Rajiv Gandhi Univesity of Knowledge Technologies, Basar.

Software Requirements Specification (SRS)

for

Agri Vision Web Application

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Mini Project Guide:U.Nagamani Madam.

Version	Date	Author	Description
1.0	October 15,2024	Depavath Naresh, Mudavath Kalyan, Mudapally Aravind.	Initial Draft.

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1. Introduction

1.1 Purpose

The purpose of the Agri Vision Project is to create a comprehensive platform that bridges the gap between farmers, consumers, and sellers in the agriculture industry. By eliminating the need for contractors, the platform ensures that farmers receive a fair price for their goods while providing consumers with fresh, direct-from-farm products. Additionally, the platform empowers farmers with tools to manage their business effectively, check weather conditions, and resolve queries through an integrated chatbot.

1.2 Scope

This web application includes multiple features for various user roles:

- Farmers can sell their crops and grains, buy farming supplies, rent machines, and access real-time weather updates.
- Sellers can manage their inventory and sell agricultural products like seeds and pesticides.
- Consumers can browse and buy products directly from farmers, manage their profiles, and view their carts.
- A GPS-enabled weather system allows farmers to check local weather updates, helping them make informed decisions.
- A chatbot provides support and answers to farming-related queries.

This system aims to build a fair, transparent, and efficient platform for all stakeholders in the agricultural ecosystem.

1.3 Definitions, Acronyms, and Abbreviations

- **GPS**: Global Positioning System
- **UI**: User Interface
- **SRS**: Software Requirements Specification
- **API**: Application Programming Interface
- **CRUD**: Create, Read, Update, Delete (operations related to data)

1.4 References

- Google map api,Open Street api,etc...

1.5 Overview

This document outlines the functional and non-functional requirements of the Agri Vision Project. It covers system design, specific features, external dependencies, user roles, and various operational conditions to provide a clear picture of the system’s functionality.

2. Overall Description

2.1 Product Perspective

The Agri Vision Project is designed to be a self-contained, modular web application that can be expanded in the future with additional services like predictive farming analytics, supply chain

monitoring, or advanced payment gateways. The system will connect multiple stakeholders (farmers, consumers, and sellers) and integrate seamlessly with weather services, GPS-based location services, and secure payment gateways.

2.2 Product Functions

Key features of the platform include:

- **Seller Profile Management**: Sellers can add, edit, and remove products from their inventory, as well as update their profile and contact information.
- **Farmer Profile Management**: Farmers can list grains for sale, buy seeds or pesticides, rent farming machinery, and check real-time weather data through an interactive map.
- **Consumer Profile Management**: Consumers can edit their profiles, manage addresses, browse products, and manage their shopping carts.
- **Weather GPS Integration**: Farmers can check weather conditions in their location by clicking on the map, which uses GPS data to show real-time weather updates.
- **Chatbot Integration**: A virtual assistant for answering farmers' questions, ranging from farming tips to platform-related queries.

2.3 User Characteristics

- **Farmers**: Typically non-technical users, comfortable with basic web and mobile applications, seeking to sell their produce and buy supplies with minimal hassle.
- **Sellers**: Businesses or individuals familiar with managing products online, responsible for selling farming supplies and renting machinery.
- **Consumers**: End-users or businesses looking to buy fresh agricultural products directly from farmers, managing personal accounts, orders, and payments.
- **Admin**: Technical users responsible for managing the platform, including user permissions, product listings, and overall system performance.

