

# LAMPIRAN

## ESP32-CAM

```
#include "esp_camera.h"
#include <WiFi.h>
#include <ESP32Servo.h>

Servo myservo; // Membuat objek dari kelas Servo

const int servoPin = 2; // Pin servo
int pos;
const int relay_pin = 15; //relay pin
const int ir_pin = 12;
int baca_ir;

//millis
unsigned long previousMillis;
unsigned int interval = 500;

//
// WARNING!!! PSRAM IC required for UXGA resolution and high JPEG
quality
//          Ensure ESP32 Wrover Module or other board with PSRAM is
selected
//          Partial images will be transmitted if image exceeds
buffer size
//
//          You must select partition scheme from the board menu that
has at least 3MB APP space.
//          Face Recognition is DISABLED for ESP32 and ESP32-S2,
because it takes up from 15
//          seconds to process single frame. Face Detection is
ENABLED if PSRAM is enabled as well

// =====
// Select camera model
// =====
// #define CAMERA_MODEL_WROVER_KIT // Has PSRAM
// #define CAMERA_MODEL_ESP_EYE // Has PSRAM
// #define CAMERA_MODEL_ESP32S3_EYE // Has PSRAM
// #define CAMERA_MODEL_M5STACK_PSRAM // Has PSRAM
// #define CAMERA_MODEL_M5STACK_V2_PSRAM // M5Camera version B Has PSRAM
// #define CAMERA_MODEL_M5STACK_WIDE // Has PSRAM
```

```

// #define CAMERA_MODEL_M5STACK_ESP32CAM // No PSRAM
// #define CAMERA_MODEL_M5STACK_UNITCAM // No PSRAM
#define CAMERA_MODEL_AI_THINKER // Has PSRAM
// #define CAMERA_MODEL_TTGO_T_JOURNAL // No PSRAM
// #define CAMERA_MODEL_XIAO_ESP32S3 // Has PSRAM
// ** Espressif Internal Boards **
// #define CAMERA_MODEL_ESP32_CAM_BOARD
// #define CAMERA_MODEL_ESP32S2_CAM_BOARD
// #define CAMERA_MODEL_ESP32S3_CAM_LCD
// #define CAMERA_MODEL_DFRobot_FireBeetle2_ESP32S3 // Has PSRAM
// #define CAMERA_MODEL_DFRobot_Romeo_ESP32S3 // Has PSRAM
#include "camera_pins.h"

// blynk datastream
#define BLYNK_TEMPLATE_ID "TMPL6CT46Dkyt"
#define BLYNK_TEMPLATE_NAME "esp32Cam servo dan Ir"
#define BLYNK_AUTH_TOKEN "YKqTPrcQwU0gAeCcDcJhNo8lotFrqjDK"

#define BLYNK_PRINT Serial
#include <WiFi.h>
#include <WiFiClient.h>
#include <BlynkSimpleEsp32.h>
int relay_value = 0;
int servo_value = 90;
// int servo_to_0_value = 0;

// =====
// Enter your WiFi credentials
// =====
const char* ssid = "admin1234";
const char* password = "admin1234";

void startCameraServer();
void setupLedFlash(int pin);

// FUNGSI BACA NILAI DARI BLYNK
BLYNK_WRITE(V4){
    relay_value = param.asInt(); // assigning incoming value from pin V1
    to a variable
}

```

```

BLYNK_WRITE(V7){
    servo_value = param.asInt(); // assigning incoming value from pin V1
to a variable
}

// BLYNK_WRITE(V5){
//    servo_to_0_value = param.asInt(); // assigning incoming value from
pin V1 to a variable
// }

void setup() { Serial.begin(115200);
    Blynk.begin(BLYNK_AUTH_TOKEN, ssid, password);
    Serial.setDebugOutput(true);
    Serial.println();
    pinMode(relay_pin, OUTPUT);
    pinMode(ir_pin, INPUT);

    camera_config_t config;
    config.ledc_channel = LEDC_CHANNEL_0;
    config.ledc_timer = LEDC_TIMER_0;
    config.pin_d0 = Y2_GPIO_NUM;
    config.pin_d1 = Y3_GPIO_NUM;
    config.pin_d2 = Y4_GPIO_NUM;
    config.pin_d3 = Y5_GPIO_NUM;
    config.pin_d4 = Y6_GPIO_NUM;
    config.pin_d5 = Y7_GPIO_NUM;
    config.pin_d6 = Y8_GPIO_NUM;
    config.pin_d7 = Y9_GPIO_NUM;
    config.pin_xclk = XCLK_GPIO_NUM;
    config.pin_pclk = PCLK_GPIO_NUM;
    config.pin_vsync = VSYNC_GPIO_NUM;
    config.pin_href = HREF_GPIO_NUM;
    config.pin_sccb_sda = SIOD_GPIO_NUM;
    config.pin_sccb_scl = SIOC_GPIO_NUM;
    config.pin_pwdn = PWDN_GPIO_NUM;
    config.pin_reset = RESET_GPIO_NUM;
    config.xclk_freq_hz = 20000000;
    config.frame_size = FRAMESIZE_UXGA;
    config.pixel_format = PIXFORMAT_JPEG; // for streaming

