Pizza Sales Analysis Report – Power BI

(Using SQL & Power BI)

1. Introduction

- Brief overview of the project.

  This report provides a comprehensive analysis of pizza sales data to uncover key business insights and drive data-driven decision-making. By leveraging SQL for data extraction and Power BI for visualization, we explore critical Key Performance Indicators (KPIs), sales trends, product performance, and customer behavior.

- Objective: Analyze pizza sales data to improve business decisions.
- Tools used: SQL (MySQL/SQL Server) + Power BI.

2. Steps in the Project

1. Define KPIs (Problem Statement).
2. Extract and clean raw data.
3. Analyze data in SQL (KPIs, trends, top/bottom performers).
4. Connect to Power BI, build dashboards.
5. Generate insights.

3. Problem Statement

KPIs Requirement

We need to calculate:

1. Total Revenue
2. Average Order Value
3. Total Pizzas Sold
4. Total Orders
5. Average Pizzas Per Order

4. Software Used

- SQL: MySQL / SQL Server (for data extraction).
- Power BI: For visualization.
- Power Query: For data cleaning.

5. Raw Data Overview

- Tables used: orders, pizza_details, sales.
- Key columns:
    - order_id, order_date, pizza_name, quantity, unit_price, total_price.

6.Import Data into SQL

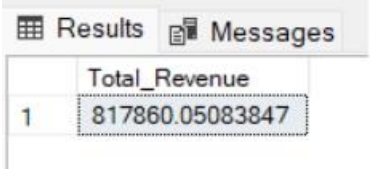
```
-- Create database & tables (example)
    CREATE DATABASE pizza_sales;
    USE pizza_sales;
-- Import data from CSV (syntax varies by SQL engine)
```

7. SQL Queries for KPIs

A. KPI's

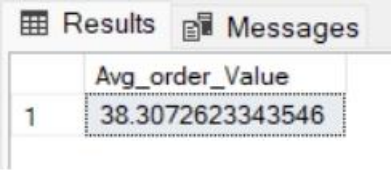
1. Total Revenue:

```
SELECT SUM(total_price) AS Total_Revenue FROM pizza_sales;
```



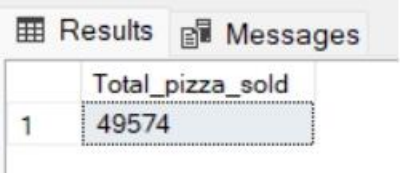
2. Average Order Value

SELECT (SUM(total_price) / COUNT(DISTINCT order_id)) AS Avg_order_Value FROM pizza_sales



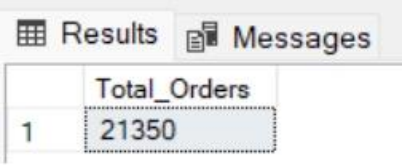
3. Total Pizzas Sold

SELECT SUM(quantity) AS Total_pizza_sold FROM pizza_sales



4. Total Orders

SELECT COUNT(DISTINCT order_id) AS Total_Orders FROM pizza_sales



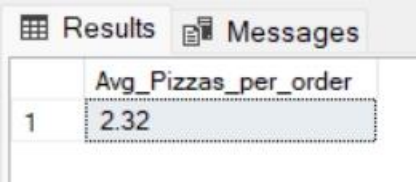
5. Average Pizzas Per Order

SELECT CAST(CAST(SUM(quantity) AS DECIMAL(10,2)) /

CAST(COUNT(DISTINCT order_id) AS DECIMAL(10,2)) AS DECIMAL(10,2))

AS Avg_Pizzas_per_order

FROM pizza_sales



B. Daily Trend for Total Orders

SELECT DATENAME(DW, order_date) AS order_day, COUNT(DISTINCT order_id) AS total_orders

FROM pizza_sales

GROUP BY DATENAME(DW, order_date)

Output:

Results Messages

	order_day	total_orders
1	Saturday	3158
2	Wednesday	3024
3	Monday	2794
4	Sunday	2624
5	Friday	3538
6	Thursday	3239
7	Tuesday	2973

