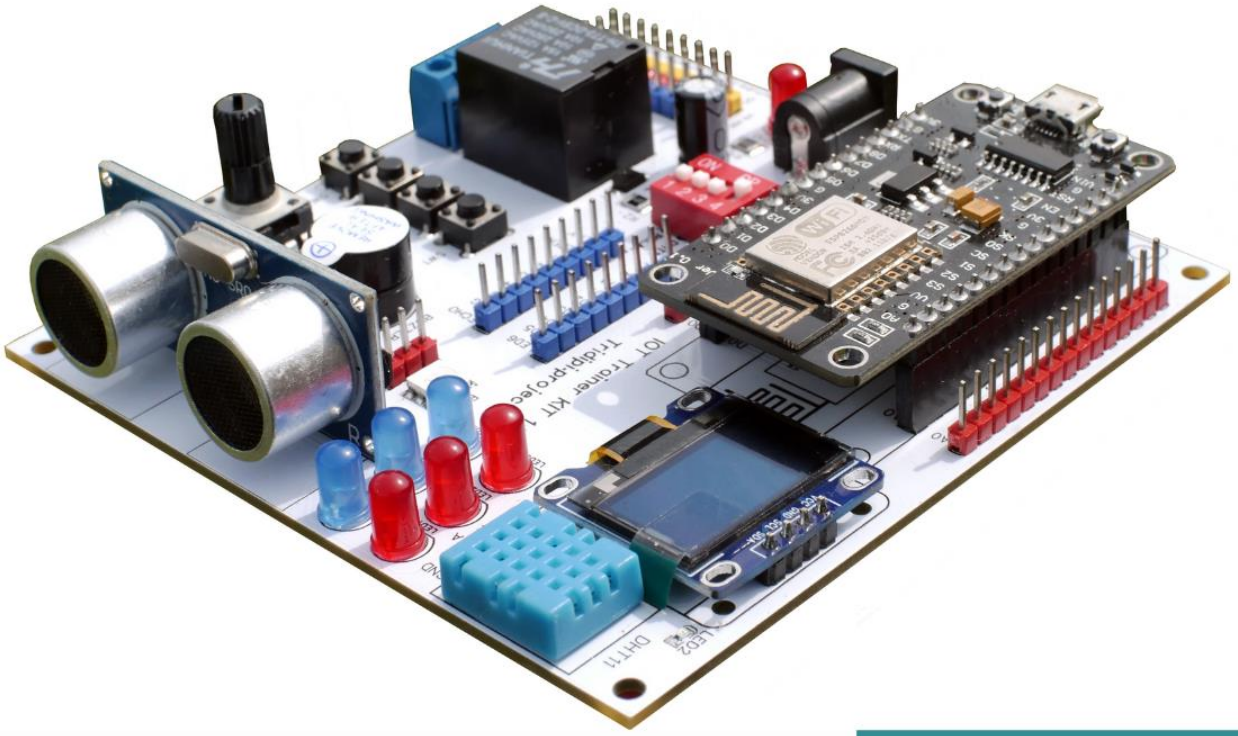
TRIDIPI PROJECT
0823 2523 3618



Trainer IOT Nodemcu ESP8266

SPESIFIKASI

NODEMCU ESP8266
LCD OLED 168X64
6 LED OUTPUT
1 BUZZER AKTIF
4 INPUT BUTTON
1 INPUT ANALOG
SENSOR ULTASONIC HCSR-04
SENSOR SUHU DHT 11
1 CHANNEL RELAY
1 LED RGB
1 INPUT POTENSIOMETER

FREE KODING, EBOOK, DAN USB KABEL

1. Cara instal aplikasi Blynk

Blynk adalah platform untuk aplikasi OS Mobile (iOS dan Android) yang bertujuan untuk kendali modul mikrokontroler seperti, Arduino, Raspberry Pi, ESP8266, WEMOS D1, dan module sejenisnya melalui Internet. Aplikasi ini merupakan wadah kreatifitas untuk membuat antarmuka grafis untuk proyek yang akan diimplementasikan hanya dengan metode drag and drop widget.

Penggunaannya sangat mudah untuk mengatur semuanya dan dapat dikerjakan dalam waktu kurang dari 5 menit. Blynk tidak terikat pada papan atau modul tertentu. Dari platform aplikasi inilah dapat mengontrol apapun dari jarak jauh, dimanapun kita berada dan waktu kapanpun. Dengan catatan terhubung dengan internet dan koneksi yang stabil dan inilah yang dinamakan dengan sistem Internet of Things (IOT).

Bagaimana cara menggunakan Blynk?

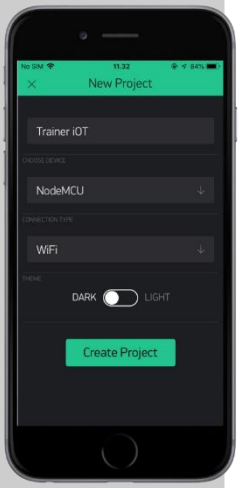
Berikut cara menggunakan aplikasi Blynk :

1. Download dan install aplikasi "**Blynk**" melalui "**PlayStore**" atau "**AppStore**".

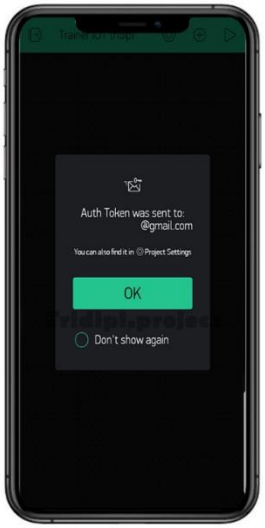
2. Buka aplikasi, dan silahkan sign up new account atau login menggunakan "**Facebook**" atau daftar menggunakan "**Email**".

3. Klik “**New Project**”

4. Setelah itu, isi kolom sesuai rancangan project Anda. Disini saya contohkan sebagai berikut.

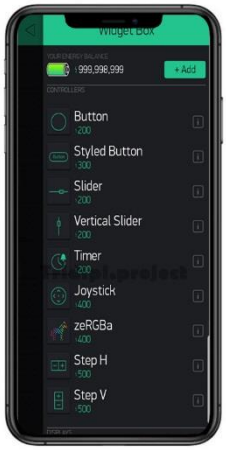


5. Nanti akan muncul pemberitahuan bahwa token akan dikirim ke email anda. Klik "**OK**".



6. Cek pesan masuk email Anda dan temukan Auth Token yang akan digunakan untuk mengisi Char Auth di list program sebelum diupload ke board NodeMCU.

