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LAMPIRAN

Lampiran 1 Program Arduino R3

```
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27,16,2);
```

```

const int sensor_api = A2;
const int sensor_gas = A3;
const int buzzer = 4;
const int relay1 = 2;//mcb
const int relay2 = 3;//springkel
int data = 0;

void setup() {
Serial.begin(9600);
lcd.init();
lcd.backlight();
lcd.setCursor(4,0);
lcd.print("WELCOME");
pinMode(sensor_api,INPUT);
pinMode(sensor_gas,INPUT);
pinMode(buzzer,OUTPUT);
pinMode(relay1,OUTPUT);
pinMode(relay2,OUTPUT);
}

void loop() {
int nilai1 = analogRead(sensor_api);
int nilai2 = analogRead(sensor_gas);
int x = nilai1*10;
float api = x/1023;
float ppm = 1.953125*nilai2;
lcd.clear();
lcd.setCursor(0,0);
lcd.print("API:");lcd.print(api);lcd.print(" GAS:");lcd.print(ppm);

//Serial.println("");Serial.print(nilai1);Serial.print("\t");Serial.
print(api);Serial.print("\t");Serial.print(nilai2);Serial.print("\t"
);Serial.println(ppm);
//delay(500);
if(nilai1 >= 500 && ppm <= 500){
digitalWrite(relay1, HIGH);
digitalWrite(relay2, HIGH);
digitalWrite(buzzer, LOW);
//Serial.write("1");//// tidak ada api dan gas
//Serial.println("1");
lcd.clear();
lcd.setCursor(0,0);
lcd.print("A:");lcd.print(api);lcd.print(" G:");lcd.print(ppm);
lcd.setCursor(6,1);
lcd.print("AMAN");
Serial.write("1");
}
}

```

```

}
else if(nilai1 >= 500 && ppm >= 500){
    digitalWrite(relay1, LOW);
    digitalWrite(relay2, HIGH);
    digitalWrite(buzzer, HIGH);
    Serial.write("2");//// tidak ada api tapi ada gas
    //Serial.println("2");
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("A:");lcd.print(api);lcd.print(" G:");lcd.print(ppm);
    lcd.setCursor(1,1);
    lcd.print("GAS TERDETEKSI");
    Serial.write("1");
}
else if(nilai1 <= 500 && ppm <= 500){
    digitalWrite(relay1, LOW);
    digitalWrite(relay2, LOW);
    digitalWrite(buzzer, HIGH);
    Serial.write("3");//// ada api tapi tidak ada gas
    //Serial.println("3");
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("A:");lcd.print(api);lcd.print(" G:");lcd.print(ppm);
    lcd.setCursor(1,1);
    lcd.print("API TERDETEKSI");
    Serial.write("1");
}
else if(nilai1 <= 500 && ppm >= 500){
    digitalWrite(relay1, LOW);
    digitalWrite(relay2, LOW);
    digitalWrite(buzzer, HIGH);
    Serial.write("4");//// ada api dan gas
    //Serial.println("4");
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("A:");lcd.print(api);lcd.print(" G:");lcd.print(ppm);
    lcd.setCursor(3,1);
    lcd.print("EMERGENCY");
    Serial.write("1");
}
else{/*Serial.write("1");*/}
// if(Serial.available()){
//     char data = Serial.read();
//     Serial.write(data);
//     Serial.println("");
// }
// digitalWrite(relay0, HIGH);

```

```

// digitalWrite(relay1, LOW);
// delay(2000);

// digitalWrite(relay1, HIGH);
// digitalWrite(relay0, LOW);
  delay(1000);
}

```

```

#ifdef ESP32
  #include <WiFi.h>
#else
  #include <ESP8266WiFi.h>
#endif

#include <WiFiClientSecure.h>
#include <UniversalTelegramBot.h>
#include <ArduinoJson.h>

int Bot_mtbs = 1000; //mean time between scan messages
long Bot_lasttime; //last time messages' scan has been done
// Replace with your network credentials
const char* ssid = "Adi";
const char* password = "12345678";

// Initialize Telegram BOT
#define BOTtoken "6976883073:AAE5p3-
Xch1SD5ALjeD5ta5AyoUYIIYnTuE" // your Bot Token (Get from
Botfather)

// Use @myidbot to find out the chat ID of an individual or a group
// Also note that you need to click "start" on a bot before it can
// message you
#define CHAT_ID "6496538911"

#ifdef ESP8266
  X509List cert(TELEGRAM_CERTIFICATE_ROOT);
#endif

WiFiClientSecure client;
UniversalTelegramBot bot(BOTtoken, client);

const int motionSensor = A0; // PIR Motion Sensor

