iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** III **Month of publication:** March 2022

DOI: https://doi.org/10.22214/ijraset.2022.40722

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue III Mar 2022- Available at www.ijraset.com

Agremart Online Revenue for Farmers

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Abstract: ***In today's agriculture and the food supply chain in general, there appears a history of quick adoption and assimilation of new technologies, especially cost reduction technologies. In the development process of electronic commerce of agricultural products, many new innovative technologies have been emerged. It connects the gap between the availability of agricultural input and delivery of agricultural outputs and agriculture infrastructure. E-commerce involves use of the Internet to market, buy and sell goods and services, exchange information, and create and maintain web-based relationships between contributor entities. Our project aims to help farmers as well as customers for buying and selling agricultural products across the country using a computerized approach. The application builds a platform for farmers to ensure greater profitability through end user communication. In developed markets, is the online bulk orders of fresh quality of the product is already a common practice among the facilities such as hotels and restaurants. The consumer market for on-line orders, it will also start to come into play, as it grows. This project allows viewing various products available, and enable users to purchase desire products instantly by online payment.***

Keywords: Ecommerce, Online shopping, Indian customers, Mobile Applications, E-Marketing strategies

I. INTRODUCTION

The successful of internet Information and Communication Technology (ICT) together with Internet is making it possible to share vast amount of knowledge and information and is driving all round socio-economic changes and growth. By 2020, India is expected to have an incremented growth with 750- 780 million internet users making it the second largest user base in the world. In developing country like India there has been a largescale rise in Global Internet usage. In the world, India is the second largest base with internet users of around 700 million.[1]. Nowadays, mobile phones are used everywhere, and android is the main operating system dominating the mobile application system market field with a market share of more than 80% and most of the applications are free to download. The horticulture sector is been used to detect weather smartphones can be used to provide the farmer with the details of all the different types of crops that he can harvest and also the best efficient way in which he can get the yield.[2] Also, when considering the environment, new technologies are increasingly being applied in the farms to maintain the sustainability of farm production. According to a market analysis, the factors that would be responsible for the adoption of sustainable farming technologies include better education and training of farmers, sharing of information, easy availability of financial resources, and increasing consumer demand for organic food. While applying these new technologies, the challenge for retrieving data from crops is to come out with something important and valuable, because data themselves are not useful, just numbers or images. Farms that decide to be technology-driven in some way, show valuable advantages, such us saving money and work, having an increased production or a reduction of costs with minimal effort, and producing quality food with more environmentally friendly practices [3]
The objectives of E-Commerce include removal of intermediaries benefitting growers and consumers, cross-boundary selling, easy delivery, and price transparency. Agriculture Ecommerce will prove profitable to farmers to present their yield in a wider market irrespective of the physical distance and reach the consumer directly. Successful development of E-Commerce of agricultural products will help to improve the financial status of the growers and economic growth of the country.[4] The main objective of this project is to help farmers ensure greater profitability through direct farmer to end user communication. Our project deals with a major perspective that the farmers get benefitted by selling the products online at better prices.
The main users of this agricultural app are farmer, customer, and admin. Farmers will get unique interface where they can perform selling of their products, get the correct rates of the products, get in touch with SMS or Email and gather knowledge of different schemes and get pay online.

Agricultural E-commerce enables good trading possibilities by supporting different business models such as multi-suppliers, e-sales and several types of auctions. [5] New opportunities are shaped by smart phone technology for farmers. Farmers must be provided with minimum cost smartphones and a particular software so that they can take advantage of the facilities which were not available before. In the days of financial crisis, farming is becoming more and more dynamic and much more important to be completed efficiently during the time period.

Several mobile applications have been developed for selling their products online. Mobile apps in the area of agriculture can be the best option to increase countries 'agriculture production. The inventions in technology in agriculture domain are not getting to the farmers; because of either most of them are illiterates or due to unawareness of the location from where they can have information. [6] First, the focus of the development of electronic commerce of agricultural products is to improve farmers' income and service consumers. Second, the situation of electronic commerce of agricultural products must be varied, but in the end, the whole process should be formed in the closed loop operation, which includes production, procurement to the transaction, distribution and other links. finally electronic commerce of agricultural products realizes the docking of the production, supply and sale of agricultural products. Third, the government of country should pay attention to rural development. Fourth, in order to carry out electronic commerce of agricultural products, Online retailers should first occupy a certain market, and then seek further development. Fifth, the integration of the supply chain should pay attention to the information sharing of each node. [7]