7. Aplikasi Blynk siap digunakan. Drag dan drop rancangan proyek Anda.

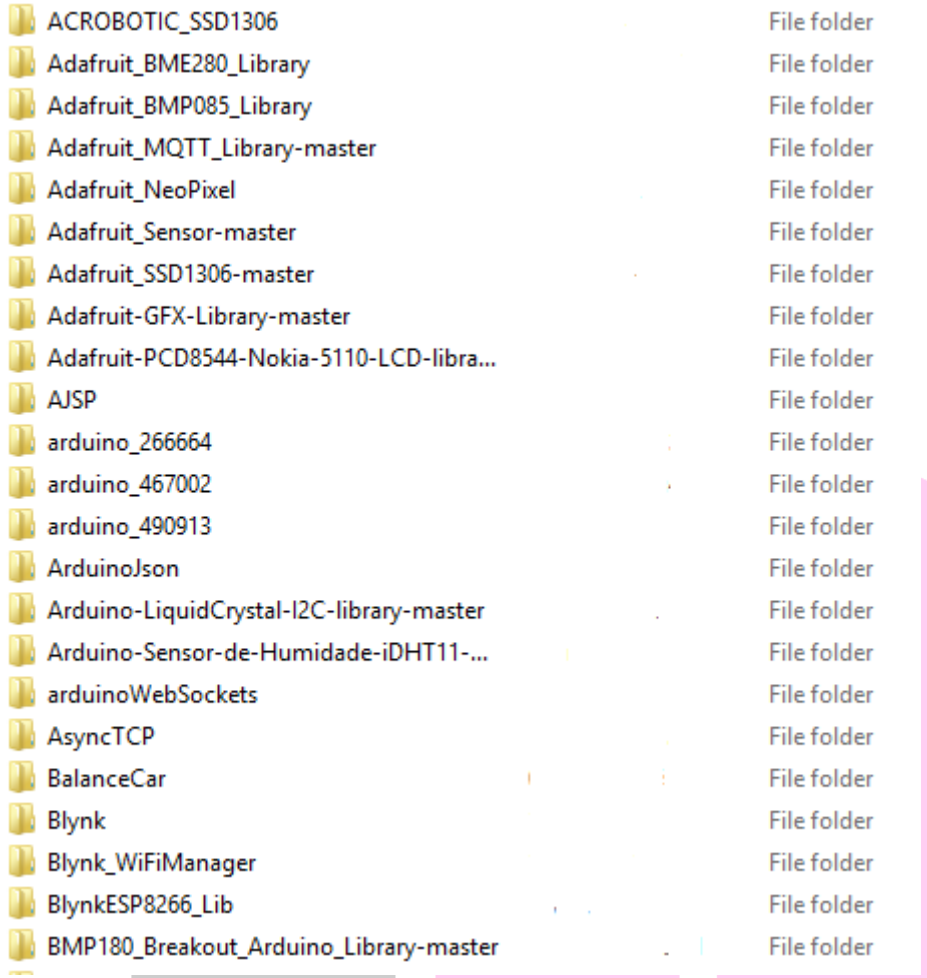


2. Cara Penambahan Library

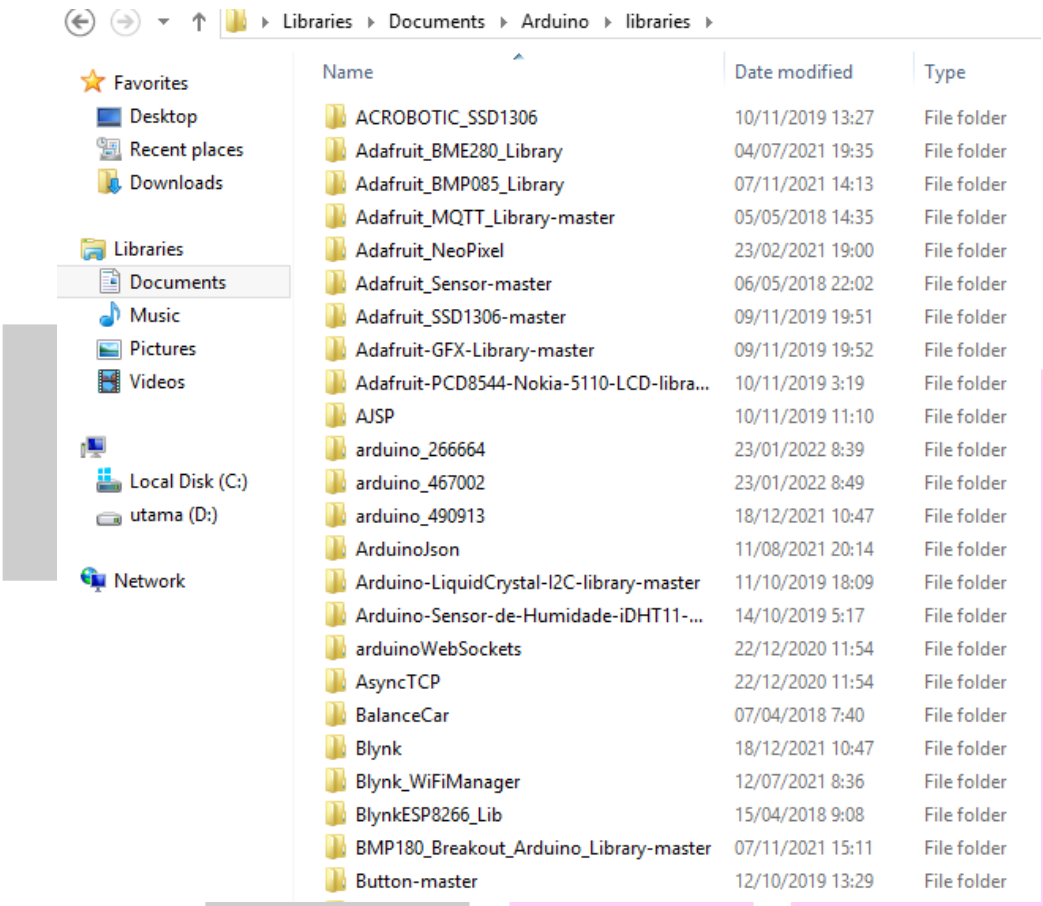
Library/Pustaka merupakan file yang memberikan fungsi ekstra dari sketch yang dibuat, semisal agar NodeMCU dapat bekerja dengan hardware tertentu dan melakukan proses manipulasi data. Untuk menginstall library pihak ketiga alias library bukan dari paltform arduino, dapat dilakukan dengan library manager, import file **.zip**, atau dengan copy paste secara manual di folder libraries pada documents di platform windows.

