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WEB PORTAL FOR AGRICULTURE PRODUCT

Dharani. V[1], Dr. R.Praba[2]

Student, B. Sc. Information Technology, Dr. N.G.P Arts and Science College, Coimbatore, Tamil Nadu, India[1]

Associate Professor, Information Technology, Dr. N.G.P Arts and Science College, Coimbatore, Tamil Nadu, India[2]

Abstract: Agriculture is a major part of everyday life and the way farm products reach customers affects both farmers and buyers in the existing system most people depend on local markets to purchase agricultural products this often involves traveling long distances spending extra money and dealing with intermediaries who increase prices many customers also find it difficult to get clear product details or compare options easily to overcome these difficulties this project introduces a web portal for agriculture product that provides a simple and practical online solution for purchasing farm products.The system allows users to create an account access the portal securely browse available products place orders and view their delivery progress customers can purchase items such as cereals and pulses directly through the website without the need to visit physical markets this not only saves time but also reduces physical effort and improves convenience the system helps avoid common mistakes found in manual order processing and ensures smoother handling of transactions.The application is developed using html and css for designing the web pages java for processing user requests on the server side and mysql for storing all system data the system is divided into several functional sections including user services product handling order processing and data storage administrators are responsible for adding new products updating existing information handling customer orders and monitoring delivery progress all records are stored in a centralized database which helps maintain accuracy consistency and security of information.This project aims to make the buying and selling of agricultural products easier faster and more transparent by reducing dependence on middlemen and allowing direct access to products the system benefits both farmers and consumers the web portal for agriculture product offers a practical and affordable digital platform that supports modern agricultural practices and improves the overall efficiency of agricultural marketing.

IndexTerms: Agriculture E-commerce, Web Portal, Online Agricultural Marketing, Farm Product Management, Order Management System, Digital Agriculture, Database Management, User Authentication System.

I. INTRODUCTION

Agriculture plays a vital role in the economy by providing food and employment to millions of people. However, traditional methods of selling agricultural products often involve middlemen, higher costs, and time-consuming market visits for both farmers and customers. To address these challenges, the Web Portal for Agriculture Product provides an online platform where farmers can list their products and customers can purchase them directly. The system enables users to browse products, compare prices, place orders, and track deliveries easily. By using web technologies and a centralized database, the portal improves transparency, efficiency, and accessibility in agricultural marketing.

1.2. LITERATURE REVIEW

Traditional agricultural marketing relies on physical markets and intermediaries, which often reduce farmers' profits and increase costs for consumers. Recent studies have shown that web-based platforms can improve transparency, reduce transaction time, and enable direct interaction between farmers and customers. Cloud-based systems further support real-time updates and centralized database management. Mobile-accessible portals have also been introduced to increase accessibility in rural areas. However, challenges such as data accuracy, secure transactions, and user adoption still need to be addressed. These studies highlight the need for a reliable and user-friendly Web Portal for Agriculture Product.

II. SYSTEM ARCHITECTURE

Portal for Agriculture Product is designed as a web-based application that connects farmers and customers through a centralized digital platform. The system follows a three-tier architecture consisting of the presentation layer, application layer, and database layer. This architecture ensures smooth communication between users, administrators, and stored data. The portal enables customers to browse agricultural products, place orders, and track deliveries, while

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administrators manage product listings, stock, and order processing. The integration of front-end technologies, back-end processing, and database management ensures secure, reliable, and efficient agricultural product marketing.

1. Presentation Layer (User Interface Layer)

- Developed using HTML and CSS
- Provides registration and login functionality
- Displays product categories and details
- Allows customers to add products to cart and place orders
- Shows order confirmation and tracking status

2. Application Layer (Business Logic Layer)

- Developed using Java
- Handles user authentication and session management
- Processes product search and order placement
- Manages product updates and stock control
- Communicates between user interface and database

3. Admin Module

- Secure admin login
- Add, update, or delete product details
- Monitor stock availability
- View and manage customer orders
- Update order delivery status

4. Database Layer

- Implemented using MySQL
- Stores user information
- Stores product data (name, category, price, quantity)
- Stores order details and transaction records
- Ensures data integrity and secure storage

III.WORKFLOW STEPS

Step 1: User Registration / Login

- User creates a new account or logs into the system
- System verifies user credentials
- Grants access to the portal dashboard

Step 2: Product Browsing

- User views available agricultural products
- Searches products by category (cereals, pulses, vegetables, fruits)
- Checks product details such as price, quantity, and availability

Step 3: Add to Cart

- User selects required products
- Adds products to the shopping cart
- Reviews selected items before placing the order

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Step 4: Place Order

- User confirms product selection
- Enters delivery details
- Submits order request to the system

Step 5: Order Processing

- System validates product availability
- Stores order details in MySQL database
- Generates order confirmation

