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Krushi Market-Smart Farmers App

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Abstract: Agriculture is the backbone of the country. About 70% percentage of India population belongs to agriculture family. Due to the digital India programme, agricultural applications have direct impact on the agricultural sectors. The way people go for buying the agricultural products is tedious. Often buyers or customers have to travel distant places to buy agricultural products and sometimes even the right quality is not ensured. Besides, farming is the main or primary occupation in India. Farmers are usually deceiveed by the middleman in today's market which leads to scarcity of grains. Fruits markets are subject of opportunity and it is important to the suppliers to identify the quality of fruits based on the ripeness level of fruits before selling out in market, in-order to get higher level of profit. The main objective of this work is to help farmers. An android application in native or regional language of the farmer to help the jobless farmers to find agriculture based jobs suitable to their skill set and receive investments from various investors across the country. Further to find investment for the needy farmers and create suitable agricultural employment for jobless farmers so that there is an increase in the progress in the field of agriculture. The prposed work of an android application is also facilitate the farmers with advanced equipments for performing various agricultural tasks, obtain the land on lease and it helps buying and selling agricultural products using a computerized approach, provide the scheme available to farmer and to determine various stages of ripeness of fruit. The application is simple and easy to use by the farmers and accumulate several agri based information at single place in multilingual applications.

I. INTRODUCTION

Giving farmers their rights is the reason we created this app. Due to brokers' influence and lack of market understanding; farmers do not receive the true market value for their crops and other agri-products, which makes it difficult for them to sell or buy their goods. Therefore, our tiny contribution to the agricultural sector is to give farmers a platform. Online store where products are sold without brokers or other fees in various locations. Live weather forecasts can be used by farmers to keep an eye on the weather in their region. Display the current Bazar prices in relation to the farmers' area, which also provides rental vehicles. Customers can purchase products directly from farmers and pay the lowest costs for the freshest, healthiest produce.

Existing System:

- In existing system, farmers are not able to get the daily updating market price as well as farmers are not able to sell their products directly to the customers.
- Farmers are not able to monitor the weather in their area with the use of live weather forecasts and also customers can buy directly from farmers and receive the freshest, healthiest items at the lowest prices.

Proposed Work:

In proposed work, farmers can directly sell their own products to customer with no broker and Customers can directly contact to farmers. Farmers can sell their own products retail or wholesale according to their quantity of production in the farming to the customer directly. To get aware and knowledge about the market to the farmers this application is needed. Farmers get know about the weather. Android has an incredible ability to solve real life problem, Problems are mainly based on two factors, time and money.

Since it is an android application, it is supported by all android devices or smart phones which are easily accessible to the users. The availability of various functionalities like buy/sell, transport and weather forecast helps farmer to get what they want saving their effort and money. This android application will help the farmer to sell their produce quickly under the right price. The transportation feature will help the farmer to transport the produce from one place to another because the

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transportation cost will be shared. The freshly cultivated product can be bought directly from the farmer at the right price. It is indeed a very long process to grow crop. The expect to get some profits.

II. RELATED WORK

In [1], a comparative study of different algorithms was performed to determine which is the best predictor of crop yield for Precision Agriculture. All algorithms are set for testing in a set of soybean crops collected within a few years. The comparison algorithms used in this paper are the Random Forest, Vector Support Machine, Bayes, Bagging, and Decision Tree.

In [2], the problem among Indian farmers regarding their choice of the best yield based on the quality of their soil is solved. The recommendation system is developed using various classification algorithms. The system works with the GUI.

In [3], the BRAC University developed an automated farming guessing system. Developed on the Android Platform and recommends to farmers the best crops according to their geographical location even before they start the farming process. The context of a highly recommended yield depends on the Performance Path parameter.

Aman Bafna et al [4] developed a system that uses a farm location to predict the weather in that area using the Weather API. Along with soil moisture sensors, the current climate is also used to draw up an irrigation plan as during the rainy season a very small amount of outdoor irrigation is required. The program also suggests the use of soluble fertilizers in water to make the fertilization process automatic.

