

**SOFTWARE REQUIREMENT SPECIFICATION
FOR
FOOD DELIVERY MANAGEMENT**

Group Number: 2

**Prepared by
Jecintha Shalini D
Jefferson Rozario R
Josiya Snowlin M
Malcolm Divine Charles**

1. Introduction

The Food Delivery Management System aims to streamline and enhance the process of food delivery services. In an era where online food ordering has become prevalent, this system provides a robust platform for managing orders, deliveries, and overall restaurant operations.

1.1 Purpose

The purpose of this document is to define the requirements for the development of a comprehensive Food Delivery Management System. This system optimizes the food delivery process by streamlining order processing, offering real-time tracking, and encouraging user engagement. It provides customers with a user-friendly interface for seamless order placement and payment. Restaurants benefit from a centralized platform for efficient order management. Real-time tracking enhances customer experience, allowing them to monitor order status and location. The system facilitates two-way communication, enabling customers to provide valuable feedback and ratings. Administrators have control over user accounts, system monitoring, and insightful reporting. The web-based application ensures accessibility, and integration with external systems ensures secure transactions and accurate menu information. The system aims to revolutionize food delivery through efficiency, transparency, and user satisfaction.

1.2 Scope of Development Project

The Food Delivery Management System will be a web-based platform that connects customers, restaurants, and delivery personnel. It aims to facilitate efficient order processing, real-time tracking, and seamless communication among the key stakeholders. The scope includes order placement, order fulfillment, delivery tracking, and administrative functionalities.

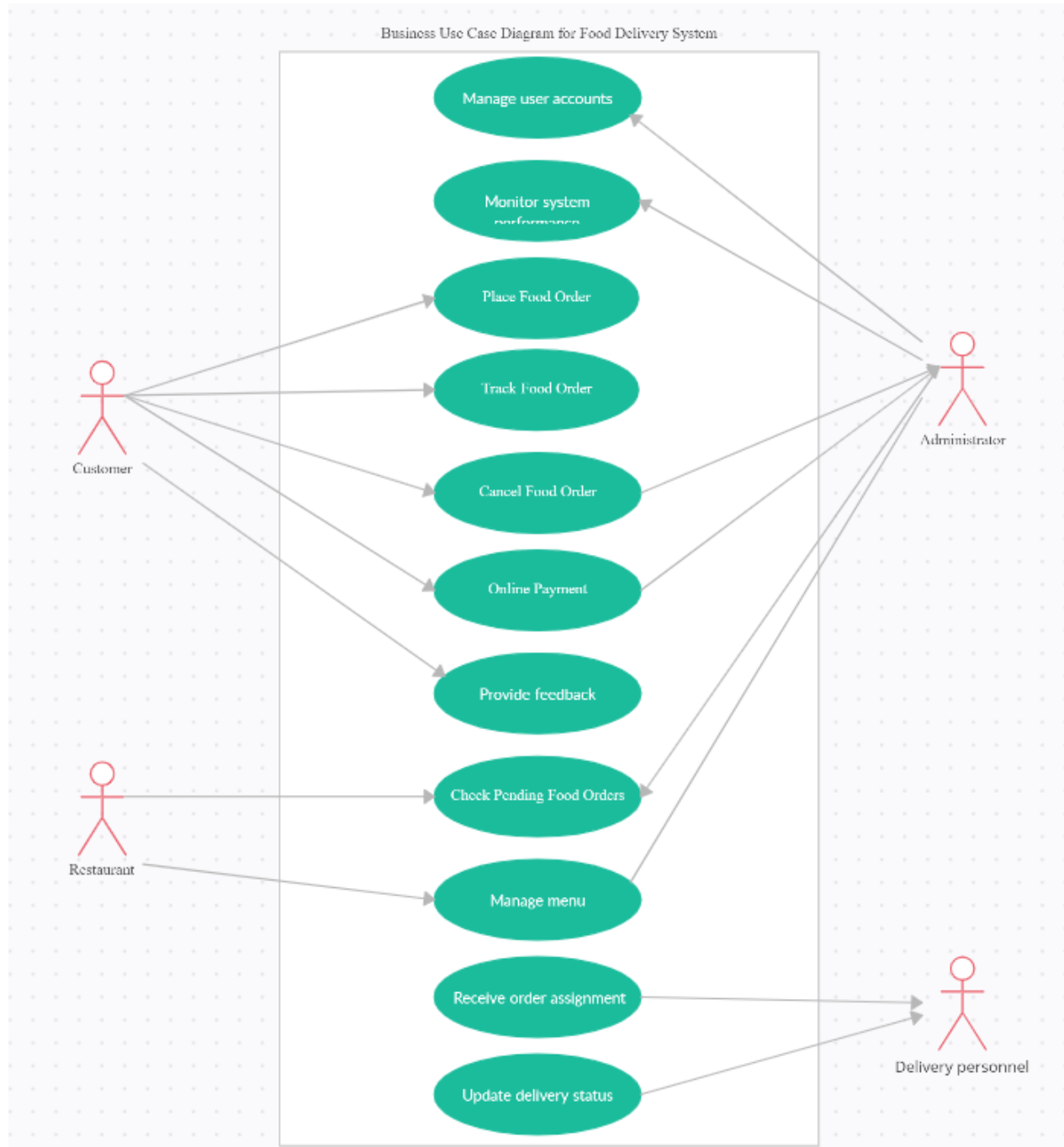
1.3 Definition, Acronyms, and Abbreviations

