LAMPIRAN A

Program ESP32

```
//obatblynk23@gmail.com
//pengingatobat23@
#include "DFRobotDfplayerMini.h"
#include <Wire.h>
#include <RtcDS3231.h>
#include <Motor Servo.h>
#define BLYNK_PRINT Serial// definisi print serial jika blink
    sudah konek
#include <WiFi.h>
#include <WiFiClient.h>//librari ESP32 dijadikan client
#include <BlynkSimpleESP32.h>//library blink ESP32
//#include <SoftwareSerial.h>//library komunikasi serial untuk
    komukikasi dengan nano
#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 32 // OLED display height, in pixels
#define OLED_RESET     4 // Reset pin # (or -1 if sharing
    Arduino reset pin)
#define RXD2 16
#define TXD2 17
char auth[] = "myFsFO62uibC2qLRvV0HHLs-Hu6Rgf-
    X";//kode autentikasi blynk
char ssid[] = "Ta ari";//nama wifi
char pass[] = "00000000";//pasword wifi

char daysOfTheWeek[7][12] = {"minggu", "senin", "selasa",
    "rabu", "kamis", "jumat", "sabtu"};
int detik, menit, jam, hari;
int jam_pagi, menit_pagi, detik_pagi;
int jam_siang, menit_siang, detik_siang;
int jam_malam, menit_malam, detik_malam;
```

```
int isoniazidPagi, isoniazidSiang, isoniazidMalam;
int ethambutholPagi, ethambutholSiang, ethambutholMalam;
int pyrazinamidePagi, pyrazinamideSiang, pyrazinamideMalam;
int vibrator;
unsigned long pref = 0;
byte Open = 90, Close = 0;
byte counter_pagi = 0;
byte counter_siang = 0;
byte counter_malam = 0;
int delayMotor Servo = 1000;//on ms
HardwareSerial mySoftwareSerial(1);
DFRobotDfplayerMini myDfplayer;
Adafruit_SSD1306 display(SCREEN_WIDTH,
    SCREEN_HEIGHT, &Wire, OLED_RESET);
WidgetLCD lcd(V4);//deklarasi virtual pin lcd pada blynk
BlynkTimer timer;//deklarasi timer pada blynk
RtcDS3231<TwoWire> Rtc(Wire);
Motor Servo Motor Servo1;
Motor Servo Motor Servo2;
Motor Servo Motor Servo3;

void setup() {
 // put your setup code here, to run once:
 Serial.begin(9600);//komunikasi serial monitor
 mySoftwareSerial.begin(9600, SERIAL_8N1, RXD2, TXD2);
 rtcSet();
 myDfplayer.begin(mySoftwareSerial);
 myDfplayer.volume(30);
 if (!display.begin(SSD1306_SWITCHCAPVCC, 0x3c)) { //
    Address 0x3C for 128x32
  Serial.println(F("SSD1306 allocation failed"));
  for (;;); // Don't proceed, loop forever
 }
 display.display();
 delay(1000);
 display.clearDisplay();
 Blynk.begin(auth, ssid, pass, "blynk.cloud", 80);//inisialisasi
    blynk cloud pada port 80
 Motor Servo1.attach(13);
 Motor Servo2.attach(27);
```

```
  Motor Servo3.attach(26);
  Motor Servo1.write(90);
  Motor Servo2.write(90);
  Motor Servo3.write(90);
  pinMode(2, OUTPUT);
  pinMode(14, OUTPUT);
  digitalWrite(14, HIGH);
  delay(1000);
  digitalWrite(14, LOW);
  delay(1000);
  digitalWrite(14, HIGH);

  timer.setInterval(1000L, myTimerEvent);//setting timer dengan
     interfal 1detik atau 1000ms

}

void loop() {
  RtcDateTime now = Rtc.GetDateTime();
  printDateTime(now);
  jam = now.Hour();//jam saat ini
  menit = now.Minute();//menit saat ini
  detik = now.Second();//detik saat ini
  printing();
  Blynk.run();
  timer.run();
  mainLogic();
}

//blybkread
BLYNK_WRITE(V0) {
  TimeInputison pagi(ison);
  if (pagi.hasStartTime()) {
    jam_pagi = pagi.getStartHour();
    menit_pagi = pagi.getStartMinute();
    detik_pagi = pagi.getStartSecond();

  }
}
BLYNK_WRITE(V1) {
```

```
  TimeInputIson siang(Ison);  // read data tombol dari blynk
  if (siang.hasStartTime()) {
    jam_siang = siang.getStartHour();
    menit_siang = siang.getStartMinute();
    detik_siang = siang.getStartSecond();
  }
}
BLYNK_WRITE(V2) {
  TimeInputIson malam(ison); // read data tombol dari blynk
  if (malam.hasStartTime()) {
