Farmer Help Desk – APMC App

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***Abstract*— The agricultural sector is poised for significant transformations in the coming years, reflecting the dynamics of our modern world. Unfortunately, the majority of Indian farmers face challenges in making informed decisions regarding the sale of their produce. They lack access to crucial information and technological resources that could potentially enhance their yields and enable them to secure better prices for their crops. Farmers are facing difficulty to transact through the Agricultural produce market committee (APMC) because of uncertainties of APMC like Manual process, Middle man interference, unable to access the variety of prices in local and distinct markets, and so on. So, it's important to develop an Android application to provide information for farmers and computerize the process of the APMC market by keeping transparency between Farmers, Traders, and APMC.**

Keywords—Android; APMC;

I. INTRODUCTION

India known for its agrarian roots, relies heavily on agriculture, with around seventy percent of our populace depending on it for their livelihoods. Furthermore, a significant portion, approximately one-third, of our national income is generated from this sector. The progress of agriculture plays a crucial role in bolstering our country's economic well-being. Currently, India has achieved self-sufficiency in food grains, a remarkable feat. However, as we look ahead, the agricultural landscape is poised to undergo significant transformations. Unfortunately, a significant number of Indian farmers, particularly those operating on a small scale, face challenges in accessing vital information and technological resources that could enhance crop yields and fetch better prices for their produce.

Farmers encounter a multitude of sources providing agricultural information, such as printed media, audio-visual aids, newspapers, television, the internet, and mobile platforms. However, the data formats and structures across these sources often differ significantly Consequently, it becomes exceedingly challenging for farmers to access and comprehend the diverse information disseminated from these various channels.

The process of transforming data from one format to another often involves numerous manual steps. In India, a significant number of farmers remain unaware of the outside world and the technological advancements in farming. They lack knowledge about prevailing crop rates and end up selling their products without a clear understanding of their value. While some farmers rely on newspapers and television for news, not all of them have the luxury of time to read newspapers or watch TV regularly. As a result, they remain unaware of the current farming schemes, leading to the sale of their products at significantly lower prices. Consequently, farmers find themselves in a cycle of financial struggle, resorting to loans from banks or individuals, often with high-interest rates. To address this issue, an Android application has been developed specifically for smartphone-using farmers. This application provides real-time updates on vegetable and fruit rates across all markets in India, enabling farmers to sell their products at fair prices.

LITERATURE SURVEY

Shankar M Patil [1] presented research on "Android application for farmers" In the present era, farmers primarily rely on newspapers and television to stay informed. However, they often lack access to specific information about the nearest markets in their region. As a result, they remain unaware of the latest news and updates related to farming schemes. Consequently, farmers find themselves compelled to sell their products at significantly lower prices, facing the disadvantage of limited market knowledge.

Arshad P Muhammed [2] presented research on "AGRIO APP: An Android application for farmers". The aim is to address these challenges and offer a solution. We are developing a platform specifically designed for smartphone users, catering to both farmers and customers. This platform will provide real-time updates on crop rates, empowering users to make informed decisions when buying or selling their products.

Ms. Shubhangi G. Mane [3] presented research on "A Review on Design and Development of Mobile App for Farmers" Today mobile devices are used commonly by everyone, including farmers and countryside people. Agriculture is the support of the Indian economy so information sharing to the knowledge-intensive agriculture area is upgraded by mobile-enabled information services and speedy growth of mobile telephony. The mobile application provides varied information services to farmers which are helpful for the management, controlling, and monitoring of the farm. The mobile app is very helpful for farmers to increase their farming to yieldmore profit. This paper explores how Mobile Apps ofagricultural services have impacted farmers in their farmingactivities and which more innovative agriculture services will provide through Mobile App.

Sushanth M [4] presented research on "Android application on Agricultural marketing" Agricultural marketing is a process that begins with the production of saleable agricultural commodities and it also involves pre andpost-operation with economic consideration. Agricultural marketing is one of the problems, which has a direct bearing on the prosperity of the cultivator. This marketing comprises all the operations involved in the movement of goods and raw materials from the field to the final consumer.