The last three decades have seen significant growth in e-commerce. Global retail e-commerce sales are now valued at around $3 trillion and continue to grow rapidly. E-commerce sales accounted for 11.9% of all retail sales worldwide in 2018, a figure expected to reach 17.5% in 2021. For buyers, e-commerce offers a more convenient way to purchase goods and services, while also providing more choice and better deals.[8]

II. LITERATURE REVIEW

Hrishikesh Mangesh Kharade, Haresh Yogesh Shelar, Shubham Sushil Shukla, Amit Jai govind Singh "Ecommerce Site for Agriculture" (2021) [1]- In this paper researcher given an entire idea about ecommerce based on agriculture for selling agricultural products. Agricultural E-commerce is any method of using electronic communications and computer technology to conduct agricultural business, so that trading partners can share a wide range of communiqué and data. Agricultural E-commerce transforms the way agricultural products are sold and the way farms interact with each other and customers through communication channels. E-commerce automates the business of enterprises and the way they provide services to their customers. It is available anytime, anywhere.

Sujay S.Kadam, Pranay P Charapale, Aniket A Patil, Indrajeet B Patil, Yugandhar Shinde, Prof S.R Kadam E-" E-farming:an E-commerce Portal for Agricultural Products" (2020) [2] This paper focuses on the platform that will help you to present products to a wide range of clients (traders), which sets out a framework for the community to sell the products. An effective supply chain management system is, perhaps, the public means of transport, such as trains and buses, and are able to ensure efficient movement of goods and services It provides customer satisfaction would result in building goodwill and reputation in market to increase Reliability. Timely delivery of stock keeping in mind non-perishability of goods.

Verónica Saiz-Rubio and Francisco Rovira-Más, Universitat Politècnica de València "From Smart Farming towards Agriculture" (2020) [3] In this paper researcher explores about how the agriculture sector is undergoing a transformation driven by new technologies, which seems very promising as it will enable this primary sector to move to the next level of farm productivity and profitability. When applying these new technologies, the challenge for retrieving data from crops is to come out with something coherent and valuable, because data themselves are not useful, just numbers or images. Advantages include saving money and work, having an increased production reduction of costs with minimal effort, producing quality food with more environmentally friendly practices. E-commerce automates inventory management. Reports get generated instantly when required.

Tumpa Banerjee, Monalisa Mishra, Narayan C. Debnath, Prasenjit Choudhury "Implementing E-Commerce model for Agricultural produce" (2019) [4] In this paper researcher have proved that agricultural ecommerce facilitates the possibilities of new types of business models by providing farmer to consumer, consumer to farmer, farmer to business and business to consumer services. The implementation of E-Commerce is expected to be more profitable, transparent and competitive. The objectives of E-Commerce include removal of intermediaries benefitting growers and consumers, cross-boundary selling, easy delivery, and price transparency.

Megha Nayak, Pinky Wankhede, Neha Khapekar, Komal Dhote "Ecommerce site for agricultural products" (2019) [5] The website will guide the farmers to access new farming techniques and compare current market rate of different products. The website builds a platform for farmers to ensure greater profitability through end user communication. The website will act as a unique and secure way to perform agro-marketing.

This project will serve as a way for the farmers to sell their products across the country just with some basic knowledge about how to use the website. This website will help farmers to get unique interface where they can perform marketing and get pay online. Agricultural E-commerce enables good trading possibilities by supporting different business models.

Mayuresh Kailas Sambhudas, Prof. Altaf Taher Shah, Prof. Shabnam Sharma "Integrating E-Commerce in agricultural sector for promotion of organic farming" (2018) [6] In this paper author explains that how the internet plays a role in agribusiness both as a new market place and as an information resource. In recent years, e-commerce has found its way to agriculture. Numerous applications have been developed by different interest groups. Involvement in e-commerce requires that both buyers and sellers have access to the Internet and that they are able to use the required hardware and software effectively. Its benefits include Farmers will benefit by adapting to new technologies to conduct businesses and receive information. E-Agriculture will provide them useful information regarding the plantations that they have grown.

Yaping Huo and Huiping Mu "Research on the Development of E-commerce model of Agricultural Products" (2017) [7] First, the focus of the development of electronic commerce of agricultural products is to improve farmers' income and service consumers. Second, the situation of electronic commerce of agricultural products can be varied. Third, the government should pay attention to regional development. Fourth, in order to carry out electronic commerce of agricultural products, Online retailers should first occupy a certain market, and then seek further development.

