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AGROMEET:- Networking for Greener Future

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ABSTRACT: Agromeet is an Android mobile application designed specifically for farmers and agricultural enthusiasts. The app is designed to provide a comprehensive platform for farmers to connect with experts, fellow farmers, and other stakeholders in the agricultural value chain. Agromeet provides a space for farmers to learn, share knowledge, and receive guidance on farming best practices, new technologies, and market trends

I. INTRODUCTION

Agromeet provides a marketplace where farmers can sell their produce, and buyers can browse and purchase directly from the app. This marketplace eliminates the need for intermediaries, reducing transaction costs for both buyers and sellers. Overall, Agromeet is an excellent tool for farmers and agricultural enthusiasts looking to expand their knowledge, connect with other stakeholders in the value chain, and improve their livelihoods. The app provides a comprehensive platform that facilitates learning, networking, and business transactions, all in one place.

II. SCOPE OF PROJECT

The scope of Agromeet, an Android mobile application designed for farmers and agricultural enthusiasts, is quite broad. The app is designed to provide a comprehensive platform for farmers to connect with experts, fellow farmers, and other stakeholders in the agricultural value chain. Here are the key features and areas of scope of Agromeet:

- **Networking:** Agromeet provides a space for farmers to connect with peers, experts, and other stakeholders in the agricultural value chain. Farmers can join relevant groups to connect with other farmers and experts in their field, ask questions, and get advice. This networking aspect of the app is essential for promoting knowledge sharing and collaborative learning among farmers.
- **Information sharing:** Agromeet provides a platform for farmers to access agricultural information and news. The app provides a newsfeed where farmers can access the latest agricultural news and trends. The app also features a chatbot that can answer common questions and provide information on crop and livestock management.
- **Marketplace:** Agromeet features a marketplace where farmers can sell their produce, and buyers can browse and purchase directly from the app. This marketplace eliminates the need for intermediaries, reducing transaction costs for both buyers and sellers.
- **Training and certification:** Agromeet provide access to agricultural training and certification programs. These programs are designed to help farmers improve their skills and knowledge in areas such as crop management, animal husbandry, and marketing.
- **Event management:** Agromeet provides information on upcoming agricultural events. Farmers can use this feature to plan and attend relevant events in their area.



III. LITRATURE SURVEY

Agromeet is a relatively new mobile application designed to connect farmers and agricultural enthusiasts with industry experts, stakeholders, and peers. The app provides a range of features aimed at promoting learning, networking, and business transactions in the agricultural sector. In this literature survey, we review relevant literature on the use of mobile applications in agriculture and provide insights into how Agromeet compares with other similar apps.

Agricultural mobile applications have gained popularity in recent years due to their potential to improve farm management, increase crop yields, and promote sustainable farming practices. Several studies have examined the impact of mobile applications on agricultural productivity, and most have reported positive outcomes. For instance, a study by Sreejith et al. (2020) found that the use of mobile applications in agriculture improved crop yields and reduced production costs. Similarly, a study by Tadesse et al. (2020) showed that mobile applications helped farmers in Ethiopia to access market information and improve their bargaining power.

Agromeet is designed to provide a comprehensive platform for farmers to access information, connect with peers, and engage with industry experts. The app offers a range of features, including a discussion forum, newsfeed, marketplace, and chatbot. These features are similar to those provided by other agricultural mobile applications such as Farmer line, We Farm, and Farm rowdy.

We Farm is a similar app that connects small-scale farmers across the world and allows them to ask and answer each other's questions. The app provides access to expert advice and market information, among other features. Farm crowdly is a Nigerian-based mobile application that connects farmers with investors, allowing them to raise capital for their agricultural ventures.

Compared to these apps, Agromeet stands out due to its focus on networking and community building. The app provides a space for farmers to connect with peers, experts, and other stakeholders in the agricultural value chain. This social aspect of the app is likely to promote knowledge sharing and collaborative learning among farmers, which could lead to improved farming practices and increased productivity.

