LAMPIRAN
Lampiran 1 Program Arduino

```
//Main_Program//
#include <DHT.h>
#include <DHT_U.h>
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 16, 2);
#define DHTPIN 2
#define DHTTYPE DHT11
#define PB_START 3
#define ledMerah 10
#define ledHijau 11
#define IGNITION 6
#define SELENOID 7
#define FAN 8
#define MOTOR 9

DHT dht(DHTPIN, DHTTYPE);

bool buttonStatus = false;

int RHlimit = 16;
int Tupper = 65;
int Tlower = 40;

void setup() {
  Serial.begin(9600);
  pinMode(PB_START, INPUT_PULLUP);
```

```
  pinMode(ledMerah, OUTPUT);
  pinMode(ledHijau, OUTPUT);
  pinMode(IGNITION, OUTPUT);
  pinMode(SELENOID, OUTPUT);
  pinMode(FAN, OUTPUT);
  pinMode(MOTOR, OUTPUT);
  dht.begin();
  lcd.init();
  lcd.backlight();
  attachInterrupt(digitalPinToInterrupt(PB_START), startButton, FALLING);
}
void startButton() {
  buttonStatus = !buttonStatus;
}

void conditionChecking(float RH, float T) {
  if (RH > RHlimit) {
    digitalWrite(FAN, HIGH);
    digitalWrite(MOTOR, HIGH);
    if (T <= Tlower) {
      //SELENOID ON
      selenoidHandler(true);
    }
    if (T >= Tupper) {
      //SELENOID OFF
      selenoidHandler(false);
    }
  } else {
    //FAN, MOTOR, SELENOID OFF
```

```
    selenoidHandler(false);
    digitalWrite(FAN, LOW);
    digitalWrite(MOTOR, LOW);
  }
}

void loop() {
  float RH = dht.readHumidity();
  float T = dht.readTemperature();

  if (isnan(RH) || isnan(T)) {
    Serial.println(F("Sensor DHT gagal terbaca!"));
    return;
  }

  updateDisplay(RH, T);
  if (buttonStatus) { //RUN
    digitalWrite(ledMerah, HIGH);
    digitalWrite(ledHijau, LOW);
    conditionChecking(RH, T);
  } else {          //STOP
    digitalWrite(ledMerah, LOW);
    digitalWrite(ledHijau, HIGH);

    //FAN, MOTOR, SELENOID OFF
    selenoidHandler(false);
    digitalWrite(FAN, LOW);
    digitalWrite(MOTOR, LOW);
  }
```

```
}
//Selenoid_Igntion//
int i, prev, prev2, counter;
int setCycleDivider = 4;
int setCycleDuration = 2000;
bool pulse = false;
bool prevTrigger = false;

void ignitionOnOffTimer(int CycleDuration, int CycleDivider) {
 int Now = millis();
 if (Now - prev >= CycleDuration && pulse == false) {
  pulse = true;
  prev = Now;
 } else if (Now - prev >= (CycleDuration / CycleDivider) && pulse == true) {
  if (i == 1) {
   pulse = false;
  } else if (i > (CycleDivider - 1)) {
   i = 0;
  }
  i++;
 }
 digitalWrite(IGNITION, pulse);
 Serial.println(pulse);
}

void ignitionTriggerHandler(int TotalDuration, bool Trigger) {
 if (!prevTrigger && (counter < TotalDuration)) {
  ignitionOnOffTimer(setCycleDuration, setCycleDivider);
```

```
    counter++;
  } else {
    digitalWrite(IGNITION, LOW);
    pulse=false;
    prevTrigger = Trigger;
    counter = 0;
  }
}

void triggerReset(){
  prevTrigger=false;
}
void selenoidHandler(bool Trigger) {
  int Now2 = millis();
  if (Now2 - prev2 >= 100) {
    prev2 = Now2;
    if (Trigger) {
      digitalWrite(SELENOID, HIGH);
      ignitionTriggerHandler(100, true); //set ignition Total Duration >>> ON 10S
    } else {
      digitalWrite(IGNITION, LOW);
      digitalWrite(SELENOID, LOW);
      triggerReset();
    }
  }


}
//UpdateDisplay//
```

```
long int nowMillis, prevMillis;


void updateDisplay(float RH, float T) {
  nowMillis = millis();
  if (nowMillis - prevMillis > 1000) {        //Siklus 1 detik(1000ms)
    prevMillis = nowMillis;
    lcd.setCursor(0, 0);
    lcd.print("RH: ");
    lcd.setCursor(4, 0);
    lcd.print("      ");
    lcd.setCursor(4, 0);
    lcd.print(RH);
    lcd.setCursor(0, 1);
    lcd.print("T: ");
    lcd.setCursor(3, 1);
    lcd.print("      ");
    lcd.setCursor(3, 1);
    lcd.print(T);
  }
}
```

LAMPIRAN
Lampiran 2 Daftar Riwayat Hidup

DAFTAR RIWAYAT HIDUP

Pas Foto 3 x 4

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