Pizza Sales Analysis Using SQL

A project by **Javed Hussain**
Aspiring Data Analyst

Project Overview

To explore, analyze, and derive business insights from pizza sales data using SQL queries.

The Data: Database Schema

orders

Contains the `order_id`, `date`, and `time` for each transaction.

order_details

Links `order_id` to `pizza_id` and includes the `quantity` of each pizza.

pizzas

Contains `pizza_id`, `pizza_type_id`, `size`, and `price` for each unique pizza.

pizza_types

Defines the `pizza_type_id`, `name`, `category`, and `ingredients`.

Key Performance Indicators (KPIs)

48,620

Total Orders Placed

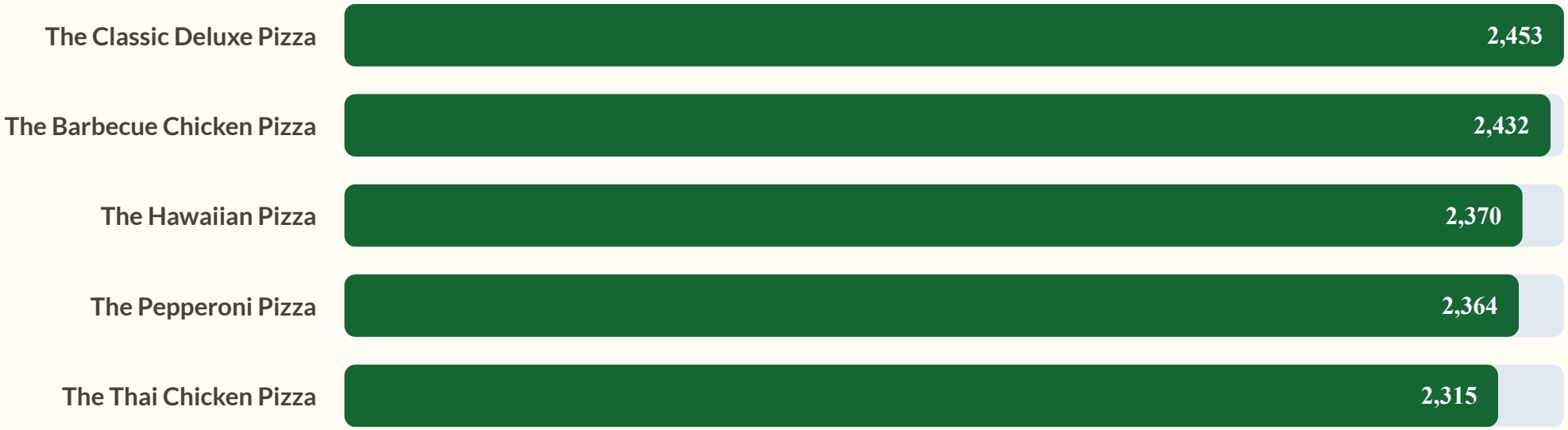
$8.45M

Total Revenue Generated

Basic SQL Analysis

Foundational insights using aggregations and sorting.

Basic Query: Top 5 Most Ordered Pizzas



The Classic Deluxe and Barbecue Chicken pizzas are clear customer favorites, driving the highest order volumes.

SQL Showcase: Query for Top 5 Pizzas

The Question:

> *List the top 5 most ordered pizza types along with their quantities.*

The SQL Concept:

