Software Requirements Specification

AgriGift- fertilizer distribution management system

GROUP -31

Version 2.0

April 10, 2024

Team - Universe

Department of Computing & Information System

Faculty of Computing Sabaragamuwa University of Sri Lanka

Team members

Index No	Name with Initials	Email	Mobile No
21CIS0215	SWMBN Wickramanayaka	swmbnwickramanayaka@std.foc.sab.ac.lk	0754680720
21CIS0062	MAR.Kaveesha	markaveesha@std.foc.sab.ac.lk	0743586609
21CIS0011	WMN Thilina	wmnthilina@std.foc.sab.ac.lk	0711101925

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Revision History

Name	Date	Reason For Changes	Version
Req. gathering	March 31, 2024	Gathering & analyzing software requirements specification.	1
System analysis	April 10, 2024	Inserting in depth analysis with necessary diagrams.	2

1. Introduction

1.1 Purpose

The main purpose of this web application is to enhance the efficiency and effectiveness of fertilizer distribution while ensuring optimal utilization of agricultural practices across Sri Lanka. Furthermore, It aims to minimize wastage, improve accessibility, provide necessary equipment and knowledge for farmers and enhance overall agricultural productivity.

1.2 Scope

The scope of this project is to cover the development of a comprehensive software solution aimed to cover the specific needs of Sri Lankan farmers and fertilizer distribution agencies. It includes functionalities for inventory management, quality control, distribution logistics and farmer engagement.

1.3 Product Perspective

This web application system will integrate with existing fertilizer management systems and databases. It will provide a user-friendly interface for stakeholders involved in the fertilizer supply chain, including farmers, distributors, and government agencies.

1.4 Product Functions

Key functions of the web application include:

- Inventory management
- Quality assurance(QA)
- Distribution, planning and tracking of fertilizer and other equipment
- Farmer registration and engagement
- Reporting and feedback mechanism
- Government advisory services for farmers.

1.5 User Characteristics

Users of the application will include farmers, fertilizer distributors, government officials, advisers and administrative staff involved in agricultural management. The application will be user friendly and users with different levels of technical expertise will be able to use it effortlessly.

1.6 Limitations

While the web application aims to optimize fertilizer management processes, there may be limitations such as network connectivity issues, data accuracy dependencies, and regulatory constraints.

1.7 Assumptions and Dependences

With the development of this application creators assumes access to reliable data sources, cooperation from relevant stakeholders, and adherence to regulatory requirements, governing fertilizer distribution and agriculture in Sri Lanka.

2. Requirements

2.1 External Interfaces

- Government databases for regulatory compliance and reporting.
- Farmer registration systems for user authentication and engagement.
- GPS systems for packages tracking distribution routes and farmer locations.
- Mobile devices for field data collection and communication.
- Payment gateways for transaction processing (if applicable).

2.2 Functions

- Maintain a centralized database of fertilizer inventory.
- Conduct quality checks on incoming and existing stock.
- Generate distribution plans based on demand and geographic factors.
- Provide real time tracking of fertilizer shipments.
- Enable farmers to register, place orders, and receive notifications.
- Generate reports on fertilizer usage, distribution, and stock levels.

2.3 Usability Requirements

- Have an intuitive user interface with multilingual support.
- Provide clear instructions and error messages.
- Be accessible via devices like mobile phones and desktops with internet support.

2.4 Performance Requirements

The application will be able to,

- Handle concurrent user requests without performance degradation.
- Load data and generate reports within acceptable timeframes.
- Support scalability to accommodate increasing data volumes and user traffic.

2.5 Logical Database Requirements

The software shall maintain a relational database schema to store:

- Fertilizer inventory details (type, quantity, quality).
- Farmer profiles and orders.
- Distribution routes and schedules.

