

## Listring Program

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//===== USER CONFIG =====

#define BLYNK_TEMPLATE_ID "TMPL6NjjD3Jr1"// Blynk Template ID
#define BLYNK_TEMPLATE_NAME "Quickstart Template"// Blynk Template
Name
char auth[] = "8ZsqQDYrfQZ_Y8SVaiVvT7CUgaJrvMxo";// Blynk Auth Token
char ssid[] = "iPhone";// Nama WiFi yang akan terkoneksi dengan
NodeMCU
char pass[] = "11223344";// Password WiFi
const int dry = 725;// kondisi nilai ADC soil sensor tidak terpasang
ke tanah
const int wet = 562;// kondisi nilai ADC soil sensor terpasang ke
tanah yang basah
int batas_bawah_soil = 40;//% Ketika kelembaban tanah < nilai yang
dimasukan maka pompa akan ON
int batas_atas_soil = 75;//% Ketika kelembaban tanah > nilai yang
dimasukan maka pompa akan OFF
int batas_bawah_temp = 28;//°C Ketika temperatur udara < nilai yang
dimasukan maka fan akan OFF
int batas_atas_temp = 35;//°C Ketika temperatur udara > nilai yang
dimasukan maka fan akan ON
//===== END USER CONFIG =====

#define BLYNK_PRINT Serial
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
#include <ESP8266WiFi.h>
#include <WiFiClient.h>
#include <BlynkSimpleEsp8266.h>
#include "DHT.h"

#define DHTPIN D3
#define relay_pompa D6
#define relay_fan D5
#define soilPin A0

//Pilih Tipe DHT Sensor
#define DHTTYPE DHT11
//#define DHTTYPE DHT22

boolean auto_mode = false;
int r_pompa_state = 0;
int r_fan_state = 0;
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int t;

LiquidCrystal_I2C lcd(0x27, 16, 2);
DHT dht(DHTPIN, DHTTYPE);

void setup() {
  Serial.begin(115200);
  pinMode(relay_pompa, OUTPUT);
  pinMode(relay_fan, OUTPUT);
  digitalWrite(relay_pompa, HIGH);
  digitalWrite(relay_fan, HIGH);
  lcd.begin();
  lcd.backlight();
  dht.begin();
  delay(1000);
  lcd.setCursor(0, 0);
  lcd.print("PENYIRAM TANAMAN");
  lcd.setCursor(4, 1);
  lcd.print("OTOMATIS");
  delay(2000);
  Blynk.begin(auth, ssid, pass);
  Blynk.setProperty(V5, "isDisabled", false);
  Blynk.setProperty(V6, "isDisabled", false);
  Blynk.virtualWrite(V4, 0);
  Blynk.virtualWrite(V5, 0);
  Blynk.virtualWrite(V6, 0);
  lcd.clear();
  lcd.setCursor(0, 0);
  lcd.print("MOISTURE = ");
  lcd.setCursor(0, 1);
  lcd.print("TEMP = ");
}

void loop() {
  Blynk.run();
  postData();
  delay(1000);
}

void postData() {
  int soilVal = analogRead(soilPin);
  int kelembabanTanah = map(soilVal, wet, dry, 100, 0);
  if (kelembabanTanah > 100) {
    kelembabanTanah = 100;
  } else if (kelembabanTanah < 0) {
    kelembabanTanah = 0;
  }
}

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int temp = dht.readTemperature();
if (isnan(temp)) {
    temp = 0;
}
if (temp > 100) {
    temp = t;
}
else {
    t = temp;
}

Blynk.virtualWrite(V7, temp);
Blynk.virtualWrite(V8, kelembabanTanah);

lcd.setCursor(11, 0);
lcd.print(kelembabanTanah);
lcd.print("%");
lcd.print("  ");
lcd.setCursor(7, 1);
lcd.print(temp);
lcd.print((char)223);
lcd.print("  ");
Serial.println("SOIL ADC = " + String(soilVal));
Serial.println("SOIL MOISTURE = " + String(kelembabanTanah) +
"%");

if (auto_mode) {
    if (kelembabanTanah > batas_atas_soil) {
        digitalWrite(relay_pompa, HIGH);
        Blynk.virtualWrite(V5, 0);
    } else if (kelembabanTanah < batas_bawah_soil) {
        digitalWrite(relay_pompa, LOW);
        Blynk.virtualWrite(V5, 1);
    }
    if (temp > batas_atas_temp) {
        digitalWrite(relay_fan, LOW);
        Blynk.virtualWrite(V6, 1);
    } else if (temp < batas_bawah_temp) {
        digitalWrite(relay_fan, HIGH);
        Blynk.virtualWrite(V6, 0);
    }
}
}

BLYNK_WRITE(V4) {
    int mode = param.asInt();
    if (mode == 0) {

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    auto_mode = false;
    Blynk.setProperty(V5, "isDisabled", false);
    Blynk.setProperty(V6, "isDisabled", false);
} else {
    auto_mode = true;
    Blynk.setProperty(V5, "isDisabled", true);
    Blynk.setProperty(V6, "isDisabled", true);
}
Serial.println("MODE KONTROL = " + String(auto_mode));
}

BLYNK_WRITE(V5) {
    int kontrol_relay = param.asInt();
    if (!auto_mode) {
        if (kontrol_relay == 0) {
            digitalWrite(relay_pompa, HIGH);
        } else {
            digitalWrite(relay_pompa, LOW);
        }
    }
}

BLYNK_WRITE(V6) {
    int kontrol_relay = param.asInt();
    if (!auto_mode) {
        if (kontrol_relay == 0) {
            digitalWrite(relay_fan, HIGH);
        } else {
            digitalWrite(relay_fan, LOW);
        }
    }
}
}

```