROM pizza\_sales;



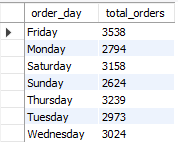
**B. Daily Trend for Total Orders**

SELECT DAYNAME(order\_date) AS order\_day, COUNT(DISTINCT order\_id) AS total\_orders

FROM pizza\_sales

GROUP BY DAYNAME(order\_date);

***Output:***

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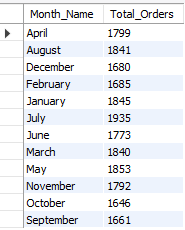
**C. Monthly Trend for Orders**

SELECT DATE\_FORMAT(order\_date, '%M') AS Month\_Name, COUNT(DISTINCT order\_id) AS Total\_Orders

FROM pizza\_sales

GROUP BY DATE\_FORMAT(order\_date, '%M');

***Output:***

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**D. % of Sales by Pizza Category**

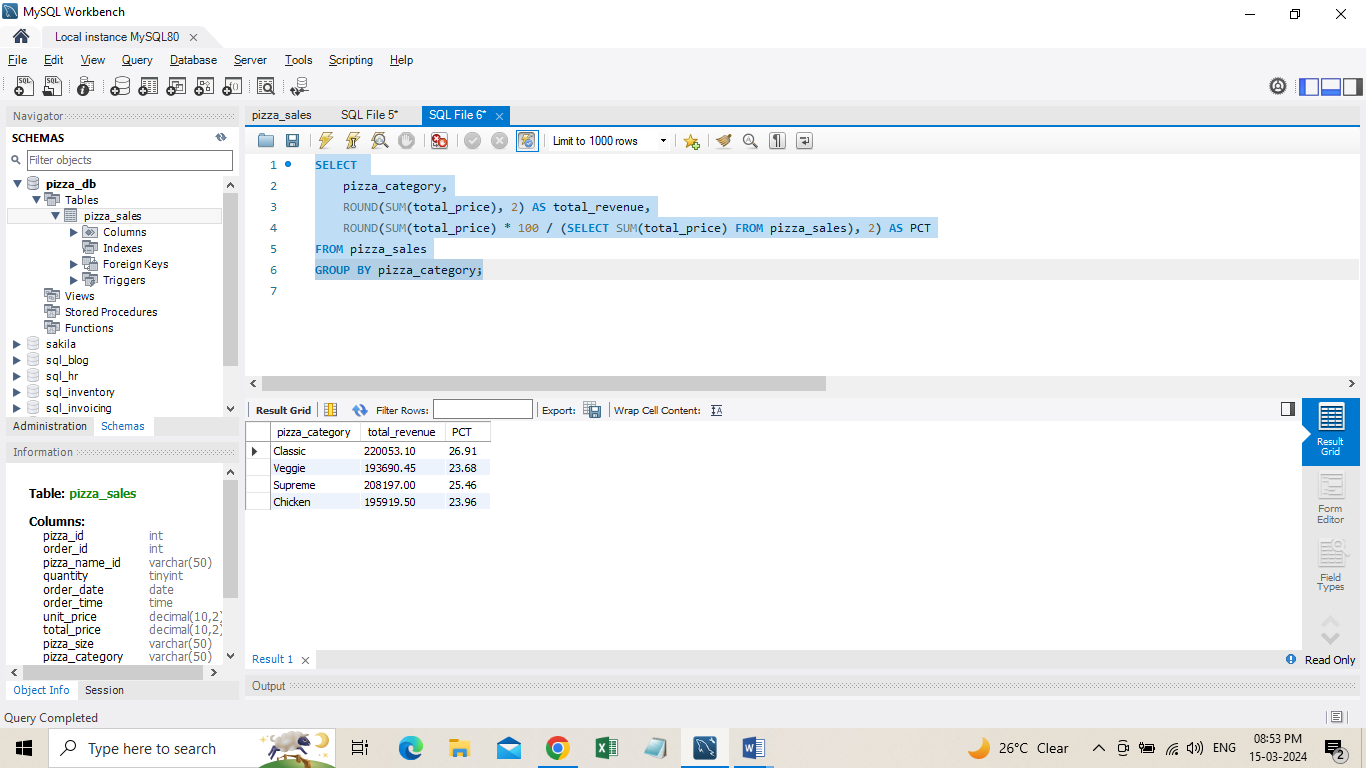
SELECT pizza\_category,

ROUND(SUM(total\_price), 2) AS total\_revenue,

ROUND(SUM(total\_price) \* 100 / (SELECT SUM(total\_price) FROM pizza\_sales), 2) AS PCT

FROM pizza\_sales

GROUP BY pizza\_category;



