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FARM HELP: A REAL TIME MEDIATOR BETWEEN SERVICE PROVIDER AND FARMER

Shraddha Admane, Kajal Gagare
Students, Department of Computer Science
RGCOE College of Engineering, Parner, Maharashtra, India

Abstract: Several reasons have been evicted as the major concern behind the farmer's apathy, specifying like scarcity, dues and marketing. However intermediate complication is major difficulty at the present days, in order eliminate the concept of middlemen this application is constructed. Improving the effectiveness and efficiency of agricultural marketing necessitates a comprehensive and cooperative strategy involving farmers, intermediaries, researchers, and administrators. The mounting difficulties faced by farmers, including insufficient financial backing, limited job opportunities, and the absence of proper equipment and machinery, are causing a substantial decline in the nation's agricultural sector. Reversing this trend requires a united effort to tackle the complex challenges affecting the industry.

Keywords: Android Studio, Java, Xml

I. INTRODUCTION

Agriculture, with its allied sectors, is unquestionably the largest livelihood provider in India, more so in the vast rural areas. It also contributes a significant figure to the Gross Domestic Product (GDP). Also, the inclination of farmers towards the use of many advanced equipment's to get better yields with minimum efforts can be seen nowadays. But what if the same equipment gets damaged in the middle of work. Our aim is to develop a system which will as a mediator between the farmer and service provider in such situations. At the same time, it will provide a platform for users to rent the equipment's and easily find customers for it.

II. MOTIVATION

Several reasons have been evicted as the major concern behind the farmer's apathy, specifying like scarcity, dues and marketing. However intermediate complication is major difficulty at the present days, in order eliminate the concept of middlemen this application is constructed. Hence to overcome all these problems, the system is proposed which is an Android application that helps the farmers find suitable agricultural jobs, get the required machineries for rent at affordable price, obtain land on lease and receive the required financial support in the form of investment. This will help in the growth of agriculture sector in the country.

III. TOOLS & LIBRARIES

Tools

a. Android Studio
b. Xml
c. Java
d. Gradle
e. Emulator
f. Kotlin
g. GitHub

Libraries

a. Dagger 2
b. Retro Fit
c. Activity Recognition API
d. Event Bus
e. Glide

IV. ALGORITHMS AND ITS WORKFLOW

1. **Linear Regression**: A simple and interpretable algorithm that models the linear relationship between farmer and Machines prices. Provides coefficients that can be interpreted to understand the impact of each feature on the Renting Machine price. Modern agriculture stands to benefit significantly from the integration of data-driven technologies. In this context, we propose the development of a Farm Help Android Application that leverages Linear Regression to provide valuable insights for farmers. The primary objective is to predict and assist in optimizing factors critical to agricultural success, such as crop yield, based on various environmental and soil parameters.

2. **Decision Trees:** The Decision Tree model forms the backbone of the application, offering a structured approach to guide farmers through various scenarios and decision points. The system incorporates machine learning algorithms to analyse historical and real-time data, providing personalized recommendations based on the unique conditions of each farm. The application utilizes a Decision Tree algorithm to model decision processes in agriculture. This algorithm considers factors such as weather conditions, soil health, crop type, and historical data to provide actionable insights.

3. **Random Forest:** The Farm Help Android Application aims to provide intelligent and personalized recommendations to farmers based on the analysis of diverse data sources, including weather patterns, soil conditions, crop types, and historical yield data. The Random Forest algorithm, known for its ability to handle complex datasets and provide accurate predictions, will be employed to create a robust decision support system for farmers.

4. **Gradient Boosting:** In modern agriculture, the integration of technology has become increasingly prevalent, aiming to enhance efficiency and productivity. This paper proposes the development of a Farm Help Android application utilizing Gradient Boosting algorithms to address challenges faced by farmers. The application is designed to support farmers in making informed decisions related to crop management, disease detection, and yield optimization.

5. **Support Vector Machines (SVM):** The agricultural sector plays a pivotal role in sustaining global food security, and technological advancements can significantly enhance efficiency and productivity. This abstract introduces a novel Android application designed to provide intelligent farm assistance using Support Vector Machines (SVM). Support Vector Machines are powerful machine learning algorithms capable of classification and regression tasks, making them well-suited for solving various challenges in agriculture.

