SMART GREENHOUSE

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ABSTRACT
India is the country is the country which is most commonly agriculture oriented. Hence it is priore to concern towards agriculture field. Now a days by using modern technologies it is possible to achieve the various requirements. Also we can make the greenhouse more and more efficient. Hence to achieve all of this Arduino is used along with the GSM system Number of parameters are to be monitored and controlled. So that greenhouse will become a smart one. Also the quantity of the required crop/ plant can be increased in the smart way.

KEYWORDS: Arduino, smart greenhouse, GSM.

1. INTRODUCTION

From the last few days certain areas in the world which are facing the problem s like shortage of the water , shortage of the food. These problems may occurs due to the natural or man- made reasons. To solve both the problems this project plays an important role. In India most of the people are farmers. Many of them uses the conventional methods for doing a firm. This reduces the overall efficiency of the firm and also causes to the wastage of the effort.   Hence it is very important to work for making the production of food/ crop/ plant in the efficient way.

The title itself indicates that the system checks the moisture content in the soil based on which a pumping motor automatically pumps the water into the field. The project is designed to develop an automatic irrigation system which switches the pump motor ON/OFF on sensing the moisture content of the soil and air. In the field of agriculture, use of proper method of irrigation is important. The advantage of using this method is to reduce human intervention and still ensure proper irrigation. The concept in the impending project can be heightened by integrating it with GSM technology, such that whenever the water pump switches on/off, an SMS is delivered to the concerned person regarding the status of the pump, enabling the user also to control the pump. The main aims of our system presented here is to monitor the moisture content, humidity in the soil , temperature, light intensity in a cultivating field. Based on the soil moisture, pumping motor will be automatically switched on or off through the relay. This saves water as well as the plants can get optimum level of water. This will increase the productivity of the crop. Along with this, required other parameters mentioned above are also monitored and controlled.

2. BLOCK DIAGRAM
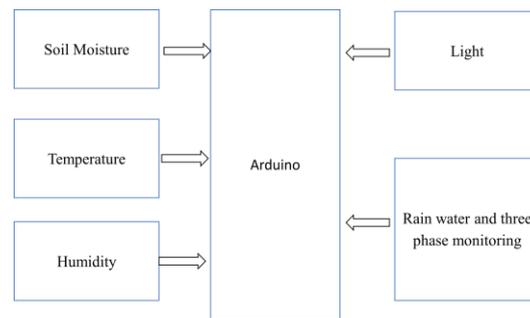
Fig.1. Parameters to be monitored and controlled
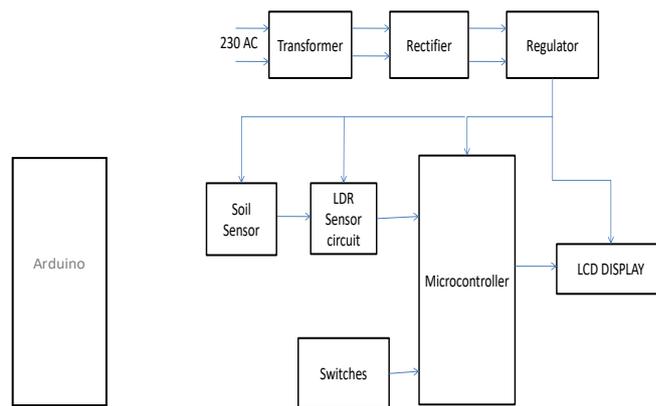
Fig.2.structure of monitoring and controlling of soil moisture

3.BLOCK DISCRIPTION

3.1 ARDUINO

Arduino is an open -source platform used for building electronics projects. Arduino consists of both a physical programmable circuit board (often referred to as a microcontroller) and a piece of software, or IDE (Integrated Development Environment) that runs on your computer, used to write and upload computer code the physical board.

The Arduino platform has become quite popular with people just starting out with electronics, and for good reason. Unlike most previous programmable circuit boards, the Arduino does not need a separate piece of hardware (called a programmer) in order to load new code onto the board – you can simply use a USB cable. Additionally, the Arduino IDE uses a simplified version of C++, making it easier to learn to program. Finally, Arduino provides a standard form factor that breaks out the functions of the micro- controller into a more accessible package.

3.2 SENSORS USED

1.Soil moisture and humidity sensor
2.Temperature sensor
3.Light sensor
4.Fire sensor

3.3ACTUATORS USED

1. Fogger
2. Water pump
3. Cooling fan

In the project Arduino is one which plays an important role. All the surrounding physical data is collected with the help of sensors. As per need of the specific plant/crop in the greenhouse related operations takes place. From the collected data control signals   generated by the Arduino. As per the need of plant related actuators started to performs. In this way the plant get fulfilled with required conditions.

System is connected with GSM. So that person gets communicate instantly for the sack of advanced simplicity.

4.PROJECT PHOTO
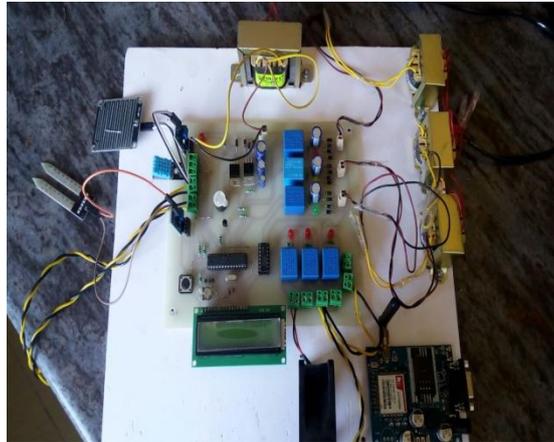
5.CONCLUSION AND FUTURE SCOPE

The project is concerned towards the monitoring and controlling of the numbers of the parameters in the greenhouse. All the performances are to be carried out with the help of modern technologies. (i.e. like Arduino, GSM)

Since the project helps to improve the production of the particular crop, in future we can also concentrate towards increasing the quality and quantity of the crop. Also the impact of environmental effect will also be less.

ACKNOWLEDGEMENT

REFERENCES

I.   "Automatic Irrigation System On Testing Soil Moisture Content." R. Vagulabranan, M. Karthikeyan, V. Sasikala: whose created an idea of an automated irrigation mechanism which turns the pumping motor ON an OFF on detecting the moisture content of the earth.

II.   "Greenhouse Monitoring And Control System Based On Wireless Sensor Network'' System Based On Wireless Sensor Network'' Dr. Marwa Mekki , Osman Abdallah, Moez Eltayeb, Amin Babiker whose created an idea of an wireless sensor networks used to monitor and control humidity, temperature and radiation leakage in greenhouse.

III. IoT based Smart Greenhouse Ravi Kishore Kodali, Vishal Jain and Sumit Karagwal Department of Electronics and Communication Engineering National Institute of Technology, Warangal.