[5] features, mixed responses, soil characteristics, fertility requirements, climate forecasting, weed, and pest quantity, crop growth response, harvest yield, post-harvest analysis, and marketing assumptions. Accurate growers should find, analyze, and apply the information found in each step in the crop system.

[6] India is a nation where agriculture plays a major role. The prosperity of the farmers prospers the nation. Our work will therefore assist farmers in sowing the right seeds to the needs of the soil to increase national productivity. future work is aimed at an advanced data set with a large number of attributes and uses yield predictions.

[7] All the work was based primarily on the goal of providing farmers with a viable practical farming assistant who can communicate with farmers. The app is designed to be very understandable to the farmer. Not only does it help farmers to get the best crop recommendations but it also helps them to feed their crops better, keep their crops growing and grow their shelf life, as well as help them find the best prices they can sell their crops for nearby markets.

[8] This research study introduced a mobile application for predicting agricultural production proposed by the agricultural sector. This serves as a mobile app for farmers to support the decision on the most important agricultural product currently in demand in the market. The development of an application for agricultural production forecasting systems is a solution for farmers to market their products without sacrificing quality and avoiding crop wastage. The application process has been assisted in monitoring the current price range used in the trading area. This also supports traders in ensuring that supply is adequate for consumers.

[9] Agriculture is a sector where attractive technology is not compromised due to the unavailability of technology. Therefore, the author has tried to change this to have a positive effect on the development of technology-based farming in the rural areas of India and thus improve their livelihood opportunities.