Sanmati Rajesh Hegde [5] presented a research paper on "E-Agriculture Solution for Farmers" The android application developed on the Android Studio platform. The project consists of six modules: admin, farmer, buyer, pre-production, machinery, and APMC. Admin will maintain the data and upload YouTube direct links, suggestions, and blogs. The farmer uploads his product's picture, price, and description of the product. Buyers will upload their details, and contact numbers to reach out to the farmers. APMC module will be updating the current price of the products.

Shailendra Wadje [6] "Smart Farming System Android App" The utilization of Internet of Things (IoT) technology enables seamless communication among various entities, triggering a profound transformation in both farming and industrial sectors. This paradigm shift leads to enhanced efficiency levels. Given the significance of agriculture as a pillar of the Indian economy, we propose the implementation of a Smart Farming System (SF) aimed at optimizing plant production. SF encompasses three key components: sensors, microcontrollers, and a comprehensive system. Within this paper, our focus centers on the control aspect, specifically addressing the watering process and capturing images based on statistical data derived from the sensor system. These sensors include temperature, humidity, moisture, and light intensity sensors.

Prof. A.V. Deshpande [7] "Agropeddle: An Android Application to Buy and Sell Agri-Products with Freshness Detection" we aim to introduce the concept of digital marketing in the field of agriculture. We are trying to eliminate the role of middlemen from agricultural marketing to ensure fair prices for farmers. Though farmers try to sell their products on online platforms, due to quality and freshness issues many consumers did not buy them. Our proposed system will overcome both the problems of farmers as well as consumers.

Rushikesh Bhave [8] "Android Application for Crop Yield Prediction and Crop Disease Detection" The proposed system represents a digital tool in the form of a mobile application, which will help farmers intelligently. It would include crop disease detection, crop yield prediction, and recommendation of the best crop as the prime focus. The prime focus is improving agricultural service usability by providing a better tool.

Mrs. Paridhi Singhai [9] "E-Machhli Android Based Application for Farmers" The app aims to serve as a comprehensive fisheries development marketplace and information portal for direct use of fishers, fish farmers as well as input suppliers. The platform will be the central digital platform for farmers managing fisheries including buying and selling of high-yield seeds, feeds as well as equipment and implements, and laboratory testing facilities.

Shaikh Wajit [10] " Krushi Sarthi: an Android Application for Farmers" The present report research was conducted to study the "Krushi Sarthi (Android Application) application" which is an application developed for managing various activities for helping farmers in farming and agriculture. The main purpose of such a project is to develop a mobile phone-based solution that helps in farm management, leads to agricultural yield improvement, and helps in the care/maintenance of the farms.

