
Software Requirements Specification

for

Restaurant Management System

Version 1.0

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1. Introduction

1.1 Purpose

The purpose of this document is to act as a contract between the parties for V1.0 of the Restaurant management System. This document will list all the functional requirements of the product and the expected timeline of the project.

1.2 Intended Audience and Reading Suggestions

This SRS is meant for all the persons involved in this project including the client and Project Head. The functional requirements are drafted as a framework for the developers to provide their feedback.

1.3 Product Scope

The Restaurant management system is built mainly to automate the day-to-day tasks performed by the restaurant owner which takes a lot of time and has the potential to cause legal complications.

2. Overall Description

2.1 Product Perspective

This product is a self-contained product which is a current requirement of the client to automate their business process.

2.2 Product Functions

The main Functionality of this product is to provide Inventory Management, POS capabilities, User management and Finance Management for the Client.

2.3 User Classes and Characteristics

The abilities of the users who will use the software may vary from persons with a little experience with computers to people who have a huge experience in working with computers.

2.4 Operating Environment

This Product must have the ability to run on computers with very low processing power, provided that they support a GUI based operating System. The computer should also be able to run PHP version 8.2 and above and should have at least 500MB of Available Space.

2.5 Design and Implementation Constraints

The Software should be able to online and within the local network. It should provide key bindings for different functions to improve the productivity of the user.

2.6 User Documentation

The Product will be delivered with a final set of user manual and an online repository showing the installation process.

3. External Interface Requirements

3.1 User Interfaces

The User Interface will have several sections including Home, About, Menu, Categories etc. In home page there will be 3 sub sections navbar, middle and footer respectively. In navbar option of Login and Registration is there. In home page itself there is button of Admin Login also there is carousel on the home page of website. In category section information about various categories of food is there once user clicks on particular box of category the detailed information will be shown to the user. In Menu section various food items will be listed there in the form of box to order once user clicks on particular box its detail including its availability, price, taxes will be shown. In footer section there is small detail about developer and social media links and name of the restaurant will be listed there in very attractive format

3.2 Hardware Interfaces

The software will be able to communicate with the print spooler to print the Bill and Receipts.

3.3 Software Interfaces

The Software Runs on by Apache server since It's a PHP based application and uses MySQL as the database. The proper installation of the requirements is necessary for the proper execution of the product. XAMPP application will be used to locally develop the project and create an virtual environment.

3.4 Communications Interfaces

The Product should run without any type of communication to a remote serve and should only require the database connection.

4. System Features

features outline the expected behavior and actions that the system will perform to meet the needs of its users. System features are typically described in detail to provide a comprehensive

understanding of the software requirements. They serve as a foundation for development, testing, and evaluation of the system

4.1 User Management:

- Registration and login functionality for administrators, staff members, and customers.
- User roles and permissions to control access and actions within the system

4.2 Menu Management:

- Ability to create, update, and delete menu items.
- Categorization of menu items (appetizers, main courses, desserts, etc.).
- Pricing and description for each menu item.
- Option to specify ingredients, dietary restrictions, and allergen information.

4.3 Order Management:

- Creation and tracking of customer orders.
- Integration with a POS system for real-time order management.
- Ability to modify and customize orders based on customer preferences.
- Support for special requests, such as substitutions or additional notes.

4.4 Table Reservation:

- Booking and management of table reservations.
- Availability and status of tables in real-time.
- Ability to assign specific tables to reservations based on customer preferences.

4.5 Inventory Management:

- Tracking and management of restaurant inventory.
- Automatic updates of stock levels based on orders placed.
- Notifications for low stock items and reordering alerts.
- Integration with suppliers for seamless procurement.

4.6 Staff Management:

- Creation and management of staff profiles.
- Assignment of roles and responsibilities to staff members.
- Scheduling and shift management for employees.
- Performance tracking and reporting for staff members.

4.7 Reporting and Analytics:

- Generation of reports on sales, revenue, and expenses.
- Analysis of customer trends and preferences.
- Performance metrics for menu items and staff members.
- Visual representations of data through graphs and charts.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

5.1.1 Response Time:

The web application should provide a responsive user interface with fast loading times. The average response time for any user interaction should be less than a specified threshold (e.g., 2 seconds). The system should have minimal latency in retrieving and displaying data.

5.1.2 Throughput:

The web application should be able to handle a specific number of simultaneous users or transactions per unit of time (e.g., 100 concurrent users). The system should support a defined number of orders or requests per second to ensure smooth operation during peak hours.

5.1.3 Scalability:

The system should be scalable to accommodate an increasing number of users, transactions, and data volume over time. The application should be able to handle increased load during high-traffic periods, such as holidays or weekends.

5.1.4 Database Performance:

Database queries and operations should be optimized to ensure efficient data retrieval and manipulation.

The database should have fast response times for common queries, such as menu item lookup or order history retrieval.

Indexing and caching mechanisms should be implemented to improve database performance.

5.1.5 Network Performance:

The web application should be designed to minimize network latency and optimize data transfer.

The application should be compatible with various network speeds and provide a consistent user experience across different network conditions.

5.1.6 Concurrent Users:

The system should be able to handle a specified number of concurrent users without significant degradation in performance.

The application should maintain its responsiveness even when multiple users are accessing and interacting with it simultaneously.

5.2 Security Requirements

5.2.1 Authentication and Access Control:

The system should require strong and unique passwords for user authentication.

Implement secure mechanisms for password storage, such as salted hashing.

Provide role-based access control (RBAC) to restrict system access based on user roles and responsibilities.

Enforce session timeouts and automatic logout after a period of inactivity.

Implement multi-factor authentication (MFA) for enhanced user authentication.

5.2.2 Data Privacy:

Ensure that personally identifiable information (PII) and customer data are securely stored and encrypted.

Implement data anonymization and pseudonymization techniques where appropriate.

Comply with relevant data protection and privacy regulations, such as GDPR or CCPA.

5.2.3 Role-Based Permissions:

Assign granular access permissions to users based on their roles and responsibilities.

Limit access to sensitive functionalities and data to authorized personnel only.

5.2.4 Secure Payments:

Implement secure payment gateways to handle financial transactions.

Comply with Payment Card Industry Data Security Standard (PCI DSS) requirements to protect credit card information.

Ensure that no sensitive payment information is stored within the application.

5.3 Business Rules

Accurate menu item descriptions, prices, and categorizations. Clear indication of specials and promotions. Ingredient details and allergen warnings.

Table Management: Efficient table allocation and reservation handling. Maximum reservation duration and availability restrictions.

Order Management: Ability to modify orders within a specific timeframe. Approval required for late modifications.

Discounts and Offers: Automatic application of eligible discounts and promotions based on predefined rules and timeframes.

Staff Shifts: Scheduling staff based on availability and skills, adhering to labor regulations.