Didalam penggunaan trainer ini memerlukan beberapa Library yang harus dipasang ke Platform Arduino IDE, agar program yang akan dibuat bisa dijalankan. Berikut ini adalah cara pemasangan Library kedalam Platform Arduino IDE

1. Menyiapkan beberapa library yang akan dipasang di Platform Arduino IDE.


ACROBOTIC_SSD1306 File folder
Adafruit_BME280_Library File folder
Adafruit_BMP085_Library File folder
Adafruit_MQTT_Library-master File folder
Adafruit_NeoPixel File folder
Adafruit_Sensor-master File folder
Adafruit_SSD1306-master File folder
Adafruit-GFX-Library-master File folder
Adafruit-PCD8544-Nokia-5110-LCD-libra... File folder
AJSP File folder
arduino_266664 File folder
arduino_467002 File folder
arduino_490913 File folder
ArduinoJson File folder
Arduino-LiquidCrystal-I2C-library-master File folder
Arduino-Sensor-de-Humidade-iDHT11-... File folder
arduinoWebSockets File folder
AsyncTCP File folder
BalanceCar File folder
Blynk File folder
Blynk_WiFiManager File folder
BlynkESP8266_Lib File folder
BMP180_Breakout_Arduino_Library-master File folder

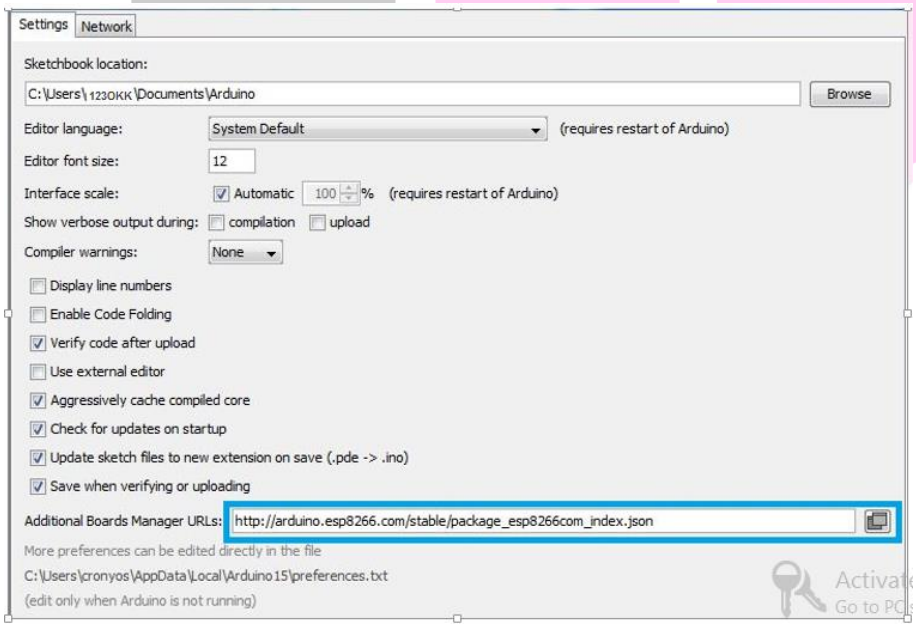
2. Silahkan Copy semua file library kedalam folder llibrary seperti pada gambar dibawah ini.



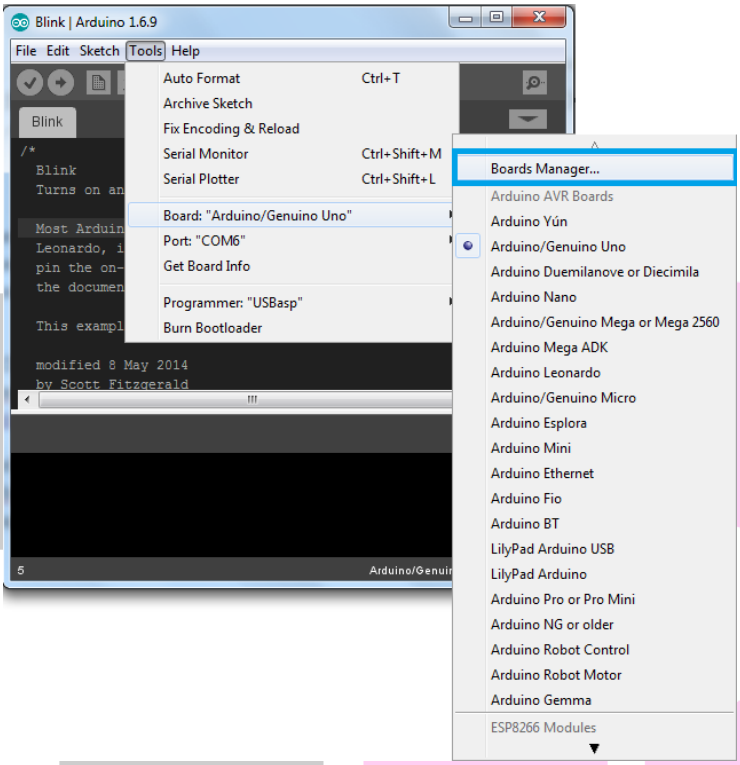
3. Cara Menambah Board NodeMCU ke Arduino IDE

Board NodeMCU bisa kita program menggunakan Arduino IDE, namun kita tidak bisa langsung program begitu saja, ada beberapa proses yang harus kita lakukan, hal tersebut dikarenakan pada Arduino IDE secara default tidak ada pilihan board NodeMCU. Untuk itu kita perlu menambahkannya. Berikut langkah-langkahnya:

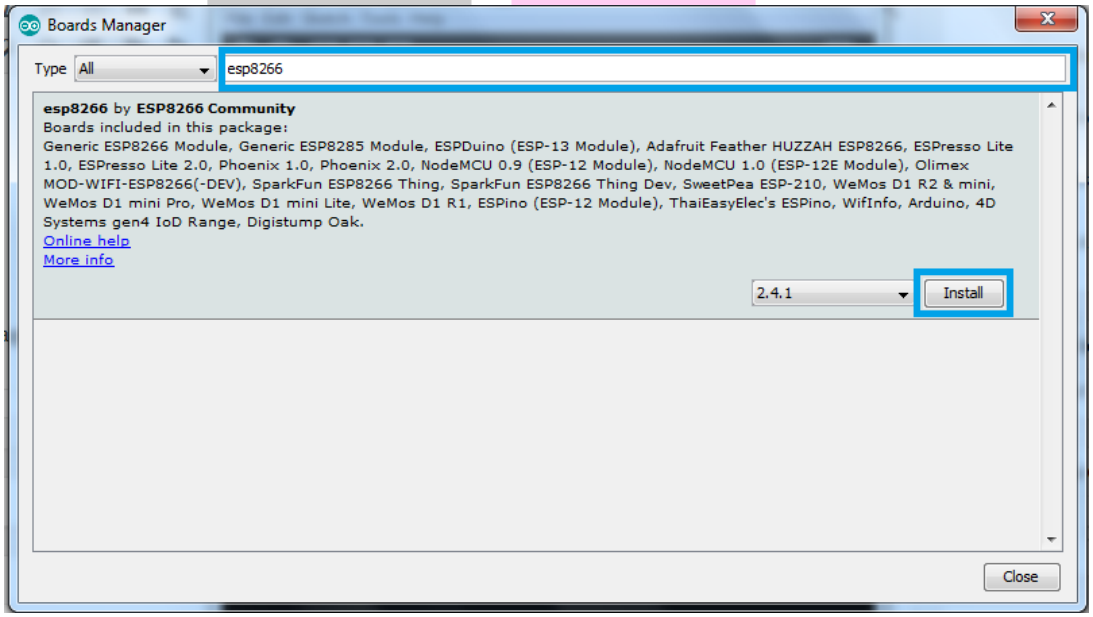
1. Pastikan anda sudah mempunyai aplikasi Arduino IDE, kemudian untuk menambahkan Board Nodemcu buka Arduino IDE kalian, masuk ke file > Preference, setelah itu tab Preference terbuka lalu masukkan link berikut ini: http://arduino.esp8266.com/stable/package_esp8266com_index.json ke bagian "Additional Board Manager URLs" lalu klik OK.



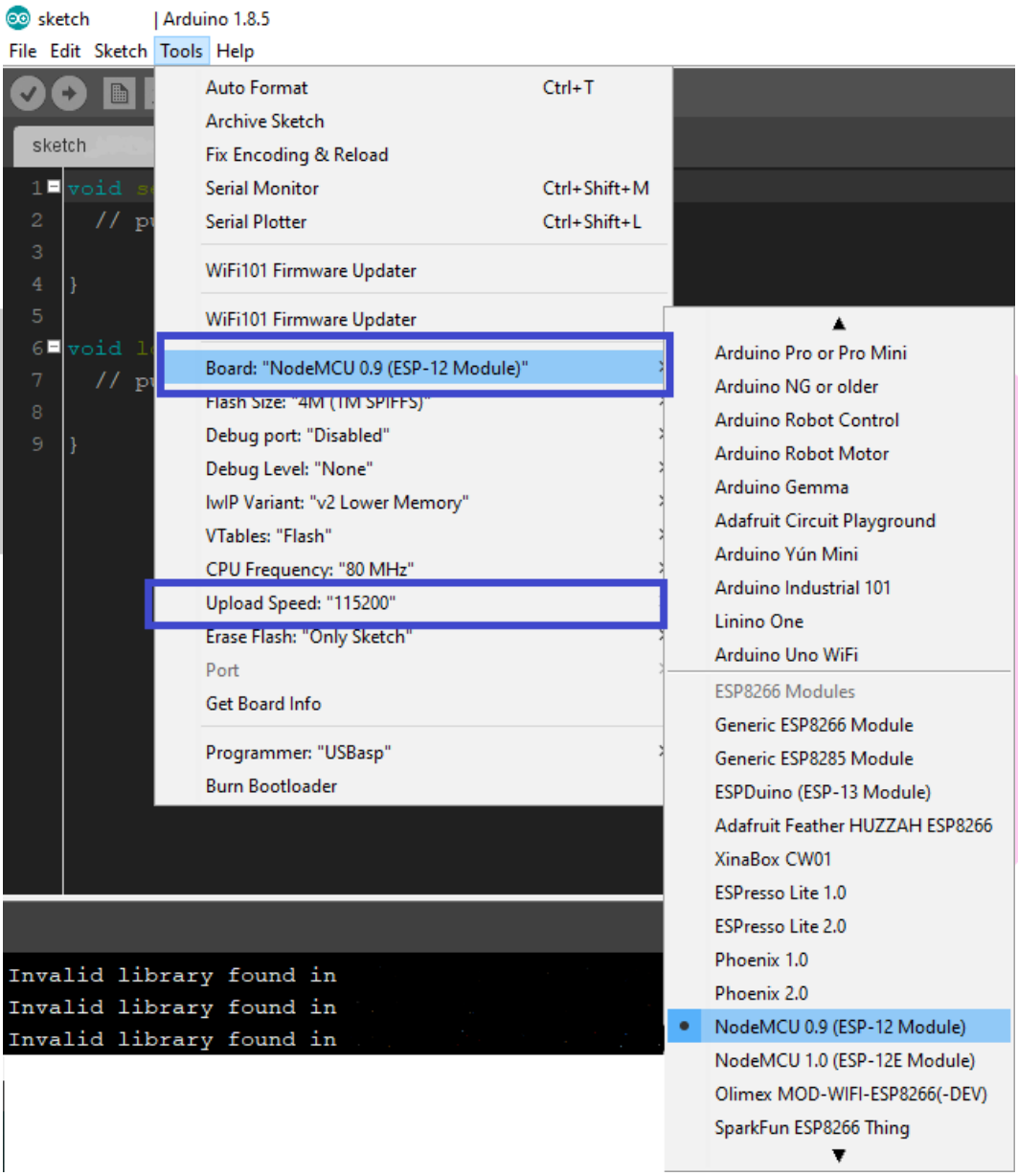
2. Kemudian masuk ke Borad Manager (Tools > Board > Board Manager).



