

## LAMPIRAN – LAMPIRAN

### Lampiran 1. Foto Dokumentasi Coding Rangkaian

```
/* Connections
Relay. D3
Btn. D7
Soil. A0
PIR. D5
SDA. D2
SCL. D1
Temp. D4
*/

//Include the library files
#include <LiquidCrystal_I2C.h>
#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>
#include <DHT.h>

//Initialize the LCD display
LiquidCrystal_I2C lcd(0x3F, 16, 2);

#define BLYNK_TEMPLATE_ID "TMPL6UH_FBFSq"
#define BLYNK_TEMPLATE_NAME "Smart Planting"
#define BLYNK_AUTH_TOKEN "hpuVOjuo4jOm0YvL6Du-oeWHwciqkhte"

char auth[] = "hpuVOjuo4jOm0YvL6Du-oeWHwciqkhte"; //Enter your Blynk Auth token
char ssid[] = "Wata"; //Enter your WIFI SSID
char pass[] = "takanomel"; //Enter your WIFI Password

DHT dht(D4, DHT11); // (DHT sensor pin, sensor type) D4 DHT11 Temperature Sensor
BlynkTimer timer;

//Define component pins
#define soil A0 //A0 Soil Moisture Sensor
#define PIR D5 //D5 PIR Motion Sensor
int PIR_ToggleValue;

void checkPhysicalButton():
int relayState = LOW;
int pushButtonState = HIGH;
#define RELAY_PIN_1 D3 //D3 Relay
#define PUSH_BUTTON_1 D7 //D7 Button
#define VPIN_BUTTON_1 V12

//Create three variables for pressure
double T, P;
char status;
```

```

void setup() {
  Serial.begin(9600);
  lcd.init();
  lcd.backlight();
  pinMode(PIR, INPUT);

  pinMode(RELAY_PIN_1, OUTPUT);
  digitalWrite(RELAY_PIN_1, LOW);
  pinMode(PUSH_BUTTON_1, INPUT_PULLUP);
  digitalWrite(RELAY_PIN_1, relay1State);

  Blynk.begin(auth, ssid, pass, "blynk.cloud", 80);
  dht.begin();

  lcd.setCursor(0, 0);
  lcd.print(" Initialising ");
  for (int a = 5; a <= 10; a++) {
    lcd.setCursor(a, 1);
    lcd.print(".");
    delay(500);
  }
  lcd.clear();
  lcd.setCursor(11, 1);
  lcd.print("W:OFF");
  //Call the function
  timer.setInterval(100L, soilMoistureSensor);
  timer.setInterval(100L, DHT11sensor);
  timer.setInterval(500L, checkPhysicalButton);
}

//Get the DHT11 sensor values
void DHT11sensor() {
  float h = dht.readHumidity();
  float t = dht.readTemperature();

  if (isnan(h) || isnan(t)) {
    Serial.println("Failed to read from DHT sensor!");
    return;
  }
  Blynk.virtualWrite(V0, t);
  Blynk.virtualWrite(V1, h);

  lcd.setCursor(0, 0);
  lcd.print("T:");
  lcd.print(t);

  lcd.setCursor(8, 0);
  lcd.print("H:");
  lcd.print(h);
}

```

```

}

//Get the soil moisture values
void soilMoistureSensor() {
  int value = analogRead(soil);
  value = map(value, 0, 1024, 0, 100);
  value = (value - 100) * -1;

  Blynk.virtualWrite(V3, value);
  lcd.setCursor(0, 1);
  lcd.print("S:");
  lcd.print(value);
  lcd.print(" ");
}

//Get the PIR sensor values
void PIRsensor() {
  bool value = digitalRead(PIR);
  if (value) {
    Blynk.logEvent("pirmotion", "WARNING! Motion Detected!"); //Enter your Event Name
    WidgetLED LED(V5);
    LED.on();
  } else {
    WidgetLED LED(V5);
    LED.off();
  }
}

BLYNK_WRITE(V6)
{
  PIR_ToggleValue = param.asInt();
}

BLYNK_CONNECTED() {
  // Request the latest state from the server
  Blynk.syncVirtual(VPIN_BUTTON_1);
}

BLYNK_WRITE(VPIN_BUTTON_1) {
  relay1State = param.asInt();
  digitalWrite(RELAY_PIN_1, relay1State);
}