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III. SYSTEM DESIGN

3.1 Block Diagram:

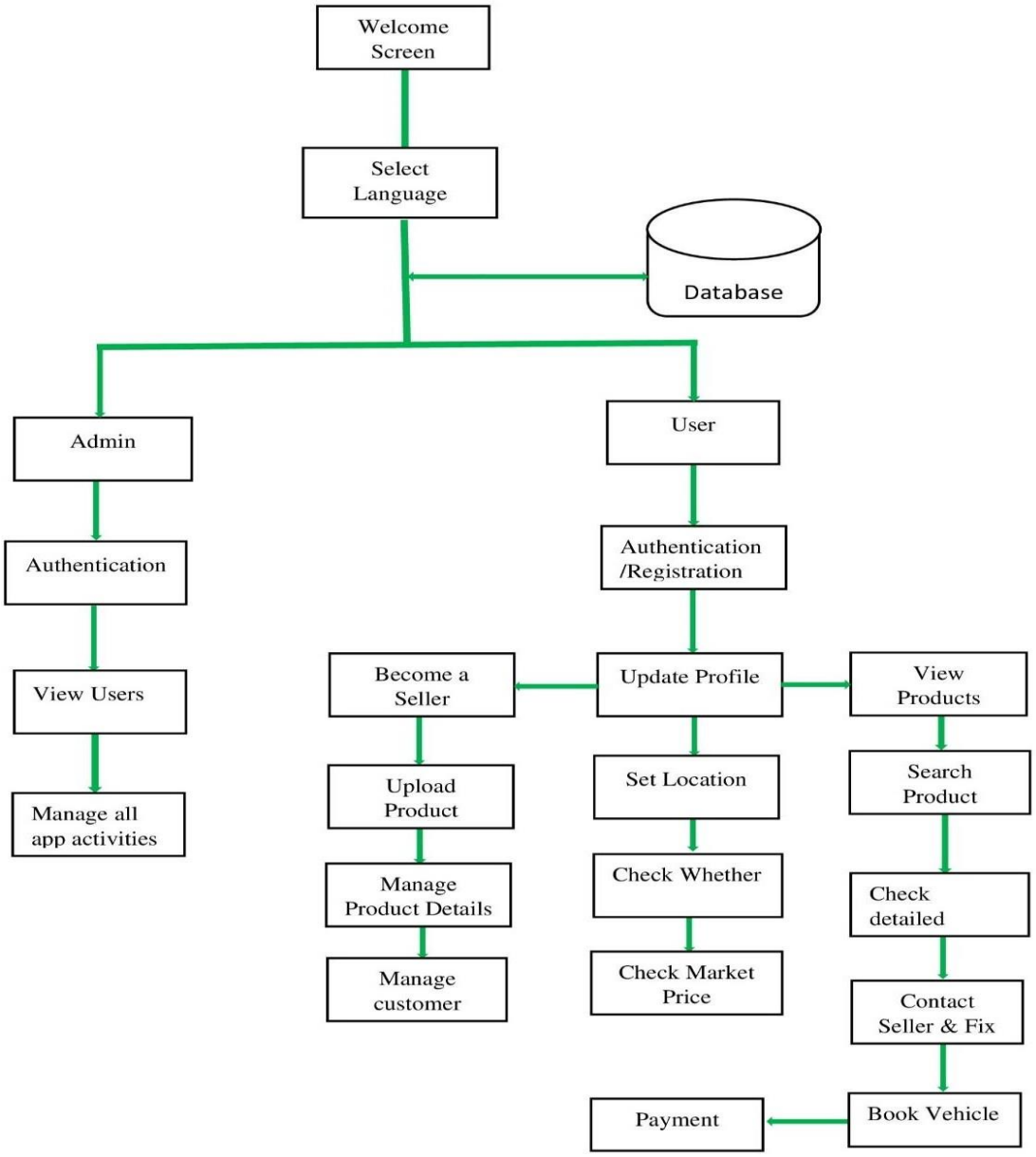

Fig 3.1. Block Diagram of Krushi Market App

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3.2 Flowchart:

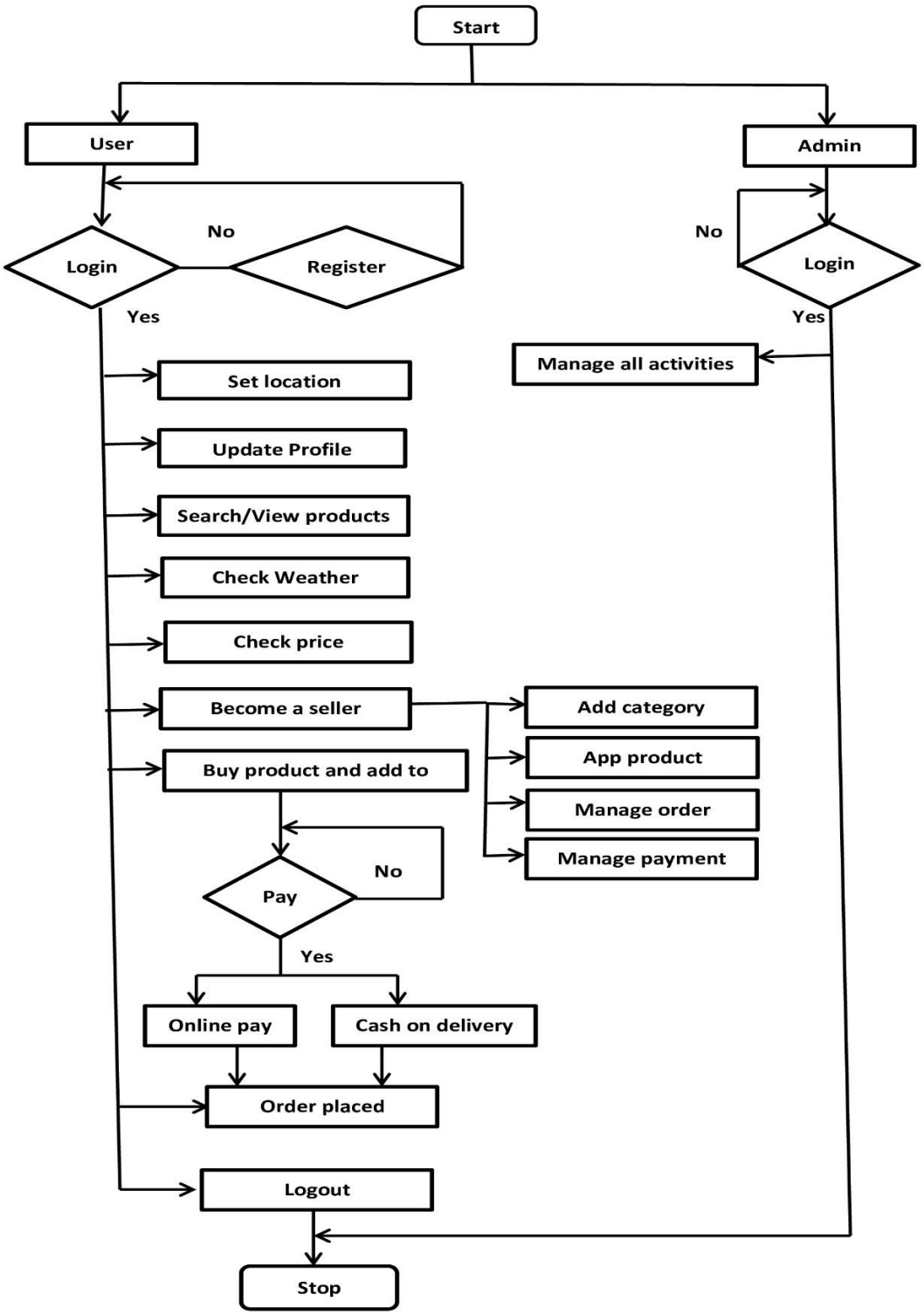

Fig 3.2. Flowchart of Krushi Market App

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3.3 System Implementation:

We are implementing our best knowledge towards making a useful app to improve the Agricultural field and give the platform to the farmers. This app focuses on main two entities as mentioned below:

Seller:

The main functions of the seller are:

- Add and manage crops/agri-products details.
- Decide crops/agri-products rate based on market price.
- Communicate with the customer.
- Check weather information.

Customer:

The main functions of the customer are:

- Search the product.
- Purchase product according to market price and decide payment mode.
- See the quality of crops/agri-products.
- Communicate with the seller.

Admin:

The main functions of the admin are:

- Managing all activities of Famar.
- Managing all activities of Customer.

The basic system architecture of project includes the seller side i.e. farmer and buyer side i.e. customer available in the system and they can access all the features available in the system.