In conclusion, Agromeet is a promising mobile application designed to connect farmers and agricultural enthusiasts with industry experts, stakeholders, and peers. The app offers a range of features aimed at promoting learning, networking, and business transactions in the agricultural sector. Compared to other similar apps, Agromeet stands out due to its focus on community building and networking. Further research is needed to evaluate the impact of the app on agricultural productivity and livelihoods.

IV. WORKING

Agromeet is an Android mobile application designed to provide farmers and agricultural enthusiasts with a comprehensive platform to connect, learn, and do business. The app has several features that work together to provide value to users. Here is a detailed overview of how Agromeet works:

1. **Registration and profile creation:** Users download the Agromeet app from the Google Play Store and register an account. They create a profile with details such as their name, location, farm size, crops they grow, and livestock they rear.
2. **Networking:** They can connect with other farmers, experts, and stakeholders in the agricultural value chain, ask questions, and get advice. They can also follow other users to stay updated on their activities.
3. **Information sharing:** Agromeet provides a newsfeed where farmers can access the latest agricultural news and trends. The app also features a chatbot that can answer common questions and provide information on crop and livestock management.
4. **Marketplace:** Agromeet features a marketplace where farmers can sell their produce, and buyers can browse and purchase directly from the app.
5. **Training and certification:** Agromeet provide access to agricultural training and certification programs. Users can enroll in these programs to improve their skills and knowledge in areas such as crop management, animal husbandry, and marketing. The app also features a calendar of upcoming training events.
6. **Event management:** Agromeet provides information on upcoming agricultural events. Farmers can use this feature to plan and attend relevant events in their area. They can also create and promote their own events, such as farm tours or workshops.
7. **Notifications:** The app sends notifications to users to keep them updated on new content, messages, and marketplace activity. Users can customize their notification settings to receive updates only for specific groups or topics.
8. In conclusion, Agromeet works by providing a platform for farmers to connect, learn, and do business. The app's networking, information sharing, marketplace, training and certification, event management, and language support features work together to create a comprehensive tool for farmers and agricultural enthusiasts

V. HARDWARE

While developing our project we have used various types of hardware components to major the moisture and temperature in the soil and we can provide better inputs to our user based on this hardware. We have used some hardware specifically like for example DS18B20 temperature sensor; we have used this because we can put it into the dry soil as well as wet soil as it is waterproof.

The hardware components used in the project are listed below along with their uses.

Microcontroller - ESP8266

The ESP8266 is a low-cost, low-power, and highly integrated microcontroller designed for Internet of Things (IoT) applications. It was developed by the Chinese company “Espressif” Systems and was first introduced in 2014. The ESP8266 has a built-in Wi-Fi module, which allows it to connect to a wireless network and communicate with other devices and systems.

The ESP8266 is based on a 32-bit RISC (Reduced Instruction Set Computing) microcontroller architecture, and features a clock speed of up to 80 MHz. It has up to 16 GPIO (General-Purpose Input/Output) pins, which can be used to interface with sensors, actuators, and other devices. It also has an integrated ADC (Analog-to-Digital Converter) and PWM (Pulse-Width Modulation) output, which make it well-suited for a wide range of applications.

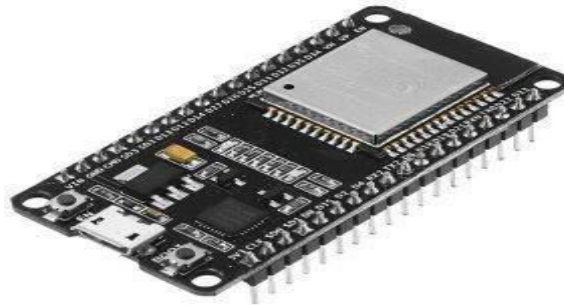


FIG1:Microcontroller-ESP8266

The ESP8266 is programmed using the Arduino Integrated Development Environment (IDE), which is a simple and easy-to-use software platform for developing microcontroller applications. It also supports programming in other languages, such as Lua and Python.

