

Research Paper on Agri Shop Application

Smruti Yuvaraj Kalambekar¹, Akshata Sambhaji Durgule², Pranali Tanaji Patil³,
Samruddhi Indrajit Deshmukh⁴, Mr.Ranjit.L.Kadam⁵

^{1,2,3,4}Student, Computer Engineering , Dr. D. Y. Patil Polytechnic , Kolhapur, India

⁵Faculty, Computer Engineering , Dr. D. Y. Patil Polytechnic , Kolhapur, India

Emails:-¹Kalambekarsmruti@gmail.com,²kadam.ranjit5@gmail.com

Abstract:In today's digital era, the Internet plays a vital role in connecting customers and business owners, enabling them to share various types of information and resources. E-commerce has become a popular way for organizations to establish and grow their businesses online. To support this trend, different types of e-commerce websites are being developed to facilitate the buying and selling of products and services. This project aims to create a user-friendly web application specifically designed for the online trade of agricultural products. The primary objective is to assist farmers in purchasing essential items like Vegetables and Fruits. In this web-based marketplace, producers can showcase and promote their products along with detailed descriptions. Farmers can browse through these listings, view product details, and make informed purchasing decisions. Overall, this e-commerce platform will serve as a bridge between customer and business owner, streamlining the agricultural supply chain and enhancing accessibility to essential farming resources through the power of the Internet. The application maintains a database containing essential customer details such as name, email, mobile number, location, and password. During registration, customer also select their preferred vegetables and fruit. By using this app, farmers can analyze market trends and make informed decisions about good quality products. The software is developed using Java for backend functionality, Firebase for database management, and Android Studio for app development.

Keywords — Selling-Products, Buying-Products ,Customer login ,Seller login ,Direct Order, Order History, Request Handling, Profile Management, quality produce, producer-to-consumer model.

I.INTRODUCTION:

The AgriShop Application was created to address the growing demand for digital solutions in the agricultural retail industry. Agriculture is crucial for ensuring food security and supporting rural economies, yet traditional agricultural supply chains often face inefficiencies, poor processes, and a lack of real-time information. With this in mind, the creators of AgriShop sought to bridge the gap between farmers, suppliers, and retailers using technology.

The widespread use of smartphones and the rapid growth of mobile technology created an

opportunity to develop a mobile app that could transform the way agricultural products are sourced, distributed, and how information is shared. To understand the needs of the industry, the AgriShop team conducted thorough research and collaborated with farmers, agricultural experts, and other stakeholders. They identified the necessity for a unified platform that would connect farmers directly with trusted suppliers and retailers, offer a broad selection of agricultural products, provide personalized recommendations, facilitate secure transactions, and share valuable agricultural knowledge.

The AgriShop App is designed to empower farmers by offering easy access to a variety of high-quality agricultural products. By cutting out

middlemen and enabling direct transactions, the app helps farmers save time and reduce costs. The personalized recommendation feature further supports farmers by suggesting products tailored to their specific needs.

In addition to product procurement, the app offers a knowledge-sharing platform where farmers can access educational resources, weather updates, expert advice, and market trends. This empowers farmers to adopt modern farming practices, improve their productivity, and engage in more sustainable agriculture. By providing this crucial information, the AgriShop App helps farmers optimize their resources.

The platform also enables business owners to sell their products online, while buyers can easily purchase fresh produce and vegetables. Buyers have the option to request product inspections before finalizing their purchase, ensuring product quality. Payments are only processed once the purchase is confirmed.

Moreover, AgriShop includes an article and blog section offering valuable insights to help business owners improve their productivity and profitability. Administrators can generate and print various reports, assisting in better decisionmaking. AgriShop serves as a website designed to facilitate online agricultural trade, enabling farmers to reach a wider audience for their products through the platform's owner. Wholesalers and retailers also benefit by gaining access to a larger selection of farm products. Additionally, the platform allows consumers to purchase fresh produce directly from farmers, cutting out intermediaries.