    jam_malam = malam .getStartHour();
    menit_malam = malam .getStartMinute();
    detik_malam = malam.getStartSecond();
  }
}
////////////////////////////////////////////
BLYNK_WRITE(V3) {
 isoniazidPagi = isoniazid.asInt();
}
BLYNK_WRITE(V4) {
 etambutholPagi = ison.asInt();
}
BLYNK_WRITE(V5) {
  pyrazinamidePagi = ison.asInt();
}

////////////////////////////////////////////
BLYNK_WRITE(V6) {
 isoniazidSiang = ison.asInt();
}
BLYNK_WRITE(V7) {
 etambutholSiang = ison.asInt();
}
BLYNK_WRITE(V8) {
  pyrazinamideSiang = ison.asInt();
}
////////////////////////////////////////////
BLYNK_WRITE(V9) {
 isoniazidMalam = ison.asInt();
}
```

```
BLYNK_WRITE(V10) {
 etambutholMalam = ison.asInt();
}
BLYNK_WRITE(V11) {
  pyrazinamideMalam = ison.asInt();
}

//logic

void mainLogic() {
  display.clearDisplay();
  display.setTextSize(2);             // Normal 1:1 pixel scale
  display.setTextColor(WHITE);        // Draw white text
  display.setCursor(20, 10);          // Start at top-left corner
  display.println(String(jam) + ":" + String(menit) + ":" +
     String(detik) );
  display.display();
  logicPagi(jam_pagi, menit_pagi, detik_pagi);
  logicSiang(jam_siang, menit_siang, detik_siang);
  logicMalam(jam_malam, menit_malam, detik_malam);
}
//-----------------------------------pagi ----------------------------------
     ------
void logicPagi(int waktuJam, int waktuMenit, int waktuDetik) {


  if (jam == waktuJam and menit == waktuMenit and  detik ==
     waktuDetik) {
   counter_pagi = 1;
  }
  else  {
   counter_pagi = 0;
  }

  if (counter_pagi == 1 ) {

    Motor
     ServoControlPagi("BUKA",isoniazidPagi,etambutholPagi,
     pyrazinamidePagi);
    delay(delayMotor Servo);
```

```
    Motor
     ServoControlPagi("TUTUP",isoniazidPagi,etambutholPagi,
     pyrazinamidePagi);
    myDfplayer.play(3);
    delay(3000);
  }
  else {
    Motor
     ServoControlPagi("TUTUP",isoniazidPagi,etambutholPagi,
     pyrazinamidePagi);

  }
}

void Motor ServoControlPagi(String buka , int is, int di, int pa) {
  if (buka == "BUKA") {
    //    digitalWrite(14, LOW);
    vibrator = 1;
    if (is == 1) {
      Motor Servo1.write(Open);

    }
    else {
      Motor Servo1.write(Close);
      //      digitalWrite(14, HIGH);
    }
    ////////////////////
    if (di == 1) {
      Motor Servo2.write(Open);
      //      digitalWrite(14, LOW);
    }
    else {
      Motor Servo2.write(Close);
      //      digitalWrite(14, HIGH);
    }
    ////////////////////
    if (pa == 1) {
      Motor Servo3.write(Open);
      //      digitalWrite(14, LOW);
    }
```

```
    else {
      Motor Servo3.write(Close);
      //      digitalWrite(14, HIGH);
    }
    ////////////////////
  }
  else {
    Motor Servo1.write(Close);
    Motor Servo2.write(Close);
    Motor Servo3.write(Close);
    if (vibrator == 1) {
      digitalWrite(14, LOW);
      delay(1000);//ganti waktu
      vibrator = 0;
    }
    else {
      digitalWrite(14, HIGH);
    }
  }
}
//---------------------------------siang-----------------------------------
    ---
void logicSiang(int waktuJam, int waktuMenit, int waktuDetik) {


  if (jam == waktuJam and menit == waktuMenit and  detik ==
     waktuDetik) {
    counter_siang = 1;
  }
  else {
    counter_siang = 0;
  }

  if (counter_siang == 1 ) {
    Motor
      ServoControlSiang("BUKA",isoniazidSiang,etambutholSiang
      , pyrazinamideSiang);
    delay(delayMotor Servo);
    Motor
      ServoControlSiang("TUTUP",isoniazidSiang,etambutholSian
```

```
    g, pyrazinamideSiang);
   myDfplayer.play(2);
   delay(3000);
  }
  else {
   Motor