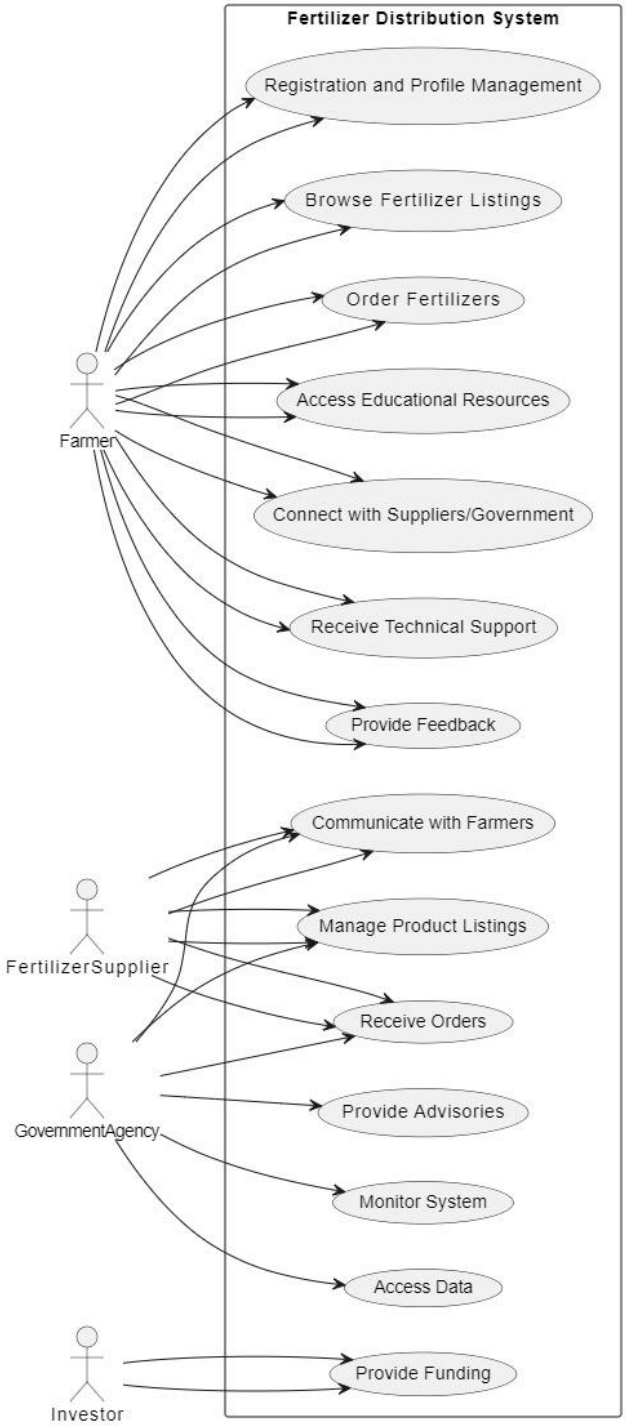
2.6 Design Constraints

The software design shall adhere to:

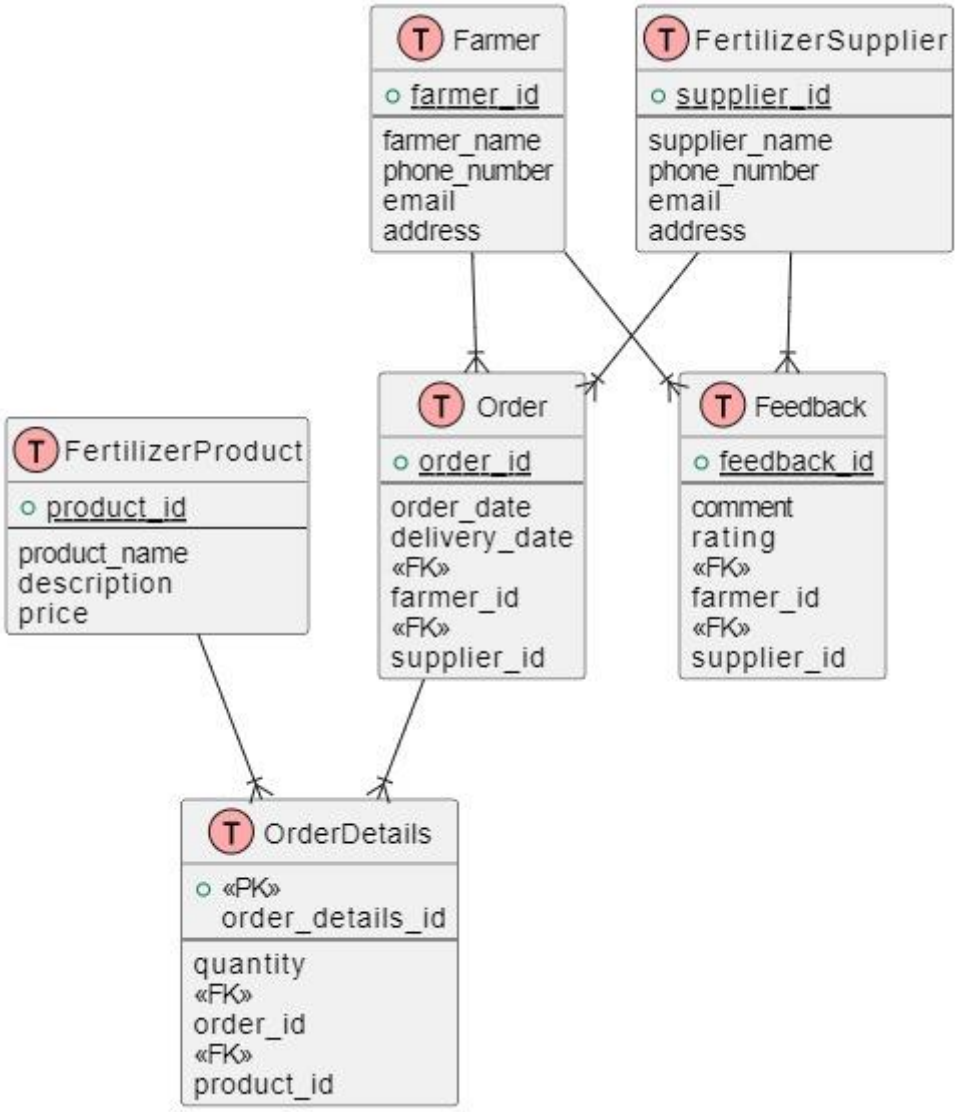
- Government regulations regarding fertilizer distribution and data privacy.
- Compatibility with existing hardware and software infrastructure.
- Consideration of limited internet connectivity in rural areas.

