



IJIRCCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 12, Issue 4, April 2024

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.379



9940 572 462



6381 907 438



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www.ijircce.com

AI Assisted App for Farmers on Agri Practices and Suggestive Crops

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ABSTRACT: Our AI-powered applications provide farmers with advanced technology that revolutionizes agriculture and crop selection. Using machine learning algorithms, it can provide recommendations based on factors such as soil composition, weather conditions and economic trends. With real-time weather updates, pest and disease management information, and soil health analysis, farmers receive valuable guidance to improve results. In addition, the app provides business intelligence for informed decision-making and facilitates social networking for peer and expert advice. It provides integration and ease of use through good understanding and use of multiple languages, ushering in a new era in precision agriculture and increasing agricultural productivity. Our AI farming apps are a game changer for farmers by providing personalized information and guidance for successful farming. By integrating advanced algorithms, it can provide recommendations based on important factors such as soil quality, safety and work efficiency. Weather forecasting now allows farmers to plan irrigation and planting times, while pest and disease management capabilities make it easier to detect and mitigate weeds. The soil health monitoring app provides recommendations for soil improvement and management practices to ensure sustainable results. In addition, it provides business intelligence that allows farmers to make informed decisions about crop selection and maximum profit opportunities. Through community forums and professional support, users can exchange information and find ideas, encouraging collaboration and continuous learning.

KEYWORDS: AI-assisted Android Studio(tool), Java and Android (Language), agriculture, farming, practices, suggestive, crops, app

I. INTRODUCTION

In today's agriculture, business faces the dual needs of meeting the growing world population and solving the difficult problems of climate change. Against the backdrop of unprecedented technological advancement, the convergence of artificial intelligence (AI) and agriculture has emerged as a beacon of innovation; It is hoped that it will provide practical solutions to these challenging problems and shed light on the changing times of permaculture. "Agri Mate" – a new revolution that harnesses the revolutionary power of artificial intelligence to quickly deliver ideas and recommendations tailored to specific situations and conditions. In fact, Agri Mate embodies a combination of cuttingedge technology and deep agricultural knowledge, ready to support all aspects of permaculture. Identify farm equipment. Using big data and advanced algorithms, Agri Mate enables farmers to make informed decisions about crop management, resource allocation and risk mitigation strategies. Field Applicability Agriculture often forms the backbone of the economy and operates similarly to large-scale businesses in industrialized countries. Agri Mate transcends regional boundaries and creates global understanding of agriculture by facilitating the dissemination of knowledge and promoting best practices. landscape and paves the way for a sustainable future. With Agri Mate as a trusted partner, farmers around the world can implement modern agriculture safely and efficiently, paving the way for greater harvests and ecological harmony. By encouraging the exchange of knowledge and promoting best practices, Agri Mate promotes an understanding of agriculture as a global partnership where expertise transcends regional boundaries. In fact, Agri Mate embodies the combination of human creativity and technological power that promises to revolutionize the agricultural sector and pave the way to the future. With Agri Mate as a compass, farmers all over the world are ready to continue the challenging journey of modern agriculture with confidence and efficiency, paving the way for harvests and ecological harmony. From seed selection and soil management to irrigation and pesticide planning, the app leverages the power of data analytics and machine learning algorithms to inform decisions and

improve operations. One of Agri Mate's core capabilities is the ability to analyze large data sets that include many variables such as local climate, soil properties, crop history, market prices, and agricultural research. The application processes this rich data to create intelligence that enables farmers to better understand crop selection, planting strategies and farming practices appropriate to their unique agro-ecological conditions. Reminders and tips to guide them through the farming season. Agri Mate embodies excellence as well as collaboration and knowledge sharing in the agricultural community. The app supports communication between friends, sharing and sharing of best work, supporting a culture of collaborative learning and innovation among farmers, agronomists, scientists and extension officers. In fact, Agri Mate is a beacon for the future of agriculture. Harnessing the transformative power of technology, it improves the use of resources, reduces risk and promotes stability while promoting harmony with nature. In the process, Agri Mate not only supports the planet, but also protects it for future generations, ensuring a sustainable and prosperous future for the agricultural world. As a result, our AI-powered app for farmers not only provides information about farming, but also recommendations for crops based on various factors such as the land where the species is found, climate and economic needs.