C. Monthly Trend for Orders

select DATENAME(MONTH, order_date) as Month_Name, COUNT(DISTINCT order_id) as Total_Orders

from pizza_sales

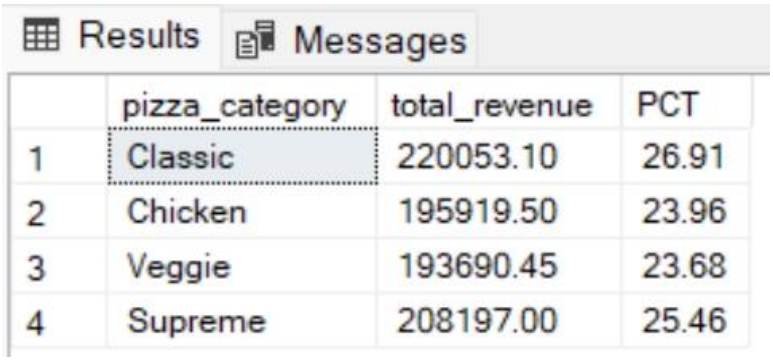
GROUP BY DATENAME(MONTH, order_date)*Output*

	Month_Name	Total_Orders
1	February	1685
2	June	1773
3	August	1841
4	April	1799
5	May	1853
6	December	1680
7	January	1845
8	September	1661
9	October	1646
10	July	1935
11	November	1792
12	March	1840

D. % of Sales by Pizza Category

```
SELECT pizza_category, CAST(SUM(total_price) AS DECIMAL(10,2)) as total_revenue,
CAST(SUM(total_price) * 100 / (SELECT SUM(total_price) from pizza_sales) AS DECIMAL(10,2)) AS PCT
FROM pizza_sales
GROUP BY pizza_category
```

Output



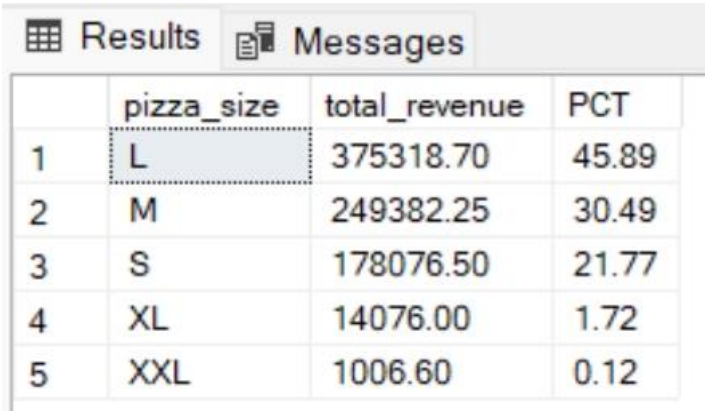
Results Messages

	pizza_category	total_revenue	PCT
1	Classic	220053.10	26.91
2	Chicken	195919.50	23.96
3	Veggie	193690.45	23.68
4	Supreme	208197.00	25.46

E. % of Sales by Pizza Size

```
SELECT pizza_size, CAST(SUM(total_price) AS DECIMAL(10,2)) as total_revenue,
CAST(SUM(total_price) * 100 / (SELECT SUM(total_price) from pizza_sales) AS DECIMAL(10,2)) AS PCT
FROM pizza_sales
GROUP BY pizza_size
ORDER BY pizza_size
```

Output



Results Messages

	pizza_size	total_revenue	PCT
1	L	375318.70	45.89
2	M	249382.25	30.49
3	S	178076.50	21.77
4	XL	14076.00	1.72
5	XXL	1006.60	0.12

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
```

Output

Results Messages

	pizza_category	Total_Quantity_Sold
1	Classic	14888
2	Supreme	11987
3	Veggie	11649
4	Chicken	11050

G. Top 5 Pizzas by Revenue

```
SELECT Top 5 pizza_name, SUM(total_price) AS Total_Revenue
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Revenue DESC
```

Results Messages

	pizza_name	Total_Revenue
1	The Thai Chicken Pizza	43434.25
2	The Barbecue Chicken Pizza	42768
3	The California Chicken Pizza	41409.5
4	The Classic Deluxe Pizza	38180.5
5	The Spicy Italian Pizza	34831.25

H. Bottom 5 Pizzas by Revenue