**E. % of Sales by Pizza Size**

SELECT pizza\_size,

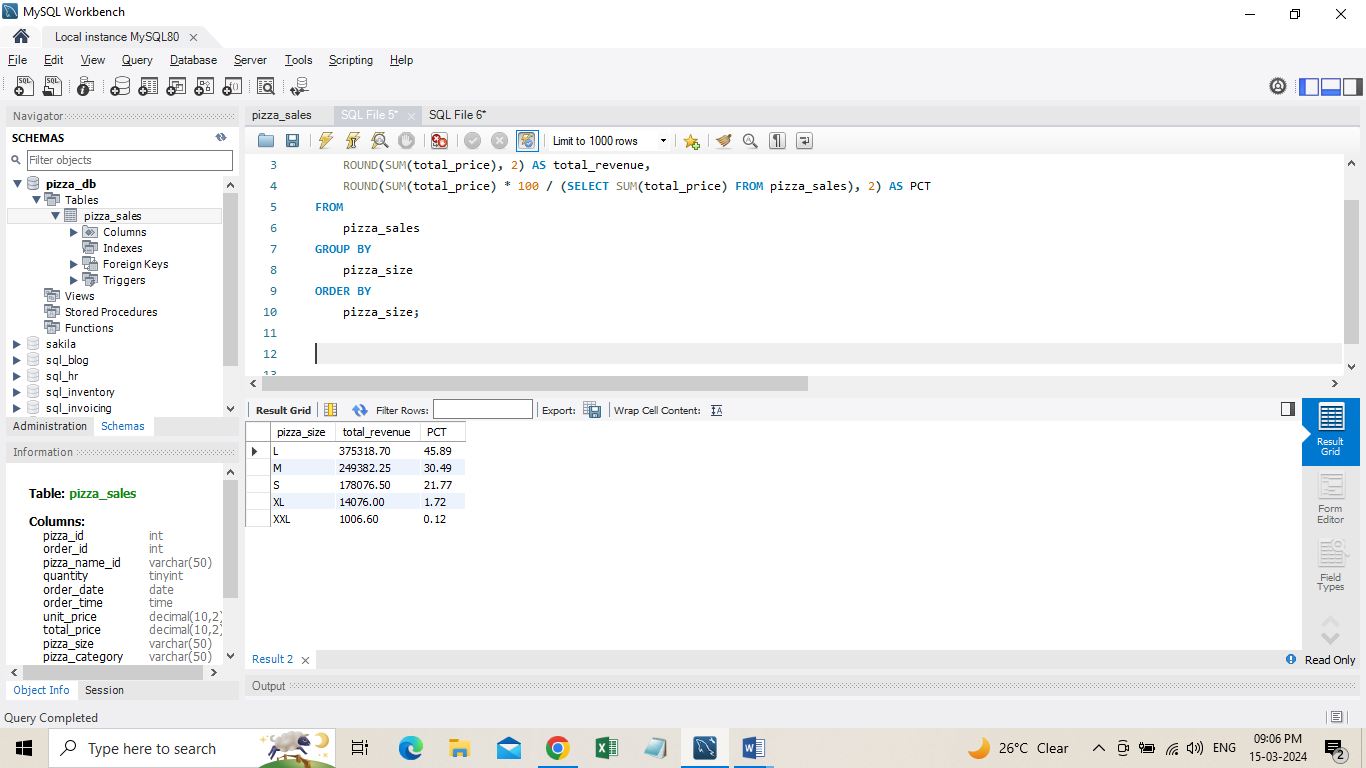
ROUND(SUM(total\_price), 2) AS total\_revenue,

ROUND(SUM(total\_price) \* 100 / (SELECT SUM(total\_price) FROM pizza\_sales), 2) AS PCT

FROM pizza\_sales

GROUP BY pizza\_size

ORDER BY pizza\_size;



**F. Total Pizzas Sold by Pizza Category**

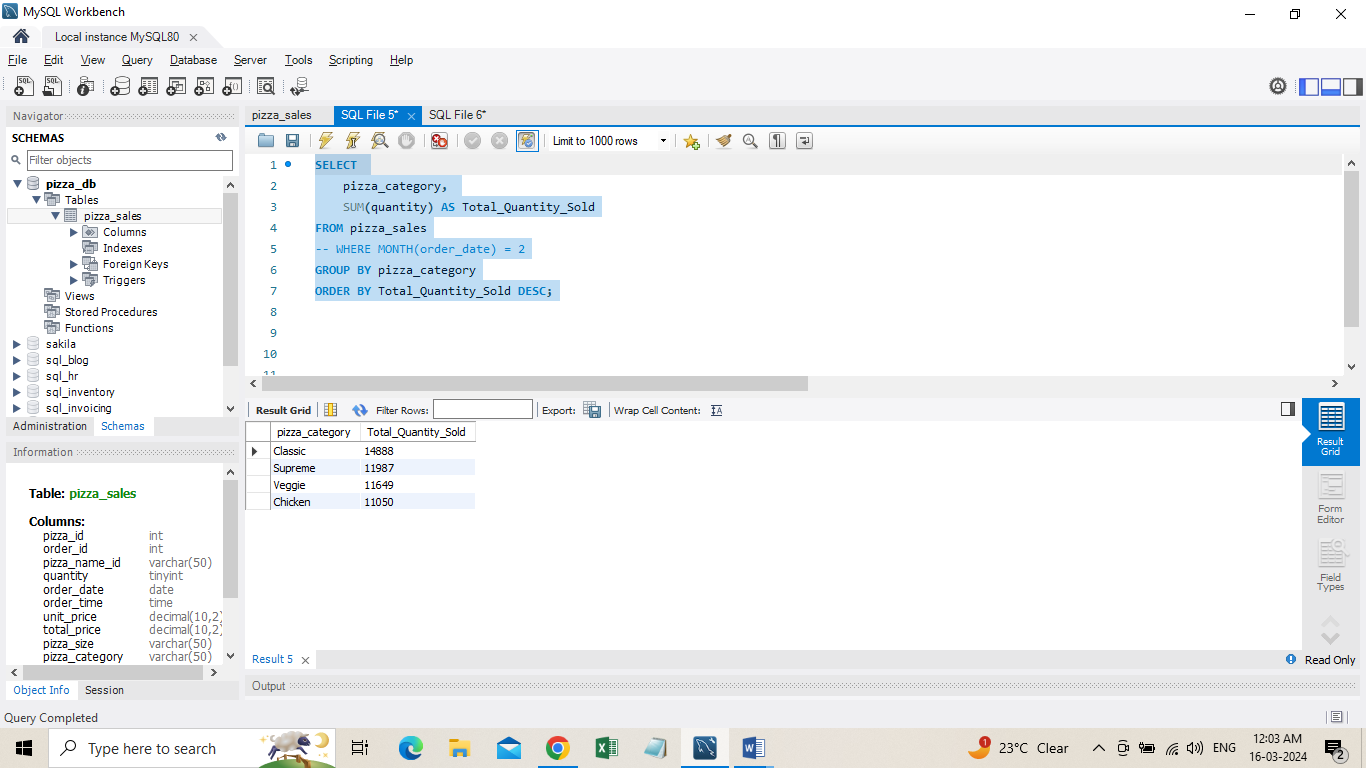
SELECT pizza\_category, SUM(quantity) AS Total\_Quantity\_Sold