3. System Design

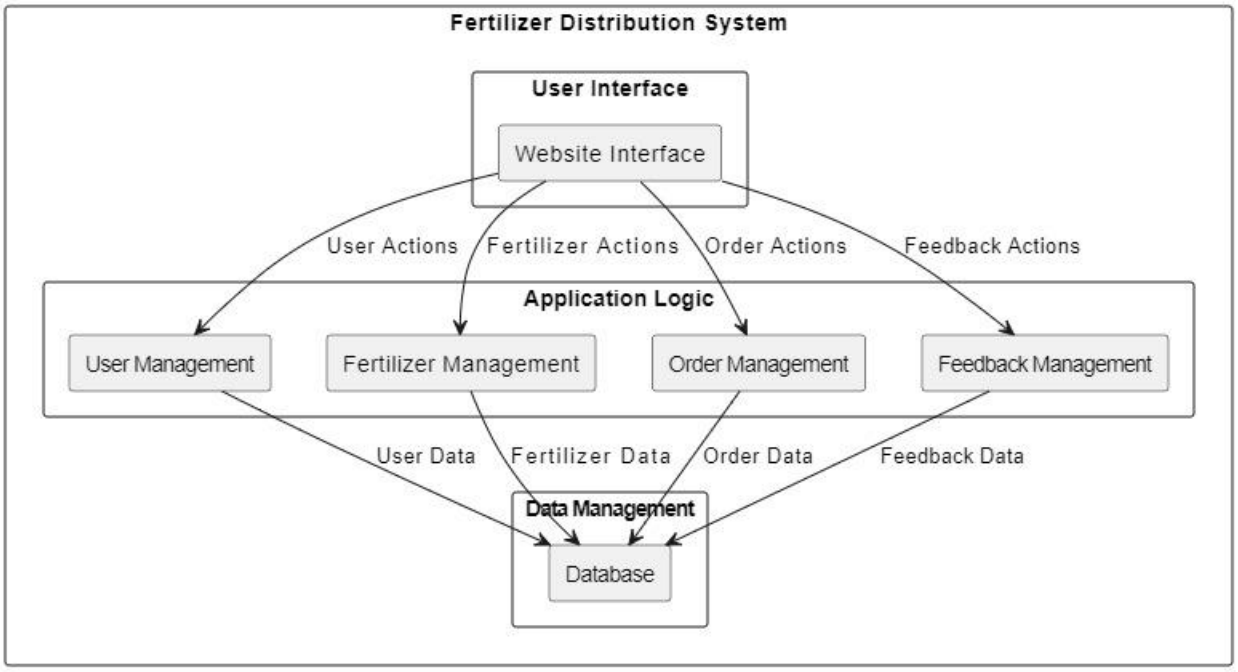
3.1 Use case diagram



3.2 ER diagram



3.3 Block diagram



4. References

- Agricultural information from Sri Lankan agrarian office Hambanthota.
- Industry standards and best practices for software development.
- Research articles and case studies on agricultural technology implementations.