```
SELECT Top 5 pizza_name, SUM(total_price) AS Total_Revenue
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Revenue ASC
```

	pizza_name	Total_Revenue
1	The Brie Carre Pizza	11588.4998130798
2	The Green Garden Pizza	13955.75
3	The Spinach Supreme Pizza	15277.75
4	The Mediterranean Pizza	15360.5
5	The Spinach Pesto Pizza	15596

I. Top 5 Pizzas by Quantity

```
SELECT Top 5 pizza_name, SUM(quantity) AS Total_Pizza_Sold
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Pizza_Sold DESC
```

Output

	pizza_name	Total_Pizza_Sold
1	The Classic Deluxe Pizza	2453
2	The Barbecue Chicken Pizza	2432
3	The Hawaiian Pizza	2422
4	The Pepperoni Pizza	2418
5	The Thai Chicken Pizza	2371

J. Bottom 5 Pizzas by Quantity

```
SELECT TOP 5 pizza_name, SUM(quantity) AS Total_Pizza_Sold
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Pizza_Sold ASC
```

Output

	pizza_name	Total_Pizza_Sold
1	The Brie Carre Pizza	490
2	The Mediterranean Pizza	934
3	The Calabrese Pizza	937
4	The Spinach Supreme Pizza	950
5	The Soppressata Pizza	961

K. Top 5 Pizzas by Total Orders