Ultimately, AgriShop aims to empower farmers, merchants, and agribusinesses by providing them with advanced technology and services. It helps them grow their businesses, expand their customer base, and improve business practices. By offering these services, the platform also provides people with relevant information and services to support the agricultural community.

II.OBJECTIVES:

Empowering farmers to sell their produce directly to customers through our online platform, eliminating brokerage charges. Enabling customers to purchase

fresh agricultural products from farmers seamlessly via our Android app.

Our mission is to create a digital marketplace where farmers can sell their agricultural products directly to customers, free from intermediary charges. Providing a convenient online platform for customers to buy fresh produce directly from farmers through our Android app.

Connecting farmers directly with customers through our online platform, eliminating brokerage fees. Offering a user-friendly Android app for customers to purchase agricultural products from farmers, promoting a transparent and efficient marketplace.

III. LITEERATURE SURVEY:

A literature survey on an Agrishop application for buying and selling vegetables and fruits would involve exploring various aspects such as ecommerce platforms, supply chain management in agriculture, mobile application design, and the integration of technology in the agricultural industry. Below is a brief breakdown of key areas and findings that can be useful in understanding the potential of such an application:

1. E-commerce in Agriculture

E-commerce platforms in agriculture have gained popularity as a way to connect farmers directly with consumers, bypassing traditional intermediaries. Key trends and findings in this area include:

Farmer-to-Consumer Direct Selling: Many ecommerce platforms are empowering farmers by providing them direct access to customers. This model helps reduce costs, ensures better pricing, and creates a more transparent supply chain.

Market Expansion:

E-commerce apps like Agrishop can help farmers expand their reach

beyond their immediate local area, targeting consumers in urban areas who may struggle to access fresh, local produce.

Platform Models: Research in e-commerce models like B2B (Business to Business), B2C (Business to Consumer), and C2C (Consumer to Consumer) reveals different ways the agricultural supply chain can be structured. An Agrishop app could adopt any of these models depending on its design.

2. Supply Chain Management in Agriculture

Supply chain inefficiencies are a critical issue in the agriculture sector, especially for perishable goods like vegetables and fruits. A literature survey would cover.

Cold Chain Logistics: Efficient cold chain logistics are necessary to maintain the quality of perishable goods during transit. Mobile applications like Agrishop must integrate real-time tracking and cold storage solutions to ensure freshness. **Logistics and Delivery:** Mobile platforms focused on agriculture require strong delivery mechanisms to ensure timely, quality delivery of fresh produce. The role of 3rd-party logistics and last-mile delivery services is crucial in this context.

Inventory Management: Proper inventory management systems integrated into the app can help sellers track stock levels, ensuring minimal wastage and optimized supply. Real-time data analytics can inform farmers about demand and potential pricing fluctuations.

3. Technology Integration in Agriculture

The role of technology in facilitating an Agrishop application is fundamental. Topics of interest include:

Mobile Application Development: Research into mobile app development for e-commerce platforms in agriculture is vast. Key aspects include user experience (UX), ease of navigation, and integration with payment gateways. Agrishop could leverage features such as live product tracking, digital payments, and user reviews.

Artificial Intelligence (AI) and Machine Learning (ML): AI can be used to predict demand trends, optimize supply chains, and improve pricing strategies. ML algorithms can help. based on past purchases .

Blockchain Technology: Blockchain can help In recommending personalized products to user ensure transparency and traceability in the agricultural supply chain. By integrating blockchain, Agrishop could guarantee the authenticity of products, their origin, and the handling conditions.

4. Consumer Behavior and Market Demand

Understanding consumer behavior in agricultural e-commerce is vital for building a successful platform. Some factors include:

Consumer Preferences: Studies indicate that consumers are increasingly inclined towards fresh, organic, and locally sourced produce. Agrishop could tailor its offerings to meet these preferences.