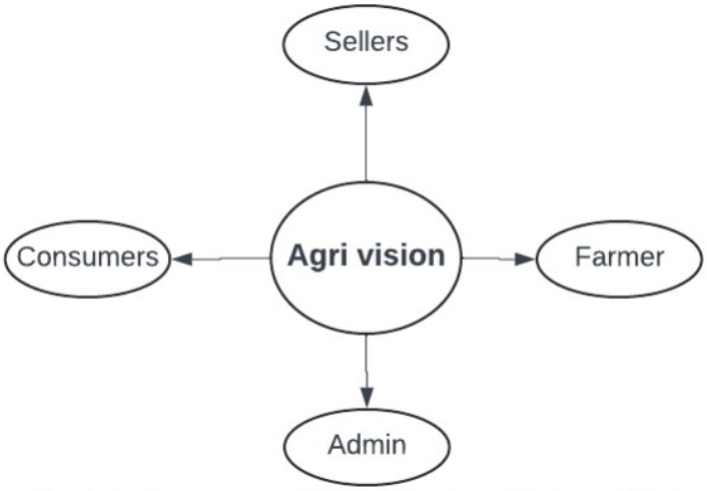


Figure:Agri vision connects i.e Farmes,Sellers,Consumers

2.4 Operating Environment

- **Browser Compatibility**: The application will run on modern browsers like Chrome, Firefox, Safari, and Edge, supporting both desktop and mobile platforms.
- **Mobile-Friendly**: A responsive UI design ensures usability on smartphones and tablets.
- **GPS Access**: GPS will be required to provide weather updates and other location-based services.
- **Cloud-based Hosting**: The platform will be hosted on cloud infrastructure to ensure scalability and availability.

2.5 Assumptions and Dependencies

- A reliable internet connection is required for accessing the platform.
- External APIs for weather data and secure payment processing will be integrated.
- GPS permissions are needed to provide accurate weather data.

3. Specific Requirements

3.1 Functional Requirements

1. User Registration and Authentication

- Users must register with valid email addresses and phone numbers.
- The platform must support different user roles (farmers, sellers, consumers).
- Secure authentication using email verification or two-factor authentication (2FA) should be provided.

2. Seller Profile Features

- **Add/Delete Products**: Sellers can upload product details including images, descriptions, pricing, and availability.
- **Edit Profile**: Sellers can edit personal information and company details, including addresses and contact numbers.
- **Inventory Management**: Sellers can update stock quantities and pricing as needed.

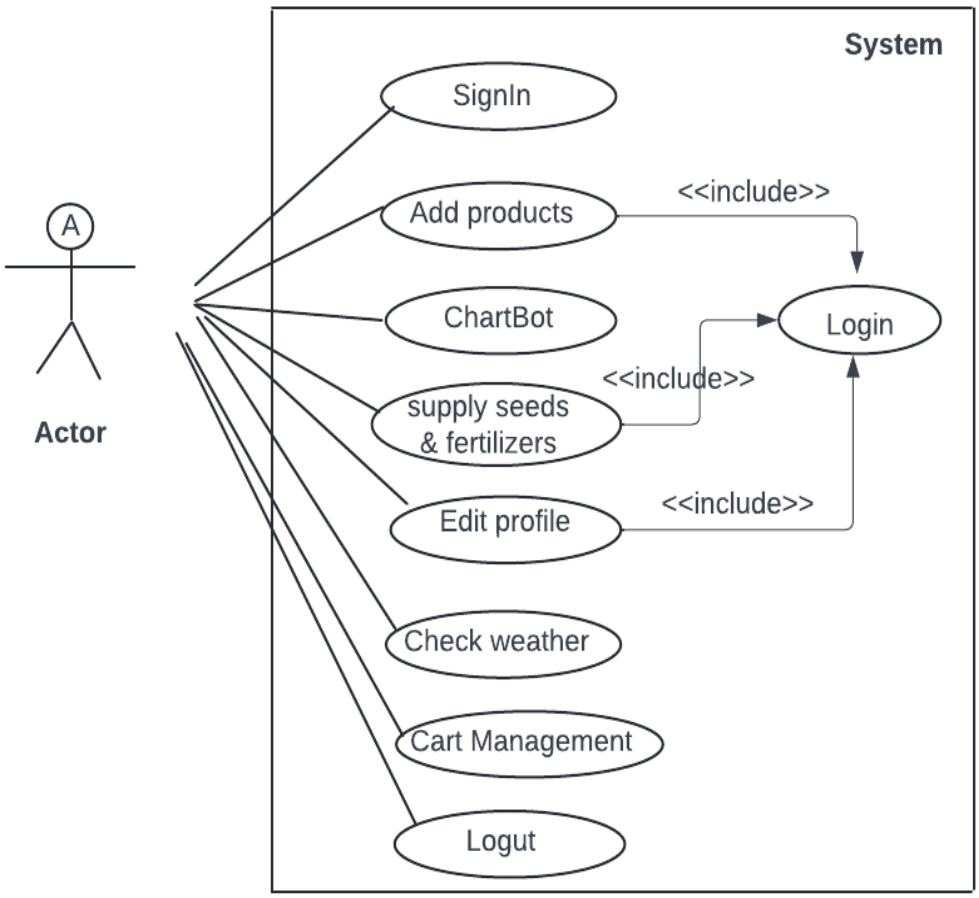


Figure:Use case Diagram of Supplier.

