Software Requirements Specification

for

Vegetable Shop Management

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Table of Contents

1. Introduction

1.1Purpose

- I propose to build a software project that can efficiently handle and manage various activities of a vegetable shop and all these activities will be happening under the supervision of the administrator. At the same time, the need for managing its operations and tasks arises.
- Today's generation encourages high-tech services especially over the Internet. Hence the project is developed proficiently to help store owners automate their business operations.
- In some store it's a given that customer will wait for half an hour after ordering to actually get the vegetable. This system aims to redefine this structure by bringing everything to customer.
- is convenient self-service table booking System that can be embedded on any website. With the online vegetable market, you can create a customized booking process, let people order vegetable through website, manage availability and reservations.

1.2 Scope

- This document describes the requirements of the digital menu cards and its advantage over the formal environment. Four related system interface encompassed by the general scope of the menu and ordering system.
- The first system interface related to the problem of the waiting time outside the store, which can be solved with the help of the application, this shows the live status of the vegetable shop.
- The second interface is related to the replacement of the current menu with the digital menu cards.
- The third interface is the system interface is related to the digital system for the shop
- manager to upload the information dynamically.
- The fourth interface is for the transferring of customer order automatically to the store, which is displayed on the screen.
- The scope of proposed system defines the features of the system. In future produce mobile app to adding the features of following: -
  1. Provide dynamic menu
  2. Live status of store.
  3. Order the vegetable from tablet or mobile.

1.3 References

1. Books:

- "E-commerce Order Management" by Oracle
- "Order Management System" by IBM
- "E-commerce Operations Management" by Wiley

2. Online Resources:

- Shopify Order Management documentation
- WooCommerce Order Management documentation
- Magento Order Management documentation
- Order Management System (OMS) software solutions (e.g. Orderbot, Zoho Inventory)

1.4 Overview

- This document provides a comprehensive guide for the development of an online vegetable shop. It is organized into sections that cover the overall description, specific requirements, system features, and other relevant information necessary for the successful development of the online platform.
- Specific requirements (user roles, product management, order management, payment gateway, security)
- System features (user registration, product catalog, shopping cart, order tracking, reviews)
- Other relevant information (technical specs, data migration, testing, deployment, future development)

1.5 Applicability

- The project will be online and will be available to all its users with all the needs taken care of the customer is not in contact with internet and with social media then we have also arrange advertisement with the help of brochure which will contain our contact numbers, E-mail address etc.

2. Overall Description

2.1 Product Perspective

- We create an android application for monitoring the vegetables through internet. The main aim of this application is to reduce the manual work of the people. In this application all details and records are maintained database software.
- Vegetables names and vegetable prices are displayed in the application. Whenever we need data, we can easily access the database to retrieve the data that are already stored at anywhere in the world. The prices will be updated periodically day by day. The records are frequently

- updated by the admin of the application. It provides a simple user interface to the users. The working method of users are designed by very simple.
- Advantages:
- The retrieval of vegetable prices is very fast in this application and it also easy to the users. It reduces the manual work of the local market members.
- The users get quick update about the prices of vegetables in the market.
- The prices will be updated periodically.
- The updating of prices is very easy in this application. Using of this application user can view the vegetable prices at anywhere.
- The application needs one time updates per day. The simple clicking options improve the interface of the app.
- Modifiable Menu
  - The hotel manager can modify the menu according to the availability.
  - The new menu also can be added to the menu card.
- Handling and storing items
  - The generation of the customer bill is done dynamically.
  - The bill is automatically stored for the further references.
- Attractive offer
  - The application shows different offers that are available.
  - It will also show special offer for the customer who will visit the application frequently.

2.2 Product Functions

- User registration and authentication
- Vegetable browsing and searching
- Online shopping cart and checkout
- Inventory management for administrators
- Order processing for administrators
- Customer support interface

2.3 User Characteristics

- Customers: Individuals who browse and purchase vegetables.
- Administrators: Shop owners and staff who manage inventory, process orders, and provide customer support.