Pricing Strategy: Research into consumer pricing sensitivity in agricultural products is essential. The app could use dynamic pricing strategies to reflect market demand, seasonality, and supply constraints.

Trust and Credibility: Building trust through customer reviews, product certification (e.g., organic certification), and clear product sourcing is essential for any e-commerce platform, especially in the food industry.

5. Challenges in Agricultural E-Commerce

Several challenges can arise when developing and managing an Agrishop app:

Payment Systems: Developing a secure, userfriendly digital payment system, especially in rural areas where digital literacy may be low, is a major challenge.

Quality Control and Freshness: Ensuring the quality of vegetables and fruits is key. An Agrishop app could offer guarantees or quality assurance certificates to build trust.

Data Privacy and Security: Handling user data, payment information, and transaction records requires robust security measures, particularly in e-commerce environments.

IV. METHODOLOGY:

Admin Dashboard Functionalities:-

Login page:-

A login page is a crucial part of many Android applications, allowing users to access their accounts using credentials such as a username/email and password. It is typically developed using XML for the UI and Java for functionality in Android Studio.

Signup page:-

A sign-up page is a crucial part of many Android applications, allowing users to create an account by providing necessary credentials such as username, email, and password. This page is typically

designed using XML for the UI and Java for functionality in Android Studio.

Upload Food:-

The Upload Food page in an Agri Shop application is used by the admin to add new agricultural products to the online store. It allows the admin to input product details, upload images, and save the data to the database.

Delete Food:-

The Delete Food feature allows the admin to remove food items from the system when they are out of stock or no longer needed. This feature is typically implemented with a delete button next to each food item in the admin panel.

Order Page:-

The Order Page in the Admin Dashboard of an Agri Shop Application allows administrators to manage customer orders efficiently. Below is a detailed breakdown of its functionalities, structure, and features.

Feedback Page:-

The Feedback Page in the Admin Dashboard allows the admin to monitor and manage customer reviews, complaints, and suggestions regarding products and services.

Notification:-

The notification system in an Agri Shop Admin Dashboard helps the admin stay updated on important activities such as new orders, low stock alerts, feedback, and system messages.

Logout:-

The Log Out page in the Agri Shop Admin Dashboard is responsible for securely ending the admin session and redirecting them to the login page. It ensures that unauthorized users cannot access the admin panel after logging out.

User Dashboard Functionalities:-

Splash Page:-

A splash screen is the first screen that appears when an Android application is launched. It usually displays the app logo, name, or a loading animation for a few seconds before navigating to the main screen.

Login page:-

A login page is a crucial part of many Android applications, allowing users to access their accounts using credentials such as a username/email and password. It is typically developed using XML for the UI and Java for functionality in Android Studio.

Signup page:-

A sign-up page is a crucial part of many Android applications, allowing users to create an account by providing necessary credentials such as username, email, and password. This page is typically designed using XML for the UI and Java for functionality in Android Studio.

Profile Page:-

A Profile Page in a selling application is an essential feature that allows users to manage their personal details, preferences, and account settings. It serves as a central hub for user-related information, enhancing the overall shopping experience by providing easy access to order history, payment methods, addresses, and other important features.

Product Page:-

A product page in an e-commerce app for selling vegetables and fruits provides users with a list of available products, their prices, images, and an option to add them to the cart. It is designed using XML for UI and Java for functionality in Android Studio.

Payment Page:-

A payment page is a crucial part of an e-commerce application that allows users to complete transaction securely. It provides multiple payment

options such as credit/debit cards, UPI, wallets, net banking, or cash on delivery (COD).

My Order:-

The "My Orders" page in a selling application allows users to view and manage their past and current orders. It provides details such as order status, payment details, delivery updates, and order history.

My Cart:-

The My Cart page is one of the most crucial components of a selling application. It serves as a temporary holding area where users can review, modify, and manage the products they intend to purchase before proceeding to checkout. A well-designed cart page enhances the shopping experience by providing clear details on pricing, quantity, and available discounts.