FROM pizza\_sales

-- WHERE MONTH(order\_date) = 2

GROUP BY pizza\_category

ORDER BY Total\_Quantity\_Sold DESC;



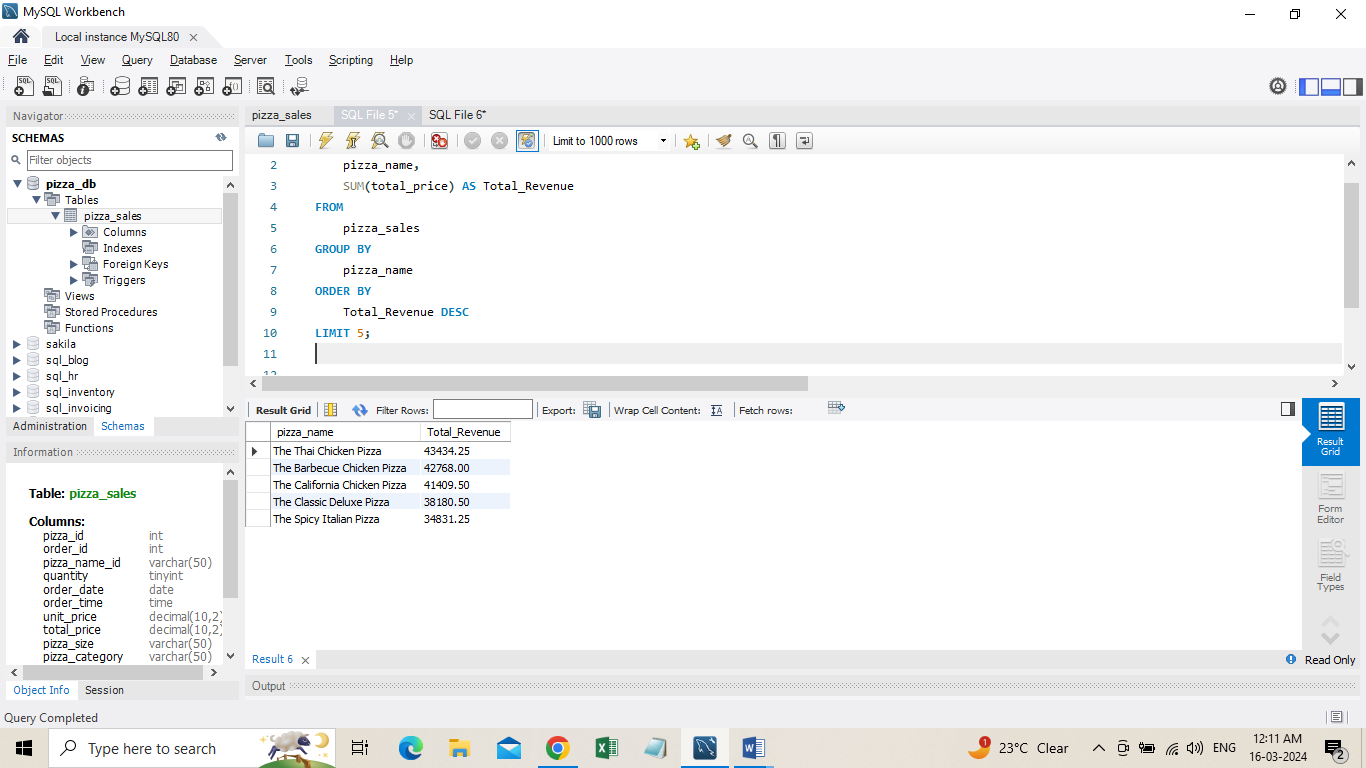
**G. Top 5 Pizzas by Revenue**

SELECT pizza\_name, SUM(total\_price) AS Total\_Revenue

FROM pizza\_sales

GROUP BY pizza\_name

ORDER BY Total\_Revenue DESC LIMIT 5;



