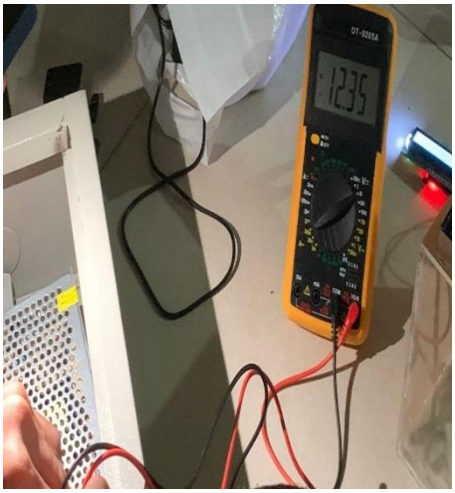
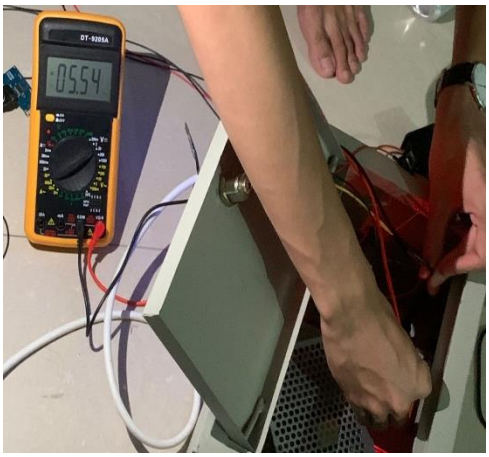
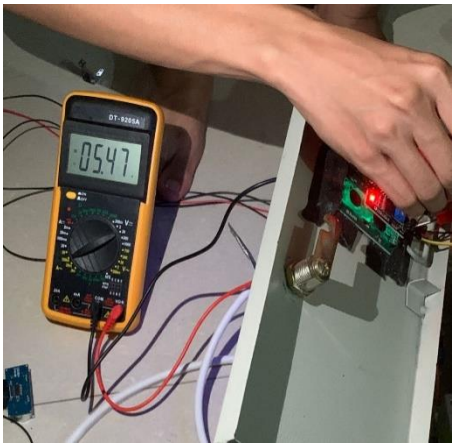
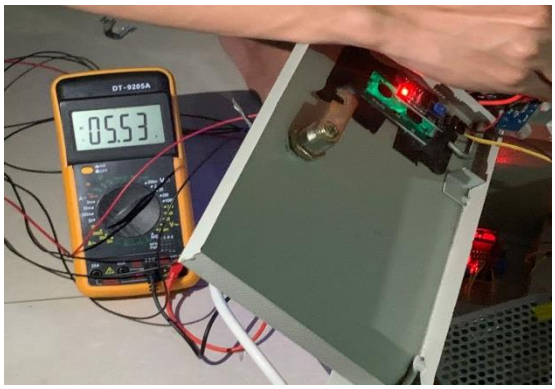
LAMPIRAN

- Hasil Pengambilan Data









- Codingan

```
//library servo
#include <Servo.h>
// membuat variabel servo untuk dikendalikan
Servo myservo;
// deklarasi variabel untuk posisi sudut
int pos = 0;

#include <Wire.h>               // Library komunikasi I2C
#include <LiquidCrystal_I2C.h>  // Library modul I2C LCD

// default address 0x27
// tipe LCD 16x2 (16,2)
LiquidCrystal_I2C lcd = LiquidCrystal_I2C(0x27, 16, 2);

int IN_1 = 4;
int IN_2 = 5;
int IN_3 = 6;
int IN_4 = 7;


int trigPin = 2;

int echoPin = 3;

long waktu;

int jarak;

void setup() {
  //deklarasi servo pada pin 9
  myservo.attach(9);
  lcd.init();
  lcd.backlight();
  lcd.clear();
  lcd.print("JARAK");
  lcd.setCursor(0, 1);
  lcd.print("PROS KEPADATTAN");

  pinMode(IN_1, OUTPUT);
  pinMode(IN_2, OUTPUT);
```

```
  pinMode(IN_3, OUTPUT);
  pinMode(IN_4, OUTPUT);

  pinMode(trigPin, OUTPUT);

  pinMode(echoPin, INPUT);

  Serial.begin(9600);
  myservo.write(90);
}
int servo_val = 90;
int servo_start = 45;
int servo_end = 135;

bool maju = true;

int jarak_batas = 7;
int jarak_hitung[90];

void loop() {

  if (maju) servo_val++;
  if (servo_val > servo_end) maju = false;
  if (!maju) servo_val--;
  if (servo_val < servo_start) maju = true;



  myservo.write(servo_val);
  hcsr04();
  lcd.setCursor(0, 0);
  lcd.print("Jarak : ");
  lcd.print(jarak);
  lcd.print("    ");
  lcd.setCursor(0, 1);
  lcd.print("PROS PEMADATTAN");

  jarak_hitung[servo_val - 45] = jarak;


  if (servo_val == 90) {
```

```
  bool ada_lebih = false;
  for (int i = 0; i < 90; i++) {
    if (jarak_hitung[i] > jarak_batas) {
      ada_lebih = true;
      break;
    }
  }


  if (!ada_lebih) {
    //sudah padat
    lcd.setCursor(0, 0);
    lcd.print("Proses Pemadatan");
    lcd.setCursor(0, 1);
    lcd.print("AKHIR");


    delay(10000);


    lcd.setCursor(0, 0);
    lcd.print("Proses Pemadatan");
    lcd.setCursor(0, 1);
