

Mini Project-I
SOFTWARE REQUIREMENT SPECIFICATION (SRS)
“Mobile App for Direct Market Access for Farmers”

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2024-25

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1. Introduction

- **Purpose:**

The Agroconnect app has been developed to help farmers in accessing the market straight without the use of middlemen by allowing them to display and manage their products. It incorporates several actors namely, farmers, buyers, Krishi Vigyan Kendras (KVKs), Farmer Producer Organizations (FPOs) and Agricultural Produce Market Committees (APMCs). However, the app also uses other types of modules such as direct purchase, negotiation, and aggregation assuring effective communication, transparency in pricing and wider market coverage.

- **Scope:**

Farmers can utilize the application to control their produce and even chat or call buyers for price discussions. It has multi-lingual and transportation systems integration and enhanced capabilities like bargaining on price in real-time. The application integrates safe channels of paying for services, publicity, and reservation services which instead enables the farmers to cut out the agents, get paid well and participate in the alliances more. Aiming at agricultural enhancement in productivity.

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- Abbreviations:

SRS	System Requirements Specification
UI	User Interface
KVK	Krishi Vigyan Kendra
FPO	Farmer Producer Organization
APMC	Agricultural Produce Market Committee
API	Application Programming Interface
COD	Cash On Delivery

2. Overall Description

- **Product Perspective:**

Agroconnect application aims to fit appropriately within the agricultural system enabling connection among farmers, buyers and other entities such as KVKs, FPOs and APMCs. It allows them to cut off market intermediaries as farmers are able to advertise, bargain and run listings on their products. Agroconnect includes Direct Purchase Module which extends the scope of product management and market interaction. It does not only operate on the local level but also helps with the observance of the geographical provisions so that local farmers would enhance sales while maintaining integrity. As a result, this improves the decision making process of farmers reducing chances of a better price being lost as well as opening up bigger markets.

- **Product Functions:**

1. **Product Listing and Management:** Assisting in the creation and maintenance of product listings, allowing farmers to display crops and seeds on the platform.
2. **Price Negotiation:** Designing a module that allows communication over chat and calls for direct price negotiation in order to allow farmers to get reasonable prices for their products.
3. **Market Information and Visualization:** Providing a dynamic market supply and demand information, including prices and their variations such that the users are able to make the right decisions as per the existing market status.
4. **Transaction and Regulatory Compliance:** Guaranteeing transaction security and sticking to the local agricultural policy guidelines to enhance efficiency and minimize fraud for both sellers and buyers.

- **User Characteristics:**

1. **Farmers:** Primary users responsible for listing and selling their agricultural products. They may have varying levels of digital literacy, with the app designed to accommodate all. Their main tasks include managing product listings and coordinating transportation.

2. **Buyers:** Users who purchase products directly from farmers, such as retailers or wholesalers. Typically tech-savvy, they use the app to browse listings, negotiate prices, and manage deliveries. They also have the option to subscribe to regular purchases like fresh produce.
3. **Management:** Decision-makers who monitor platform data and performance, including government agencies and NGOs. They use summarized reports to make informed decisions related to agricultural policies and sustainability initiatives. Their focus is on accessing insights and economic trends for planning.

3. Specific Requirements

- **Functional requirements:**

1. **Product Listing and Categorization**

- The system allows farmers to list and categorize their agricultural products (e.g., vegetables, grains, fruits) by type, quantity, and price. Users can filter products based on criteria like location, crop type, and price range.

2. **Price Negotiation**

- The platform facilitates real-time price negotiation between buyers and farmers.

3. **Data Validation and Error Handling**

- The app ensures robust data validation, checking for completeness and accuracy of product listings. Farmers and buyers receive clear prompts for missing or incorrect entries, ensuring a smooth transaction process.

4. **Transaction and Payment Management**

- Users can complete purchases securely within the app. The system confirms transactions with details like product type, total price, and payment status. Users receive payment confirmations that include essential details like amount and transaction ID.

- **Non-Functional Requirements:**

1. **Performance**

- The app must handle multiple concurrent users (farmers, buyers, and logistics providers) without significant delays. System response time should be less than 3 seconds for standard operations such as browsing product listings or completing transactions.

2. **Scalability**

- The platform should be scalable to accommodate growing numbers of users and products over time, without degrading performance. It must support increasing user loads and expanding market areas as the app adoption grows.

3. **Security**

- All user data, including personal and transaction information, must be encrypted during transmission and storage. Secure payment gateways must be integrated, and the system should enforce strong authentication protocols to prevent unauthorized access.

4. **Usability**

- The user interface must be intuitive and easy to navigate, supporting farmers and buyers with varying levels of digital literacy. Multi-language support is essential to ensure accessibility for users from different linguistic backgrounds.

4. System Features

1. **Product Listing and Management**

- **Input:** Farmers can enter product details (crop type, quantity, price, location) or upload files with product data.
- **Processes:** The system categorizes products based on user input and predefined product types (grains, vegetables, fruits).

- **Output:** A comprehensive list of products with details such as price, quantity, and availability.
- **User Interaction:** Intuitive interface for farmers to easily upload and manage product listings.

2. Price Negotiation

- **Input:** Buyers and farmers can enter product quantities, price offers.
- **Processes:** Facilitates negotiations between farmers and buyers.
- **Output:** Finalized deal terms including negotiated prices.
- **User Interaction:** Users can adjust bids or offers in a user-friendly format.

3. User Management

- **Input:** User registration details such as username, password, and roles (farmer, buyer, admin).
- **Processes:** Manages user accounts with role-based access control, authentication, and permission settings.
- **Output:** User activity reports showing active accounts, permissions, and transaction histories.
- **User Interaction:** Admins can manage user roles, while users can update profiles, reset passwords, and manage their accounts easily.

4. Pricing and Payment System

- **Input:** Consumers select payment methods during checkout (credit/debit cards, UPI, digital wallets, cash on delivery).
- **Processes:** The system securely processes payment transactions and confirms successful payments or any issues encountered.
- **Output:** Payment confirmation notifications for consumers and financial summaries for farmers.
- **User Interaction:** A secure and simple payment interface that ensures user confidence and facilitates easy transactions.

5. Shopping Cart and Checkout

- **Input** Consumers can add selected products to their shopping cart and specify quantities.
- **Processes** The system calculates the total price, including any applicable taxes and delivery fees.
- **Output:** A summary of the shopping cart, including product details, total cost, and checkout options.
- **User Interaction:** Clear buttons for adding/removing items and a straightforward checkout process that guides consumers step-by-step.