SOFTWARE REQUIREMENTS SPECIFICATION

FOR

FOOD DELIVERY MANAGEMENT SYSTEM

Prepared By

Alan Judith A

Cyril Martin S

Kanishkumar K

Satyavarssheni Ra V

Academic Year: *2023 - 2024*

Department of Computer Science and Engineering

1. INTRODUCTION:

1.1. Purpose:

The purpose of this Software Requirements Specification (SRS) document is to define the functional and non-functional requirements for the development of a Food Delivery Management System (FDMS). This system aims to streamline and enhance the process of food delivery, connecting customers, restaurants, and delivery personnel through an efficient and user-friendly platform.

1.2. Outcome:

The outcome of the Software Requirements Specification (SRS) document is to establish a clear and common understanding of the Food Delivery Management System's requirements and functionalities among all project stakeholders. This document serves as a crucial reference throughout the project's lifecycle, ensuring alignment with client expectations, guiding developers, and facilitating effective project planning and risk management.

1.3. Scope of Development Project

The scope of the Food Delivery Management System (FDMS) development project encompasses the following aspects:

1.3.1 Inclusions

- Development of a web-based platform accessible to customers, restaurants, and delivery personnel.
- Implementation of user registration and authentication mechanisms.
- Creation of restaurant profiles with menu and item management capabilities.
- Ordering and payment processing functionalities for customers.
- Real-time order tracking features.
- Assignment and management of delivery personnel.
- Rating and review systems for restaurants and delivery personnel.
- Reporting and analytics tools for administrators.
- Implementation of necessary security measures to protect user data.
- Development of an admin panel for system administrators to manage the platform.

1.3.2 Exclusions

- Physical delivery logistics such as vehicles and delivery routes.
- Integration with external third-party services (e.g., mapping and navigation services) unless explicitly stated in the requirements.
- Hardware and network infrastructure setup, which is assumed to be in place.

1.4. Definitions, Acronyms and Abbreviations

Definitions:

Order Status:

- **Placed:** The order has been successfully submitted by the customer.
- **Accepted:** The restaurant has accepted the order and is preparing it.
- **Picked Up:** The delivery personnel has picked up the order for delivery.
- **Delivered:** The order has been successfully delivered to the customer.
- **Canceled:** The order has been canceled, and payment may be refunded as per the cancellation policy.

Delivery Radius: The maximum distance within which a restaurant is willing to deliver orders.

Promo Code: A special code that customers can apply to their orders for discounts or promotions.

Delivery Fee: The fee charged to customers for delivery service, if applicable.

Notification: A message or alert sent to users to inform them of updates or important events related to their orders or accounts.