    lcd.print("AKHIR                ");

    digitalWrite(IN_1, HIGH);
    digitalWrite(IN_2, HIGH);
    digitalWrite(IN_3, HIGH);
    digitalWrite(IN_4, HIGH);

    delay(10000);

  }else{
    motorDriver();
  }
}



// motorServo();
// motorDriver();
```

```
}

void motorServo() {
  // perulangan untuk posisi 0 sampai 180 derajat
  for (pos = 0; pos < 180; pos += 1) {  // step setiap 1
derajat
    // memerintahkan servo ke posisi derajat sesuai nilai
variabel pos
    myservo.write(pos);
    delay(15);  // menunggu 15 milidetik
  }

  for (pos = 180; pos >= 1; pos -= 1)  // perulangan untuk
posisi 180 sampai 0 derajat
  {
    myservo.write(pos);  // memerintahkan servo ke posisi
derajat sesuai nilai variabel pos

    delay(15);  // menunggu 15 milidetik
  }
}


void motorDriver() {
  //Putar Mesin searah jarum jam
  digitalWrite(IN_1, HIGH);
  digitalWrite(IN_2, LOW);
  // delay(1500);
  // //Untuk mesin A
  // digitalWrite(IN_1, HIGH);
  // digitalWrite(IN_2, HIGH);
  // delay(1000);
  // //Putar Motor B searah jarum jam
  digitalWrite(IN_3, HIGH);
  digitalWrite(IN_4, LOW);
  // delay(1500);
  // //Untuk mesin B
  // digitalWrite(IN_3, HIGH);
  // digitalWrite(IN_4, HIGH);
  // delay(1000);
```

```
  // //Putar Motor a berlawan arah jarum jam
  // digitalWrite(IN_1, LOW);
  // digitalWrite(IN_2, HIGH);
  // delay(1500);
  // //Untuk mesin A
  // digitalWrite(IN_1, HIGH);
  // digitalWrite(IN_2, HIGH);
  // delay(1000);
  // //Putar Motor B berlawan arah jarum jam
  // digitalWrite(IN_3, LOW);
  // digitalWrite(IN_4, HIGH);
  // delay(1500);
  //Untuk mesin B
  // digitalWrite(IN_3, HIGH);
  // digitalWrite(IN_4, HIGH);
  // delay(1000);
}

void hcsr04() {
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);
  float jarak_tentu = 7;
  waktu = pulseIn(echoPin, HIGH);
  jarak = waktu * 0.034 / 2;
  // if (jarak >= 7) {
  //   Serial.print("mesin gerak");
  //   motorServo();
  //   motorDriver();
  // }else{
  //   break;
  // }
  // else{
  //   return;
  // }
  Serial.print("Jarak: ");
  Serial.println(jarak);
  // delay(200);
}
```