II. EXISTING SYSTEM

There are currently many artificial intelligence applications that will help farmers improve agriculture and make informed decisions about crop selection. These apps use artificial intelligence, machine learning models, and big data analytics to provide personalized recommendations based on farmers' specific needs and village conditions. Smart and IoT sensors collect data on humidity, temperature and other environmental factors. Analyzing the data collected provides farmers with a deeper understanding of crop health, optimal irrigation schedules and optimum planting times, ultimately increasing profitability benefits while saving resources. Additionally, artificial intelligence applications help farmers detect crop diseases and pests thanks to image recognition technology. By simply sending images of affected plants, farmers receive diagnosis and immediate treatment recommendations, ensuring timely intervention and reducing crop losses. Provide farmers with information about the field and estimate yields. These insights allow farmers to adjust their agricultural practices accordingly, increasing productivity and profitability. Choose to make a decision. As technology continues to evolve, these systems will evolve to provide better performance, allowing farmers to respond to the challenges of farming on a daily basis with confidence and efficiency.

III. PROPOSED SYSTEM

The AI-powered app meets farmers' needs for farming and product advice and will include a number of important features to improve farming and achieve good results. Advanced artificial intelligence algorithms; It can analyze a variety of input data, including soil health, weather conditions and crop history. The analysis will give farmers insight into best practices such as irrigation schedules, fertilization methods and pest control strategies. Recommended soil types, climatic conditions and market needs. Additionally, examining local weather patterns and historical data can help make decisions about planting and planting seasons and help reduce risks associated with extreme weather conditions. The latest information can guide product selection to achieve good results. Crop diversification based on economic needs and crop rotation patterns can help reduce risks associated with price fluctuations, pests, and diseases. Proper treatment can improve soil health, reduce erosion and reduce dependence on chemical inputs. Benefits of Permaculture Practices By using technology, farmers can achieve better results while also supporting environmental protection, contributing to food security and the economy, replicating the progress of their communities. Thanks to advanced technologies such as image recognition technology, farmers can easily detect and identify crop diseases and pests and get instant treatment and management recommendations. IoT sensors and satellite imagery. This continuous monitoring allows farmers to respond to changes, optimize resource allocation and reduce risks to crops. In general, our artificial intelligence-supported applications are markers of innovation in agriculture, filling the gap between traditional agricultural methods and technology in their system which always contains crops.

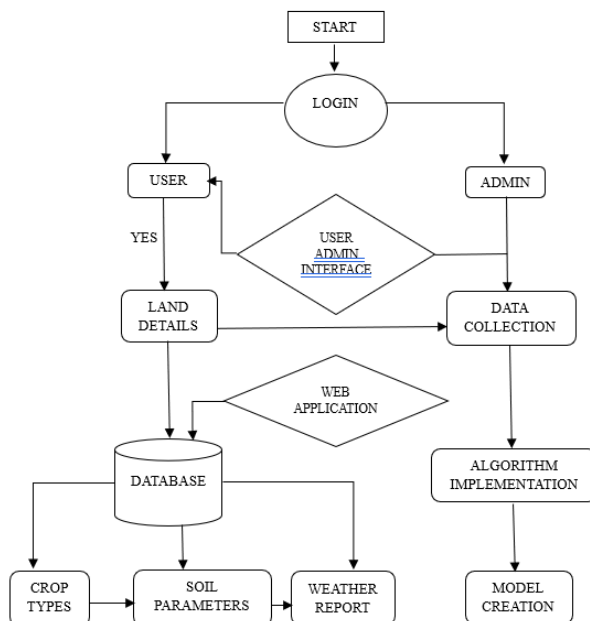


Fig:1 Block Diagram of Working Model

IV. THE OBJECTIVE OF PROJECT

The aim of the AI-powered farmer app is to provide farmers with knowledge, tools and advice on farming and teach crops to improve their agricultural work and increase productivity. It provides farmers with personalized recommendations and information based on data analysis factors such as soil health, weather conditions and business needs. Using artificial intelligence, the application can provide recommendations on crop selection, irrigation timing, fertilization methods and pest control strategies. and mobile device access. The app is easy to use, allowing farmers to easily access information, get advice and make informed decisions about their farming. such as conservation tillage, crop rotation and pest control. The app helps farmers reduce their environmental impact, improve soil health and protect natural resources by providing guidance and support for good practices.

