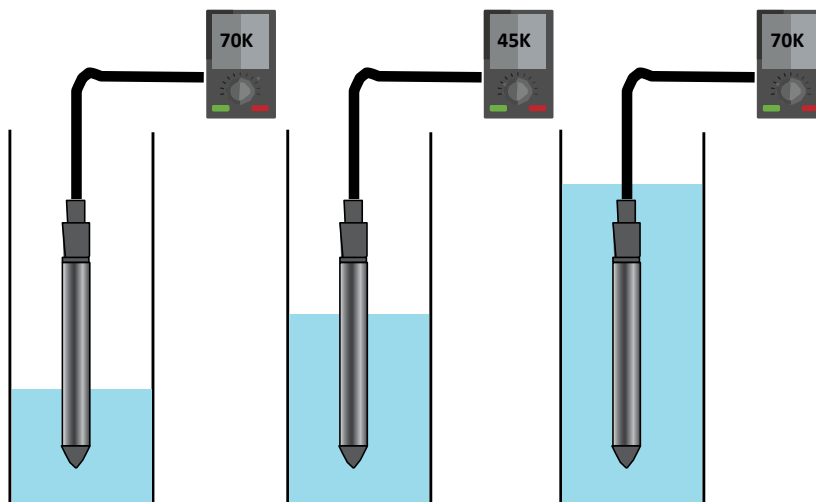


ACTIVITY CARD - 3

WATER LEVEL SENSOR

Introduction

Water Level sensor works on the principal of conduction. When the sensor is immersed in water or any other conductive liquid, the resistance of the sensor changes. This in turn produces an analog voltage signal which is dependent on the level of water. As shown in below figure, depending on the level of water the resistance of water level sensor decreases. For example, if level of the water is high, it measures low resistance. That resistor can be measured by using multimeter.



Objective:

During this activity, you will help students to achieve following objectives:

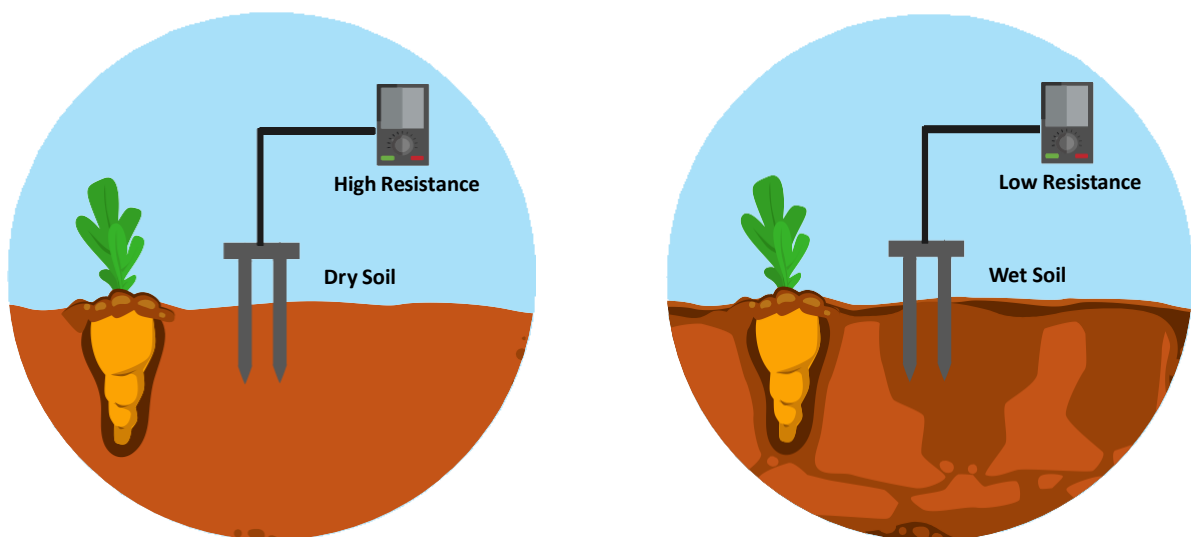
- Understanding principle and operations of Water Level sensor.
- Design algorithm and flowchart to sense water level using Water Level sensor.
- Programming Water Level sensor using Arduino API for Intel Genuino.
- Interfacing Water Level sensor with Intel Genuino using analog pin A0.

ACTIVITY CARD - 4

SOIL MOISTURE SENSOR

Introduction

Soil moisture sensor has two probes, and the resistance between the two probes is determined by the moisture in the soil. As shown in below figure, more the moisture, less is the resistance and vice- versa. This change in resistance can be measured by using multimeter.