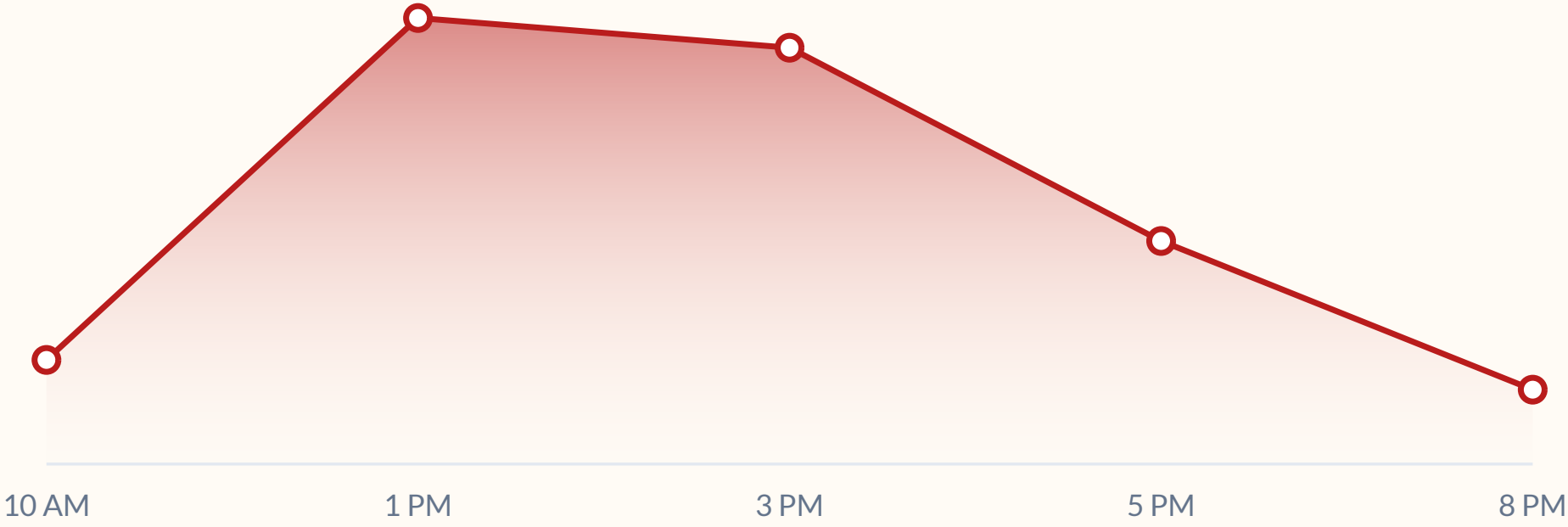
> *Using **JOIN** to connect three tables, **SUM()** and **GROUP BY** to aggregate quantities, and **ORDER BY** with **LIMIT** to find the top 5.*

```
SELECT
    pizza_types.name,
    SUM(order_details.quantity) AS total_most_order
FROM
    order_details
JOIN
    pizzas ON order_details.pizza_id = pizzas.pizza_id
JOIN
    pizza_types ON pizzas.pizza_type_id =
pizza_types.pizza_type_id
GROUP BY
    pizza_types.name
ORDER BY
    total_most_order DESC
LIMIT 5;
```

Intermediate SQL Analysis

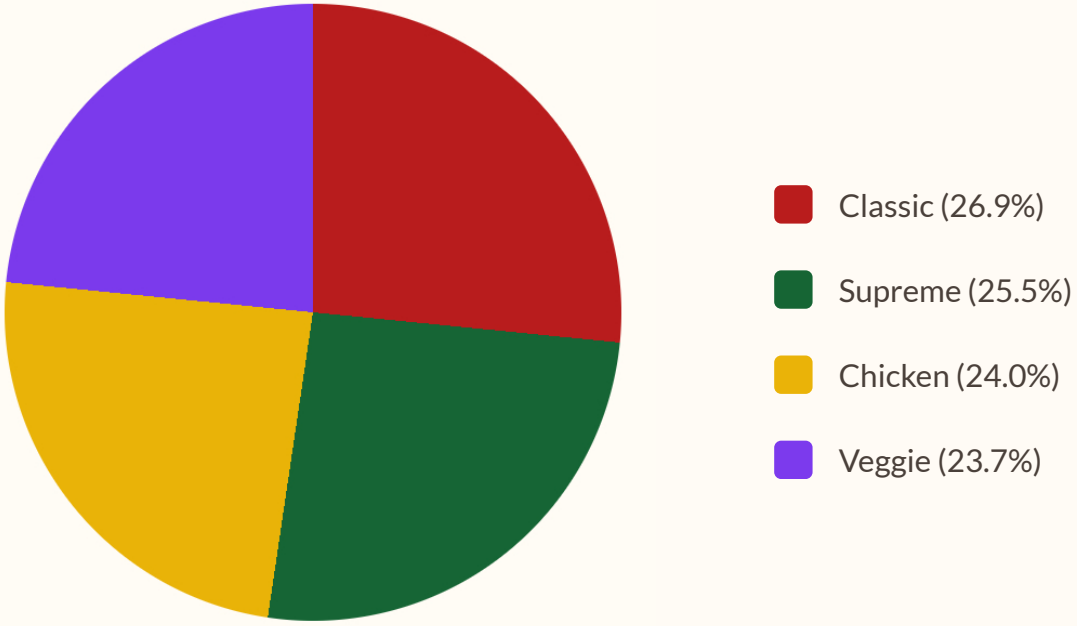
Using JOINs, functions, and grouping to find deeper patterns.

