Project Proposal: Restaurant Database Management System

Jannat Lnu, Solaris Serrano, Aryan Rathi

1. Problem Domain: The restaurant industry faces challenges in efficiently managing reservations, customer orders, inventory, employee scheduling, and customer feedback. Many restaurants rely on fragmented systems or manual processes, leading to inefficiencies and errors. A well-structured database can centralize and streamline restaurant operations, improving service quality and operational efficiency.

2. Need for the Database: A restaurant database is necessary to optimize various aspects of restaurant management. A database-driven approach will eliminate manual record-keeping, reduce errors, and provide real-time access to critical business data, improving overall restaurant efficiency, including:

- **Reservations Management:** Keeping track of table bookings to prevent overbooking.
- **Order Processing:** Ensuring that customer orders are accurately recorded and linked to the kitchen.
- **Inventory Management:** Monitoring ingredient stock levels to prevent shortages.
- **Employee Scheduling:** Assigning shifts efficiently to avoid understaffing.
- **Customer Feedback Collection:** Recording customer reviews to improve service quality.

3. Context, Scope, and Perspective: The primary users of the database will include:

- **Restaurant Owners/Managers:** To monitor business performance, manage employees, and oversee operations.
- **Chefs and Kitchen Staff:** To access real-time order information and inventory levels.
- **Waitstaff:** To place and manage customer orders efficiently.
- **Customers (indirectly):** To make reservations and provide feedback.

4. Motivation: We chose this project because of our personal interest in the restaurant industry and our desire to apply database management principles to a real-world problem. Efficient restaurant management is essential for customer satisfaction and business success. By developing this database, we aim to enhance operational efficiency and customer experience, benefiting restaurant businesses

5. Database Complexity: The proposed database will consist of at least five major entities:

1. **Customers:** Stores customer details, reservations, and feedback.
2. **Orders:** Tracks food and drink orders placed by customers.
3. **Menu Items:** Maintains details of all food and drink offerings.
4. **Inventory:** Manages stock levels of ingredients and supplies.
5. **Employees:** Contains staff details, schedules, and roles.

Additional entities may include payments, suppliers, and restaurant locations to increase database functionality.

This database will support at least 20 unique queries, covering different aspects such as retrieving customer order history, identifying popular menu items, managing employee schedules, and tracking inventory restocks.