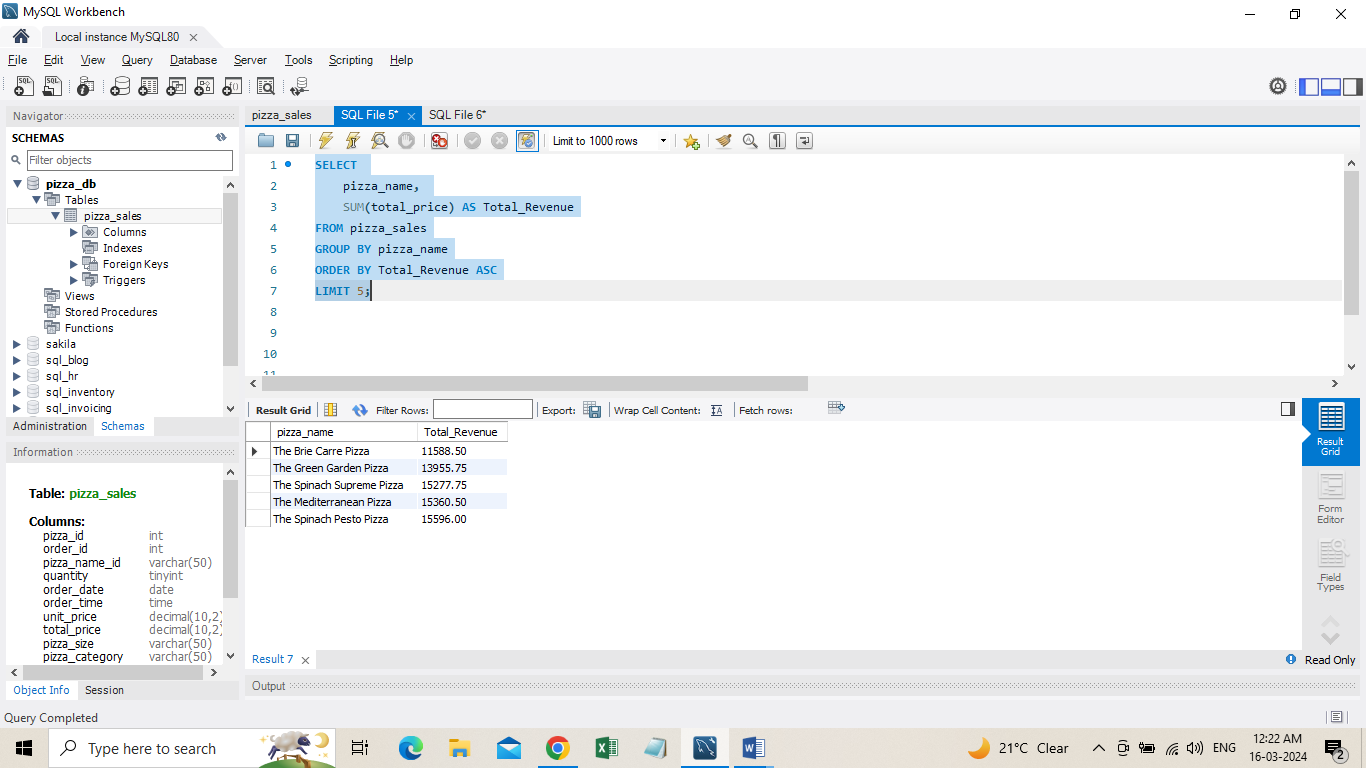
**H. Bottom 5 Pizzas by Revenue**

SELECT pizza\_name, SUM(total\_price) AS Total\_Revenue

FROM pizza\_sales

GROUP BY pizza\_name

ORDER BY Total\_Revenue ASC LIMIT 5;



**K. Top 5 Pizzas by Quantity**

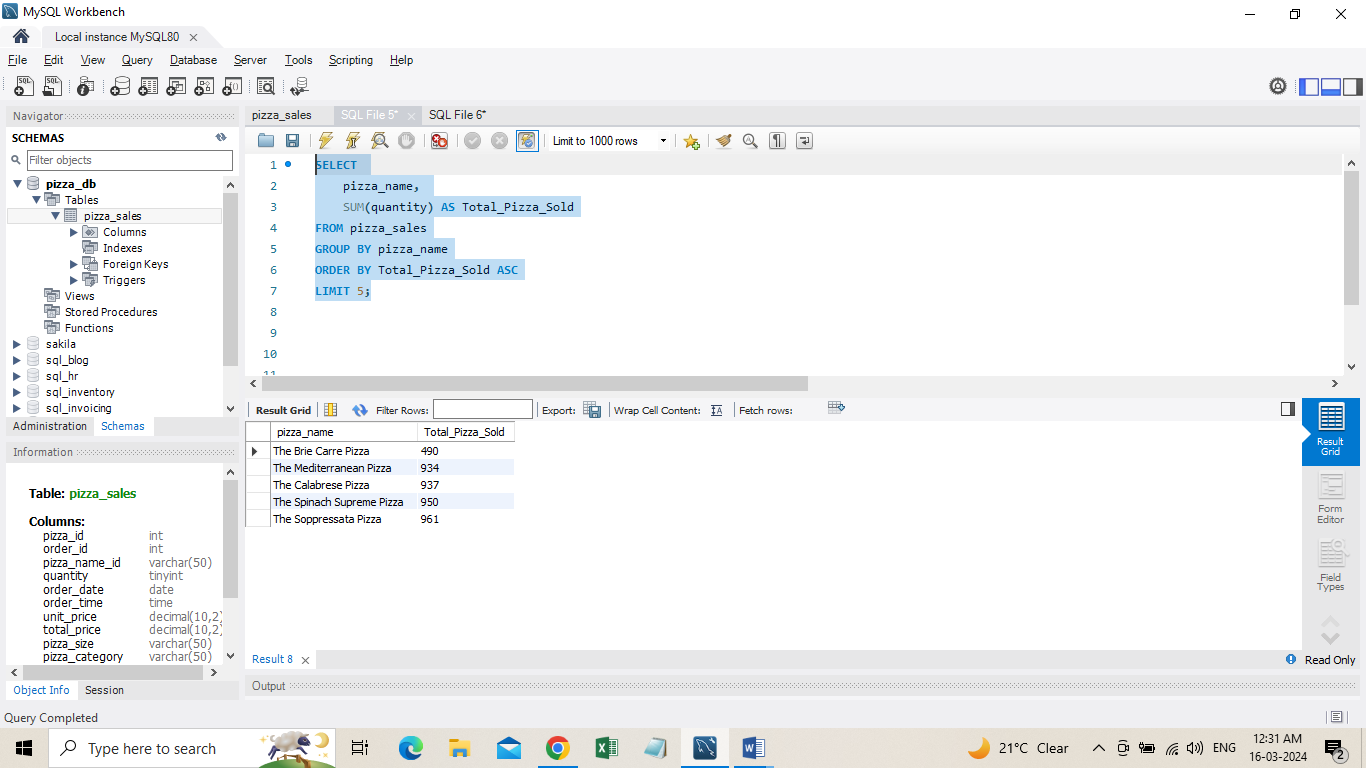
SELECT pizza\_name, SUM(quantity) AS Total\_Pizza\_Sold

