Project Brief

Title

Database Design and Implementation for Swiggy – Online Food Delivery Platform

Introduction

Swiggy is a popular online food delivery platform that connects customers with restaurants and delivery partners through a technology-driven ecosystem. The platform manages a high volume of users, orders, payments, and logistics operations daily. To support such operations efficiently, a well-structured and optimized database system is essential.

This project focuses on designing and implementing a relational database for a Swiggy-like system using MySQL. The database is designed by considering real-world business requirements, data integrity, normalization, and performance optimization.

Objectives of the Project

The main objectives of this DBMS project are:

- To understand the complexity of a real-world organization like Swiggy
- To identify key entities and relationships involved in food delivery systems
- To design a normalized relational database schema
- To implement constraints to maintain data integrity
- To apply appropriate data types to conserve memory and improve efficiency

Scope of the Project

The scope of the project includes managing data related to customers, restaurants, menus, orders, delivery partners, payments, and reviews. The system supports order placement, delivery assignment, payment processing, and customer feedback. The project does not cover UI design or application-level logic; it is limited to backend database design and SQL implementation.

Database Design Overview

The database consists of 10 tables:

1. Customer – Stores customer details such as name, phone, and email
2. Address – Stores multiple addresses for customers
3. Restaurant – Contains restaurant information and ratings
4. Menu_Category – Groups menu items into categories
5. Menu_Item – Stores individual food item details
6. Orders – Maintains order-related information
7. Order_Item – Handles many-to-many relationship between orders and items
8. Delivery_Partner – Stores delivery personnel information

9. Payment – Manages payment details for orders
10. Review – Stores customer feedback for restaurants

The database follows normalization principles up to Third Normal Form (3NF) to avoid redundancy and ensure data consistency.

Technologies Used

- Database: MySQL
- Language: SQL (DDL and DML)
- Tool: MySQL Workbench

Key Features and Constraints

- Primary and Foreign Keys for entity relationships
- CHECK constraints for valid data ranges
- ENUM data types for fixed values such as order status and payment mode
- UNIQUE constraints for email and phone numbers
- Cascading deletes to maintain referential integrity

Conclusion

This project demonstrates the practical application of database management system concepts in designing a real-world food delivery platform. The Swiggy database schema effectively captures organizational complexity, ensures data integrity, and supports efficient data retrieval. The project helps in understanding how relational databases are used in large-scale applications and prepares students for real-world database design challenges.