LAMPIRAN

Lampiran 1. Coding Program

```
#include "FirebaseESP8266.h"  // Install Firebase ESP8266 library
#include <ESP8266WiFi.h>
#include <DHT.h>          // Install DHT11 Library and Adafruit Unified Sensor Library

#define FIREBASE_HOST "https://monitoring-tanaman-bawang-default-rtdb.firebaseio.com/" //Without http:// or https:// schemes
#define FIREBASE_AUTH "ardAEfjRgKkThJJqV9LDzqCg6rap0SSG5nXofiU1"
#define WIFI_SSID "Salsabila Audyanisa"
#define WIFI_PASSWORD "1911060057"

#define DHTPIN 2          // Connect Data pin of DHT to D2
int led = D5;                   // Connect LED to D5
int KIPAS = D2;
#define DHTTYPE    DHT11
DHT dht(DHTPIN, DHTTYPE);

#define analogInPin A0  //sambungkan kabel hitam (output) ke pin A0
int sensorValue = 0;
float outputValue = 0;
//Define FirebaseESP8266 data object
FirebaseData firebaseData;
FirebaseData ledData;
FirebaseJson json;

void setup()
{

  Serial.begin(9600);
  dht.begin();
  pinMode(led, OUTPUT);
 pinMode(KIPAS, OUTPUT);
  WiFi.begin(WIFI_SSID, WIFI_PASSWORD);
  Serial.print("Connecting to Wi-Fi");
  while (WiFi.status() != WL_CONNECTED)
  {
    Serial.print(".");
    delay(300);
  }
  Serial.println();
  Serial.print("Connected with IP: ");
  Serial.println(WiFi.localIP());
  Serial.println();
```

```
  Firebase.begin(FIREBASE_HOST, FIREBASE_AUTH);
  Firebase.reconnectWiFi(true);

}

void sensorUpdate() {
  sensorValue = analogRead(analogInPin);
  delay(500);
  //rumus didapat berdasarkan datasheet
  outputValue = (-0.0139 * sensorValue) + 7.7851;
  Serial.println(  sensorValue);
  Serial.println( outputValue);

  float h = dht.readHumidity();
  // Read temperature as Celsius (the default)
  float t = dht.readTemperature();
  // Read temperature as Fahrenheit (isFahrenheit = true)
  float f = dht.readTemperature(true);

if ( outputValue >= 7) {
   digitalWrite(led, HIGH);
}
else{
   digitalWrite(led, LOW);
}
  // Check if any reads failed and exit early (to try again).
  if (isnan(h) || isnan(t) || isnan(f)) {
    Serial.println(F("Failed to read from DHT sensor!"));
    return;
  }

  Serial.print(F("Humidity: "));
  Serial.print(h);
  Serial.print(F("%  Temperature: "));
  Serial.print(t);
  Serial.print(F("°C  ,"));
  Serial.print(f);
  Serial.println(F("°F  "));
if ( t >= 30) {
   digitalWrite(KIPAS, HIGH);
}
else{
   digitalWrite(KIPAS, LOW);
}
  if (Firebase.setFloat(firebaseData, "/FirebaseIOT/temperature", t))
```

```
{
  Serial.println("PASSED");
  Serial.println("PATH: " + firebaseData.dataPath());
  Serial.println("TYPE: " + firebaseData.dataType());
  Serial.println("ETag: " + firebaseData.ETag());
  Serial.println("------------------------------------");
  Serial.println();
}
else
{
  Serial.println("FAILED");
  Serial.println("REASON: " + firebaseData.errorReason());
  Serial.println("------------------------------------");
  Serial.println();
}

if (Firebase.setFloat(firebaseData, "/FirebaseIOT/humidity", h))
{
  Serial.println("PASSED");
  Serial.println("PATH: " + firebaseData.dataPath());
  Serial.println("TYPE: " + firebaseData.dataType());
  Serial.println("ETag: " + firebaseData.ETag());
  Serial.println("------------------------------------");
  Serial.println();
}
else
{
  Serial.println("FAILED");
  Serial.println("REASON: " + firebaseData.errorReason());
  Serial.println("------------------------------------");
  Serial.println();
}

if (Firebase.setFloat(firebaseData, "/FirebaseIOT/pH tanah", outputValue))
{
  Serial.println("PASSED");
  Serial.println("PATH: " + firebaseData.dataPath());
  Serial.println("TYPE: " + firebaseData.dataType());
  Serial.println("ETag: " + firebaseData.ETag());
  Serial.println("------------------------------------");
  Serial.println();
}
else
{
  Serial.println("FAILED");
  Serial.println("REASON: " + firebaseData.errorReason());
```

```
    Serial.println("-----------------------------------");
    Serial.println();
  }
}
void loop() {
  sensorUpdate();

  if (Firebase.getString(ledData, "/FirebaseIOT/led")) {
    Serial.println(ledData.stringData());
    if (ledData.stringData() == "1") {
      digitalWrite(led, HIGH);
    }
    else if (ledData.stringData() == "0") {
      digitalWrite(led, LOW);
    }
  }
  delay(100)
```