Objective:

During this activity, you will help students to achieve following objectives:

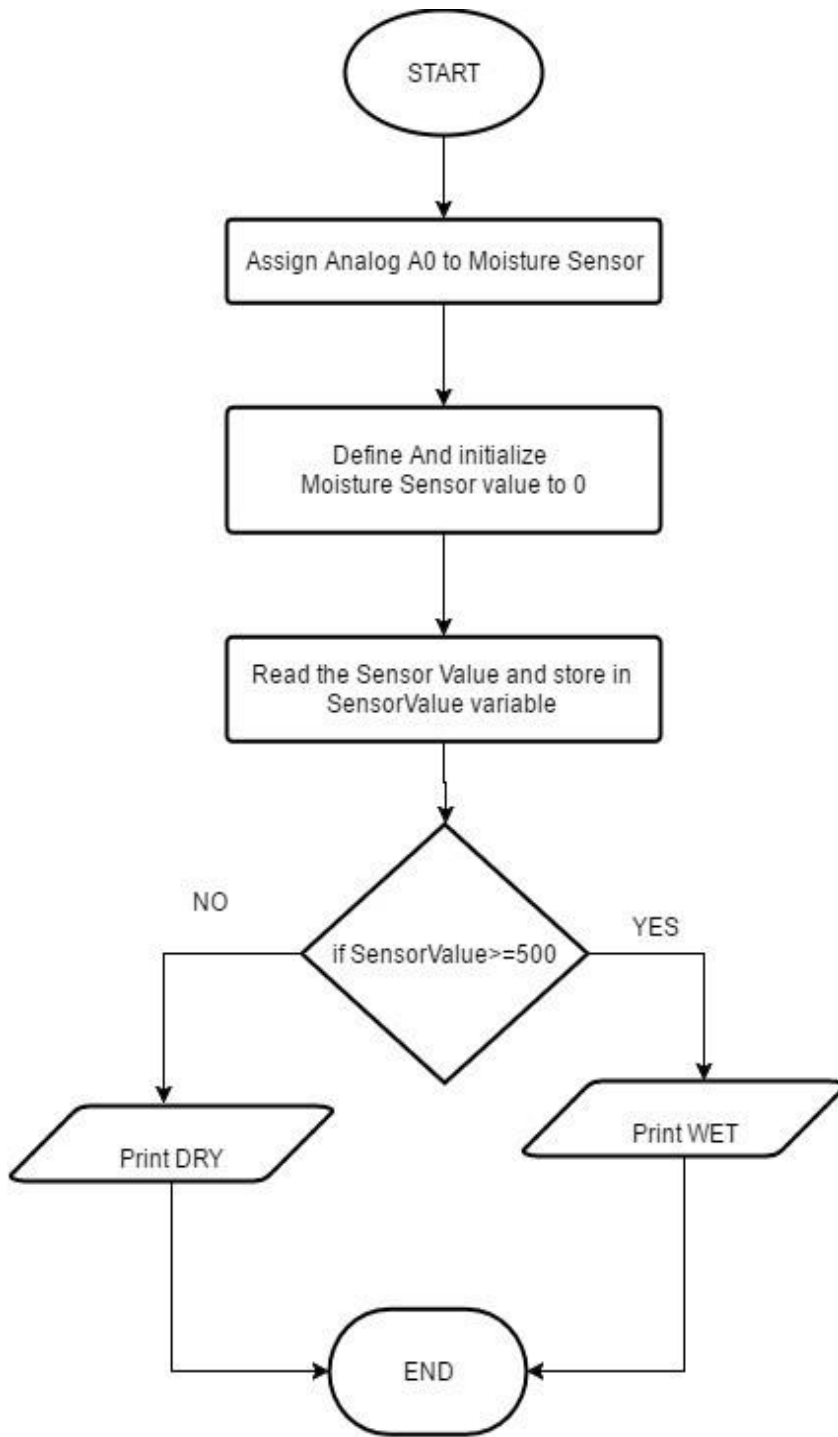
- Understanding principle and operations of Soil Moisture sensor.
- Design algorithm and flowchart to sense moisture of soil using Soil Moisture sensor.
- Programming Soil Moisture sensor using Arduino API for Intel Genuino.
- Interfacing Soil Moisture sensor with Intel Genuino using analog pin A0.

Algorithm

- Step 1 Assign analog pin A0 to Moisture Sensor
- Step 2 Define and initialize SensorValue to 0 I,e int SensorValue=0
- Step 3 Read SensorPin and store value in SensorValue variable
- Step 4 if sensor value is equal to or greter than 500 then print "WET"
- Step 5 if sensor value is equal to or less than 200 then print "DRY"



Flowchart



Programming

```
#define MoistureSensor
A0 void setup() {

  Serial.begin(9600);
}

void loop() {

  int sensorValue = analogRead(MoistureSensor);
  if(sensorValue >= 500)
  {
    Serial.println("WET
");} else
    Serial.println("DRY
")
  delay(1);          // delay in between reads for stability
}
```



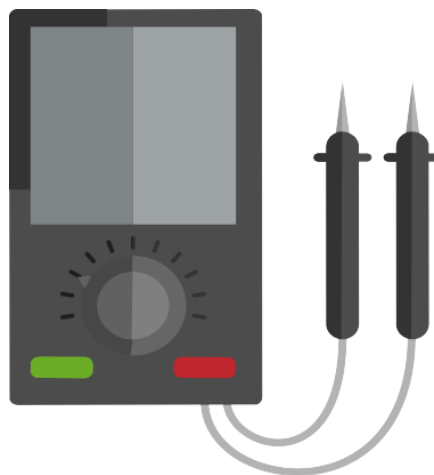
Hardware

Instructions:

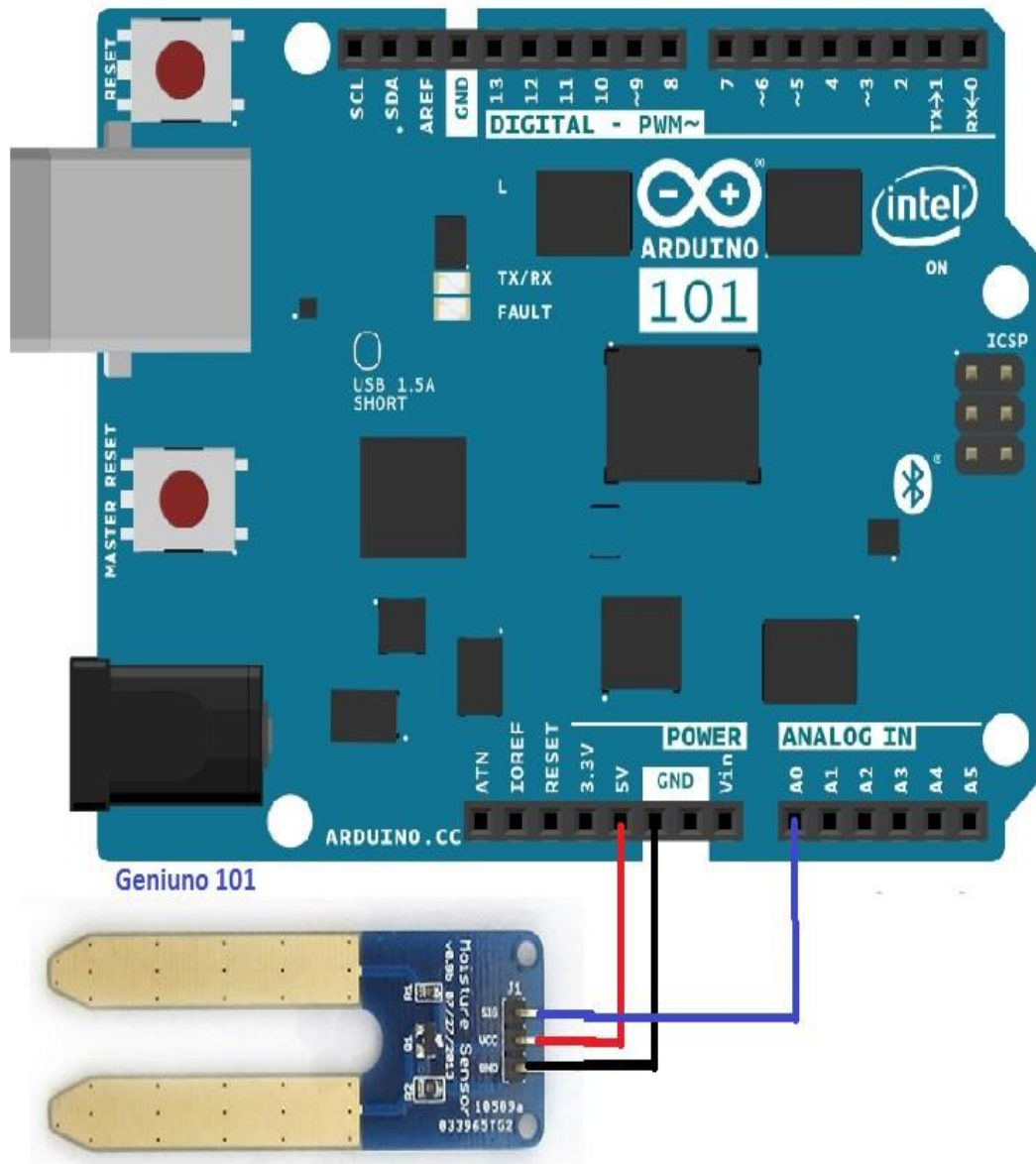
- Connect GND pin of Soil Moisture sensor to GND on the Genuino board
- Connect Out pin of Soil Moisture sensor to A0 on the Genuino board
- Connect VCC pin of Soil Moisture sensor to 5V on the Genuino board
- Connect power supply to the Genuino and USB to USB Client Port on the Genuino
- Open Arduino IDE under Tools → Board select Intel® Genuino
- Under Tools → Serial Port select the Com # where the Genuino is connected to
- Write the above code on Arduino IDE
- Upload to the Genuino by clicking the upload button
- Monitor the value of the soil moisture sensor in the Serial Monitor

Hardware Connection

Genuino pin	Soil Moisture Sensor Pin
5V	VCC
GND	GND
Analog pin 0	Signal



Circuit Diagram:



Geniuno 101