Restaurant System

Functional Requirements :

1. **FR1: Customer Management**

   o   Track customer information, including contact details, and loyalty points.

2. **FR2: Table Reservation System**

   o   Enable customers to reserve tables online or in person.

3. **FR3: Menu Management**

   o   Store menu items with descriptions, prices, and categories (e.g., appetizers, main courses).

4. **FR4: Order Management**

   o   Handle order entry for dine-in, takeaway, and delivery.

5. **FR5: Payment Processing**

   o   Support different payment methods (cash, card, and digital wallets).

6. **FR6: Staff Management**

   o   Manage staff details, roles, and schedules.

7. **FR7: Inventory Management**

   o   Track the availability and usage of ingredients in the kitchen.

8. **FR8: Supplier Management**

   o   Store supplier details and track order history with suppliers.

9. **FR9: Kitchen Order Queue**

   o   Display active orders to kitchen staff for processing.

10. **FR10: Order Status Tracking**

   o   Track the status of each order (e.g., pending, in progress, ready, delivered).

11. **FR11: Feedback System**

   o   Allow customers to provide feedback or reviews on their dining experience.

12. **FR12: Discount and Promotions Management**

   o   Support the application of discounts, offers, or promotional codes.

13. **FR13: Employee Time Tracking**

   o   Track employee attendance and working hours.

14. **FR14: Reporting System**

   o   Generate reports on daily sales, most popular dishes, and customer feedback.

15. **FR15: Reservation Availability Check**

   o   Automatically update table availability based on reservations and seating.

16. **FR16: Food Preparation Time Estimation**

   o   Estimate preparation times for orders based on items.

17. **FR17: Customer Order History**

   o   Maintain a record of previous orders for regular customers.

18. **FR18: Waitlist Management**

   o   Manage waitlists during busy hours.

19. **FR19: Multiple Branch Management**

   o   Handle multiple restaurant branches, if applicable.

20. **FR20: Customer Notifications**

   o   Notify customers when their table or order is ready via SMS or email.

Non-Functional Requirements :

1. **NFR1: Performance**

   o The system should handle up to 1000 concurrent users without performance degradation.

2. **NFR2: Security**

   o Ensure that customer and payment data is encrypted and meets PCI-DSS standards.

3. **NFR3: Availability**

   o The system should have an uptime of 99.9%, ensuring minimal downtime.

4. **NFR4: Scalability**

   o The database should be scalable to support additional branches or increased customer traffic during peak hours.

5. **NFR5: Usability**

   o The user interface must be intuitive and easy to use for both staff and customers, with minimal training required.

Justification:

- **Customer management** and **order processing** are crucial for restaurant operations.

- **Inventory and supplier management** ensure smooth kitchen operations and prevent stock-outs.

- **Security and availability** are critical for customer trust and continuous business operation, especially for online payments.

- **Scalability** allows for future expansion or seasonal traffic spikes.