Lampiran 3 Source Code :

```
#define BLYNK_TEMPLATE_ID "TMPL6CPcSp9Li"
#define BLYNK_TEMPLATE_NAME "ESP 32 Home"
#define BLYNK_AUTH_TOKEN "HKo3T0wF7Z1b3X_qu_0xqlE7p05TEDZW"
//-------------------------------------------------------------------
------------
//---------------------------------------------------
#include <WiFi.h>
#include <WiFiClient.h>
#include <BlynkSimpleEsp32.h>

// Comment this out to disable prints and save space
#define BLYNK_PRINT Serial

char auth[] = BLYNK_AUTH_TOKEN;
BlynkTimer timer;
//---------------------------------------------------
char ssid[] = "Gratis";
char pass[] = "87654321";
//---------------------------------------------------
#define RELAY_1 19
#define RELAY_2 18
#define RELAY_3 17
#define RELAY_4 16
//---------------------------------------------------
#define BUZZER  25
#define DOOR_SENSOR  32
#define MQ2     34
#define DHT_PIN 26
#define FLAME   35
//---------------------------------------------------
int STATE_RELAY_1 = 0;
int STATE_RELAY_2 = 0;
int STATE_RELAY_3 = 0;
int STATE_RELAY_4 = 0;
//---------------------------------------------------
//Virtual Pin Blynk samakan dengan datastream
#define VPIN_BUTTON_1     V0
#define VPIN_BUTTON_2     V1
#define VPIN_BUTTON_3     V2
#define VPIN_BUTTON_4     V3
#define VPIN_TEMPERATURE  V4
#define VPIN_HUMIDITY     V7
#define VPIN_MQ2          V5
#define VPIN_FLAME        V6
//Untuk Membaca Status
```

```
boolean flame_new   = LOW;
boolean flame_old   = LOW;

int mq2_new         = LOW;
int mq2_old         = LOW;

float temp_new      = LOW;
float temp_old      = LOW;
//Notif Di Blynk
String fire_event = "FIRE";
String gas_event  = "GAS";
String temp_event = "TEMPERATURE";
//Nilai waktu buzzer aktif
boolean buzzer_state = false;
unsigned long buzzer_timer = 0;
//Limit sensor
int mq2_limit   = 50;
int temp_limit  = 40;
int flag=0;
//---------------------------------------------------
#include <DHT.h>
#define DHTTYPE DHT11
DHT dht(DHT_PIN, DHTTYPE);
//---------------------------------------------------
const byte IR_RECEIVE_PIN = 18;
//---------------------------------------------------
//------------------------------------------------------------------------
--------
//
//Fungsi untuk sincron ke blynk
BLYNK_CONNECTED() {
  Blynk.syncVirtual(VPIN_BUTTON_1);
  Blynk.syncVirtual(VPIN_BUTTON_2);
  Blynk.syncVirtual(VPIN_BUTTON_3);
  Blynk.syncVirtual(VPIN_BUTTON_4);
  //Blynk.syncAll();
}
//------------------------------------------------------------------------
--------
BLYNK_WRITE(VPIN_BUTTON_1) {
  STATE_RELAY_1 = param.asInt();
  digitalWrite(RELAY_1, STATE_RELAY_1);
  Serial.print("Relay1 State = "); Serial.println(STATE_RELAY_1);
}
//------------------------------------------------------------------------
--------
BLYNK_WRITE(VPIN_BUTTON_2) {
```

```
  STATE_RELAY_2 = param.asInt();
  digitalWrite(RELAY_2, STATE_RELAY_2);
  Serial.print("Relay2 State = "); Serial.println(STATE_RELAY_2);
}
//-------------------------------------------------------------------
--------
BLYNK_WRITE(VPIN_BUTTON_3) {
  STATE_RELAY_3 = param.asInt();
  digitalWrite(RELAY_3, STATE_RELAY_3);
  Serial.print("Relay3 State = "); Serial.println(STATE_RELAY_3);
}
//-------------------------------------------------------------------
--------
BLYNK_WRITE(VPIN_BUTTON_4) {
  STATE_RELAY_4 = param.asInt();
  digitalWrite(RELAY_4, STATE_RELAY_4);
  Serial.print("Relay4 State = "); Serial.println(STATE_RELAY_4);
}
//-------------------------------------------------------------------
--------
//-------------------------------------------------------------------
--------

/*********************************************************************
*******************************
 * setup() Function