3. Masukkan "ESP8266" pada Searchbox lalu Klik Install. Tahap ini komputer harus terhubung ke internet.



4. Setelah proses Download selesai maka kita akan bisa menemukan Board bernama NodeMCU di submenu Board.



4. Kumpulan Project Dengan Trainer IOT

A. Kontrol Relay Dengan 1 Button

1. Wiring

- RL1 ------ > D1
- SW1 -------> D2

2. Koding / Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/
//Cara kontrol relay dengan 1 button
//penegenalan pin
int relay = D1;
int sw1   = D2;
int sw1State = 0;
void setup() {
  // program setup
  pinMode (sw1, INPUT);
  pinMode (relay, OUTPUT);
}
void loop() {
  // program perulangan
  sw1State = digitalRead (D2);
   if (sw1State == 0) {
    digitalWrite (relay, HIGH); //relay nyala
    }
   else { //ketika switch dilepas
```

```
    digitalWrite (relay, LOW); //relay mati
   }
}
//PROJECT : Program Kontrol Relay 1 Button
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

B. Kontrol Relay Dengan 2 Button

1. Wiring

- RL1 ------- > D1
- SW1 -------> D2
- SW2 -------> D3

2. Koding / Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/
//Cara kontrol relay dengan 2 button
//penegenalan pin
int relay = D1;
int sw1   = D2;
int sw2   = D3;
int sw1State = 0;
int sw2State = 0;
```

```
void setup() {
  // program setup
  pinMode (sw1, INPUT);
  pinMode (sw2, INPUT);
  pinMode (relay, OUTPUT);
}
void loop() {
  // program perulangan
  sw1State = digitalRead (D2);
  sw2State = digitalRead (D3);
   if (sw1State == 0) {
    digitalWrite (relay, HIGH); //relay nyala
    }
   if (sw2State == 0) {
    digitalWrite (relay, LOW); //relay mati
    }
}
//PROJECT : Program Kontrol Relay 2 Button
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

C. Memainkan Lagu Mario Bross

1. Wiring

- Buzzer ----- > D1

2. Koding / Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/
//Cara memainkan lagu mario bross dengan buzzer nodemcu

//melody super mario
#include "pitches.h"
//note dalam data melody:
int melody[] = {
  NOTE_C4,  NOTE_G3,  NOTE_G3,  NOTE_A3,  NOTE_G3,  0,
NOTE_B3, NOTE_C4
};
//note durations: 4 = quarter note, 8 = eighth note, etc.:
int noteDurations[] = {
  4, 8, 8, 4, 4, 4, 4, 4
};
void setup() {
  // kosong
}
void loop() {
for (int thisNote = 0; thisNote < 8; thisNote++) {
```

```
    // to calculate the note duration, take one second divided by the note type.
    //e.g. quarter note = 1000 / 4, eighth note = 1000/8, etc.
    int noteDuration = 1000 / noteDurations[thisNote];
    tone(D1, melody[thisNote], noteDuration);
    // to distinguish the notes, set a minimum time between them.
    // the note's duration + 30% seems to work well:
    int pauseBetweenNotes = noteDuration * 1.30;
    delay(pauseBetweenNotes);
    // stop musicnya;
    noTone(D1);
  }
  // no need to repeat the melody.
}
//PROJECT : Program Menyanyikan Lagu Dengan Buzzer
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

D. Memainkan Lagu Coffin Dance Dengan Buzzer

1. Wiring
   - Buzzer ----- > D1

2. Koding / Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
```

```
leimanilmu.blogspot.com
*/
//Cara memainkan musik coffin dance dengan buzzer nodemcu
//lagu Coffin
#include "pitches.h"
int melody[] = {
NOTE_AS4, NOTE_AS4, NOTE_AS4, NOTE_AS4,
NOTE_AS4, NOTE_AS4, NOTE_AS4, NOTE_AS4,
NOTE_AS4, NOTE_AS4, NOTE_AS4, NOTE_AS4,
NOTE_AS4, NOTE_AS4, NOTE_AS4, NOTE_AS4,
NOTE_AS4, NOTE_AS4, NOTE_AS4, NOTE_AS4,
NOTE_D5, NOTE_D5, NOTE_D5, NOTE_D5,
NOTE_C5, NOTE_C5, NOTE_C5, NOTE_C5,
NOTE_F5, NOTE_F5, NOTE_F5, NOTE_F5,
NOTE_G5, NOTE_G5, NOTE_G5, NOTE_G5,
NOTE_G5, NOTE_G5, NOTE_G5, NOTE_G5,
NOTE_G5, NOTE_G5, NOTE_G5, NOTE_G5,
NOTE_C5, NOTE_AS4, NOTE_A4, NOTE_F4,
NOTE_G4, 0, NOTE_G4, NOTE_D5,
NOTE_C5, 0, NOTE_AS4, 0,
NOTE_A4, 0, NOTE_A4, NOTE_A4,
NOTE_C5, 0, NOTE_AS4, NOTE_A4,
NOTE_G4,0, NOTE_G4, NOTE_AS5,
NOTE_A5, NOTE_AS5, NOTE_A5, NOTE_AS5,
NOTE_G4,0, NOTE_G4, NOTE_AS5,
NOTE_A5, NOTE_AS5, NOTE_A5, NOTE_AS5,
NOTE_G4, 0, NOTE_G4, NOTE_D5,
NOTE_C5, 0, NOTE_AS4, 0,
```

```
NOTE_A4, 0, NOTE_A4, NOTE_A4,
NOTE_C5, 0, NOTE_AS4, NOTE_A4,
NOTE_G4,0, NOTE_G4, NOTE_AS5,
NOTE_A5, NOTE_AS5, NOTE_A5, NOTE_AS5,
NOTE_G4,0, NOTE_G4, NOTE_AS5,
NOTE_A5, NOTE_AS5, NOTE_A5, NOTE_AS5
};
int noteDurations[] = {
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
```

```
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
4,4,4,4,
};
void setup() {
}
void loop()
{
for (int thisNote = 0; thisNote < 112; thisNote++)
{
int noteDuration = 750 / noteDurations[thisNote];
tone(D1, melody[thisNote], noteDuration);
int pauseBetweenNotes = noteDuration * 1.30;
delay(pauseBetweenNotes);
noTone(D1);}
}
//PROJECT : Program Menyanyikan Lagu Dengan Buzzer 2
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