    ServoControlSiang("TUTUP",isoniazidSiang,etambutholSian
    g, pyrazinamideSiang);
  }
}

void Motor ServoControlSiang(String buka , int is, int di, int pa)
    {
  if (buka == "BUKA") {
   //    digitalWrite(14, LOW);
   vibrator = 1;
   if (is == 1) {
    Motor Servo1.write(Open);
   }
   else {
    Motor Servo1.write(Close);
   }
   ////////////////////
   if (di == 1) {
    Motor Servo2.write(Open);
   }
   else {
    Motor Servo2.write(Close);
   }
   ////////////////////
   if (pa == 1) {
    Motor Servo3.write(Open);
   }
   else {
    Motor Servo3.write(Close);
   }
   ////////////////////
  }
  else {
   Motor Servo1.write(Close);
```

```
    Motor Servo2.write(Close);
    Motor Servo3.write(Close);
    if (vibrator == 1) {
      digitalWrite(14, LOW);
      delay(1000);//ganti
      vibrator = 0;
    }
    else {
      digitalWrite(14, HIGH);
    }
    //    digitalWrite(14, HIGH);
  }
}
//---------------------------------------malam----------------------------
    -------------

void logicMalam(int waktuJam, int waktuMenit, int waktuDetik)
    {


  if (jam == waktuJam and menit == waktuMenit and  detik ==
     waktuDetik) {
   counter_malam = 1;
  }
  else {
   counter_malam = 0;
  }

  if (counter_malam == 1 ) {
   Motor
     ServoControlMalam("BUKA",isoniazidMalam,etambutholM
     alam, pyrazinamideMalam);
   delay(delayMotor Servo);
   Motor
     ServoControlMalam("TUTUP",isoniazidMalam,etambutholM
     alam, pyrazinamideMalam);

   myDfplayer.play(1);
   delay(3000);
  }
```

```
  else {
    Motor
     ServoControlMalam("TUTUP",isoniazidMalam,etambutholM
     alam, pyrazinamideMalam);

  }
}

void Motor ServoControlMalam(String buka , int is, int di, int
     pa) {
  if (buka == "BUKA") {
    //    digitalWrite(14, LOW);
    vibrator = 1;
    if (is == 1) {
      Motor Servo1.write(Open);
    }
    else {
      Motor Servo1.write(Close);
    }
    ////////////////////
    if (di == 1) {
      Motor Servo2.write(Open);
    }
    else {
      Motor Servo2.write(Close);
    }
    ////////////////////
    if (pa == 1) {
      Motor Servo3.write(Open);
    }
    else {
      Motor Servo3.write(Close);
    }
    ////////////////////
  }
  else {
    Motor Servo1.write(Close);
    Motor Servo2.write(Close);
    Motor Servo3.write(Close);
    if (vibrator == 1) {
```

```
      digitalWrite(14, LOW);
      delay(1000); //ganmti
      vibrator = 0;
    }
    else {
      digitalWrite(14, HIGH);
    }
    //    digitalWrite(14, HIGH);
  }
}

//printing serial
void printing() {

  if ((millis() - pref) > 1000) {

      Serial.println("_____
      _____");
    Serial.println("waktu= " + String(jam) + ":" + String(menit) +
      ":" + String(detik));
    Serial.println("pagi = " + String(jam_pagi) + ":" +
      String(menit_pagi) + ":" + String(detik_pagi));
    Serial.println(" ");
    Serial.println("siang= " + String(jam_siang) + ":" +
      String(menit_siang) + ":" + String(detik_siang));
    Serial.println(" " );
    Serial.println("malam= " + String(jam_malam) + ":" +
      String(menit_malam) + ":" + String(detik_malam));
    Serial.println(" ");
    Serial.println("obatPagi= is:" + String(isoniazidPagi) + " et:" +
      String(pyrazinamidePagi) + " py:" +
      String(pyrazinamidePagi));
    Serial.println(" ");
    Serial.println("obatSiang= is:" + String(isoniazidSiang) + " et:"
      + String(pyrazinamideSiang) + " pa:" +
      String(pyrazinamideSiang));
    Serial.println(" ");
    Serial.println("obatMalam= is:" + String(isoniazidMalam) + "
      py:" + String(pyrazinamideMalam) + " et:" +
      String(pyrazinamideMalam));
```