- FDMS: Food Delivery Management System
- UI: User Interface
- API: Application Programming Interface
- GPS: Global Positioning System
- CRM: Customer Relationship Management

2. Overall Description

2.1 Product Perspective

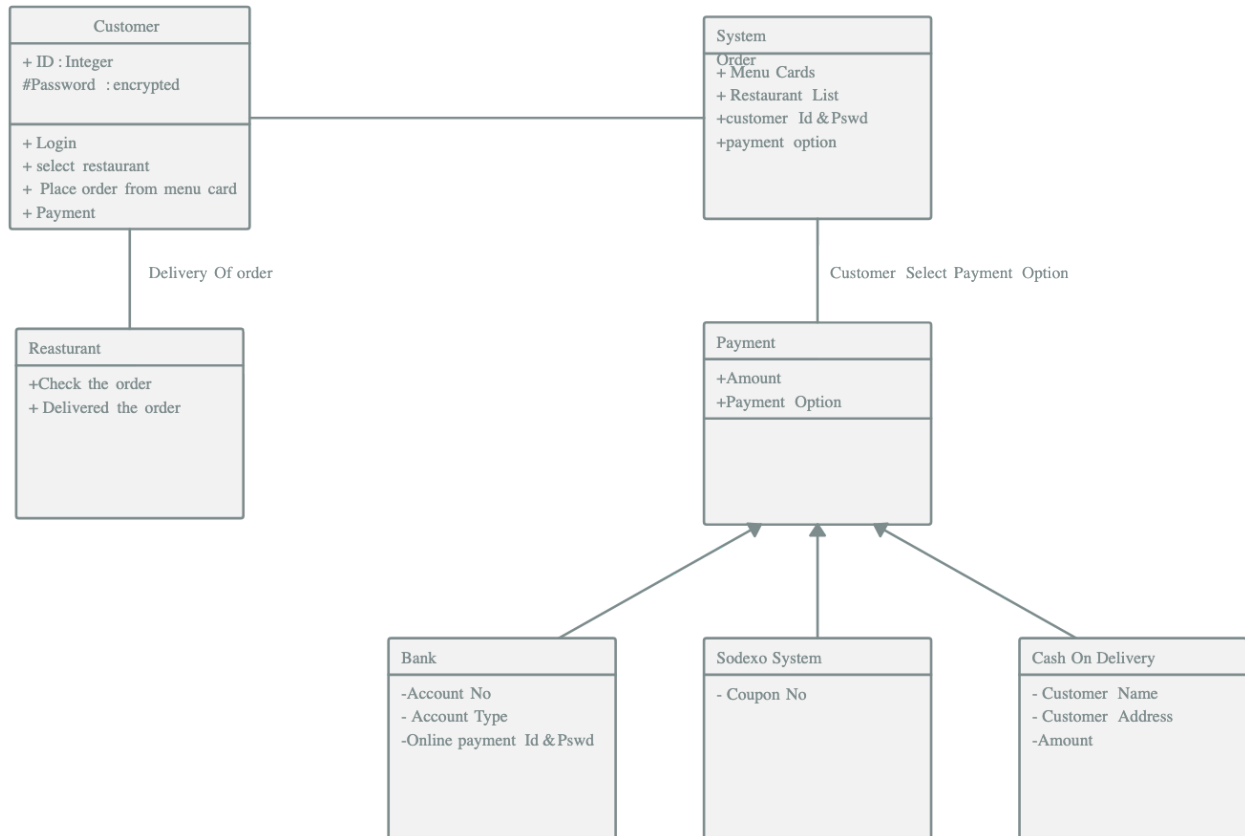
The Food Delivery Management System will act as a standalone application, interacting with external systems such as payment gateways and restaurant databases. The following use case diagram illustrates the interactions between the system and its users:



2.2 Product Function

Entity-Relationship (ER) Diagram:

The ER diagram below illustrates the key entities and their relationships within the Food Delivery Management System. Entities include Users, Orders, Restaurants, and Delivery Personnel.



2.3 User Classes and Characteristics

The system will have the following user classes:

- **Customers:** Users who place orders, track deliveries, and provide feedback.
- **Restaurants:** Users who manage menus, receive orders, and update order status.
- **Delivery Personnel:** Users responsible for fulfilling delivery requests and updating delivery status.
- **Administrators:** Users who manage user accounts, monitor system performance, and generate reports.

2.4 Operating Environment

The Food Delivery Management System will be a web-based application accessible through popular web browsers such as Chrome, Firefox, and Safari. It will be hosted on a secure server with proper configurations to ensure data security and privacy.

2.5 Assumptions and Dependencies

→ Assumptions:

- ◆ Users have access to a stable internet connection.
- ◆ Customers and restaurants have access to devices capable of running modern web browsers.

→ Dependencies:

- ◆ Integration with third-party payment gateways for transaction processing.
- ◆ Interaction with restaurant databases for menu information.

2.6 Requirements

→ Software Configurations:

- ◆ Web Server: Apache or Nginx
- ◆ Database: MySQL or PostgreSQL
- ◆ Programming Language: Node.js for the backend, JavaScript for the frontend
- ◆ Framework: Express.js for the backend, React.js for the frontend

→ Hardware Configurations:

- ◆ Minimum 2 GHz processor
- ◆ 4 GB RAM
- ◆ 20 GB of free disk space

2.7 Data Requirements

The system will require the following data:

- User Data: Including customer details, restaurant information, and delivery personnel profiles.
- Order Data: Details of each order, including items, quantities, and transaction information.
- Feedback and Ratings: Customer feedback and ratings for both restaurants and delivery personnel.
- Configuration Data: System configuration settings and preferences.

This overall description provides an overview of the Food Delivery Management System, detailing its perspective, functions, user classes, operating environment, assumptions, dependencies, requirements, and data needs.

3. External Interface Requirements

3.1 Graphical User Interface (GUI)

The graphical user interface (GUI) of the Food Delivery Management System is designed to provide an intuitive and user-friendly experience for customers, restaurants, delivery personnel, and administrators. The GUI components and interactions are described below:

→ Customer Interface:

- ◆ *Order Placement:* Customers can easily browse restaurant menus, select items, customize orders, and place them with a simple and visually appealing interface.
- ◆ *Real-Time Tracking:* A dedicated section allows customers to track the real-time status and location of their orders, providing a dynamic and engaging experience.
- ◆ *Feedback and Ratings:* Customers can submit feedback and ratings effortlessly through a user-friendly feedback form, contributing to a seamless user experience.

→ Restaurant Interface:

- ◆ *Order Management:* Restaurants have an organized dashboard to view incoming orders, update order statuses, and manage menu items efficiently.
- ◆ *Feedback Review:* The system provides a clear interface for restaurants to view and respond to customer feedback, fostering improved communication.

→ Delivery Personnel Interface:

- ◆ *Order Assignment:* Delivery personnel receive a clear interface displaying assigned orders, delivery locations, and real-time updates.
- ◆ *Status Updates:* A straightforward interface enables delivery personnel to update the order status, ensuring accurate and timely communication.

→ Administrator Interface:

- ◆ *User Management:* Administrators have an administrative dashboard to manage user accounts, permissions, and system configurations.
- ◆ *Performance Monitoring:* The system provides graphical representations and reports for administrators to monitor system performance and key metrics.