```
SELECT Top 5 pizza_name, COUNT(DISTINCT order_id) AS Total_Orders
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Orders DESC
```

	pizza_name	Total_Orders
1	The Classic Deluxe Pizza	2329
2	The Hawaiian Pizza	2280
3	The Pepperoni Pizza	2278
4	The Barbecue Chicken Pizza	2273
5	The Thai Chicken Pizza	2225

L. Bottom 5 Pizzas by Total Orders

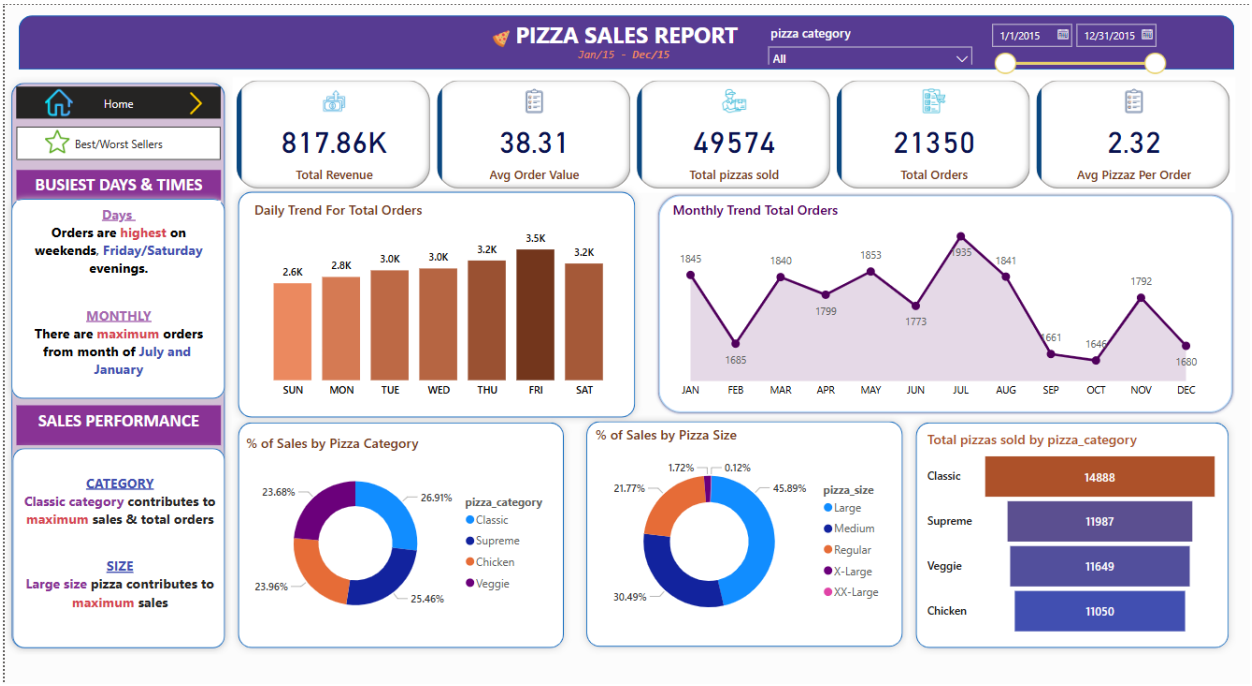
```
SELECT Top 5 pizza_name, COUNT(DISTINCT order_id) AS Total_Orders
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Orders ASC
```

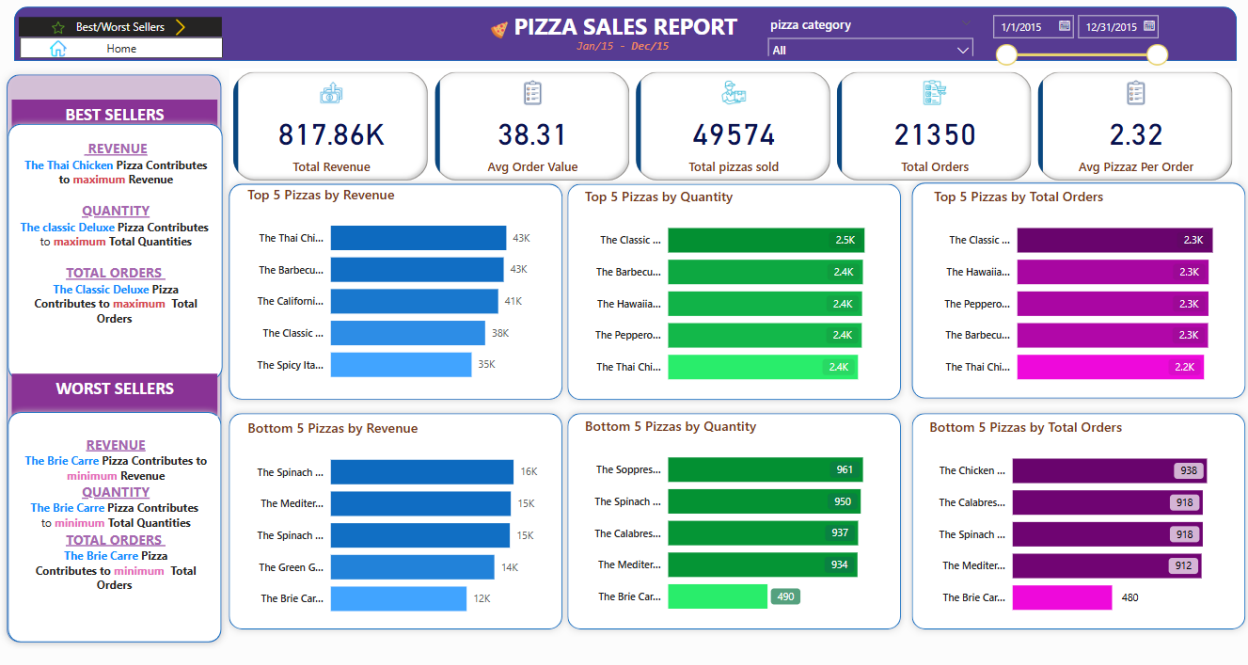
	pizza_name	Total_Orders
1	The Brie Carre Pizza	480
2	The Mediterranean Pizza	912
3	The Spinach Supreme Pizza	918
4	The Calabrese Pizza	918
5	The Chicken Pesto Pizza	938

8. Power BI Steps

1. Connect Power BI to SQL DB
2. Data Cleaning in Power Query
    - Remove duplicates.
    - Fix data types
3. Build KPIs in Power BI
    - Use Card Visuals for:
        - Total Revenue
        - Avg. Order Value
        - Total Pizzas Sold
4. Create Visualizations
5. Add Navigation Buttons
    - Use Bookmarks to switch between dashboards.

9. Pizza Sales- Dashboards





10. Conclusion

This Power BI dashboard provides actionable insights into pizza sales performance, highlighting key trends, top-selling items, and customer preferences. By analyzing KPIs, sales patterns, and product performance, the report helps identify opportunities for growth and efficiency.