```

```

//config.pixel_format = PIXFORMAT_RGB565; // for face
detection/recognition
config.grab_mode = CAMERA_GRAB_WHEN_EMPTY;
config.fb_location = CAMERA_FB_IN_PSRAM;
config.jpeg_quality = 12;
config.fb_count = 1;

// if PSRAM IC present, init with UXGA resolution and higher JPEG
quality
//                               for larger pre-allocated frame buffer.
if(config.pixel_format == PIXFORMAT_JPEG){
    if(psramFound()){
        config.jpeg_quality = 10;
        config.fb_count = 2;
        config.grab_mode = CAMERA_GRAB_LATEST;
    } else {
        // Limit the frame size when PSRAM is not available
        config.frame_size = FRAMESIZE_SVGA;
        config.fb_location = CAMERA_FB_IN_DRAM;
    }
} else {
    // Best option for face detection/recognition
    config.frame_size = FRAMESIZE_240X240;
#ifdef CONFIG_IDF_TARGET_ESP32S3
    config.fb_count = 2;
#endif
}

#ifdef CAMERA_MODEL_ESP_EYE
    pinMode(13, INPUT_PULLUP);
    pinMode(14, INPUT_PULLUP);
#endif

// camera init
esp_err_t err = esp_camera_init(&config);
if (err != ESP_OK) {
    Serial.printf("Camera init failed with error 0x%x", err);
    return;
}

sensor_t * s = esp_camera_sensor_get();

```

```

    // initial sensors are flipped vertically and colors are a bit
saturated
    if (s->id.PID == OV3660_PID) {
        s->set_vflip(s, 1); // flip it back
        s->set_brightness(s, 1); // up the brightness just a bit
        s->set_saturation(s, -2); // lower the saturation
    }
    // drop down frame size for higher initial frame rate
    if(config.pixel_format == PIXFORMAT_JPEG){
        s->set_framesize(s, FRAMESIZE_QVGA);
    }

#ifdef CAMERA_MODEL_M5STACK_WIDE ||
defined(CAMERA_MODEL_M5STACK_ESP32CAM)
    s->set_vflip(s, 1);
    s->set_hmirror(s, 1);
#endif

#ifdef CAMERA_MODEL_ESP32S3_EYE
    s->set_vflip(s, 1);
#endif

// Setup LED FLash if LED pin is defined in camera_pins.h
#ifdef LED_GPIO_NUM
    setupLedFlash(LED_GPIO_NUM);
#endif

    WiFi.begin(ssid, password);
    WiFi.setSleep(false);

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

    startCameraServer();

    Serial.print("Camera Ready! Use 'http://");
    Serial.print(WiFi.localIP());

```

```

Serial.println(""); to connect");

// Inisialisasi servo
myservo.setPeriodHertz(50); // Atur frekuensi PWM ke 50Hz
myservo.attach(servoPin, 1000, 2000); // Karena library ESP32Servo
menggunakan range 1000-2000 untuk posisi servo
}

void loop() {
  // Gerakan servo dari 180 derajat ke 0 derajat

  // unsigned long currentMillis = millis();
  // if (currentMillis - previousMillis >= interval) {
  //   previousMillis = currentMillis;
  //   myservo.write(0);
  //   // digitalWrite(relay_pin, HIGH);
  //   delay(3000);
  //   myservo.write(180);
  //   // digitalWrite(relay_pin, LOW);
  //   delay(3000);
  // }

  Blynk.run();
  Serial.print(servo_value);
  Serial.print("||");
  // Serial.print(servo_to_0_value);
  // Serial.print("||");
  Serial.print(relay_value);
  Serial.print("||");

  baca_ir = digitalRead(ir_pin);
  Serial.println(baca_ir);

  /*
    blynk button ==> 0 = off || 255 == on
    ir ==> 0 --> ketrigger || 1 --> tidak ketrigger
  */

  if(baca_ir == 0 || relay_value == 255){
    digitalWrite(relay_pin, HIGH);
  }
}