The ESP8266 is widely used in IoT applications such as smart homes, industrial automation, and remote monitoring. The low cost and high integration of the ESP8266 make it an attractive option for developers and hobbyists looking to build IoT applications

2. Moisture - Capacitive Soil Moisture Sensor V2.0

The Capacitive Soil Moisture Sensor V2.0 is a type of sensor used for measuring soil moisture levels. It works based on the principle of capacitance - the ability of two conductive objects to store an electrical charge between them. The sensor consists of two electrodes, which are inserted into the soil to measure the soil moisture content.



FIG 2: Capacitive Soil Moisture Sensor V2.0

The Capacitive Soil Moisture Sensor V2.0 is an improved version of the original sensor, with several key enhancements. The Capacitive Soil Moisture Sensor V2.0 is commonly used in agriculture and horticulture applications, where it is used to monitor soil moisture levels and optimize irrigation and watering schedules. It can also be used in other applications, such as environmental monitoring or soil science research.

3. Temperature - DS18B20 temperature sensor

The DS18B20 is a digital temperature sensor manufactured by Maxim Integrated. It is a versatile and low-cost sensor that can be used in a variety of applications where temperature measurement is required.

The DS18B20 temperature sensor communicates over a 1-Wire bus, which means that multiple sensors can be connected to the same bus using only one data line. Each sensor has a unique 64-bit serial code, which allows it to be identified on the bus.



FIG 3: - DS18B20 temperature sensor

The DS18B20 sensor is accurate to within $\pm 0.5^{\circ}\text{C}$ over a temperature range of -10°C to $+85^{\circ}\text{C}$. It has a resolution of up to 12 bits, which allows for temperature readings with a precision of up to 0.0625°C . The sensor has a wide operating voltage range of 3.0V to 5.5V and consumes very little power, making it suitable for use in battery-powered applications.

The DS18B20 sensor is available in a variety of packages, including TO-92, TO-220, and surface-mount packages. It can be easily interfaced with a microcontroller using a 1-Wire interface, and there are many libraries and code examples available for popular microcontroller platforms such as Arduino.

The DS18B20 sensor is commonly used in applications such as temperature monitoring in industrial automation, HVAC systems, and medical equipment. It is also used in hobbyist projects such as home automation and weather stations. The low cost, accuracy, and ease of use make the DS18B20 sensor a popular choice for temperature sensing applications.

4. Resistor - 4.7kOhm

A 4.7kOhm resistor is a type of passive electronic component that is commonly used in electronic circuits to limit current flow or to divide voltage. The resistance value of the resistor is 4.7 kilohms, which means that it will allow a current of 1 milliampere to flow through it when a voltage of 4.7 volts is applied across its terminals, according to Ohm's law.

The 4.7kOhm resistor is typically color-coded with a yellow, purple, red, and gold band, which indicates the resistance value, tolerance, and temperature coefficient of the resistor. The first two bands (yellow and purple) represent the first two digits of the resistance value (4 and 7, respectively), while the third band (red) represents the number of zeros following the first two digits (which is 1 in this case). The fourth band (gold) represents the tolerance of the resistor, which is typically 5%.

The 4.7kOhm resistor is commonly used in electronic circuits as a pull-up or pull-down resistor, as a current-limiting resistor in LED circuits, or as a voltage-divider resistor. It can also be used in combination with other resistors to create a wide range of resistance values. The 4.7kOhm resistor is widely available and is one of the most commonly used resistors in electronics due to its versatility and low cost.

5. Breadboard

A breadboard is a type of solderless electronic prototyping board used to build and test electronic circuits. It allows components to be easily inserted and removed without the need for soldering, making it ideal for rapid prototyping and experimentation.

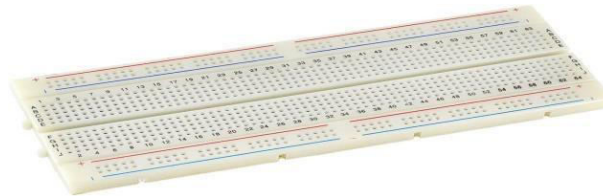


FIG 5: Breadboard

Breadboards come in various sizes, ranging from small 170- point boards to large 830-point boards. The size of the breadboard depends on the complexity of the circuit being built and the number of components needed.

