

P.A COLLEGE OF ENGINEERING AND TECHNOLOGY-POLLACHI

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SMART AGRICULTURE MONITORING SYSTEM

TITLE : Smart Farmer- IOT Enabled Smart Farming Application

DOMAIN NAME : Internet of things

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ABSTRACT

Agriculture is the science and art of farmers to cultivate the plants. Agriculture was the key to develop the rise of sedentary in human civilization. Agriculture is done manually in ages. IOT plays a important role in agriculture. IOT sensors are capable of providing information about agriculture fields. we have proposed an IOT and smart agriculture system using automation. This IOT based Agriculture monitoring system makes use of wireless sensor networks that collects data from different sensors deployed at various nodes and sends it through the wireless protocol. This smart agriculture using IOT system is powered by Arduino, it consists of Temperature sensor, Moisture sensor, water level sensor, DC motor and GPRS module. When the IOT based agriculture monitoring system starts it checks the water level, humidity ,moisture and pH level. It sends SMS alert to the phone about the levels. Sensors sense the level of water if it goes down, it automatically starts the water pump. If the temperature goes above the level, fan starts. The above things are displayed on the LCD display module and also seen in IOT, where it shows information of Humidity, Moisture and water level with date and time, based on per minute. Temperature can be set on a particular level, it is based on the type crops cultivated. If we want to close the water forcefully on IOT there is button given from where water pump can be fo Remote Monitoring System (RMS) is proposed. Major objective is to collect real time data of agriculture production environment that provides easy access for cultivation and increases the crop yield. By monitoring the field using the IP address Nutrient deficiency in the soil are detected and rectified.

INTRODUCTION

One of the largest livelihood providers in India is Agriculture. Agriculture plays an essential role in supporting human life. The rise in population is proportional to the increase in agriculture production. Basically, Agriculture production depends upon the seasonal situations which do not have enough water sources. To get beneficial results

in agriculture and to overcome the problems, IoT based smart agriculture system is employed. Global and regional scale agricultural monitoring systems aim to provide up-to-date information regarding food production. In IoT-based smart farming, a system is built for monitoring the crop field with the help of sensors like light, humidity, temperature, soil moisture, etc. The farmers can monitor the field conditions from anywhere. IoT-based smart farming is highly efficient when compared with the conventional approach. The proposed IoT based Irrigation System uses ESP8266 NodeMCU Module and DHT11 Sensor. It will not only automatically irrigate the water based on the moisture level in the soil but also send the Data to ThingSpeak Server to keep track of the land condition. Due to the recent advances in sensors for the irrigation systems for agriculture and the evolution of WSN and IoT technologies, these can be applied in the development of automatic irrigation systems. The system will determine the parameters that are monitored in irrigation systems regarding water quantity and quality, soil characteristics, weather conditions, and fertilizer usage and provide an overview of the most utilized nodes and wireless technologies employed to implement WSN and IoT based smart irrigation systems.

LITERATURE SURVEY

An IOT Based Crop-field monitoring an irrigation automation system describes how to monitor a crop field. A system is developed by using sensors and according to the decision from a server based on sensed data, the irrigation system is automated. Through wireless transmission the sensed data is forwarded to web server database. If the irrigation is automated then the moisture and temperature fields are decreased below the potential range. The user can monitor and control the system remotely with the help of application which provides a web interface to user. By smart Agriculture monitoring system and one of the oldest ways in agriculture is the manual method of checking the parameters. In this method farmers by themselves verify all the parameter and calculate the reading. The system focuses on developing devices and tool to manage, display and alert the users using the advantages of a wireless sensor network system. It aims at making agriculture smart using automation and IoT technologies. The cloud computing devices are used at the end of the system that can create a whole computing system from sensors to tools that observe data from agriculture field. It proposes a novel methodology for smart farming by including a smart sensing system and smart irrigator system through wireless communication technology. This system is cheap at cost for installation. Here one can access and also control the agriculture system in laptop, cell phone or a computer.

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