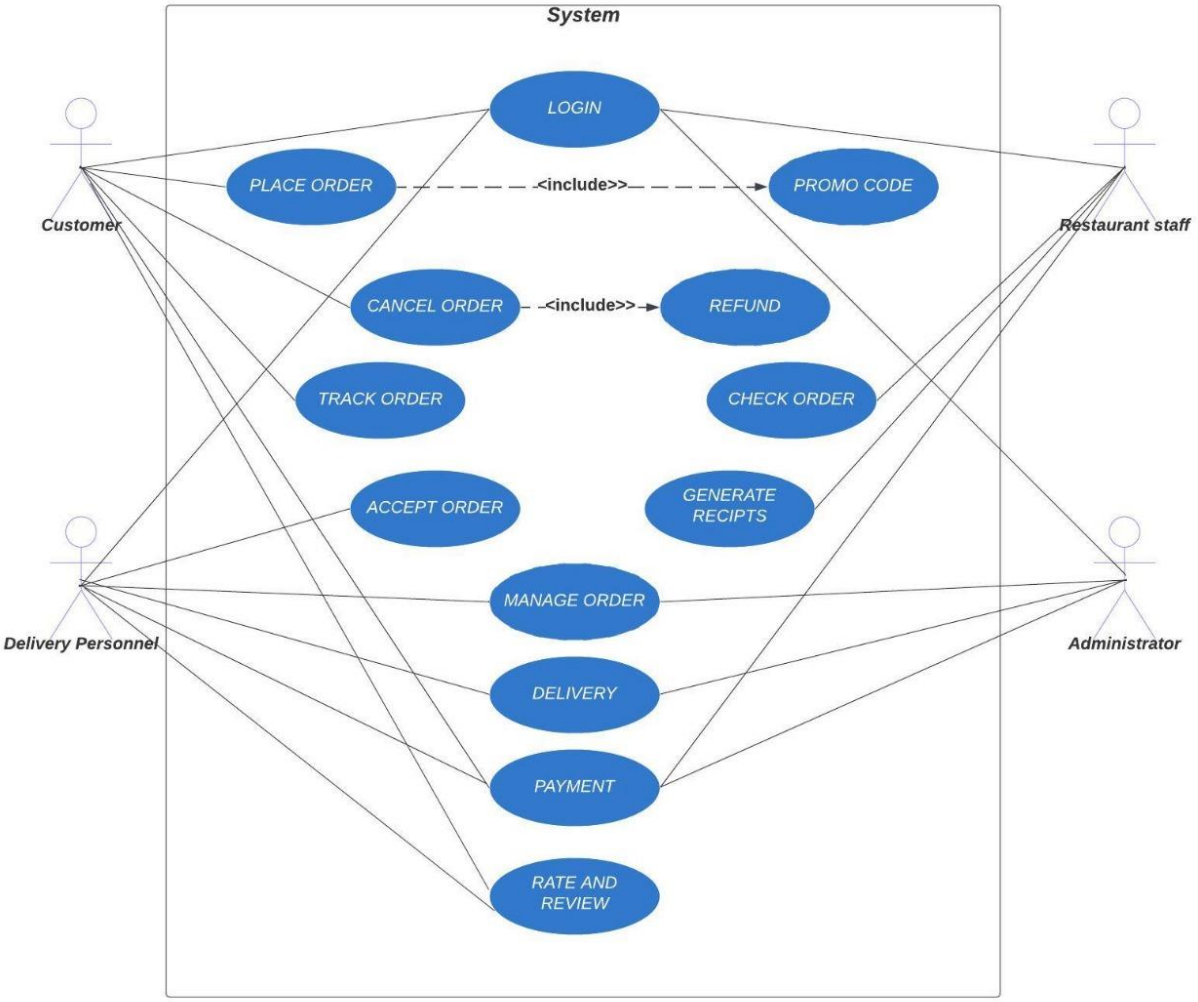
Acronyms and Abbreviations:

- **POS:** Point of Sale (system used by restaurants to manage orders and payments).
- **GPS:** Global Positioning System (used for location tracking).
- **UI/UX:** User Interface/User Experience (refers to the design and usability of the system).
- **API:** Application Programming Interface (enables communication between different software systems).
- **SDK:** Software Development Kit (a set of tools and libraries for software development).
- **CSV:** Comma-Separated Values (a file format for storing and exchanging tabular data).
- **FAQ:** Frequently Asked Questions (a list of common questions and answers)**.**

2. OVERALL DESCRIPTIONS:

2.1. Product Perspective (use case diagrams)

A use case diagram is a visual representation that illustrates how different actors (users or external systems) interact with a system and the various use cases (functionalities) the system offers in response to those interactions. In the context of the Food Delivery Management System (FDMS), here are some key actors and their associated use cases.



Actors:

- **Customer:** A person who uses the FDMS to order food from restaurants.
- **Restaurant Staff:** Employees or administrators of restaurants that use the FDMS to manage their profiles and orders.

- **Delivery Personnel:** Individuals responsible for delivering orders from restaurants to customers.
- **Administrator:** A system administrator who manages and maintains the FDMS, including user accounts and system configurations.

