Exploring Customer Behavior Through Database Analysis : SQL Case Study Data Driven Insights

Presented by Pavan kulkarni

Batch number CX-127feb

1)INTRODUCTION: -

* This report presents an SQL-based case study aimed at understanding customer behavior in the context of food ordering. Using a structured database containing customer orders—specifically the date of order, items ordered, and the amount spent—this project applies SQL techniques to extract valuable insights. The goal is to analyze trends in customer preferences, spending behavior, and order frequency to inform business strategies in the food and beverage sector.

2)KEY Findings: -

Top 3 products with their revenue are Butter Chicken 1700, Shahi Panner 1360, Mutton Biryani 1350 respectively

Customers who joined Gold membership and their date are Anshul 02-07-2017, Rohan 15-01-2018, Priya 17-01-2018, Gaurav 02-01-2019, Ritika 02-01-2019, Sahil 02-01-2019, Sahil 02-04-2017, Aryan 08-09-2018

Total revenue by Gold members is 2300

Popular product among Gold member is Butter Chicken

Total Revenue by Year wise is 2014-400, 2016-830, 2017-1780, 2018-1640, 2019-790

Dal Makani was the ordered the most compared to all other products

3) Methodologies: -

Connecting to the SQL database containing customer food order data.

Identifying relevant tables and fields: order date, items ordered, customer ID, and order amount.

Writing SQL queries to calculate total sales, average spend, customer frequency, and item popularity.

Writing and executing SQL queries to retrieve and manipulate data from different tables.

Performing aggregations (SUM, COUNT, AVG), filtering (WHERE, HAVING), joining tables (INNER JOIN, LEFT JOIN), subqueries and CTEs for deep analysis.

Approaches

The project followed a structured approach to data exploration:

1. **Data Understanding**: Reviewed database schema and relationships between tables.
2. **Data Cleaning**: Filtered out null or duplicate orders where necessary.
3. **Exploratory Analysis**: Identified KPIs such as average order value, order frequency, Total revenue and customer retention.
4. **Segmentation**: Analyzed customer behaviour by category (e.g., new vs. repeat, Regular users vs. Gold members).

Conclusions:

This SQL case study successfully revealed meaningful patterns in customer food ordering behaviour. By querying the database and analyzing customer trends over time, this project demonstrates how structured data and SQL techniques can support customer retention strategies, marketing efforts, and revenue growth. The insights generated can be further enhanced by integrating demographic data or applying machine learning for predictive analytics.