Iot Based Farm and Monitoring System

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ABSTRACT

In India the involvement of technology in agriculture is not been facilitated by the farmers, so to improve this perception towards technology this project has been put forward. The objective is to hike up the use of internet to reduce all the man power required and to inculcate the usage of e- agriculture in farming process.in addition, involvement of different types of sensors make our project more user friendly. IoT is a network device which connects all the electronic devices that are capable of holding and exchanging data. IoT enables remote access to the physical world from computer based world hence leading to reduce manual interface. It also help in increasing efficiency since it can preserve previous data as history. For minimizing physical work and extraneous stress on farmers we are adopting the technology called IoT, which would serve the need of agriculture for farmers. Irrespective of the location, the connected devices can be viewed and operated online. The use of moisture sensor and the temperature sensor are one of the connected devices, that would help user know the condition of the soil and also these conditions would be stored in the database. Involvement of GSM would send an alert message to the user during the scarcity situation.

Keywords: IOT, farm-monitoring, GSM, sensors.

I. INTRODUCTION

As there is a constant enhancement in the technology the incorporation of the same in every field is more promoted. In agricultural domain the involvement to this technology may help in improving the efficiency and the outcomes.

Few system and researches have been put forward for monitoring and managing of the agricultural courses .The intent of our design is to administer both the monitoring as well as the management process of the field. This system comprises of distinct sensors which would calculate the soil status, hence improving the management technique.

The temperature sensor, water level sensors and moisture sensors are the sensors involved which would measure the water content therefore indicating whether the soil is wet or dry.

Along with measuring the temperature of the soil .These measurement can be viewed online by the user and would be store in the directory for easy future access.

In some cases there may be a situation arises where a motor is on irrespective of the water content of the well , if it is below the mark then alert message through GSM can be send to the user .

II. PROPOSED PLAN

✓ The process of utilizing technology in farming and cultivation require deep knowledge of agriculture process. In order to design and build a precision agriculture that can be widely used by many users and applied in different context.

✓ Designing such a system to improve the state of agriculture that can be used in multiple context is a challenging task and it is too complex of a problem to address in such a broad perspective.

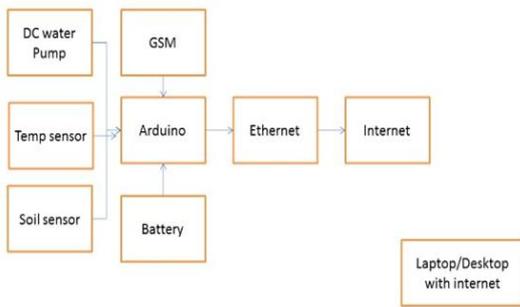✓ this farm monitoring and management system proposed mainly helps in minimising the human involvement in agricultural

Figure 1. A sample line flow diagram showing all the connections.

a. DC water pump -DC water pump is a device that helps in moving fluids and slurries by mechanical action.

b. Temperature sensor - temperature sensor is a device that helps in measuring the temperature through electrical signals.

c. Soil sensor- soil sensor helps in measuring the volumetric content of the soil.

d. GSM- GSM is a mobile communication and it helps in digital cellular.

e. Arduino - Arduino is a open source company that designs and manufactures single board

microcontrollers, kits for building digital devices that can sense and control objects from real world.

f. Battery-battery is a device which helps in providing power to the electrical devices.

g. Ethernet-Ethernet is a interface which is used for connecting multiple electronic devices together.
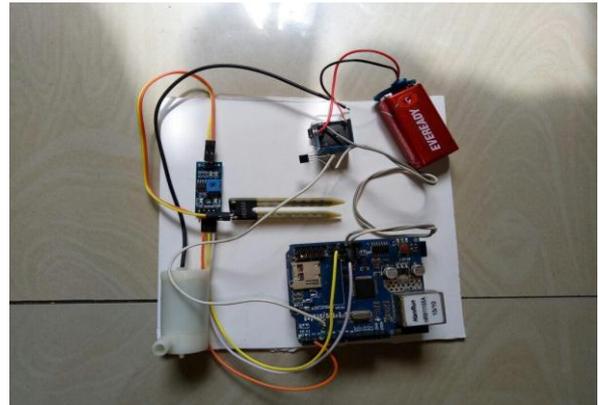
III. WORKING

Figure 2. hardware connections

a. It generate the modern agriculture which is highly knowledge intensive which also requires timely, reliable and accurate information on natural resource endowments.

b. It consists of two detection systems one monitoring and another warning system.

c. Signal send to the controller by sensors, accordingly, the information about the land is updated in the Microcontroller.

d. In case of emergency alert SMS can be passed by GSM and current information are viewed through internet database by using internet.

e. In case of emergency automatic motor has been OFF if the water level is decreased and SMS will send.

IV. RESULTS AND DISCUSSION

By using internet of things majority of farmers were aware about the monitoring and warning detection method in agriculture along with managing the same at the same time. This will facilitate the e-agriculture to accessing the performance of the farmer doing independently. It enables to provide the alert messages and statistical survey report to the farmers by irrespective of location. This study is to provide great potential for improving decision making in agriculture. From this report it extend the agriculture organisation ability to meet the need of its farmers.

V. CONCLUSION

This farm monitoring and management system might prove to reduce the physical work along with a widespread of awareness of the usage of e-agriculture hence improving the performance of the crop yield.

Also, the involvement of gsm in this project enables the farmer to know the crop condition from any location along with an alert message notification during extremes. The use of sensors also enhances this project as they can store the data recorded as the readings in the database which can be accessed as and when required by the user hence making it more user friendly .this prior stored database would help the farmer improve his decision making in agriculture.

VI. REFERENCES

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