E. Kontrol Led RGB Dengan Blynk

1. Wiring

- Led Red ----- > D0
- Led Green ----- > D1
- Led Blue ----- > D2

2. Koding / Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/
//Cara kontrol led RGB dengan aplikasi BLYNK
#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>
char auth[] = "kode_otentikasi_kalian";
char ssid[] = "nama_wifi_anda";
char pass[] = "password_wifi_anda";
void setup()
{
  // Debug console
  Serial.begin(9600);
  Blynk.begin(auth, ssid, pass);
}
```

```
void loop()
{
  Blynk.run();
}
//PROJECT : Cara kontrol led RGB dengan aplikasi BLYNK
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

F. Pembacaan Suhu Dht 11 Dengan Tampilan Lcd Oled 128x64

1. Wiring
   - SCL LCD ----- > D1
   - SDA LCD ----- > D2
   - DHT ----- > D3

2. Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/
//Pembacaan suhu DHT 11 dengan tampilan LCD OLED 128x64
//------------------librarry untuk OLED 128x64----------------------------
#include <SPI.h>
#include <Wire.h>
#include <Adafruit_GFX.h>
```

```
#include <Adafruit_SSD1306.h>
#define SCREEN_WIDTH 128 // OLED display width, in pixels
#define SCREEN_HEIGHT 64 // OLED display height, in pixels
#define OLED_RESET     -1 // Reset pin # (or -1 if sharing Arduino reset pin)
Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire, OLED_RESET);
//-------------------------------------------------------------------------
//-------------------Library DHT11-------------------
#include "DHTesp.h"
DHTesp dht;
//-----------------------------------------------
void setup() {
  // put your setup code here, to run once:
  Serial.begin(115200);  // Untuk komunikasi serial
  dht.setup(D3);  // pin DHT
  if(!display.begin(SSD1306_SWITCHCAPVCC, 0x3C)) { // Alamat I2C LCD OLED
    Serial.println(F("SSD1306 allocation failed"));
    for(;;); // Don't proceed, loop forever
  }
}
void loop() {
  // put your main code here, to run repeatedly:
  static uint32_t last_dht_update= 0;
  uint32_t now_dht = millis();
    if (now_dht - last_dht_update > dht.getMinimumSamplingPeriod() *1.2) {
```

```
    last_dht_update = now_dht;
    float humidity = dht.getHumidity();
    float temperature = dht.getTemperature();
    Serial.print(temperature);
    Serial.print("C   ");
    Serial.print(humidity);
    Serial.println("%");

    //-------menampilkan Suhu di LCD OLED--------------------

    display.clearDisplay();
    display.setTextSize(2); // Draw 2X-scale text
    display.setTextColor(SSD1306_WHITE);
    display.setCursor(0, 0);
    display.print(temperature);
    display.print("C");
    display.setCursor(0, 24);
    display.print(humidity);
    display.print("%");
    display.display();
    delay(500); //waktu untuk refresh data suhu dan kelembabpan
    //-------menampilkan Suhu di LCD OLED--------------------
  }
  }
//PROJECT : Cara pembacaan suhu DHT 11 dengan tampilan LCD OLED 128x64
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

G. Penggaris Digital Dengan Sensor Ultrasonic Dan Lcd Oled 12

1. Wiring

- TRIG Pin ----- > D5
- ECHO Pin ----- > D6
- SCL ----- > D1
- SDA ----- > D2

2. Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/
//Penggaris digital dengan sensor Ultrasonik dan LCD OLED 128x64

//------------------librarry untuk OLED 128x64----------------------------
-
#include <SPI.h>
#include <Wire.h>
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>
#define SCREEN_WIDTH 128 // OLED display width, in pixels
#define SCREEN_HEIGHT 64 // OLED display height, in pixels
```

```
#define OLED_RESET     -1 // Reset pin # (or -1 if sharing Arduino reset pin)
Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire, OLED_RESET);

//----------- PIN ------
int trig_pin = D5;
int echo_pin = D6;
long durasi, jarak;

void setup() {
  Serial.begin(115200); // Untuk komunikasi serial

  if(!display.begin(SSD1306_SWITCHCAPVCC, 0x3C)) { // Alamat I2C LCD OLED
    Serial.println(F("SSD1306 allocation failed"));
    for(;;); // Don't proceed, loop forever
  }
  pinMode(trig_pin, OUTPUT);    // set pin menjadi output
  pinMode(echo_pin, INPUT);     // set pin input
  digitalWrite(trig_pin, LOW);
}

void loop() {
  digitalWrite(trig_pin, LOW);
  delayMicroseconds(8);
  digitalWrite(trig_pin, HIGH);
  delayMicroseconds(8);
```

```
  digitalWrite(trig_pin, LOW);
  delayMicroseconds(8);

  durasi = pulseIn(echo_pin, HIGH); // Penerimaan suara ultrasonic
  jarak = (durasi / 2) / 29.1;     // Pengubahan durasi menjadi jarak (CM)
  Serial.println(jarak);           // Menampilkan jarak di Serial Monitor

  //-------menampilkan jarak di LCD OLED-------------------
  display.clearDisplay();
  display.setTextSize(2); // Draw 2X-scale text
  display.setTextColor(SSD1306_WHITE);
  display.setCursor(24, 24);
  display.print(jarak);
  display.println(" CM");
  display.display();
  delay(500); //waktu untuk refresh data jarak
  //-------menampilkan jarak di LCD OLED-------------------
}

//PROJECT : Program Penggaris digital dengan sensor Ultrasonik dan
LCD OLED 128x64
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

H. Cara Membuat Running Led

1. Wiring
   - LED 1 ----- > D0
   - LED 2 ----- > D1
   - LED 3 ----- > D2
   - LED 4 ----- > D3
   - LED 5 ----- > D4
   - LED 6 ----- > D5

2. Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/

//Cara membuat nodemcu running led

void setup() {
 pinMode(D0, OUTPUT);
 pinMode(D1, OUTPUT);
 pinMode(D2, OUTPUT);
 pinMode(D3, OUTPUT);
 pinMode(D4, OUTPUT);
 pinMode(D5, OUTPUT);
```

