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**Department of Computer
Science and Engineering**



**‘ A SYNOPSIS REPORT ON THE
PROJECT ENTITLED’**

TOPIC-

**“AUTOMATED IRRIGATION
SYSTEM USING INTERNET OF
THINGS”**

CONDUCTED BY-

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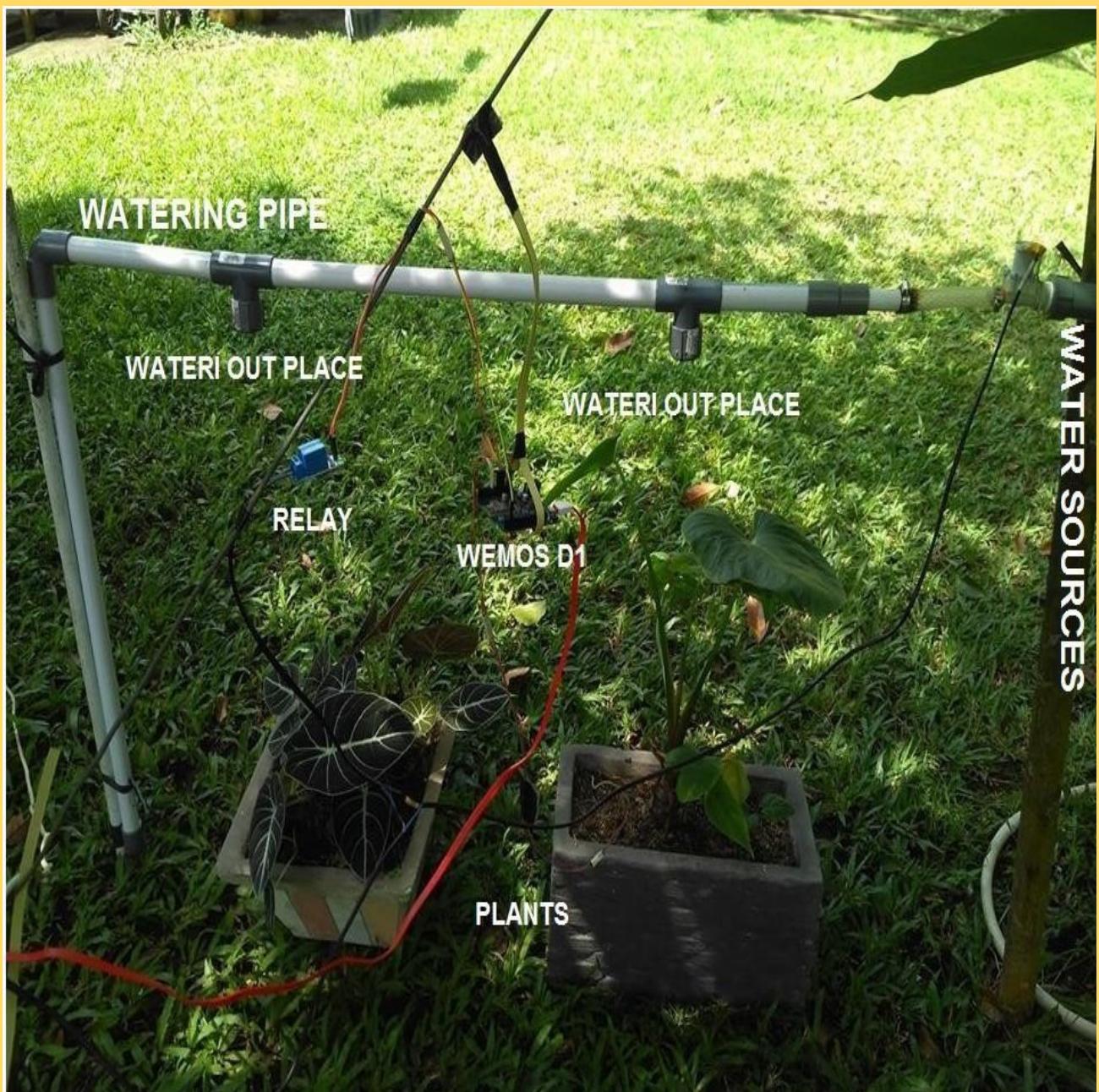
ACKNOWLEDGMENT

