SMART FARMING STICK

ADD PROJECT
SUBMITTED TO

RAMAIAH INSTITUTE OF TECHNOLOGY
(Autonomous Institute, Affiliated to VTU)

Bangalore – 560054

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As part of the Course **ANALOG AND DIGITAL DESIGN**

SUPERVISED BY
Faculty
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RAMAIAH INSTITUTE OF TECHNOLOGY

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Department of Computer Science and Engineering

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CERTIFICATE

This is to certify **KANWALDEEP SINGH SALUJA (1MS16CS046)**, **KESHAVA PRANATH K (1MS16CS048), GAURAV KARKAL (1MS16CS034), K DHANUSH REDDY (1MS16CS042)** have completed the **"SMART FARMING STICK"** as part of ADD PROJECT. We declare that the entire content embodied in this B.E. 3rd Semester report contents are not copied.

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Evaluation Sheet

Sl. No	USN	Name	Content and Demonstration (16)	Speaking Skills (1)	Teamwork (1)	Neatness and care (1)	Effectiveness & Productivity (1)	Total Marks (20)
1.	1MS16CS046	KANWALDEEP SINGH SALUJA						
2.	1MS16CS048	KESHAVA PRANATH K						
3.	1MS16CS034	GAURAV KARKAL						
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Abstract

It is a smart farming stick based on IoT (Internet of things) technology which has brought revolution to each and every field of common man's life by making everything smart and intelligent. Aim of this project is to propose a novel smart IoT based agriculture stick assisting farmers in getting live data (Temperature, soil moisture, Sunlight) for efficient environment monitoring which will enable them to do smart farming and increase their overall yield and quality of products. The agriculture stick being proposed via this project is integrated with Arduino technology, breadboard mixed with various sensors. Bluetooth module to obtain data on android phones through App.

INTRODUTION

Smart farming based agriculture IoT stick is regarded as IoT gadget focusing on live monitoring of environmental data in terms of temperature, moisture and other types depending on sensors integrated with it. Agricultural IoT stick provides the concept of "plug & sense" in which farmers can directly implement smart farming by as such putting the stick on the field and getting live data feeds on various devices like smartphones, tablets etc. and data generated via sensors can be easily shared anywhere and viewed by agriculture consultants remotely via cloud computing technology.

LITERATURE SURVEY

Some of the papers we went through to understand the project are:

1) Ashton, K. (2009). That 'internet of things' thing. RFiD Journal, 22(7), 97-114.
2) Atzori, L., Iera, A., & Morabito, G. (2010). The internet of things: A survey.Computer networks, 54(15), 2787-2805.
3) Bahga, A., & Madisetti, V. (2014). Internet of Things: A Hands-on Approach. VPT.

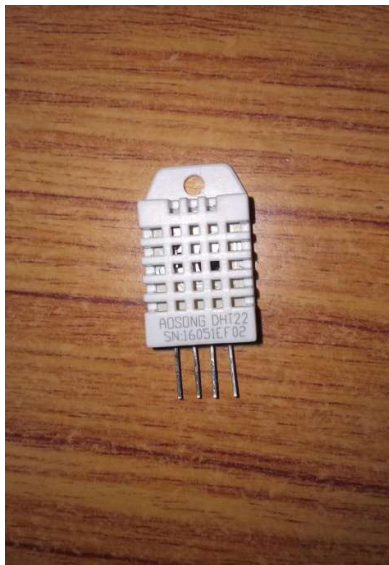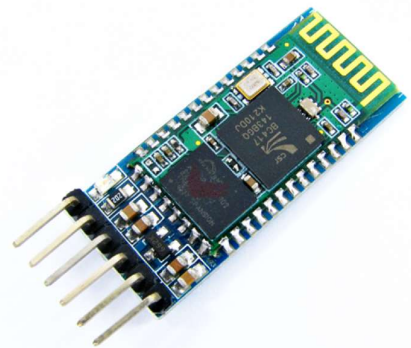# Components Required

Light Dependent Resistor (LDR) with comparator circuit

Soil moisture sensor (FC-28)


Unified humidity and temperature sensor (DHT22)

Bluetooth Module (HC-05)

