PIZZA SALES ANALYSIS

USING MS SQL SERVER AND POWER BI

- THIS PROJECT ANALYZES RESTAURANT SALES DATA TO UNCOVER TRENDS, IDENTIFY PRODUCT PERFORMANCE, AND GENERATE ACTIONABLE BUSINESS INSIGHTS USING SQL AND POWER BI.

OBJECTIVE

- To analyze pizza sales data and uncover customer ordering patterns.
- To evaluate product performance across categories, sizes, and individual pizzas.
- To identify key revenue drivers and low-performing items.
- To support data-driven decisions through clear insights and visual dashboards.

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:

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

SOFTWARE USED

MICROSOFT SQL SERVER

SQL Server was used to extract and analyze the pizza sales data through structured queries. It helped calculate key metrics like total orders, revenue, average pizzas per order, and perform trend analysis using date functions and aggregations.

POWER BI

Power BI was used to build an interactive dashboard that visualizes KPIs, sales trends, and top- and bottom-performing pizzas. With data modeling and DAX measures, it enabled dynamic filtering and clear insights for decision-making.

GOALS

SQL QUERIES

```sql
--//Total Revenue
SELECT SUM(total_price) AS total_revenue FROM pizza_sales;
--//Average Order Value
SELECT SUM(total_price) / COUNT(DISTINCT order_id) AS Avg_ord_value FROM pizza_sales;
--//Total Quantity of Pizzas Sold
SELECT SUM(quantity) AS total_pizza_sold FROM pizza_sales;
--//Total Orders Placed
SELECT COUNT(DISTINCT order_id) AS Total_order_placed FROM pizza_sales;
```

RESULTS:

	total_revenue
1	817860.05083847

Avg_ord_value
38.307262343546

	total_pizza_sold
1	49574

	Total_order_placed
1	21350

```sql
--//Average Pizzas per Order
SELECT CAST(SUM(quantity) * 1.0 / COUNT(DISTINCT order_id) AS DECIMAL(10,2))
  AS average_pizza_sold_per_order
FROM pizza_sales;
--//Day-wise Order Trends
SELECT DATENAME(dw, order_date) AS order_day,
COUNT(DISTINCT order_id) AS total_order
FROM pizza_sales
GROUP BY DATENAME(dw, order_date);
```

RESULTS:

average_pizza_sold_pre_order
2.32

DAILY ORDERS

Results | Messages

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

```sql
--//Month-wise Order Trends
SELECT DATENAME(month, order_date) AS Months,
COUNT(DISTINCT order_id) AS total_order
FROM pizza_sales
GROUP BY DATENAME(month, order_date)
ORDER BY total_order DESC;
--//Revenue % by Category
SELECT pizza_category,
CAST(SUM(total_price) AS DECIMAL(10,2)) AS total_revenue,
CAST(SUM(total_price) * 100.0 / (SELECT SUM(total_price) FROM pizza_sales) ,
FROM pizza_sales
GROUP BY pizza_category;
```

RESULTS:

MONTH TRENDS

Results | Messages

	Months	total_order
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

Revenue % by Category

	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

```sql
--//Revenue % by Size
SELECT pizza_size,
CAST(SUM(total_price) AS DECIMAL(10,2)) AS total_revenue,
CAST(SUM(total_price) * 100.0 / (SELECT SUM(total_price) FROM pizza_sales) AS DECIMAL(10,2)) AS PCT
FROM pizza_sales
GROUP BY pizza_size
ORDER BY pizza_size;
--//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:

Revenue % by Size

	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

Top 5 Pizzas by Revenue

	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

```sql
--//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;
--//Top 5 Pizzas by Quantity
SELECT TOP 5 pizza_name, SUM(quantity) AS total_quantity
FROM pizza_sales
GROUP BY pizza_name
ORDER BY total_quantity DESC;
```

RESULTS:

Bottom 5 Pizzas by Revenue

pizza_name	total_revenue
The Brie Carre Pizza	11588.4998130798
The Green Garden Pizza	13955.75
The Spinach Supreme Pizza	15277.75
The Mediterranean Pizza	15360.5
The Spinach Pesto Pizza	15596

Top 5 Pizzas by Quantity

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