The artificial intelligence-supported application is intended to revolutionize agriculture by providing farmers with suggestions and tools that will improve their activities. The app provides personalized recommendations on crop selection, irrigation schedules and pest management strategies through technology and data analysis. You can easily access and benefit from its features. Additionally, the practice contributes to environmental protection and cost savings by promoting permaculture practices such as soil conservation and integrated management. It comes down to making informed decisions and mitigating risk. Finally, by increasing productivity and promoting sustainable practices, the practice not only improves the welfare of farmers but also strengthens the security of vegetables and rice and the economic well-being of the community. With insight and instant data analysis, it is changing the way farmers manage their crops, ultimately promoting permaculture and ensuring food security for future generations.

V. SOFTWARE INTEGRATION

The AI-powered app for farmers integrates various essential software to perform its work efficiently. , weather conditions, crop history and economic trends. These algorithms power the app's recommendation engine, providing farmers with personalized information and recommendations tailored to their unique situation. This allows farmers to submit images of affected plants, which are then analyzed by the software to provide rapid diagnosis and treatment recommendations.

View information such as site boundaries, soil types and water levels on buildings. Analyzing this spatial data can help farmers make decisions about cultivation, resource allocation and land management. The app integrates weather data into its recommendations, allowing farmers to adapt their practices to climate change, heavily reducing the risks

associated with climate change. User-friendly interface software development framework and tools for application development.

The interface allows farmers to access the application from a variety of devices, including smartphones, tablets and computers, thereby increasing usability and usability for people with a variety of background knowledge. AI-powered apps for farmers use a combination of AI, image recognition, GIS, weather forecasting and user interface software to offer personalized recommendations, check for crop issues, view farm data and improve user experience.

VI. DESIGN

In this app, we have designed a user-friendly interface tailored specifically for farmers, allowing them to easily access suggestions on crops and agricultural practices. The app is built using Android Studio, ensuring a reliable design that enhances usability and accessibility for farmers, ultimately maximizing the utility of the application.



Fig:2 AI Assisted Integration

VI. IMPLEMENTATION



Fig:3 Login for Crop prediction

The login feature allows users to access the crop forecast functionality in the app. By logging in, users can access information on soil type, climate and soil ph value. This data is then analyzed using predictive algorithms to predict the best crops to grow in a particular region.

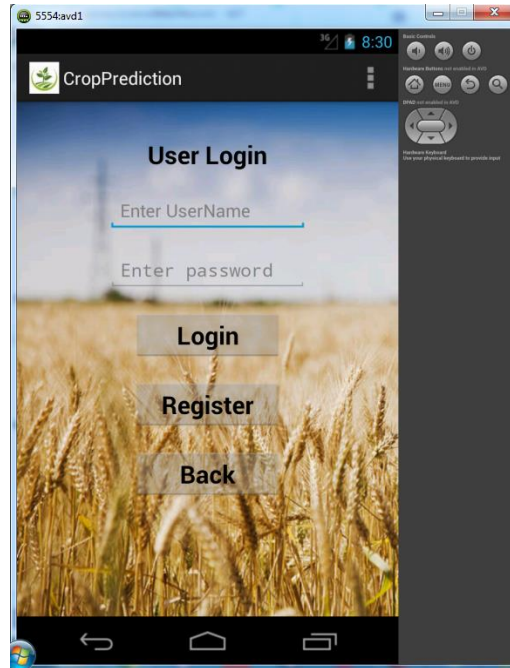


Fig:4 User Login

The user login page to the application where you will find login boxes for your username and password. After entering your information, log in as if you were sharing your identity.

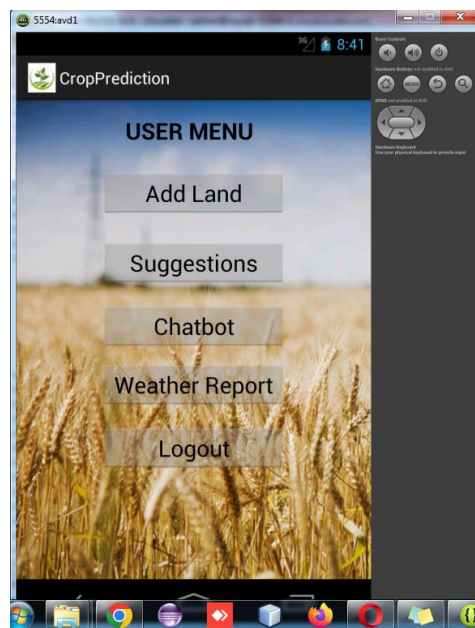


Fig:5 User Menu

The user menu within the app offers essential features for seamless navigation and enhanced user experience. Users can add land details for personalized recommendations, access suggestions for crop cultivation and farming practices, and

utilize a chatbot for real-time assistance. Additionally, they can stay informed about weather conditions and securely logout when needed.