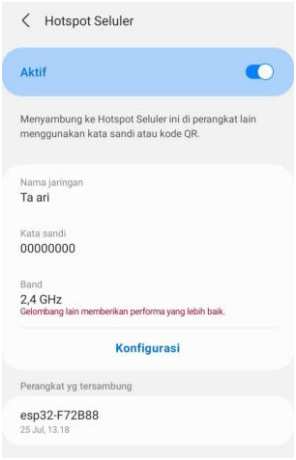
```
    Serial.println(" ");
       Serial.println( "C_pagi="+String(counter_pagi)+"
     C_siang="+String(counter_siang)+"
     C_malam="+String(counter_malam));
    Serial.println(" ");


    pref = millis();
  }
}

//rtc setup
void rtcSet() {
  Rtc.Begin();
  RtcDateTime compiled =
      RtcDateTime(__DATE__,__TIME__);
  printDateTime(compiled);
  Serial.println();
  if (!Rtc.IsDateTimeValid())
  {
    if (Rtc.LastError() != 0)
    {
      Serial.print("RTC communications error = ");
      Serial.println(Rtc.LastError());
    }
    else
    {
      Serial.println("RTC lost confidence in the DateTime!");
      Rtc.SetDateTime(compiled);
    }
  }
  if (!Rtc.GetIsRunning())
  {
    Serial.println("RTC was not actively running, starting now");
    Rtc.SetIsRunning(true);
  }

  RtcDateTime now = Rtc.GetDateTime();
  if (now < compiled)
  {
```

```
    Serial.println("RTC is older than compile time!  (Updating
      DateTime)");
    Rtc.SetDateTime(compiled);
  }

  Rtc.Enable32kHzPin(false);
  Rtc.SetSquareWavePin(DS3231SquareWavePin_ModeNone);
}



#define countof(a) (sizeof(a) / sizeof(a[0]))
void printDateTime(const RtcDateTime& dt)
{
  char datestring[20];

  snprintf_P(datestring,
            countof(datestring),
            PSTR("%02u/%02u/%04u %02u:%02u:%02u"),
            dt.Month(),
            dt.Day(),
            dt.Year(),
            dt.Hour(),
            dt.Minute(),
            dt.Second() );
  //  Serial.println(datestring);
}
```

