FARMEASY-WEB APPLICATION FOR MARKETING BETWEEN FARMERS AND CUSTOMERS

Minor project-1 report submitted
in partial fulfillment of the requirement for award of the degree of

Bachelor of Technology
in
ARTIFICIAL INTELLIGENCE & MACHINE LEARNING

By

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Under the guidance of
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ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
SCHOOL OF COMPUTING

VEL TECH RANGARAJAN DR. SAGUNTHALA R&D INSTITUTE OF SCIENCE & TECHNOLOGY

(Deemed to be University Estd u/s 3 of UGC Act, 1956)
Accredited by NAAC with A++ Grade
CHENNAI 600 062, TAMILNADU, INDIA

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CERTIFICATE

It is certified that the work contained in the project report titled **"FARMEASY-Web Application For Marketing Between Farmers And Customers"** by "N.Vinod Kumar (22UEAM0043), S.Sasi Kumar Reddy (22UEAM0057), K.Prashanth Kumar Reddy(22UEAM0024)" has been carried out under my supervision and that this work has not been submitted elsewhere for a degree.

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November, 2024

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November, 2024

DECLARATION

We declare that this written submission represents my ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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APPROVAL SHEET

This project report entitled **FARMEASY-Web Application For Marketing Between Farmers And Customers** by N.Vinod Kumar (22UEAM0043), S.Sasi Kumar Reddy (22UEAM0057), K.Prashanth Kumar Reddy (22UEAM0024) is approved for the degree of B.Tech in Artificial Intelligence & Machine Learning

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Examiners **Supervisor**

Dr.R.LOTUS, M.Tech,Ph.D

Date: / /

Place:

ACKNOWLEDGEMENT

We express our deepest gratitude to our **Honorable Founder Chancellor and President Col.Prof. Dr.R.RANGARAJAN B.E. (Electrical), B.E. (Mechanical), M.S (Automobile), D.Sc., and Foundress President Dr. R. SAGUNTHALA RANGARAJAN M.B.B.S.** Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, for her blessings.

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ABSTRACT

FARMEASY is an online tool, cutting the middlemen from contacting the consumer directly. It handles agricultural marketing and supply chain matters. It ensures that the products can be sold directly, providing better returns to the farmers and fresh and locally produced products to the consumers. Its features include easy interface for product listing, order management, and secure payment processing. It also provides inventory tracking and market analytics tools that empower the farmers to use data-driven decision making. This pioneering solution addresses threats that come from limited market access and price fluctuations. FARMEASY thus fosters a sustainable lifestyle while promoting the economy at both local and regional levels by facilitating healthier consumption habits to avoid throwing away edible food.

Keywords:

• Direct Connection
• Improved Pricing
• User-Friendly Interface
• Product Listings
• Order Management
• Secure Payment
• Inventory Tracking
• Market Analytics
• Sustainability Focus
• Community Support
• Quality products
• Fresh produce

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

API	- Application Programming Interface
B2B	- Business to Business
B2C	- Business to Consumer
CRM	- Customer Relationship Management
D2C	- Direct to Consumer
eComm	- eCommerce
FMCG	- Fast-Moving Consumer Goods
GDPR	- General Data Protection Regulation
KPI	- Key Performance Indicator
ROI	- Return on Investment
SaaS	- Software as a Service

TABLE OF CONTENTS

Chapter 1

INTRODUCTION

1.1 Introduction

FARMEASY is a web-based platform designed to bridge the gap between farmers and consumers. By eliminating intermediaries, it allows farmers to sell their produce directly to customers, ensuring fair prices and reducing costs. Consumers can access fresh, locally grown products at competitive rates while supporting local farmers. The platform offers features like product listings, order management, and secure payment gateways, providing a convenient and transparent experience for both parties.

FARMEASY is an online platform that transforms the agricultural marketing landscape by ensuring direct interaction between producers and consumers, minus any middlemen, to give producers a fair share of the cake and fresh, wholesome produce to the consumer. This platform offers various features such as listings, order management, secure payment gateways, as well as community features ensuring a smooth ride for all parties involved. Through FARMEASY, local farmers will be encouraged as they are the only ones capable of producing sustainable crops at competitive prices and are consumed fresh. Consumers will enjoy fresh homegrown produce, and with technology, buy competitively.

1.2 Aim of the project

The main objectives of the FARMEASY project are to make a direct line between farmers and consumers. It seeks to eliminate intermediaries, increase income for farmers, extend their market, and bring down costs on both sides. Sustainably, the platform will offer support for local farmers who tend to be far from added food miles. Consumers are also availed with opportunities to consume fresh, high-quality produce within competitive prices. This project of mine, in the larger picture, attempts to create a more efficient, equitable, and sustainable marketplace for agriculture that would benefit the farmers as much as it benefits the consumer.

1.3 Project Domain

The FARMEASY project falls under agricultural technology and e-commerce. It connects farmers directly with consumers through digital platforms, bypassing traditional intermediaries in order to create an even more efficient and transparent marketplace. In short words, the FARMEASY project uses technology to bridge gaps between marketing produce to farmers and the access of fresh locally grown food to consumers.

The social impact and sustainability of the project's domain are well-covered, too. FARMEASY can rejuvenate local economies by supporting small-scale farms with minimal environmental footprint from long-distance transportation of food, and a direct relationship between the farmer and consumer can help boost greater appreciation for sustainable agriculture and create a more resilient food system.

1.4 Scope of the Project

FARMEASY is an online platform that is trying to shift the very face of agricultural marketing. It connects direct buyers with farmers, and thereby, it is doing away with mediaries. Therefore, there are fair prices for farmers and fresh produce, high in quality, for consumers. Such a wide platform with all its features: product listing, order management, secure payment gateway, and community features-all these make the both parties convenient and transparent for each other.

FARMEASY sets up collaborative support, such as a program designed to build participation in sustainable agriculture, and bolsters accessibility of local produce for consumers at affordable prices. It is a model that could revolutionize the way we interact with our food producers and enhance local economies through technology, community, and sustainability.

Chapter 2

LITERATURE REVIEW

2.1 Literature Review

Direct marketing between farmers and consumers has perceived advantages as follows: The removal of intermediaries means that much money stays in the pockets of farmers while keeping themselves directly connected with potential buyers. Thus, the influence of those who promote sustainability has found that consumers' preferences for greater freshness and local origins of goods are located. Digital technologies such as e-commerce platforms offer farmers more market insight and visibility. Building trust and a sense of community are very crucial as direct contact builds customer loyalty. Efficient logistics serve the products' freshness and accessibility. Overall, such knowledge can be leveraged by platforms like FARMEASY in the interest of strengthening the agricultural supply chain and improving the consumer experience while promoting environmentally friendly practices. Further studies to study the long-term impact on farmers and consumers would be required.

2.2 Gap Identification

First, the user experience in agricultural marketing platforms remains rather a grey area and presents problems in regards to effective engagement. The smaller farmer markets often get lost in the discussion since it centers more on larger farms. There isn't much research on how technology affects consumer purchasing decisions on local and sustainable products. Data privacy issues from the use of collected data are under-researched. Analysis of real-time market and consumer preference insights remains relatively limited. Rarely is there articulation of how the system could integrate into and strengthen on existing agricultural systems. Lastly, the cultural gap that limits farmer participation in digital marketing needs more attention. More work on these gaps will further enhance the effectiveness of FARMEASY to the agricultural market.

Chapter 3

PROJECT DESCRIPTION

3.1 Existing System

The current agricultural marketing system is dominated by traditional models such as those found in farmers' markets and middlemen. The net consequence of that is that farmers are highly price-compressed; farmers can easily take only a small share of the amount paid by consumers in the retail market. This scenario tends to isolate consumers from producers; sourcing locally by the buyer becomes tricky. This problem is further worsened by the lack of visibility within the supply chain; thereby, consumers are unable to trace where their produce comes from-the deciding factor in purchasing the products. In most rural areas, farmers lack direct access to the market and therefore cannot respond appropriately to demand.

