

# AGRO Master Revolutionary Android Application for Farmers

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**Abstract:** *These days, everyone knows about smartphones, even farmers. Phones are really important in our daily lives. But using old-fashioned methods in farming makes progress slow. Farmers don't always know about new ways to grow crops or how much their crops are worth. They might miss out on helpful programs for farmerstoo. Now, with phones and the internet, we can share important info easily. So, we made an app called AGRO Master APP to help with these issues. It's for farmers and anyone who has a smartphone. They can check crop prices and learn about farming tips from experts. The app also tells about different farming programs. Plus, it helps farmers sell their crops at good prices and learn about the weather and new farming methods. It's like having a helpful friend in farming right on your phone.*

**Keywords:** Android, Weather Detail, Weather Blog, Farmers Community, Plot Registration, Market Rates

## I. INTRODUCTION

India relies heavily on agriculture for its economy. Agriculture is crucial for producing food and other materials, and a large part of the population depends on it. The development of agriculture is key for the economic well-being of our country. India is particularly good at growing food crops compared to other countries. However, agriculture faces many problems due to factors like population growth, increased food demand, natural resource degradation, and climate change concerns.

Farmers often struggle to keep up with new farming technologies, methods, and policies. They also find it hard to know the market prices for their products, leading to lower profits when they sell them. While some farmers get news from television, radio, and smartphones, many can't read newspapers or watch TV regularly. As a result, they miss out on important farming news and schemes, which affects their profits and forces some to take loans.

Smartphones are becoming more common in rural areas, and they can help spread agricultural information to farmers. Mobile applications, especially on Android phones, are a great way to share information. Android smartphones are popular because they're affordable and easy to use. An app can provide real-time updates on vegetable, fruit, and crop prices from nearby markets, helping farmers sell their produce at better rates. It can also give weather forecasts, crop cultivation methods, connect farmers with experts, offer guidance on pesticides and fertilizers, suggest the best seasons for growing crops, facilitate renting agricultural machinery, and inform about new government farming policies and schemes. With the help of smartphones and apps, farmers can improve their yields and incomes, even without expanding their land.

## II. OVERVIEW

An Android application named AGRO MASTER, developed by students, provides updated rates of vegetables and fruits at various markets in India. This assists farmers in selling their crops at better prices. Moreover, the app disseminates farming-related notices from the government and details about different schemes. However, it's important to note that AGRO MASTER is not currently available on the Play Store.

Recommendations are made for farmers to utilize mobile computing through an app named "AGRO Master" to enhance cultivation and trade. AGRO Master provides real-time weather updates, news, and market prices in regional languages. The article proposes the utilization of mobile computation, employing tools like the Android SDK to develop infrastructure for smart farming. This approach aims to augment farm management and agricultural yield.

Google Cloud Messaging is employed to meet the growing needs in farming, aiming to double productivity through modern technology. The Android application leverages Firebase database, Google Cloud Messaging, and JavaScript Object Notation to achieve this objective.

The article underscores the importance of integrating ICT into agricultural kiosks to improve farming practices, introducing forecasting and technical farming information. The proposed system utilizes Android smartphones to access information from the kiosks, providing significant benefits to rural farmers.

### III. METHODOLOGY

The primary objective of our proposed project is to develop an application that assists users in crop cultivation by providing essential information. Users begin by registering with their personal details, which are then stored in the database. Upon registration, users can log in to the app using their username and password.

The application offers basic information such as weather forecasting, enabling users to plan their farming activities effectively. Additionally, users can purchase crops directly from farmers through the app. To facilitate this process, farmers must post their current farming location on the map, along with crop details, address information, and crop photos. Potential buyers can view this information on the app and locate the desired crops, eliminating the need for intermediaries.

Moreover, the application includes remedies for various diseases affecting different crops, aiding farmers in taking necessary actions to mitigate crop damage. Additionally, users have the option to rent or purchase agricultural machines by posting the details and owner addresses. Here the Admin/ Expert can add news and update the market price of different crops in different location, and the Experts will also respond to queries and doubts asked by users.

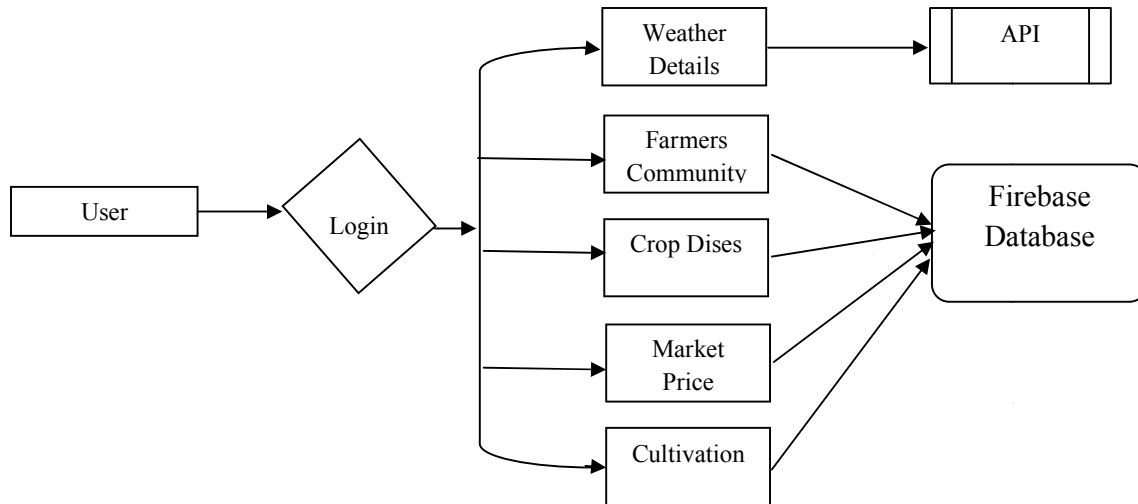


Fig. 1 Blog Diagram

The project is divided into different modules which are:

