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LAMPIRAN A PROGRAM ARDUINO ALAT

```
//Windu
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27,20,4);
#include <SoftwareSerial.h>
#include "TFMini.h"
TFMini tfmini;
SoftwareSerial SerialTFMini(2, 3);           //The only value that matters
here is the first one, 2, Rx

unsigned long prevMillis = 0; // Set up millis //
float sensor = 0;
float panjang, lebar, tinggi, volume; // Set up panjang, lebar, dan tinggi
serta volume //

// Set up Push Button PIN //
const byte switch1 = 8;
const byte switch2 = 9;
const byte switch3 = 10;
const byte switch4 = 11;
const byte switch5 = 12;

byte hitung = 0;
byte tahap = 0;

byte I[] = {18, 10};
byte Icount = 2;
byte E[] = {16, 17, 18, 20};
byte Ecount = 4;
byte PK = 0;
float ket = 0.0;
//byte ketCount = 6;
float hasil = 0;
int data ;
float sensorValue;
```

```

void setup()
{
  pinMode (switch1, INPUT_PULLUP); // Initialize the Push Button
  pinMode (switch2, INPUT_PULLUP);
  pinMode (switch3, INPUT_PULLUP);
  pinMode (switch4, INPUT_PULLUP);
  pinMode (switch5, INPUT_PULLUP);

  digitalWrite (switch1, HIGH);
  digitalWrite (switch2, HIGH);
  digitalWrite (switch2, HIGH);
  digitalWrite (switch3, HIGH);
  digitalWrite (switch4, HIGH);
  digitalWrite (switch5, HIGH);

  lcd.init(); // initialize the lcd
  lcd.init();
  lcd.backlight();
  lcd.clear();
  lcd.setCursor(6, 0);
  lcd.print("WELCOME");
  lcd.setCursor(5, 2);
  lcd.print("ALAT UKUR");
  lcd.setCursor(1, 3);
  lcd.print("PENGONDISIAN UDARA");
  delay(3000);
  lcd.clear();
}

void loop()
{
  int distance = 0;
  int strength = 0;

  getTFminiData(&distance, &strength);
  while (!distance)
  {
    getTFminiData(&distance, &strength);
    if (distance)

```

```

    {
        Serial.print(distance);
        Serial.print("cm\t");
        Serial.print("strength: ");
        Serial.println(strength);
    }
}
//Program
unsigned long millis();
if (millis() - prevMillis >= 500){
    prevMillis = millis();
    lcd.clear();
}
if (digitalRead (switch4) == LOW){
    tahap++;
    delay (250);
    if (tahap >2){
        tahap = 0;
        delay (250);
    }
}
//Hasil Nilai Konversi BTU KE PK
if ((hasil >= 10) & (hasil <= 6999)) {
    ket = 0.5;
}
else if ((hasil >= 7000) & (hasil <= 8999)){
    ket = 0.7;
}
else if ((hasil >= 9000) & (hasil <= 11999)){
    ket = 1;
}
else if ((hasil >= 12000) & (hasil <= 17999)){
    ket = 1.5;
}
else if ((hasil >= 18000) & (hasil <= 23999)){
    ket = 2;
}
else if ((hasil >= 24000) & (hasil <= 26999)){
    ket = 2.5;
}

```

```

    }
    else if ((hasil >= 27000) & (hasil <= 44999)){
        ket = 3;
    }
    else if ((hasil >= 45000) & (hasil <= 89999)){
        ket = 5;
    }
    else if ((hasil >= 90000) & (hasil <= 134999)){
        ket = 10;
    }

switch (tahap){
case 0:
// sensor = distance/30.48;
sensorValue = (((distance/1,0135- 0,0402)+26);
sensor = sensorValue/100;
lcd.setCursor (0,0);
lcd.print ("sensor : ");
lcd.setCursor (9,0);
lcd.print (sensor);
lcd.setCursor (13,0);
lcd.print ("feet");
// lcd.print (distance);

lcd.setCursor (0,(hitung+1)); lcd.print (>");
lcd.setCursor (1,1); lcd.print ("p :");
lcd.setCursor (5,1); lcd.print (panjang);
lcd.setCursor (9,1); lcd.print ("feet");
lcd.setCursor (1,2); lcd.print ("l :");
lcd.setCursor (5,2); lcd.print (lebar);
lcd.setCursor (9,2); lcd.print ("feet");
lcd.setCursor (1,3); lcd.print ("t :");
lcd.setCursor (5,3); lcd.print (tinggi);
lcd.setCursor (9,3); lcd.print ("feet");
lcd.setCursor (14,2); lcd.print ("v :");
lcd.setCursor (14,3); lcd.print (volume);
lcd.setCursor (19,0); lcd.print (hitung);

if (digitalRead (switch2) == LOW){