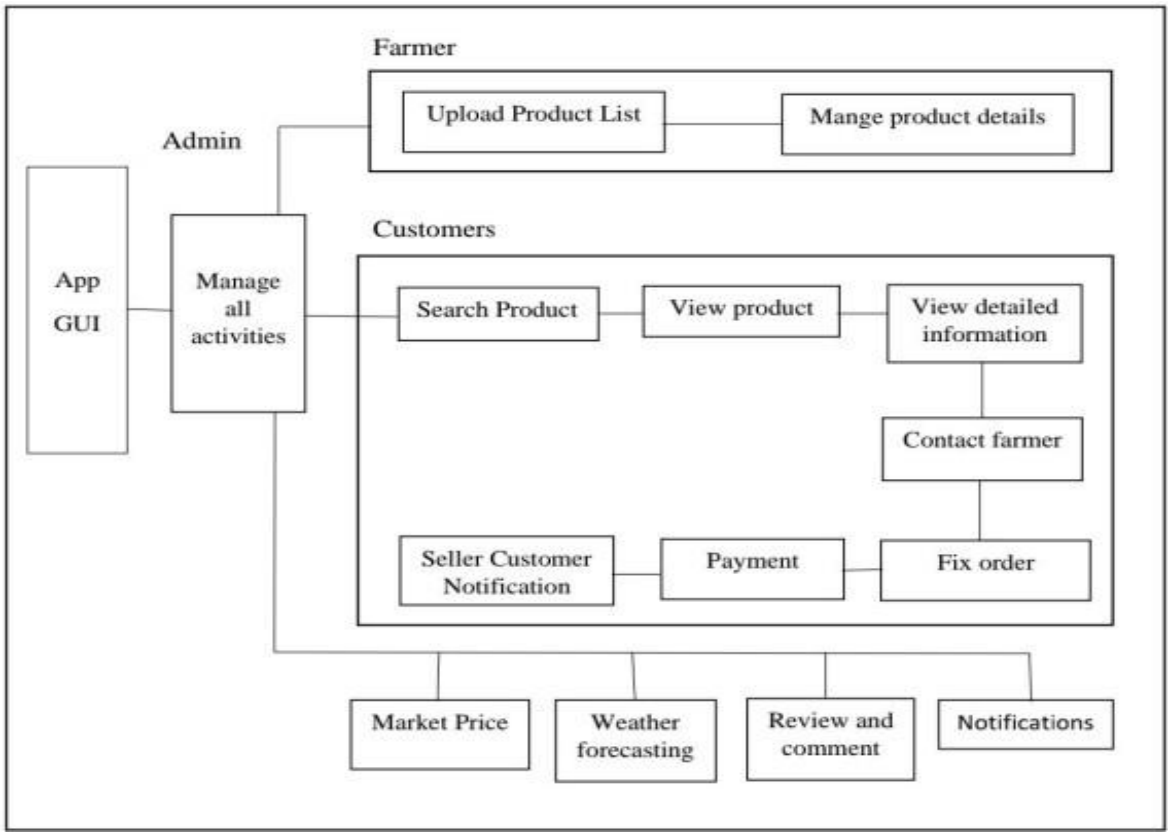

Fig 3.3 System Implementation Design

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IV. RESULT

4.1 Running the Android App:

After creating your first Android App, it is time to test your app by running. This section describes how you can run your android application; on a real device and on an emulator.

4.2 Testing the app on a Real Device or an Emulator

Connect your phone device to your computer system you have used to develop your app. You have to enable a phone setting called "USB Debugging" for you to run an app on your phone. Here is how to:

- Open Settings App on your phone.
- Scroll down to and open About Phone.
- There is Build Number at the bottom, tap it seven times.
- Return to About Phone, head over to Developer Options, and open it.
- Scroll down to USB Debugging and enable it.

Your phone device is now ready to run your android application. Now, open Android Studio and follow the following steps to test the app.

- On Android Studio, head over to the toolbar and click on run/debug configurations drop-down menu, select your application.
- Still on the toolbar, go to the target device drop-down menu and select the phone device you have connected to the computer and wish to run your app on.
- Now click Run. Android Studio downloads, install and run the application on your phone.

And that"s it! phone should be able to display what we had coded to be displayed during development.

4.3 Running on an Emulator

Android Studio provides a tool for creation and running of an app emulator. It is done through Android Virtual Device (AVD).Following are guidelines one can refer in creating one:

- In Android Studio, head over to Tools then AVD Manager.
- Click on the Create Virtual Device tab at the bottom of the panel.
- Select Hardware window appears; select a virtual device that we may be interested in emulating your app. If virtual device you prefer is not available, create or import one, otherwise click Next
- System Image panel comes up. This is where we select android OS version we prefer, but according to a specific API level.
- On Verify Configuration page, confirm settings and do changes where necessary. More settings are on the Show Advanced Settings tab.

Now prepared a virtual device, it is time to emulate application. Follow the following steps:

- Select app from run/debug configurations drop-down menu in the toolbar.
- Select a virtual device created from target device drop-down menu.
- Click Run

Android Studio installs and runs application on the virtual device, and we should be able to see the display of what we had coded our app to output.

