1. Introduction

Agriculture is the backbone of many developing countries, including Nepal. Farmers often rely on middlemen to sell their produce, resulting in reduced income and unfair pricing. Customers also face difficulty in getting fresh produce directly from farmers at a reasonable rate. To solve this problem, we propose Farmo, a mobile application that directly connects farmers and customers. The app allows farmers to list their crops and vegetables, and customers can browse available products, compare prices, and place orders directly removing middlemen from the supply chain

2. Aim and Scope

Aim:

- ✓ The main aim of the Farmo project is to create a digital platform that directly connects Nepali farmers and consumers by eliminating middlemen, ensuring fair pricing for farmers, and providing fresh, quality agricultural products to consumers.

Scope:

- ✓ The platform enables farmers to register, list products, and sell directly to consumers without middlemen.
- ✓ Consumers can browse products, place orders, and rate both farmers and goods.
- ✓ Admins manage user verification, monitor transactions, and generate system reports.

3. Objective

The Main objectives of Farmo are as follows:

- ✓ To create a user-friendly digital platform that allows farmers to list and sell their products directly to consumers in fair price.

- ✓ To enable consumers to browse, order, and rate agricultural goods and farmers efficiently.
- ✓ To promote transparency and fair pricing by eliminating middlemen and fostering direct farmer-consumer interaction.

4. Study of the Previous Systems

- ✓ Farmers sold their products through middlemen or local markets, often receiving low prices and delayed payments.
- ✓ Consumers had limited access to fresh, traceable farm goods and often paid inflated prices due to multiple intermediaries.
- ✓ There was no centralized digital platform for direct interaction, product tracking, or transparent rating between farmers and consumers.
- ✓ Communication between farmers and consumers was minimal, leading to lack of trust, poor feedback, and limited market reach for farmers.

5. Current Problems and Proposed Solutions

Current Problems:

- ✓ Farmers earn less because middlemen take most of the profit.
- ✓ Consumers pay high prices but still don’t get fresh products.
- ✓ No direct link between farmers and buyers, causing mistrust.
- ✓ Farmers have limited market reach and no proper online platform.
- ✓ Lack of transparency, consumers don’t know the source of their food.

Proposed Solutions:

- ✓ Farmers can upload and sell products directly through a simple online platform.
- ✓ Consumers buy fresh goods at fair prices without middlemen.
- ✓ Direct communication between farmers and buyers builds trust.
- ✓ Wider market reach for farmers beyond local bazaars.

- ✓ Transparent product details ensure consumers know the source.

6. High level requirements

6.1 Functional Requirements

1. User Registration & Login
   - Farmers and consumers must be able to create an account and log in.
2. Farmer Profile Management
   - Farmers can add or update their personal and farm details.
3. Product Upload
   - Farmers can upload product details with photos, videos, price, quantity, produced date, etc.
4. Product Browsing
   - Consumers can view products uploaded by farmers.
5. Search & Filter
   - Consumers can search products by name, category, or location.
6. Order Placement
   - Consumers can order products directly from farmers.
7. Location Sharing
   - Farmers can share their location or tell address where to deliver.
8. Notifications
   - Users receive updates about orders and also suggestion of new products according to his usage.
9. Admin Panel
   - Admin can manage users, products, product category and system activity.

6.2 Non-Functional

1. Usability
   - The app should be simple, clean, and easy to use.
2. Performance
   - Pages should load fast, even with many products.
3. Security
   - User data, passwords, and product details must be safe.
4. Scalability
   - The app should handle more farmers and consumers in the future.
5. Compatibility
   - The app should run on most Android phones.
6. Maintainability
   - The system should be easy to update and fix if needed.

6.3 Requirement Prioritization Table

S.N.	Requirement	Priority	Description
1.	Farmer registration & product listing	High	Core feature to allow farmers to upload and sell goods directly.
2.	Consumer registration & ordering	High	Essential for buyers to browse, order, and purchase products.
3.	Rating & feedback system	Medium	Builds trust and transparency between farmers and consumers.
4.	Notifications & alerts	Medium	Keeps users updated on orders, offers, and product availability.

5.	Admin verification & reporting	Medium	Helps maintain system integrity and monitor activities.
6.	Delivery tracking	Low	Adds convenience but can be handled by third-party logistics initially.
7.	Advanced analytics/dashboard	Low	Useful for insights but not critical in the first phase.
8.	Warehousing & logistics management	Low	Out of scope; farmers or third parties handle delivery independently.

