PRESIDENCY UNIVERSITY

Private University Estd. in Karnataka State by Act No. 41 of 2013

BANGALORE

A Project Report On

"Mobile App For Direct Market Access For Farmers"

Batch Details: CSE-G23

Sl. No.	Roll Number	Student Name
1	20211CSE0382	Kiran R
2	20211CSE0378	Arun Kumar P
3	20211CSE0386	Jishnu Kumar G S
4	20221LCS0022	Praveen Kumar S

School of Computer Science,

Presidency University, Bengaluru.

Under the guidance of,

Mr. Md Ziaur Rahman

Assistant Professor

School of Computer Science,

Presidency University, Bengaluru

CONTENTS

1.INTRODUCTION

Agriculture has always been a fundamental pillar of global economies, particularly in developing countries where a significant portion of the population depends on farming as their primary livelihood. However, one of the biggest challenges faced by farmers, particularly smallholder farmers, is the ability to access profitable markets to sell their produce. Farmers often find themselves at the mercy of middlemen who act as intermediaries between them and the consumers or retailers. These middlemen typically set prices that are not favor able to farmers, which reduces their income potential and limits their ability to expand their farming operations.

The project is focused on developing a mobile application that provides farmers with direct market access, allowing them to connect with consumers and retailers efficiently. The app will serve as a platform where farmers can list their produce, set prices, negotiate with potential buyers, and manage their transactions, thus enhancing their income potential. By eliminating the need for middlemen, the app provides farmers with greater control over their sales, enabling them to sell at fairer prices and ensuring they receive a larger share of the revenue generated from their produce.

This application is designed to be user-friendly and intuitive, keeping in mind the literacy levels, technical expertise, and internet connectivity challenges in rural farming communities. Farmers will be able to easily navigate through the app, listing their products, negotiating prices, and finalizing transactions. Retailers and consumers, on the other hand, will benefit from the ability to access a variety of fresh, locally sourced produce at competitive prices.

Farmers, especially in rural areas, continue to face significant barriers when it comes to selling their products at fair prices. A primary reason for this is the involvement of middlemen who often control the distribution channels. These intermediaries purchase produce from farmers at lower prices and then sell them to consumers or retailers at marked-up prices, resulting in farmers receiving only a fraction of the actual market value. This dynamic limits farmers' income and their ability to sustain and expand their operations. Furthermore, many farmers lack access to efficient market information and face difficulty in reaching potential buyers.

2.LITERATURE REVIEW

Aker and Mbiti (2010) in their paper, "Mobile Phones and Economic Development in Africa," argue that mobile phones significantly improve farmers' access to market information, thereby helping them to make more informed decisions about when and where to sell their produce. The use of mobile phones for market linkages has been widely adopted in Sub-Saharan Africa, enabling farmers to connect directly with buyers and negotiate prices. This study emphasizes the transformative potential of mobile technology in enhancing economic outcomes for rural farmers by improving market access.

Aker and Mbiti (2010) in their paper, "Mobile Phones and Economic Development in Africa," argue that mobile phones significantly improve farmers' access to market information, thereby helping them to make more informed decisions about when and where to sell their produce. The use of mobile phones for market linkages has been widely adopted in Sub-Saharan Africa, enabling farmers to connect directly with buyers and negotiate prices. This study emphasizes the transformative potential of mobile technology in enhancing economic outcomes for rural farmers by improving market access.

The study by Manjunatha et al. (2017) titled "Agricultural E-commerce in India: Challenges and Opportunities," which reviews platforms like AgriBazaar and Ninja Cart. These platforms provide tools for farmers to showcase their products, negotiate prices, and manage transactions directly with buyers. According to the authors, these platforms have proven effective in reducing the role of intermediaries and ensuring farmers receive better prices for their produce. The study highlights the importance of digital literacy and the availability of technology in supporting the success of such initiatives.

Kshetri (2017), in his paper "The Economics of Trust in E-commerce," discusses the importance of reputation systems in e-commerce. In the context of agriculture, reputation systems can be crucial in reducing information asymmetry between farmers and buyers. By providing users with the ability to rate and review each other, these platforms can foster trust and encourage honest transactions. This paper highlights how such features can mitigate risks and foster long-term relationships between farmers and consumers.

