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Farm2Door: Fresh from Fields to Your Doorstep

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ABSTRACT: Farm2Door is a digital agriculture marketplace platform designed to bridge the gap between farmers and consumers by enabling direct transactions without intermediaries. This innovative mobile solution empowers farmers to set their own prices, ensuring fair trade and maximum profit, while providing consumers with fresh agricultural products at affordable rates. By eliminating middlemen, Farm2Door promotes transparency, efficiency, and sustainability in the agricultural supply chain. The platform allows farmers to list their products, set prices based on market trends, and sell directly to individuals, retailers, and businesses. Consumers benefit from lower prices and fresh produce, while farmers retain complete control over their sales, resulting in economic empowerment and improved livelihoods. Key features of Farm2Door include secure digital transactions, logistics and delivery support, real-time price tracking, customer reviews, and market insights to help farmers make informed decisions. The app also fosters a community-driven ecosystem by providing resources, weather updates, and collaborative forums for farmers to connect and grow together. By leveraging mobile technology, Farm2Door aims to build a fair, profitable, and self-sufficient agricultural ecosystem, empowering farmers and benefiting consumers through direct access and digital innovation.

KEYWORDS: Farm2Door, Agriculture Marketplace, Farmer Empowerment, Fair Pricing.

I. INTRODUCTION

India's agricultural sector is the backbone of its economy, yet many farmers struggle to access fair markets and competitive prices due to the dominance of middlemen and lack of direct buyer interaction. The Agriculture Marketplace Application aims to revolutionize this scenario by providing a digital platform where farmers can connect directly with consumers, wholesalers, and retailers. This transparent and user-friendly system empowers farmers to list their produce, monitor price trends, and negotiate sales without intermediaries.

The app supports real-time product listing, price comparison, location-based search, and secure communication between buyers and sellers. An intuitive dashboard helps farmers manage inventory, while buyers can browse available produce with detailed descriptions and availability status. With features like rating systems, delivery coordination, and transaction tracking, the app ensures reliability and trust in agricultural commerce. By bridging the gap between rural producers and urban markets, this platform fosters inclusivity, financial growth, and technological adaptation in the agriculture sector, contributing to a more sustainable and equitable food ecosystem.

II. LITERATURE SURVEY

1. eNAM (National Agriculture Market)

Reference: https://www.enam.gov.ineNAM is a pan-India electronic trading portal launched by the Government of India to integrate Agricultural Produce Market Committee (APMC) mandis into a unified national market. It enables transparent pricing and smooth online trading of agri-produce. While it streamlines wholesale trade, it lacks a mobile-first, consumer-focused approach and doesn't allow small farmers to directly reach individual buyers or local consumers.

- 2. AgriBazaar A Private Digital Marketplace
 - AgriBazaar is an agri-tech platform that connects farmers, traders, and agri-input businesses through a digital



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medium. It offers services like price discovery, logistics, and payments. However, the platform is B2B-centric and primarily benefits large-scale farmers or traders. It lacks education tools and real-time support features like chat, seedling guidance, or disease management for smaller farmers.

III. METHODOLOGY

The methodology adopted for developing the Farm2Door application follows a structured and iterative approach based on the Incremental Software Development Life Cycle (SDLC) Model. This model allows the project to be broken down into smaller, manageable modules that are developed, tested, and refined in phases, ensuring better quality control and quicker feedback integration. Data Cleaning: Removing null or irrelevant entries, and standardizing units.

- **Requirement Analysis:** Identified functional needs of farmers and consumers, including login, product listing, and browsing features.
- System Design: Designed role-based workflows and data flow diagrams to map user interactions with system modules.
- **Frontend Development (Flutter):** Developed a responsive mobile UI with Flutter to support navigation, filtering, and user-specific actions.
- **Backend Integration (Appwrite):** Used Appwrite for secure user authentication and real-time product and user data management.
- Module Testing and Validation: Individually tested each module to ensure features like login, product upload, and cart behavior work correctly.
- Final Integration and Evaluation: Integrated all modules into a single app and evaluated usability, performance, and correctness across roles.

IV. EXISTING SYSTEM

In the existing agricultural market system, farmers rely heavily on local traders, agents, and middlemen to sell their produce. This traditional supply chain reduces the profit margins for farmers, as a significant portion of the final price is absorbed by intermediaries. Most small and marginal farmers lack access to reliable, scalable, and direct marketplaces where they can connect with consumers or retailers. While some digital platforms and government portals exist, they often have limited reach, complex interfaces, or lack support for local languages and services like logistics or machinery rentals. Additionally, these systems do not provide a comprehensive solution that includes educational resources, real-time price tracking, or the ability to hire workers and access farming tools in one place. As a result, both farmers and consumers continue to face inefficiencies, unfair pricing, and limited transparency in the agricultural supply chain.

V. EXPERIMENTAL RESULTS

The Farm2Door application was successfully developed and tested on Android devices using real-time interactions between farmers and consumers. Experimental evaluation showed that farmers were able to register, log in, and list their products efficiently using the app interface. Consumers could seamlessly browse through product categories, add items to the cart, and simulate a checkout process. Role-based access control was verified—ensuring that only farmers had access to the product upload features, while consumers could only view and purchase products. All data operations, including user authentication and product storage, were handled securely through Appwrite. The application's responsiveness, user interface flow, and functionality across different modules met the expected requirements without errors. Overall, the system performed reliably under test conditions and successfully demonstrated its capability to support direct farmer-to-consumer interactions in a mobile environment



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Volume 14, Issue 5, May 2025 |DOI: 10.15680/IJIRSET.2025.1405422| OUTPUT



VI. CONCLUSION

The Farm to Door project successfully establishes a digital platform that connects farmers directly with consumers, promoting fair trade and reducing dependency on middlemen. By implementing role-based access using Appwrite, the application ensures that farmers have the exclusive ability to add and manage their products, while consumers can conveniently browse, view categorized listings, add items to their cart, and proceed with a simulated payment process. The app includes core functionalities such as categorized product viewing (Seeds, Seedlings, Vegetables, Machinery), individual role-based profile management, and a clear separation of services. The integration of a real-time database through Appwrite for storing login details and farmer product data ensures secure and structured data management. This project not only supports local agriculture but also introduces an easy-to-use, scalable digital solution to modernize the agricultural marketplace. It lays a strong foundation for further enhancements to improve reach, efficiency, and user satisfaction.

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