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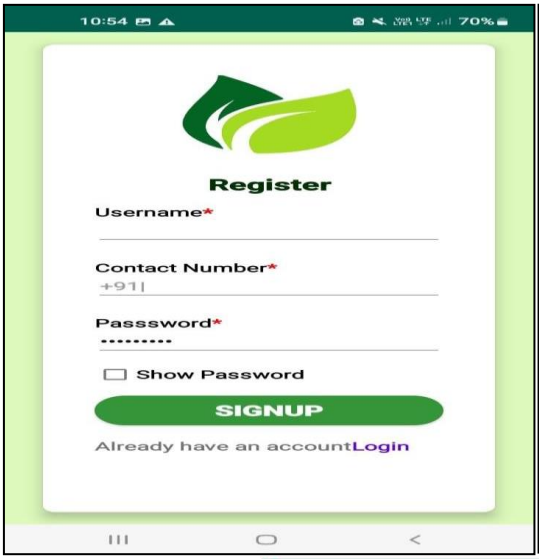
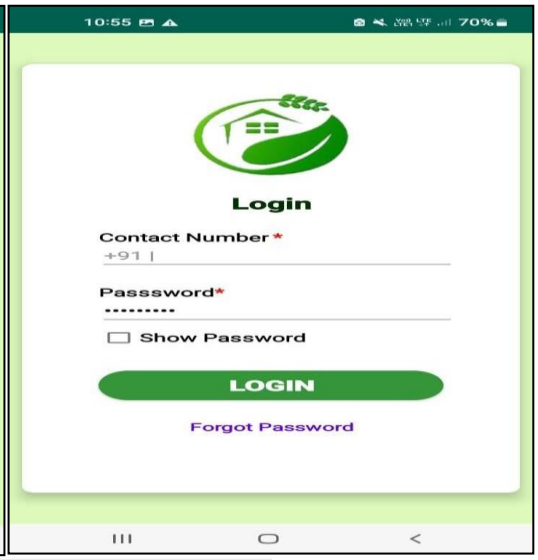
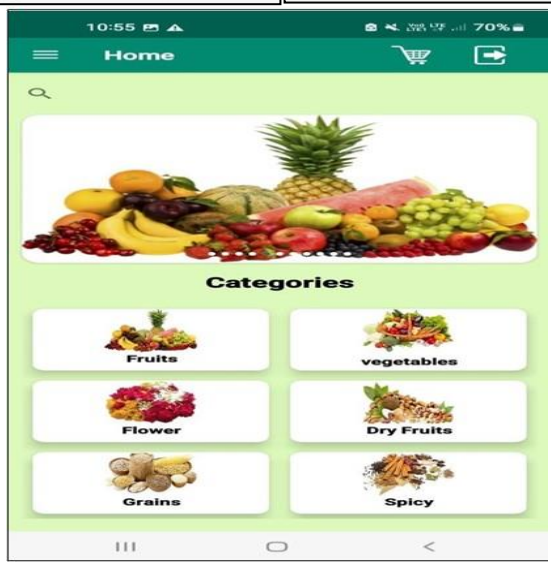
4.4 System GUI Snapshots:







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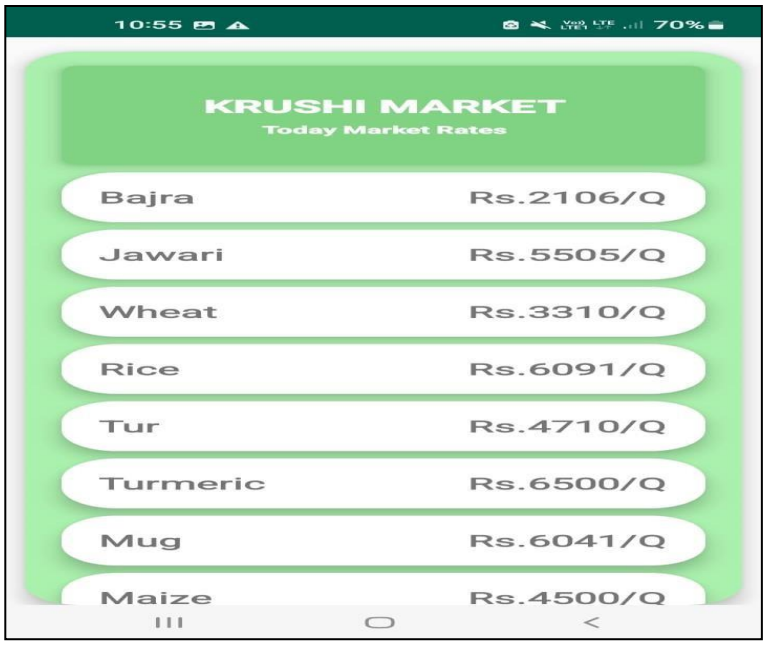

