

LAMPIRAN

Lampiran 1. Listing Program Lengkap

```
#include <SPI.h>

#include <Wire.h>

#include <Adafruit_GFX.h>

#include <Adafruit_SSD1306.h>

#include <Servo.h>

int servoPin = D8;

Servo Servo1;

const int analogPin = A0; // Analog input pin 0 (GPIO 36)

int sensorValue = 0; // Value read from the ADC

#define OLED_RESET 0

Adafruit_SSD1306 display(OLED_RESET);

#define NUMFLAKES 10

#define XPOS 0

#define YPOS 1

#define DELTAY 2

#define LOGO16_GLCD_HEIGHT 16

#define LOGO16_GLCD_WIDTH 16

Servo servoku;

#include "RTCLib.h"
```

```

//=====
=====

#if defined(ARDUINO_ARCH_SAMD)

    #define Serial SerialUSB

#endif

#include <JatayuIO.h>

String apikey = "f167965e-75f5-11e9-a008-4ec6f6809b89";

char* ssid = "AyAlisrah";
char* password = "desember";

JatayuIO jatayu(apikey, ssid, password);

//=====
=====

RTC_DS1307 rtc;

const int DS1307 = 0x68; // Address of DS1307 see data sheets

char daysOfTheWeek[7][12] = {"Sunday", "Monday", "Tuesday", "Wednesday",
"Thursday", "Friday", "Saturday"};

const char* days[] = {"Sunday", "Monday", "Tuesday", "Wednesday", "Thursday",
"Friday", "Saturday"};

const char* months[] = {"January", "February", "March", "April", "May", "June",
"July", "August", "September", "October", "November", "December"};

```

```
// Initializes all values:

byte second = 0;

byte minute = 0;

byte hour = 0;

byte weekday = 0;

byte monthday = 0;

byte month = 0;

byte year = 0;

String incomingByte[3];

int i = 0;

String jam;

String men;

String det;

int d0;

int d1;

int d2;

int jam2;

int men2;

int h;

int m;

int s;

String strTanggal;

String strWaktu;

String JamAlarm1;

String MenAlarm1;
```

```

String JamAlarm2;

String MenAlarm2;

String JamAlarm3;

String MenAlarm3;

int AlarmJam1;

int AlarmMen1;

int AlarmJam2;

int AlarmMen2;

int AlarmJam3;

int AlarmMen3;

void setup() {

  #ifndef ESP8266

    while (!Serial);

  #endif

  Wire.begin();

  Serial.begin(9600);

  jayay.begin();

  rtc.adjust(DateTime(F(__DATE__), F(__TIME__)));

  if (! rtc.begin()) {

    Serial.println("RTC tidak ditemukan");

    while (1);

  }

  if (! rtc.isrunning()) {

    Serial.println("RTC tidak jalan!");

```

```

    rtc.adjust(DateTime(F(__DATE__), F(__TIME__)));
}

display.begin(SSD1306_SWITCHCAPVCC, 0x3C);
display.clearDisplay();
display.setTextSize(1);
display.setTextColor(WHITE);
display.setCursor(55, 10);
display.println("Ayu");
display.display();
display.setCursor(40, 20);
display.println("150120076");
display.display();
delay(2000);
display.clearDisplay();
Servo1.attach(servoPin);
}

// Continuous function for converting bytes to decimals and vice versa
void loop() {
    DateTime now = rtc.now();

    String dataV1 = jatayu.GetData("V1");
    String dataV2 = jatayu.GetData("V2");
    String dataV3 = jatayu.GetData("V3");

    JamAlarm1 = dataV1.substring(0,2);
    MenAlarm1 = dataV1.substring(2,4);
}

```

```
JamAlarm2 = dataV2.substring(0,2);
MenAlarm2 = dataV2.substring(2,4);
JamAlarm3 = dataV3.substring(0,2);
MenAlarm3 = dataV3.substring(2,4);
display.setTextSize(1);
display.setTextColor(WHITE);
display.clearDisplay();
display.setCursor(40, 10);
display.println("Alarm 1");
display.display();
display.setCursor(40, 20);
display.print(JamAlarm1);
display.print(':');
display.print(MenAlarm1);
display.display();
delay(1000);

display.setTextSize(1);
display.setTextColor(WHITE);
display.clearDisplay();
display.setCursor(40, 10);
display.println("Alarm 2");
display.display();
display.setCursor(40, 20);
display.print(JamAlarm2);
```

```
display.print(':');  
display.print(MenAlarm2);  
display.display();  
delay(1000);  
  
display.setTextSize(1);  
display.setTextColor(WHITE);  
display.clearDisplay();  
display.setCursor(40, 10);  
display.println(" Alarm 3");  
display.display();  
display.setCursor(40, 20);  
display.print(JamAlarm3);  
display.print(':');  
display.print(MenAlarm3);  
display.display();  
delay(1000);  
  
//Serial.print("jatayu.GetData");  
//Serial.println(data V1);  
//Serial.print("jatayu.GetData");  
//Serial.println(data V2);  
//Serial.print("jatayu.GetData");  
//Serial.println(data V3);  
  
AlarmJam1 = JamAlarm1.toInt();
```



```

AlarmMen1 = MenAlarm1.toInt();

AlarmJam2 = JamAlarm2.toInt();

AlarmMen2 = MenAlarm2.toInt();

AlarmJam3 = JamAlarm3.toInt();

AlarmMen3 = MenAlarm3.toInt();

String dataV0 = jatayu.GetData("V0");

jam = dataV0.substring(0,2);

men = dataV0.substring(2,4);

det = dataV0.substring(4,6);

d0 = jam.toInt();

d1 = men.toInt();

d2 = det.toInt();

if (dataV0 == "0"){

    jam2 = d0;

    men2 = d1;

}

else if (dataV0 == ""){

    Serial.println("data error");

    delay(5000);

}

else{

    jam2 = d0 - now.hour();

    men2 = d1 - now.minute();

    jatayu.SetData("V0", 0);

