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Software Requirements Specification

for Food Distribution Management System

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Revision History

Version	Date	Description	Author(s)
1.0	2024-06-13	Initial Draft	All members

1 Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to define the requirements and specifications for the Food Distribution Management System (FDMS). This system is intended to streamline the management of food distribution, including tracking donors, beneficiaries, and inventory, to ensure efficient and equitable food distribution, thereby contributing towards achieving SDG 2: Zero Hunger.

1.2 Document Conventions

This document follows the IEEE standard for SRS. Key terms are capitalized, and technical terms are explained in the glossary section.

1.3 Intended Audience and Reading Suggestions

This document is intended for the project stakeholders, including developers, project managers, and end-users. It provides detailed requirements and design specifications to guide the development and implementation of the FDMS.

1.4 Product Scope

The Food Distribution Management System (FDMS) is a web-based application focused on enhancing the efficiency of food distribution processes. It includes modules for managing donors, beneficiaries, inventory, distribution schedules, and generating detailed reports and analytics.

1.5 References

- IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications.
- Oracle APEX Documentation.
- Oracle Database Documentation.

2 Overall Description

2.1 Product Perspective

The FDMS is an independent system designed to operate on Oracle APEX and utilize Oracle Database for backend data storage. It will be accessible via web browsers, providing a unified platform specifically tailored for managing food distribution activities.

2.2 Product Functions

The main functions of the FDMS include:

- User Authentication and Authorization: Ensures secure access to the system.
- Donor Management: Tracks and manages donor information and contributions.
- Beneficiary Management: Records and manages beneficiary details.
- Inventory Management: Manages food inventory, including tracking quantities and expiry dates.
- Distribution Management: Schedules and tracks food distributions to beneficiaries.
- Reporting and Analytics: Generates comprehensive reports and analytics for stakeholders.

2.3 User Classes and Characteristics

- Administrators: Have full access to all system functionalities. They manage users, donors, beneficiaries, and inventory.
- Field Workers: Use the web-based application to update records and manage distributions efficiently in the field.
- Donors: Can view their contribution history and related reports, providing transparency and accountability.

2.4 Operating Environment

- Oracle APEX: Version 21.1 or later.
- Oracle Database: Version 19c or later.
- Web Browsers: Chrome, Firefox, Safari, Edge.

2.5 Design and Implementation Constraints

- The system will be implemented using Oracle APEX as the development platform.
- Oracle Database will be used for backend data storage.
- The system must adhere to relevant data protection regulations and standards.

2.6 User Documentation

User manuals and online help guides will be provided to assist users in navigating and utilizing the FDMS efficiently.

2.7 Assumptions and Dependencies

- Users will have internet access.
- Oracle APEX and Oracle Database will be available and properly configured.
- Users will possess basic knowledge of web-based applications.

3 External Interface Requirements

3.1 User Interfaces

The system will provide a user-friendly interface accessible via web browsers and mobile devices. Key screens include:

- Login Screen: For user authentication.
- Dashboard: Provides an overview of system status and key metrics.
- Donor Management: Includes forms and lists for managing donor information.
- Beneficiary Management: Includes forms and lists for managing beneficiary details.
- Inventory Management: Includes forms and lists for managing food inventory.
- Distribution Management: Includes forms and schedules for managing food distributions.
- Reporting and Analytics: Includes interactive dashboards and reports.

3.2 Hardware Interfaces

The system will interact with standard input and output devices such as keyboards, mice, and touchscreens for mobile devices.

3.3 Software Interfaces

The system will interface with Oracle Database for data storage and retrieval. It may also interface with external systems via RESTful APIs if necessary.

3.4 Communications Interfaces

The system will use standard internet protocols (HTTP/HTTPS) for communication between the client (web browser) and the server.

4 System Features

4.1 Feature 1: User Authentication and Authorization

- Description: Ensures secure access to the system using user credentials.
- Priority: High
- Stimulus/Response Sequences:
  - Users enter their credentials.
  - The system validates credentials and grants access based on user roles.

4.2 Feature 2: Donor Management

- Description: Tracks and manages donor information and contributions.
- Priority: High
- Stimulus/Response Sequences:
  - Users enter donor details.
  - The system stores and updates donor information.

4.3 Feature 3: Beneficiary Management

- Description: Records and manages beneficiary details.
- Priority: High
- Stimulus/Response Sequences:
  - Users enter beneficiary details.
  - The system stores and updates beneficiary information.

4.4 Feature 4: Inventory Management

- Description: Manages food inventory, including tracking quantities and expiry dates.
- Priority: High
- Stimulus/Response Sequences:
  - Users enter inventory details.
  - The system updates and tracks inventory status.

4.5 Feature 5: Distribution Management

- Description: Manages the logistics of delivering food to beneficiaries.
- Priority: High
- Stimulus/Response Sequences:
  - Users schedule distributions.
  - The system tracks and updates distribution status.

4.6 Feature 6: Reporting and Analytics

- Description: Generates comprehensive reports and analytics for stakeholders.
- Priority: Medium
- Stimulus/Response Sequences:
  - Users request reports.
  - The system generates and displays the requested reports.

5 Other Nonfunctional Requirements

5.1 Performance Requirements

- The system should handle up to 1000 concurrent users.
- Response time for any user action should not exceed 2 seconds.

5.2 Safety Requirements

- Regular backups of the database should be performed to safeguard data.

5.3 Security Requirements

- The system must ensure data confidentiality, integrity, and availability.
- User data must be encrypted in transit and at rest.

5.4 Software Quality Attributes

- Reliability: The system should be available 99.9% of the time.
- Scalability: The system should handle increasing loads efficiently.
- Usability: The system should be user-friendly and intuitive.
- Maintainability: The system should be easy to maintain and update.

6 Glossary

Term	Definition
FDMS	Food Distribution Management System
SRS	Software Requirements Specification
Donor	An entity that provides food or funds for distribution
Beneficiary	An individual or group receiving food aid
Inventory Management	The process of overseeing and controlling the ordering, storage, and use of food items
Distribution Management	The process of managing the logistics of delivering food to beneficiaries
Oracle APEX	Oracle Application Express, a web-based software development environment