6. **Neural Networks:** The primary objective of the application is to provide personalized recommendations to farmers based on real-time data, weather conditions, soil health, and crop-specific requirements. The neural network model implemented in the application is trained on historical data, including crop performance, weather patterns, and soil characteristics. This enables the system to learn and adapt, offering increasingly accurate and relevant suggestions over time.

V. CHARACTERISTICS

1. **User-Friendly Interface:** Intuitive design for easy navigation. Simple and clear instructions for users

2. **Multi-Functionality:** Support for various farm tasks such as planting, harvesting, and irrigation. Livestock management features if applicable. Weather integration for better planning.

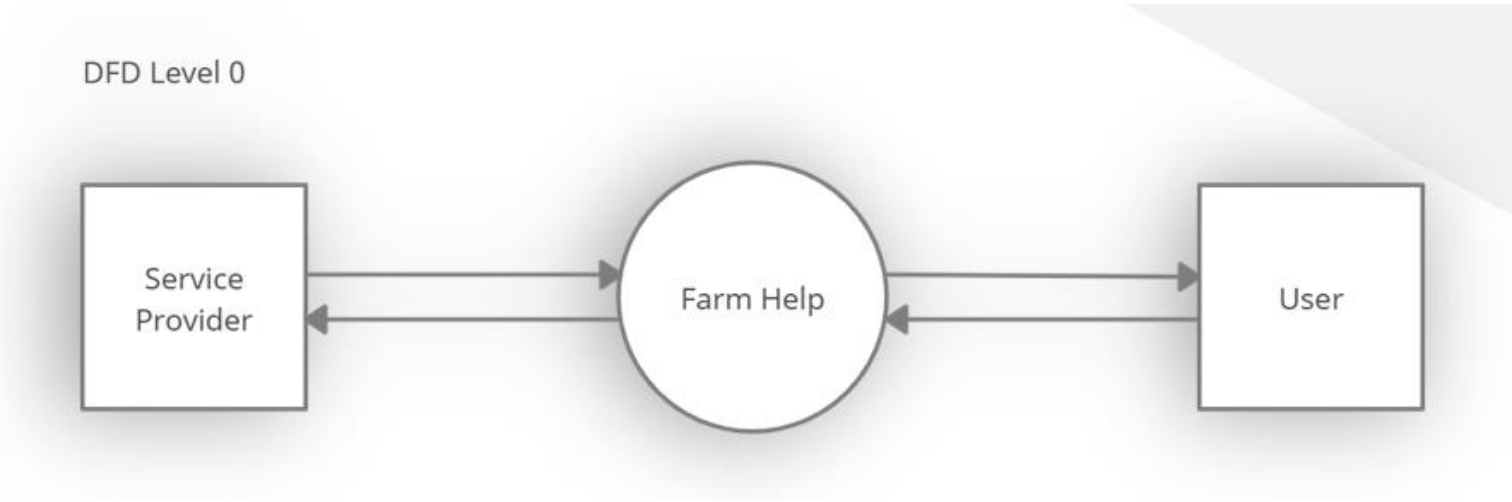
3. **Task Scheduling:** Ability to Provide Fertilizer and organize farm activities. Notifications for upcoming tasks and reminders.