Lai wei, hong chen, jie zhang "Status and Scope of E-Commerce in agribusiness in India" (2018) [8] In this paper researcher focuses on development of agricultural information based on websites to give information about various crops, soil conditions, weather and pesticides. Farmers get up-to-date information about the market and can sell their produce through the electronic medium. Using e-commerce, orders for the products can be generated anytime, anywhere without any human intervention, the customers place orders immediately on the net and goods are delivered under normal way.

III. DESIGN

Our proposed system is based on Agremart app in which facility of tracking location of the equipment or vehicle carrying equipment is to be implemented using Firebase Realtime Database. The device users will know that they are being tracked, means with the permission of user tracking will start. This will help to the receivers or equipment owners to track the equipment. Weather forecasting in this app is used for avoiding the losses to farmers due to weather changes. The main aim of our project is that, farmers should understand benefits and limitations of using mobile app for reaching to the new farming techniques and accessing them. Farmers should also be able to share their resources on rent basis or using them on group basis. Farmers/receivers will be able to make payment on their ease of use either by online or by offline system. Farmers will be able to know the daily market prices at one platform and will get fair price returns by eliminating middlemen. Farmers can sell their products at reasonable price.

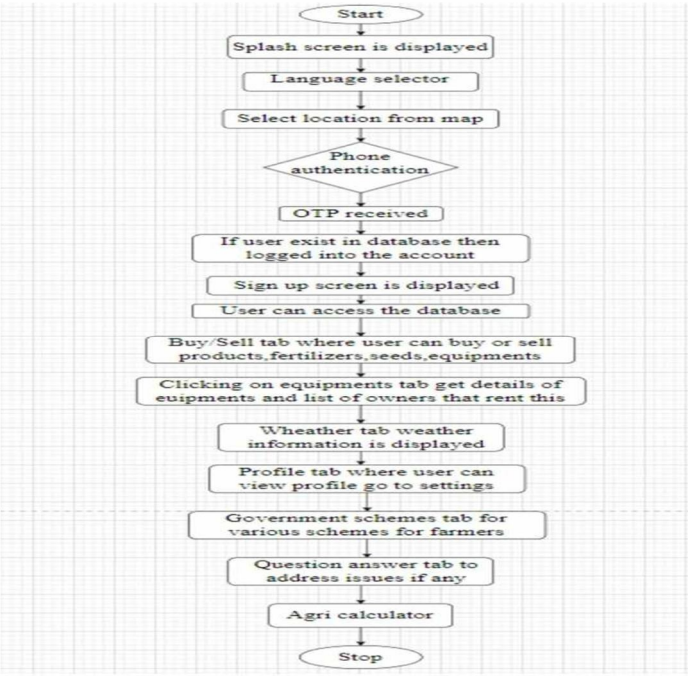

Fig. 1 Flowchart

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
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IV. WORKING

1) *Step 1:* User will open the app
2) *Step 2:* User can choose any language of their choice
3) *Step 3:* User has to verify the phone Number on the application server, if verification successful then he/she can further proceed
4) *Step 4:* If user exists in database the he will be automatically logged into the account else he needs to sign up
5) *Step 5:* Login on application server, the application server will verify the customer, if it is invalid then it will again return to login page and again the login process will start once the customer is verified, he can proceed further
6) *Step 6:* User can access dashboard and browse for the products he /she wish to buy or sell
7) *Step 7:* User can View Equipment and book equipment as per their choice
8) *Step 8:* After this user can access government schemes tab if he wants to do.
9) *Step 9:* In weather tab weather information is displayed
10) *Step 10:* In profile tab user can view profile, edit profile go to settings and change language.
11) *Step 11:* Now from settings, user can move to general part of application.