2.2. Product Function

The Food Delivery Management System (FDMS) provides various functions to facilitate the food delivery process. These functions include, but are not limited to:

User Registration and Authentication:

- Users can register and log in to their accounts securely.
- Registration is differentiated for customers, restaurant staff, delivery personnel, and administrators.

Customer Functions:

- Place orders from restaurants.
- Track the status of their orders in real-time.
- Apply promo codes to receive discounts.
- Provide feedback and ratings for restaurants and delivery personnel.
- View order history.

Restaurant Functions:

- Create and manage restaurant profiles.
- Add, edit, or delete menu items with descriptions and prices.
- Set restaurant status (open/closed).
- View and manage incoming orders.
- Update the status of orders (accepted, picked up, delivered).
- View order history.

Delivery Personnel Functions:

- Receive notifications of assigned orders.
- Update order status (picked up, delivered).
- View order details.
- Communicate with customers or restaurants as needed.

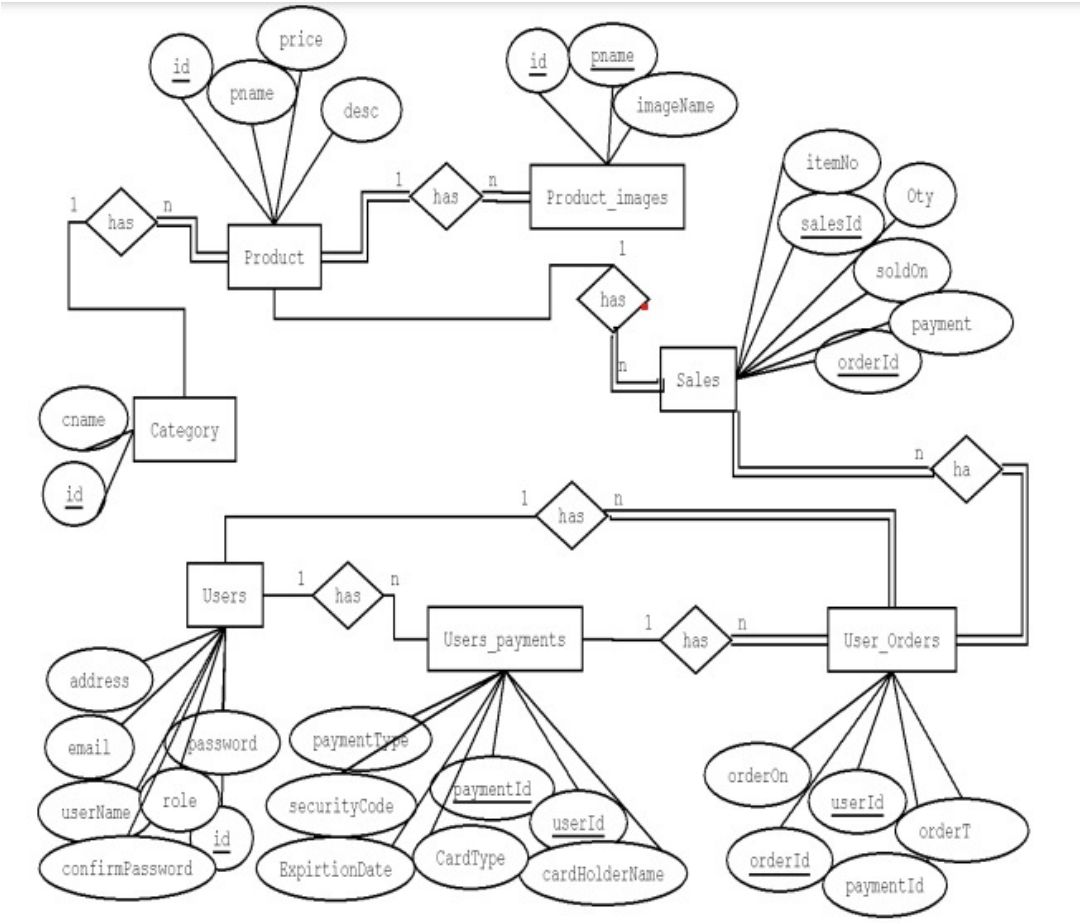
Administrator Functions:

- Manage user accounts and permissions.
- Manage restaurant profiles.
- Manage delivery personnel profiles.
- Generate reports and analytics for system performance.

