Sample Table of Contents

1. Version History (Should include Version #, Name of the Author and Date)

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| --- | --- | --- |
| Version # | Author | Date |
| 1.0 | Chunhua Li  Yingchun Gao  Xiaolin Wu | March 13,2024 |

2. Introduction (About the system and what does the document is about)

The Food Waste Reduction Platform(FWRP) aims to address the global issue of food waste by providing a comprehensive solution that connects food retailers, consumers, and charitable organizations. The high-level design document outlines the architecture and functionalities of the FWRP.

3. Targeted Audience (Who are the targeted audience for this document)

Project managers, developers, testers, and stakeholders involved in the development and implementation of the FWRP.

4. Scope (What is in and out of the scope of this document)

In Scope:

* User registration and authentication
* Inventory management for retailers
* Surplus food identification and listing
* Claiming food by charitable organizations
* Purchasing by consumers
* Surplus food alerts
* Database design and management
* Application, business, data, security, and deployment architecture
* Testing Model

Out of Scope:

* Real financial transactions
* Real Automatic Notifications Email/Phone

5. Application Architecture (High level architecture/overview of entire system/

main component etc.)

The FWRP follows a three-tier architecture:

Sub heading 1: Presentation Layer:

* User Interface (UI)
* Model-View-Controller (MVC) pattern for interaction with users

Sub heading 2: Business Layer:

* Business logic and functionalities
* Processing of user requests

Sub heading 3 : Database Layer:

* Relational Database Management System (RDBMS) for data storage and management

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6. Business Architecture (Use Case diagrams along with the description)

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Sub heading 1: Retailer Use Cases:

* Manage Inventory
* Identify Surplus Food
* List Surplus Food Items

Sub heading 2: Charitable Organization Use Cases:

* Claim Food
* Update Inventory

Sub heading 3: Consumer Use Cases:

* Purchase Items
* Update Inventory

7. Detailed Design (Class diagrams, Component diagrams etc.)

Sub heading 1: Class diagrams

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Sub heading 2: Component diagrams

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8. Data Architecture (Database structures, ERD, Physical/Logical Data Model)

Sub heading 1: Database Structures:

Tables/entities include Users, Charitable Organizations, Food Inventory, Claims, Purchases, Subscriptions, etc.

Sub heading 2: Entity-Relationship Diagram (ERD)

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9. Security Architecture (What are the security consideration in your designs)

Sub heading 1: Strong Password Policies

Users will be required to create passwords that meet certain complexity criteria, such as minimum length, inclusion of alphanumeric characters, and special characters.

Sub heading 2: Session Management[1]

Sessions will be managed securely to prevent session hijacking and session fixation attacks.

10. Testing Model (How are you testing your application. Junit, API testing etc)

Sub heading 1: Testing Approach

* Unit testing using JUnit for individual components
* Integration testing for interaction between components

Sub heading 2: Tools

* JUnit

11. References

# References

1. *What Is Session Management: Threats and Best Practices*. (2023, 07 14). Retrieved from Authgear: https://www.authgear.com/post/session-management

12. Acronyms/Abbreviation

FWRP: Food Waste Reduction Platform

RDBMS: Relational Database Management System

UI: User Interface

MVC: Model-View-Controller

ERD: Entity-Relationship Diagram