

Overview

Beginners can analyze a pizza sales database using Oracle SQL to gain insights into business growth, customer behavior, and preferences. This analysis will help the store make data-driven decisions by understanding trends.

Objectives

This project will help you explore and understand pizza sales data, utilize SQL queries for retrieving, filtering, and aggregating information, and answer crucial business questions about pizza sales, popular pizzas, top sellers, and sales trends, gaining insights into store growth and customer preferences through data-driven analysis.

In-scope tasks include data extraction using SQL from a database, analyzing top pizzas, prices, orders, and sales trends, as well as gaining insights into regional customer behavior.

Out of scope are advanced machine learning, predictive analytics beyond SQL, and web development/UI/UX design.

Tools and Technologies

- Database Management System: Oracle SQL Developer
- Query Language: SQL

Dataset Description

The dataset consists of multiple tables, including:

Table Name	Description
pizza_order_details	Contains individual pizza items per order (pizza_id, quantity, order_id)
pizza_orders	Stores overall order info (order_id, order_date, time)
pizza_types	Lists pizza types with names, categories, and ingredients
pizzas	List pizzas by their types and sizes with pricing

Queries (Solution: check the *pizza_sales_data_analysis.sql* file)

Queries (Set-1: Easy):

Query-1: Retrieve the total number of orders placed.

Query-2: Calculate the total revenue generated from pizza sales.

Query-3: Identify the highest-priced pizza with ID.

Query-4: Identify the most common quantity ordered.

Query-5: Identify the most common pizza size ordered.

Query-6: List the top 5 most ordered pizza names along with their quantities.

Query-7: Join the necessary tables to find the total quantity of each pizza type / category ordered.

Query-8: Identify the top 5 highest-priced pizza with ID and count their total number of orders.

Query-9: Calculate the total prices based on pizza ID and pizza name, generated from pizza sales.

Queries (Set-2: Intermediate):

Query-10: Determine the distribution of orders by hour of the day.

Query-11: Join relevant tables to find the category-wise distribution of pizzas.

Query-12: Group the orders by date and calculate the average number of pizzas ordered per day.

Query-13: Determine the top 5 most ordered pizza types based on revenue.

Queries (Set-3: Advanced):

Query-14: Calculate the percentage contribution of each pizza type to total revenue.

Query-15: Analyze the cumulative revenue generated over time.

Query-16: Determine the top 3 most ordered pizza types based on revenue for each pizza category.

Query-17: Determine the ordered pizza types based on revenue for each pizza category with the rank only 1.

Expected Outcomes

Develop skills in pizza sales analysis, customer behavior assessment with SQL, interpreting database insights, enhancing query writing, identifying top pizzas, prices, and orders, and understanding store growth and revenue trends.

Future Works

Future works include data visualization with Python (Matplotlib/Seaborn) or Power BI, advanced SQL queries using window functions and CTEs, and predictive analytics to forecast sales trends with machine learning.

Project Completion Milestones

Key project milestones include understanding database schema, SQL query writing and execution, analyzing results, documenting insights, and planning future data enhancements.

Conclusion

This project offers a practical SQL-based pizza data analysis experience using a structured sales database. Beginners will gain insights to make business decisions and develop crucial data analysis skills for real-world careers in data science and analytics.

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