Logistics and delivery issues heighten this situation, as poor transport also causes the farmer to lose products due to spoilage and waste. The system does not allow any coordination of these demands from a central place that helps in the formation of community trust and, consequently, may build farmer-to-consumer and consumer-to-farmer relationships. This system has thus failed to maximize the advantages brought by direct marketing for both the farmers and consumers involved in the said processes in this market.

3.2 Problem statement

The current agricultural marketing system has several problems related to access for both the farmer or the consumer. In most cases, the farmer is left at the mercy of intermediaries, leading to reduced income and less profit. This situation isolates the consumer from fresh locally grown produce and denies him the ease of sourcing food easily based on its origin, thus creating mistrust of quality and sustainability. Thirdly, lack of access to real-time market information constrains the type of adaptation where production follows demand.

For all these purposes, the proposed FARMEASY platform creates a direct marketing channel empowering farmers and enhancing the consumer experience. Through direct sales to consumers, farmers will sell more produce to the consumer and hence obtain a higher proportion of the revenue, plus real-time market feedback that will enable them to alter offerings according to consumer preferences. Site increases transparency about origin and production of the products, therefore creating customer trust in the business. FARMEASY, through its user-friendly interface, allows easy transactions and then community engagement, which in turn contributes to a more sustainable agricultural market.

3.3 System Specification

3.3.1 Hardware Specification

• **Server:**
- Intel Xeon Silver 4210 (10 cores, 2.2 GHz)
- 32 GB DDR4 RAM
- 1 TB SSD + 2 TB HDD
- Dual 1 Gbps Ethernet ports
• **Client Devices:**
- Intel Core i5 (10th or 11th generation) or equivalent AMD Ryzen
- Minimum 8 GB DDR4 RAM
- 256 GB SSD
- 15.6-inch Full HD (1920 x 1080) display
• **Mobile Devices:**
- Qualcomm Snapdragon 888 or equivalent
- Minimum 4 GB RAM
- Minimum 64 GB storage (expandable via microSD)
- 6.5-inch Full HD+ (2400 x 1080) display
• **Networking Equipment:**
- Wi-Fi 6 (802.11ax) capable router
- 24-Port Gigabit Ethernet switch
- Next-generation firewall
• **Backup Power:**
- Minimum 1500 VA Uninterruptible Power Supply (UPS)

3.3.2 Software Specification

• Operating System:
- Windows Server 2022 or Ubuntu Server 20.04 LTS
• Web Server:
- Apache HTTP Server 2.4 or Nginx 1.21
• Database Management System:
- MySQL 8.0 or PostgreSQL 14
• Backend Development:
- Node.js (version 16.x or higher) or Python (Django framework)
• Frontend Development:
- React.js (version 17.x or higher) or Angular (version 12.x or higher)
- HTML5, CSS3, JavaScript
• Version Control:
- Git (with GitHub or GitLab for repository management)
• Containerization:
- Docker (version 20.x or higher)
• API Integration:
- RESTful APIs for seamless data communication
• Security:
- SSL/TLS for secure data transmission
- Firewall software (e.g., UFW or iptables for Linux)
• Backup and Recovery:
- Automated backup solutions (e.g., Bacula or Duplicati)

3.3.3 Standards and Policies

• Data Privacy and Protection:
- Compliance with GDPR (General Data Protection Regulation) for data handling and user privacy.
- Implementation of data encryption for sensitive information, both in transit and at rest.

• **Security Standards:**

- Adherence to OWASP (Open Web Application Security Project) guidelines to protect against common vulnerabilities (e.g., SQL injection, cross-site scripting).
- Regular security audits and vulnerability assessments to ensure system integrity.

• **Accessibility Standards:**

- Compliance with WCAG (Web Content Accessibility Guidelines) 2.1 to ensure the platform is usable for individuals with disabilities.
- Regular testing and updates to maintain accessibility features.

• **User Account Management:**

- Policy for strong password requirements (minimum length, complexity) and regular password updates.
- Two-factor authentication (2FA) for added security on user accounts.

• **Service Level Agreements (SLAs):**

- Defined response and resolution times for technical support and maintenance.
- Regular updates and maintenance schedules to ensure system reliability.

• **Quality Assurance:**

- Implementation of a testing framework (unit, integration, and user acceptance testing) to ensure the application meets functionality and performance standards.
- Continuous integration and deployment (CI/CD) practices for efficient development and release cycles.

• **Content Moderation:**

- Policies for user-generated content to prevent inappropriate or harmful material, including reporting mechanisms.
- Guidelines for the verification of farmer profiles and product listings to ensure authenticity.

• **Environmental Sustainability:**

- Commitment to sustainable practices in operations, such as energy-efficient server usage and promotion of eco-friendly products.

Chapter 4

METHODOLOGY

4.1 Proposed System

The proposed system for FARMEASY – Web Application for Marketing Between Farmers and Customers aims to connect farmers directly with customers, eliminating the need for middlemen. This will allow farmers to receive fair prices for their produce while offering customers fresh, high-quality products at competitive rates. The system will feature distinct user roles: farmers, customers, and admin. Farmers can register, list their products, manage inventory, and track orders through an intuitive dashboard. Customers will be able to browse products, place orders, and choose delivery or pickup options, with the added convenience of product search and filtering features. An admin will oversee platform operations, including managing users and resolving disputes

4.2 General Architecture

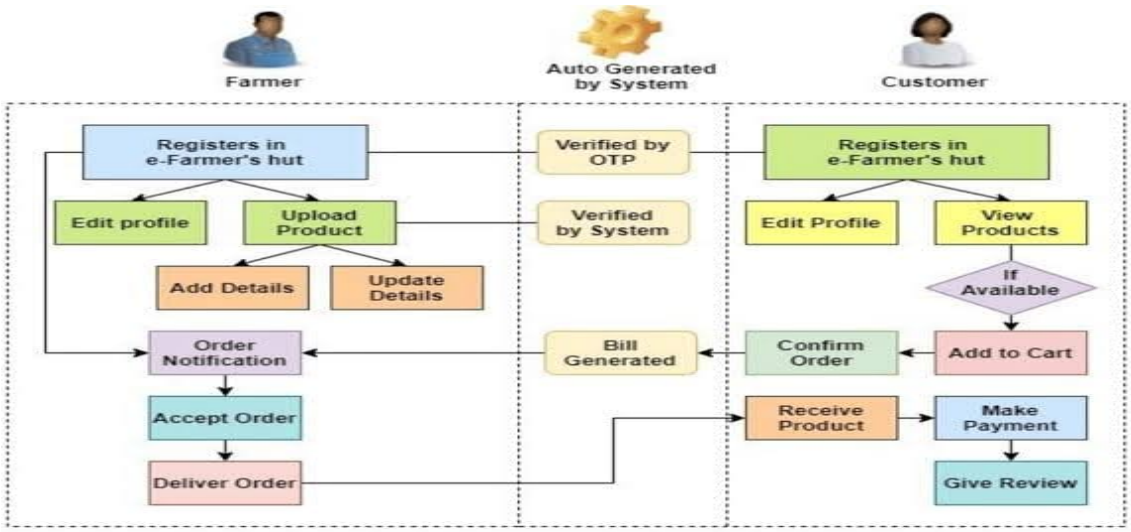


Figure 4.1: **General Architecture of FARMEASY**

The architecture diagram provided in outlines the workflow of an e-commerce platform that connects farmers and customers. It starts with the farmer registering in the app, editing their profile, and uploading product details. These actions trigger automated system processes like OTP verification and spam checks. The system also sends notifications and generates orders when customers place them. On the customer side, the process begins similarly with registration and profile editing. Customers can then view products, add items to their cart, confirm orders, receive products, make payments, and provide reviews. The diagram highlights the interactions between these actions, such as how an accepted order leads to delivery for the farmer and receipt for the customer. This setup ensures a seamless transaction process between farmers and customers, facilitated by both user actions and automated system processes.

