IOT BASED SMART FARMING

Abstract :

As new technologies has been introduced and utilized in modern world, there is a need to bring advancement in the field of agriculture also. Various Researches have been undergone to improve crop cultivation and have been widely used. In order to improve the crop productivity efficiently, it is necessary to monitor the environmental conditions in and around the field. The parameters that has to be properly monitored to enhance the yield are soil characteristics, weather conditions, moisture, temperature, etc., Internet of Things (IOT) is being used in several real time applications. The introduction of IOT along with the sensor network in agriculture refurbish the traditional way of farming.Online crop monitoring using IOT helps the farmers to stay connected to his field from anywhere and anytime. Various sensors are used to monitor and collect information about the field conditions. Collectively the about the farm condition is sent to the farmer through GSM (**global system for mobile communication**) technology.

Keywords: Arduino, IOT, Sensors.

Introduction :

One of the main aspects of human survival is the agriculture which is the main source of food. Unfortunately most of the farmers in our country use traditional way of farming which is a hectic process to analyse data manually related to soil and crops. This can be overcome by modern farming methods. Systems such as IoT sensors and big data analytics are offering chances to reinvent archaic farming practices, creating more cost-efficient processes that produce higher quantities of food with less strain on resources. IoT based smart farming system is built for monitoring the crop field with the help of sensors and automating the irrigation system. The aim is to increase they yields at maximum reducing water consumption and ultimately shift the traditional Agriculture to smart agriculture as well as Precision Agriculture (PA) based on automation and IoT technologies.

LITERATURE SURVEY :

The scenario of decreasing water tables, drying up of rivers and tanks, unpredictable environment present an urgent need of proper utilization of water. To cope up with this use of temperature and moisture sensors at suitable locations for monitoring of crops is implemented .An algorithm developed with threshold values of temperature and soil moisture can be programmed into micro controller based gateway to control water quantity. The system can be powered by Photo voltaic panels and can have duplex communication link based on cellular – Internet interface that allow data inspection and irrigation scheduling to be programmed through web. The technological development in open source software and hardware make it easy to develop the device which can make better monitoring and wireless sensor network made it possible to use in monitoring and control of green house parameter in precision agriculture.

A method to evaluate the use of wireless sensor network used in automating irrigation and data are sent to the web server through wireless communication. The sensors are used to sense the temperature, humidity, moisture for crop monitoring. The irrigation is automated when the sensor reading goes below the threshold values. The farmer is regularly intimated with the field conditions. It also explained that in greenhouses, light intensity control can also be automated in addition to irrigation. Here, the prediction of crop water requirement is not efficient.

Proposed system :

In the proposed system, Crop monitoring is done where sensors are used to collect information in the agricultural field. The different sensors used are temperature and humidity sensor and soil moisture sensor.

The information collected by the sensors is sent to the arduino microcontroller ATmega328.The collected information can be displayed in a LCD display. A webpage is created and the information collected by the sensors are updated periodically in it through Wi-Fi. A GSM module is connected with the microcontroller through which the message about the farm condition is sent to the authorised person.

Conclusion :

In this paper, we proposed a method for efficient crop monitoring for agricultural field. With the application of IOT the datas can be stored and retrieved from anywhere. In this proposed work, the sensor part is limited only for monitoring of cropshence in future it can be automated for irrigation and the system can be enhanced with security of farmland under video surveillence which prevents it from obtruder intrusion. Finally conclude that need to develop on optimal Agri-IoT architecture which is enclosed with low cost, low power consumption of devices, better decision making process, QoS service, optimal performance and it is easy to understand the farmer without knowledge.

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