FROM pizza\_sales

GROUP BY pizza\_name

ORDER BY Total\_Pizza\_Sold ASC

LIMIT 5;



**L. Top 5 Pizzas by Total Orders**

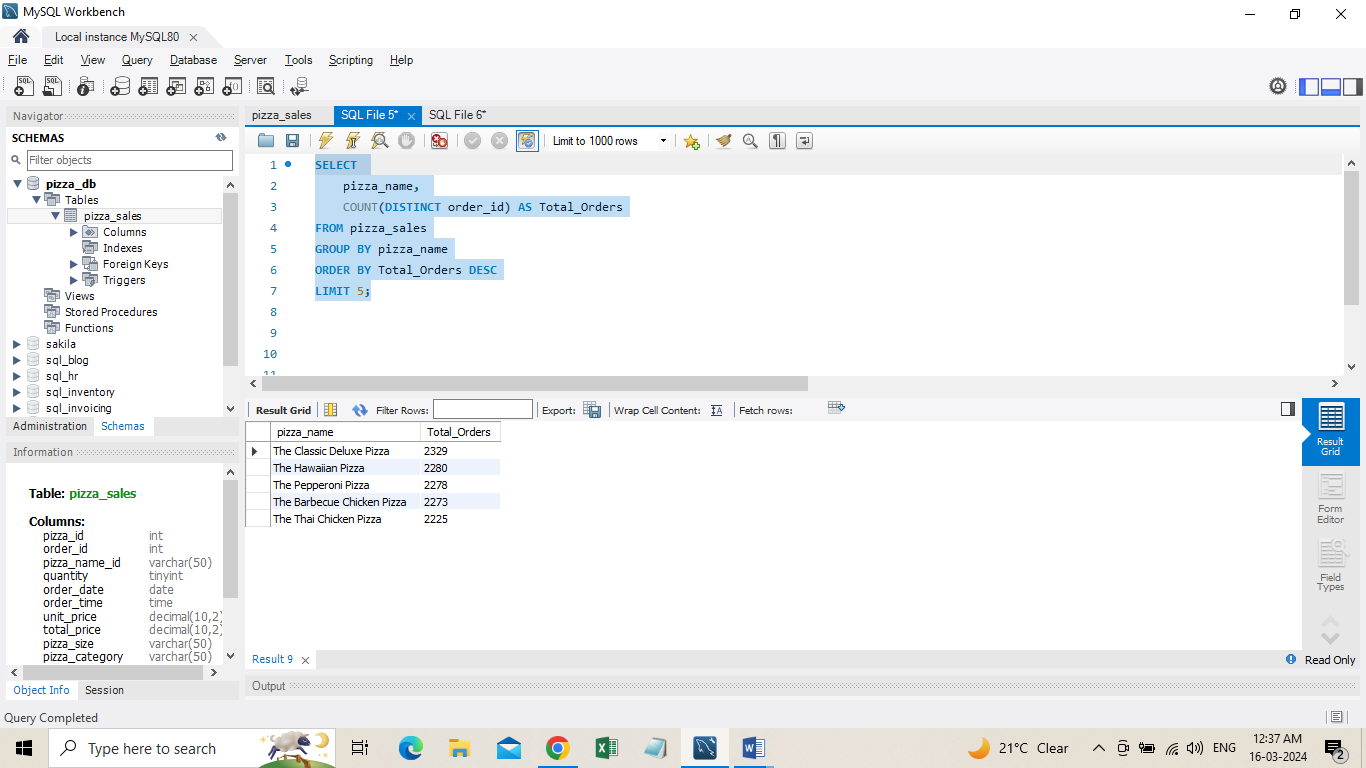
SELECT pizza\_name, COUNT(DISTINCT order\_id) AS Total\_Orders

FROM pizza\_sales

GROUP BY pizza\_name

ORDER BY Total\_Orders DESC

LIMIT 5;