Step 6: Admin Management

- Admin views new orders
- Updates order status (Processing / Shipped / Delivered) □ Manages stock and product updates

Step 7: Order Confirmation & Delivery

- User receives confirmation message
- User tracks order status
- Receives product delivery

WORKFLOW CHART

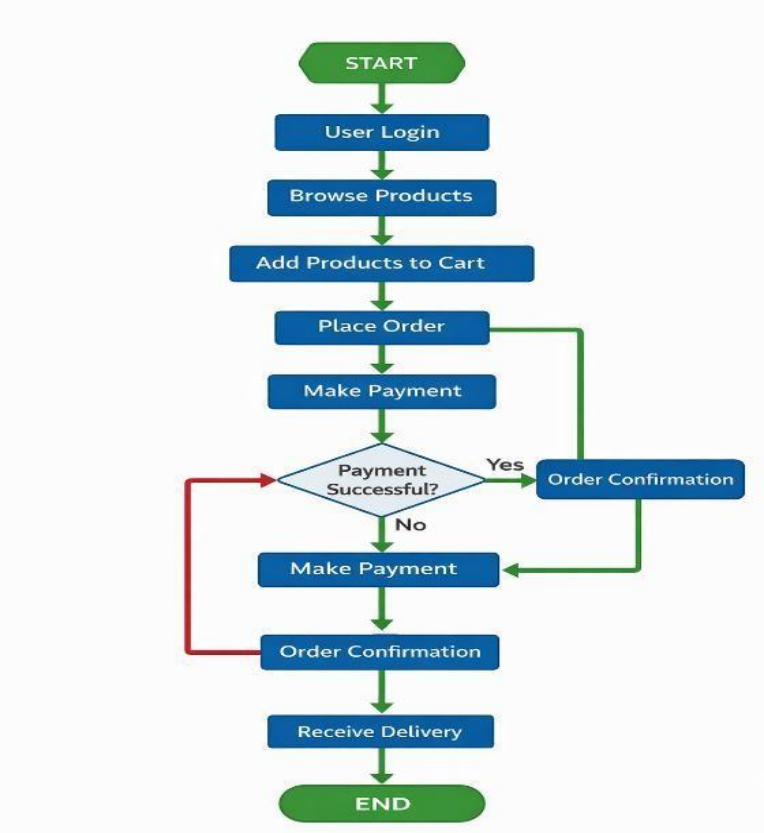

Figure : 3.1

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IV. METHODOLOGY

4.1. System Overview

The Web Portal for Agriculture Product is an online platform designed to connect farmers and customers directly. The system consists of a user module, admin module, product management module, order management module, and a centralized MySQL database. Customers can register, browse products, place orders, and track delivery status, while administrators manage product listings, stock, and customer orders. The front-end is developed using HTML and CSS, and the back-end is implemented using Java to handle server-side operations and database communication. The system ensures secure access, accurate data management, and efficient agricultural product marketing.

1. Requirement Analysis:

The first step is to understand the needs of users, including farmers, customers, and administrators. Functional requirements such as user registration, product listing, order placement, order tracking, and admin management are identified. Non-functional requirements like security, performance, and ease of use are also considered.

2. System Design:

Based on the requirements, the system architecture is designed. The portal is divided into modules such as User Module, Admin Module, Product Management Module, Order Management Module, and Database Module. The database structure is planned using MySQL to store user details, product information, and order records securely. User interface layouts are also designed for smooth navigation.

3. Front-End Development:

The front-end of the portal is developed using HTML and CSS to create a clean, simple, and user-friendly interface. Web pages such as login, registration, product listing, cart, order confirmation, and admin dashboard are designed to ensure easy interaction for all users.

4. Back-End Development:

The back-end logic is implemented using Java. This includes handling user authentication, managing sessions, processing orders, validating inputs, and communicating with the database. Java ensures efficient server-side operations and smooth data flow between the user interface and database.

5. Database Development:

A MySQL database is created to store all system data, including user profiles, product details, order records, and payment information. Proper relationships are established between tables to maintain data integrity and avoid redundancy.

6. Integration and Testing:

All modules are integrated and tested together to ensure the system works as expected. Functional testing is performed to check login, registration, product search, order placement, and admin operations. Errors and bugs are identified and corrected to improve system reliability.

7. Deployment and Maintenance:

After successful testing, the system is deployed on a web server. Regular maintenance is carried out to update products, improve performance, fix issues, and enhance security.

Overall, this methodology ensures that the Web Portal for Agriculture Product is developed in a structured, efficient, and userfocused manner, providing a reliable digital solution for modern agricultural marketing.