3. Farmer Profile Features

- **Add/Delete Grains**: Farmers can list their crops and grains for sale.
- **Purchase Seeds/Pesticides**: Farmers can browse, select, and purchase farming supplies like seeds or pesticides from sellers.
- **Rent Machines**: Farmers can rent agricultural machines from sellers, specifying the rental duration.
- **Check Weather via Map**: Farmers can click on a map to view weather updates for their region using GPS data.
- **Edit Profile & Address**: Farmers can update their personal information and contact details.

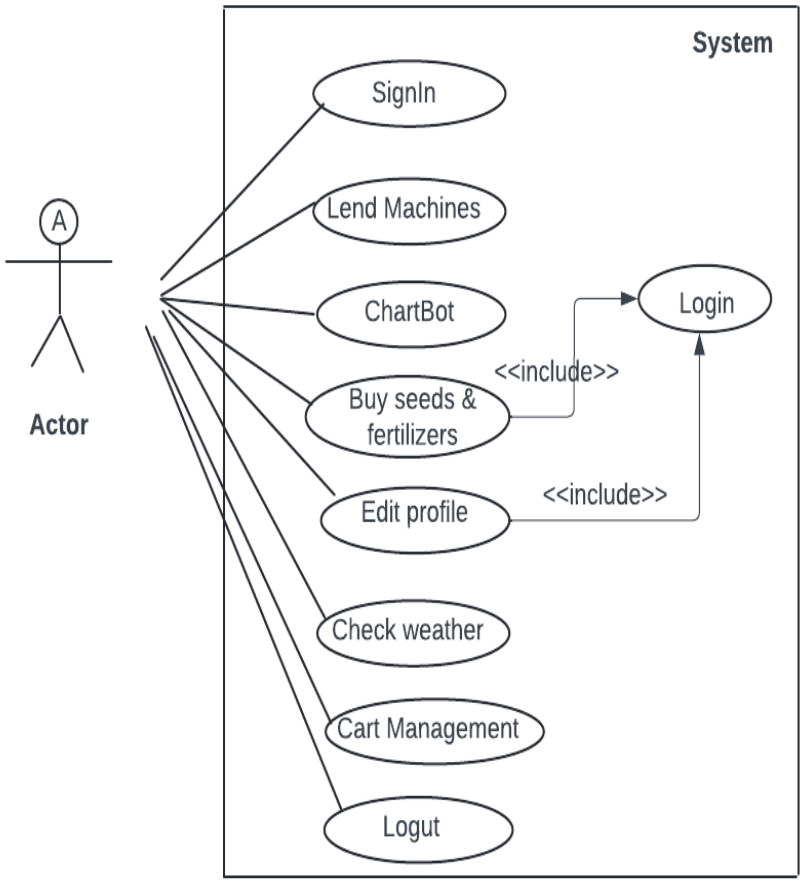


Figure:Use case Diagram of Farmer

4. Consumer Features

- **Edit Profile & Address**: Consumers can update their profile information, including personal details and delivery addresses.
- **Buy Products from Farmers**: Consumers can browse and purchase products directly from farmers, adding them to their cart.
- **Cart Management**: Consumers can manage their cart, change product quantities, and remove products before proceeding to checkout.
- **Order Summary & Payment**: Consumers receive a detailed order summary and have multiple payment options, including card and cash-on-delivery.