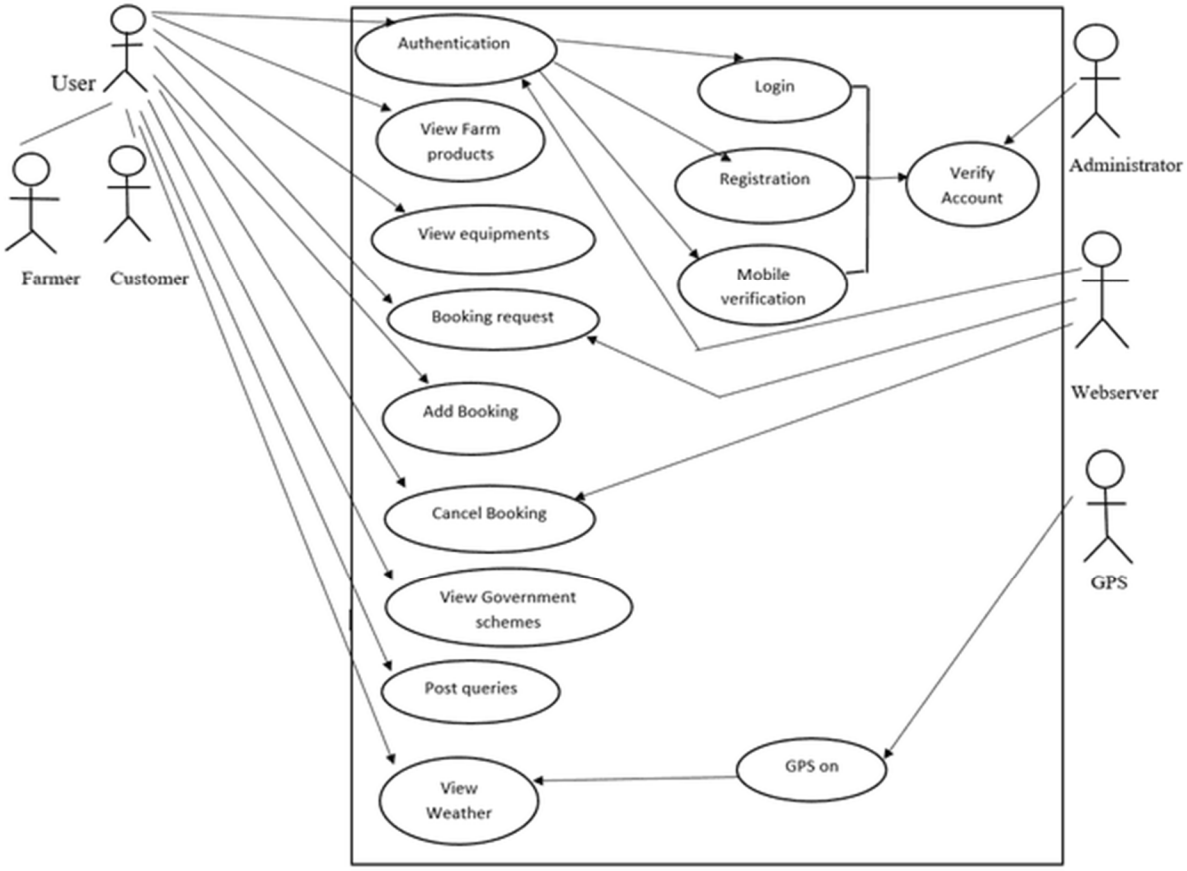

Fig. 2 Working of Webapp

A. *Component Diagram*

A component diagram is generally used to show a set of components and their relationships. Graphically a component diagram is a collection of vertices and arcs where components are the vertices and relationships form the arcs. Particularly components are connecting with the help of dependency relationship that shows the dependencies among the various components. The figure given below shows the component diagram for the proposed system

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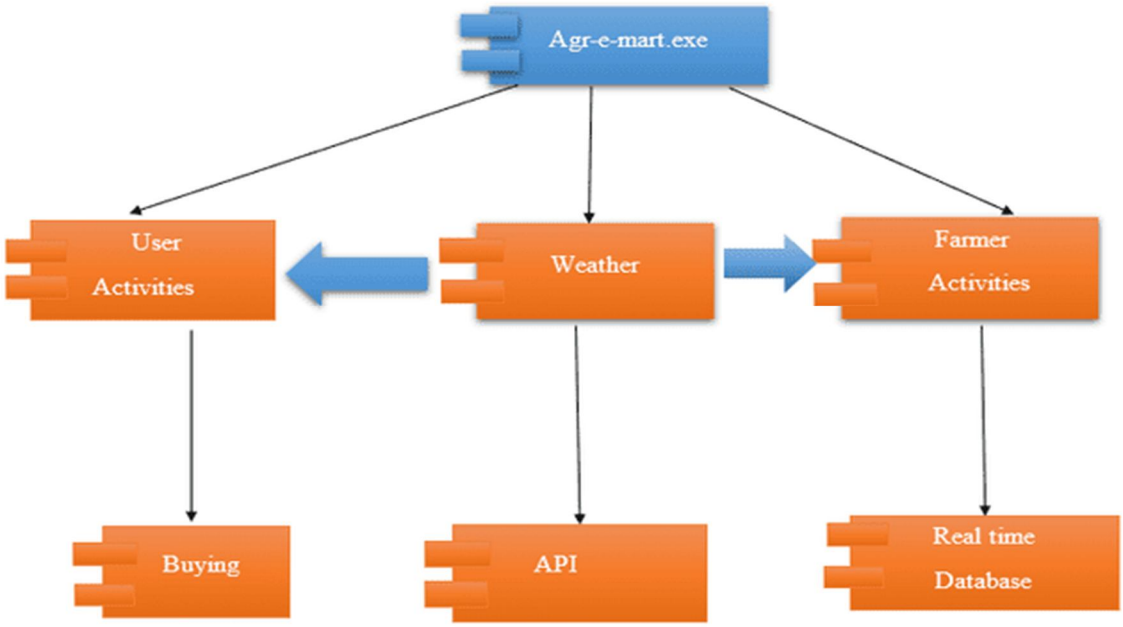

