EXPLORATION PROJECT

PLANT MONITORING SYSTEM

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ARDUINO CODE FOR PLANT MONITORING SYSTEM

```
#include <dht.h>
#include <BH1750.h>
#include <Wire.h>

#define PUMP_PIN 10
#define RELAY 5

#define DHT11_PIN 2
int temp, humid;
dht DHT;

const int soil_pin = A1;     /* Soil moisture sensor O/P pin */
int moisture;

BH1750 lightMeter;


void setup(){
  Serial.begin(9600);
  pinMode(PUMP_PIN, OUTPUT);
  pinMode(RELAY, OUTPUT);

  pinMode(soil_pin, INPUT);   //soil moisture

  Wire.begin();
  lightMeter.begin();     //bh1750

  delay(5000);
}

void loop(){
  int chk = DHT.read11(DHT11_PIN);
  Serial.print("Temperature = ");
  Serial.println(DHT.temperature);
  Serial.print("Humidity = ");
  Serial.println(DHT.humidity);
  Serial.print("%\n\n");

  humid = DHT.humidity;
  temp = DHT.temperature;
  if(humid <= 100){
    digitalWrite(PUMP_PIN, HIGH);         //WATER PUMP
    delay(10000);
    digitalWrite(PUMP_PIN, LOW);
  }/*else{
    digitalWrite(PUMP_PIN, LOW);
  }*/

  if(temp >= 40){
    digitalWrite(RELAY, HIGH);    //GREEN SHIELD
    delay(5000);
    digitalWrite(RELAY, LOW);
  }/*else{
```

```
    digitalWrite(RELAY, LOW);
  }*/

  moisture = analogRead(soil_pin);
  moisture = map(moisture, 0, 1023, 0, 100);
  Serial.print("Moisture Percentage = ");
  Serial.print(moisture);
  Serial.print("%\n\n");

  if(moisture <= 10){
    digitalWrite(PUMP_PIN, HIGH);     //WATER PUMP
    delay(10000);
    digitalWrite(PUMP_PIN, LOW);
  }

  float lux = lightMeter.readLightLevel();
  Serial.print("Light: ");
  Serial.print(lux);
  Serial.println(" lx");

  if(lux >= 12000){
    digitalWrite(RELAY, HIGH);
    delay(5000);
    digitalWrite(RELAY, LOW);
  }

  delay(15000);
}
```