4.3 Design Phase

4.3.1 Data Flow Diagram

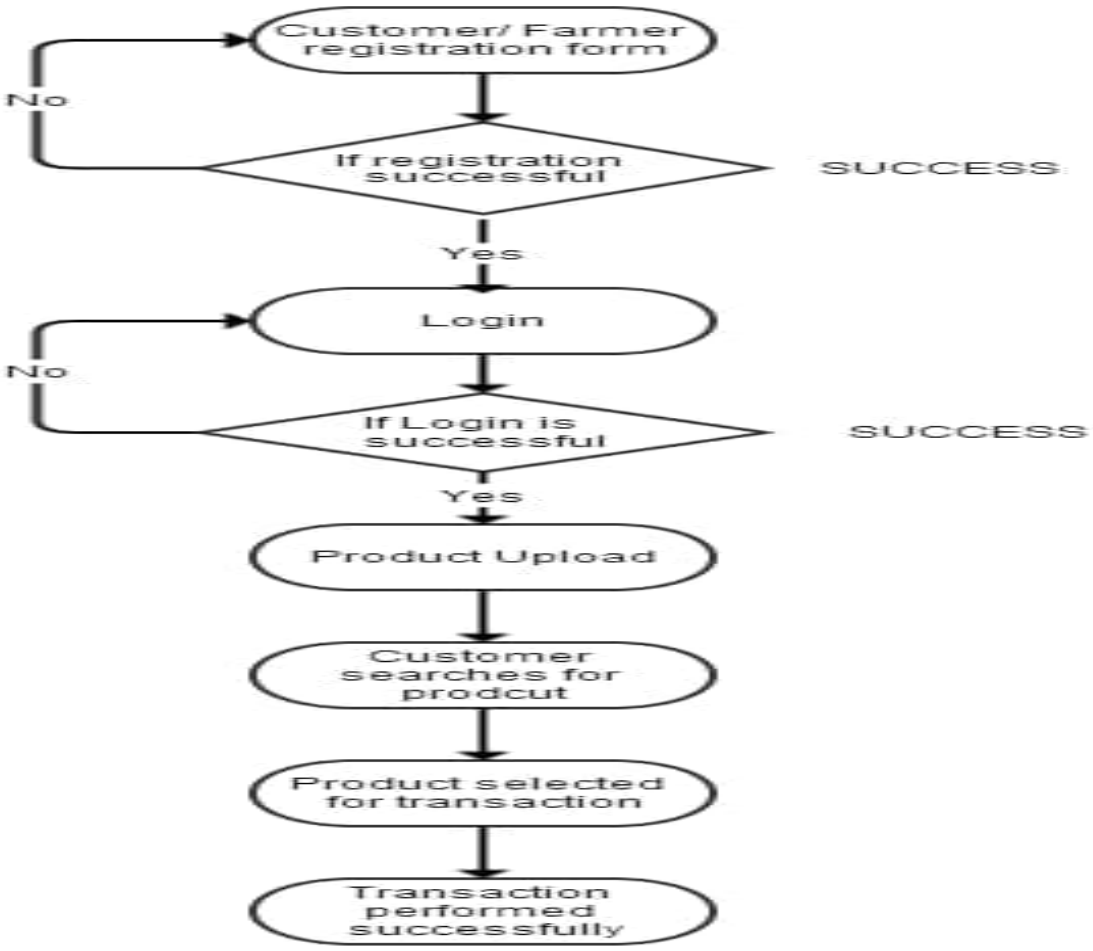


Figure 4.2: **Customer & Farmer registration form**

The flowchart you provided outlines the process for customers or farmers interacting with a system, likely for product management or purchasing. It begins with the ”Customer/Farmer registration form,” where users fill out their details. If the registration is unsuccessful, the process loops back to the beginning. Once registration is successful, users proceed to the ”Login” step. If login attempts fail, users are prompted to try again. Successful logins lead to the ”Product Upload” stage, where farmers can upload their products.Next, the flowchart shows that customers search for products. Once a product is selected for a transaction, the process moves to the final step, ”Transaction performed successfully,” indicating a successful purchase. This flowchart effectively maps out the user journey from registration to completing a transaction, ensuring a clear understanding of each step involved in the process.

4.3.2 Use Case Diagram

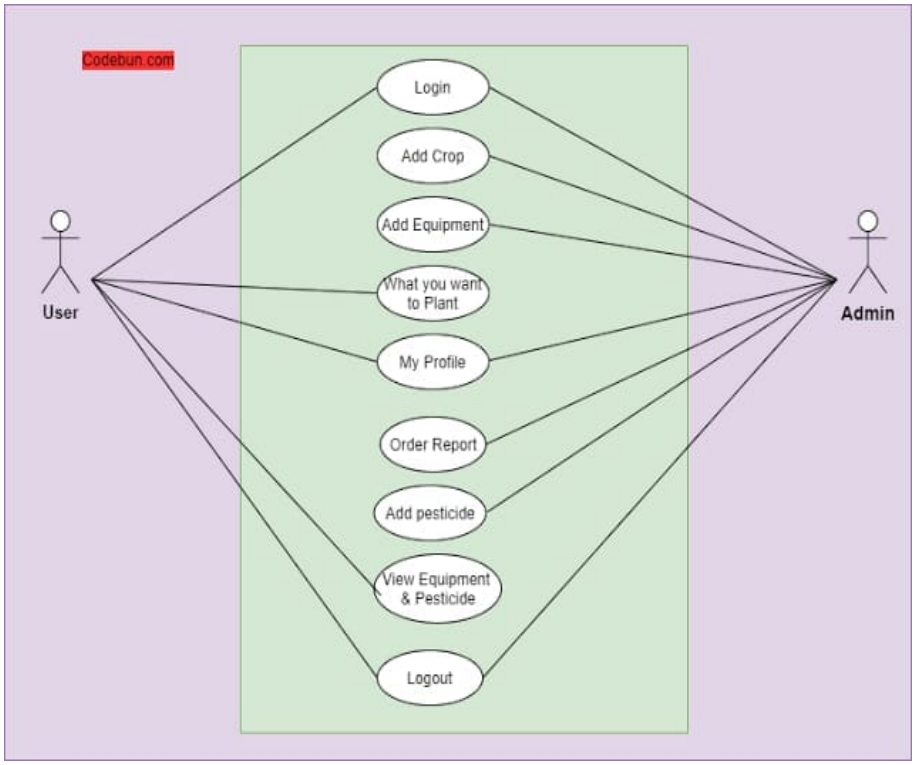


Figure 4.3: **UML Diagram**

The above use case diagram shows the interaction between users and the system. The functionalities available to the users as well as to the administrators have been followed - login, crops, and equipment; viewing profiles and reports by the users and pesticide by the administrator, pesticide management, and logout. It also points out that adding equipment leads to displaying some information regarding the equipment or pesticide. Overall, the use case diagram clearly indicates what a system is able to do, and how the users or even administrators can interact with this system.

4.3.3 Class Diagram

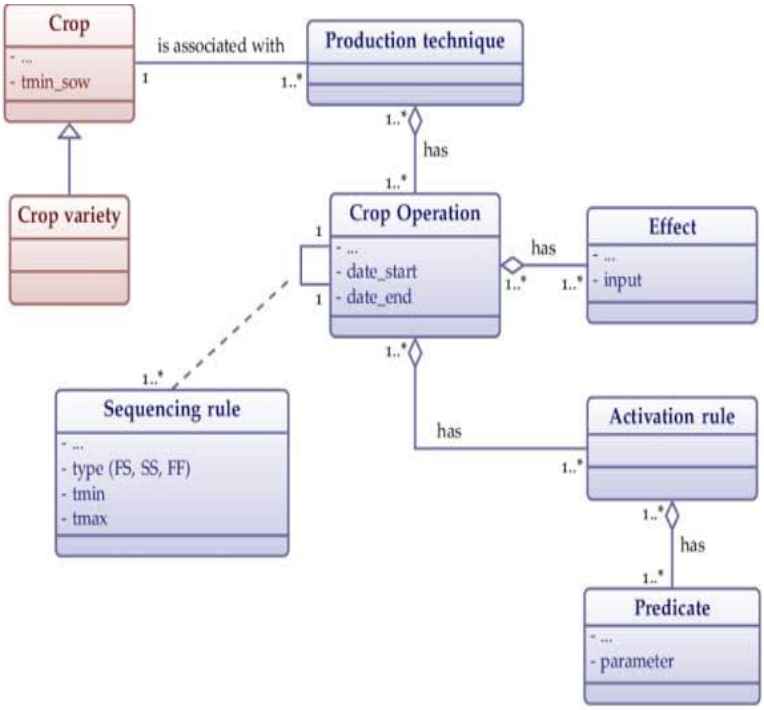


Figure 4.4: **Crop Management System**

The conceptual model of the crop management system is as follows: This particular model represents the relationships between the entities involved in the crop culturing process, namely crops, crop varieties, crop operations, effects, sequencing rules, activation rules, and predicates. The diagram depicts the relationship of crops to any productive techniques, how crop operations might have multiple effects and be controlled with sequencing rules, and how activation rules may be specified in terms of predicates. With these objectives, this model can present a blueprint for the design of a database or even a software system for effective management of crop information and processes.

