

**DATABASE MANAGEMENT SYSTEM LAB**

**CSL-220**

**Project Proposal**

**“Food Delivery System”**

**BS(CS)-4B**

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| **Project Title: Food Delivery System**  **Project Description:**  **Introduction:**  The Food Delivery System Database project aims to design and implement a robust and efficient SQL database system to support a food delivery service. The database will serve as the backbone for managing and organizing various aspects of the food delivery process, including orders, payments, restaurants, customers, employees, menus, feedback, vehicles, promotions, and order items.  **Project Objectives:**  **Data Management:** Create a well-structured database to efficiently store and manage data related to the food delivery service.  **Data Integrity:** Ensure data integrity through proper data validation, constraints, and relationships between entities.  **User Interaction:** Develop SQL queries and stored procedures to allow users to interact with the database effectively. This includes functionality for placing orders, tracking deliveries, and processing payments.  **Reporting and Analytics**: Implement reporting and analytics features to provide insights into the system's performance, customer behavior, and order trends.  **Key Entities and Attributes:**  **1. Order:** Manage customer orders, their status, and delivery information.  **- OrderID (Primary Key)**  **- CustomerID (Foreign Key)**  **- RestaurantID (Foreign Key)**  **- ReceivedBy EmployeeID (Foreign Key)**  **- DeliveredBy EmployeeID (Foreign Key)**  **- OrderDate**  **- Status (e.g., pending, in progress, delivered)**  **- TotalAmount**  **- DeliveryAddress**  **- SpecialInstructions**  **- EstimatedDeliveryTime**  **- ActualDeliveryTime**  **2. Payment:** Track payment transactions associated with orders.  **- PaymentID (Primary Key)**  **- OrderID (Foreign Key)**  **- PaymentDate**  **- PaymentAmount**  **- PaymentMethod (e.g., credit card, cash, PayPal)**  **- PaymentStatus (e.g., approved, pending)**  **3. Restaurant:** Store information about partnering restaurants, their menus, and contact details.  **- RestaurantID (Primary Key)**  **- Name**  **- Location**  **- CuisineType**  **- ContactInfo (phone number, email)**  **- ServingHours**  **- Rating**  **4. Customer:** Manage customer profiles and contact information.  **- CustomerID (Primary Key)**  **- FirstName**  **- LastName**  **- Email**  **- Phone**  **- Address**  **- Username**  **- Password**  **5. Employee:** Handle employee information, roles, and employment details.  **- EmployeeID (Primary Key)**  **- FirstName**  **- LastName**  **- Email**  **- Phone**  **- Role (e.g., delivery driver, customer support)**  **- HireDate**  **- Salary**  **- VehicleID (Foreign Key for vehicles used by delivery drivers)**  **6. Menu:** Store menu items, their descriptions, prices, and availability.  **- MenuID (Primary Key)**  **- RestaurantID (Foreign Key)**  **- ItemName**  **- Description**  **- Price**  **- Category (e.g., appetizers, main courses, desserts)**  **- Availability (e.g., available, out of stock)**  **7. Feedback:** Record customer feedback and ratings for restaurants and orders.  **- FeedbackID (Primary Key)**  **- CustomerID (Foreign Key)**  **- RestaurantID (Foreign Key)**  **- OrderID (Foreign Key)**  **- Rating**  **- Comments**  **- DatePosted**  **8. Vehicles:** Track vehicles used for delivery, including their type and availability.  **- VehicleID (Primary Key)**  **- VehicleType (e.g., car, bike, scooter)**  **- LicensePlate**  **- Make**  **- Model**  **- Year**  **- Status (e.g., available, in use)**  **9. Order Items:** Store details of items ordered within each order.  **- OrderItemID (Primary Key)**  **- OrderID (Foreign Key)**  **- MenuItemID (Foreign Key)**  **- Quantity**  **- Subtotal**  **Order: (3rd normal form)**  **OrderID (PK)**  **CustomerID (FK)**  **RestaurantID (FK)**  **OrderDate**  **Status**  **TotalAmount**  **DeliveryAddress**  **SpecialInstructions**  **EstimatedDeliveryTime**  **ActualDeliveryTime**  **OrderEmployee: (3rd normal form)**  **- OrderID (PK, FK to Order)**  **- ReceivedBy (FK to Employee)**  **- DeliveredBy (FK to Employee)**  **Functionality**:  Allow customers to place orders, specify delivery details, and select payment methods.  Enable restaurant owners to manage their menus and track orders.  Provide employees with tools for order delivery and customer support.  Implement a feedback system for customers to rate and review their experiences.  Support promotional offers and discounts.  Generate reports and analytics for business insights.  Database Design:  The project will involve creating the database schema with tables, primary keys, foreign keys, and indexes. Establish appropriate relationships between entities to maintain data integrity.  **Conclusion:**  The Food Delivery System Database project will provide the foundation for an efficient, scalable, and organized food delivery service. By implementing a well-designed database, the project aims to streamline order management, enhance customer experience, and provide valuable insights for business growth and decision-making.  **Relationships between the entities:**  USER  CART  **1**  **M**  CART  BOOK  **M**  **N**  BOOK  PUBLISHER  **M**  **1**  BOOK  AUTHOR  **M**  **1**    ERD: |