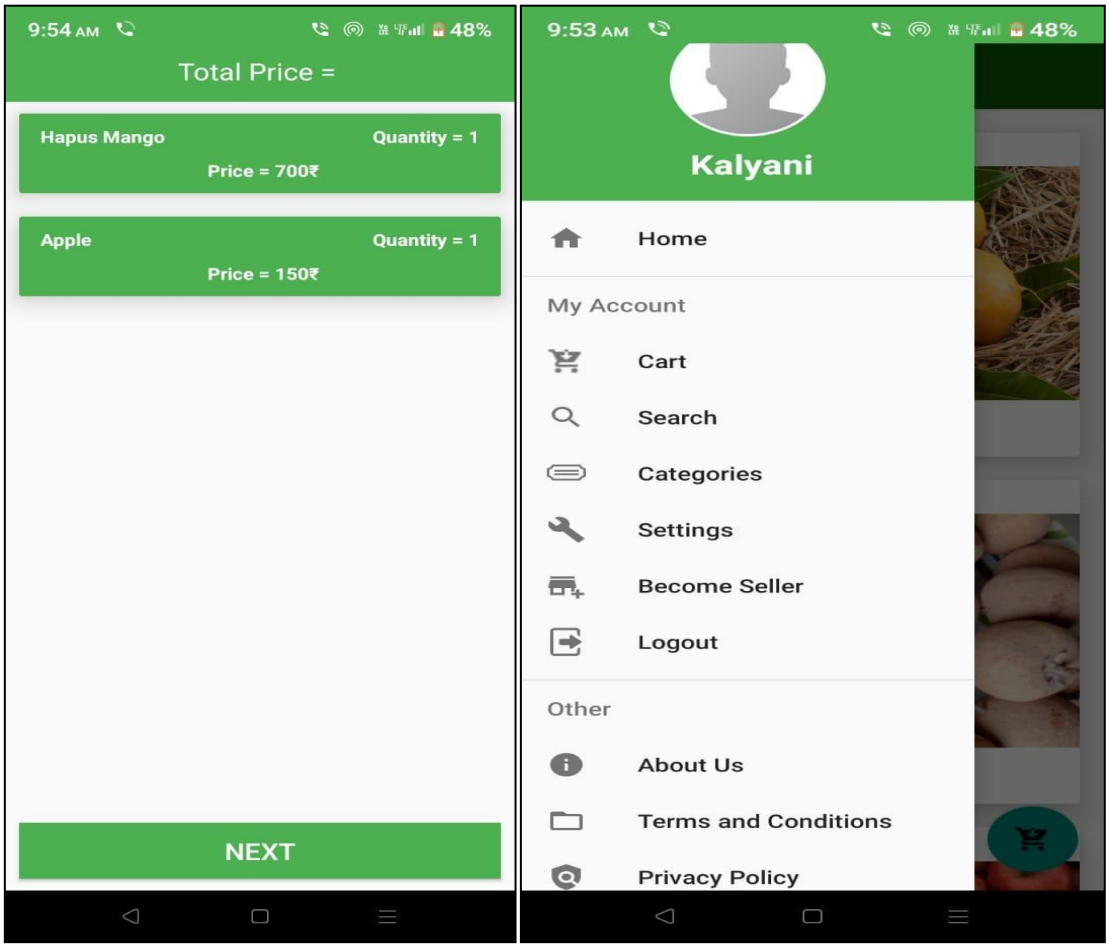

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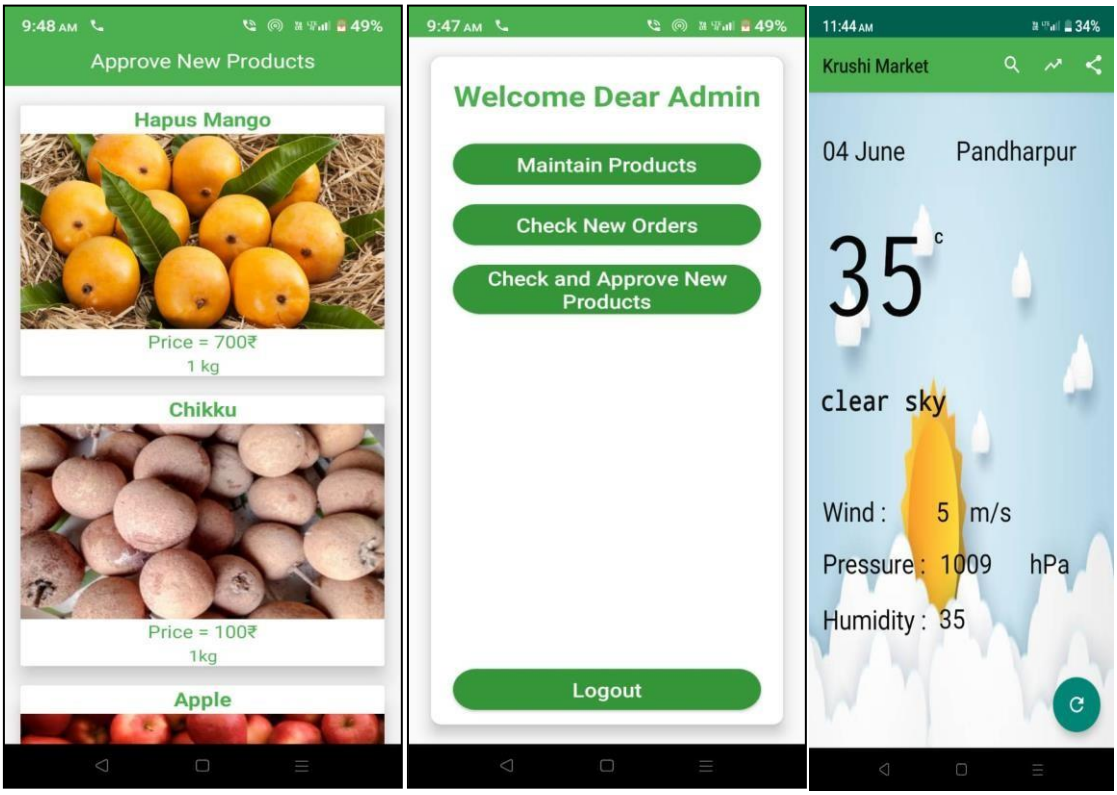

V. CONCLUSION & FUTURE SCOPE

5.1 Conclusion:

We have designed a mobile application and completed its development, by applying engineering knowledge we have analyzed the societal problems in the agriculture sector. It would assist in protecting the crops in different weather and the main approach is for buying and selling of the crops, which help the farmer to sell the product and get a better profit rate than the markets. The transport feature helps the farmer to share a ride with other people which are taking the same route. The compensation is distributed resulting in profit to the farmer. We have used modern tools and platforms like android studio and firebase. During the development we have understood the importance of individual and teamwork while project development and management. While presenting our project in various seminars we have enhanced our communication skills and displayed professional ethics which will result in lifelong learning.

5.2 Future Scope:

- It is not only providing services but also developing employment so it helps to reduce unemployment area and gives more opportunities in rural areas. We can further add other facilities in the app also like fertilizer sales through our app bcz through the Kisan app we will have a great network then it will be easy to sell products to the farmers. Many new technology companies can work with the Kisan app as farmers are getting farming services through the app so machine companies can provide or sell their products through our network which is also a great source of business.

- The smart farming has a real potential to deliver a more productive and sustainable form of agricultural production, based on a more precise and resource-efficient approach. New farms will finally realize the eternal dream of mankind. It‟ll feed our population, which may explode to 9.8 billion by 2050..

- Agricultural marketing is important not just for increasing productivity and consumption, but also for accelerating economic growth. Its dynamic functions play a critical role in encouraging economic growth. As a result, it‟s been dubbed “the most powerful multiplier of agricultural development.

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