

AUTOMATED PLANT WATERING SYSTEM BY USING IoT

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Abstract:

Automation of farms activities can transform agricultural domain from being the manually and static intelligent and dynamic leading to moreproduction with less human supervision. Irrigation is the synthetic application of water to thatsoil. There are certain problem associated with it like, Over Irrigation, Under Irrigation, Farm Lands & Fields situated miles away from your home etc. This Study proposes an automated irrigation system which displays and maintains the desired soil moisture content via automatic watering.

Keywords---Automatic Watering System, Arduino-Board, Soil Moisture Sensor, Relay.

I. INTRODUCTION

With India's population crossing 1.5 billion in 2019, a balance between the optimum population growth and a healthy of nation is far to be achieved. The rising population, it's a need for increased agricultural production. Irrigated agriculture has been an extremely useful source expand agricultural production. The initial aim of this project is to aid the farmers and reduce their work. This module can be implemented in perennial plant irrigation farm and gardening farm.

humidity and light to create a savvy irrigation framework.

II. LITERATURE SURVEY

Paper no. [4] It has genius represented a framework that is extremely essential and doesn't convey anything new to the table. It utilizes a structure it has sensors for moisture, temperature, and humidity, and utilizations Arduinoto execute its capacities. It is incompleteautomates as the client needs to keep a mind the water dimension of the framework. This framework utilizes a GSM module for correspondence.

Paper no. [5] Proposes a strategy that utilize different sensors i.e. Temperature, moisture,

III.FLOW CODE OF SYSTEM PROGRAM

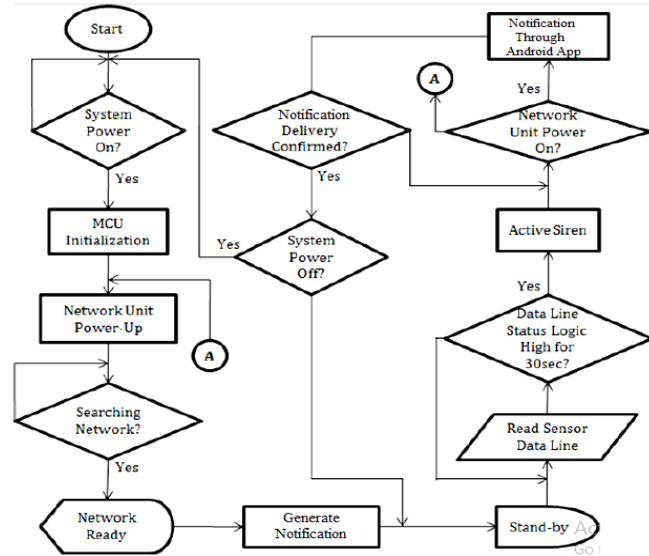


Fig 1: Flow chart

IV. COMPONENT

A. Arduino Microcontroller

Arduino is an open-source electronics platform based on easy-to both hardware and software. Arduino boards are able to reads inputs – light on a sensor, a finger on a button – and turn it into an output – activating a motor, turning on an LED. A microcontroller is a small computer on only one integrated circuit. In modern specification, it is a system on a chip. It include everything require to support the microcontroller, easy to use the USB cable or power it with a AC to DC adapter or battery is connected to a computer designs.

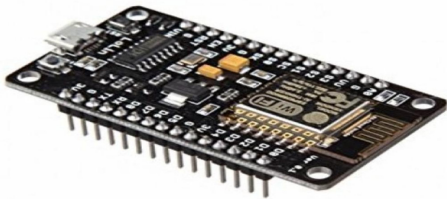


Fig a: Arduino Microcontroller

B. Soil Moisture Sensor

Soil moisture sensors measure the volumetric water accessory in soil. Since the direct gravid measurement of open soil moisture need for particular purpose, removing, rainless and heavy of a sample, soil moisture sensors measure the volumetric water content indirectly by using some other property of the soil, such as electrical opposition, dielectric constant, or behaving with neutrons, as a proxy for the moisture content.

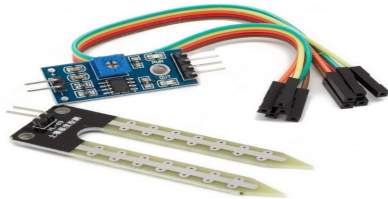


Fig b: Soil Moisture Sensor

C. Temperature and Humidity Sensor

The DHT11 Temperature and Humidity sensor is used. The total amount of water vapour in air is defined measure of humidity. Relative humidity is calculated because when there is a change in temperature, relative humidity also changed. The temperature and humidity alteration occur before and after irrigation.