**M. Bottom 5 Pizzas by Total Orders**

SELECT

pizza\_name,

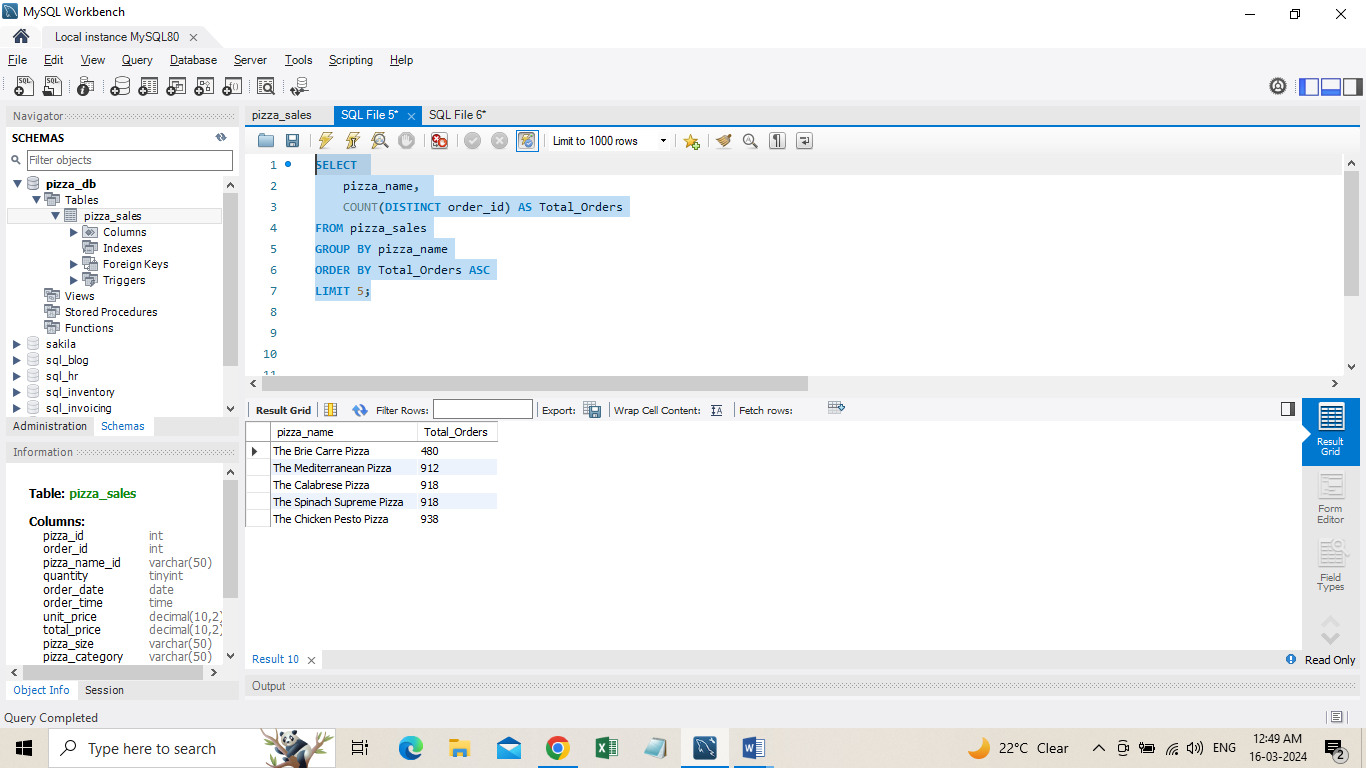
COUNT(DISTINCT order\_id) AS Total\_Orders

FROM pizza\_sales

GROUP BY pizza\_name

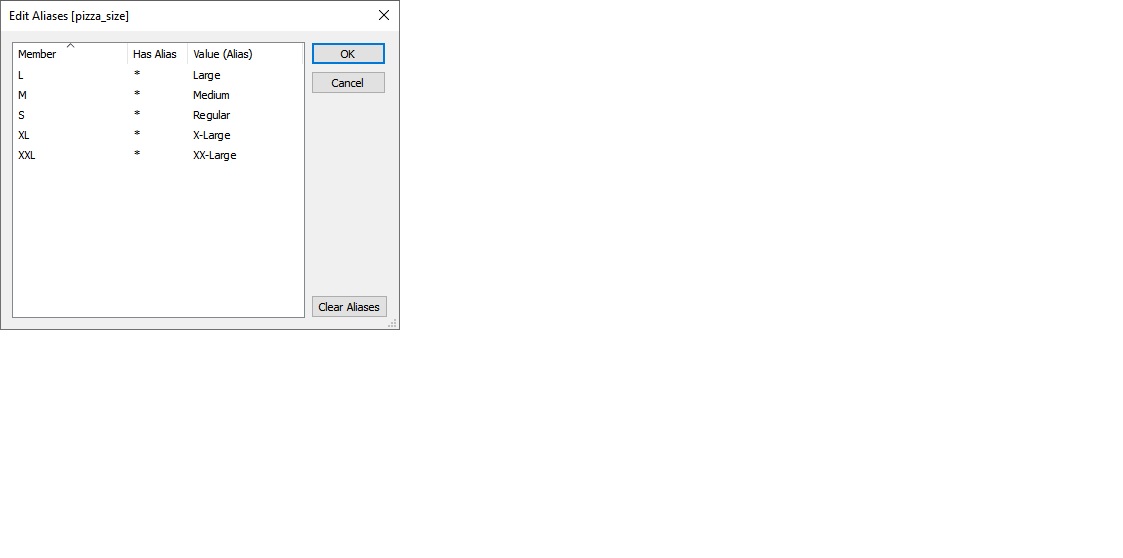
ORDER BY Total\_Orders ASC

LIMIT 5;



**Data Cleaning**

Pizza size category we have in our database is abbreviated and for dashboard we need it in full expanded form. For eg. L= large, M= medium etc, so we will create an alias to temporary change its name in required format.

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**Build Dashboard or a Report using Power BI**

Created a comprehensive dashboard in Power BI featuring key metrics and charts, including Hourly Trend, Weekly Trend, Sales by Category, Sales by Size, Total Pizzas Sold by Category, Top 5 Best Sellers, and Bottom 5 Worst Sellers.

