1. **KODINGAN DISPLAY**

```
#include <SPI.h>
#include <DMD.h>
#include <TimerOne.h>
#include "SystemFont5x7.h"
#include "Arial_black_16.h"
#include "sensordht.h"
//http://kursuselektronikaku.blogspot.com/2018/08/membuat-moving-teks-dan-moving-sign.html
//Isi dengan jumlah panel DMD yang di susun dalam kolom dan baris
#define DISPLAY_COLUMN_COUNT  3
#define DISPLAY_ROW_COUNT     1

#define PIXELS_PER_COLUMN    32
#define PIXELS_PER_ROW        16


DMD dmd(DISPLAY_COLUMN_COUNT, DISPLAY_ROW_COUNT);
String Text = "Selamat Datang";
/*--------------------------------------------------------------------------------
  Interrupt handler for Timer1 (TimerOne) driven DMD refresh scanning, this gets
  called at the period set in Timer1.initialize();
  --------------------------------------------------------------------------------*/
void ScanDMD()
{
  dmd.scanDisplayBySPI();
}

void setup(void)
{
```

```
  Serial.begin(1000000);
  //inisialisasi Timer1 untuk menginterupsi pengeksekusian prosedur pindai DMD secara periodik
  Timer1.initialize( 6000 );          //perioda eksekusi pindai DMD selama 1 ms. Nilai yang lebih besar dapat menimbulkan efek flicker.
  Timer1.attachInterrupt( ScanDMD );   //terapkan prosedur interupsi pindai DMD
  dmd.clearScreen( true );   //normalnya true (semua piksel dalam keadaan mati), false (semua piksel dalam keadaan hidup)
  pinMode(pin_relay, OUTPUT);
  pinMode(pin_servo, OUTPUT);
  digitalWrite(nilai_sensor_asap, HIGH);

}

boolean ret = false;
long timer;
long start;

enum {
  selmatdatang,
  sensor_suhu,
  sensor_asap
};
uint8_t state_text = selmatdatang;

void loop(void)
{
  loop_sensor();

  switch (state_text) {
```

```
  case selmatdatang:
    if (ret) {
      dmd.clearScreen( true );
      dmd.selectFont(Arial_Black_16);
      int str_len = Text.length() + 1;
      char char_array[str_len];
      // Copy it over
      Text.toCharArray(char_array, str_len);
      dmd.drawMarquee(char_array, Text.length(),
(PIXELS_PER_COLUMN * DISPLAY_COLUMN_COUNT) - 1, 0);
      start = millis();
      timer = start;
      ret = false;

    } else {
      // while (!ret) {
      if ((timer + 30) < millis()) {
        ret = dmd.stepMarquee(-1, 0); // Geser 1 karakter ke kiri
        timer = millis();
        if (ret) {
          state_text = sensor_suhu;
          Text = "Suhu : ";
          Text += String(dht_temperature, 1);
          Text += "°C ";
        }
      }
    }
    break;

  case sensor_suhu:
    if (ret) {
```

```
      dmd.clearScreen( true );
      dmd.selectFont(Arial_Black_16);
      int str_len = Text.length() + 1;
      char char_array[str_len];
      // Copy it over
      Text.toCharArray(char_array, str_len);
      dmd.drawMarquee(char_array, Text.length(),
(PIXELS_PER_COLUMN * DISPLAY_COLUMN_COUNT) - 1, 0);
      start = millis();
      timer = start;
      ret = false;

    } else {
      // while (!ret) {
      if ((timer + 30) < millis()) {
        ret = dmd.stepMarquee(-1, 0); // Geser 1 karakter ke kiri
        timer = millis();
        if (ret) {
          state_text = sensor_asap;
          Text = "Asap : ";
          Text += String(nilai_sensor_asap, 1);
          // Text[] += "°C ";
        }
      }
    }
    break;

  case sensor_asap:
    if (ret) {
      dmd.clearScreen( true );
      dmd.selectFont(Arial_Black_16);
```

```
        int str_len = Text.length() + 1;
        char char_array[str_len];
        // Copy it over
        Text.toCharArray(char_array, str_len);
        dmd.drawMarquee(char_array, Text.length(),
    (PIXELS_PER_COLUMN * DISPLAY_COLUMN_COUNT) - 1, 0);
        start = millis();
        timer = start;
        ret = false;

      } else {
        // while (!ret) {
        if ((timer + 30) < millis()) {
          ret = dmd.stepMarquee(-1, 0); // Geser 1 karakter ke kiri
          timer = millis();
          if (ret) {
            state_text = selmatdatang;
            Text = "Selamat Datang";

            // Text[] += "°C ";
          }
        }
      }
      break;
  }

}
```

2. KODINGAN SENSOR

```
#include "DHTStable.h"
```

```
DHTStable DHT;
#define DHT22_PIN A0
#define ASAP_SENSOR_PIN A1
#define pin_relay 2
#define pin_servo 3

float dht_temperature, nilai_sensor_asap;
bool loop_sensor() {
  static uint32_t timer_read_sensor = 0;
  if (millis() - timer_read_sensor >= 500) {
    timer_read_sensor = millis();
    if (DHT.read22(DHT22_PIN) == 0) {
      dht_temperature = DHT.getTemperature();
    }
    int buf = 0;
    for (uint8_t a = 0; a < 25; a++) {
      buf += analogRead(ASAP_SENSOR_PIN);
    }
    nilai_sensor_asap = buf / 25.0;
    Serial.print("ASAP Value = ");
    Serial.print(nilai_sensor_asap);  // the raw analog reading
    Serial.print(F(" ADC,  Temperature: "));
    Serial.print(dht_temperature);
    Serial.println(F("°C "));
    if (dht_temperature > 34 || nilai_sensor_asap > 120) {  // nyalakan relay
satt t> 38, asap >500
      if (digitalRead(pin_relay) == LOW) {
        digitalWrite(pin_relay, HIGH);  // active LOW
        digitalWrite(pin_servo, HIGH);
        Serial.println("Nyalakan Relay");
      }
```

```
    } else {
      if (digitalRead(pin_relay) == HIGH) {
        digitalWrite(pin_relay, LOW);
        digitalWrite(pin_servo, LOW);
        Serial.println("Matikan Relay");
      }
    }
  }
}
```

3. **KODINGAN SERVO**

```
/* Sweep
 by BARRAGAN <http://barraganstudio.com>
 This example code is in the public domain.

 modified 8 Nov 2013
 by Scott Fitzgerald
 https://www.arduino.cc/en/Tutorial/LibraryExamples/Sweep
*/

#include <Servo.h>

Servo myservo;  // create servo object to control a servo
// twelve servo objects can be created on most boards

int pos = 0;    // variable to store the servo position
int inputdariarduino = 3;
void setup() {
  Serial.begin (9600);
  pinMode (inputdariarduino , INPUT);
  myservo.attach(9);  // attaches the servo on pin 9 to the servo object
```

```
}

void loop() {



 int Sensordata = digitalRead (inputdariarduino);

   Serial.print("Nilai sensor:");
   Serial.println(Sensordata);

 if(Sensordata == 1)
  {
  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(5);                       // waits 15 ms for the servo to reach the position
  }
  for (pos = 180; pos >= 0; pos -=3) { // goes from 180 degrees to 0
degrees
    myservo.write(pos);              // tell servo to go to position in variable
'pos'
    delay(10);                       // waits 15 ms for the servo to reach the
position
  }
  }
 else if (Sensordata == 0)
  {
     myservo.write(10);
```