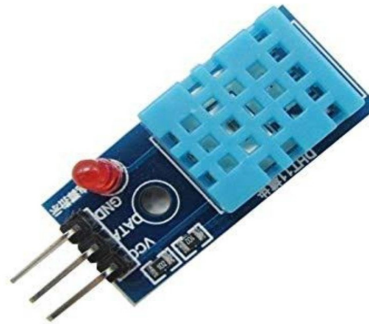


Fig c: Humidity and Temperature Sensor

V. Proposed System

In this paper proposed agricultural field is facing lots of problems due to lack of water resources. In order to aid the farmers to overcome the difficulties, smart irrigation structure has been used. In this system, various sensors such as pH, soil moisture and DHT11 are connected to the input pins of Arduino microcontroller. The sensed values from the sensors are shown in LCD screen. If the sensed value move across the threshold values set in the program, the pump will be automatically switched ON/OFF by the relay circuit and it is connected to the driver circuit which aid to switch the voltage.

The farmer will be intimated about the current field condition through Wi-Fi module and also updated in the mobile app. By using in this system, the farmer can access the details about the situation of the field anyplace and any time.

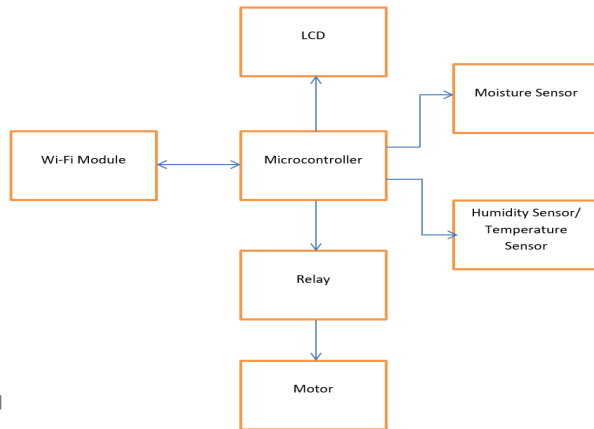


Fig 2: System Architecture

VI. CONCLUSION

A system to monitor moisture levels in the soil is presented. The proposed system can be used to switch on/off the water pump according to soil moisture levels thereby automating the process of irrigation. The system uses information from soil moisture sensors to irrigate soil which helps to prevent over irrigation or under irrigation of soil thereby avoiding crop damage.

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Table no.1: Comparative Analysis

Sr. No.	Name	Merit	Demerit
1	A crop monitoring system based on wireless sensor network	Improve the performance of irrigation system	Difficult to understand
2	Wireless lysimeters for real time online soil water monitoring	Good approach explained	Time consuming
3	Automated plant watering system using IoT	This makes increase in productivity and much land will be irrigated	It has boundations for a distance because of using Wi-fi module.

REFERENCES

1. Ravi Kishore Kodali, Archana Sahu (2016) "An IoT based soil moisture monitoring on Losant platform "2nd International Conference on Contemporary Computing and Informatics (IC3I)IEEE Press. Pages: 764 – 768 Year: 2016.
2. V. Vijayhari Ram, Vishal, S.Dhanalakshmi, Archana Sahu, P.Meenakshividya,(2015) "Regulation of water in agriculture field using Internet of Things" IEEE Technological Innovation in ICT for Agriculture and Rural Development (TIAR). Pages: 112 – 115 Year: 2015
3. D. K. Sreekantha; Kavya A. M. (2017) "Agricultural crop monitoring using IOT - a study" 11th International Conference on Intelligent Systems and Control (ISCO). pages: 134 – 139 Year: 2017.
4. P. Rajalakshmi, S.Devi Mahalashmi (2016) "IoT based crop-field monitoring and irrigation automation"10th International Conference on Intelligent Systems and Control (ISCO).IEEE Press. Year: 2016 Pages: 1 – 6
5. Intelligent Irrigation System ans IOT based Approach, Dr. M. Newlin, RajKumar, S. Abinaya, Dr. V. Venkatesa Kumar.