4.3.4 Sequence Diagram

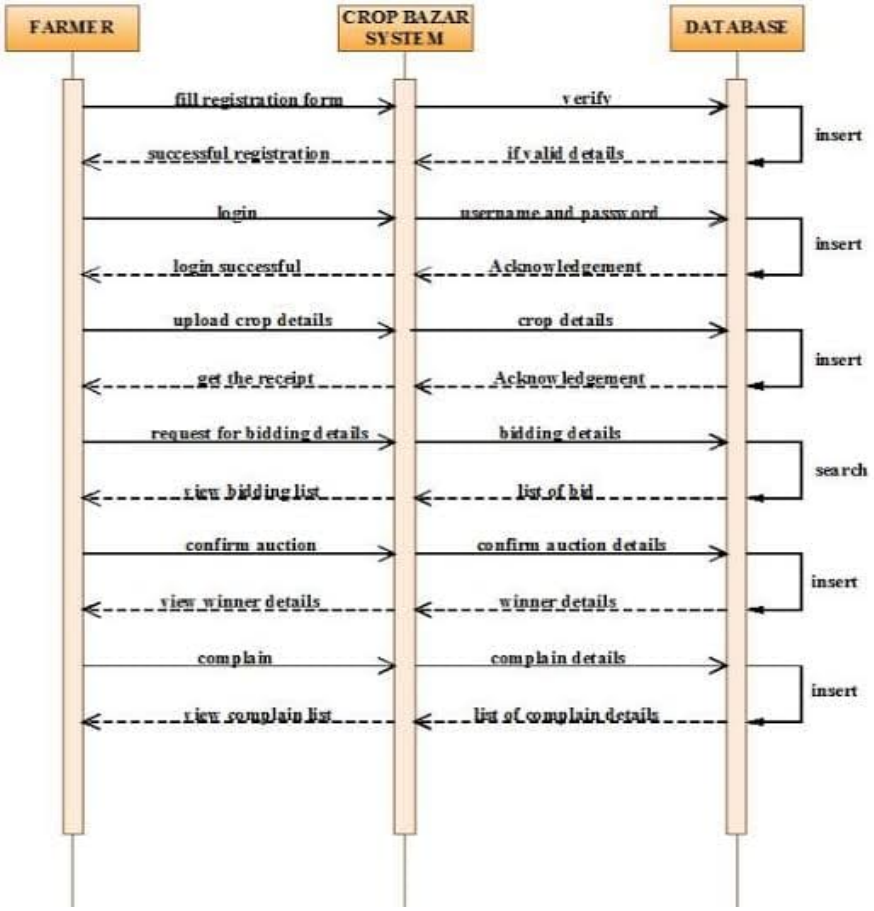


Figure 4.5: **Sequence Diagram**

This flowchart you provided shows how interaction between the farmer, Crop Bazar System, and database occurs. It initiates by registration of a farmer using a registration form. If the registration details are correct, the system checks them and creates a new user account within the database. Then, it sends a successful registration message from the system back to the farmer. The farmer will log in using his/her username and password authenticated from the system. After successful login, the farmer gets an acknowledgment. He can upload crop details; the system inserts them into the database. He will get receipt acknowledgment for his uploads. He is also able to request bidding details, and the system will search the database, return the list of bidders, and so on. If the farmer confirmed the auction, then the system will insert the details of the auction to the database and provide the farmer with the details of the winner.

4.3.5 Collaboration diagram

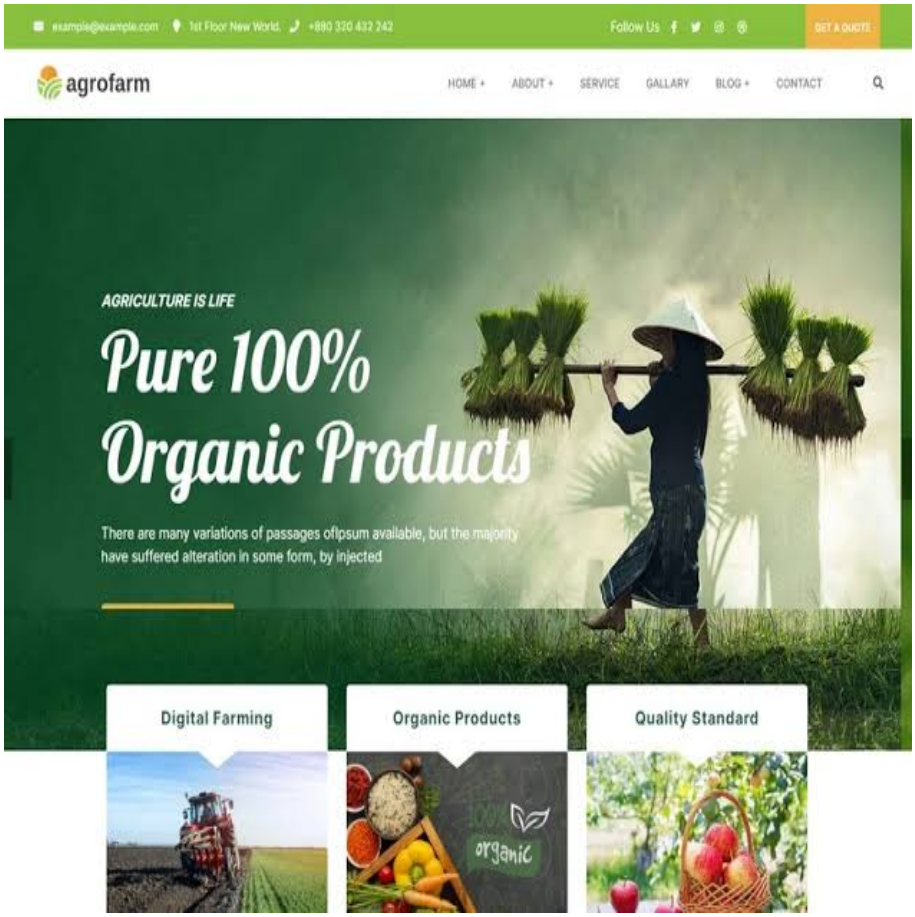


Figure 4.6: **Collaboration diagram**

The Agrofarm website does not have any name ”Farmeasy” but exemplifies the crux of a farmer-customer platform. Here, directly reaching out to and connecting the customer with the farmer through a website that helps farmers display organic produce and lets customers easily find fresh products from the local market. Such web applications rely on ”quality, sustainability, and transparency,” and Agrofarm exemplifies this with an application that aims to make organic agriculture accessible, hence it becomes one very relevant example in the context of the Farmeasy-Web Application for Marketing between Farmers and Customers. Such an interface means, therefore, that a great number of farmers can use such an application in order to get in touch with customers who would be willing to purchase organic produce directly from farmers.

