Source Code

```
#define BLYNK_TEMPLATE_ID "TMPL6rz2-awgC"
#define BLYNK_TEMPLATE_NAME "Penyiram Tanaman Otomatis"
#define BLYNK_AUTH_TOKEN "B0AI976nu_f3HH2V_4x_GNqERQT8TOUA"


//#include <Wire.h>
#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>
#include <DHT.h>
#include <DHT_U.h>
#include <NewPing.h>


// Pin definitions
#define Pompa 12
#define Lampu 13
#define TRIGGER_PIN 05
#define ECHO_PIN 04
#define MAX_DISTANCE 99
#define SoilSen A0 // Soil Moisture Sensor
#define DHTPIN 14 // Pin untuk koneksi sensor DHT11
#define DHTTYPE DHT11 // Tipe sensor DHT11


DHT dht(DHTPIN, DHTTYPE);
NewPing sonar(TRIGGER_PIN, ECHO_PIN, MAX_DISTANCE);


char auth[] = BLYNK_AUTH_TOKEN;
char ssid[] = "vivoy30";  // type your wifi name
char pass[] = "nedya12345";  // type your wifi
```

```
25  int sensorValue = 0;
26  float LembabTanah = 0;
27  int nilaiMax = 1023;
28  float panjangSensor = 100.0;
29  BlynkTimer timer;

30  void sendSensor() {
31  sensorValue = analogRead(SoilSen);
32  LembabTanah = sensorValue * panjangSensor / nilaiMax;
33  float t = dht.readTemperature(); // Membaca suhu dari sensor
    DHT11
34  if (isnan(t)) { // Memeriksa apakah nilai suhu valid
35  Serial.println("Failed to read from DHT sensor!");
36  return;
37  }
38  Blynk.virtualWrite(V1, t); // Mengirim nilai suhu ke pin
    virtual V1 di Blynk
39  Blynk.virtualWrite(V4, LembabTanah); //virtual pin V4
40  Serial.print("Suhu : ");
41  Serial.println(t); // Mencetak nilai suhu ke Serial Monitor
42  Serial.print("Kelembapan Tanah : ");
43  Serial.println(LembabTanah);

44  if (LembabTanah > 40) {
45  Serial.println("KERING"); //ke serial monitor
46  } else if (LembabTanah > 35 && LembabTanah < 40) {
47  Serial.println("NORMAL");
48  } else if (LembabTanah < 35) {
49  Serial.println("BASAH");
```

```
50  }
51  }

52  void checkDistance() {
53  int distance = sonar.ping_cm();
54  Blynk.virtualWrite(V5, distance);
55  Serial.print("Jarak Air : ");
56  Serial.println(distance);

57  if (distance > 10) {
58  Serial.println("Air Kosong");
59  } else if (distance < 10 && distance > 5) {
60  Serial.println("Air Tersedia");
61  }else if (distance <= 5) {
62  Serial.println("Air Penuh");
63  }
64  }

65  void setup() {
66  Serial.begin(9600);
67  Blynk.begin(auth, ssid, pass);
68  dht.begin(); // Memulai sensor DHT11
69  timer.setInterval(2000L, sendSensor); // Mengatur interval
    untuk membaca dan mengirim data suhu
70  timer.setInterval(2000L, checkDistance); // Mengatur
    interval untuk membaca data jarak
71  pinMode(Lampu, OUTPUT);
72  pinMode(Pompa, OUTPUT);
73  digitalWrite(Pompa, LOW);
```

```
74  digitalWrite(Lampu, LOW);
75  }

76  void loop() {
77  Blynk.run(); // Menjalankan Blynk
78  timer.run(); // Menjalankan timer untuk membaca dan mengirim
    data suhu
79  }

80  // Fungsi untuk mengontrol Pompa dari aplikasi Blynk
81  BLYNK_WRITE(V6) {
82  int value = param.asInt();
83  Serial.print("Pompa control value: "); // Debugging
    statement
84  Serial.println(value); // Debugging statement
85  if (value == 1) {
86  digitalWrite(Pompa, HIGH); // Adjust this if your relay
    logic is inverted
87  Serial.println("Pompa ON"); // Debugging statement
88  } else {
89  digitalWrite(Pompa, LOW); // Adjust this if your relay logic
    is inverted
90  Serial.println("Pompa OFF"); // Debugging statement
91  }
92  }

93  // Fungsi untuk mengontrol Lampu dari aplikasi Blynk
94  BLYNK_WRITE(V7) {
95  int value = param.asInt();
```

```
96   Serial.print("Lampu control value: "); // Debugging
     statement
97   Serial.println(value); // Debugging statement
98   if (value == 1) {
99   digitalWrite(Lampu, HIGH); // Assuming active LOW logic for
     the lamp relay
100  Serial.println("Lampu ON"); // Debugging statement
101  } else {
102  digitalWrite(Lampu, LOW); // Assuming active LOW logic for
     the lamp relay
103  Serial.println("Lampu OFF"); // Debugging statement
104  }
105  }
```