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V. RESULT

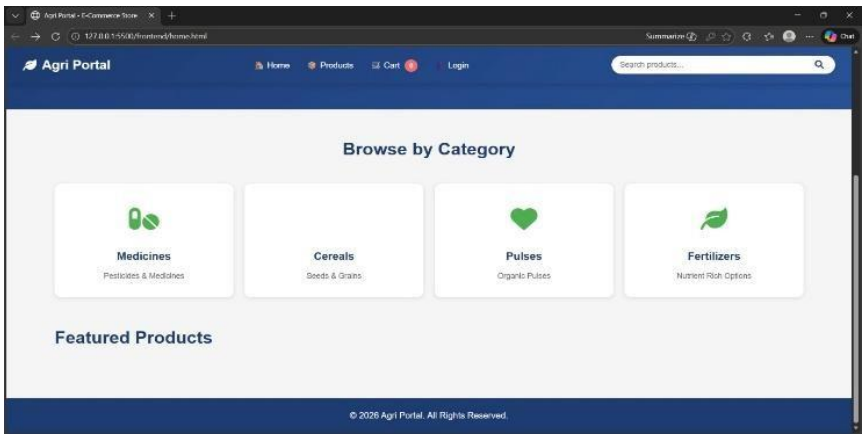

Figure 5.1

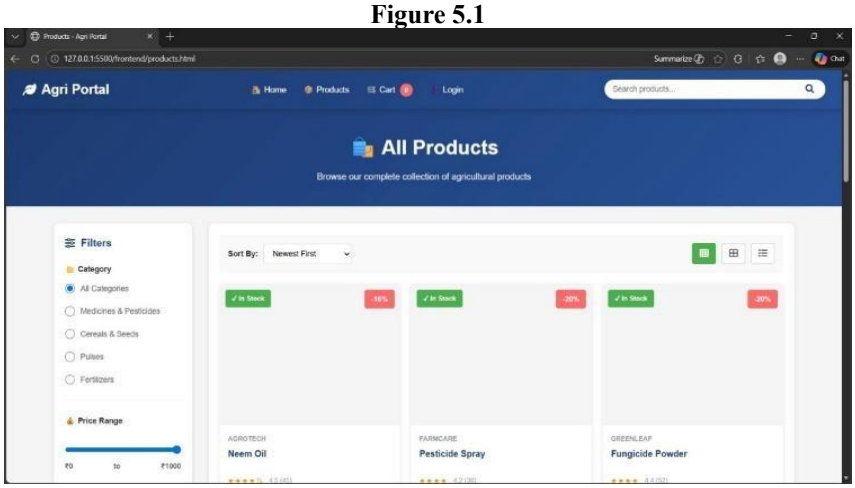

Figure 5.2

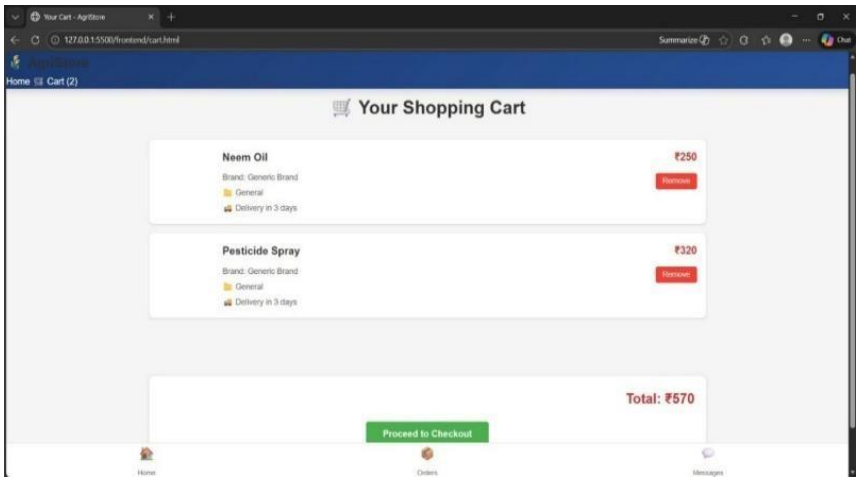

Figure 5.3

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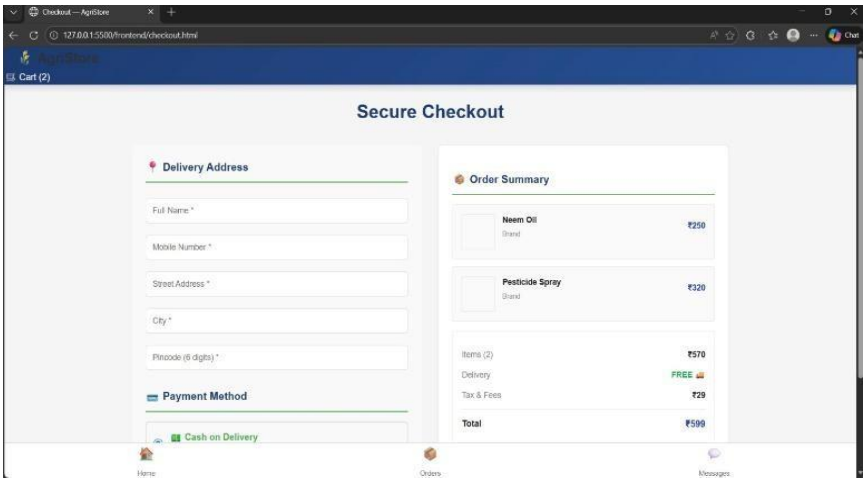