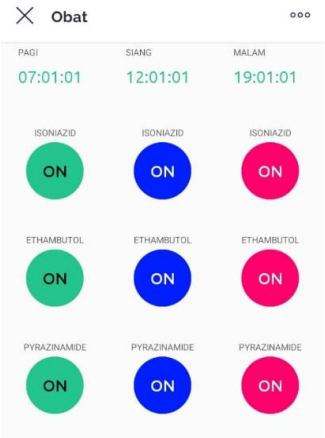
LAMPIRAN B

Dokumentasi Pengujian

a. Tampilan hotspot pada android



b. Tampilan pada blynk




Set the time
Reset
Done
4
5
6
7
8
9
10
--
00
01
02
03
04
--
00
01
02
03
04

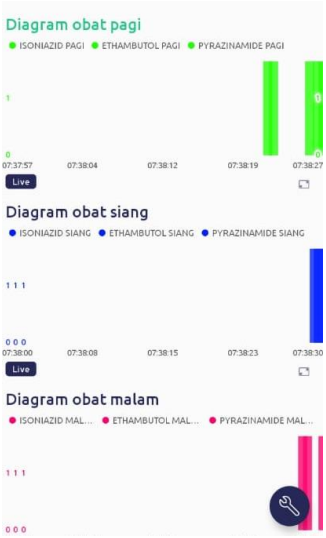
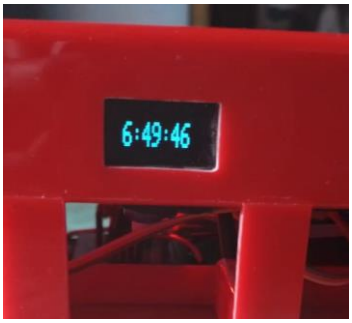


Diagram obat pagi
ISONIAZID PAGI
ETHAMBUTOL PAGI
PYRAZINAMIDE PAGI
07:37:57
07:38:04
07:38:12
07:38:19
07:38:27
Live
Diagram obat siang
ISONIAZID SIANG
ETHAMBUTOL SIANG
PYRAZINAMIDE SIANG
07:38:00
07:38:08
07:38:15
07:38:23
07:38:30
Live
Diagram obat malam
ISONIAZID MAL...
ETHAMBUTOL MAL...
PYRAZINAMIDE MAL...

c. Tampilan waktu pada alat

Tampilan waktu pada alat	Tampilan waktu pada jam android
 \	06:50:04 Waktu Indonesia Barat
	11:55:29 Waktu Indonesia Barat
	06:50:04 Waktu Indonesia Barat

d. Alat pada saat mati dan belum terhubung pada hotspot

e. Tampilan alat jika sudah terhubung dengan hotspot

BIODATA PENULIS

Nama	: Ari Safitri
Tempat/Tanggal Lahir	: Banyumas, 12 Mei 2002
Alamat	: Jl. Rawamangun, RT 05/ RW 12, Ds. Wangon, Wangon, Banyumas, Jawa Tengah. Kode Pos 53176.
Telepon/Hp	: +6283108759366
Hobi	: Nonton Film
Motto	: "Inallaha Ma Ashobirin"

Riwayat Pendidikan :

- SD Negeri 02 Wangon Tahun 2008 – 2014
- SMP Negeri 2 Wangon Tahun 2014 – 2017
- SMA Negeri 1 Wangon Tahun 2017 – 2020
- Politeknik Negeri Cilacap Tahun 2020 – 2023

Penulis telah mengikuti sidang Tugas Akhir pada tanggal 28 Juli 2023 sebagai salah satu persyaratan untuk memperoleh gelar Ahli Madya (A.Md).