Smart Irrigation using iot Code

```cpp
        #include <ESP8266WiFi.h>
#include "Adafruit_MQTT.h"
#include "Adafruit_MQTT_Client.h"
const char *ssid =  "Galaxy-M20";    // Enter your WiFi Name
const char *pass =  "ac312124"; // Enter your WiFi Password

WiFiClient client;

#define MQTT_SERV "io.adafruit.com"
#define MQTT_PORT 1883
#define MQTT_NAME "choudharyas"
#define MQTT_PASS "988c4e045ef64c1b9bc8b5bb7ef5f2d9"

const int ledPin = D6;
const int ldrPin = D1;
const int moisturePin = A0;          // moisteure sensor pin
const int motorPin = D0;
unsigned long interval = 10000;
unsigned long previousMillis = 0;
unsigned long interval1 = 1000;
unsigned long previousMillis1 = 0;
float moisturePercentage;          //moisture reading

//Set up the feed you're publishing to
Adafruit_MQTT_Client mqtt(&client, MQTT_SERV, MQTT_PORT, MQTT_NAME, MQTT_PASS);
Adafruit_MQTT_Publish AgricultureData = Adafruit_MQTT_Publish(&mqtt,MQTT_NAME
"/f/AgricultureData");

//Set up the feed you're subscribing to
 Adafruit_MQTT_Subscribe LED = Adafruit_MQTT_Subscribe(&mqtt, MQTT_NAME "/f/LED");
  Adafruit_MQTT_Subscribe Pump = Adafruit_MQTT_Subscribe(&mqtt, MQTT_NAME "/f/Pump");

void setup()
{
  Serial.begin(115200);
  delay(10);
  mqtt.subscribe(&LED);
  mqtt.subscribe(&Pump);
  pinMode(motorPin, OUTPUT);
  pinMode(ledPin, OUTPUT);
  pinMode(ldrPin, INPUT);
  digitalWrite(motorPin, LOW); // keep motor off initally

  Serial.println("Connecting to ");
  Serial.println(ssid);
  WiFi.begin(ssid, pass);
  while (WiFi.status() != WL_CONNECTED)
  {
    delay(500);
    Serial.print(".");           // print ... till not connected
```

```
  }
  Serial.println("");
  Serial.println("WiFi connected");
}

void loop()

{
  MQTT_connect();

 int ldrStatus = analogRead(ldrPin);

   if (ldrStatus <= 200) {

   digitalWrite(ledPin, HIGH);

   Serial.print("Its DARK, Turn on the LED : ");

   Serial.println(ldrStatus);

   }
   else {

   digitalWrite(ledPin, LOW);

   Serial.print("Its BRIGHT, Turn off the LED : ");

   Serial.println(ldrStatus);

   }
  moisturePercentage = ( 100.00 - ( (analogRead(moisturePin) / 1023.00) * 100.00 ) );

   Serial.print("Soil Moisture is  = ");
   Serial.print(moisturePercentage);
   Serial.println("%");


if (moisturePercentage < 35) {
  digitalWrite(motorPin, HIGH);        // tun on motor
}
if (moisturePercentage > 35 && moisturePercentage < 37) {
  digitalWrite(motorPin, HIGH);       //turn on motor pump
}
if (moisturePercentage > 38) {
  digitalWrite(motorPin, LOW);        // turn off mottor
}

if (! AgricultureData.publish(moisturePercentage))
    {
```

```cpp
        delay(5000);
        }
Adafruit_MQTT_Subscribe * subscription;
while ((subscription = mqtt.readSubscription(5000)))
   {

  if (subscription == &LED)
    {
     //Print the new value to the serial monitor
     Serial.println((char*) LED.lastread);

   if (!strcmp((char*) LED.lastread, "OFF"))
     {
       digitalWrite(ledPin, HIGH);
     }
    if (!strcmp((char*) LED.lastread, "ON"))
     {
       digitalWrite(ledPin, LOW);
     }
 }

  if (subscription == &Pump)
    {
     //Print the new value to the serial monitor
     Serial.println((char*) Pump.lastread);

   if (!strcmp((char*) Pump.lastread, "OFF"))
     {
       digitalWrite(motorPin, HIGH);
     }
    if (!strcmp((char*) Pump.lastread, "ON"))
     {
       digitalWrite(motorPin, LOW);
     }

     }
     }
}
void MQTT_connect()
{
  int8_t ret;

  // Stop if already connected.
  if (mqtt.connected())
  {
   return;
  }

  uint8_t retries = 3;
  while ((ret = mqtt.connect()) != 0) // connect will return 0 for connected
  {
```

```
    mqtt.disconnect();
    delay(5000);  // wait 5 seconds
    retries--;
    if (retries == 0)
    {
      // basically die and wait for WDT to reset me
      while (1);
    }
  }
}
```