```

```

bool motionDetected = false;

// Indicates when motion is detected
void ICACHE_RAM_ATTR detectsMovement() {
  //Serial.println("MOTION DETECTED!!!");
  motionDetected = true;
}
int led = 2 ;
int data;
void setup() {
  //Serial.begin(921600);
  Serial.begin(9600);
  pinMode(led, OUTPUT);
  #ifdef ESP8266
  configTime(0, 0, "pool.ntp.org"); // get UTC time via NTP
  client.setTrustAnchors(&cert); // Add root certificate for
api.telegram.org
  #endif

  #ifdef ESP32
  client.setCACert(TELEGRAM_CERTIFICATE_ROOT); // Add root
certificate for api.telegram.org
  #endif

  // PIR Motion Sensor mode INPUT_PULLUP
  pinMode(motionSensor, INPUT);
  // Set motionSensor pin as interrupt, assign interrupt function
and set RISING mode
  //attachInterrupt(digitalPinToInterrupt(motionSensor),
detectsMovement, RISING);

  // Attempt to connect to Wifi network:
  Serial.print("Connecting Wifi: ");
  Serial.println(ssid);

  WiFi.mode(WIFI_STA);
  WiFi.begin(ssid, password);

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

  Serial.println("");
  Serial.println("WiFi connected");
  Serial.print("IP address: ");
  Serial.println(WiFi.localIP());

```

```
bot.sendMessage(CHAT_ID, "terhubung");

}

void loop() {
  if(Serial.available() > 0){
    data = Serial.read();
    Serial.print(char(data));
    //Serial.write(data);
    // Serial.print(data);
    // Serial.println("");
    //delay(500);

    if(data == '4'){
      digitalWrite(led, HIGH);
      Serial.print("LED ON");
      bot.sendMessage(CHAT_ID, "PERINGATAN_API & GAS");
      digitalWrite(led, LOW);
      Serial.print("LED OFF");
      //sendMessage("Peringatan ada api dan gas");
    }
    else if(data == '2'){
      digitalWrite(led, HIGH);
      Serial.print("LED ON");
      bot.sendMessage(CHAT_ID, "PERINGATAN_GAS");
      digitalWrite(led, LOW);
      Serial.print("LED OFF");
      // bot.sendMessage(CHAT_ID, "Peringatan ada gas");
      // bot.sendMessage(CHAT_ID, "Peringatan ada gas");
      // delay(10);
      //sendMessage("Peringatan ada gas");
    }
    else if(data == '3'){
      digitalWrite(led, HIGH);
      Serial.print("LED ON");
      bot.sendMessage(CHAT_ID, "PERINGATAN_API");
      digitalWrite(led, LOW);
      Serial.print("LED OFF");
      // bot.sendMessage(CHAT_ID, "Peringatan ada api");
      // bot.sendMessage(CHAT_ID, "Peringatan ada api");
      // delay(10);
      // //sendMessage("Peringatan ada api");
    }
    Serial.println();
    // else{
    //   //bot.sendMessage(CHAT_ID, "R");
    // }
  }
```



```

    // else{

    // // if (millis() > Bot_lasttime + Bot_mtbs) {
    // // int numNewMessages =
bot.getUpdates(bot.last_message_received + 1);
    // // while(numNewMessages) {
    // //   Serial.println("Pesan Diterima");
    // //   Serial.println("sedang diproses.....");
    // //   handleNewMessages(numNewMessages);
    // //   numNewMessages =
bot.getUpdates(bot.last_message_received + 1);
    // // }
    // // Bot_lasttime = millis();
    // // }
    // }
    //delay(10);

    // if (millis() > Bot_lasttime + Bot_mtbs) {
    // int numNewMessages = bot.getUpdates(bot.last_message_received +
1);
    // while(numNewMessages) {
    //   Serial.println("Pesan Diterima");
    //   Serial.println("sedang diproses.....");
    //   handleNewMessages(numNewMessages);
    //   numNewMessages = bot.getUpdates(bot.last_message_received +
1);
    // }
    // Bot_lasttime = millis();
    // }

}

void handleNewMessages(int numNewMessages) {
  int nilai = analogRead(motionSensor);
  float volt = (1.5*nilai)/12;
  Serial.print("status pesan = ");
  Serial.print(String(numNewMessages));
  Serial.println(",pesan berhasil diterima\n");
  for (int i=0; i<numNewMessages; i++) {
    String text = bot.messages[i].text;
    if (text == "/start") {
      bot.sendMessage(CHAT_ID, "HAIII");
    }
  }
}
}

```