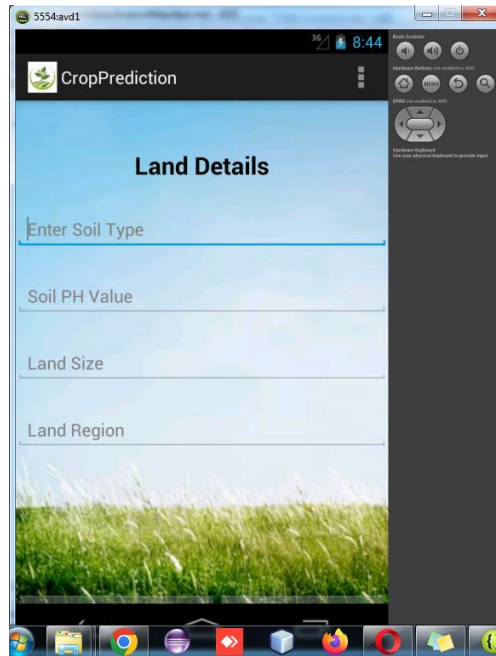


Fig:6 Land Details

In the "Land Details" section, users can input crucial information about their land in just a few simple steps. They can specify the type of soil and its pH values, which helps in understanding soil fertility. Additionally, users can enter the size of their land and the region where it's located. This information is vital for receiving personalized recommendations on crop selection and farming practices tailored to their specific land characteristics. By providing these details, users can make informed decisions to optimize their agricultural outcomes effectively.

VII. WORKING

The AI-assisted app for farmers on agricultural practices and suggestive crops follows a systematic working process to deliver valuable insights and recommendations. It begins by collecting pertinent data from diverse sources such as soil assessments, weather forecasts, and market trends. This data undergoes rigorous analysis utilizing sophisticated AI algorithms to discern patterns and correlations relevant to crop cultivation and farming techniques. Subsequently, the app generates personalized recommendations tailored to each farmer's specific needs and circumstances. Through an intuitive user interface, farmers can interact with these recommendations, accessing additional support features like chatbots for real-time assistance and weather reports for informed decision-making. As farmers implement the recommendations, the app continues to gather feedback and data to refine and improve its predictive capabilities, ensuring ongoing optimization of agricultural practices and crop selection.

Data Collection in the app collects relevant data from a variety of sources, including soil health measurements, weather conditions, crop history, and market trends. Data collection shows patterns, relationships, and topics related to planting and agriculture. Recommendations for strategic management user interaction in the app provides farmers with a better understanding of how to interact with recommendations and access other information. This may include features like chatbots for quick service and weather forecasts for informed decision-making. This information is used to continuously refine and improve the forecast of the application to enable better optimization of farming and crop selection.

VIII. RESULT

Creating an AI-powered app that focuses on farming and crop recommendations for farmers involves several important factors. First, the app collects and analyzes relevant information, including soil type, weather conditions, crop yield,

and business needs. Using intelligent algorithms, this information can be processed to provide personalized recommendations. These recommendations will suggest suitable crops considering factors like soil fertility, climate, and water availability. Moreover, the app will provide guidance on optimal farming methods tailored to the recommended crops, covering planting techniques, irrigation schedules, and pest management strategies. In addition, the app will advise on best farming practices based on recommended crops, including planting techniques, irrigation schedules and pest management. Integrated weather forecasting will now allow farmers to make informed decisions and reduce weather risks. Additionally, the app should provide business insights, social media, and feedback for continuous improvement. Accessibility, geography, collaboration and scalability considerations are important to ensure the app is effective and efficient in supporting farmers' needs.