Intermediate Query: Distribution of Orders by Hour



Based on the query, order volume clearly peaks during the 1 PM - 3 PM lunch rush.

Intermediate Query: Revenue Contribution by Category



Sales are remarkably balanced across all four major categories, with no single category dominating the market.

Advanced SQL Analysis

Using CTEs and Window Functions for high-value strategic insights.

SQL Showcase: % Revenue Contribution (CTE)

The Question:

> *Calculate the percentage contribution of each pizza category to total revenue.*

The SQL Concept:

> *Using **Common Table Expressions (CTEs)** to create temporary, readable tables for category revenue and total revenue, then joining them to calculate the percentage.*

```
WITH pizza_revenue AS (
  SELECT
    pt.category,
    SUM(p.price * od.quantity) AS per_category_revenue
  FROM order_details AS od
  JOIN pizzas AS p
    ON od.pizza_id = p.pizza_id
  JOIN pizza_types AS pt
    ON p.pizza_type_id = pt.pizza_type_id
  GROUP BY pt.category
),
total_revenue AS (
  SELECT
    SUM(od.quantity * p.price) AS total_sales
  FROM order_details AS od
  JOIN pizzas AS p
    ON od.pizza_id = p.pizza_id
```

SQL Showcase: Top 3 per Category (Window Function)

The Question:

> *Determine the top 3 most ordered pizza types based on revenue for *each* pizza category.*

The SQL Concept:

> *This is a complex problem solved with **Window Functions**. Using **RANK()** partitioned by category allows us to rank pizzas *within* their group, finding the top performers for each.*

```
WITH tr AS (
  SELECT
    pt.name,
    pt.category,
    SUM(p.price * od.quantity) AS per_category_revenue
  FROM order_details AS od
  JOIN pizzas AS p
    ON od.pizza_id = p.pizza_id
  JOIN pizza_types AS pt
    ON p.pizza_type_id = pt.pizza_type_id
  GROUP BY
    pt.category, pt.name
),
rank_table AS (
  SELECT
    name,
    category,
```

Key Findings & Learnings

Business Insights: Large pizzas are most popular, Classic & Supreme categories drive sales, and the 1-3 PM period is the peak time for orders.

SQL Proficiency: This project strengthened my skills in translating business problems into SQL logic, using JOINS, aggregations, CTEs, and Window Functions.

Actionable Outcome: By identifying top pizzas (like BBQ Chicken) and peak hours, a business can optimize inventory and create targeted promotions.

About Me

Javed Hussain

Aspiring Data Analyst with a passion for transforming raw data into actionable business intelligence and telling stories with data.

SQL | Power BI | EXCEL | Python | Data Analysis | Data Cleaning | Data Visualization | Business Acumen

Thank You!

Let's connect. View the full project and analysis on GitHub.

LinkedIn GitHub