Smart Agriculture Using Iot

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Abstract - IOT sensors can provide information about agriculture areas and then take action based on the user's input, which makes smart agriculture a developing concept. Thispaper's main contribution is the creation of a system that uses sensors and an Arduino UNO board to keep track of temperature, water content, moisture levels, and even movement that could damage crops if it occurs in an agricultural area. IOT sensors can provide information about agriculture areas and then take action based on the user's input,which makes smart agriculture a developing concept. UtilisingIOT and smart agriculture employing automation, the project attempts to utilise developing technology. Upon development of the hardware, and in accordance with evolving technological needs.

1. INTRODUCTION

Agriculture is very important for living , that's why farming management is also important for increasing the quality and quantity of agriculture products. In now the era of 21st century farmer have access to GPS , soil scanning , IOT , data management and other enough technologies.

The purpose of smart agriculture research is to provide a solid foundation for a farm management decision-support system. Population growth, climate change, and labour are all challenges that smart farming believes must be addressed. This includes everything from crop planting and irrigation to health and harvesting.

To monitor the crop farmer use the sensors (light , humidity , soil moisture, water level , etc) these IOT- based sensors made this smart agriculture form more useful to automate the irrigation the crop . Cameras and sensors detect the changes and perform any changes over it.

Smart agriculture needs to grow and evolve beyond what it is now since doing so will significantly reduce the unfavourable environmental externalities of modern agriculture. Smart cities use connected sensors, lights, and metres from the Internet of Things (IOT) to gather and process data. The cities use this information to enhance infrastructure, public utilities, and services, among other things. Farmers find it challenging to comprehend technical language and how to use technology, but it is also a financially advantageous endeavour.

Problem Statement

To provide the information of changes or insufficient of soil moisture , temperature , humidity in crops , on these details bases it helps to support the decision taking through a wireless sensor network and handle different activities of farms.

The weather has caused the water level to rise. Farmers are frequently diverted, which is bad for agriculture. Using that mobile app, farmers can control the water level in two different ways: automatically and manually. Farmers will feel more at ease as a result. Agriculture takes a lot of time to complete.

Problem Definition

It should utilize minimum resources in terms of hardware and cost. This overcomes the manual operations required tomonitor and maintain the agricultural farms in both automatic and manual modes. It should be able to measure the increase or decrease in level of water as well as moisturein the soil.

2. LITERATURE SURVEY

This paper explains how Internet of effects(IOT) technology has revolutionised every aspect of the life of the average person by making everything smart and intelligent. IOT describes a network of autonomously configuring objects. In addition to perfecting ranch product, the development of IOT- grounded Intelligent Smart Farming bias is also lowering waste and adding cost- effectiveness. The purpose of this study is to suggest a new smart IOT- grounded husbandry system that will help growers gain real- time data(temperature, soil humidity) for effective terrain monitoring. This system will allow growers to exercise smart husbandry and ameliorate their overall yield and product quality.

Brief Introduction of Paper: This paper brings perceptivity to construct a frame for robust working on fields and easy for growers. One of main areas where IOT grounded exploration is going on and new products are launching on everyday base to make the conditioning smarter and effective towards better product is " Agriculture ".

Agriculture sector is regarded as the further pivotal sector encyclopedically for icing food security. Talking of India growers, which are right now in huge trouble and are at inimical position in terms of ranch size, technology, trade, government programs, climate conditionsetc.

3. IMPLEMENTATION

Implementation of IOT in the field of smart agriculture, Despite combating challenges like extreme rainfall conditions, rising climate change, and tilling's environmental impact, the demand for further food has to be met. To meet these adding requirements, husbandry has to turn to new technology. New smart husbandry operations grounded on IOT technologies will enable the husbandry assiduity to reduce waste and enhance productivity. It is the operation of ultramodern ICT(Information and Communication Technologies) into agriculture. Smart farming is based on IOT , smart farming system is built for monitoring the crop field with the help of some special sensors(soil moisture , temperature , humidity , light etc) . This technology is very helpful for farmers , with the help of this farmers can monitor the field condition from anywhere and anytime.

Implementation of Soil moisture sensor in smart agriculture: Soil humidity detectors measure the volumetric water content in soil. Reflected microwave oven radiation is affected by the soil humidity and is used for remote seeing in hydrology and husbandry. movable inquiry instruments can be used by growers or gardeners.

Good irrigation management is made possible by soil moisture sensors. improved crops are produced with improved irrigation management, which also utilises less inputs and boosts profitability. Irrigators can better grasp what's going on in a crop's root zone with the use of soil moisture sensors.

Implementation of Water Level Sensor in smart agriculture: Water force is essential and pivotal to agrarian and ranch affair as well as to our quality of life. A vital part of husbandry is maintaining the water position in a water source, similar as a drag well or water tank. Monitoring a water source's water position, similar as a drag well or water tank, is pivotal to effective water operation. Monitoring the water position in a water source can be used to probe how water periods and to save water. thus, keeping an eye on the water position is pivotal in husbandry. An Arduino UNO board and an Ethernet guard are both used in this prototype attempt to connect to the internet. This has a water position detector.

CONCLUSION

We've designed automated Smart Agriculture system which reduces the time and coffers that's needed while performing it manually. This system uses the technology of Internet of effects. The system also measure humidity of soil and position of water in fields. This system works well in the ideal conditions and farther enhancement can be made when the conditions aren't ideal like proper illumination or lightning.

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