Verhagen and van Dolen (2011) explore the role of communication in ecommerce platforms in their paper "The Role of Communication in Ecommerce Platforms." They argue that real-time

communication through messaging systems is integral to building trust and facilitating effective price negotiations between buyers and sellers. In agricultural e-commerce, the ability to communicate directly with buyers helps farmers manage their offers and product details more efficiently. This facilitates faster negotiation, improving the overall purchasing experience for both buyers and sellers.

The paper by Fafchamps et al. (2017) in "Mobile Payments and Financial Inclusion in Developing Countries" highlight the role of mobile platforms in improving financial inclusion by offering secure payment systems. In many rural areas, access to formal banking is limited, but mobile-based platforms can offer farmers faster and more secure methods of receiving payments. By incorporating mobile payments into agricultural apps, farmers can avoid the risks associated with cash transactions and ensure smoother, more reliable financial exchanges.

3.OBJECTIVES

The Objectives of the Customer Support Chatbot with ML are:

- **Eliminate Middlemen:**

  One of the key objectives of this project is to eliminate the reliance on middlemen who often exploit farmers by purchasing produce at low prices and selling it at inflated rates. By creating a direct link between farmers and buyers, this mobile app allows farmers to negotiate better prices and gain full control over the sale of their produce. The elimination of middlemen ensures that farmers retain a larger portion of the revenue, leading to a more equitable distribution of profits in the agricultural supply chain.

- **Enhance Market Transparency:**

  This project aims to provide a transparent marketplace where both farmers and buyers have access to real-time information about the produce, pricing, and transaction terms. By enabling farmers to list their products with clear descriptions, images, and prices, the app fosters an open market environment. This transparency helps build trust between parties, minimizes the risk of price manipulation, and ensures fair trading, benefiting both the farmer and the consumer.

- **Improve Farmer Income:**

  By connecting farmers directly with consumers and retailers, the app is designed to enhance farmers' income potential. The removal of intermediaries means farmers can sell their products at a fair price, without having to share a significant portion of their earnings with middlemen. Additionally, the app's pricing flexibility allows farmers to negotiate terms that reflect the true market value of their produce, ultimately resulting in higher profits and better financial stability.

- **Facilitate Easy Transactions:**

  The app will integrate features that make transactions seamless and efficient for both farmers and buyers. With secure payment options, order tracking, and delivery management, farmers can easily complete sales without needing complex or traditional payment methods. The app will streamline the buying and selling process by offering a user-friendly interface, reducing transaction time, and ensuring secure exchanges. This convenience helps farmers focus on farming while ensuring timely and reliable payment for their produce.

- **Expand Market Reach:**

  The platform will help farmers expand their market reach by providing them access to a larger pool of potential buyers, including urban retailers, consumers, and even international markets. Farmers, especially those in rural areas, often have limited access to larger markets due to logistical challenges or

distance. Through this mobile app, they will be able to showcase their produce to a wide range of consumers, breaking geographical barriers and increasing sales opportunities for their products.

- **Promote Sustainable Farming:**

  The app supports sustainable farming practices by encouraging the sale of locally grown produce. By promoting local food systems and reducing the reliance on long supply chains, it helps minimize carbon footprints and food waste. Additionally, farmers who use the app can engage with environmentally-conscious consumers who prioritize sustainable practices. This objective aligns with promoting eco-friendly agriculture, where farmers are incentivized to adopt more sustainable farming techniques while benefiting from fair trade practices.

4.HARDWARE AND SOFTWARE REQUIREMENTS

- Windows OS,
- Android Studio for Mobile App Development xml for fronted.
- Java For Backend
- SQL Database for storing the Queries.

5.METHODOLOGY

The Proposed method consists of the following steps:

- Step-1 Registration/Login: Secure login for farmers and buyers (potentially different registration processes).
- Step-2: Profile Management: Farmers can create profiles detailing their farm, produce, certifications (organic, etc.), location, contact info, etc. Buyers can create profiles with delivery addresses, preferred produce, etc.
- Step-3: Add Product: Farmers can easily list their products with photos, descriptions, available quantities, pricing (fixed or negotiable), harvest dates, etc.
- Step-4: Search and Filter: Buyers can search for specific products, filter by category, location, price range, etc.