Figure 5.4

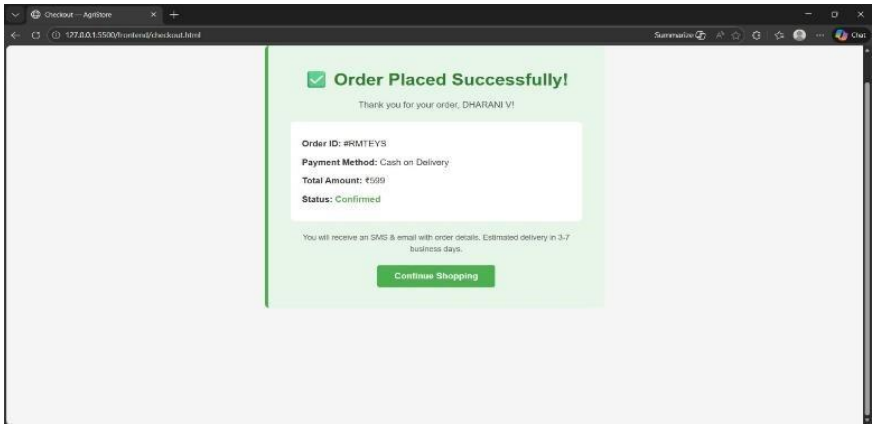

Figure 5.5

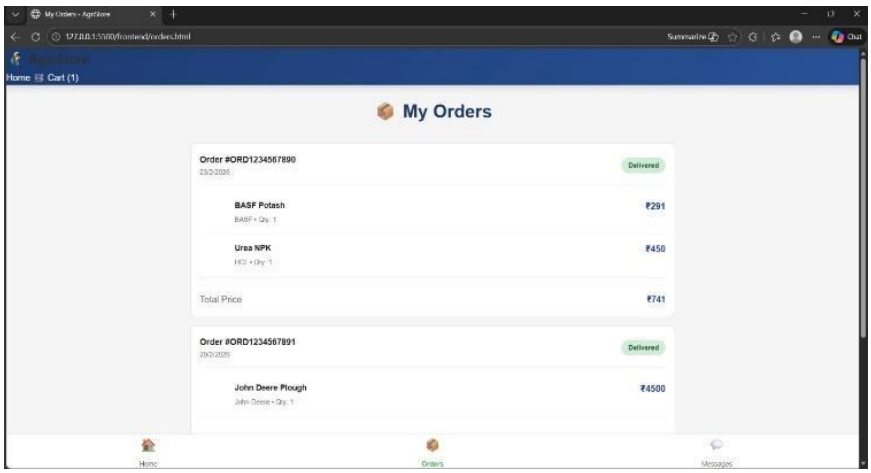

Figure 5.6

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VI. CHALLENGES AND FUTURE DIRECTIONS

6.1. CHALLENGES

- Limited internet connectivity in rural areas may affect system accessibility.
- Farmers with low digital literacy may find it difficult to use the web portal initially.
- Ensuring data accuracy for product details and stock updates can be challenging.
- Secure handling of user data and transactions is necessary to prevent cyber threats.
- System performance may slow down if a large number of users access the portal simultaneously.
- Dependence on manual product updates may lead to inconsistencies if not managed properly.

6.2. FUTURE DIRECTIONS

- Integrate secure online payment options such as UPI, credit/debit cards, and digital wallets.
- Develop a mobile application version to improve accessibility for rural users.
- Add real-time delivery tracking and notification systems.
- Introduce multilingual support to assist users from different regions.
- Implement product review and rating features for better transparency.

VII. CONCLUSION

This study presented the design and implementation of a Web Portal for Agriculture Product aimed at improving the efficiency and transparency of agricultural marketing. The system enables farmers to list products and customers to purchase them directly through a secure online platform. By reducing dependency on middlemen, the portal helps farmers increase their profit margins while offering customers fair pricing and convenience. The integration of user management, product management, order processing, and centralized database storage ensures accurate data handling and reliable performance. Overall, the proposed system demonstrates how web technologies can modernize agricultural trade and promote digital transformation in the farming sector.

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