```

```

hitung++;
delay (250);
if (hitung > 2){
    hitung = 0;
    delay (250);
}}
if (digitalRead (switch3) == LOW){
    volume = panjang*tinggi*lebar*35,315;
}
switch (hitung){
    case 0:
        if (digitalRead (switch1) == LOW){
            panjang = sensor;
            break;
        }
        case 1:
            if (digitalRead (switch1) == LOW){
                lebar = sensor;
                break;
            }
        case 2:
            if (digitalRead (switch1) == LOW){
                tinggi = sensor;
                break;
            }
        }
    }
    break;
    case 1:
        lcd.setCursor (0,(PK+1)); lcd.print (>");
        lcd.setCursor (0,0); lcd.print (v :");
        lcd.setCursor (4,0); lcd.print (volume);
        lcd.setCursor (1,1); lcd.print (I :");
        lcd.setCursor (5,1); lcd.print (I[Icount]);
        lcd.setCursor (1,2); lcd.print (E :");
        lcd.setCursor (5,2); lcd.print (E[Ecount]);
        lcd.setCursor (0,3); lcd.print (hasil :");
        lcd.setCursor (8,3); lcd.print (hasil);
        lcd.setCursor (19,0); lcd.print (PK);
        if ((digitalRead (switch1) == LOW) and (PK == 0)){

```

```

Icount++;
if(Icount > 1){
    Icount = 0;
}
}
if ((digitalRead (switch1) == LOW) and (PK == 1)){
    Ecount++;
    delay (250);
    if(Ecount > 3){
        Ecount = 0;
    }
}
if (digitalRead (switch2) == LOW){
    PK++;
    delay (250);
    if (PK > 1) {
        PK = 0;
    }
}
if (digitalRead (switch3)== LOW){
    hasil = volume*I[Icount]*E[Ecount]/60;
}
break;
case 2 :
    lcd.setCursor (0,0); lcd.print ("Hasil (BTU) : ");
    lcd.setCursor (0,1); lcd.print (hasil);
    lcd.setCursor (0,2); lcd.print ("Keterangan : ");
    lcd.setCursor (0,3); lcd.print (ket,1);
    lcd.setCursor (4,3); lcd.print ("PK");
}
if (digitalRead (switch5) == LOW){
    panjang = 0;
    lebar = 0;
    tinggi = 0;
    volume = 0;
    hasil = 0;
    ket = 0.0;
}
}
}

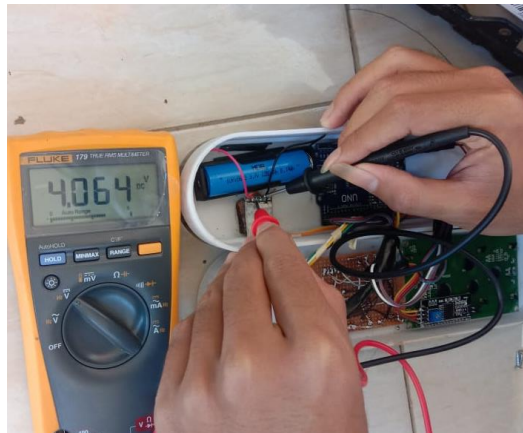
```


LAMPIRAN B DOKUMENTASI

1. Proses pemasangan LCD



2. Proses pengukuran tegangan baterai



3. Proses pengecatan casing



BIODATA PENULIS



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Riwayat Pendidikan

1. MI DarwataGlempang Tahun 2007 – 2013
2. SMP Negeri 1 Maos Tahun 2013 – 2016
3. SMK Negeri 2 Cilacap Tahun 2016 – 2019
4. Politeknik Negeri Cilacap Tahun 2019 – 2022

Penulis telah mengikuti seminar Tugas Akhir pada tanggal 28 Juli 2022 sebagai salah satu persyaratan untuk memperoleh gelar Ahli Madya (A.Md).