**I AM TAKING THIS
OPPORTUNITY TO
ACKNOWLEDGE THEIR**

**A PROJECT IS A BRIDGE BETWEEN THEORETICAL AND PRACTICAL
LEARNING AND WITH THIS THINKING I WORKED ON THE PROJECT AND MADE IT
SUCCESFULL, DESIGNINING AND MAKING THIS PROJECT
CREATIVE.**

INTRODUCTION ;

The Internet of Things (IoT) is a technology where in a mobile device can be used to monitor the function of a device. The Internet of Things (IoT) is concerned with interconnecting communicating objects that are installed at different locations that are possibly distant from each other

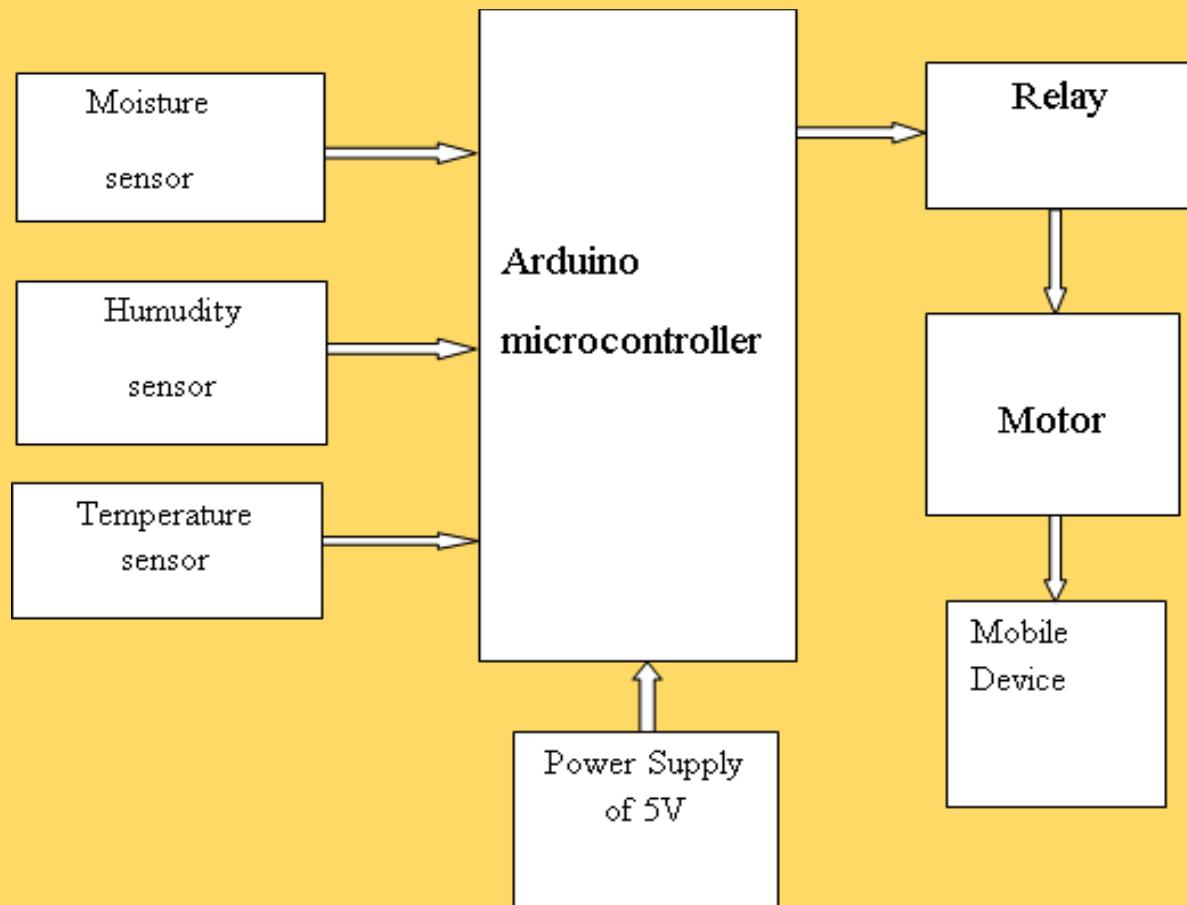


KEYWORDS: Internet of things (IoT), Arduino, Temperature sensor, Soil moisture sensor, And Humidity sensor.

