# Sales Performance Analysis Dashboard - SQL & PowerBI

# **Project Overview**

This end-to-end analytics project demonstrates how I used SQL and Power BI to uncover valuable business insights from a pizza sales dataset. The objective was to support data-driven decision-making by developing a robust backend using SQL Server and an interactive, executive-level dashboard in Power BI.

The project replicates a real-world business intelligence environment where KPIs, operational trends, and product performance must be analyzed to support strategic planning.

# **Tools & Technologies**

#### Microsoft SQL Server

- Data Import and Storage:imported large CSV files into a structured database.
- Relational Modeling: Designed normalized tables to ensure data integrity and efficiency.
- SQL Queries: Wrote SQL scripts to compute KPIs and support report development.
- **Performance Metrics**: Developed queries for aggregation, filtering, and transformation to extract business-relevant metrics.

#### Power BI

- Data Integration: Connected Power BI directly to SQL Server for live data querying.
- Data Cleaning with Power Query: Applied transformations including data type correction, column splitting, null value handling, and filtering.
- **DAX Measures**: Created custom measures (e.g., Total Revenue, Average Order Value) using DAX for dynamic calculations.
- **Visualization Design**: Developed a professional dashboard with KPI cards, bar charts, line graphs, pie charts, funnel visuals, and slicers to enable data exploration.

# **Project Objective**

To transform raw pizza sales data into a decision-ready format by:

- Defining and calculating key performance indicators (KPIs)
- Highlighting patterns in customer purchasing behavior
- Identifying top and bottom-performing products
- Enabling data exploration through visuals and filters

# **Key Performance Indicators (KPIs)**

Each metric was implemented with optimized SQL queries and supported by Power BI visuals.

#### 1. Total Revenue

#### SQL:

```
SELECT ROUND(SUM(total_price),2) AS Total_Revenue FROM pizza_sales

Total_Revenue
1 817860.05
```

**Result:** \$817,860.05 **Business Value:** Aids in revenue tracking and financial health assessment.

## 2. Average Order Value (AOV)

#### SQL:

```
ROUND(SUM(total_price)/count(DISTINCT order_id),2)
AS Average_Order_Value
FROM pizza_sales

Average_Order_Value
1 38.31
```

Result: \$38.31 Business Value: Helps assess pricing strategy and upselling effectiveness.

#### 3. Total Pizzas Sold

SQL:

```
SELECT SUM(quantity) AS Total_Pizza_Sales from pizza_sales

Total_Pizza_Sales

1 49574
```

Result: 49,574 pizzas Business Value: Useful for supply chain and inventory planning.

#### 4. Total Orders

#### SQL:

```
SELECT COUNT (DISTINCT order_id) AS Total_Orders FROM pizza_sales

Total_Orders
1 21350
```

**Result:** 2,131 orders **Business Value:** Supports operations, marketing ROI, and customer engagement strategies.

#### 5. Average Pizzas per Order

#### SQL:

```
CAST(CAST(SUM(Quantity) AS DECIMAL(10,2)) /
CAST(COUNT(DISTINCT order_id) AS DECIMAL(10,2)) AS decimal(10,2) )
AS Average_Pizzas_Per_Order
FROM
pizza_sales;

Average_Pizzas_Per_Order

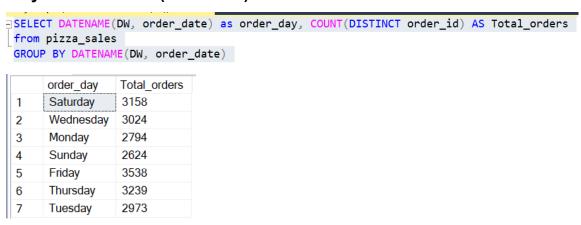
1 2.32
```

**Result:** 23.27 pizzas/order **Business Value:** Helps design value meal bundles and combo offers.

# **Power BI Dashboards & Visuals**

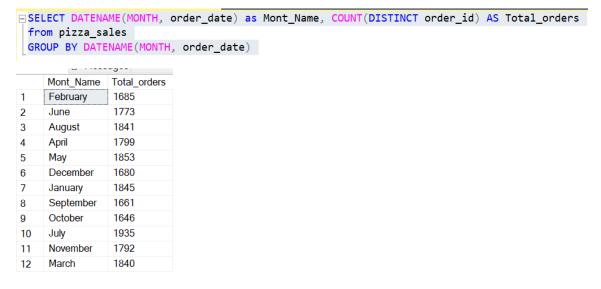
Each visual was designed to offer strategic insights while allowing user interactivity through filters.

