Project Report: Pizza Sales Analysis using MySQL

1. Project Overview

This project focuses on analyzing pizza sales data using MySQL to derive actionable business insights. The analysis covers various aspects, including sales performance, customer ordering patterns, and revenue contribution by pizza types and categories.

2. Database Schema

The analysis is built upon a database named 'pizza' consisting of four primary tables:

• pizza_types: Contains details about pizza names, categories (e.g., Classic, Veggie), and ingredients.

• pizzas: Stores specific pizza IDs, sizes, and prices, linked to pizza types.

• orders: Records the date and time each order was placed.

• order_details: A transactional table tracking individual pizza quantities within each order.

3. Key Analysis & Queries

A. Basic Analysis

• Total Orders: Determining the total volume of orders processed.

• Revenue Performance: Calculating the total revenue generated by joining order details with pizza prices.

• Product Insights: Identifying the highest-priced pizza and the most frequently ordered pizza size.

• Top Sellers: Listing the top 5 most ordered pizza types by quantity.

B. Intermediate Analysis

• Category Performance: Aggregating quantities ordered by pizza category to identify popular segments.

• Time-Based Patterns: Analyzing the distribution of orders by the hour of the day to identify peak operational hours.

• Operational Metrics: Calculating the average number of pizzas ordered per day to assist in inventory and staffing decisions.

• Revenue Leaders: Identifying the top 3 pizza types that contribute the most to total revenue.

C. Advanced Analysis

• Revenue Contribution: Calculating the percentage contribution of each pizza type to total revenue using window functions.

• Growth Trends: Analyzing cumulative revenue over time to track business growth.

• Segmented Leaders: Identifying the top 3 most profitable pizza types within each specific category.

4. Technical Implementation

The project utilizes several advanced SQL features, including:

• Joins: Combining multiple tables (pizzas, pizza_types, orders, and order_details) to link product details with sales data.

• Aggregate Functions: Using SUM, COUNT, and AVG for high-level metrics.

• Window Functions: Implementing OVER(), RANK(), and ROW_NUMBER() for ranking and cumulative calculations.

• CTEs (Common Table Expressions): Utilizing WITH clauses to organize complex queries for better readability.