Breadboards are ideal for quickly testing and prototyping electronic circuits without the need for soldering. They are also reusable, allowing components to be easily removed and repositioned. Breadboards are widely used in hobbyist electronics, education, and prototyping industries.

6. Male to male and female to female jumper wires

Male and female jumper wires are types of wire connectors commonly used in electronic prototyping and breadboard circuits. They are used to create temporary connections between electronic components and circuit elements.

Male jumper wires have pins or exposed metal tips at one end that can be inserted into holes or female headers on a breadboard, while the other end is typically left bare for attaching to electronic components or other male connectors.

Female jumper wires have receptacles or sockets at one end that can receive male pins or exposed tips, while the other end is typically left bare for attaching to electronic components or other female connectors.

Both male and female jumper wires come in a variety of lengths and colors, making it easy to organize and differentiate between different connections in a circuit. They are also typically made from flexible stranded wire with a small gauge size, allowing them to be easily bent and maneuvered into place.

Jumper wires are commonly used in breadboard circuits, Arduino projects, and other electronic prototyping applications where temporary connections between components are needed. They are a low-cost and convenient way to quickly build and test electronic circuits without the need for soldering

VI. FUTURE SCOPE

Agromeet is a versatile application that has a wide range of features catering to the needs of farmers and agricultural enthusiasts. The app has tremendous potential for future expansion and development. Here are some possible future scopes for Agromeet:

- **Virtual reality tours:** The app could provide virtual reality tours of farms, allowing farmers to explore different farming practices and techniques from the comfort of their homes. This would be particularly useful for farmers in remote areas who may not have access to physical training programs.
- **Partnerships with research institutions:** Agromeet could partner with research institutions to provide access to the latest agricultural research and technology. This would enable farmers to adopt cutting-edge farming practices and improve their yields.

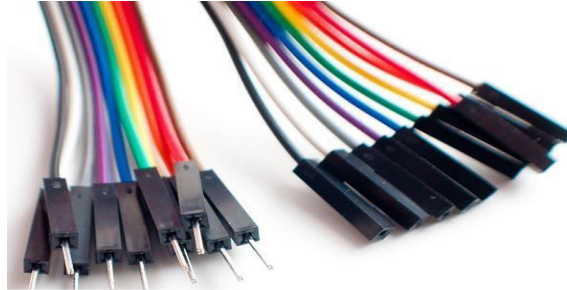


FIG6: jumperwires

- **Integration with e-commerce platforms:** Integrating the app with e-commerce platforms such as Amazon or Alibaba can help farmers to sell their produce globally, providing access to a larger customer base.
- **Offline accessibility:** Providing offline access to the app's content can help farmers who do not have consistent internet connectivity. This would ensure that they can still access the app's resources and information when they need it.
- **Customized weather forecasts:** Customized weather forecasts can help farmers make informed decisions on when to plant or harvest crops. This feature would be particularly useful for farmers in regions with unpredictable weather patterns.
- **Digital payment options:** Integrating digital payment options can help farmers receive payments quickly and securely, reducing the risks associated with cash transactions.

In conclusion, Agromeet has immense potential for future development and expansion. Incorporating features such as integration with IoT and AI, virtual reality tours, partnerships with research institutions, integration with e-commerce platforms, offline accessibility, customized weather forecasts, and digital payment options can further enhance the app's usefulness to farmers and agricultural enthusiasts.

VII. CONCLUSIONS

In conclusion, Agromeet is an Android mobile application designed to provide farmers and agricultural enthusiasts with a comprehensive platform to connect, learn, and do business. The app is developed with the goal of supporting and empowering farmers in their agricultural practices by providing access to valuable resources and information.

Agromeet also aims to promote sustainability in agriculture by providing resources and information on sustainable agricultural practices. This helps farmers make informed decisions that benefit both their businesses and the environment.

Overall, Agromeet is a valuable tool for farmers and agricultural enthusiasts to improve their knowledge, connect with others in the industry, and grow their businesses. It is a great example of how technology can be used to support agriculture and promote sustainability in the sector.

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