Table 6.3: Requirement Prioritization Table

7. Design

7.1 Methodology

Agile Scrum Methodology is an iterative and incremental framework for managing complex software projects. It uses short cycles called Sprints to deliver working features quickly and consistently. It is used because it allows teams to adapt to changing requirements, obtain frequent user feedback, and efficiently mitigate risks by focusing on continuous improvement and collaboration.

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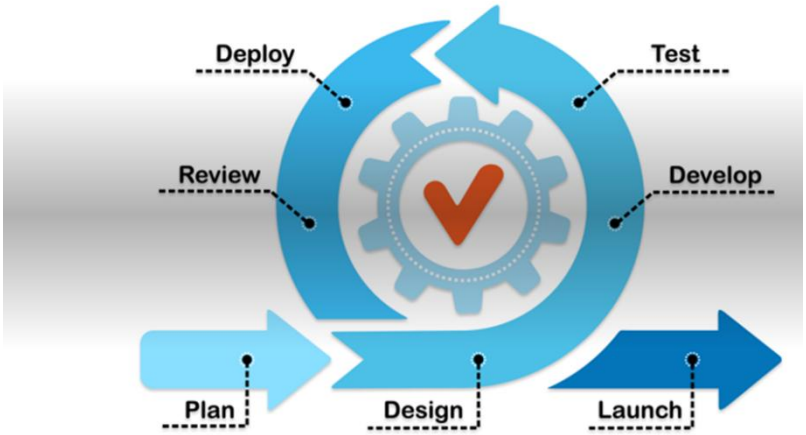