KPI’S

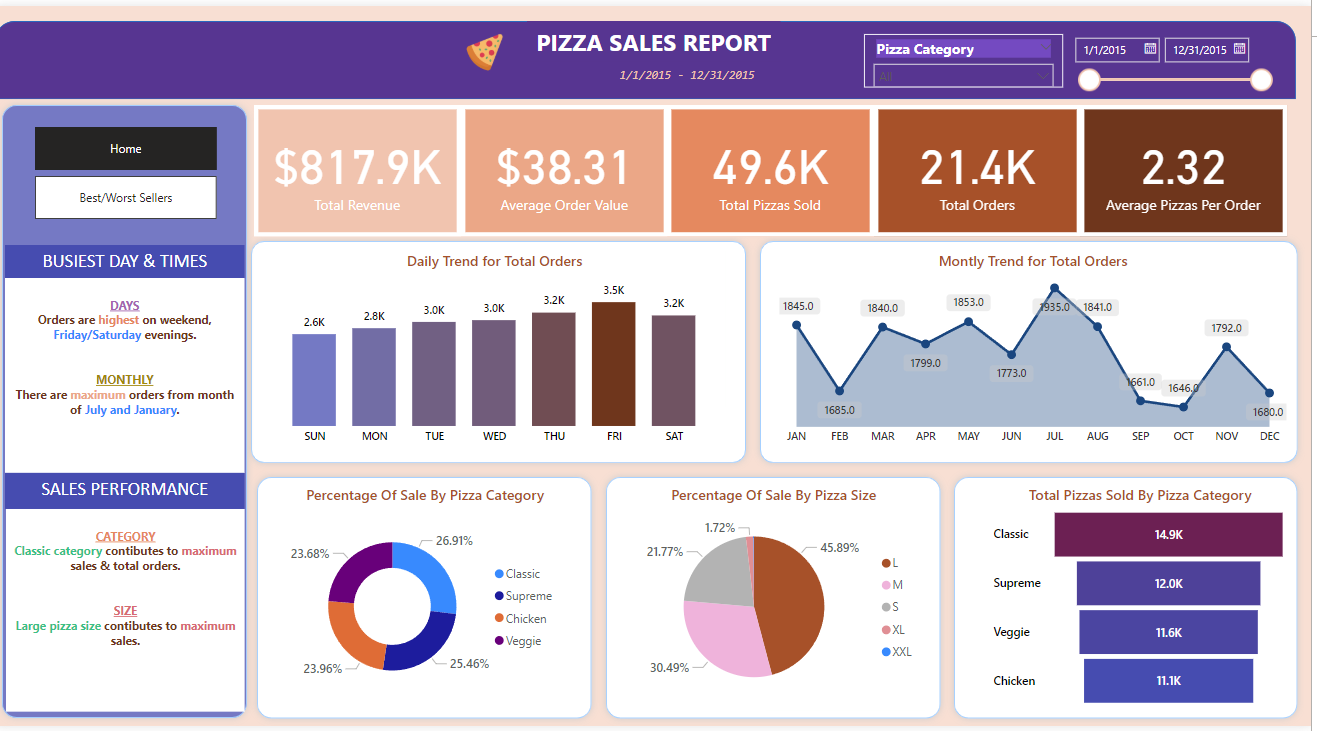
* **Total Revenue** SUM([total prices])
* **Total Orders** COUNTD([order id])
* **Average Order Value** [total revenue] / [total orders]
* **Total Pizzas Sold** SUM([quantity])
* **Average Pizzas Per Order** [total pizzas sold] / [total orders]