```

```

void checkPhysicalButton()
{
  if (digitalRead(PUSH_BUTTON_1) == LOW) {
    // pushButton1State is used to avoid sequential toggles
    if (pushButton1State != LOW) {

      // Toggle Relay state
      relay1State = !relay1State;
      digitalWrite(RELAY_PIN_1, relay1State);

      // Update Button Widget
      Blynk.virtualWrite(VPIN_BUTTON_1, relay1State);
    }
    pushButton1State = LOW;
  } else {
    pushButton1State = HIGH;
  }
}

void loop() {
  if (PIR_ToggleValue == 1)
  {
    lcd.setCursor(5, 1);
    lcd.print("M:ON ");
    PIRsensor();
  }
  else
  {
    lcd.setCursor(5, 1);
    lcd.print("M:OFF");
    WidgetLED LED(V5);
    LED.off();
  }

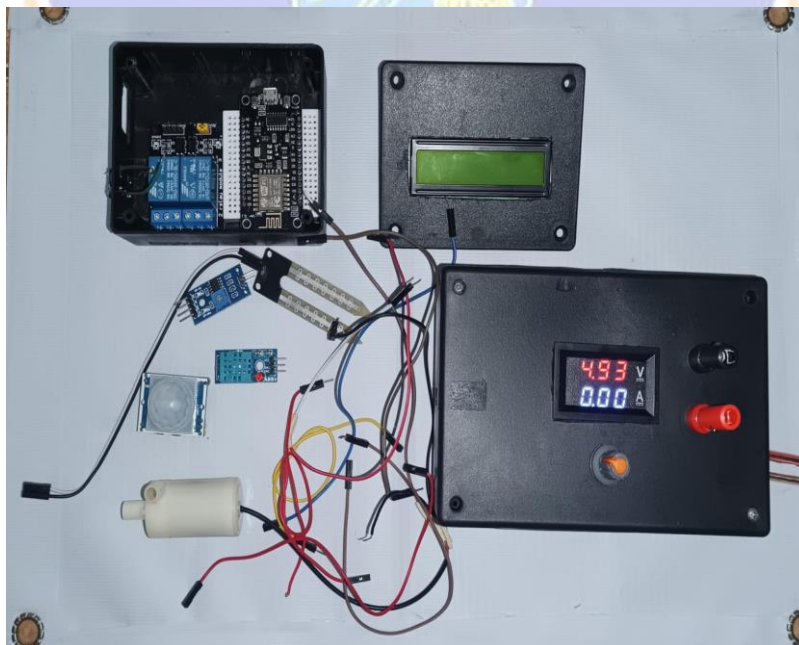
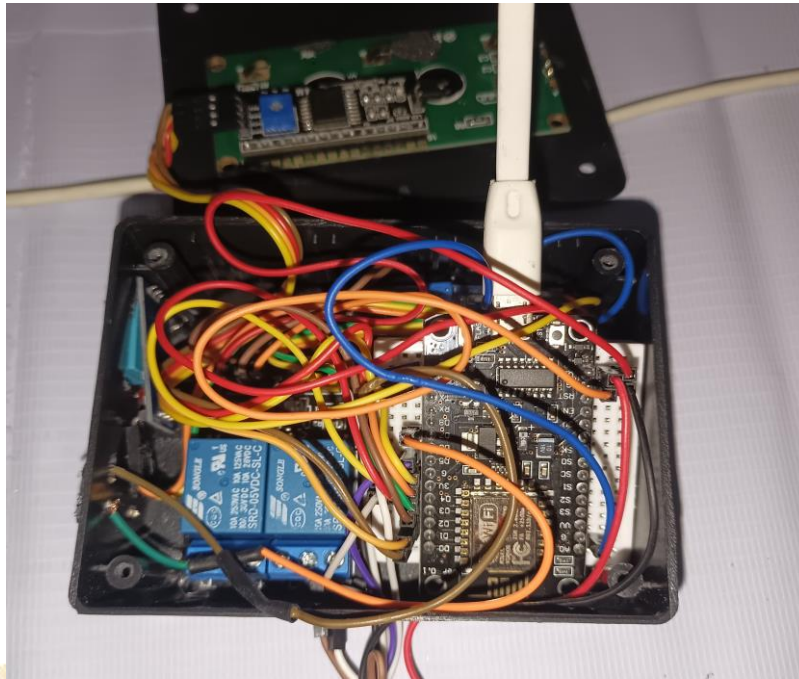
  if (relay1State == HIGH)
  {
    lcd.setCursor(11, 1);
    lcd.print("W:ON ");
  }
  else if (relay1State == LOW)
  {
    lcd.setCursor(11, 1);
    lcd.print("W:OFF");
  }

  Blynk.run();//Run the Blynk library
  timer.run();//Run the Blynk timer

}

```

## Lampiran 2. Foto Dokumentasi Pembuatan Rangkaian



### Lampiran 3. Foto Dokumentasi Pengujian Rangkaian