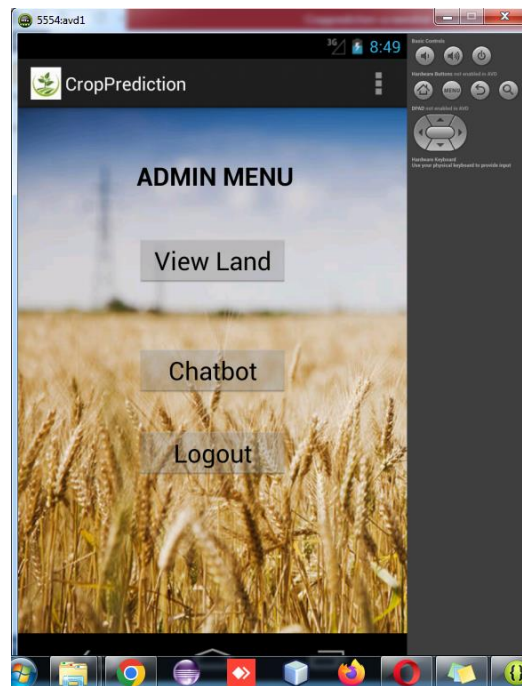


Fig:7 Admin Menu

The control menu provides a simple interface to access important functions. It has three main options: "View Land", "Chatbot" and "Log Out". Once in the menu, the administrator will see the options and will be asked to select one by entering the corresponding number. Selecting View Land allows administrators to view details about the land, such as ownership, boundaries, and related information. Select Chatbot allows access to the chatbot functionality, allowing administrators to join the conversation or provide assistance using responses. Finally, selecting the "Log Out" option allows administrators to securely log in to the system, ensuring the privacy and security of their accounts. This convenient menu and user interface makes the management tool very useful to use and use.

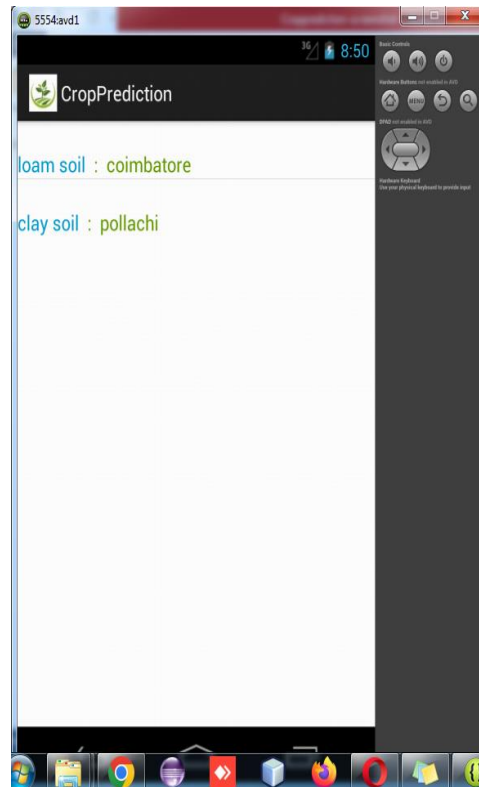


Fig:9 Result of crop prediction

This AI-powered app provides farmers with information on farming and crop recommendations and includes comprehensive systems to optimize farming practices and generate profits. At its core, the app uses advanced artificial intelligence to analyze various data points, including soil properties, weather patterns, future crop background and business needs. The data-driven approach enables the app to provide personalized recommendations to farmers and recommend the most suitable crops based on specific location, season and resources. To guide farmers from best agricultural practices to planned products. This includes information on optimum growing conditions, irrigation times, pest and disease management strategies, and optimum harvest times. Integrated weather systems enable farmers to make informed decisions and reduce risks associated with adverse weather conditions. resources. This allows farmers to make decisions about crop selection and marketing time, ultimately maximizing profits.

IX. ADVANTAGES

AI-powered applications for farmers have many advantages and are revolutionizing agriculture and crop management. First, the app uses the power of AI algorithms and data analysis to provide farmers with recommendations based on their unique geography and environment. This improves the decision-making process, thus optimizing product selection and increasing efficiency. In addition, the app provides farmers with access to real-time weather forecasts, allowing them to respond to weather-related events and reduce investment losses. In addition, by sharing market insights and models, farmers can choose strategies to maximize their profits and market competition. In addition, the app promotes a sense of community and knowledge sharing among farmers through interactive, collaborative, and collaborative learning. In general, artificial intelligence-supported applications increase the health and productivity of agriculture by making it more efficient, profitable and sustainable.

Increased efficiency - The application makes it easier for farmers to make decisions, saving time and effort in searching and planning agricultural projects. Accurately forecast production, optimize resource allocation and financial planning.

Supporting small farmers - Small farmers who do not have access to traditional farming facilities and information can benefit from the app's instructions and guidance.



X. CONCLUSION

In summary, AI-powered farmer apps represent a revolutionary tool that will revolutionize agriculture through technology and medicine.

In this project, we have concluded that the app is beneficial for farmers as it provides suggestive crops along with their details, information, pH values, chatbot assistance, and weather reports. Farming is a crucial occupation practiced across various places and countries. Agri Mate about AI assisted farming includes which is useful for their agriculture crops.

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