ADVANTAGE OF SMART IRRIGATION SYSTEM-;

1. In this paper, soil moisture sensor, temperature and humidity sensors placed in root zone of plant and transmit data to android application. Threshold value of soil moisture sensor that was programmed into a microcontroller to control water quantity.
2. This proposed paper is arduino based remote irrigation system developed for the agricultural plantation, which is placed at the remote location and required water provides for plantation when the humidity of the soil goes below the set-point value.
3. Microcontroller based Controlled Irrigation System for Plantation” In this paper old generation with lesser memory microcontroller is used to control the system but proposed system made use of arduino yun board which is user friendly and it helps to dump the programs easily
4. A wireless application of drip irrigation automation supported by soil moisture sensors” in this paper irrigation is carried out using soil moisture values but extend to this proposed system displays temperature and humidity values

PROPOSED SYSTEM;



Block Diagram of Automatic Irrigation System

The block diagram of smart irrigation system with IoT. Farmers start to utilize various monitoring and controlled system in order to increase the yield with help of automation of an agricultural parameters like temperature, humidity and soil moisture are monitored and control the system which can help the farmers to improve the yield.

This proposed work includes an embedded system for automatic control of irrigation. This project has wireless sensor network for real-time sensing of an irrigation system.

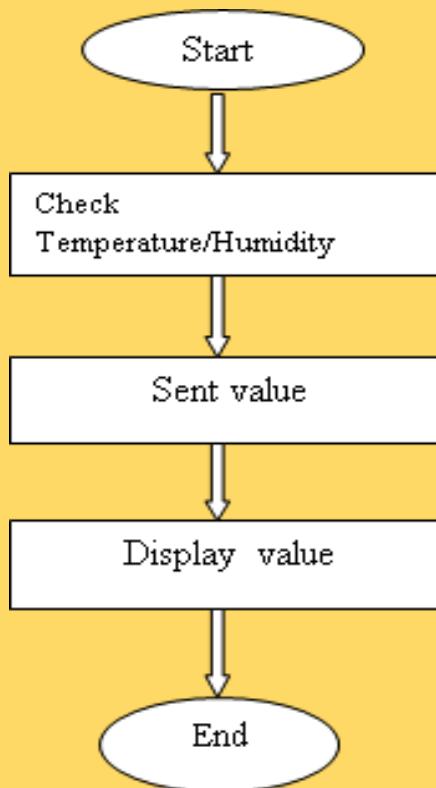
OBJECTIVE OF THE PROJECT-;

The main objective of this project is to provide an automatic irrigation system thereby saving time, money & power of the farmer. The traditional farm-land irrigation techniques require manual intervention. With the automated technology of irrigation the human intervention can be minimized.

HARDWARE DISCRIPTION-;

1. TEMPERATURE AND HUMIDITY SENSOR;

shows the sensed values of temperature and humidity.