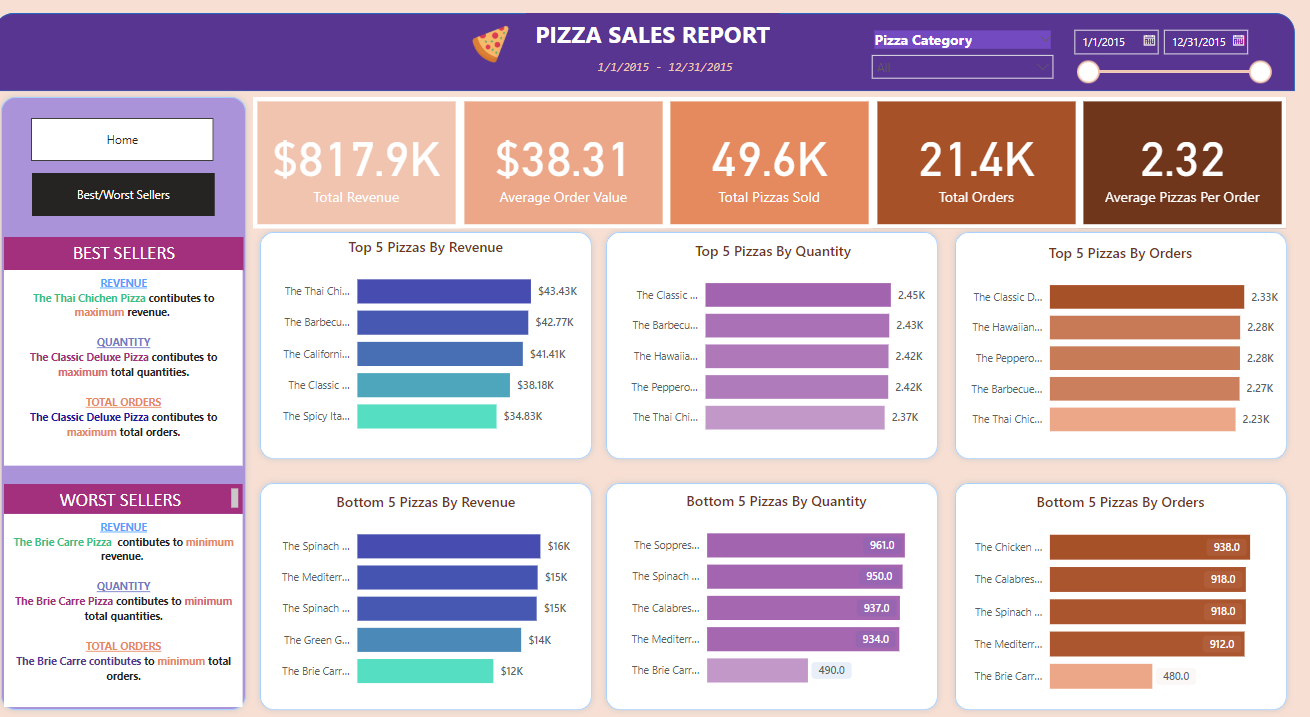


KEY INSIGHTS



DASHBOARD



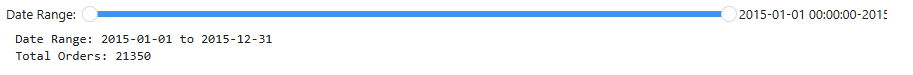


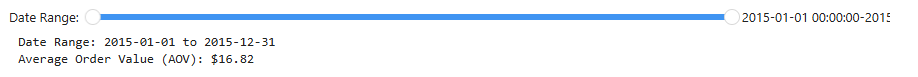
[**Data Analysis and visualization Jupyter Notebook, Python**](https://github.com/yogeshkasar778/Sales_insights_of_data_analysis-AtliQ_Hardware/edit/main/README.md#data-analysis-using-mysql-) **libraries such as pandas, matplotlib, seaborn, and plotly**

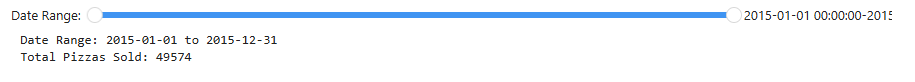
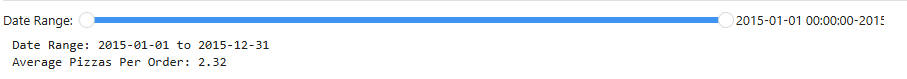
KPI’S

* Total Revenue
* Total Orders
* Average Order Value
* Total Pizzas Sold
* Average Pizzas Per Order



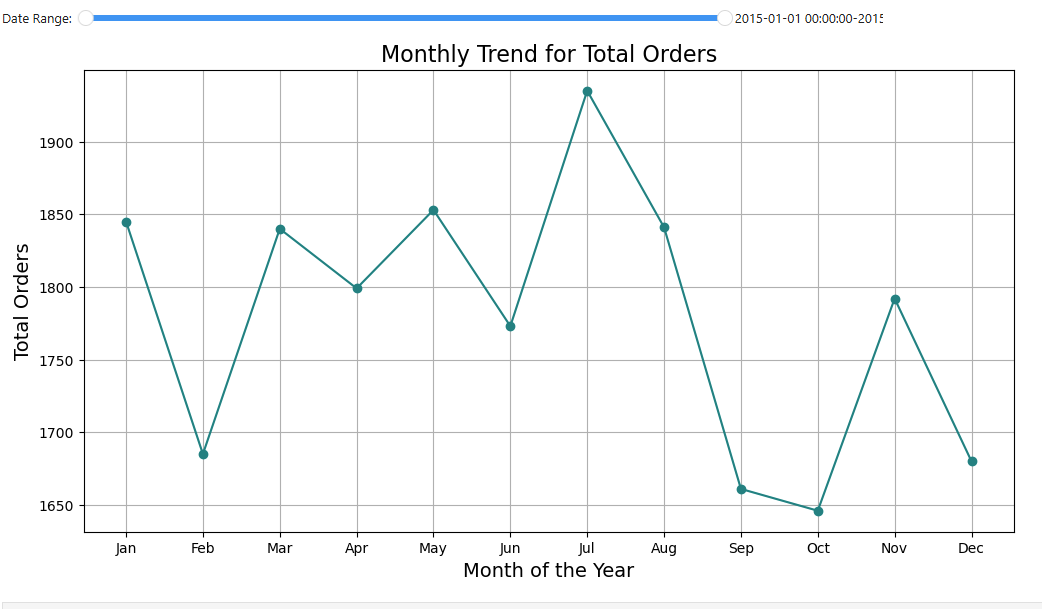






CHARTS

* Monthly Trend for Total Orders (Line Chart)
* Percentage of Sales by Pizza Category (Funnel Chart)
* Percentage of Sales by Pizza Size (Funnel Chart)
* Top 5 Best Sellers by Revenue, Total Quantity and Total Orders (Bar Chart)
* Bottom 5 Best Sellers by Revenue, Total Quantity and Total Orders (Bar Chart)

Total Pizzas Sold by Pizza Category (Funnel Chart)

**Tools, Software, and Libraries**

* **MySQL Workbench** **8.0 CE**

for data analysis and storage

* **Power BI Desktop**

for dashboard creation and visualization

* **Jupyter Notebook 7.2.2**

for data analysis and visualization

* **Excel version 2021**  
  for initial data exploration and manipulation

**References**

* <https://www.youtube.com/@datatutorials1>