Fig 7.1: Agile Scrum Methodology

7.2 Architectural Diagram

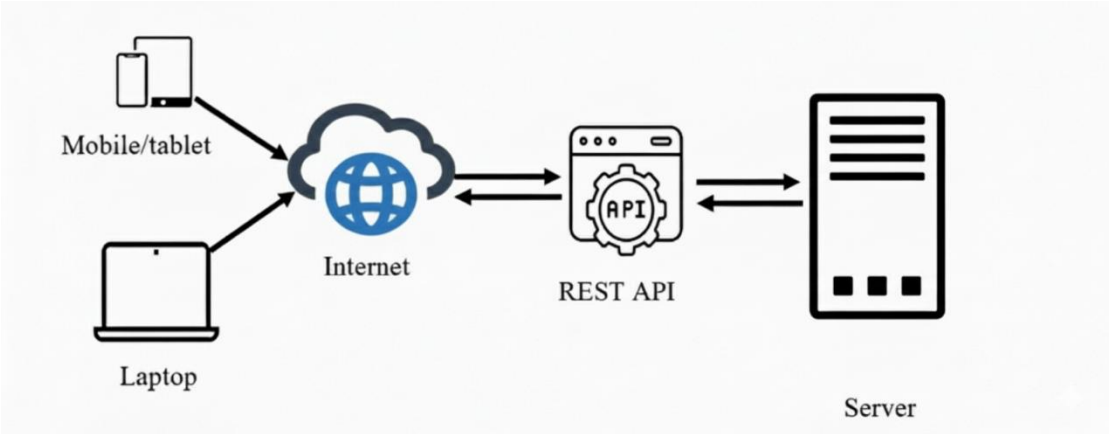

Fig 7.2: Architectural diagram

7.3 ER Diagram

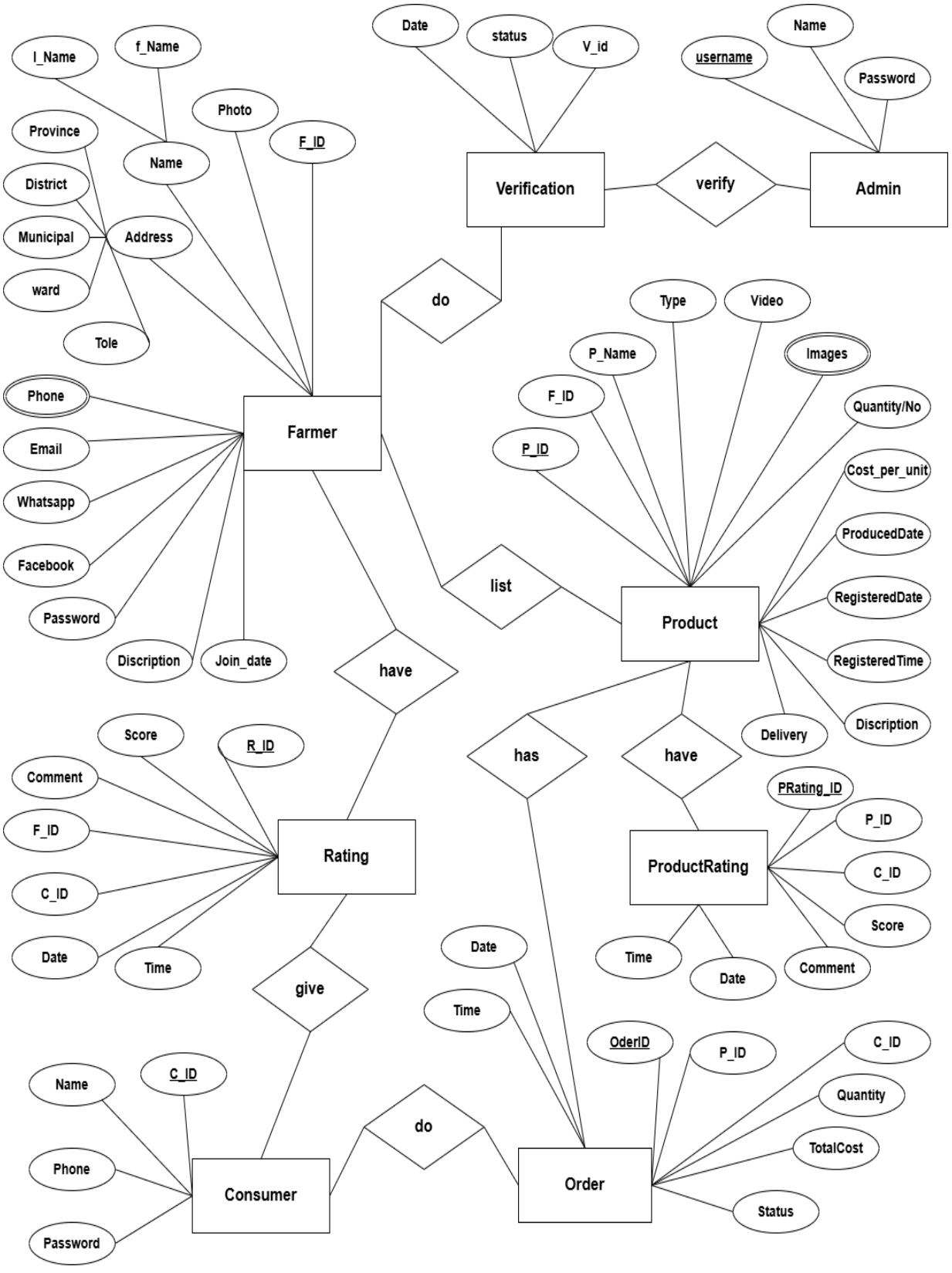

Fig 7.3: ER diagram

7.4 Use Case Diagram

7.4.1 Use case diagram for Admin

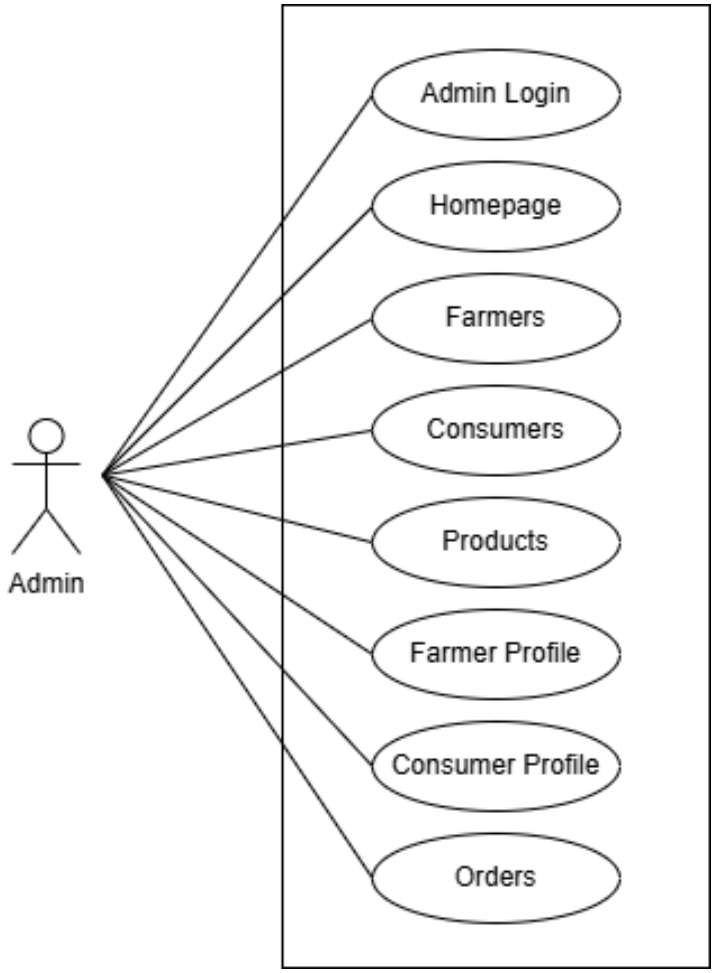

Fig 7.4.1: Use Case diagram for Admin

7.4.2 Use case diagram for Farmer/Consumer

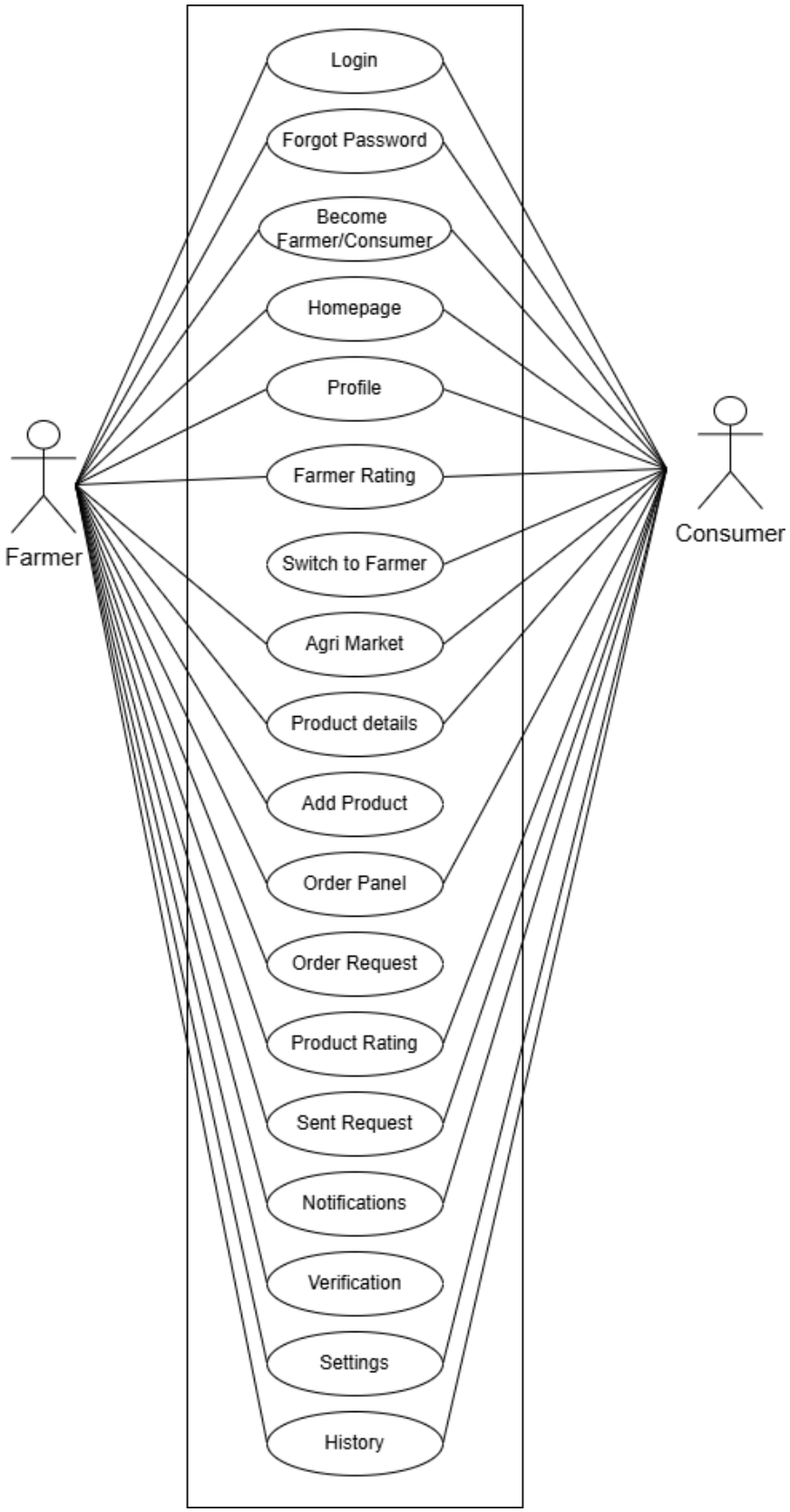

Fig 7.4.2: Use Case diagram for Farmer/Consumer

7.5 DFD Diagram

7.5.1 DFD Level 0

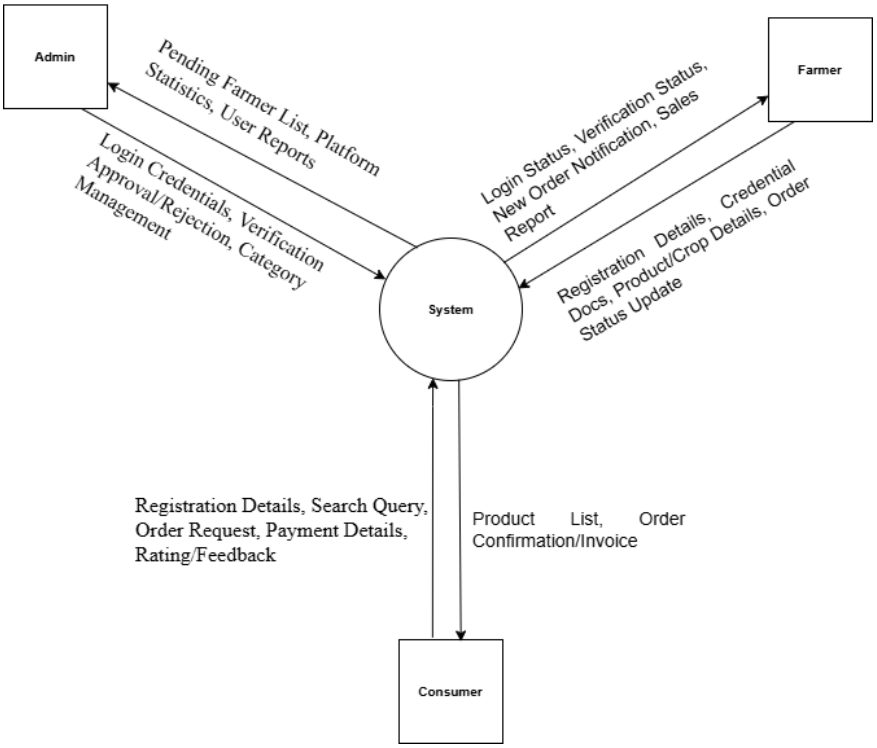

Fig 7.5.1: DFD Level 0 Diagram

7.5.2 DFD Level 1

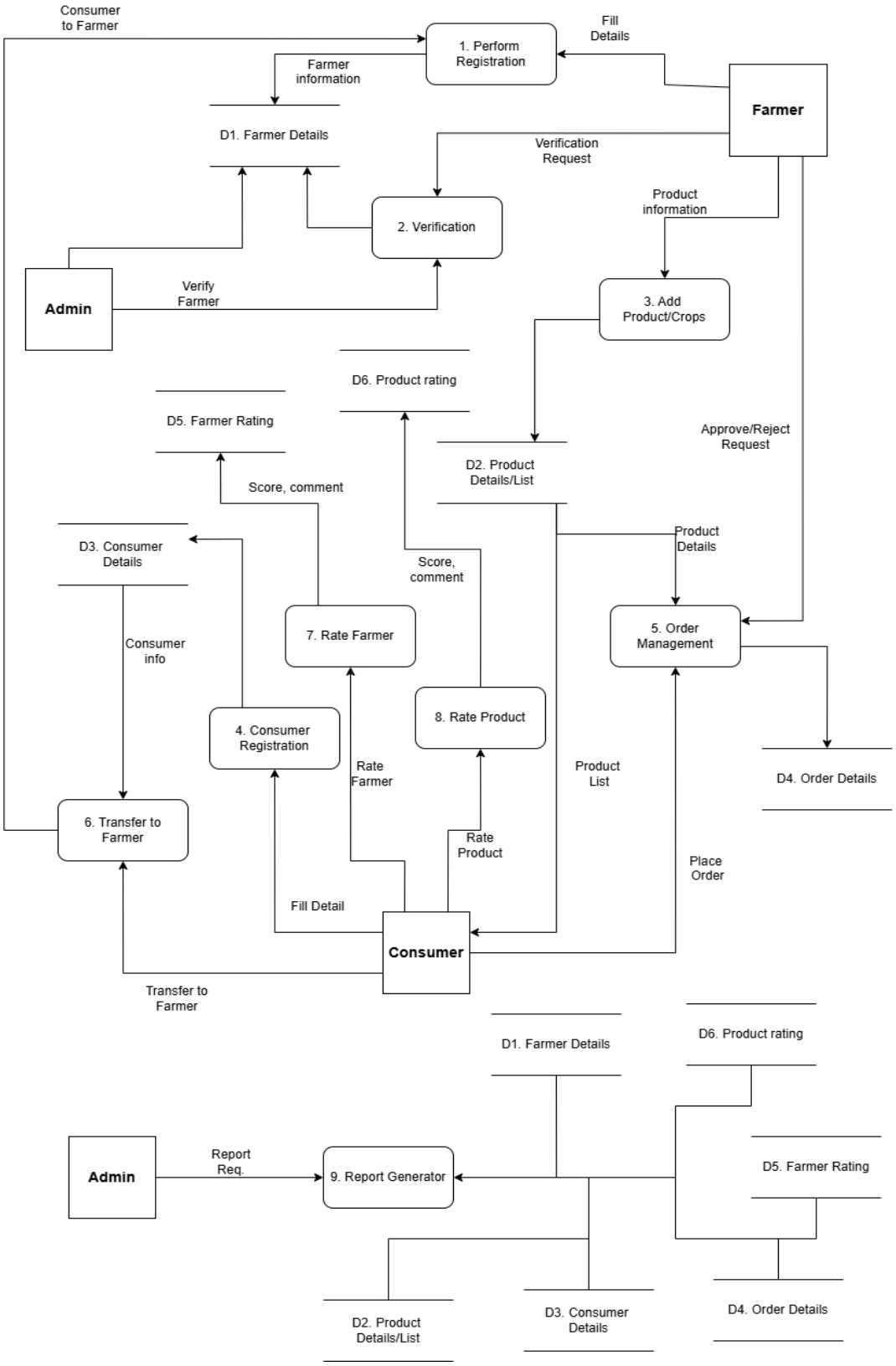

Fig 7.5.2: DFD Level 1 Diagram

8. Budget

8.1 Budget Detail