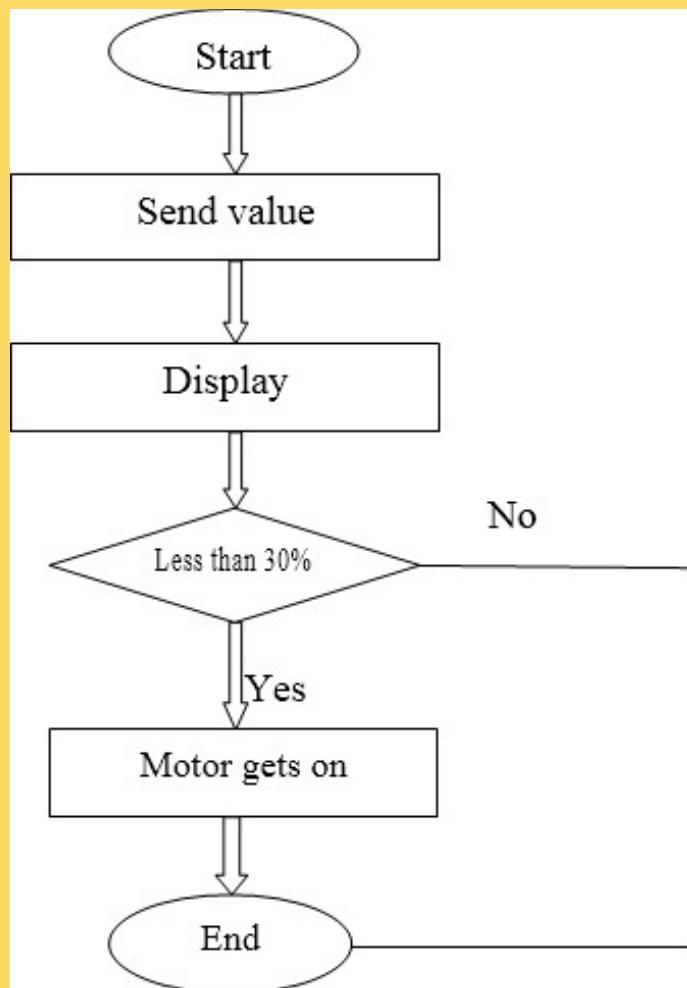


Flowchart of Temperature/Humidity Sensor

The DHT11 is a basic, digital temperature and humidity sensor. It uses a capacitive humidity sensor and a thermistor to measure the surrounding air, and spits out a digital signal on the data pin(no analog pins needed).It is simple to use, but requires careful timing to grab data. Humidity sensors are used for measuring moisture content in the atmosphere. Then current temperature, humidity values are send to the microcontroller, those values will display in the users android app.

2. SOIL MOISTURE SENSOR;

shows the procedure of displaying soil moisture value



Flow chart of Soil moisture sensor

Soil moisture sensors measure the water content in soil. Moisture in the soil is an important component in the atmospheric water cycle. Sensor module outputs a high level of resistance when the soil moisture is low. It has both digital and analog outputs. Digital output is simple to use, but it is not as accurate as analog output based on moisture level motor gets turn on/off automatically.

3. MOISTURE SENSOR;



Flow chart of moisture sensor;

The working of the soil moisture sensor is pretty straightforward.

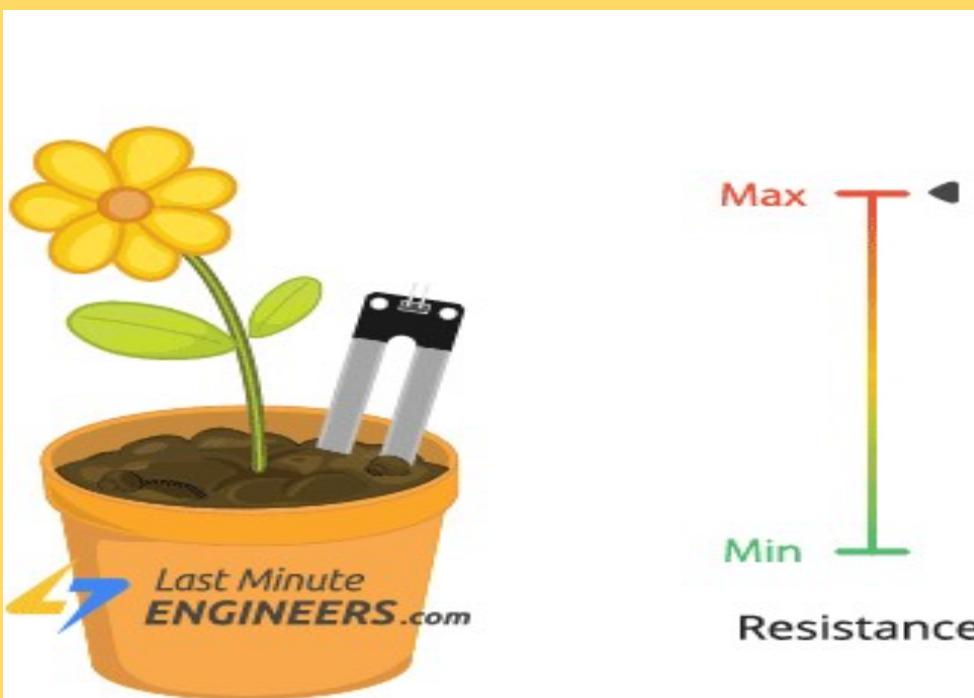
The fork-shaped probe with two exposed conductors, acts as a variable resistor (just like a potentiometer) whose resistance varies according to the water content in the soil.

This resistance is inversely proportional to the soil moisture:

- The more water in the soil means better conductivity and will result in a lower resistance.
- The less water in the soil means poor conductivity and will result in a higher resistance.