## 1. Daily Order Trends (Bar Chart)



- Insight: Friday had the highest number of orders; Monday the lowest.
- Use Case: Optimize staffing and promotion planning.

#### 2. Monthly Order Trends (Line Chart)



- **Insight:** Highest order volumes observed in July and December.
- Use Case: Supports seasonal planning and targeted campaigns.

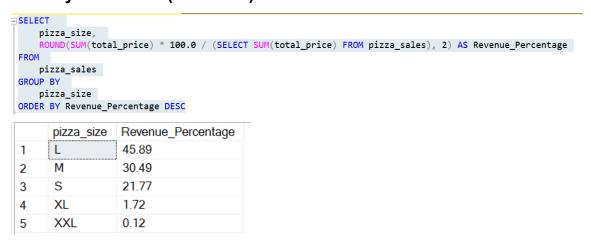
## 3. Sales by Pizza Category (Pie Chart)

```
DELECT
    pizza_category,
    ROUND(SUM(total_price) * 100.0 / (SELECT SUM(total_price) FROM pizza_sales), 2) AS Revenue_Percentage
FROM
    pizza_sales
GROUP BY
    pizza_category;
```

	pizza_category	Revenue_Percentage
1	Classic	26.91
2	Chicken	23.96
3	Veggie	23.68
4	Supreme	25.46

- **Insight:** Classic pizzas generated the most revenue (around 50%).
- Use Case: Focus campaigns on best-performing categories.

## 4. Sales by Pizza Size (Pie Chart)



- **Insight:** Large pizzas contributed the majority of sales (~58%).
- Use Case: Prioritize inventory and packaging for popular sizes.

# 5. Revenue by Pizza Category (Funnel Chart)

```
SELECT

pizza_category,

ROUND(SUM(total_price),2) AS total_price_per_category

FROM pizza_sales

GROUP BY

pizza_category
```

	pizza_category	total_price_per_category
1	Classic	220053.1
2	Chicken	195919.5
3	Veggie	193690.45
4	Supreme	208197

• **Insight:** Revenue distribution highlights strong preference for Classic over Supreme and Veggie.

# 6. Top 5 Best Sellers (Bar Charts)

```
TOP 5 pizza_name,
ROUND(SUM(total_price),2) AS total_revenue
FROM pizza_sales
GROUP BY
pizza_name
ORDER BY
total_revenue DESC
```

	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

• Insight: These should be promoted heavily and kept in stock.

# 7. Bottom 5 Worst Sellers (Bar Charts)

```
TOP 5 pizza_name,
SUM(quantity) AS total
FROM pizza_sales
GROUP BY
pizza_name
ORDER BY
total DESC
```

	pizza_name	total
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

Insight: Consider repositioning, bundling, or discontinuing.

# **Project Results & Learnings**

- Developed a clean, transformed dataset from raw CSVs into a report-ready format
- Automated real-time metrics using SQL and Power BI integration
- Created dynamic dashboards for both high-level summaries and detailed drill-downs
- Improved data storytelling by designing visuals that emphasize clarity and business relevance

# **Future Enhancements**

- Customer Segmentation: Add demographic data to personalize insights
- Time Series Forecasting: Predict future sales with machine learning models
- Alert System: Trigger email/notification alerts for KPI anomalies

# **Summary for Portfolio**

This project demonstrates:

- Proficiency in SQL for data modeling and KPI extraction
- Power BI expertise in dashboard design and DAX implementation
- Ability to turn raw data into actionable business recommendations