II. METHODOLOGY

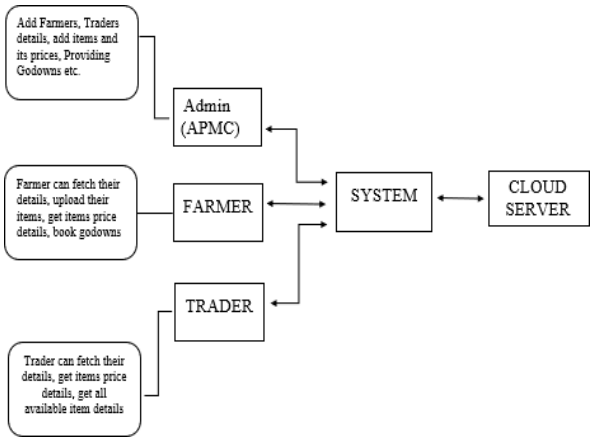


Fig 1: Farmer Help Desk-APMC Method

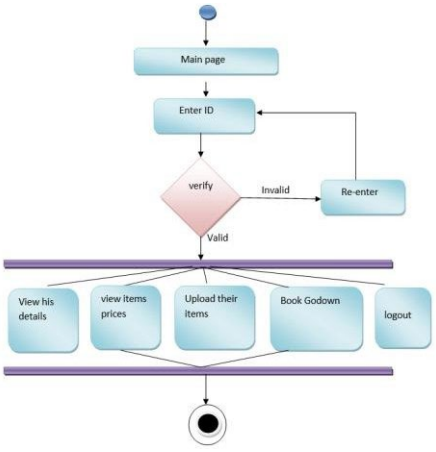


Fig 2: Farmer Activity

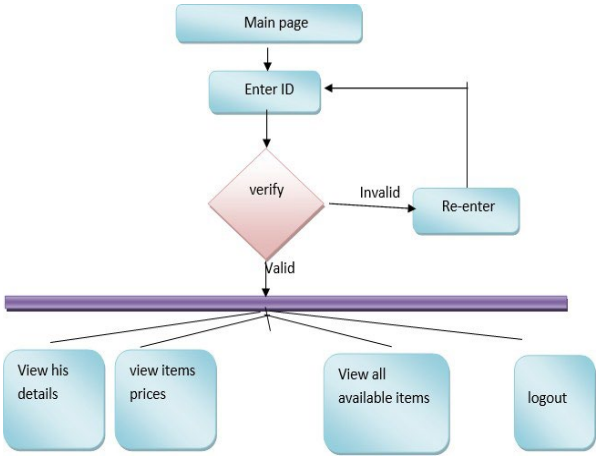


Fig 3: Trader activity

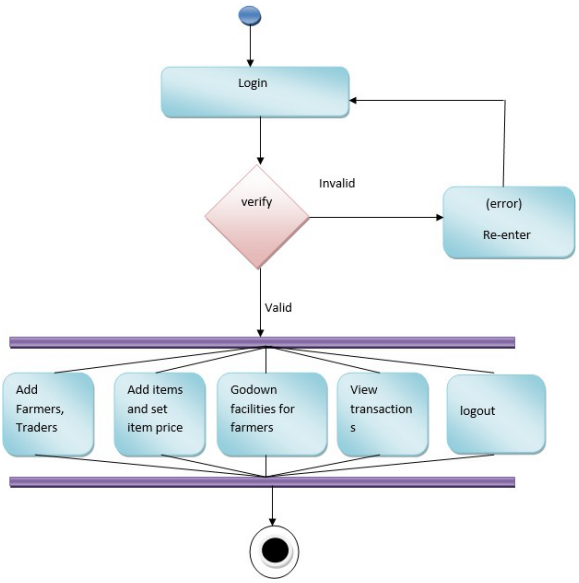


Fig 4: Admin Activity

Designing a Rich GUI interface for farmers to get necessary Information. To develop such an application software thattries to eliminate the problems of the conventional system.

To provide a unique user id to farmers and traders will view their transaction details. Making the farmers and traders transact through the administrator.

Computerizing the process of APMC. Keeping transparency between farmers and traders. And also, a selection of a civilian for their requirements making easy.

Admin(APMC): The admin login into the application through his username and password. The admin interface will have activities like Registering new Farmers, and new Traders to the list, adding items and prices to the list, providing godown facilities to the farmers, and can view transaction details between farmersand traders.

Farmer: The farmers login into the application through their contact number which is provided at the time of pre-registration. The farmers will have interfaces as Farmer details such as name, acres, address, contact number, taluk, and city.
Fetch item price details such as carrot, beans, onion, jowar, Toor Dal, etc. prices are listed daily according to the agricultural produce market committee(APMC) i.e. added by the Admin(APMC).
Farmers can Upload their item details and can sell their products to traders through admin. And admin(APMC)can view his details and transaction details.
Farmers can book the APMC godown according to their requirements to keep their yield as a stock and the transaction of this process will be done between the farmers and the Admin(APMC)

Trader: The Traders login into the application through their contact number which is provided at the time of pre-registration. The Trader will have interfaces like Trader details such as name trader id, ward, address, phone number, and city.
Fetch item price details such as carrot, beans, onion, jowar, Toor Dal, etc. prices are listed daily according to the agricultural produce market committee(APMC) i.e. added by the Admin(APMC).
A trader can fetch all available item details of the crops/products which are uploaded by the farmers and purchase them with his trader id the transaction will do between farmer and trader under the admin(APMC) and the admin can view the transaction details by keeping the transparency between the farmers, traders,and the APMC. All the processes will be done within the system which is connected to a cloud server to fetch any details of APMC, farmers, and traders and administrated by admin(APMC).