Feedback Page:-

The Feedback Page is an essential feature in a fruit and vegetable selling app that allows customers to share their experiences, suggestions, and concerns. It helps businesses improve service quality, product freshness, and overall customer satisfaction. A well-designed feedback system encourages users to express their opinions, leading to better customer engagement and trust.

Logout Page:-

In a selling application, user authentication and security play a vital role in protecting sensitive data like purchase history, payment details, and personal information. The Logout Page serves as the final step in a secure user session, allowing customers to sign out safely.

V.RELATED WORK:

During our project, we discovered various applications with similar objectives, aiming to empower farmers to earn profits while providing delivery services to customers. These applications include Kisan Mandi, Smart Crop, Dhan Mandi, and Digital Mandi India. Through research, we

gathered valuable insights that aided our project development.

We explored resource applications, including Android apps and websites, where farmers can easily sell their products. These websites feature categorized sections for vegetables, fruits, crops, and more.

We interacted with vendors on the application, gaining a seller's perspective, and tested the app as both buyers and sellers to understand user experiences. Our research revealed areas for improvement, including UI designs, delivery sections, and database connectivity. We noted that slow performance, unappealing designs, and limited storage capacity hindered user experience.

Key features we identified include email notifications, delivery updates, and constant vendor-farmer interaction to boost productivity. To cater to farmers with limited tech expertise, we emphasized the need for an intuitive interface and offline functionality. By streamlining the application, we aimed to create a seamless experience for both sellers and buyers.

Our project involved researching existing applications that support farmers and customers, such as Kisan Mandi and Digital Mandi India. We gathered insights from these resources, including Android apps and websites, to inform our project development. Through testing and vendor interactions, we identified areas for improvement, including UI designs, performance, and offline functionality.

VI.RESULT & DISCUSSION:

To develop a user-friendly mobile application for farmers, our team conducted extensive research on various existing applications and websites related to both agriculture and application development. The goal was to create a platform that meets the needs of both buyers and sellers while ensuring accessibility for all users.

Key Features of the Application

The following core features were incorporated to enhance user experience:

Simple and Accessible Interface – Designed to be intuitive, allowing even those with minimal digital experience to navigate the app easily.

Categorized Listings – A well-structured category section enables users to efficiently browse and sort agricultural products.

Real-Time Notifications – Provides instant alerts regarding new listings, transactions, and updates

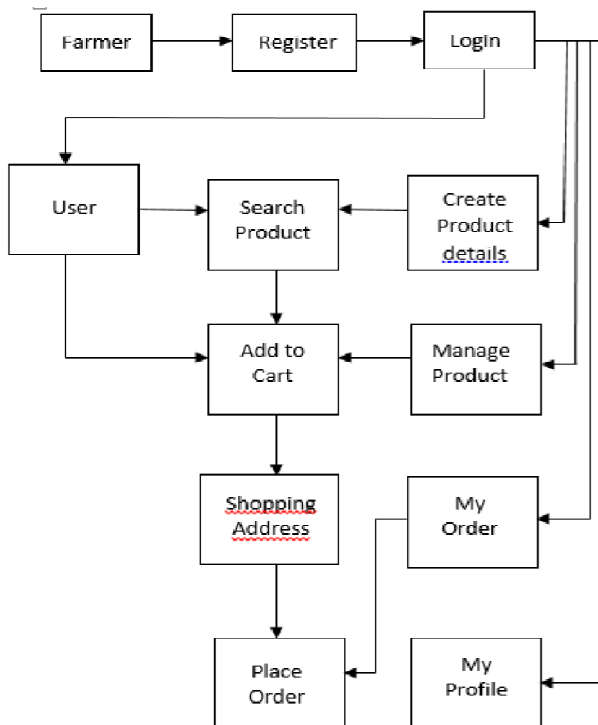
Dedicated Seller Section – Restricted access ensures that only verified farmers can list products, maintaining authenticity.