4.3.6 Activity Diagram

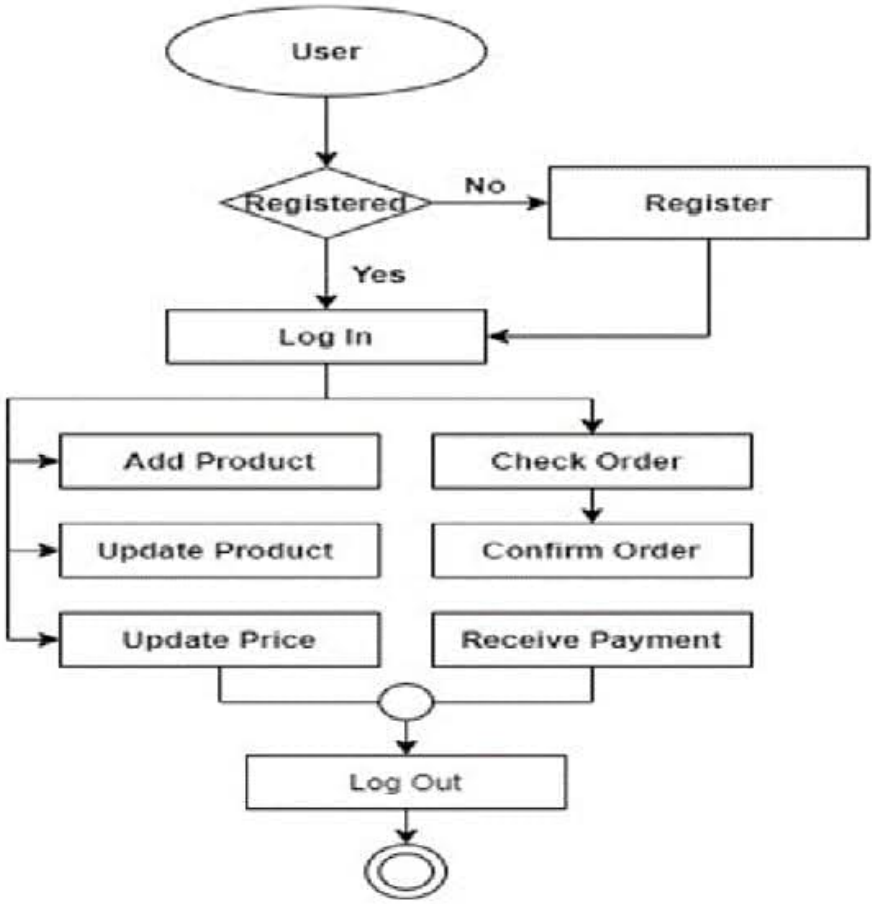


Figure 4.7: **UML Activity Diagram**

4.4 Algorithm & Pseudo Code

4.4.1 FARMEASY PLATFORM ALGORITHM

FARMEASY – Web Application for Marketing Between Farmers and Customers ensures efficient interaction between the platform's actors (farmers, customers, and admin) and the system components. The algorithm follows these steps:

1.Farmer Registration and Login: Farmers first register on the platform by providing their personal details and farm information. After successful registration, they can log in using their credentials.

2.Product Listing: Once logged in, farmers can add details of the products they wish to sell, including product name, category, price, and stock availability. This information is saved in the database.

3.Customer Registration and Login: Customers register on the platform similarly to farmers, providing necessary details such as contact information and delivery address. After registration, they log in using their credentials.

4.Product Search and Browsing: Customers can browse through the product listings on the web application interface. They can search for specific products, filter by categories, and view farmer profiles to check product ratings and reviews.

5.Order Placement: When a customer selects a product, they add it to their cart and proceed to checkout. At checkout, the customer confirms their delivery details and selects a payment method. The order details are sent to the order management system, and the database is updated.

6.Payment Processing: The platform redirects the customer to a payment gateway for secure payment processing. After the payment is successfully completed, the system updates the order status in the database and notifies the customer and the farmer.

7.Order Fulfillment: The order management system notifies the farmer of the customer's order. The farmer then prepares the order for delivery. The platform updates the order status (e.g., processing, shipped) accordingly.

8.Admin Monitoring: Throughout the process, the admin monitors all transactions, user interactions, and handles any disputes or issues that arise, ensuring the system functions smoothly.

4.4.2 Pseudo Code

```
CREATE TABLE Farmers (
    FarmerID INT AUTO_INCREMENT PRIMARY KEY,
    Name VARCHAR(100) NOT NULL,
    Contact VARCHAR(15) NOT NULL,
    Address VARCHAR(255) NOT NULL
);
CREATE TABLE Products (
    ProductID INT AUTO_INCREMENT PRIMARY KEY,
    Name VARCHAR(100) NOT NULL,
    Price DECIMAL(10, 2) NOT NULL,
    Quantity INT NOT NULL,
    FarmerID INT,
    FOREIGN KEY (FarmerID) REFERENCES Farmers(FarmerID)
        ON DELETE CASCADE
        ON UPDATE CASCADE
);
CREATE TABLE Customers (
    CustomerID INT AUTO_INCREMENT PRIMARY KEY,
```

```
    Name VARCHAR(100) NOT NULL,
    Contact VARCHAR(15) NOT NULL,
    Address VARCHAR(255) NOT NULL
);
CREATE TABLE Orders (
    OrderID INT AUTO_INCREMENT PRIMARY KEY,
    Quantity INT NOT NULL,
    TotalPrice DECIMAL(10, 2) NOT NULL,
    OrderStatus VARCHAR(50) DEFAULT 'Pending',
    CustomerID INT,
    ProductID INT,
    FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID)
        ON DELETE CASCADE
        ON UPDATE CASCADE,
    FOREIGN KEY (ProductID) REFERENCES Products(ProductID)
        ON DELETE CASCADE
        ON UPDATE CASCADE
);
```

4.4.3 Data Set / Generation of Data

To generate a dataset for a Farmer-Customer Website, you would create data representing the interactions between farmers, customers, products, and orders. Start by generating around 50-100 farmers, each with unique names, contact details, and addresses representing rural areas. Each farmer would offer 5-10 products, such as fruits, vegetables, dairy, and grains, with random pricing between $1and50$ per unit and quantities between 50 and 1000 units. Next, create a customer base of 200-500 individuals, with names, contact details, and urban or suburban addresses. Finally, simulate orders by having customers purchase products from various farmers, generating multiple order records per customer. Each order would include information like the product, quantity, total price, and order status (e.g., ”Pending” or ”Delivered”). This dataset would reflect a realistic flow of activity between farmers and customers on the platform.

4.5 Module Description

4.5.1 User Authentication

The User Authentication module is essential for managing the access control of the Agriculture Products Selling System. It includes user registration, login, and authentication functionalities. Users can create accounts by providing personal details, which are securely stored in the database with encryption. The module checks user credentials against stored data during login attempts. Additionally, it incorporates features for password recovery and account management, including updating user information and managing account settings. The implementation of multi-factor authentication adds an extra layer of security, ensuring that user data remains protected against unauthorized access. Describe module with Title

4.5.2 Product Management

The Product Management module serves as the backbone of the e-commerce platform, allowing administrators to manage the product catalog efficiently. This module provides functionalities for adding new products, updating existing product details, and removing discontinued items. Administrators can categorize products based on types, such as fruits, vegetables, and grains, to facilitate easy browsing for users. Furthermore, it includes pricing management features, enabling dynamic pricing strategies based on market demand or seasonal changes, thus optimizing sales opportunities.

4.5.3 Order Processing

The Order Processing module is designed to streamline the purchasing workflow from product selection to order fulfillment. It enables users to add items to their shopping cart, review their selections, and proceed to checkout. This module calculates the total order cost, including taxes and shipping fees, and provides secure payment processing through various payment gateways. Upon successful payment, order confirmations are generated, and users receive notifications about their order status via email or SMS. Additionally, the module integrates inventory management, ensuring that product availability is updated in real-time, preventing overselling and enhancing customer satisfaction

Chapter 5

TESTING

5.1 Testing

- **Unit Testing**: Verifies individual functions and components to ensure they work as expected in isolation, helping to catch bugs early in development.
- **Integration Testing**: Tests the interactions between different modules to ensure they function together correctly, preventing issues caused by miscommunication between components.
- **Functional Testing**: Validates that user flows and the application's interface perform according to requirements, ensuring that all features work as intended from the user's perspective.
- **Performance Testing**: Assesses the system's speed, load-handling capacity, and resource usage under various conditions, ensuring the application remains responsive and efficient even under stress.
- **Security Testing**: Identifies potential vulnerabilities and security risks within the application, helping to protect against threats such as unauthorized access or data breaches.
- **User Acceptance Testing (UAT)**: Collects feedback from actual users to ensure the system meets their needs and expectations, often being the final step before the product is released.
- **Regression Testing**: Ensures that existing features continue to work properly after updates or changes, preventing new code from breaking previously functioning components.
- This structured testing approach will help ensure your online portfolio project is robust, user-friendly, and secure. Tailor the testing strategies to fit the specific needs of your project, and document the results for future reference.