```sql
--//Bottom 5 Pizzas by Quantity
SELECT TOP 5 pizza_name, SUM(quantity) AS total_quantity
FROM pizza_sales
GROUP BY pizza_name
ORDER BY total_quantity ASC;
--//Total Quantity Sold by Category
SELECT pizza_category, SUM(quantity) AS Total_Quantity_Sold
FROM pizza_sales
GROUP BY pizza_category
ORDER BY Total_Quantity_Sold DESC;
```

RESULTS:

Bottom 5 Pizzas by Quantity

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

Total Quantity Sold by Category

pizza_category	Total_Quantity_Sold
Classic	14888
Supreme	11987
Veggie	11649
Chicken	11050

```sql
--//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;
--//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;
```

RESULTS:

Top 5 Pizzas by total orders

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

Bottom 5 Pizzas by Total Orders

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

KEY INSIGHTS

- The total number of orders placed is 21,350 (from DISTINCT order_id).
- Total revenue generated from pizza sales is 817,860.05.
- The most common pizza size ordered is Large (L) based on revenue contribution.
- The Classic Deluxe, Barbecue Chicken, and Hawaiian pizzas are among the top-ordered items.
- The Classic category has the highest quantity sold, followed by Supreme.
- The busiest ordering window is between 12:00 PM to 8:00 PM based on hourly trend analysis.
- The average number of pizzas sold per order is 2.32 (from AVG pizzas per order query).
- Top 5 pizzas by revenue include premium items such as the Thai Chicken Pizza, BBQ Chicken Pizza, and California Chicken Pizza.
- Category-wise revenue share is: Classic (26.91%), Supreme (25.46%), Chicken (23.96%), and Veggie (23.68%).
- Monthly trends indicate clear seasonal demand patterns, with certain months receiving significantly higher orders.

POWER BI ANALYSIS

PIZZA SALES REPORT

JAN/15-DEC/15

pizza_category: All

01-01-2015 — 31-12-2015

Home

Best & worst sellers