Fig. 3 Component Diagram of App

V. RESULTS

The app provides all information related to agriculture so that farmers will be able to carry out their farming activities. Farmer and customer can login in the system, then dashboard will be displayed to them. Farmer can upload the product or delete the product, On the other side customers can browse various products and buy them. There are various governments schemes available so that farmers can go through that link for applying for various schemes. There is a weather tab where farmer will be able to note the weather conditions so that they can carry agricultural practices without fear of any losses.

Fig. 4 Splash Screen

Fig. 5 OTP page

Fig. 6 Products Page

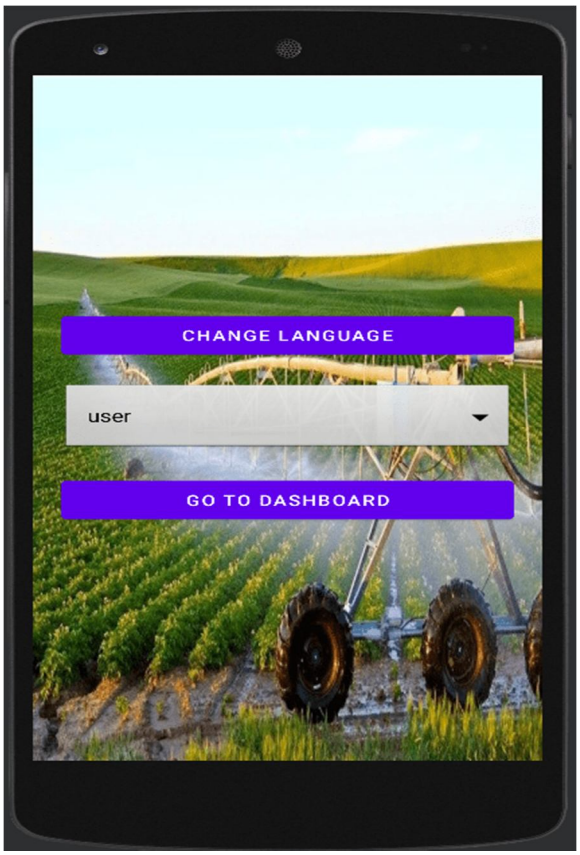

Fig. 7 User/Farmer Dropdown

Fig. 8 Product Buying Page

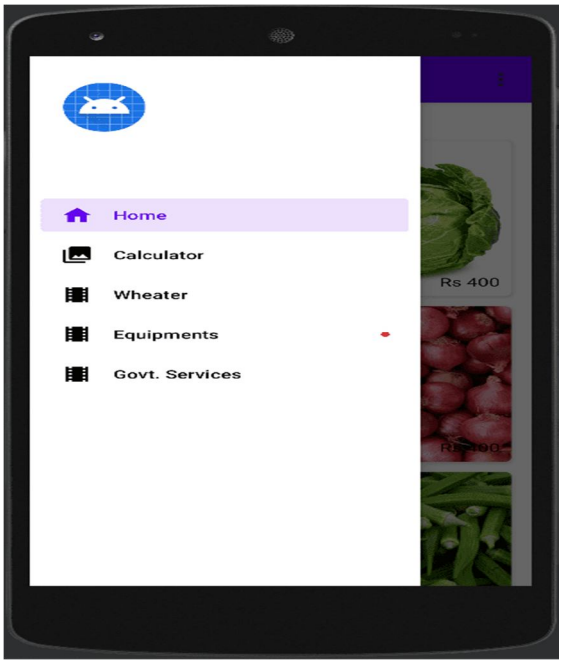

Fig. 9 Side Bar Section of User