The sensor produces an output voltage according to the resistance, which by measuring we can determine the moisture level.

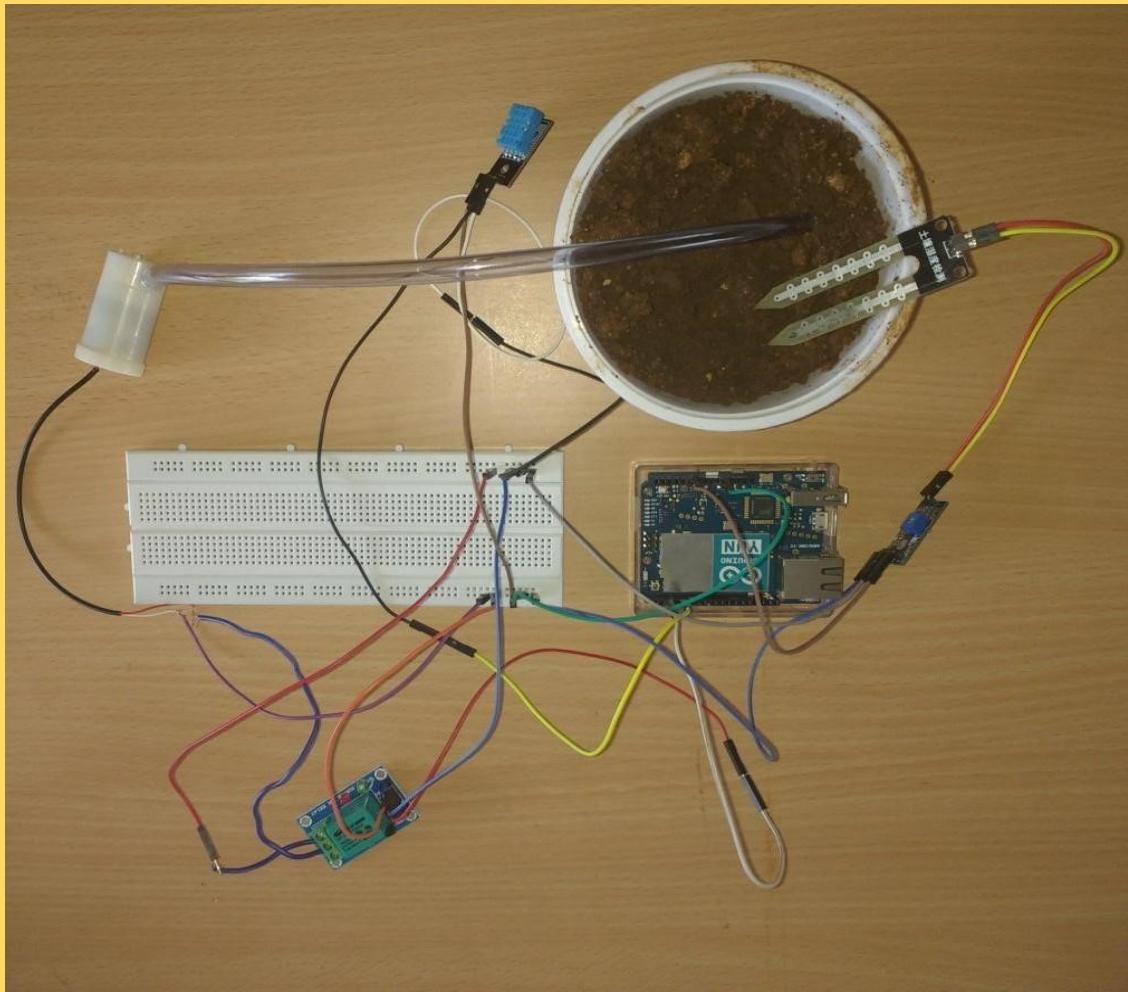
Working of this sensor:



A small charge is placed on the electrodes and electrical resistance through the sensor is measured. As water is used by plants or as the soil moisture decreases, water is drawn from the sensor and resistance increases. Conversely, as soil moisture increases, resistance decreases.

The soil moisture sensor consists of two probes which are used to measure the volumetric content of water. The two probes allow the current to pass through the soil and then it gets the resistance value to measure the moisture value.