DESIGN PROCEDURE:

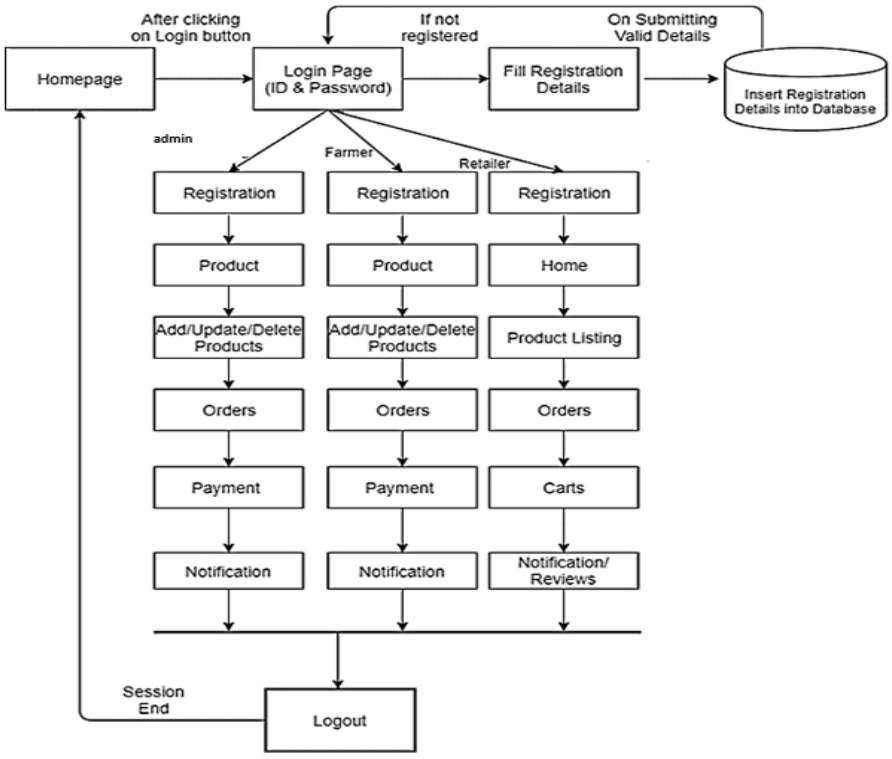

Fig 5.1 Architecture of Application

6.OUTCOMES

- Increased Farmer Profits- Farmers earn higher revenues by selling directly to buyers.
  without middlemen.

- Better Price Transparency Real-time market price updates help farmers make informed selling decisions.

- Wider Market Reach-Farmers can sell their produce to buyers across different regions, including urban markets.

- Efficient Transaction System-Digital payments ensure secure, transparent, and hasslefree transactions

- Enhanced Quality Assurance-Buyers can verify product quality through ratings, reviews, and certifications.

- Increased Farmer Awareness-Farmers gain knowledge about government schemes, subsidies, and best practices.

- Higher Adoption of Technology in Agriculture-Farmers become more comfortable using digital platforms, improving overall efficiency.