BUSIEST DAYS & TIME

DAYS

Order are **highest** on weekends . **Friday/Saturday** evening.

MONTHLY

There are **maximum orders** from month of **July and January**

SALES PERFORMANCE

CATEGORY

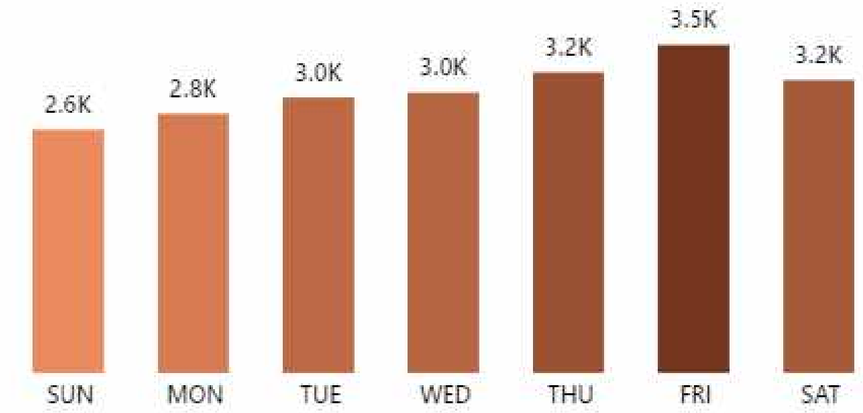
Classic Category contributes to **maximum** sales & total orders

SIZE

Large size pizza contributes to **maximum** sales

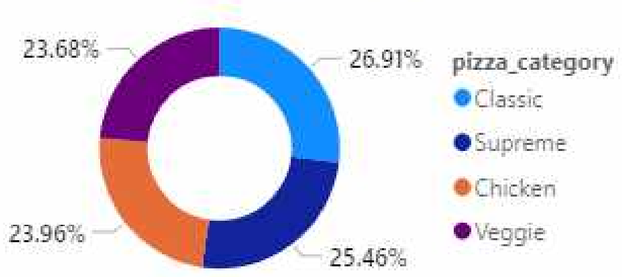
817.86K	38.31	49574	21350	2.32
TOTAL_REVENUE	AVG_ORDERS_val...	TOTAL_PIZZA_SO...	TOTAL_ORDERS	AVG_PIZZA_SOL...

Daily Trend for Total orders

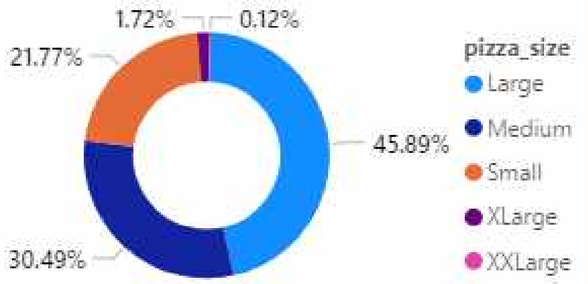


Monthly trend for total orders

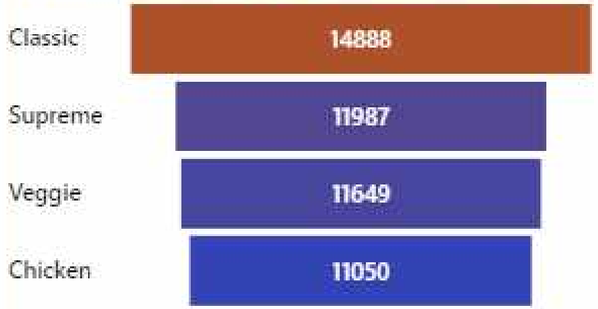
% OF Sales by Pizza_Category



% OF Sales by Pizza_Size



TOTAL_PIZZA_SOLD by Pizza_Category



PIZZA SALES REPORT

JAN/15-DEC/15

pizza_category: All

01-01-2015 — 31-12-2015

Home

Best & worst sellers

BEST SELLERS

REVENUE

The Thai Chicken Pizza contributes to maximum Revenue

QUANTITY

The Classic Deluxe Pizza Contributes to maximum Total quantities

Total orders

The Classic deluxe Pizza Contributes to maximum Total order

Worst Sellers

REVENUE

The Brie Carre Pizza contributes to minimum Revenue

QUANTITY

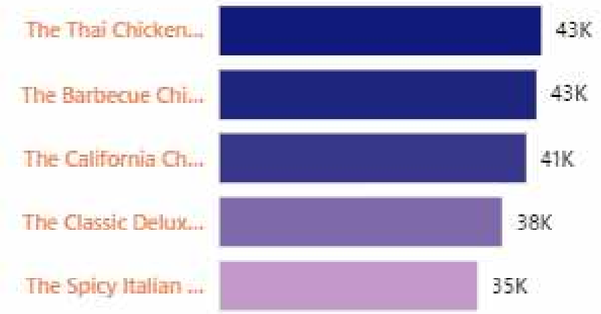
The Brie Carre Pizza Contributes to minimum Total quantities

Total orders

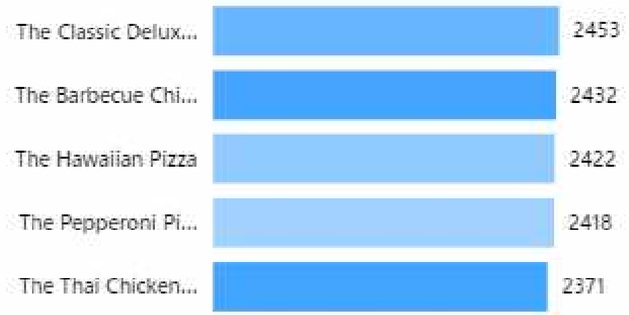
The Brie Carre Pizza Contributes to minimum Total order

817.86K	38.31	49574	21350	2.32
TOTAL_REVENUE	AVG_ORDERS_val...	TOTAL_PIZZA_SO...	TOTAL_ORDERS	AVG_PIZZA_SOL...

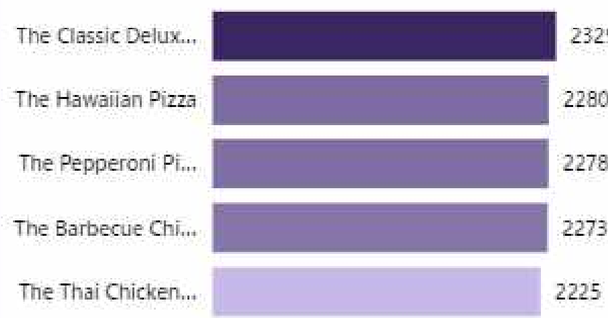
Top 5 best pizzas by Revenue



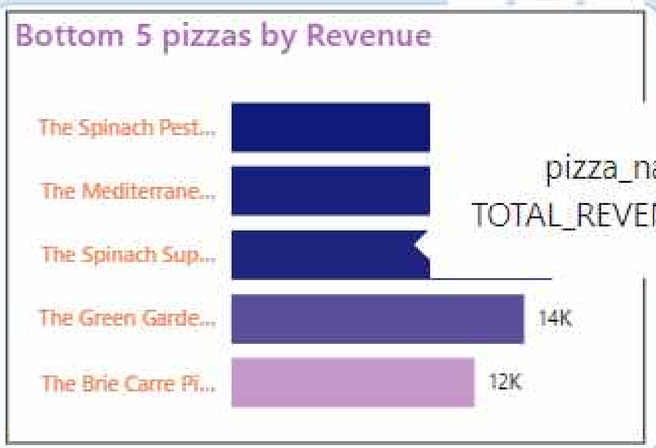
Top 5 best pizzas by Quantity



Top 5 best pizzas by Total Orders



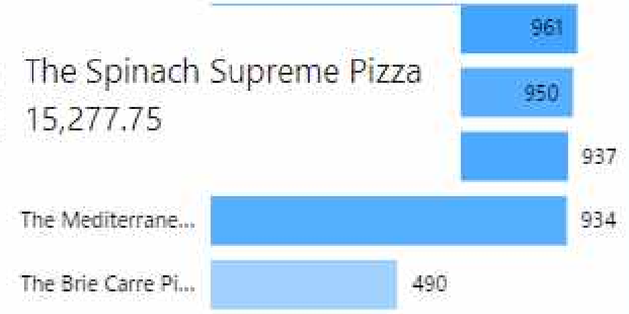
Bottom 5 pizzas by Revenue



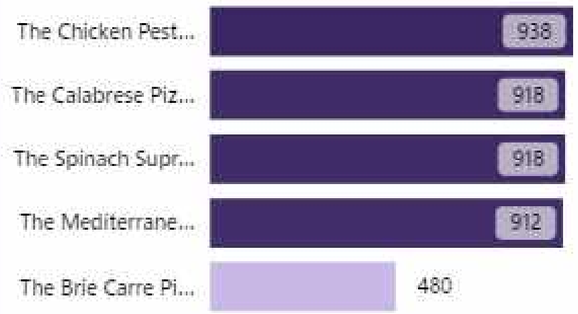
pizza_name The Spinach Supreme Pizza

TOTAL_REVENUE 15,277.75

Bottom 5 pizzas by Quantity



Bottom 5 pizzas by Total Orders