The estimated budget for developing the farmer-to-consumer system is approximately NPR 154,400. It covers frontend and backend development, mobile app creation, database setup, UI/UX design, hosting, and documentation. The budget also includes a one-time Google Play Console fee for app publishing. By using open-source tools like Django, PostgreSQL, and Android Studio, the team ensures cost-efficiency while delivering a complete and testable prototype.

8.2 Budget Breakdown

Items	Description	Cost (Rs.)
1. Frontend Development	UI/UX design, web interface, farmer/consumer dashboards	22,000
2. Backend Development	APIs, business logic, order processing, rating system	65,000
3. Database Setup	Schema design, product/user/order tables, backups	5,000
4. Mobile App Development	Android app for farmers and consumers	40,000
5. UI/UX Design	Designing Figma prototypes, Use Case/DFD flows.	5,000
6. Web Hosting	Cloud server, domain, SSL, uptime monitoring	10,000
7. Google Play Console	One-time developer fee ($25) to publish your Android App.	3,400
8. Report Printing	Requirement docs, DFDs, final report, presentation	4,000

Table 8.2: Budget Breakdown

9. Project Time Schedule

The project work is divided into various activities which will be carried out as per given schedule:

Activities	Nov-Dec				Dec-Jan				Jan-Feb	
	Week				Week				Week	
	1	2	3	4	5	6	7	8	9	10
Feasibility Study										
Proposal submission										
Proposal Defense										
System design & Specification										
Coding & verification										
Integration & Testing										
Mid-term Defense										
Final testing										
Documentation										
Final presentation										

Table 9: Project time schedule

10. Conclusion

The proposed system bridges the gap between farmers and consumers by offering a direct, transparent, and user-friendly digital platform. It empowers farmers to showcase and sell their products fairly, while enabling consumers to access fresh goods at reasonable prices. By eliminating middlemen, enhancing communication, and expanding market reach, the system promotes trust, efficiency, and sustainability in the agricultural supply chain. With well-defined hardware, software, and technology requirements, the project is both feasible and impactful for rural development.

11. References

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