- Login/Register
- Weather Expert Login
- Climate / weather Blog
- Market rates
- Methods and techniques
- Chat / Farmers Community
- Admin

**IV. TECHNOLOGY USED**

**Android**

Android is a Linux-based operating system and an open source, mainly designed for developing mobile applications for devices like smart phones. Android is an operating system used for mobile phones. Android programming is based on Java programming language and developers can modify and customize the OS for each phone. Android SDK is the software development kit that permit developers to develop apps for the Android platform.

**Java**

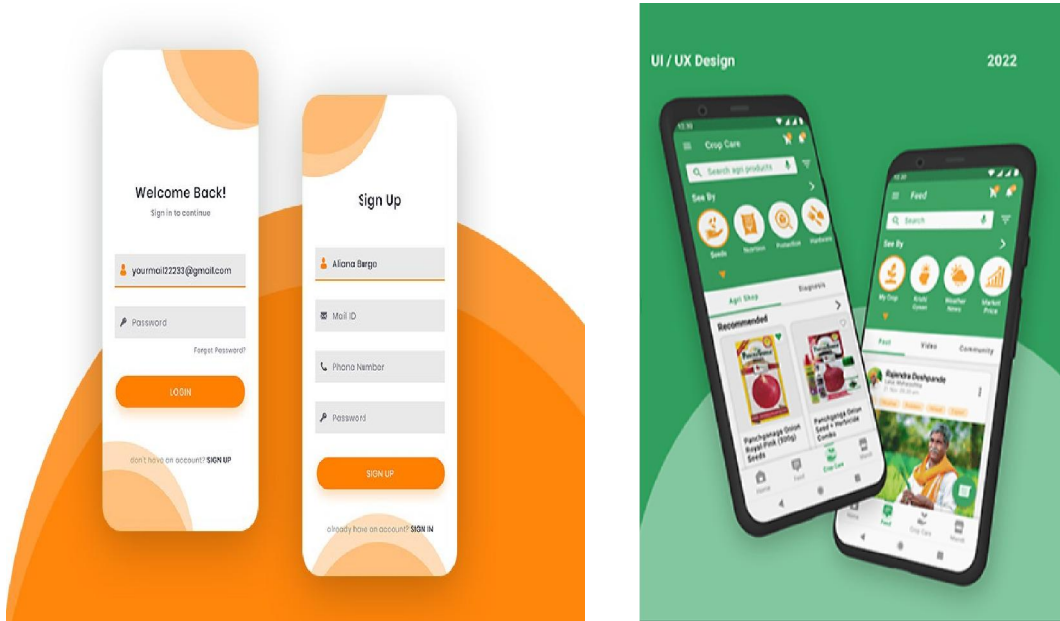
Java is object oriented computer programming language that is class based, which is mainly used for developing applications. The syntax of java is similar to C and C++, but has low level facilities comparatively to other languages. Java is the basic programming language for the Android smartphone applications. Java is designed to be easy to use, learn, write, debug and compile than other programming languages.

**Firestore Database**

Google Firestore is a set of cloud-based development tools that helps mobile app developers build, deploy and scale their apps. It is used to store Users data in database.

**V. RESULT**

The user interface of this app is shown below.



The application in which user can find the details of farmers and their crops, they can also add details of their crops and location, rental machines, climate information, current market price of specific crops after searching the crops in specified location, getting the latest news related to agriculture from agricultural officer, know the remedies for various crop diseases after selecting required crop, ask queries to experts and getting replies from them.

**VI. CONCLUSION**

The AGRO Master App creates an innovative platform for interaction between different users as farmers or customers. By implementing this application it helps customers to find farmers who are reliable for them to buy crops. This App helps to reduce the problems of farmers by introducing a platform with different operating interfaces that provide services that are needed by farmers such as knowing the details of information required for the cultivation of each

crops, weather forecasting for each selected location, Market rates of each crops in different location, supporting expert's advisories, diseases and prevention methods for each crop weeds, renting of agricultural machines, trending news regarding agriculture, etc. And this application also provides a platform for helping customers to know about their nearest farmers for taking orders of their food crops.

#### **VII. ACKNOWLEDGMENT**

We extend our heartfelt gratitude to all individuals and entities who have contributed to the research and development of our project aimed at creating an application to support users in crop cultivation. We express our sincere appreciation to the members of our project team for their unwavering commitment, tireless effort, and collaborative spirit throughout the research and development phases. Their diverse skill sets and dedication have been instrumental in realizing the objectives of this project.

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#### **REFERENCES**

- [1] SMART Farming(<https://iopscience.iop.org/article/10.1088/1755-1315/540/1/012074/meta>)
- [2]Dr. N. K. Gunjal, Prog.Yogesh Chitte: Overview of Mobile Android Agriculture Applications
- [3] Santosh G. Karkhile, Sudarshan G. Ghuge: A Modern Farming Techniques using Android Application
- [4] AniketUdar,Aniket Gade , Rohit Patil: Smart Farm Application: A Modern Farming Technique Using Android Application
- [5] Sahyadri farmers Producer Company: A Survey( to identify needs of farmers and producers )