*********************************************************************
*******************************/
void setup(){
  // Debug console
  Serial.begin(115200);
  //-----------------------------------------------------------------
----
  pinMode(BUTTON_1, INPUT_PULLUP);
  pinMode(BUTTON_2, INPUT_PULLUP);
  pinMode(BUTTON_3, INPUT_PULLUP);
  pinMode(BUTTON_4, INPUT_PULLUP);
  //-----------------------------------------------------------------
----
  pinMode(RELAY_1, OUTPUT);
  pinMode(RELAY_2, OUTPUT);
  pinMode(RELAY_3, OUTPUT);
  pinMode(RELAY_4, OUTPUT);
  //-----------------------------------------------------------------
----
  //During Starting all Relays should TURN OFF
  digitalWrite(RELAY_1, HIGH);
```

```
  digitalWrite(RELAY_2, HIGH);
  digitalWrite(RELAY_3, HIGH);
  digitalWrite(RELAY_4, HIGH);
  //------------------------------------------------------------------
----
  pinMode(FLAME, INPUT);
  pinMode(BUZZER, OUTPUT);
  pinMode(DOOR_SENSOR,INPUT_PULLUP);
  //------------------------------------------------------------------
----
  dht.begin();
  //------------------------------------------------------------------
----
  //------------------------------------------------------------------
----
  Blynk.begin(auth, ssid, pass);
  // You can also specify server:
  //Blynk.begin(auth, ssid, pass, "blynk.cloud", 80);
  //Blynk.begin(auth, ssid, pass, IPAddress(192,168,1,100), 8080);
  //------------------------------------------------------------------
----
  //------------------------------------------------------------------
----
  timer.setInterval(100L, MQ2GasSensor);
  timer.setInterval(100L, DHT11Sensor);
  timer.setInterval(100L, FlameSensor);
  timer.setInterval(3000L,notifyOnButtonPress);
}

/*****************************************************************
*********************************
 * loop() Function
*****************************************************************
*********************************/
void loop() {
  Blynk.run();
  timer.run();


  listen_push_buttons();

  if (buzzer_state == false) {
    if (millis() - buzzer_timer > 3000) {
      digitalWrite(BUZZER, LOW);
      buzzer_state = false;
      buzzer_timer = 0;
    }
```

```
  }

}

/*********************************************************************
*******************************
 * DHT11Sensor Function
*********************************************************************
*******************************/
void DHT11Sensor() {
  //-------------------------------------------------------------------
-------
  float h = dht.readHumidity();
  //-------------------------------------------------------------------
-------
  //Read temperature as Celsius (the default)
  temp_old = temp_new;
  temp_new = dht.readTemperature();
  //-------------------------------------------------------------------
-------
  if (isnan(h) || isnan(temp_new)) {
    return;
  }

  Blynk.virtualWrite(VPIN_TEMPERATURE, temp_new);
  Blynk.virtualWrite(VPIN_HUMIDITY, h);
  //-------------------------------------------------------------------
-------
  if(temp_old < temp_limit && temp_new >= temp_limit) { //LOW to
HIGH
    String text = "SUHU TINGGI";
    Serial.println(text);
    Blynk.logEvent(temp_event, text);
    digitalWrite(BUZZER, LOW);
    buzzer_state = true;
    buzzer_timer = millis();
  }
}


/*********************************************************************
*******************************
 * MQ2GasSensor Function
*********************************************************************
*******************************/
void MQ2GasSensor() {
  mq2_old = mq2_new; // store old state
```

```
  mq2_new = analogRead(MQ2); //read new state
  mq2_new = map(mq2_new, 0, 4095, 0, 100);

  //--------------------------------------------------------------