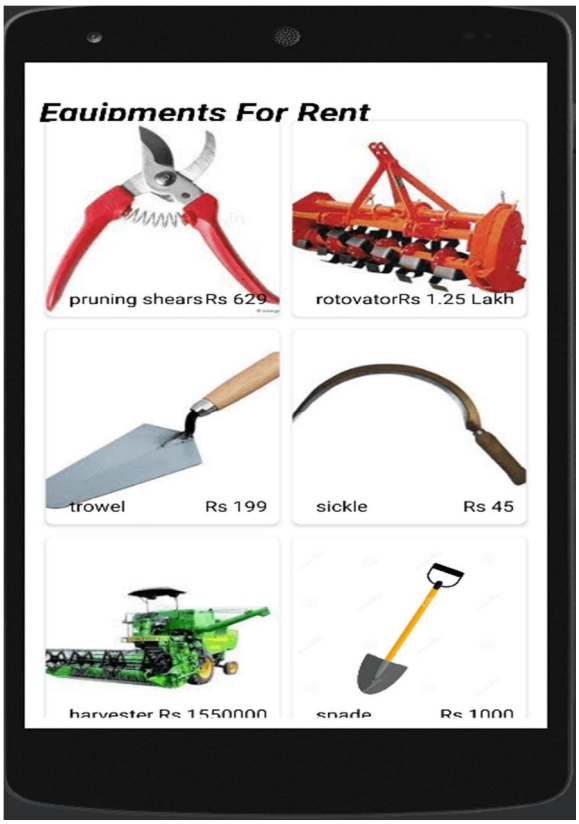

Fig. 10 Equipment Page

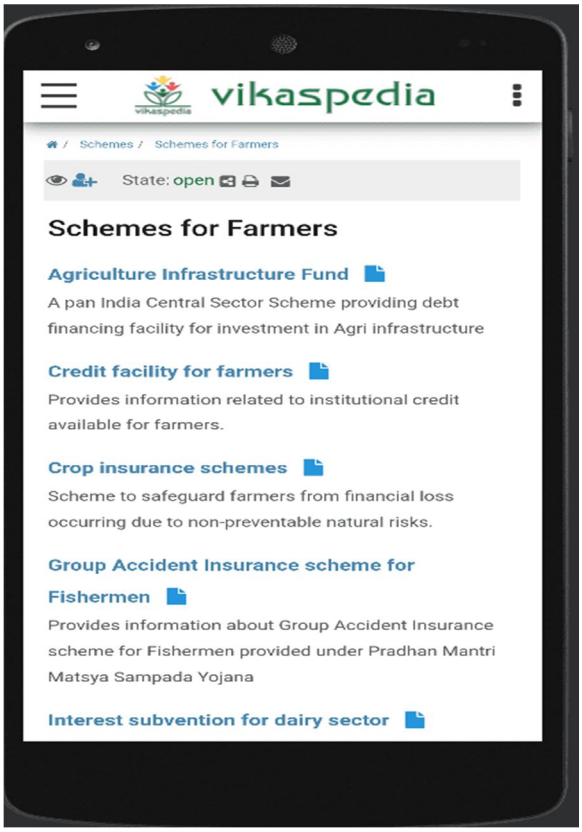

Fig. 11 Government Schemes Tab

Fig. 12 Weather Tab

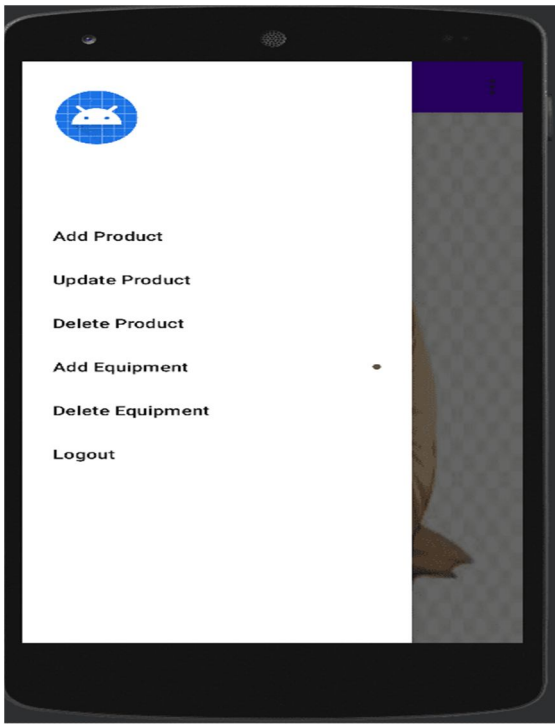

Fig. 13 Side Bar Section of Farmer

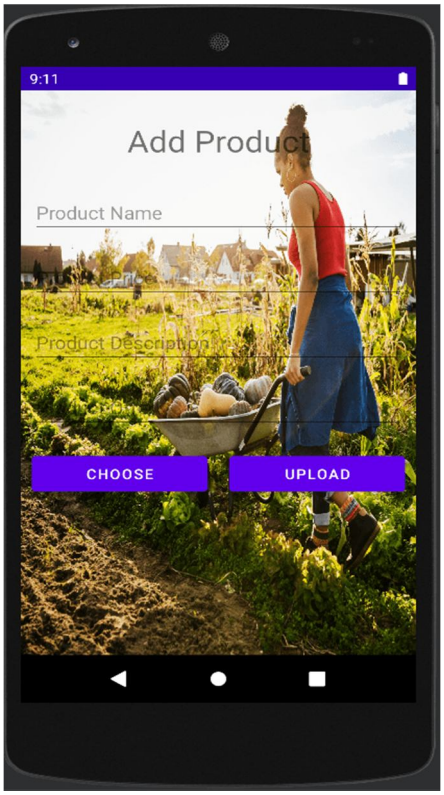

Fig. 14 Add Product Section

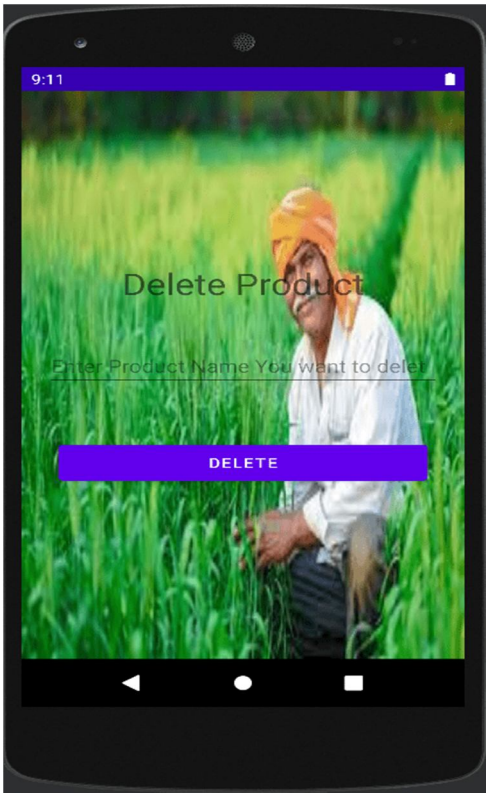

Fig. 15 Delete Product Section

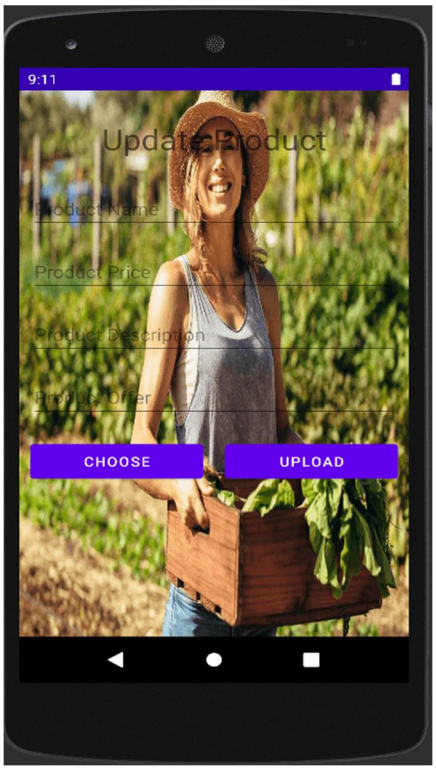

Fig. 16 Update Product Section

Fig. 17 Language Selection

VI. CONCLUSION

Using monitoring information farmer can access or control his farm activities, it helps to increase a crop yield and reduces wastage of money. Our app is user friendly. Our application focuses on how farmer can be benefited by providing an easy way of resource sharing. We aim to provide and make the modern methodologies and techniques at affordable prices to the farmers. Our application tries to make the farmers reach to all the news and updates to get benefited.

Agremart app will benefit anytime anywhere 24x7.

1) Increased selection. Many stores offer a wider array of products online than they carry in their brick-and-mortar counterparts. And many stores that solely exist online may offer consumers exclusive inventory that is unavailable elsewhere.
2) Faster buying process.
3) Store and product listing creation.
4) Cost reduction.
5) Affordable advertising and marketing.
6) Flexibility for customers.
7) No reach limitations.
8) Product and price comparison.
9) Faster response to buyer/market demands.

VII. FUTURE SCOPE

In Future we will work on following topics:

1) Live location tracking for track equipment.
2) Online payment gateway.
3) Season wise equipment showing.
4) When user book equipment then suggest weather for equipment book or not.
5) We can try to use blockchain for farmer authentication.