2.4 Constraints

- The app must comply with data protection regulations (GDPR, CCPA).
- Secure payment processing must comply with PCI DSS standards.
- The app must be accessible on desktop

2.5 Assumptions and Dependencies

- Users will have access to internet-enabled devices.
- The application will integrate with third-party payment gateways and delivery services.

3 Functional Requirements

3.1 User Authentication and Authorization

- Users must be able to register with a unique username and password.
- The system must support role-based access control with predefined roles:
  - Customer: able to browse and purchase vegetables, view order history
  - Administrator: able to manage inventory, process orders, manage customer support
- Users must be able to reset their passwords using a secure process.
- The system must implement the following authentication measures:
  - Email verification for new registrations
  - CAPTCHA challenge to prevent automated registrations
  - Account lockout after multiple failed login attempts
  - Session timeout for inactive users
- The system must maintain an audit log of user authentication and authorization activities for security monitoring and compliance purposes.

3.2 Inventory Management (Admin)

- Administrators must be able to add new vegetables to the inventory, including:
  - Vegetable name and description
  - Price and discount information
  - Stock quantity and unit of measurement (e.g., kg, piece)
  - Category and sub-category assignment

- Administrators must be able to update vegetable details, including:
  - Editing existing information
  - Uploading or changing product images
  - Managing product variations (e.g., size, color)

- Administrators must be able to remove vegetables from the inventory, including:
  - Permanently deleting products
  - Temporarily disabling products (e.g., for seasonal or out-of-stock items)

- Administrators must be able to view inventory levels and sales reports, including:
    - Current stock quantities and low-stock alerts
    - Sales history and trends
    - Product popularity and best-seller lists

3.3 Order Processing (Admin)

- Administrators must be able to view and manage customer orders.
- Administrators must be able to update the status of orders (e.g., pending, shipped, delivered).

4 Non-Functional Requirements

4.1 Performance Requirements

- The app must respond within 2 seconds for most user interactions, including:
    - Page loads and transitions
    - Search queries and results
    - Adding items to cart and checkout
    - User authentication and authorization

- The app must support up to 1,000 concurrent users without performance degradation, including:
    - Handling multiple simultaneous requests
    - Maintaining consistent response times
    - Preventing server overload and crashes
    - Ensuring data consistency and integrity

- The app must achieve a minimum uptime of 99.9% per month, with:
    - Scheduled maintenance windows communicated in advance
    - Automatic failover and redundancy measures

    - Real-time monitoring and alerting for performance issues

4.2 Reliability

- The app must have 99.9% uptime, including:
  - Scheduled maintenance windows communicated in advance
  - Automatic failover and redundancy measures
  - Real-time monitoring and alerting for performance issues
  - Regular backups and disaster recovery procedures

- The app should handle unexpected errors gracefully and provide meaningful error messages, including:
  - User-friendly error pages with clear explanations
  - Error logging and reporting for debugging purposes
  - Automatic retry mechanisms for temporary failures
  - Clear differentiation between user errors (e.g., invalid input) and system errors
  - The app must implement robust data validation and sanitization to prevent data corruption and ensure data integrity.

4.3 Security

- User data must be encrypted both in transit and at rest, including:
  - Using industry-standard encryption protocols (e.g., TLS, AES)
  - Regularly updating and patching encryption libraries
  - Implementing secure key management practices

- The app must use secure authentication methods (e.g., OAuth 2.0), including:
  - Multi-factor authentication (MFA) for administrators
  - Password hashing and salting for user accounts
  - Secure storage of authentication tokens and sessions

- The app must comply with GDPR and CCPA regulations, including:
  - Implementing data subject access requests (DSARs) and data erasure
  - Conducting regular data protection impact assessments (DPIAs)
  - Providing clear and transparent privacy policies and notices
  - Ensuring data minimization and purpose limitation
  - Implementing measures for data breach detection and response