Order Management:

- Efficiently assign delivery personnel to orders based on location and availability.
- Calculate estimated delivery times.
- Process payments securely.

Entity Relationship



2.3 User Classes and Characteristics

The Food Delivery Management System (FDMS) involves several user classes, each with distinct characteristics and roles:

Customers:

- *Characteristics*: Customers use the FDMS to place food orders, track deliveries, provide feedback, and interact with restaurants and delivery personnel. They may have varying levels of technical proficiency and can access the system from web browsers or mobile devices.

Restaurant Staff:

- *Characteristics*: Restaurant staff, including managers, cooks, and waitstaff, interact with the FDMS to manage restaurant profiles, update menus, view incoming orders, and communicate with customers. Their technical expertise may vary, and they access the system from both desktop and mobile devices.

Delivery Personnel:

- *Characteristics*: Delivery personnel are responsible for delivering food orders from restaurants to customers. They use the FDMS to receive order assignments, update order statuses, and communicate with customers or restaurants. They typically use mobile devices for navigation and order management.

Administrators:

- *Characteristics*: Administrators oversee the entire FDMS, managing user accounts, restaurants, delivery personnel, and system configurations. They possess strong system administration skills and use desktop or web-based admin panels to perform their duties.

2.4. Operating Environment

The FDMS operates within a specific technical environment:

- **Web Server:** The system is hosted on a web server that serves web pages and handles user requests via HTTP/HTTPS protocols.
- **Database Server:** User accounts, restaurant profiles, menu data, orders, and other related information are stored in a database server to ensure data integrity and reliability.
- **User Devices:** Customers, restaurant staff, and administrators access the system using web browsers on desktop computers or mobile devices. Delivery personnel primarily use mobile devices equipped with the FDMS mobile app for order management and navigation.
- **Internet Connectivity:** A stable and secure internet connection is essential for all users to interact with the FDMS.

2.5. Assumptions and Dependencies

Several assumptions and dependencies are associated with the development and operation of the FDMS:

- **Hardware and Network Infrastructure:** It is assumed that the necessary hardware, including web servers and database servers, and reliable network infrastructure, such as internet connectivity and server hosting, are in place and functional.

- **Third-Party Services:** The FDMS may rely on external services, such as mapping and navigation services, for location-based features. It is dependent on the availability and proper functioning of these services.
- **Payment Processing:** The system assumes integration with secure third-party payment processing services to handle financial transactions. It depends on these services to ensure secure and efficient payment processing.

2.6. Requirements

- **User Interfaces:** The system must provide intuitive and user-friendly interfaces for customers, restaurants, and delivery drivers to streamline the ordering and delivery process, ensuring a seamless user experience.
- **Real-Time Communication:** Implement real-time communication and notification features to keep customers, restaurants, and delivery drivers informed about order status, estimated delivery times, and any updates, enhancing transparency and trust.
- **Menu Management:** Enable restaurant owners to easily update and manage their menus, including item descriptions, prices, and availability, ensuring accurate and up-to-date offerings for customers.
- **Scalability and Performance:** The system should be designed to handle increased user activity and order volumes efficiently, maintaining optimal performance even during peak hours to meet customer demand.
- **Security and Compliance:** Implement robust security measures to safeguard customer data and payment information, ensuring compliance with data protection regulations to build trust and protect sensitive information.