VIII. ACKNOWLEDGEMENT

We sincerely wish to thank our Project guide **Prof. Reena Deshmukh** for her ever encouraging and inspiring guidance helped us to make our project a success. Our project guide made us ensure with her expert guidance, kind advice and timely motivation which helped us to determine about our project.

We also express our deepest thanks to our H.O.D. **Dr. Uttara Gogate** who's benevolent helps us making available the computer facilities to us for our project in our laboratory and making it true success. Without his kind and keen co-operation our project would have been stifled to stand still.

Lastly, we would like to thank our college Principal **Dr. Pramod R Rodge** for providing lab facilities and permitting us to go on with our project. We would also like to thank our colleagues who helped us directly or indirectly during our project.

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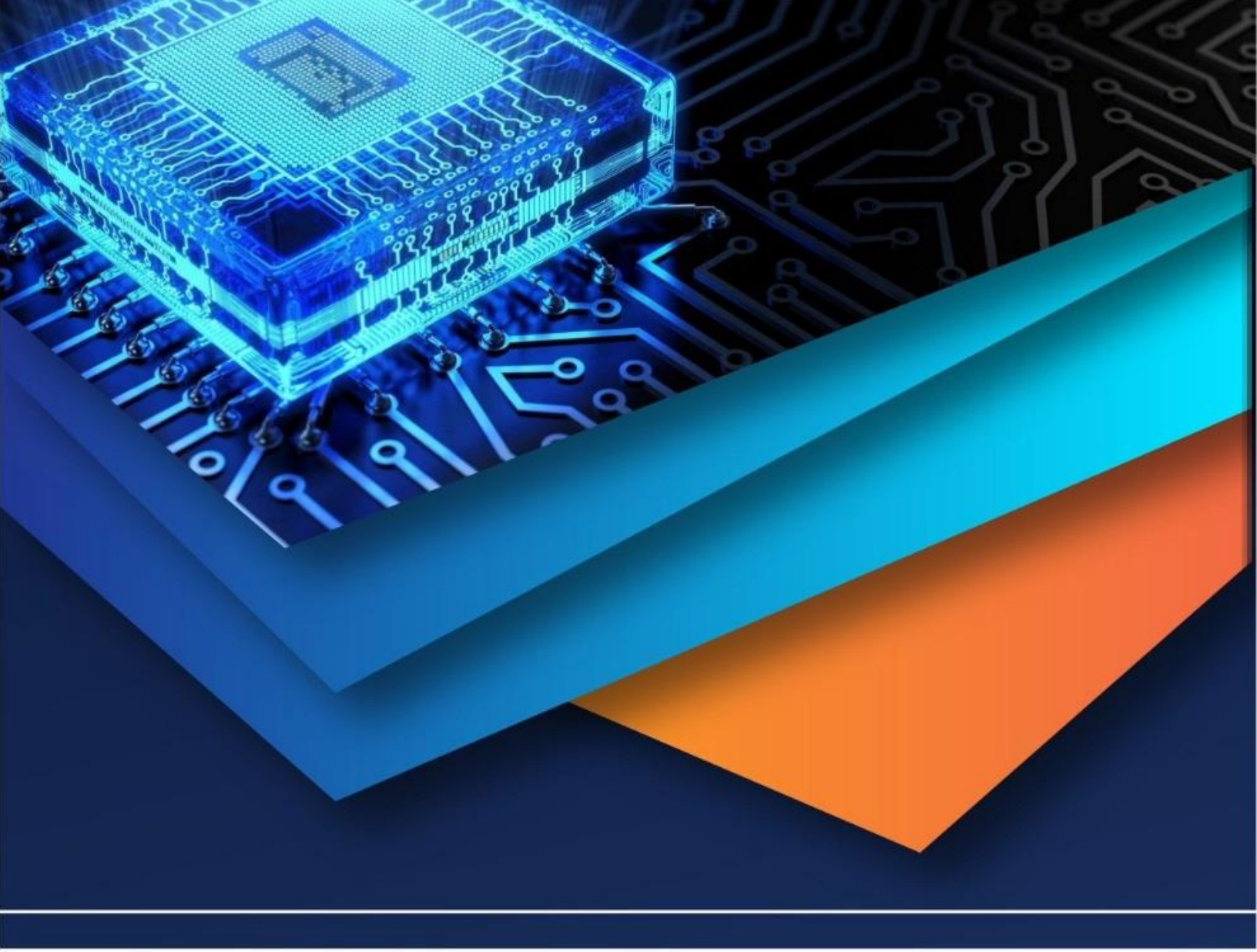

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