SustainLink

SRS Report

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PROBLEM DEFINITION

A significant amount of food and other perishable products is wasted each year, causing environmental, economic, and social problems.

This project, addressing the challenge of minimizing waste and enhancing community welfare, aims to develop a Perishable Product Rescue Platform that connects near-expiry products with individuals and organizations in need.

The primary issues it tackles include:

1. Waste Reduction: Minimizing the disposal of near-expiry perishable goods by facilitating their redistribution to individuals or communities.

2. Community Welfare: Ensuring surplus essentials find purpose by connecting businesses, local charities, and the community in a collaborative ecosystem.

REQUIREMENT SPECIFICATIONS

Functional Requirements:

- **User Profiles** - Allows to create user profiles for individuals or organizations seeking perishable products. As well as profiles of stores holding near-expiry products.

- **Expiration Date Tracking** - The system allows stores to record expiration dates for perishable goods upon arrival.

- **Alert System** - An alert mechanism will notify the stores when products are close to expiration.

- **Product Listing** - Allows stores to list near-expiry including product details, quantity, location, expiration date, etc.

- **Connection and Coordination** - Facilitates real-time connections between stores and local charities for efficient redistribution.

- **Product Search** - Enable users to search for available perishable products based on location, product category, and other relevant criteria.

- **Push Notifications -** Send push notifications to users about new product listings, updates, and special offers.

- **Incentive System** - Implement an incentive system to motivate users to reduce waste of perishable products.

- **Administrative Tools** - Provide administrative tools for managing user accounts, product listings, and overall platform operations.

Technical Requirements:

- **Software** – The platform should be developed using web technologies, ensuring cross-platform compatibility and accessibility.

- **Database** - A scalable database is to be used to store product information, user profiles, transaction records, and other relevant data.

- **Networking** - The platform should have secure and reliable networking capabilities for data transfer and user interactions.

- **Security** - Implement robust security measures to protect user data, prevent unauthorized access, and ensure compliance with data privacy regulations.

- **Performance** - The platform should be designed for high performance to handle a large volume of users and transactions.

- **Scalability** - The platform should be scalable to accommodate future growth in users and product listings.

- **Reliability** - The platform should be highly reliable to ensure continuous operation and availability.

- **Geolocation Integration** - Implement a geolocation feature to connect stores and individuals based on proximity.

System Requirements:

- **Hardware Requirements:**
  - Operating System – Windows 10 or above
  - Processor – Core 2 duo or an equivalent
  - Memory – 4 GB RAM or more

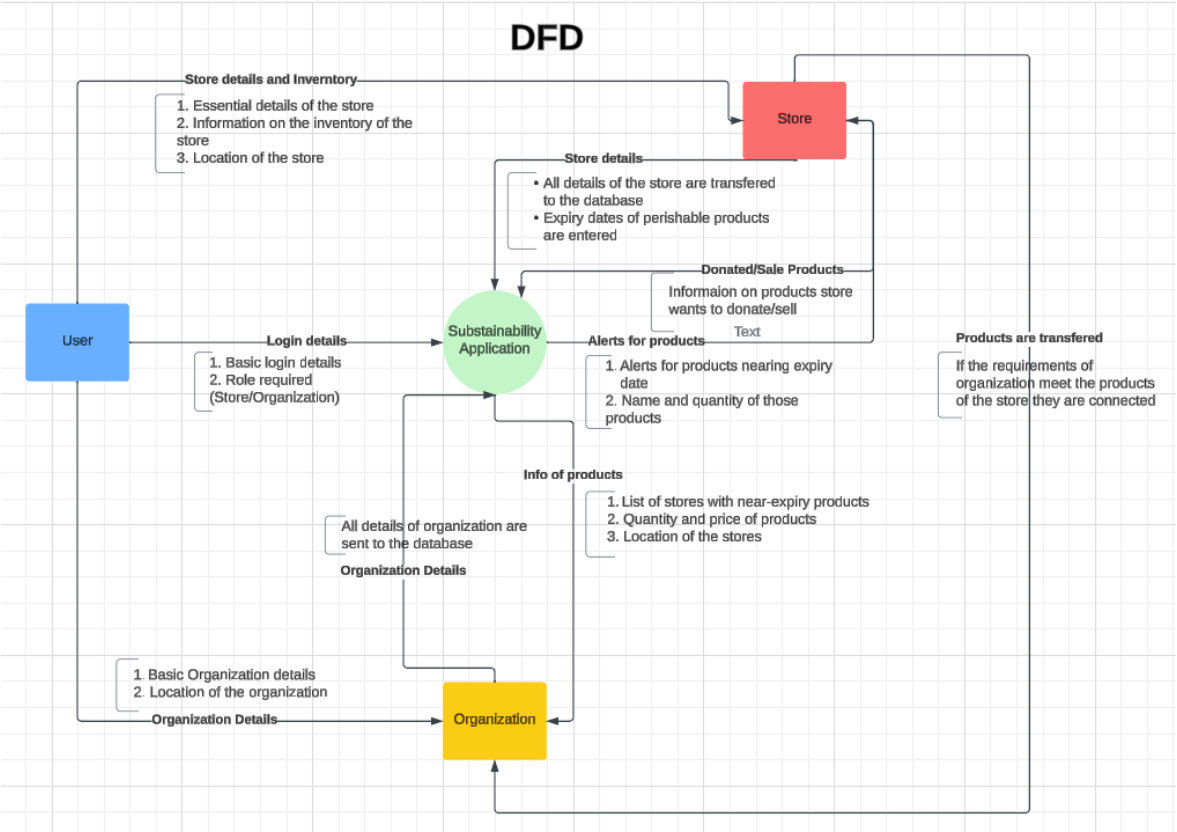
- **Software Requirements:**
  - Front End – React
  - Back End – Firebase
  - Geolocation Integration

- **Network Requirements:**
  - The platform should have secure and reliable networking capabilities for data transfer and user interactions.

- Firewall and Security - Configured firewall settings to control incoming and outgoing traffic. Usage of SSL/TLS encryption for secure data transmission.

CONCEPTUAL MODEL

Data Flow Diagram (DFD):



PROPOSED TOOLS

- Visual Studio Code as the code editor.
- Git for version control.
- GitHub or GitLab for code repository management.
- Firestore for database management
- Figma for design
- Firebase for back end development