```

```
setTime();

String dataV1 = jatayu.GetData("V1");
String dataV2 = jatayu.GetData("V2");
String dataV3 = jatayu.GetData("V3");
JamAlarm1 = dataV1.substring(0,2);
MenAlarm1 = dataV1.substring(2,4);
JamAlarm2 = dataV2.substring(0,2);
MenAlarm2 = dataV2.substring(2,4);
JamAlarm3 = dataV3.substring(0,2);
MenAlarm3 = dataV3.substring(2,4);

display.setTextSize(1);
display.setTextColor(WHITE);
display.clearDisplay();
display.setCursor(40, 10);
display.println(" Alarm 1 ");
display.display();
display.setCursor(40, 20);
display.print(JamAlarm1);
display.print(':');
display.print(MenAlarm1);
display.display();
delay(1000);

display.setTextSize(1);
display.setTextColor(WHITE);
```

```
display.clearDisplay();  
display.setCursor(40, 10);  
display.println(" Alarm 2");  
display.display();  
display.setCursor(40, 20);  
display.print(JamAlarm2);  
display.print(':');  
display.print(MenAlarm2);  
display.display();  
delay(1000);
```

```
display.setTextSize(1);  
display.setTextColor(WHITE);  
display.clearDisplay();  
display.setCursor(40, 10);  
display.println(" Alarm 3");  
display.display();  
display.setCursor(40, 20);  
display.print(JamAlarm3);  
display.print(':');  
display.print(MenAlarm3);  
display.display();  
delay(1000);
```

```

    AlarmJam1 = JamAlarm1.toInt();

    AlarmMen1 = MenAlarm1.toInt();

    AlarmJam2 = JamAlarm2.toInt();

    AlarmMen2 = MenAlarm2.toInt();

    AlarmJam3 = JamAlarm3.toInt();

    AlarmMen3 = MenAlarm3.toInt();

}

tampil_rtc();

scan_alarm();

}

void tampil_rtc(){

    sensorValue = analogRead(analogPin); // Read the analog in value:

    DateTime now = rtc.now();

    // Serial.print(now.day(), DEC);

    // Serial.print('/');

    // Serial.print(now.month(), DEC);

    // Serial.print('/');

    // Serial.print(now.year(), DEC);

    // Serial.print(" ");

    // Serial.print(daysOfTheWeek[now.dayOfTheWeek()]);

    // Serial.print(" ");

    // Serial.print(now.hour(), DEC);

    // Serial.print(':');

    // Serial.print(now.minute(), DEC);

```

```

// Serial.print(':');

// Serial.print(now.second(), DEC);

// Serial.println();

display.setTextSize(1);

display.setTextColor(WHITE);

display.clearDisplay();

display.setCursor(40, 10);

display.print(now.day(), DEC);

display.print('/');

display.print(now.month(), DEC);

display.print('/');

display.print(now.year(), DEC);

display.display();

display.setCursor(40, 20);

display.print(now.hour(), DEC);

display.print(':');

display.print(now.minute(), DEC);

display.print(':');

display.print(now.second(), DEC);

display.display();

strTanggal =
String(now.year()+"/"+String(now.month()+"/"+String(now.day()));

strWaktu =
String(now.hour()+":"+String(now.minute()+":"+String(now.second()));

String dataStr = strTanggal+" "+strWaktu;

jatayu.SetData("dataTimer", dataStr);

```

```

    jatayu.SetData("dataInfrared", sensorValue);

    Serial.print("dataInfrared");

    Serial.println(sensorValue);

}

void scan_alarm(){
    DateTime now = rtc.now();
    if ((now.hour() == AlarmJam1)&&(now.minute() == AlarmMen1)){
        display.setTextSize(1);
        display.setTextColor(WHITE);
        display.clearDisplay();
        display.setCursor(40, 10);
        display.println("Servo");
        display.display();
        display.setCursor(40, 20);
        display.println("Open");
        display.display();
        Servo1.write(0);
        delay(1000);
        display.setTextSize(1);
        display.setTextColor(WHITE);
        display.clearDisplay();
        display.setCursor(40, 10);
        display.println("Servo");
    }
}