4.4 Usability

- The app must be intuitive and easy to use for users of all technical levels, including:
  - Consistent and predictable navigation and interface elements
  - Clear and concise labeling and instructions
  - Minimal cognitive load and simple workflows
  - Accessibility features for users with disabilities (e.g., screen reader support, high contrast mode)

- The app must provide help documentation and tooltips for all features, including:
  - Contextual tooltips and inline help for complex features
  - Comprehensive user guides and tutorials
  - FAQ sections and knowledge bases
  - Searchable documentation and indexing
  - Regularly updated documentation to reflect app changes and updates

4.5 Scalability

- The app must be scalable to support a growing number of users and inventory items, including:
  - Load balancing and autoscaling to handle increased traffic
  - Distributed database architecture for high availability and performance
  - Caching mechanisms for frequent queries and data retrieval
  - Queue-based architecture for handling high volumes of requests

- The app must support horizontal and vertical scaling as needed, including:
  - Adding more servers or instances to handle increased load (horizontal scaling)
  - Increasing resources (e.g., CPU, RAM, storage) for existing servers (vertical scaling)
  - Automated scaling based on performance metrics and thresholds
  - Scalability testing and performance benchmarking to ensure capacity

5 System Requirements

5.1 Hardware Requirements

- Processor: Intel(R) Core(TM) i3-5005U CPU @ 2.00GHz 2.00 GHz
- Memory: 8.00 GB RAM for windows XP/windows7/windows8/windows 8.1
- System Type: 64 bit Operating System, x64-based processor

5.2 Software Requirements

- FRONTEND: - C#.Net
- BACKEND: - My SQL.
- BROWSER: Google Chrome & Mozilla Firefox.

5.3 Network Requirements

- Minimum: 3G internet connectivity
- Recommended: Broadband internet connectivity

6 Interface Requirements

6.1 User Interface

- The app must have a responsive design for desktop
- The homepage must feature categories and popular vegetables.
- The vegetable detail page must display comprehensive information and an "Add to Cart" button.
- The shopping cart page must allow users to update quantities or remove items.
- The admin dashboard must provide access to inventory and order management features.

6.2 Hardware Interfaces

- Support for barcode scanners for inventory management (if applicable).

7. System Features

7.1 User Registration and Authentication

- Users can register with their email address and a password.
- Users can log in and log out of their accounts.
- Users can reset their passwords
- Role-based access control ensures appropriate access levels for customers and administrators.

7.2 Vegetable Browsing and Searching

- Users can browse vegetables by category.
- Users can search for vegetables using keywords.
- Vegetable listings display relevant details including name, image, price, and availability.

7.3 Shopping Cart and Checkout

- Users can add vegetables to their shopping cart.
- Users can view, update, and remove items from their cart.
- Users can proceed to checkout, providing delivery details and selecting a delivery slot.
- Order confirmation sent to users upon successful checkout.

7.4 Inventory Management (Admin)

- Add new vegetables to the inventory.
- Update vegetable details.
- Remove vegetables from the inventory.
- View inventory levels and sales reports.

7.5 Order Processing (Admin)

- View all orders (pending, processing, shipped, cancelled)
- Filter orders by date, status, customer name, or order ID
- Update order status (pending, processing, shipped, cancelled)
- Assign orders to specific delivery personnel or drivers

- View order details (customer info, products, payment method, shipping address)
- Edit order details (update customer info, add/remove products, change shipping address)

7.6 -Customer Support

- Contact customer support through the app.
- Administrators can view and respond to support queries.

8. Other Requirements

8.1 Support Requirements

- 24/7 customer support for users.
- Regular software updates and maintenance.
- Appendices

A. Glossary

- Cart: A virtual basket where users add items they intend to purchase.
- Checkout: The process of paying for items in the cart and arranging delivery.
- Order: A confirmed purchase of one or more items.