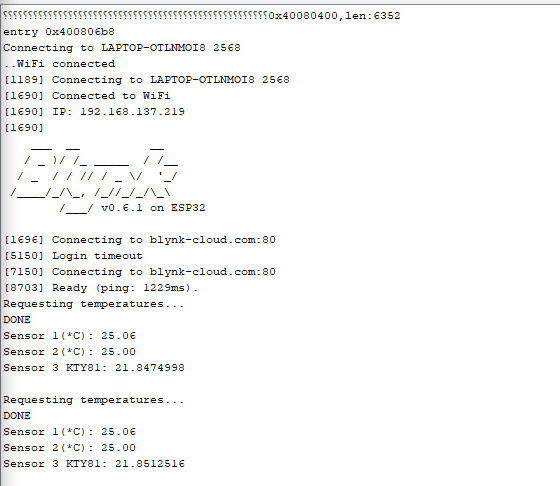
**Opdracht 7 (Individuele opdracht):** realiseer een LED die je bestuurt met Blynk vanaf je smartphone. Volg stapsgewijze onderstaande handleiding.

<https://www.instructables.com/id/Use-ESP32-to-Control-LED-With-Blynk-Via-WiFi/>

Toon vervolgens de ruwe waarde van de 16 bits ADC op je smartphone. Vervolledig eventueel met een ander veld dat de temperatuur weergeeft in graden Celcius.



Afbeelding met elektronica, circuit

Automatisch gegenereerde beschrijving

#define BLYNK\_PRINT Serial

int pin = 18;

#include <WiFi.h>

#include <WiFiClient.h>

#include <BlynkSimpleEsp32.h>

#include <OneWire.h>

#include <DallasTemperature.h>

#include <Wire.h>

#include <Adafruit\_GFX.h>

#include <Adafruit\_SSD1306.h>

#include <Adafruit\_ADS1015.h>

// You should get Auth Token in the Blynk App.

// Go to the Project Settings (nut icon).

char auth[] = "iyFDjTSp0yOimpvd\_AtXzQ7LQ9UHWpWJ";

// Your WiFi credentials.

// Set password to "" for open networks.

char ssid[] = "LAPTOP-OTLNMOI8 2568";

char pass[] = "1756{Bn9";

Adafruit\_ADS1115 ads(0x48);

float temp = 0.0;

float temp1 = 0.0;

#define SCREEN\_WIDTH 128 // OLED display width, in pixels

#define SCREEN\_HEIGHT 64 // OLED display height, in pixels

// Declaration for an SSD1306 display connected to I2C (SDA, SCL pins)

Adafruit\_SSD1306 display(SCREEN\_WIDTH, SCREEN\_HEIGHT, &Wire, -1);

// Data wire is connected to GPIO15

#define ONE\_WIRE\_BUS 15

// Setup a oneWire instance to communicate with a OneWire device

OneWire oneWire(ONE\_WIRE\_BUS);

// Pass our oneWire reference to Dallas Temperature sensor

DallasTemperature sensors(&oneWire);

DeviceAddress sensor1 = { 0x28, 0x38, 0x44, 0x9B, 0xB, 0x0, 0x0, 0x10 };

DeviceAddress sensor2 = { 0x28, 0x85, 0x3C, 0x9B, 0xB, 0x0, 0x0, 0xE };

void setup() {

pinMode(pin, OUTPUT);

pinMode(pin, HIGH);

Serial.begin(115200);

delay(10);

Serial.print("Connecting to ");

Serial.println(ssid);

WiFi.begin(ssid, pass);

int wifi\_ctr = 0;

while (WiFi.status() != WL\_CONNECTED) {

delay(500);

Serial.print(".");

}

Serial.println("WiFi connected");

Blynk.begin(auth, ssid, pass);

if (!display.begin(SSD1306\_SWITCHCAPVCC, 0x3C)) { // Address 0x3D for 128x64

Serial.println(F("SSD1306 allocation failed"));

for (;;);

}

Serial.begin(115200);

sensors.begin();

ads.begin();

}

void loop(){

Blynk.run();

Serial.println("Requesting temperatures...");

sensors.requestTemperatures(); // Send the command to get temperatures

Serial.println("DONE");

Serial.print("Sensor 1(\*C): ");

Serial.println(sensors.getTempC(sensor1));

Serial.print("Sensor 2(\*C): ");

Serial.println(sensors.getTempC(sensor2));

display.clearDisplay();

display.setTextSize(1);

display.setTextColor(WHITE);

display.setCursor(0, 0);

// Display static text

display.println("Sensor 1 dallas:");

display.setTextSize(1);

display.setTextColor(WHITE);

display.setCursor(0, 10);

// Display static text

display.println(sensors.getTempC(sensor1));

display.display();

Blynk.virtualWrite(V1, sensors.getTempC(sensor1));

display.setTextSize(1);

display.setTextColor(WHITE);

display.setCursor(0, 20);

// Display static text

display.println("Sensor 2 Dallas:");

display.setTextSize(1);

display.setTextColor(WHITE);

display.setCursor(0, 30);

// Display static text

display.println(sensors.getTempC(sensor2));

display.display();

Blynk.virtualWrite(V2, sensors.getTempC(sensor2));

int16\_t adc0;

adc0 = ads.readADC\_SingleEnded(0);

temp = (adc0 \* 0.1875) / 1000; // convert ADC value into voltage

temp1 = temp \* 10;

Serial.print("Sensor 3 KTY81: ");

Serial.println(temp1, 7);

Serial.println();

display.setTextSize(1);

display.setTextColor(WHITE);

display.setCursor(0, 40);

// Display static text

display.println("Sensor 3 KTY81:");

display.setTextSize(1);

display.setTextColor(WHITE);

display.setCursor(0, 50);

// Display static text

display.println(temp1);

display.display();

Blynk.virtualWrite(V3, temp1);

delay(200);

}