

Software Requirements Specification (SRS)

Project Title:

Farm Direct – Online Platform for Canadian Farmers to Sell
Directly to Customers

Team members:

Dev Pinakinbhai Patel

Hetanshu Hemant Patel

Kush Janak Patel

Pranav Shrivastava

INDEX

1.	Introduction.....	1
2.	Overall Description.....	2
3.	System Features.....	3
4.	External Interface Requirements.....	4
5.	Non-functional Requirements.....	5
6.	Other Requirements.....	6

1. Introduction

1.1.1 Purpose

The purpose of this SRS is to define the requirements for Farm Direct, a mobile platform designed to connect Canadian farmers directly with consumers, enhancing access to local, fresh produce. This document serves as a guideline for developers, testers, stakeholders, and project managers by detailing both functional and non-functional requirements.

1.2 Scope

This project focuses on creating a direct-to-consumer sales channel for farmers. Key objectives include:

- Enabling farmers to list products, manage inventories, and interact with customers directly.
- Reducing intermediaries to lower distribution costs.
- Increasing access to fresh, locally sourced food for Canadian consumers. The platform will be a mobile-first solution, primarily for Android and iOS, with a web-based administrative interface for managing platform operations.

1.3 Definitions, Acronyms, and Abbreviations

List specific terms and abbreviations that will be used throughout the document:

- **D2C:** Direct-to-Consumer.
- **CSA:** Community Supported Agriculture.
- **PIPEDA:** Personal Information Protection and Electronic Documents Act (Canada's data privacy law).

1.4 References

This section lists documents and resources referenced in defining the requirements, such as:

- Canadian agriculture market reports.
- Data privacy regulations.

- Project proposal and market study documents

2. Overall Description

2.1 Product Perspective

Describe Farm Direct's role within the broader agricultural and e-commerce market:

- Farm Direct bridges the gap between local farmers and consumers by offering a centralized digital marketplace, overcoming limitations of farmers' markets and CSA programs.
- The platform offers scalability for farmers, allowing them to reach more consumers and build relationships, which is not possible on platforms like Amazon or traditional grocery delivery services.

2.2 Product Functions

Summarize the main functions of Farm Direct:

- **Farmer Profiles and Product Listings:** Farmers can set up profiles to showcase farm information, including farming practices and certifications, and manage product listings.
- **Search and Discovery Features:** Users can search for nearby farms, and filter by product types, farming methods, and dietary needs.
- **Secure Online Transactions:** The platform supports payments through an integrated payment gateway and includes an escrow system for added transaction security.
- **Community Engagement:** The platform allows knowledge sharing, recipe sharing, and discussions.
- **Analytics and Market Insights:** Sales and consumer data analytics for farmers to optimize product offerings.
- **Quality Assurance and Review System:** Consumers can review products, helping maintain quality standards.

2.3 User Classes and Characteristics

Define user groups:

- **Farmers:** Primary users who use the platform to list products, manage inventory, and interact with customers. They may have limited digital skills.
- **Consumers:** Users seeking local produce; they value convenience, transparency, and sustainable products.
- **Administrators:** Responsible for overseeing platform operations, handling disputes, and ensuring quality.

2.4 Operating Environment

Specify the system environment:

- The platform will operate on mobile devices (iOS and Android) for farmers and consumers. Administrators will use a web interface for easier management of platform operations.

2.5 Design and Implementation Constraints

Outline constraints:

- **Regulatory Compliance:** Adherence to Canadian food safety standards.
- **Data Privacy:** Compliance with PIPEDA for secure handling of user data.
- **Technology Stack:** Built with Flutter for cross-platform support and Java for backend API services.

2.6 User Documentation

Specify documentation requirements:

- Provide user guides, video tutorials, and FAQs accessible within the app and on the website for easy onboarding.