```

```

display.display();

display.setCursor(40, 20);

display.println("Close");

display.display();

Servo1.write(90);

delay(1000);
}

if ((now.hour() == AlarmJam2)&&(now.minute() == AlarmMen2)){

display.setTextSize(1);

display.setTextColor(WHITE);

display.clearDisplay();

display.setCursor(40, 10);

display.println("Servo");

display.display();

display.setCursor(40, 20);

display.println("Open");

display.display();

Servo1.write(0);

delay(1000);

display.setTextSize(1);

display.setTextColor(WHITE);

display.clearDisplay();

display.setCursor(40, 10);

display.println("Servo");

display.display();

```

```

    display.setCursor(40, 20);
    display.println("Close");
    display.display();
    Servo1.write(90);
    delay(1000);
}
if ((now.hour() == AlarmJam3)&&(now.minute() == AlarmMen3)){
    display.setTextSize(1);
    display.setTextColor(WHITE);
    display.clearDisplay();
    display.setCursor(40, 10);
    display.println("Servo");
    display.display();
    display.setCursor(40, 20);
    display.println("Open");
    display.display();
    Servo1.write(0);
    delay(1000);
    display.setTextSize(1);
    display.setTextColor(WHITE);
    display.clearDisplay();
    display.setCursor(40, 10);
    display.println("Servo");
    display.display();
    display.setCursor(40, 20);

```



```
    display.println("Close");  
    display.display();  
    Servo1.write(90);  
    delay(1000);  
}  
}
```

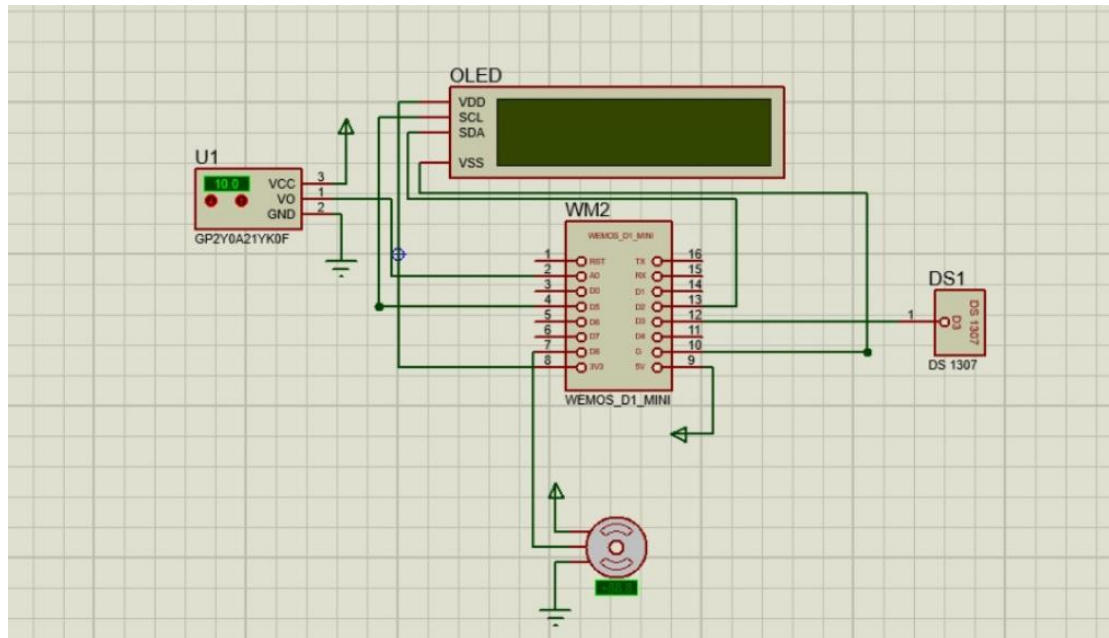
```
byte decToBcd(byte val) {  
    return ((val/10*16) + (val%10));  
}
```

```
byte bcdToDec(byte val) {  
    return ((val/16*10) + (val%16));  
}
```

```
// This set of codes is allows input of data  
void setTime() {  
    Serial.print("The current date and time is: ");  
    Wire.beginTransmission(DS1307);  
    Wire.write(byte(0));  
    Wire.write(decToBcd(d2));  
    Wire.write(decToBcd(d1));  
    Wire.write(decToBcd(d0));  
    Wire.endTransmission();  
    Serial.println("Thank you.");  
}
```

}

Lampiran 2. Rangkaian Keseluruhan



Lampiran 3. Foto Alat dan Aplikasi



Set Alarm & Timer :

Set Alarm 1 : :

Set Alarm 2 : :

Set Alarm 3 : :

Set Timer : : :

Timer Server :

Feed Level :