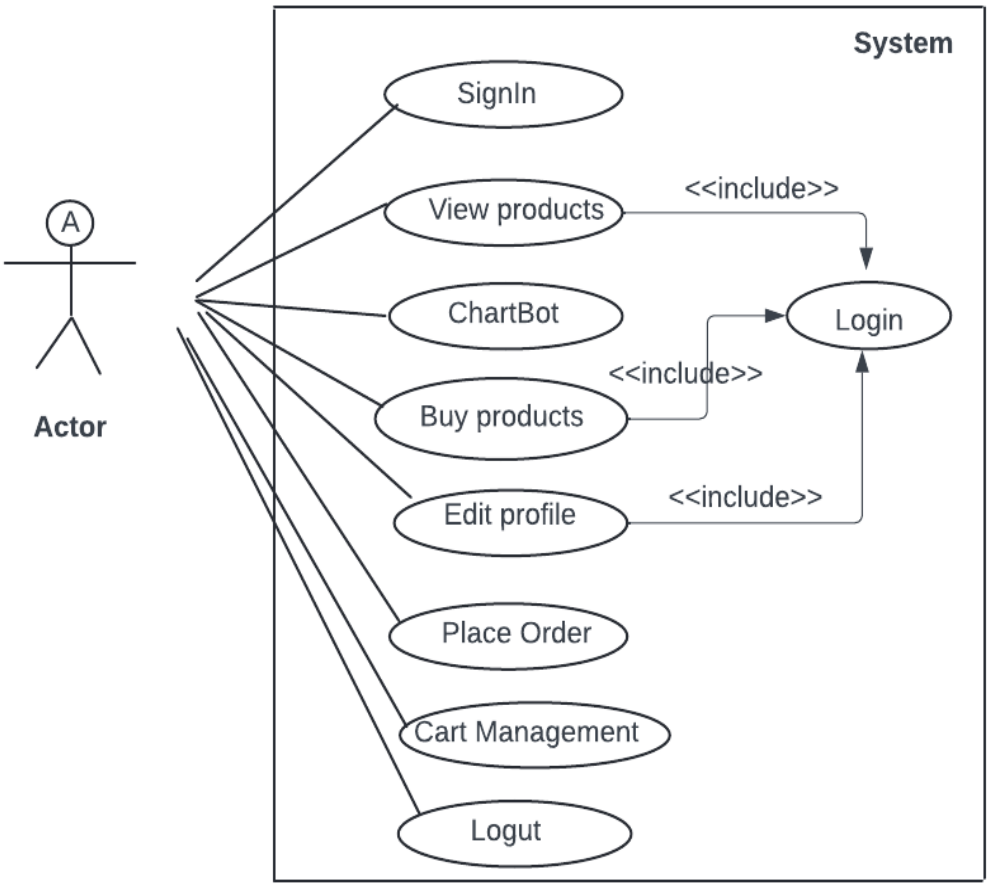
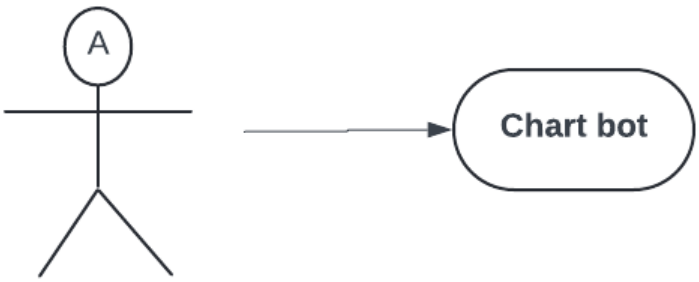


Figure:Use case Diagram of Consumer.

5. Chatbot Assistance

- **Interactive Help**: The chatbot will help farmers with questions about farming, managing their products, or technical issues related to the platform.
- **24/7 Availability**: The chatbot will be available round-the-clock to assist users.



Authorised login will access chartbot.

4. System Features

4.1 Seller Profile Management

- **Priority**: High
- **Functional Requirements**:
    - Add/delete products with images and descriptions.
    - Edit personal and company details.
    - Update address and contact information.

4.2 Farmer Profile Management

- **Priority**: High
- **Functional Requirements**:
    - Add/delete grains for sale.
    - Purchase seeds or pesticides.
    - Rent machines and specify rental periods.
    - View weather updates using GPS by clicking on an interactive map.

4.3 Consumer Profile Management

- **Priority**: High
- **Functional Requirements**:
    - Edit profile and addresses.
    - Browse and purchase products from farmers.
    - Manage cart: add, remove, or modify product quantities.

4.4 Weather GPS

- **Priority**: Medium
- **Functional Requirements**:
    - Access location data using GPS to provide real-time weather updates.
    - Display weather information on a map based on the farmer’s current location.

4.5 Chatbot Assistance

- **Priority**: Medium
- **Functional Requirements**:
    - Provide natural language responses to user queries.
    - Assist with farming tips, platform navigation, and troubleshooting.

5. Non-functional Requirements

1. Performance

- The system must handle at least 1,000 concurrent users without performance degradation.

2. Security

- Ensure secure transactions using SSL encryption.
- Implement role-based access control (RBAC) to protect sensitive data.

- Personal data must comply with local privacy laws (e.g., GDPR).

3. Usability

- The platform must be easy to use, especially for non-technical farmers.
- Provide tooltips and tutorials to guide first-time users.

4. Availability and Reliability

- The platform must ensure 99.9% uptime, minimizing downtime for farmers during peak seasons.

6. Appendices

- **Use Case Diagrams**: Visual representation of user interactions with the system.
- **Glossary**: A list of specialized terms used in agriculture or technology within the application