5.1.1 Test Result

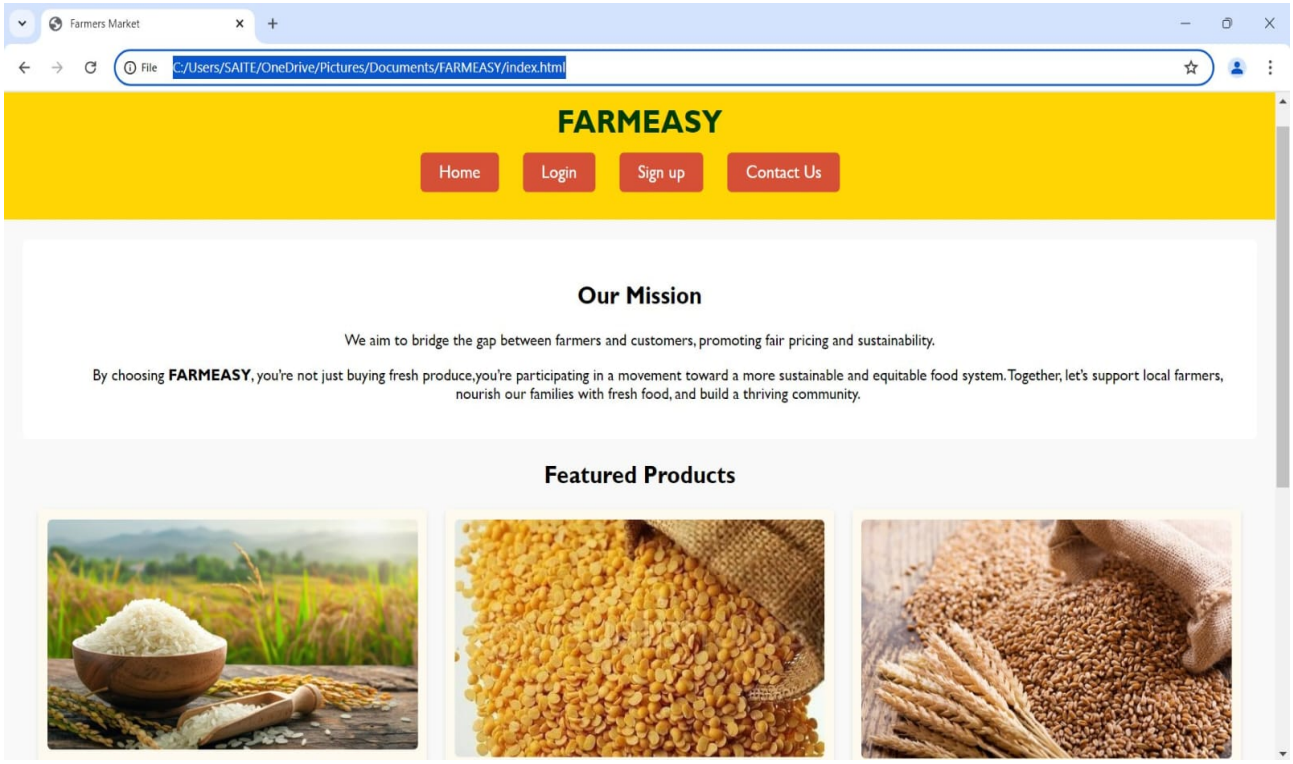


Figure 5.1: **Admin Test**

5.1.2 Test Bugs

• Based on the provided test cases, some of the potential bugs that are found during testing are: Blank spaces are allowed in the username or password fields. Numbers are allowed in the username field.

• The application allows blank spaces in the username and password fields, which should typically be restricted to prevent invalid credentials from being accepted during login.

• The username field allows numeric characters, which may not be suitable based on the design or validation rules for usernames. Ideally, usernames should only consist of letters and possibly underscores.

• Fields that are expected to accept only numeric data, such as energy usage, transportation miles, and waste generation, allow non-numeric characters. This can lead to inaccurate calculations or cause application errors.

• The website takes an unusually long time to process login requests, resulting in slow performance for users. This could be due to inefficient server-side processing or database issues, leading to a frustrating login experience.

Chapter 6

RESULTS AND DISCUSSIONS

6.1 Efficiency of the Proposed System

The FARMEASY platform is highly efficient in streamlining agricultural marketing between direct direct interactions between farmers and consumers. The elimination of middlemen enables farmers to realize a greater proportion of their revenues thereby providing them with higher profit margins. The platform is easy to use and lessens the loads of administrative tasks in listing products, inventory management, and sales tracking for farmers. Real-time data analytics allow farmers insight into customer preferences and market trends, from where they can base their informed decisions on what to produce and what to charge for.

It also improves the probability of responsive management in the supply chain and reduces waste as they can provide what the customers need at a particular time. Better customer interaction is also brought about by reviews of products sold, ratings provided, and direct messages, just like with this multi-feature platform.

6.2 Comparison of Existing and Proposed System

Existing system:(Decision tree)

In the Existing system, we implemented a decision tree algorithm that predicts whether to grant the loan or not. When using a decision tree model, it gives the training dataset the accuracy keeps improving with splits. We can easily overfit the dataset and doesn't know when it crossed the line unless we are using the cross validation. The advantages of the decision tree are model is very easy to interpret we can know that the variables and the value of the variable is used to split the data. But the accuracy of decision tree in existing system gives less accurate output that is less when compared to proposed system.

Proposed system:(Random forest algorithm)

Random forest algorithm generates more trees when compared to the decision tree and other algorithms. We can specify the number of trees we want in the forest and also we also can specify maximum of features to be used in the each of the tree. But, we cannot control the randomness of the

forest in which the feature is a part of the algorithm. Accuracy keeps increasing as we increase the number of trees but it becomes static at one certain point. Unlike the decision tree it won't create more biased and decreases variance. Proposed system is implemented using the Random forest algorithm so that the accuracy is more when compared to the existing system.