SUGGESTIONS TO BOOST SALES

- **Boost High-Performing Categories:**

Classic and Supreme contribute the highest revenue—add new variants, combos, and premium editions to maximize sales.

- **Leverage Popular Pizza Sizes:**

Large (L) is the most ordered size—launch size-focused deals like upsizing offers, family combos, and special discounts.

- **Promote Top-Selling Pizzas:**

Highlight Thai Chicken, Barbecue Chicken, and California Chicken pizzas in promotions and app placements to increase visibility and demand.

- **Improve Low-Performing Items:**

Use limited-time discounts, better photos, or bundling strategies to uplift bottom 5 pizzas based on revenue and orders.

- **Use Trend Insights to Time Offers:**

Launch targeted deals during peak hours (12 PM–8 PM) and high-performing days/months to maximize order frequency and revenue.

OVERALL IMPACT

REVENUE GROWTH POTENTIAL:

IMPLEMENTING THESE DATA-DRIVEN STRATEGIES CAN INCREASE OVERALL REVENUE BY 20–25%, BASED ON IMPROVEMENTS IN TOP-SELLING CATEGORIES, SIZE-BASED PERFORMANCE, AND OPTIMIZED PEAK-HOUR SALES.

PROJECTED SALES INCREMENT:

ACCORDING TO SQL ORDERING TRENDS AND POWER BI DAILY–MONTHLY PATTERNS, THESE ACTIONS CAN GENERATE APPROXIMATELY 8,000–12,000 ADDITIONAL ORDERS PER YEAR, DEPENDING ON EXECUTION AND CONSISTENCY OF PROMOTIONS.

CONCLUSION

This analysis provided a clear understanding of sales performance, customer ordering patterns, and product trends through SQL-based exploration and Power BI visualization. Key KPIs such as total revenue, total orders, average order value, and product-wise performance helped identify top contributors as well as underperforming items. The daily and monthly trends revealed peak demand periods, supporting better planning and forecasting. Overall, the insights gained from this project can help optimize the menu, improve marketing strategies, and support data-driven business decisions.