3. System Features

3.1 Farmer Profile and Product Listings

- **Description:** Farmers can create detailed profiles showcasing their farms and products, enhancing transparency and consumer trust.
- **Functional Requirements:**
 - Allow farmers to create and edit profiles with farm descriptions, certifications, and farming practices.
 - Enable farmers to add, edit, and manage product listings, including photos, descriptions, prices, and inventory levels.
 - Provide support for multimedia (photos, videos) to enhance product presentations.

3.2 Search and Discovery

- **Description:** Consumers can easily locate and browse local farm products based on their preferences.
- **Functional Requirements:**
 - Implement a search feature with filters for product categories, farm certifications, and location-based searches.
 - Use geolocation to show consumers nearby farms, helping them source produce locally.
 - Allow users to save searches and set up notifications for new product availability.

3.3 Secure Transactions and Escrow System

- **Description:** The platform supports secure transactions with an escrow system to protect both parties.
- **Functional Requirements:**
 - Integrate with payment gateways to support multiple payment methods (credit/debit cards, bank transfers, etc.).
 - Implement an escrow system to hold payments until orders are fulfilled, ensuring security for both consumers and farmers.

3.4 Community Engagement and Forums

- **Description:** A feature-rich community space that encourages interactions, knowledge sharing, and relationship building.
- **Functional Requirements:**
 - Provide discussion forums for consumers and farmers to exchange ideas, ask questions, and share experiences.
 - Include recipe-sharing options linked to products available on the platform.
 - Offer educational resources on sustainable farming practices and local food benefits.

3.5 Analytics and Reporting for Farmers

- **Description:** Analytics tools to help farmers make informed business decisions.
- **Functional Requirements:**
 - Display detailed sales analytics, customer demographics, and product performance insights.

- Allow farmers to track consumer behavior trends, aiding in planning and marketing efforts.
- Include reports on seasonal trends and market demands to inform planting decisions.

4. External Interface Requirements

4.1 User Interfaces

Describe the UI design:

- Design a mobile-friendly and intuitive interface with easy-to-navigate menus and simplified data entry for farmers.
- Use visual cues and notifications to guide farmers in managing their inventory and tracking sales.

4.2 Hardware Interfaces

Define any device requirements:

- The mobile app should be compatible with most Android and iOS devices, ensuring accessibility for a wide user base.

4.3 Software Interfaces

Outline software interactions:

- Integrate with third-party services for payment processing, location-based searches, and analytics.
- Use RESTful APIs to enable secure data exchanges with the backend.

4.4 Communication Interfaces

Requirements for secure and reliable data transmission:

- Secure communication channels (HTTPS) for all data transfers.
- Backend hosted on a secure cloud platform with data encryption and redundancy measures.

5. Non-functional Requirements

5.1 Performance Requirements

Specify expected performance metrics:

- Response times for critical functions (e.g., search and transactions) should be under 2 seconds.
- System uptime should meet or exceed 99.9% to ensure availability for users.

5.2 Security Requirements

Detail security measures:

- Ensure encryption of sensitive data, including payment details.
- Implement secure login and user authentication mechanisms.
- Regular security audits and vulnerability assessments.

5.3 Usability Requirements

Requirements to enhance ease of use:

- User interface optimized for ease of navigation with clear labeling and guidance.
- Provide accessible design for users with varying levels of technical experience.

5.4 Reliability Requirements

Define reliability standards:

- Implement automated monitoring and logging for early detection of issues.
- Data backup and recovery plans in place to prevent data loss.

5.5 Scalability Requirements

Outline scalability needs:

- Use cloud infrastructure to scale with user demand.
- Design architecture to handle increasing data volumes and user activity without performance degradation.

6. Other Requirements

6.1 Legal and Regulatory Requirements

Specify compliance obligations:

- Adherence to Canadian e-commerce, data privacy, and food safety regulations.
- Develop user consent policies and data management processes in line with PIPEDA.

6.2 Environmental and Ethical Requirements

Outline the project's commitment to sustainability and ethical practices:

- Encourage environmentally friendly packaging practices.
- Foster transparency in farming practices to build consumer trust and support sustainable agriculture.