Cafeteria Management System

Software Requirements Specification

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Submitted to :

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Revision History

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26.02.2025	Version 1.0	Amirul Alam	Initial Draft
	Version 1.1	Amirul Alam	Minor updates and clarifications
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Document Approval

The following Software Requirements Specification has been accepted and approved by the following:

Signature	Printed Name	Title	Date
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1. Introduction

The Cafeteria Management System is a web-based and mobile-friendly application designed to streamline cafeteria operations by automating order management, payment processing, and inventory tracking. The system enables customers to browse the menu, place orders, and make payments seamlessly while allowing cafeteria staff to manage orders efficiently. Administrators can monitor sales, track inventory, and generate reports to optimize operations. By reducing manual errors and enhancing service speed, the system aims to improve the overall customer experience and operational efficiency of the cafeteria.

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to define the functional and non-functional requirements of the Cafeteria Management System (CMS). This system will automate cafeteria operations, including order management, billing, inventory tracking, and reporting. The goal is to improve efficiency, reduce errors, and enhance the customer experience.

1.2 Scope

The Cafeteria Management System will be a web-based and mobile-friendly application that allows customers to place orders, make payments, and track their order status. It will also enable cafeteria staff to manage orders, update menu items, and monitor inventory levels. The system will include the following features:

- Online and offline order processing
- Menu management
- Inventory management

- Payment processing (cash, card, and digital wallets)
- Reporting and analytics
- Role-based access control (admin, staff, and customer)

1.3 Definitions, Acronyms, and Abbreviations

- CMS – Cafeteria Management System
- POS – Point of Sale
- GUI – Graphical User Interface
- API – Application Programming Interface

1.4 References

- IEEE 830-1998 standard for SRS
- Online payment gateway documentation
- Inventory management best practices

1.5 Overview

This document details the system's requirements, functionalities, and constraints. It includes functional, non-functional, and technical specifications.

2.Overall Description

2.1 Product Perspective

The system is a **standalone web-based and mobile-friendly application** that integrates with payment gateways and inventory management tools. It replaces the traditional manual order-taking and payment process with an automated solution.

2.2 Product Functions

- **Customer Interface**: Browse menu, place orders, make payments, and track order status.
- **Cafeteria Staff Interface**: View and process orders, update menu, and manage inventory.
- **Admin Interface**: Manage users, generate reports, and monitor system performance.

2.3 User Characteristics

- **Customers**: Non-technical users placing food orders.
- **Cafeteria Staff**: Basic computer users handling order processing.
- **Admins**: Experienced users managing system settings.

2.4 Constraints

- The system must be accessible via a web browser and mobile devices.
- Payment processing should comply with security standards (PCI DSS).
- Inventory data should be updated in real time.

2.5 Assumptions and Dependencies

- The system will require an internet connection for real-time updates.
- Users must have a valid account to place orders.
- Integration with third-party payment gateways.

Specific Requirements

3.1 Functional Requirements

3.1.1 User Authentication and Authorization

- Users can register and log in using email and password.
- Role-based access control for customers, staff, and admins.

3.1.2 Order Management

- Customers can select items and place orders.
- Staff can accept, prepare, and mark orders as complete.

3.1.3 Menu Management

- Admins can add, update, or remove food items.
- Prices and descriptions can be modified.

3.1.4 Inventory Management

- Track ingredient usage and stock levels.
- Generate alerts for low-stock items.

3.1.5 Payment Processing

- Integration with payment gateways (PayPal, Stripe, UPI, etc.).
- Cash-on-delivery option.

3.1.6 Reporting and Analytics

- Generate sales reports.
- Track customer preferences and order trends.

3.2 Non-Functional Requirements

3.2.1 Performance Requirements

- The system should handle at least **1000 concurrent users**.
- Response time should not exceed **3 seconds**.

3.2.2 Security Requirements

- Implement **SSL encryption** for secure data transmission.
- Use **role-based access control (RBAC)** to prevent unauthorized access.

3.2.3 Usability Requirements

- The system should have an **intuitive and responsive UI**.
- Support **multiple languages** for better accessibility.

3.2.4 Availability and Reliability

- The system should have **99.9% uptime**.
- Data backups should be performed **daily**.

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4. External Interface Requirements

4.1 User Interfaces

- **Customer Portal**: Web and mobile-friendly order placement.
- **Staff Dashboard**: Order processing and inventory management.
- **Admin Panel**: User management and analytics.

4.2 Hardware Interfaces

- Compatible with **POS systems** for order processing.

4.3 Software Interfaces

- Integration with **payment gateways (Bkash, Nagad etc.)**.
- Database: **MySQL/PostgreSQL/MongoDB**.

5. Other Requirements

5.1 Legal and Compliance

- Compliance with **GDPR** for data privacy.
- Adherence to **PCI DSS** for secure payments.

5.2 Future Enhancements

- AI-based **recommendation system** for personalized food suggestions.
- **Mobile app** for enhanced user experience.

6. Appendices

- Sample **ER diagrams** and **UI mockups**.
- API documentation for third-party integrations.