Output

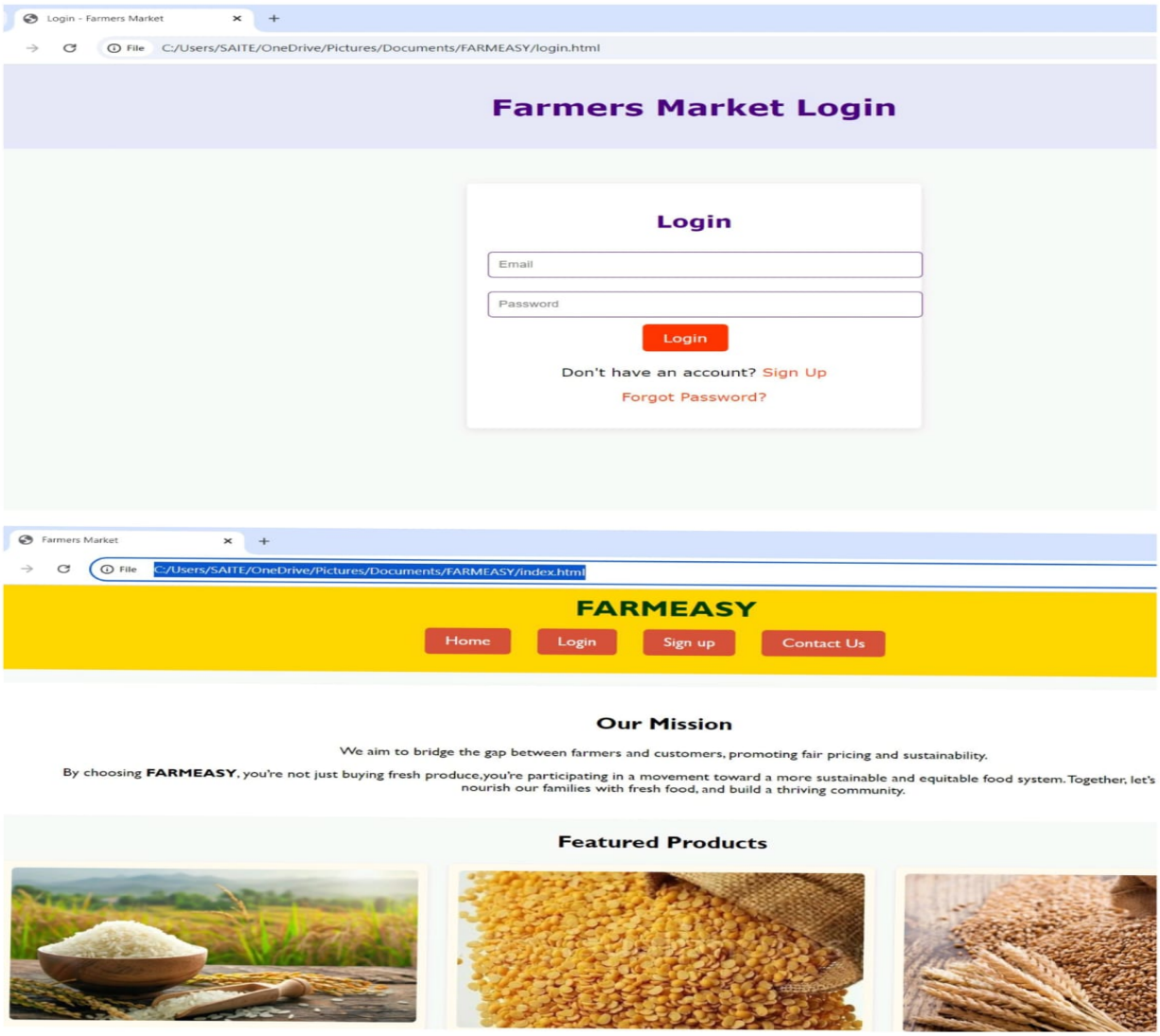


Figure 6.1: **Login Farmeasy**

Figure 6.2: **Home Page**

Chapter 7

CONCLUSION AND FUTURE ENHANCEMENTS

7.1 Conclusion

The FARMEASY web application stands as a door linking the farmers with the customers. This bridges the marketing process and allows direct contact between the parties involved. By implementing the technology, FARMEASY enhances access, transparency, and smooth transaction, thus offering benefits to the users of this application. The visibility of farmers is increased, as well as access to a wider range of customers; fresh produce and equity pricing are beneficial to consumers. With changing agricultural markets, a product such as FARMEASY would become a key enabler in the move towards sustainability support and in realigning economics with local economies. Further developments over the road map may include making it mobile-enabled and analytics-integrated, all which will help it meet the dynamic needs of the agricultural community. Through continuous innovation and engagement with its users, FARMEASY will come to shape the landscape of agriculture and consuming landscapes.

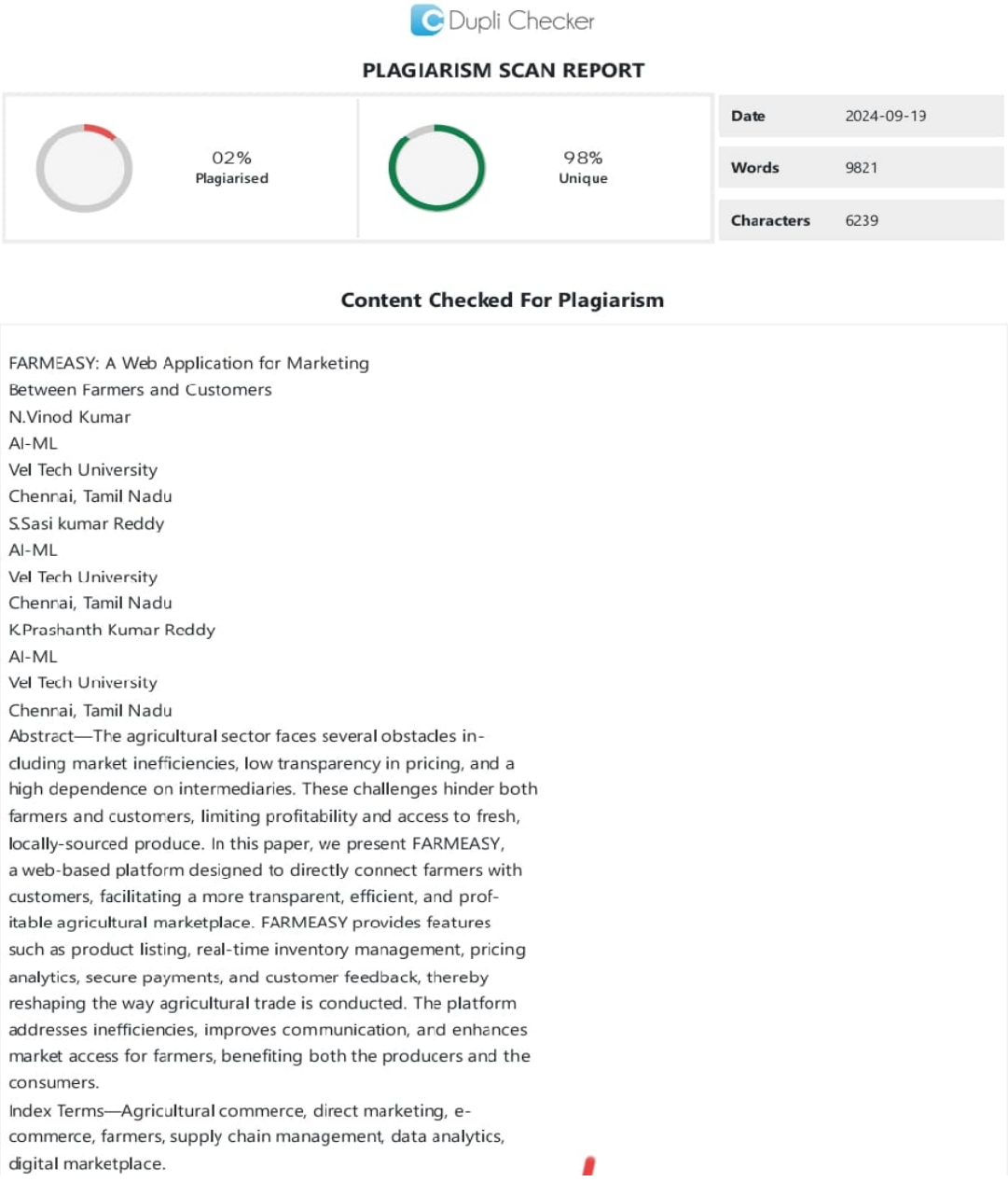
7.2 Future Enhancements

Future enhancements to the FARMEASY web application might be on increasing user engagement besides adding more functionality. A mobile app can be used to make it easy for users to access and buy produce using their cell phones. The inclusion of AI-based recommendation and voice search will also make the shopping experience seamless as they can filter through produce easily. Subscription services to subscribe for regular deliveries and loyalty programs can also induce repeated purchases. It would also feature features that give community engagements such as forums and farmer profiles that conclude in relationships and lead to the development of sustainable activities by stories exchange and resource among users.

Other improved areas would include advanced analytics tracking deliveries in real time. The given information can be used to enhance understanding on both sides: for farmers, through sales trends and customer preferences so they can make better judgments, and on the side of customers by real-time tracking of orders. Sustainability features such as tracing carbon footprint and green certification of products will appeal to the environmentally conscious consumer. Finally, using blockchain technology to allow transparency into the supply chain, combined with strong security features such as two-factor authentication, which give peace of mind and trust in the platform, will be a guarantee.

