IOT Based Greenhouse Monitoring And Controlling

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Abstract. Greenhouse Automation System is the technical approach in which the farmers in the rural areas will be benefitted by automatic monitoring and control of greenhouse Environment,
It replaces the direct supervision of the human. In this report the different papers have been reviewed and developed the proposed system based on the limitation in the present monitoring system. It also focuses on the Generic Architecture which can be applied for many other Automation Application. Greenhouse is a building where plants are grown in a controlled manner.
Nowadays due to urbanization and lack of land availability there is a great need to construct the Greenhouses which will be reserved mainly for growing crops. With the advancement of technology we can control and monitor the multiple Greenhouse Devices from Home or Control Station

Index Terms **–Microcontroller, Wi-Fi module, Sensors, LCD display, Power Supply.**

I. INTRODUCTION

This project explains the design and implementation of an electronic system based on cloud computing and Internet of Things (IOT) for sensing the climatic parameters in the greenhouse. Based on the characteristics of accurate perception, efficient transmission and intelligent synthesis of Internet of Things and cloud computing, the system can obtain real time environmental information for crop growth and then be transmitted. The system can monitor a variety of environmental parameters in greenhouse effectively and meet the actual agricultural production requirements. Devices such as temperature sensor, light sensor, relative humidity sensor and soil moisture sensor are integrated to demonstrate the proposed system. This project focuses on developing a system that can automatically measure and monitor changes of temperature, light, Humidity and moisture level in the greenhouse. The quantity and quality of production in greenhouses can be increased. The procedure used in our system provides the owner with the details online irrespective of their presence onsite. The main system collects environmental parameters inside greenhouse tunnel. The parameters that are collected by a network of sensors are being logged and stored online using cloud computing and Internet of Things (IOT) together called as Cloud IOT

I. LAYOUT OF PAPER

The paper has been divided into following parts viz, Introduction, Layout of paper Existing system, Proposed system Architecture, Algorithms and Technologies, Acknowledgement, conclusion and References

II. EXISTING SYSTEM

The Existing system provides various recently available greenhouse monitoring systems were studies and found that they are categorized based on various techniques. Some systems are based on the communication media used and others are based on the processor and techniques. There are various communications channels used in different types of embedded systems recently based on GSM based, GPRS, WSN network, etc.

III. Proposed system

In this project there are total six parameters which are temperature, smoke, light, water, motion and humidity. The values of these sensors are given to the controller and controller sends it to the server or to the cloud. It uses http protocol for this. Data sent by the controller is observable through the World Wide Web. Further we are providing the authentication to avoid unauthorized access.

3.1 Proposed System Architecture
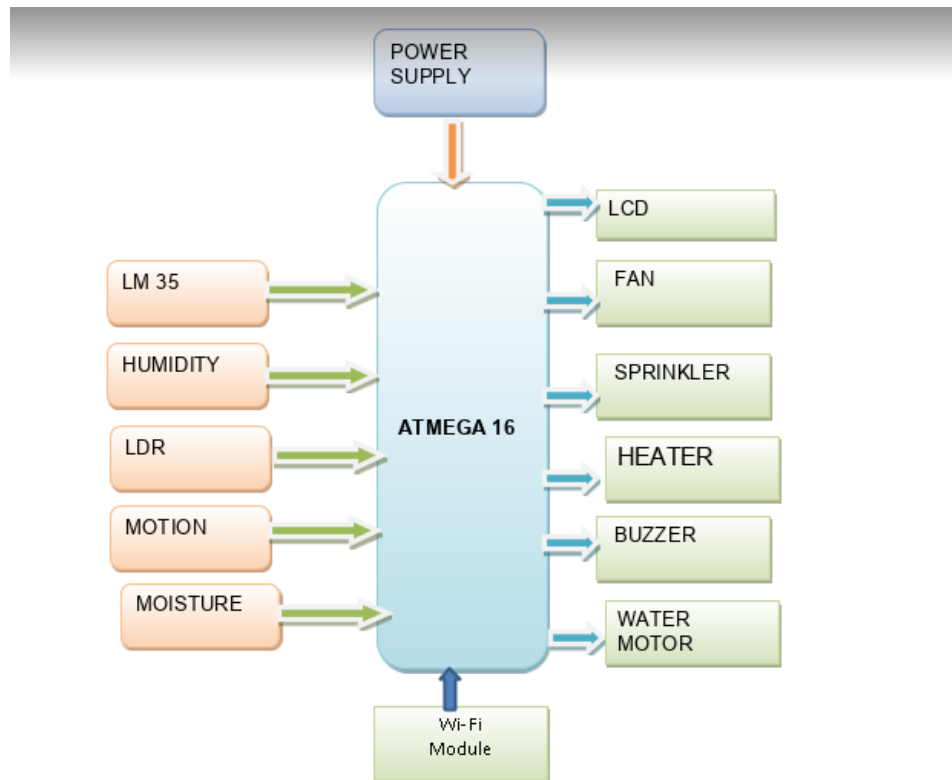
Our system includes total six sensors, which are smoke, temperature, rain-drop sensor and motion detected sensor. All these sensors are sending the data to controller. Our Controller i.e, Atmega-16P, is inputting this data at analog pins A0, A1,A2,A3 and A4. After receiving the data controller converts the analog data into digital by using ADC. After this we are monitoring the data on digital pins of controller. Then this data is transferred to the LCD, which displays the data. Our main of the system is to send this data to the website. This is possible with the help of wifi_-module, which is ESP8266. We are connecting Rx pin of ESP8266 to the Tx pin of AVR. And Rx pin of AVR is connected to the Tx pin of ESP8266. Data is transferred from ESP8266 to the server using HTTP [Hyper Text Transfer Protocol]. This data is fetched to the website using PHP.

3.2. Technologies

IOT Technology is used for this work, In this the data monitored and collected by the sensors is sent to the cloud through Wi-Fi and it is observed by the end user.

V. REFERENCES

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