4. System Features:

The Food Delivery Management System integrates a comprehensive set of features tailored to meet the diverse requirements of customers, restaurants, delivery personnel, and administrators, elevating the overall functionality and user experience. For customers, the system facilitates seamless order placement and management through an intuitive interface, offering real-time tracking and interactive map displays for live monitoring of deliveries. The feedback and ratings feature enhances user engagement with a user-friendly interface. Restaurants benefit from streamlined order reception, efficient menu management, and continuous improvement through access to customer feedback. Delivery personnel experience clear order assignments, real-time status updates, and navigation assistance for optimized routes. Administrators, utilizing an administrative dashboard, gain control over user management, reporting tools, and real-time system monitoring for proactive issue resolution. Common features ensure secure authentication, automated notifications, and efficient search functionalities, collectively providing an integrated and efficient solution for order processing, tracking, feedback management, and system administration within the Food Delivery Management System.

5. Other Non-Functional Requirements

5.1 Performance Requirements

The system must accommodate a minimum of 1000 concurrent users, ensuring response times do not exceed 3 seconds for critical functions. The database should be optimized for quick data retrieval, and the system must maintain a 99.9% uptime for uninterrupted service.

5.2 Safety Requirements

While the system primarily operates in a digital environment, safety considerations include secure data transmission and storage to protect sensitive user information. The system must

adhere to industry-standard practices to mitigate cybersecurity risks, ensuring the safety and confidentiality of user data.

5.3 Security Requirements

Security measures encompass secure user authentication, encryption of sensitive information (such as payment details), and access controls to prevent unauthorized access. Regular security audits and updates are essential to identify and address potential vulnerabilities, ensuring the overall integrity of the Food Delivery Management System.

5.4 Requirement attributes

Requirement attributes provide additional information about each requirement, aiding in its understanding, management, and implementation. Here are some key attributes to elaborate on:

→ Unique Identifier/ID:

- ◆ **Definition:** A unique alphanumeric code assigned to each requirement for easy reference and traceability.
- ◆ **Elaboration:** Each requirement in the Food Delivery System SRS should have a distinct identifier, such as REQ001, REQ002, etc. This identifier helps stakeholders refer to specific requirements during discussions, testing, and implementation.

→ Name/Title:

- ◆ **Definition:** A descriptive and concise title that summarizes the essence of the requirement.
- ◆ **Elaboration:** The name/title should capture the core functionality or objective of the requirement. For example, "REQ001 - User Registration" or "REQ002 - Real-time Order Tracking."

→ Description:

- ◆ Definition: A detailed and clear explanation of the requirement, including its purpose and expected outcomes.
- ◆ Elaboration: The description should provide enough information for developers, testers, and stakeholders to understand the context and intent of the requirement. It may include specific use cases or scenarios.

→ Priority:

- ◆ Definition: Indicates the relative importance or priority of the requirement.
- ◆ Elaboration: Assign priorities such as High, Medium, or Low to convey the criticality of each requirement. For instance, a real-time order tracking feature might have a higher priority than a cosmetic UI enhancement.

→ Status:

- ◆ Definition: Tracks the current state of the requirement throughout the development lifecycle.
- ◆ Elaboration: The status could be "Proposed," "Approved," "Implemented," "Verified," or other relevant states. Regularly updating the status helps in monitoring the progress of each requirement.

→ Version:

- ◆ Definition: Specifies the version of the requirement, particularly useful in projects with evolving requirements.
- ◆ Elaboration: As the project progresses, requirements may be updated. The version attribute helps in tracking changes and ensuring that all stakeholders are working with the latest version of each requirement.

→ Traceability:

- ◆ Definition: Establishes links between the requirement and related artifacts, such as design documents, test cases, and source code.
- ◆ Elaboration: Traceability ensures that each requirement is properly accounted for in downstream activities. For example, it helps in verifying that test cases cover all specified requirements.

5.5 Business Rules

The system must enforce specific business rules to maintain consistency and standardization. This includes rules governing order processing, payment transactions, and user interactions. Business rules are integral to the system's proper functioning and adherence to industry standards and regulations.

5.6 User Requirements

User requirements dictate the user experience and interface design. These include an intuitive and responsive GUI, accessibility features for users with diverse needs, and compatibility with various devices and browsers. Additionally, the system should support internationalization and localization for users across different regions and languages.

6. Other Requirements

6.1 Class Diagram