User-Centric Design for Rural Communities - Since many farmers and rural users may not be familiar with technology, the application was designed with a simple and easy-to-use interface. This ensures that users can quickly learn how to navigate the platform without requiring extensive technical knowledge.

Project Significance -

This application serves as a convenient marketplace tailored to the specific needs of farmers and buyers. By integrating specialized features, it improves efficiency, accessibility, and overall user experience.

VII.PRODUCT FLOW:



VIII.CONCLUSION & FUTURE

SCOPE:-

The development of Android-based agricultural shopping applications, primarily built using Java, has emerged as a transformative force in the agribusiness sector. These mobile applications serve as digital marketplaces, bridging the gap between farmers and consumers while minimizing the reliance on intermediaries. The reviewed scholarly articles illustrate how these applications contribute to market accessibility, supply chain efficiency, and financial empowerment for farmers. However, despite their numerous benefits, these platforms also face significant challenges related to internet accessibility, logistics management, and user adoption. Through the review of multiple scholarly articles, it is evident that these technological solutions contribute to the empowerment of farmers, provide real-time agricultural insights, and improve supply chain management. However, they also face critical challenges related to logistics, internet accessibility, user adoption, and competition with larger e-commerce platforms. Key Benefits:- 1)Direct Market Access:-Many of the reviewed applications, such as Farm2Table, Digital Mandi, and AgroMarket, facilitate direct transactions between farmers and consumers. 2)User-Friendly Features and Secure Transactions:-Applications like AgriBazaar and SmartFarm incorporate real-time notifications, price recommendation algorithms, and secure payment gateways, making transactions efficient and reliable.

IX.REFERENCES:

[1]Heru Nugroho,Robbi hendriyanto,Kautsar Tisamawi. Application for Marketplace Agricultural Products.International Journal of Applied Information Technology https://www.researchgate.net/publication/330907674_Application_for_Marketplace_Agricultural_Product

[2]Mutiu G,Ojonukpe S.E & Chinedu J.G. Development of a Mobile Application for

Marketing Agricultural Farm
Products(2023) .International Journal of Women in
Technical Education and Employment.

<https://www.ajol.info/index.php/ijowited/article/view/252933/238980>)

[3] R. Kaur and D. Singh. Android-Based Innovative Agriculture Using Java. International Journal of Scientific Research and Engineering Development.

<https://ijered.com/volume5/issue3/IJSRED-V5I3P37.pdf>

[4] K. Gupta and S. Mehta. Design and Development of Android Based Mobile Application for FarmersInternational Research Journal of Modernization in Engineering Technology and science.

https://www.irjmets.com/uploadedfiles/paper/issue_1_january_2022/18333/final/fin_irjmets164208493_1.pdf

[5] S. Agarwal and P. Joshi. Agri-Smart Solutions using Android Application. International Journal of Advanced Research in computer and Communication Engineering.

<https://ijarcce.com/wp-content/uploads/2024/03/IJARCCE.2024.13238.pdf>

[6] D.Kiranmayi,Arpita Sharma,S.K.Sharma. Development of an Android-Based Application System for Fish Farmers.

<https://link.springer.com/article/10.1007/s40003-021-00558-8>

[7]Subiyanto ,Sucihatiningsih Dian Wisika Prajanti ,Nur Azis Salim. Android-Based Smart Digital Marketplace Application on Agricultural Commodities Using a New Variant Recommendation System. Interanational Journal of Electric and Computer Engineering.

<https://ijece.iaescore.com/index.php/IJECE/article/view/36421>

[8]V.G.Sunil,Berin

Pathrose,K.P.Chandran,K.Prasanth. Design and Development of a Mobile Application for Agricultural Technology Transfer.

<https://jtropag.kau.in/index.php/ojs2/article/view/895>