PROTO TYPE OF THE SYSTEM-;



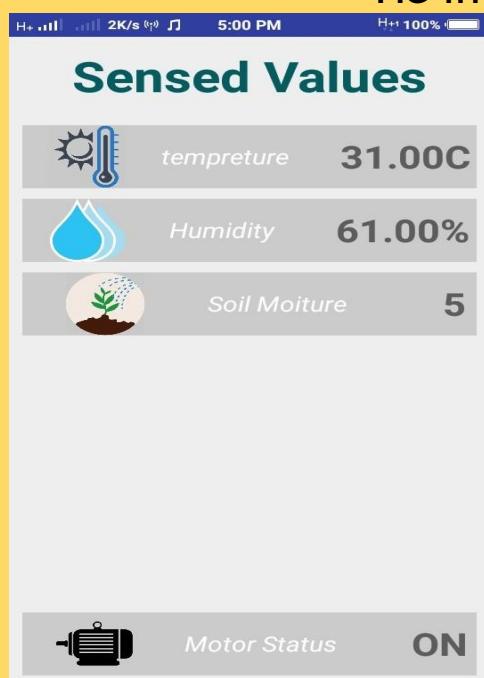
: Prototype of smart Irrigation System

shows the prototype of automatic irrigation system. The microcontroller arduino is connected to temperature sensor, soil moisture sensor, humidity sensor, relay and motor. These sensors sense the various parameter of the soil, motor is used to provide water to the land. And relay is used control the motor.

OUTCOMES FROM PROPOSED SYSTEM;



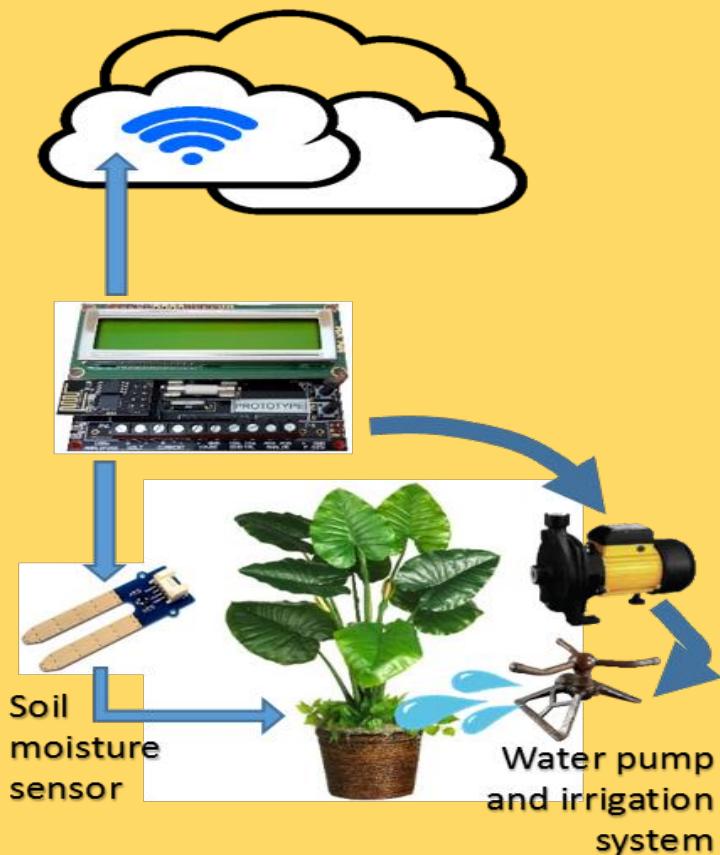
FIG 1.1,



Sensed values displayed on user android application

FIG 1.2,

CONCLUSION OF THIS PROJECT;



CONCLUSIONS

- The smart irrigation system is **feasible and cost effective** for optimizing water resources for agricultural production.
- This irrigation system allows cultivation in places with **water scarcity** thereby improving sustainability.
- It proves that the use of water can be diminished.
- The use of **solar power** in this system is significantly important for organic crops.

MOHIT KUMAR SHARMA

SEMESTER 2

BE CSE



THANK YOU ;.

**LINK OF TINKER CAD FOR PERFORMING THIS
PROJECT ON IT-**

[http://www.tinkercad.com/things/dgDDwmyFdBs-
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