System: The system facilitates seamless communication between the administrator (APMC), farmers, traders, and the cloud server. Whenever a user initiates a transaction on any of the three interfaces, it undergoes processing and is securely stored in the cloud server. This ensures that users can access their transaction details at any given time, providing them with the convenience of retrieving information whenever needed.

Cloud Server: A cloud server serves as a consolidated and centrally located server resource, accessible to multiple users over a network, commonly the Internet. It operates on an on-demand basis, providing users with the ability to perform various functions similar to those offered by a conventional physical server. These functions include processing power, storage capabilities, and the execution of applications.

IV. RESULTS

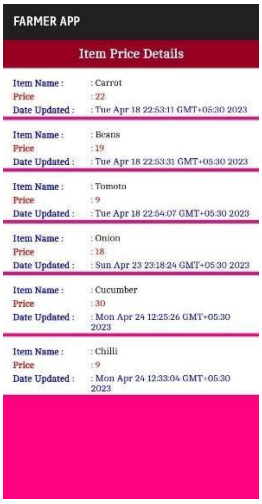


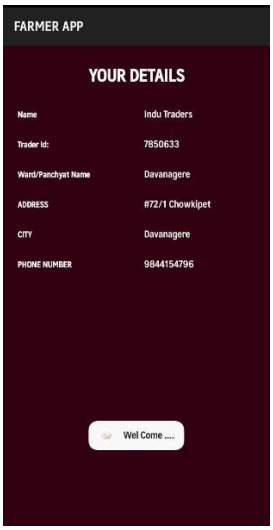
Fig 5: Farmer Details Fig 6: Item Price Details

Fig 5 displays the details of farmers such as name, acre, ward, address, city, and contact number in the farmer activity when Admin(APMC) registers the new farmer.

Fig 6 displays the item prices details such as item name, price, and date uploaded in the farmer activity when the admin (APMC) adds items and their price

Fig 7: Uploading Item details by Farmer

Fig 7 displays uploading item details by the farmer such as select item type, price, number of kilos, additional information and upload photos in the farmer activity and the result can be seen by a trader in their activity.



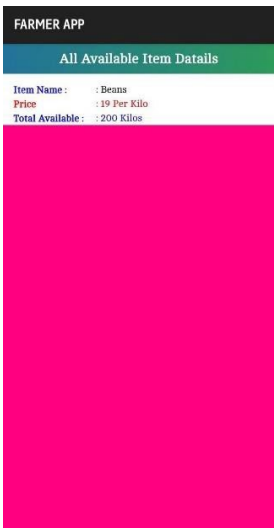


Fig 8: Trader Details Fig 9: Available items on Trader Interface

Fig 8 displays the details of farmers such as name, trader id, ward, address, city, and phone number in the trader activity when Admin(APMC) registers the new trader.

Fig 9 displays all available items on the trader interface such as item, name, price, and total available when farmer uploads their items.

Fig 10: Item sold by Admin APMC Fig 11: Item sold transaction details on Admin (APMC) Interface

Fig 10 displays items sold by admin(APMC) details such as item name, price per kilo, total available item, contact number, trader name, and enter quantity item required.
Fig 11 displays item sold transaction details on the Admin interface such as trader name, trader number, item name, price, quantity, total price, and date when the item is sold.

V. CONCLUSION

The project Farmer Help Desk- APMC App is developing to overcome certain uncertainties which are happening in the agriculture department about farmers and their needs. Here we trying to provide a solution to farmers problems about to add their items to the portal and view all processed details. We hope we will develop this application to the requirement specified and meet the real-world requirement.

FUTURE SCOPE

The application can be enhanced in the future by adding an online payment gateway between farmers and traders, information in regional languages, popping messages, applying for trader APMC license, and selling directly to the APMC.

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