INTERNET OF THINGS

SMART FARMER-IoT ENABLED SMART FARMING APPLICATION

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LITERATURE REVIEW

Survey 1:

Zuraida Muhammad, Muhammad Azri Asyraf Mohd Hafez, Nor Adni MatLeh, Zakiah Mohd Yusoff , Shabinar Abd Hamid (2020).

‘Smart Agriculture Using Internet of Things with Raspberry Pi’

The term "Internet of Things" describes the process of attaching equipment, cars, and other items to a network in order to share data (IoT). The Internet of Things (IoT) is being used more often to link things and gather data. Therefore, the usage of the Internet of Things in agriculture is essential. The project's goal is to build a smart agriculture network that is integrated with the internet of things. To deal with Malaysia's changing weather, technology is coupled with an irrigation system. The Raspberry Pi 4 Model B serves as the system's microcontroller. The DHT22 and soil moisture sensor are used to keep track of the local climate's temperature and humidity as well as the soil's level of moisture. The information will be accessible on a computer and a smartphone. Therefore, smart agriculture systems based on Raspberry Pi and the Internet of Things (IoT) have a big impact on how farmers work. Additionally, it will have a positive effect on agricultural productivity. Comparing IoT-based irrigation systems to traditional irrigation systems in Malaysia results in annual savings of about 24.44 percent. This will avoid water waste from daily demands while also saving money on labour costs.

Survey 2:

Divya J., Divya M.,Janani V.(2017)

‘IoT based Smart Soil Monitoring System for Agricultural Production’

Both the economy and the existence of the Indian people depend on agriculture. The goal of

this project is to develop an embedded-based irrigation and soil monitoring system that will lessen the need for manual field monitoring and deliver data via a mobile app. The technique is designed to assist farmers in boosting agricultural productivity. The equipment used to inspect the soil includes a pH sensor, a temperature sensor, and a humidity sensor. Farmers may choose to plant the best crop for the land based on the findings. Wi-Fi is used to transmit sensor data to the field manager, and a mobile app is used to generate crop recommendations. Use of an automatic watering system is necessary when the soil temperature is high. The crop picture is collected and sent to the field supervisor for guidance on pesticides.

Survey 3:

H.G.C.R. Laksiri, H.A.C. Dharmagunawardhana, J.V. Wijayakulasooriya (2019)

"Design and Optimization of loT Based Smart Irrigation System**"**

The creation of an efficient loT-based smart irrigation system is another essential requirement for farmers in the agricultural sector. A low-cost, weather-based smart watering system is created by this research. In order to get started, an efficient drip irrigation system that can automatically adjust water flow to plants based on soil moisture levels must be developed. Then, an IoT-based communication feature is added to this water-saving irrigation system to increase its efficiency. This feature enables a remote user to monitor soil moisture levels and manually control water flow. The system also incorporates sensors for temperature, humidity, and raindrops that have been updated to enable online remote monitoring of these variables. These field weather variables are kept in a distant database in real time. Finally, considering the weather at the moment. To control water distribution under these circumstances, a weather prediction system is used. The suggested smart irrigation system would enable farmers to irrigate their crops more effectively.

Survey 4:

Anushree Math, Layak Ali, Pruthviraj U (2018)

'Development of Smart Drip Irriga- tion System Using IoT'

India is a nation where agriculture is extremely important. In order to maximise yield per unit of area and hence produce optimum production, it is crucial to water the plants carefully. Irrigation is the technique of giving plants a specified amount of water at a particular time. This project's goal is to install a sophisticated drip irrigation system on the National Institute of Technology Karnataka campus to irrigate the plants. The system's primary controller is the open source platform, which is utilised to do this. Numerous sensors have been used to provide the most recent values of the variables that continuously affect the health of plants. Water is delivered to the plants at regular intervals by manipulating a solenoid valve, based on thedata gleaned from the RTC module. The entire irrigation system may be managed and monitored using the website. This website has a feature that lets you manually or automatically regulate how often plants are watered. Using a Raspberry Pi camera that provides live streaming to the webpage, the health of the plants is tracked. Through a wireless network, the controller gets information about water flow from the water flow sensor. The controller examines this data to see if the pipe has any leaks. Weather forecasting is also done to limit the amount of water provided, making it more reliable and effective.

Survey 5:

Dweepayan Mishra, Arzeena Khan, Rajeev Tiwari, Shuchi Upadhaye

'Automated Irrigation System-IoT Based Approach' **(2018).**

Indians rely heavily on agriculture as a source of income, which has a significant effect on the country's economy. In order to increase output and produce products of greater quality, crop development is crucial. Therefore, crop beds with optimum conditions and the right amount of moisture can significantly affect productivity. Streams that run from one end to the other of an

area are common examples of traditional irrigation systems. The delivery of this material has the potential to change the fields' moisture content. The management of the water system can be improved with the use of a tailored watering system. This study suggests a terrain-specific programmable water system that will save human labour while boosting agricultural productivity and water efficiency,An Arduino kit, a moisture sensor, and a Wi-Fi module make up the system. Data is obtained by coupling our test system to a cloud infrastructure. The data is subsequently analysed by cloud services, who then take the required actions.