B-Tech

Minor Project

Project Title/Objective

SMART WATERING MANAGEMENT SYSTEM

Designed by:

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Abstract:

Many people are facing problems regarding the watering of plant while they are out of station by which they are unable to water their plants which leads to dead or growing issues.And also maintenance cost is higher for watering.

Components:

Hardware :

1. ARDUINO UNO
2. SOIL MOISTURESENSOR (Model:- RKI4669)
3. 12V DC MOTOR
4. RELAY
5. Jumpper Wires
6. Pipes

Software

1. Arduino IDE

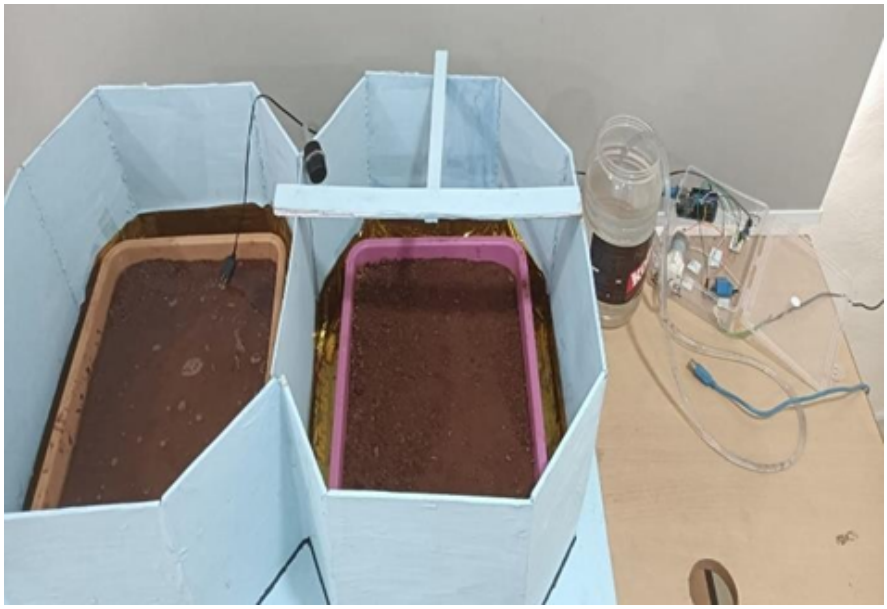
DESCRIPTION: -

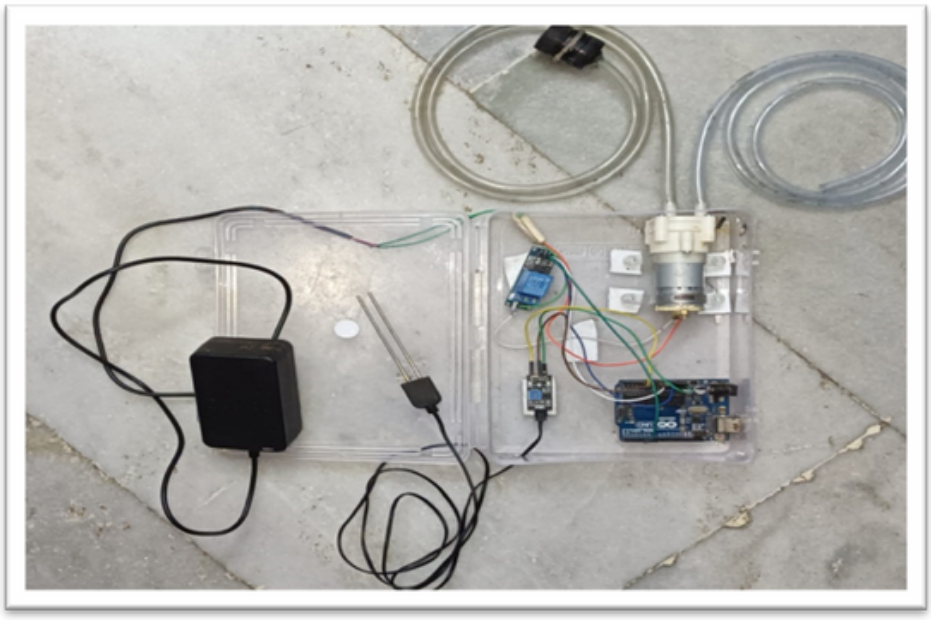
The IoT Based Smart Watering Management System has been designed and tested successfully. The system has been tested to function automatically. The moisture sensors measure the moisture level (water content)of the soil. If the moisture level is found to be below the desired level, the moisture sensor sends the signal to the Arduino UNO board which triggers the Water Pump to turn ON and supply the water to respective plant using the 12v DC Motor. When the desired moisture level is reached, the system halts on its own and the Water Pump is turned OFF. Power Management is managed by Relay.

Source Code: -

```
const int sensor_pin = A1; /* Soil moisture sensor O/P pin */
const int motor_pin=4;
void setup() {
 Serial.begin(9600); /* Define baud rate for serial communication */
 pinMode(sensor_pin,INPUT);
 pinMode(motor_pin,OUTPUT);
}
void loop() {
 float moisture_percentage;
 int sensor_analog;
 sensor_analog = analogRead(sensor_pin);
 moisture_percentage = ( 100 - ( (sensor_analog/1023.00) * 100 ) );
 Serial.print("Moisture Percentage = ");
 Serial.print(moisture_percentage);
 Serial.print("%\n\n");
 delay(200);
  while(1)
  {
   delay(1000);
   Serial.print("Moisture Percentage = ");
    Serial.print(moisture_percentage);
    Serial.print("%\n\n");
   sensor_analog = analogRead(sensor_pin);
   moisture_percentage = ( 100 - ( (sensor_analog/1023.00) * 100 ) );
   if(moisture_percentage < 80 ) /*majority of flowers,trees & shrubs
require moisture levels between 21%-40%, while all vegetables require
soil moisture between 41% & 80%*/
   {
    digitalWrite(motor_pin,HIGH);
    delay(50);
   }
   else{
    digitalWrite(motor_pin,LOW);
    delay(50);
        break;
   }
  }
}
```

Images: -





This photos is the overview of project objectives and their essential qualities explained by me. The project is designed for improving smart watering technologies, to blow out your worries about your plants.

Video Links: -

https://drive.google.com/file/d/1ayvYxy7jKGacmMCBdrg3H3w5rzRq12dJ/view?usp=sharing