```
}
void loop() {
 //------------------------------  MODE 1  ---------------
 digitalWrite (D0, HIGH);
 digitalWrite (D1, LOW);
 digitalWrite (D2, LOW);
 digitalWrite (D3, LOW);
 digitalWrite (D4, LOW);
 digitalWrite (D5, LOW);
 delay(300);

 digitalWrite (D0, LOW);
 digitalWrite (D1, HIGH);
 digitalWrite (D2, LOW);
 digitalWrite (D3, LOW);
 digitalWrite (D4, LOW);
 digitalWrite (D5, LOW);
 delay(300);

 digitalWrite (D0, LOW);
 digitalWrite (D1, LOW);
 digitalWrite (D2, HIGH);
 digitalWrite (D3, LOW);
 digitalWrite (D4, LOW);
 digitalWrite (D5, LOW);
 delay(300);

 digitalWrite (D0, LOW);
```

```
digitalWrite (D1, LOW);
digitalWrite (D2, HIGH);
digitalWrite (D3, LOW);
digitalWrite (D4, LOW);
digitalWrite (D5, LOW);
delay(300);

digitalWrite (D0, LOW);
digitalWrite (D1, LOW);
digitalWrite (D2, LOW);
digitalWrite (D3, HIGH);
digitalWrite (D4, LOW);
digitalWrite (D5, LOW);
delay(300);

digitalWrite (D0, LOW);
digitalWrite (D1, LOW);
digitalWrite (D2, LOW);
digitalWrite (D3, LOW);
digitalWrite (D4, HIGH);
digitalWrite (D5, LOW);
delay(300);

digitalWrite (D0, LOW);
digitalWrite (D1, LOW);
digitalWrite (D2, LOW);
digitalWrite (D3, LOW);
digitalWrite (D4, LOW);
```

```
digitalWrite (D5, HIGH);
delay(300);
//------------------------------ MODE 1 --------------

//------------------------------ MODE 2 --------------
digitalWrite (D0, LOW);
digitalWrite (D1, LOW);
digitalWrite (D2, LOW);
digitalWrite (D3, LOW);
digitalWrite (D4, LOW);
digitalWrite (D5, LOW);
delay(300);

digitalWrite (D0, HIGH);
digitalWrite (D1, HIGH);
digitalWrite (D2, HIGH);
digitalWrite (D3, HIGH);
digitalWrite (D4, HIGH);
digitalWrite (D5, HIGH);
delay(300);

digitalWrite (D0, LOW);
digitalWrite (D1, LOW);
digitalWrite (D2, LOW);
digitalWrite (D3, LOW);
digitalWrite (D4, LOW);
digitalWrite (D5, LOW);
delay(300);
```

```
digitalWrite (D0, HIGH);
digitalWrite (D1, HIGH);
digitalWrite (D2, HIGH);
digitalWrite (D3, HIGH);
digitalWrite (D4, HIGH);
digitalWrite (D5, HIGH);
delay(300);

digitalWrite (D0, LOW);
digitalWrite (D1, LOW);
digitalWrite (D2, LOW);
digitalWrite (D3, LOW);
digitalWrite (D4, LOW);
digitalWrite (D5, LOW);
delay(100);

digitalWrite (D0, HIGH);
digitalWrite (D1, HIGH);
digitalWrite (D2, HIGH);
digitalWrite (D3, HIGH);
digitalWrite (D4, HIGH);
digitalWrite (D5, HIGH);
delay(100);

digitalWrite (D0, LOW);
digitalWrite (D1, LOW);
digitalWrite (D2, LOW);
```

```
  digitalWrite (D3, LOW);
  digitalWrite (D4, LOW);
  digitalWrite (D5, LOW);
  delay(100);

  digitalWrite (D0, HIGH);
  digitalWrite (D1, HIGH);
  digitalWrite (D2, HIGH);
  digitalWrite (D3, HIGH);
  digitalWrite (D4, HIGH);
  digitalWrite (D5, HIGH);
  delay(100);
  //------------------------------  MODE 2  --------------
}

//PROJECT : Program Penggaris digital dengan sensor Ultrasonik dan
LCD OLED 128x64
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

I. Pembacaan Jarak Menggunakan Blynk

1. Wiring
   - TRIGGER Pin ----- > D5
   - ECHO Pin ----- > D6

2. Program

```
/*
Youtube.com/LeimanGoVlog
```

```
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/
//Cara pembacaan jarak menggunakan aplikasi blynk
#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>
#define TRIGGERPIN D5
#define ECHOPIN    D6

char auth[] = "kode_otentikasi_kalian";
char ssid[] = "nama_wifi_anda";
char pass[] = "password_wifi_anda";

WidgetLCD lcd(V1);

void setup()
{
  Serial.begin(9600);
  pinMode(TRIGGERPIN, OUTPUT);
  pinMode(ECHOPIN, INPUT);
  Blynk.begin(auth, ssid, pass);
  lcd.clear();
  lcd.print(0, 0, "Jarak Dalam CM");
}
```

```
void loop()
{
 lcd.clear();
 lcd.print(1, 0, "Jarak Dalam CM");
 long duration, distance;
 digitalWrite(TRIGGERPIN, LOW);
 delayMicroseconds(3);
 digitalWrite(TRIGGERPIN, HIGH);
 delayMicroseconds(12);
 digitalWrite(TRIGGERPIN, LOW);
 duration = pulseIn(ECHOPIN, HIGH);
 distance = (duration/2) / 29.1;
 Serial.print(distance);
 Serial.println("Cm");
 lcd.print(7, 1, distance);
 Blynk.run();
 delay(500);
}
//PROJECT     : Cara pembacaan jarak menggunakan aplikasi blynk
//DIBUAT      : TRIDIPI.PROJECT
//TANGGAL     : 07/12/2021
```

J. Cara Membuat Jam Digital NTP

1. Wiring

- SCL ----- > D1
- SDA ----- > D2

2. Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/

//Cara membuat jam digital NTP IOT
#include <ESP8266WiFi.h>
#include <time.h>
#include <SPI.h>
#include <Wire.h>
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>
#define SCREEN_WIDTH 128          // OLED display width, in pixels
#define SCREEN_HEIGHT 64          // OLED display height, in pixels
#define OLED_RESET -1
Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire, OLED_RESET);

const char* ssid = "nama_wifi_anda";
const char* password = "password_wifi_anda";
int ledPin = D5;
```