  if(mq2_old < mq2_limit && mq2_new >= mq2_limit) { //LOW to HIGH
    String text = "TERDETEKSI GAS BOCOR";
    Serial.println(text);
    Blynk.logEvent(gas_event, text);
    digitalWrite(BUZZER, LOW);
    buzzer_state = true;
    buzzer_timer = millis();
  }
  //--------------------------------------------------------------
  else if(mq2_old > mq2_limit && mq2_new <= mq2_limit) { //HIGH to
LOW
    Serial.println("Tidak ada gas bocor!");
    digitalWrite(BUZZER, HIGH);
  }
  //--------------------------------------------------------------
  Blynk.virtualWrite(VPIN_MQ2, mq2_new);
}

/************************************************************
********************************
 * FlameSensor Function
************************************************************
********************************/
void FlameSensor() {
  //--------------------------------------------------------------
  flame_old = flame_new; // store old state
  flame_new = digitalRead(FLAME); //read new state
  //--------------------------------------------------------------
  if(flame_old == HIGH && flame_new == LOW) { //HIGH to LOW
    String text = "TERDETEKSI API";
    Serial.println(text);
    Blynk.logEvent(fire_event, text);
    digitalWrite(BUZZER, LOW);
    buzzer_state = true;
    buzzer_timer = millis();
  }
  else if(flame_old == LOW && flame_new == HIGH) { //LOW to HIGH
    Serial.println("Api Berhenti!");
    digitalWrite(BUZZER, HIGH);
  }
  //--------------------------------------------------------------
  Blynk.virtualWrite(VPIN_FLAME, !flame_new);
  //--------------------------------------------------------------
```

```
}

/*********************************************************************
*******************************
 * DOOR SENSOR
*********************************************************************
*******************************/
void notifyOnButtonPress()
{
  int isButtonPressed = digitalRead(DOOR_SENSOR);
  if (isButtonPressed==1 && flag==0) {
    Serial.println("Ada Orang Buka Pintu");
    Blynk.logEvent("security_alert","Ada Orang Buka Pintu");
    digitalWrite(BUZZER, LOW);
    flag=1;
  }
  else if (isButtonPressed==0)
  {
    flag=0;
    Serial.println("Pintu Ketutup");
    digitalWrite(BUZZER, HIGH);
  }
}

/*********************************************************************
*******************************
 * listen_push_buttons() function
*********************************************************************
*******************************/
void listen_push_buttons(){
    //---------------------------------------------------
    if(digitalRead(BUTTON_1) == LOW)
      {ControlRelay(1, RELAY_1, STATE_RELAY_1, VPIN_BUTTON_1);}
    //---------------------------------------------------
    else if (digitalRead(BUTTON_2) == LOW)
      {ControlRelay(2, RELAY_2, STATE_RELAY_2, VPIN_BUTTON_2);}
    //---------------------------------------------------
    else if (digitalRead(BUTTON_3) == LOW)
      {ControlRelay(3, RELAY_3, STATE_RELAY_3, VPIN_BUTTON_3);}
    //---------------------------------------------------
    else if (digitalRead(BUTTON_4) == LOW)
      {ControlRelay(4, RELAY_4, STATE_RELAY_4, VPIN_BUTTON_4);}
    //---------------------------------------------------
}

/*********************************************************************
*******************************
```

```
 * ControlRelay Function
**************************************************************
********************************/
void ControlRelay(int number, int relay_pin, int &status, int
virtual_pin){
    delay(200);
    status = !status;
    digitalWrite(relay_pin, status);
    delay(50);
    Blynk.virtualWrite(virtual_pin, status); //update button state
    Serial.print("Relay"+String(number)+" State = ");
Serial.println(status);
}
```