7.TIMELINE OF THE PROJECT

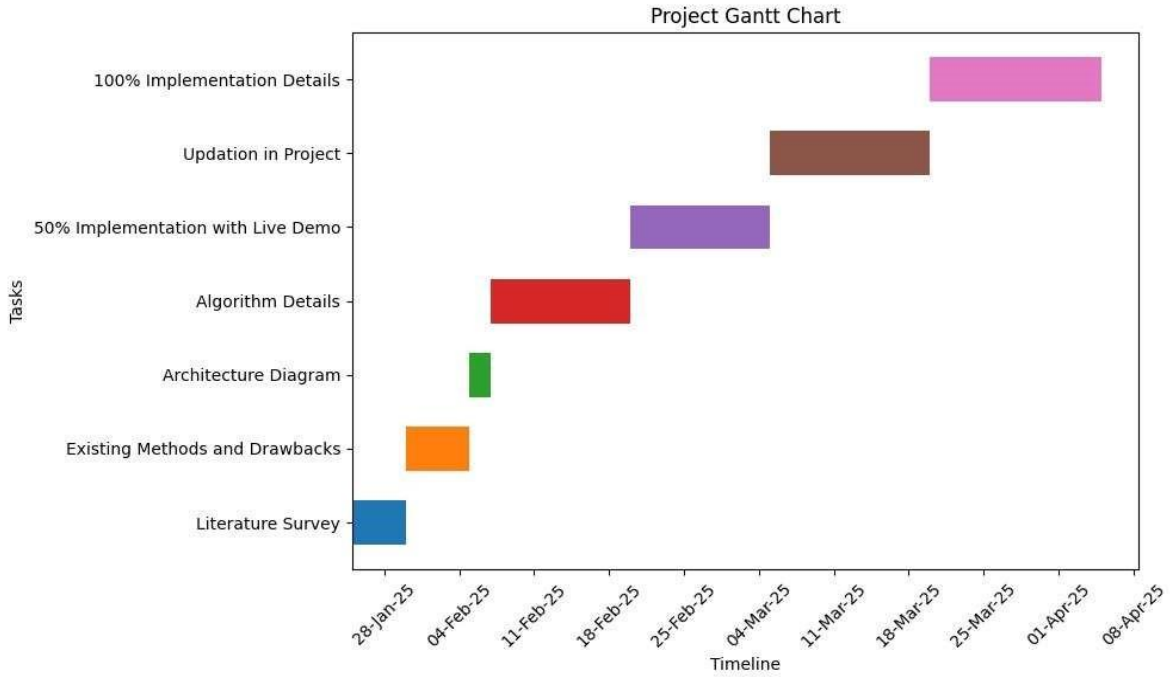

Fig 7.1: Timeline of the Project

8.CONCLUSION

The Mobile App for Direct Market Access for Farmers is set to revolutionize the agricultural landscape by providing farmers with a dynamic, transparent, and efficient platform to connect directly with consumers and retailers. This solution addresses the long-standing issue of middlemen exploitation, which has kept farmers from receiving fair prices for their produce. By eliminating these intermediaries, the app ensures that farmers can set competitive prices based on real-time market data, thus allowing them to retain a larger portion of the profits.

The integration of secure digital transactions within the platform further strengthens trust between farmers and buyers, ensuring safe and timely payments. This feature is especially important for rural farmers who often face barriers in accessing formal financial systems. With features such as logistics support, the app ensures efficient delivery of produce, reducing delays and post-harvest losses that are often associated with traditional farming methods.

Additionally, quality assurance features allow farmers to highlight the quality of their produce, building transparency and trust among buyers. The app also offers multilingual accessibility, ensuring that farmers from diverse linguistic backgrounds can engage with the platform without language barriers. This inclusivity makes the app accessible to a broader range of farmers, particularly in rural and underserved areas where digital literacy may be lower.

9.REFERENCES

[1]. P. Mehta, "A Case Study on Farm-to-Consumer Mobile Platforms," International Conference on Digital Transformation in Agriculture, 2021. https://www.researchgate.net/publication/354980800_Farm-to-Consumer_Mobile_Platforms

[2]. K. Speina, "Foogly: A Farm-to-Consumer E-commerce Platform," NewAgeSys IT Solutions, 2023. https://newagesysit.com/foogly-farm-to-consumer-ecommerce-platform/

[3]E. Evans, "ConFarm: An Agricultural Technology Mobile Application," Medium, 2021. https://medium.com/@Esther_Evans/case-study-confarm-b4d52e8221eb

[4].Fusion Informatics, "Farmerprice: Online Marketplace App for Farmers," 2022. https://www.fusioninformatics.com/farmerprice-app.html

[5].C. Hinojosa, K. Sanchez, A. Camacho, H. Arguello, "AgroTIC: Bridging the Gap Between Farmers, Agronomists, and Merchants Through Smartphones and Machine Learning," arXiv preprint arXiv:2305.12418, 2023.
https://arxiv.org/abs/2305.12418