Task 10 Detecting soil moisture using soil moisture sensor

Problem definition:

To detect the mositure of the soil using soil moisture sensor to blink the LED light and buzzer sound if the soil moisture value is low.

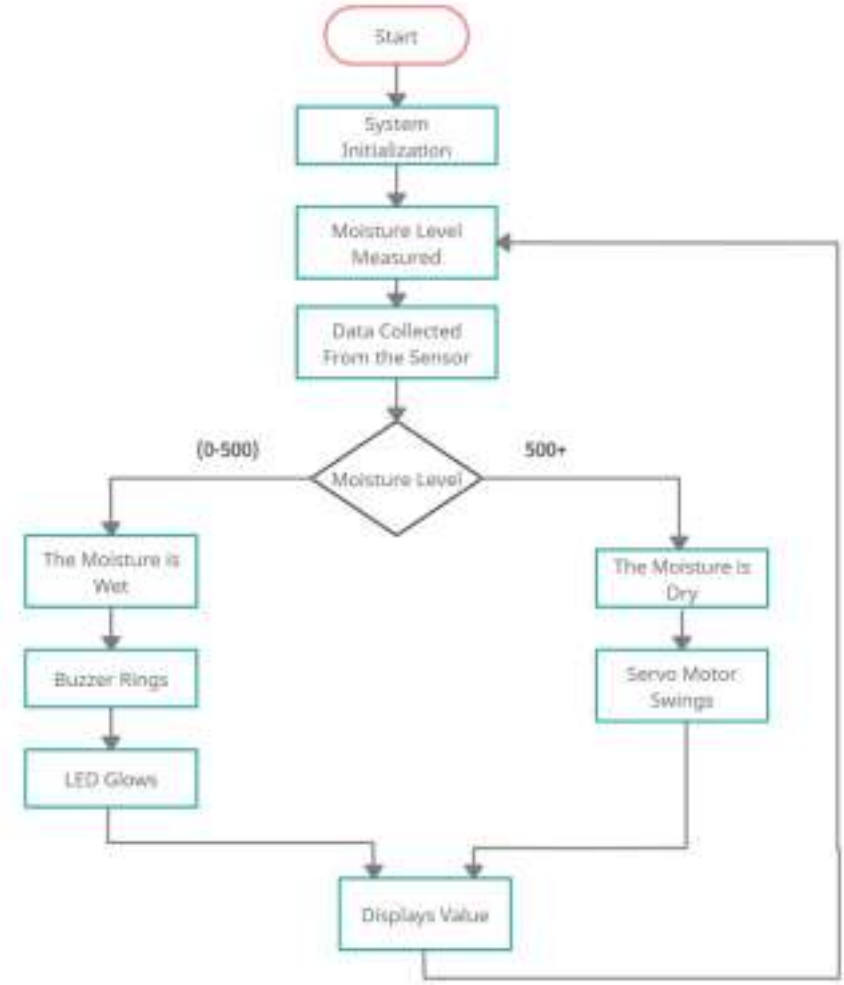
Tools used:

Software - Arduino

Hardware – server motor, soil moisture sensor

Board - Intel Galileo

Flowchart:



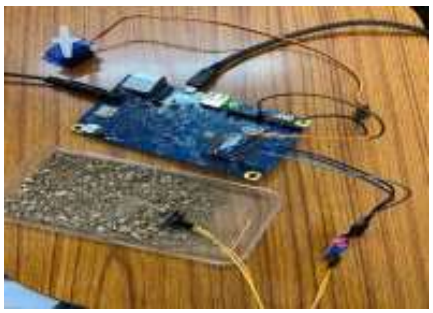
Code:

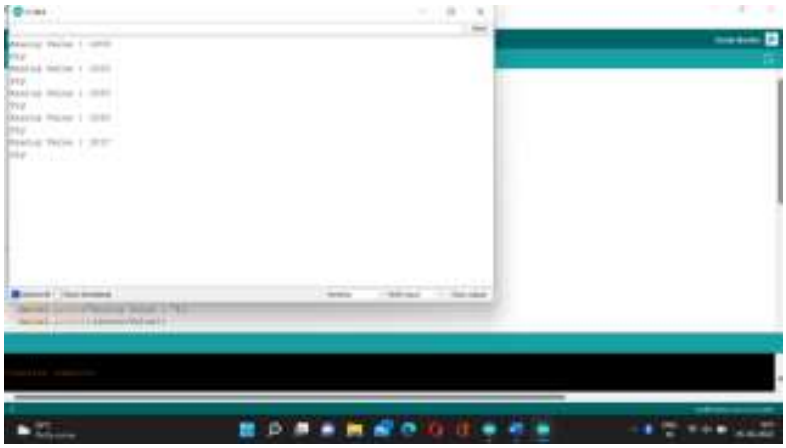
```
#include <Servo.h>
int sensorPin = A0;
int sensorValue;
int limit = 500;
Servo myservo; // create servo object to control a servo   // a
maximum of eight servo objects can be created  int pos = 0;
void setup()
{ Serial.begin(9600);
pinMode(13, OUTPUT);
myservo.attach(9);
 }
```

```
void loop()
{
 sensorValue = analogRead(sensorPin);
 Serial.print("Analog Value : ");
 Serial.println(sensorValue);
 if (sensorValue<400)
 {
 Serial.println("Wet");
 digitalWrite(13, HIGH);
 }
 else
 {
 Serial.println("Dry");
 digitalWrite(13, LOW);

 // in steps of 1 degree
 myservo.write(pos); // tell servo to go to position in variable 'pos'
delay(15); // waits 15ms for the servo to reach the position  for (pos = 180;
pos >= 0; pos -= 1) { // goes from 180 degrees to 0 degrees
myservo.write(pos); // tell servo to go to position in variable 'pos'
delay(15); }

 }
 delay(1000);
 }
```

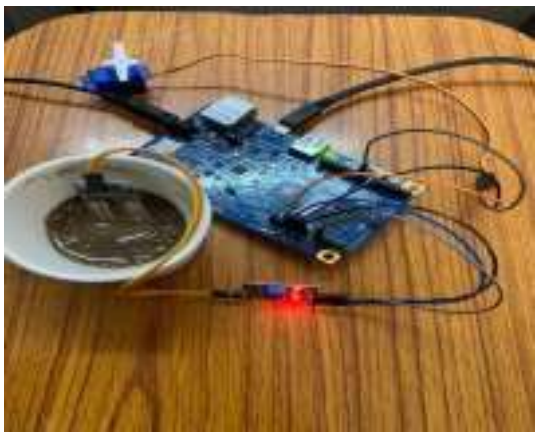
Sample input and output:

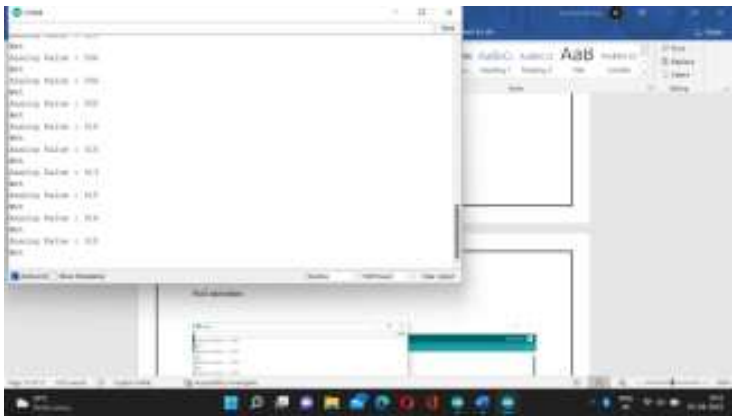
Dry sand detection:





Wet sand detection:





Application:

Sensors are integrated into irrigation systems in agriculture to help arrange water supply efficiently. Such meter's help reduce or enhance irrigation to achieve optimal plant growth.

Conclusion:

Hence, we found the dry and wet stand using soil moisture sensor.