Chapter 8

PLAGIARISM REPORT



Dupli Checker

PLAGIARISM SCAN REPORT

02% Plagiarised

98% Unique

Date	2024-09-19
Words	9821
Characters	6239

Content Checked For Plagiarism

FARMEASY: A Web Application for Marketing
Between Farmers and Customers
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AI-ML
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Vel Tech University
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Abstract—The agricultural sector faces several obstacles including market inefficiencies, low transparency in pricing, and a high dependence on intermediaries. These challenges hinder both farmers and customers, limiting profitability and access to fresh, locally-sourced produce. In this paper, we present FARMEASY, a web-based platform designed to directly connect farmers with customers, facilitating a more transparent, efficient, and profitable agricultural marketplace. FARMEASY provides features such as product listing, real-time inventory management, pricing analytics, secure payments, and customer feedback, thereby reshaping the way agricultural trade is conducted. The platform addresses inefficiencies, improves communication, and enhances market access for farmers, benefiting both the producers and the consumers.
Index Terms—Agricultural commerce, direct marketing, e-commerce, farmers, supply chain management, data analytics, digital marketplace.

Figure 8.1: **Plagiarism Report**

Chapter 9

Source Code

Conatact.Html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Contact Us - FARMEASY</title>
    <style>
        body {
            font-family: 'Gill Sans', 'Gill Sans MT', Calibri, 'Trebuchet MS', sans-serif, sans-
                serif;
            margin: 0;
            padding: 0;
            background-color: #f9f9f9;
        }

        header {
            background-color: #ffd504; /* Bright Yellow */
            color: #013b01; /* Dark Green */
            padding: 20px;
            text-align: center;
        }

        main {
            padding: 20px;
            max-width: 600px;
            margin: auto;
        }

        h2 {
            text-align: center;
            color: #013b01; /* Dark Green */
        }

        form {
            display: flex;
            flex-direction: column;
        }

        input[type="text"], input[type="email"], textarea {
```

```
            margin-bottom: 15px;
            padding: 10px;
            border: 1px solid #ccc;
            border-radius: 5px;
        }

        textarea {
            resize: vertical;
            height: 150px;
        }

        button {
            background-color: #013b01; /* Dark Green */
            color: white;
            padding: 10px;
            border: none;
            border-radius: 5px;
            cursor: pointer;
            transition: background-color 0.3s;
        }

        button:hover {
            background-color: #e76f51; /* Coral */
        }

        footer {
            background-color: #333;
            color: white;
            padding: 20px;
            text-align: center;
            margin-top: 20px;
        }

        footer h3 {
            margin: 10px 0;
        }

        footer a {
            color: white;
            margin: 0 10px;
            text-decoration: none;
            transition: color 0.3s;
        }

        footer a:hover {
            color: #ffd504; /* Bright Yellow */
        }
    </style>
</head>
<body>
```

```
    <header>
        <h1>FARMEASY</h1>

    </header>

    <main>
        <h2>Contact Us</h2>
        <p>If you have any questions, feedback, or inquiries, please feel free to reach out to us
            using the form below!</p>

        <form action="#" method="post">
            <input type="text" name="name" placeholder="Your Name" required>
            <input type="email" name="email" placeholder="Your Email" required>
            <textarea name="message" placeholder="Your Message" required></textarea>
            <button type="submit">Send Message</button>
        </form>

        <h3>Our Contact Information</h3>
        <p>Email: <a href="mailto:support@farmeasy.com">support@farmeasy.com</a></p>
        <p>Phone: <a href="tel:+1234567890">+1 234 567 890</a></p>
    </main>

    <footer>
        <h3>Follow Us</h3>
        <a href="#">Facebook</a>
        <a href="#">Instagram</a>
        <a href="#">Twitter</a>
    </footer>
</body>
</html>
```

Dashboard.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Farmers' Dashboard - FARMEASY</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            margin: 0;
            padding: 0;
            background-color: #f9f9f9;
        }

        header {
            background-color: #ffd504; /* Bright Yellow */
```

```
            color: #013b01; /* Dark Green */
            padding: 20px;
            text-align: center;
        }

        nav {
            text-align: center;
            margin: 20px 0;
        }

        nav a {
            margin: 0 15px;
            color: #013b01;
            text-decoration: none;
        }

        main {
            padding: 20px;
            max-width: 800px;
            margin: auto;
        }

        h2 {
            text-align: center;
            color: #013b01; /* Dark Green */
        }

        .dashboard-section {
            background-color: #ffffff;
            padding: 20px;
            border-radius: 5px;
            box-shadow: 0 2px 5px rgba(0, 0, 0, 0.1);
            margin-bottom: 20px;
        }

        .button {
            background-color: #013b01; /* Dark Green */
            color: white;
            padding: 10px;
            border: none;
            border-radius: 5px;
            cursor: pointer;
            transition: background-color 0.3s;
        }

        .button:hover {
            background-color: #e76f51; /* Coral */
        }

        footer {
```

```
            background-color: #333;
            color: white;
            padding: 20px;
            text-align: center;
            margin-top: 20px;
        }

        footer a {
            color: white;
            text-decoration: none;
        }

        footer a:hover {
            color: #ffd504; /* Bright Yellow */
        }
    </style>
</head>
<body>
    <header>
        <h1>FARMEASY</h1>
        <p>Farmers Dashboard</p>
    </header>

    <nav>

        <a href="products.html">Products</a>
        <a href="contact.html">Contact Us</a>
        <a href="index.html">Logout</a>
    </nav>

    <main>
        <h2>Welcome, [Farmer's Name]</h2>

        <div class="dashboard-section">
            <h3>Product Management</h3>
            <button class="button">Add New Product</button>
            <button class="button">Edit Existing Product</button>
            <button class="button">Delete Product</button>
        </div>

        <div class="dashboard-section">
            <h3>Inventory Tracking</h3>
            <p>Current Inventory: [Real-time inventory data]</p>
            <p>Notifications: [Low inventory alerts]</p>
        </div>

        <div class="dashboard-section">
            <h3>Sales Analytics</h3>
            <p>Trends: [Display sales trends]</p>
            <p>Customer Preferences: [Display customer data]</p>
```

```
        </div>

        <div class="dashboard-section">
            <h3>Profile Settings</h3>
            <button class="button">Edit Profile</button>
            <button class="button">Change Password</button>
        </div>
    </main>

    <footer>
        <p>&copy; 2024 FARMEASY. All rights reserved.</p>
        <p><a href="#">Privacy Policy</a> | <a href="#">Terms of Service</a></p>
    </footer>
</body>
</html>
```

Signup.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Sign Up - Farmers Market</title>
    <style>
        body {
            font-family: 'Gill Sans', 'Gill Sans MT', Calibri, 'Trebuchet MS', sans-serif, sans-
                serif;
            margin: 0;
            padding: 0;
            background-color: #f9f9f9;
        }

        header {
            background-color: #E6E6FA; /* Lavender */
            color: #4B0082; /* Indigo */
            padding: 20px;
            text-align: center;
        }

        .signup-container {
            max-width: 400px;
            margin: 50px auto;
            padding: 20px;
            background-color: white;
            border-radius: 5px;
            box-shadow: 0 2px 10px rgba(0, 0, 0, 0.1);
        }

```

```
        h2 {
            text-align: center;
            color: #4B0082; /* Indigo */
        }

        input[type="text"],
        input[type="email"],
        input[type="password"] {

    </div>
</body>
</html>
```

Products.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Products - Farmers Market</title>
    <style>
        body {
            font-family: 'Gill Sans', 'Gill Sans MT', Calibri, 'Trebuchet MS', sans-serif, sans-
                serif;
            margin: 0;
            padding: 0;
            background-color: #fff; /* Bright white background */
        }

        header {
            background-color: #ffd504; /* Light Red */
            color: #070707; /* Indigo */
            padding: 20px;
            text-align: center;
        }

        nav ul {
            list-style-type: none;
            padding: 0;
            text-align: center;
        }

        nav ul li {
            display: inline;
            margin-right: 20px;
        }

        nav a {
```

```
            color: #4B0082; /* Indigo */
            text-decoration: none;
        }

        main {
            padding: 20px;
        }

        .product-grid {
            display: grid;
            grid-template-columns: repeat(auto-fill, minmax(220px, 1fr));
            gap: 20px;
            margin-top: 20px;
        }

        .product {
            background-color: #FFFAF0; /* Floral White */
            padding: 10px;
            border-radius: 10px;
            box-shadow: 0 4px 15px rgba(0, 0, 0, 0.2);
            text-align: center;
            transition: transform 0.2s;
        }

        .product:hover {
            transform: scale(1.05);
        }




</body>
</html>
```

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