```

```

    myservo.write(servo_value);
}else{
    digitalWrite(relay_pin, LOW);
    myservo.write(servo_value);
}

// int sudut_Servo;

// if(servo_to_180_value == 255){
//     // sudut_Servo = sudut_Servo + 30;
//     myservo.write(180);
// }
// else if(servo_to_0_value == 255){
//     // sudut_Servo = sudut_Servo - 30;
//     myservo.write(0);
// }

// myservo.write(0);
// digitalWrite(relay_pin, HIGH);
// delay(2000);
// myservo.write(180);
// digitalWrite(relay_pin, LOW);
// delay(2000);

// for (pos = 0; pos <= 180; pos += 1) { // goes from 0 degrees to
180 degrees
    // // in steps of 1 degree
    // myservo.write(pos); // tell servo to go to position
in variable 'pos'
    // delay(15); // waits 15 ms for the servo to
reach the position
    // }
    // for (pos = 180; pos >= 0; pos -= 1) { // goes from 180 degrees to
0 degrees

```



```
    // myservo.write(pos);           // tell servo to go to position
in variable 'pos'
    // delay(15);                   // waits 15 ms for the servo to
reach the position
    // }
}
```

```
1#define BLYNK_TEMPLATE_ID "TMPL6CT46Dkyt"
#define BLYNK_TEMPLATE_NAME "esp32Cam servo dan Ir"
#define BLYNK_AUTH_TOKEN "YKqTPrcQwU0gAeCcDcJhNo8lotFrqjDK"
/* Comment this out to disable prints and save space */
#define BLYNK_PRINT Serial
```

```
#include <Servo.h>
```

```
Servo myservo;
```

```
#include <ESP8266WiFi.h>
```

```
#include <BlynkSimpleEsp8266.h>
```

```
// Your WiFi credentials.
```

```
// Set password to "" for open networks.
```

```
char ssid[] = "admin1234";
```

```
char pass[] = "admin1234";
```

```
int ir_pin = A0;
```

```
int baca_ir;
```

```
int relay1_value = 0;
```

```
int relay2_value = 0;
```

```
int relay3_value = 0;
```

```
int pin_relay1 = D5;
```

```
int pin_relay2 = D6;
```

```
int pin_relay3 = D7;
```

```
int x;
```

```
int servo_value = 0;
```

```

// This function will be called every time Slider Widget
// in Blynk app writes values to the Virtual Pin V1

BLYNK_WRITE(V4){
  relay1_value = param.asInt(); // assigning incoming value from pin V1
  to a variable
}

BLYNK_WRITE(V6){
  relay2_value = param.asInt(); // assigning incoming value from pin V1
  to a variable
}

BLYNK_WRITE(V7){
  servo_value = param.asInt(); // assigning incoming value from pin V1
  to a variable
}

void setup()
{
  // Debug console
  Serial.begin(115200);

  pinMode(ir_pin, INPUT_PULLUP);

  Blynk.begin(BLYNK_AUTH_TOKEN, ssid, pass);
  // You can also specify server:
  //Blynk.begin(BLYNK_AUTH_TOKEN, ssid, pass, "blynk.cloud", 80);
  //Blynk.begin(BLYNK_AUTH_TOKEN, ssid, pass, IPAddress(192,168,1,100),
  8080);

  pinMode(pin_relay1, OUTPUT);
  pinMode(pin_relay2, OUTPUT);
  pinMode(pin_relay3, OUTPUT);

  myservo.attach(D4);
}

void loop(){

```

```

// Blynk.run();
for(x = 1; x <= 2; x){
  Blynk.run();

  baca_ir = analogRead(ir_pin);
  if(baca_ir < 1024){
    x++;
  }
  else{
    x = x + 0;
  }
  // Serial.print(baca_ir);
  // Serial.print("||");
  // Serial.println(x);

  Serial.print(baca_ir);
  Serial.print("||");
  Serial.print(relay2_value);
  Serial.print("||");
  Serial.print(servo_value);
  Serial.println(x);

  // Serial.print(relay2_value);
  // Serial.print(baca_ir);
  // Serial.print(baca_ir);

  if((x % 2)==0){
    digitalWrite(pin_relay1, HIGH);
    Serial.println("HIDUP");
    myservo.write(servo_value);
  }else{
    digitalWrite(pin_relay1, LOW);
    Serial.println("MATI");
    myservo.write(servo_value);
  }
  if(relay1_value == 255){
    digitalWrite(pin_relay2, HIGH);
    myservo.write(servo_value);
  }else{
    digitalWrite(pin_relay2, LOW);
  }
}

```

```
    myservo.write(servo_value);
}

if(relay2_value == 255){
    digitalWrite(pin_relay3, HIGH);
    myservo.write(servo_value);
}else{
    digitalWrite(pin_relay3, LOW);
    myservo.write(servo_value);
}

    delay(300);
}
// delay(100);
}
```