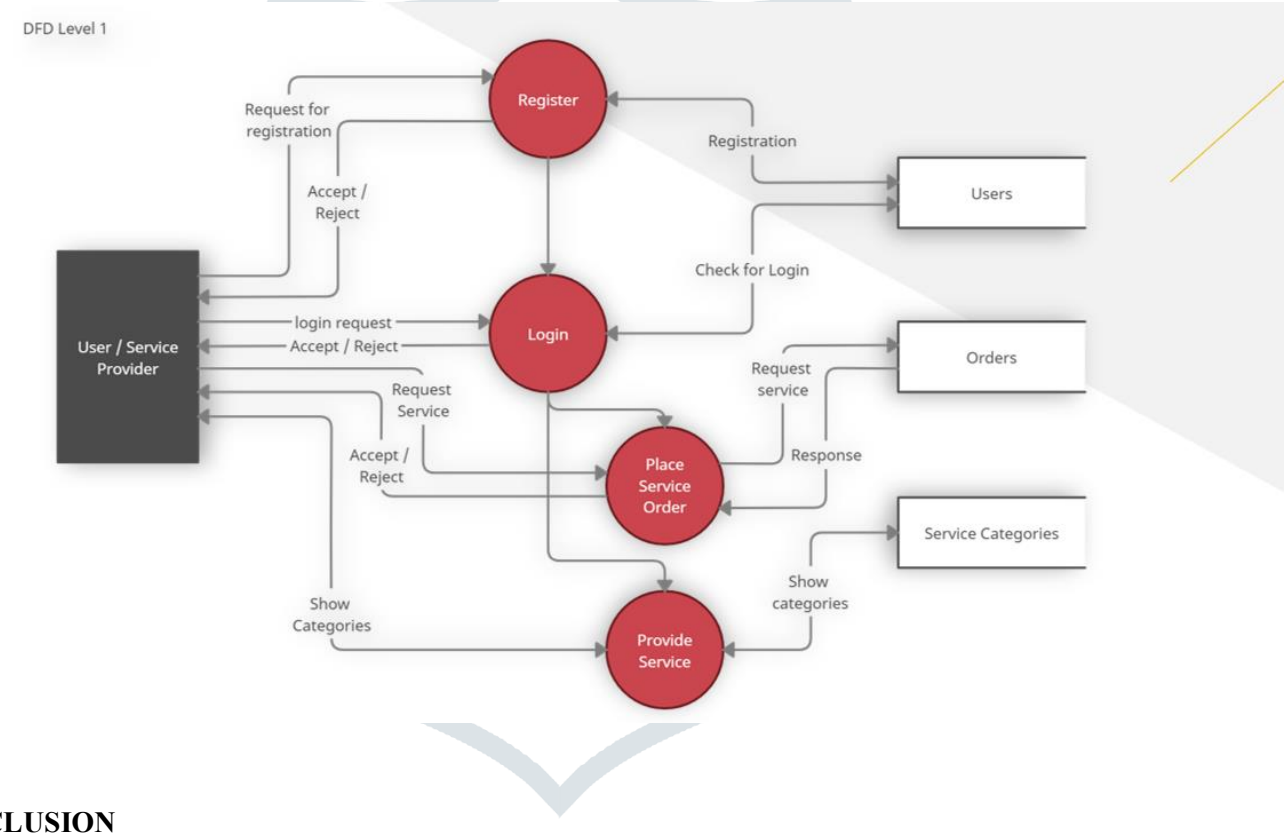
4. **Resource Management:** Inventory tracking for seeds, fertilizers, and equipment. Resource optimization suggestions for cost-effective farming.

5. **Data Analytics:** Data-driven insights for crop performance. Historical data tracking for better decision-making.

6. **Weather Integration:** Real-time weather updates. Weather forecasts for better planning.

VI. FLOWCHART





VII. CONCLUSION

In response to the prevailing challenges faced by farmers, including issues such as scarcity, pending dues, and marketing complexities, this proposal addresses a significant contemporary obstacle—intermediate complications. To alleviate farmer apathy and eliminate reliance on middlemen, an Android application is introduced. The core objective is to enhance the effectiveness and efficiency of agricultural marketing through collaborative efforts involving farmers, middlemen, researchers, and administrators. This proposed solution aims to tackle the escalating problems confronting farmers, encompassing financial constraints, diminished job opportunities, and inadequate access to equipment and machinery. The Android application serves as a comprehensive system, facilitating farmers in finding suitable agricultural jobs, securing affordable machinery rentals, identifying available land for lease, and obtaining essential financial support in the form of investments. The envisioned impact of this initiative is a positive transformation in the agricultural sector, countering its current decline. By leveraging technology, the proposed application aligns with the broader goal of offering streamlined processes and direct connectivity among stakeholders. Emphasizing a holistic approach, the initiative seeks to address various facets of the agricultural ecosystem. This abstract underscore the application's potential to contribute significantly to the overall well-being and growth of the agricultural sector, emphasizing the role of collaborative and integrated technological solutions.

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