IMPLEMENTATION

```
#include<DHT.h>
#include<SoftwareSerial.h>
int LDRpin = A0;
int DHTpin = 2;
int Moistpin = A1;
DHT dht;
SoftwareSerial BTSerial(10, 11);
void setup()
{
 pinMode(9, OUTPUT);
 digitalWrite(9, HIGH);
 Serial.begin(9600);
 BTSerial.begin(9600);
 dht.setup(DHTpin);
}
void loop()
{
 printHumidity();
 BTSerial.print(", ");
 printTemperature();
 BTSerial.println(", ");
 printIntensity();
 BTSerial.print(", ");
 printMoisture();
 BTSerial.println();
 delay(5000);
}
void printHumidity()
{
 BTSerial.print("Humidity: ");
 BTSerial.print(dht.getHumidity());
 BTSerial.print("%");
}
void printTemperature()
{
 BTSerial.print("Temperature: ");
 BTSerial.print(dht.getTemperature());
 BTSerial.print(" C");
}
void printIntensity()
{
 float LDRvalue=analogRead(LDRpin);
 float vout=LDRvalue*5/1024;
 float lux=50*(5-vout)/vout;
 BTSerial.print("Light Intensity: ");
 BTSerial.print(lux);
 BTSerial.print(" lux");
```

```
}
void printMoisture()
{
  float moisture = analogRead(Moistpin);
  moisture=map(moisture,1023,483,0,100);
  BTSerial.print("Moisture: ");
  BTSerial.print(moisture);
  BTSerial.print("%");
}
```

RESULTS AND DISCUSSION
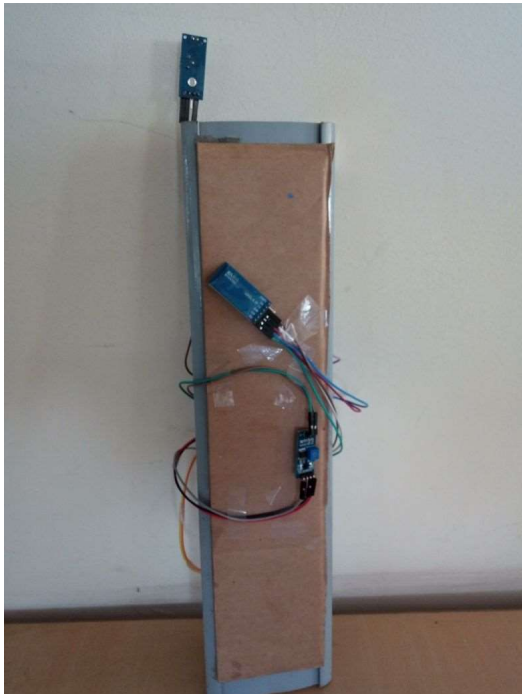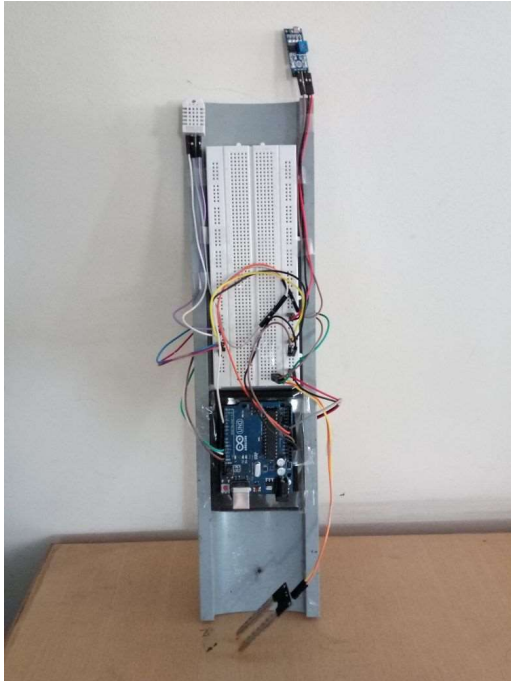
CONCLUSION

Smart Farming Enabled: IoT Based Agriculture Stick for Live Monitoring of Temperature and Soil Moisture has been proposed using Arduino, Cloud Computing and Solar Technology. The stick has high efficiency and accuracy in fetching the live data of temperature and soil moisture. The Agriculture stick being proposed via this paper will assist farmers in increasing the agriculture yield and take efficient care of food production as the stick will always provide helping hand to farmers for getting accurate live feed of environmental temperature and soil moisture with more than 99% accurate results.

REFERENCES

1) https://github.com/adafruit/DHT-sensor-library

2) http://www.instructables.com/id/IoT-Based-Smart-Farming-Stick-Using-Arduino-and-Cl/

3) https://github.com/nethoncho/Arduino-DHT22

4) https://github.com/Apollon77/I2CSoilMoistureSensor