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No	Tanggal	Uraian Bimbingan	Tanda Tangan Pembimbing
1		Acc Bab 1	7
2		Acc Bab 2	7
3		Acc Bab 3	7
4		Acc Bab 4	7
5		Tambahan Lampu	7
6		Revisi Alat	7
7		Tambahan Alat penguji	7
8		Acc bab 5	7
9		Acc Alat	7
10.		Acc laporan akhir	7

Mengetahui,  
Ketua Jurusan Teknik Komputer



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No	Tanggal	Uraian Bimbingan	Tanda Tangan Pembimbing
1		Acc Bab 1	
2		Acc Bab 2	
3		Acc Bab 3	
4		Revisi Bab 4	
5		Acc Bab 4	
6		Acc Alat	
7.		Acc Laporan Akhir	

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**REKOMENDASI UJIAN TUGAS AKHIR**

Pembimbing Laporan Akhir memberikan rekomendasi kepada:

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Judul Laporan Akhir : Rancang Bangun Alat *Monitoring* Dan  
Kendali Lampu Rungan Berbasis IOT

Mahasiswa tersebut telah memenuhi persyaratan dan dapat mengikuti Ujian Laporan Tugas Akhir (TA) pada Tahun Akademik 2024.

Pembimbing I

  
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Palembang, Juli 2024

Pembimbing II

  
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No. Dok. :	Tgl. Berlaku :	No. Rev. :
	<b>KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI</b> <b>POLITEKNIK NEGERI SRIWIJAYA</b> Jalan Srijaya Negara, Palembang 30139. Telp. 0711-353414 Website : <a href="http://www.polsri.ac.id">www.polsri.ac.id</a> E-mail : <a href="mailto:info@polsri.ac.id">info@polsri.ac.id</a>	
<b>REVISI TUGAS AKHIR (TA)</b>		


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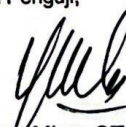
Jurusan /Program Studi : D3/Teknik Komputer

Judul LA/ Skripsi : Rancang Bangun Alat Monitoring dan Kendali Lampu ruangan Berbasis IOT

No	Uraian Revisi	Paraf
	<p>Pembahasan</p> <p>Tata tulis</p>	

Palembang,

Dosen Penguji,

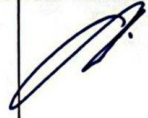




( Yulian Mirza,ST.MT.,M.Kom )



No. Dok. :	Tgl. Berlaku :	No. Rev. :
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No	Uraian Revisi	Paraf
1	<p><i>nanti Lemukan prog / coding secara Mandiri</i></p>	
2.	<p><i>Mengulang dasar ! &amp; mengulaskan proses kerja alat dari awal.</i></p>	
	<p><i>shakila.kp@gmail.com</i></p>	

Palembang, 18 Juli 2020.  
 Dosen Penguji,

( Alan Novi ~~Tumpunu~~, MT )

No. Dok. :	Tgl. Berlaku :	11-
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<b>REVISI TUGAS AKHIR (TA)</b>		

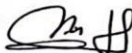
Dosen Penguji : Hartati Deviana,ST.,M.Kom

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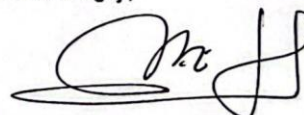
Jurusan /Program Studi : D3/Teknik Komputer

Judul LA/ Skripsi : Rancang Bangun Alat Monitoring Dan Kendali Lampu Ruang Berbasis IOT

No	Uraian Revisi	Paraf
		

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Dosen Penguji,



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Judul LA/ Skripsi : Rancang Bangun Alat Monitoring Dan Kendali Lampu Ruang Berbasis IOT

No	Uraian Revisi	Paraf
1.	Tentukan budget produksi hingga < 15 %.	
2.	Pembahasan hasil sesuai skema penelitian.	

Palembang,

Dosen Penguji,



( Rian Rahmanda Putra, M.Kom )



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PELAKSANAAN REVISI UJIAN TUGAS AKHIR

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Telah melaksanakan revisi terhadap Laporan Tugas Akhir yang diujikan pada hari Senin tanggal 15 bulan 7 tahun 2024 Pelaksanaan revisi terhadap Laporan Tugas Akhir tersebut telah disetujui oleh Dosen Penguji yang memberikan revisi:

No	Komentar	Nama Dosen Penguji	Tanggal/ bulan	Tanda Tangan
1.	ACC	Yulian Mirza, ST, M.Kom	20/2024 7	
2.	Acc	Ir. Alan Novi Tompunu, ST, MT, IPM., ASEAN Eng	6/8 2024	
3.	Acc	Hartati Deviana, ST, M.Kom	23/2024 8	
4.	Acc	Rian Rahmanda Putra, S.Kom., M.Kom	13/2 2024	

Palembang, Juli 2024  
Ketua Penguji,

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