2.7 Data Requirement

The FDMS has various data requirements, including the storage and management of user data, restaurant profiles, menus, order information, payment details, feedback, ratings, and analytics data. These data requirements are essential for the system's functionality and are described in detail in the SRS document, specifying how data is collected, processed, stored, and accessed by the system.

3. EXTERNAL INTERFACE REQUIREMENT

3.1. GUI

- The GUI should have an intuitive design with easy navigation.
- Users should be able to access the system via web browsers or mobile apps.
- The GUI should provide clear menus, buttons, and forms for user interactions.
- Mobile apps should be available for download from app stores.

4. SYSTEM FEATURES

- **User Registration and Authentication:** Users can register and log in securely, with password recovery options.
- **Order Placement and Tracking:** Customers can browse menus, apply promo codes, and track order status. Real-time updates should be visible.
- **Menu and Item Management:** Restaurant staff can manage menus, including adding, editing, and deleting items.
- **Delivery Personnel Assignment:** Orders are assigned to delivery personnel based on location and availability.
- **Rating and Reviews:** Customers can rate and review restaurants and delivery personnel.
- **Administrator Panel:** Administrators can manage users, restaurants, and access system reports.

5. OTHER NON-FUNCTIONAL REQUIREMENTS

5.1. Safety Requirements

- Automated data backup is implemented to prevent data loss.
- Error messages should be user-friendly, without revealing sensitive information.

5.2 Performance Requirements

- The system should handle at least 1000 concurrent users with response times under 2 seconds.
- Response times for critical operations (e.g., order placement) should be minimized.

5.3 Security Requirements

- User passwords are securely hashed and stored.
- Robust authentication and authorization mechanisms are implemented.
- Data transmitted between users and the system is encrypted using HTTPS.
- The system is protected against common web vulnerabilities

5.4 Business rules

- Customers must be able to place orders only from restaurants within the specified delivery radius.
- Promo codes can only be applied during the order placement process.
- Payment processing must adhere to industry-standard security protocols.
- Restaurant staff can update the status of orders (e.g., "accepted," "picked up") but cannot cancel orders once they are accepted.
- Delivery personnel must be assigned orders based on their current location and availability.
- Customers can only review and rate restaurants and delivery personnel after completing an order.

5.5 User Requirements

- Users must be able to create an account with a unique username and password.
- Customers should have the option to browse restaurant menus and view item details.
- Ordering should be a straightforward process, allowing customers to select items, apply promo codes, and specify delivery details.
- Real-time order tracking should be available, showing the current status and estimated delivery time.
- Customers need access to order history for reference and reordering.

6. Other Requirements

6.1 Data and Category Requirements

The system needs to securely store user information, including usernames, email addresses, hashed passwords, contact numbers, and delivery addresses. Restaurants must provide essential details such as their name, address, contact information, and delivery radius. Delivery personnel profiles

should include their names, contact information, and current locations. Menus should be comprehensive, including item names, descriptions, prices, and availability status, with each item linked to a specific restaurant. Order data should capture order IDs, customer and restaurant details, order items, order status, delivery personnel assignment, and timestamps.

6.2 Glossary

- User Accounts: Personal profiles containing usernames, emails, passwords, phone numbers, and addresses.
- Delivery Radius: The maximum distance a restaurant can deliver orders.
- Menus: Lists of food items, including names, descriptions, prices, and availability.
- Menu Items: Individual food offerings in menus associated with specific restaurants.
- Order ID: A unique code for each food order.
- Order Status: The current stage of an order, like "Placed" or "Delivered."
- Payment Data: Information about payment methods, amounts, and transaction IDs.
- Ratings: Scores given to restaurants and delivery personnel.
- Reviews: Written feedback by customers about their experiences.
- Notifications: Messages that update users about orders or account events.
- Performance: The system's speed and capacity.
- Security: Protections for user data, authentication, encryption, and safety from web threats.

6.3. Class Diagrams