```
int timezone = 7 * 3600;
int dst = 0;

void setup() {
  display.begin(SSD1306_SWITCHCAPVCC, 0x3C);
  // Clear the buffer.
  display.clearDisplay();
  display.display();

  pinMode(ledPin,OUTPUT);
  digitalWrite(ledPin,LOW);
  Serial.begin(115200);
  display.setTextSize(1);
  display.setTextColor(WHITE);

  display.setCursor(0,0);
  display.println("Wifi connecting to ");
  display.println( ssid );
  WiFi.begin(ssid,password);
  display.println("\nConnecting");
  display.display();

  while( WiFi.status() != WL_CONNECTED ){
     delay(500);
     display.print(".");
     display.display();
  }
```

```
// Clear the buffer.
display.clearDisplay();
display.display();
display.setCursor(0,0);

display.println("Wifi Connected!");
display.print("IP:");
display.println(WiFi.localIP() );

display.display();

configTime(timezone, dst, "pool.ntp.org","time.nist.gov");
display.println("\nWaiting for NTP...");

while(!time(nullptr)){
  Serial.print("*");

  delay(1000);
}
display.println("\nTime response....OK");
display.display();
delay(1000);

display.clearDisplay();
display.display();
}
```

```
void loop() {

  time_t now = time(nullptr);
  struct tm* p_tm = localtime(&now);

  Serial.print(p_tm->tm_mday);
  Serial.print("/");
  Serial.print(p_tm->tm_mon + 1);
  Serial.print("/");
  Serial.print(p_tm->tm_year + 1900);

  Serial.print(" ");
  Serial.print(p_tm->tm_hour);
  Serial.print(":");
  Serial.print(p_tm->tm_min);
  Serial.print(":");
  Serial.println(p_tm->tm_sec);
  // Clear the buffer.
  display.clearDisplay();
  display.setTextSize(3);
  display.setTextColor(WHITE);

  display.setCursor(0,16);
  display.print(p_tm->tm_hour);
  display.print(":");
  if( p_tm->tm_min <10)
  display.print("0");
  display.print(p_tm->tm_min);
```

```
  display.setTextSize(2);
  display.setCursor(90,23);
  display.print(".");
  if( p_tm->tm_sec <10)
    display.print("0");
  display.print(p_tm->tm_sec);

  display.setTextSize(2);
  display.setCursor(5,0);
  display.print(p_tm->tm_mday);
  display.print("/");
  display.print(p_tm->tm_mon + 1);
  display.print("/");
  display.print(p_tm->tm_year + 1900);

  display.setTextSize(1);
  display.setCursor(25,44);
  display.print("Tridipi.project");
  display.setTextSize(1);
  display.setCursor(2,55);
  display.print("-----------------------------------");
  display.display();
  delay(1000); // update every 1 sec
}
//PROJECT : Cara membuat jam digital NTP IOT
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

K. Kontrol 3 Led Dengan Aplikasi Blynk

1. Wiring

- LED 1 ----- > D1
- LED 2 ----- > D2
- LED 3 ----- > D3

2. Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/

//Cara kontrol 3 led degan aplikasi blynk
#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>

char auth[] = "kode_otentikasi_kalian";
char ssid[] = "nama_wifi_anda";
char pass[] = "password_wifi_anda";

void setup()
{
  // Debug console
```

```
  Serial.begin(9600);

  Blynk.begin(auth, ssid, pass);
}

void loop()
{
  Blynk.run();
}

//PROJECT : Cara kontrol 3 led degan aplikasi blynk
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

L. Kontrol Relay Dengan Aplikasi Blynk

1. Wiring
   - Relay 1 ----- > D1

2. Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/
```

```
//Cara kontrol relay dengan aplikasi BLYNK
#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>

char auth[] = "kode_otentikasi_kalian";
char ssid[] = "nama_wifi_anda";
char pass[] = "password_wifi_anda";

void setup()
{
  // Debug console
  Serial.begin(9600);
  Blynk.begin(auth, ssid, pass);
}
void loop()
{
  Blynk.run();
}

//PROJECT : Cara kontrol relay dengan aplikasi BLYNK
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

M. Kontrol Led Fading Dengan Potensiometer

1. Wiring
   - Potensiometer ----- > A0
   - Led ----- > D1

2. Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/

//Cara kontrol led fading dengan potensio meter
int led = D1;
int pot = A0;
int potState = 0;

void setup() {
  // put your setup code here, to run once:
pinMode (led, OUTPUT);
pinMode (pot, INPUT);
}

void loop() {
  // put your main code here, to run repeatedly:
```

```
potState = analogRead (pot);
analogWrite (led, potState);
}

//PROJECT : Cara kontrol led fading dengan potensio meter
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```

N. Monitoring Suhu Dan Kelembaban Online Dengan Blynk

1. Wiring
   - DHT 11 ----- > D1

2. Program

```
/*
Youtube.com/LeimanGoVlog
Tokopedia.com/tridipiproject
saweria.co/leimangovlog
instagram/tridipi.project
github.com/leiman07
leimanilmu.blogspot.com
*/

//Cara monitoring suhu dan kelembaban IOT dengan aplikasi BLYNK

#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>
#include <DHT.h>
```

```
//auth blynk
char auth[] = "kode_otentikasi_kalian";

//wifi
char ssid[] = "nama_wifi_anda";
char pass[] = "password_wifi_anda";

#define DHTPIN D1
#define DHTTYPE DHT11
DHT dht(DHTPIN, DHTTYPE);
BlynkTimer timer;


void sendSensor()
{
  float h = dht.readHumidity();
  float t = dht.readTemperature();

  if (isnan(h) || isnan(t)) {
    Serial.println("Gagal membaca sensor!");
    return;
  }
  Blynk.virtualWrite(V0, t);
  Blynk.virtualWrite(V1, h);
}
```

```
void setup()
{
  Serial.begin(9600);
  Blynk.begin(auth, ssid, pass);
  dht.begin();
  timer.setInterval(1000L, sendSensor);
}

void loop()
{
  Blynk.run();
  timer.run();
}

//PROJECT : Cara monitoring suhu dan kelembaban IOT dengan aplikasi BLYNK
//DIBUAT  : TRIDIPI.PROJECT
//TANGGAL : 07/12/2021
```