

LAMPIRAN

1. Listing Program Keseluruhan Alat Pemijat

```
#include<Wire.h>
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27,2,1,0,4,5,6,7,3,POSITIVE);
int motor1 = 2;
int limit1 =3;
int limit2 =4;
int putar_kanan1 =1;
int putar_kiri1 =1;
int putar_kanan2 = 1;
int putar_kiri2 = 1;
int a=1;
int b=1;
int c=1;
int d=1;
int e=1;
int f=1;
int g=1;
int relay1=5;
int relay2=10;
int limit3=11;
int limit4=12;
int motor2=13;
int waktu=0;
int waktu1=0;
int waktu2=0;
int mode1=6;
int mode2=7;
int menit=0;
int detik=59;
int star=0;
int durasi=0;
int mulai = 8;
int jalan=-1;
```

```
int belakang =9;
void setup() {
  pinMode(motor1, OUTPUT);
  pinMode(motor2, OUTPUT);
  pinMode(relay1,OUTPUT);
  pinMode(relay2,OUTPUT);
  pinMode(belakang,OUTPUT);
  pinMode(limit1, INPUT);
  pinMode(limit2, INPUT);
  pinMode(limit3, INPUT);
  pinMode(limit4, INPUT);
  pinMode(mode1, INPUT);
  pinMode(mode2, INPUT);
  pinMode(mulai, INPUT);
  lcd.begin(16,4);
  lcd.setCursor(3,2);
  lcd.print("BRA TERAPI");
  delay (2000);
  lcd.clear();
  Serial.begin(9600);
}
void loop() {
  jalan=-1;
  digitalWrite(belakang, LOW);
  lcd.clear();
  lcd.setCursor(2,1);
  lcd.print("SETTING WAKTU");
  lcd.setCursor(4,2);
  lcd.print(waktu);
  lcd.print(" MENIT");

  waktu1 = digitalRead (mode1);
  if (waktu1 != e){
    if (waktu1 == LOW){
      waktu =15;
    }
    e=waktu1;}
  waktu2 = digitalRead (mode2);
```

```
if (waktu2 != c){
    if (waktu2 == LOW){
        waktu =20;
    }
    c=waktu2;}
    star = digitalRead (mulai);
if (star != d){
    if (star == LOW){
        jalan = waktu - 1;
    }
    d=star;
        lcd.clear();
        lcd.setCursor(2,1);
lcd.print("SEDANG TERAPI");
        lcd.setCursor(3,2);
        lcd.print(waktu);
lcd.print(":");
lcd.print("00");
lcd.print(" MENIT");
}
while(jalan>=0){
digitalWrite(belakang, HIGH);
    waktu=0;
    durasi = durasi +1;
    if (durasi ==7){
        durasi =0;
            lcd.clear();
            lcd.setCursor(2,1);
lcd.print("SEDANG TERAPI");
            lcd.setCursor(5,2);
lcd.print(":");
            if (jalan>=10){
                lcd.setCursor(3,2);
lcd.print(jalan);
            }
                if (jalan<=9){
                    lcd.setCursor(3,2);
```

```
lcd.print(detik);
  lcd.print(" MENIT");
  }
detik --;
}
if (detik<=-1){
  jalan=jalan-1;
  detik = 59;
}
putar_kanan1 = digitalRead (limit1);
if (putar_kanan1 != a){
  if (putar_kanan1 == LOW){
    digitalWrite(relay1, HIGH);
  }
}
a=putar_kanan1;
putar_kiri1 = digitalRead (limit2);
if (putar_kiri1 != b){
  if (putar_kiri1 == LOW){
    digitalWrite(relay1, LOW);
  }
}
b=putar_kiri1;
putar_kanan2 = digitalRead (limit3);
if (putar_kanan2 != f){
  if (putar_kanan2 == LOW){
    digitalWrite(relay2, HIGH);
  }
}
f=putar_kanan2;
putar_kiri2 = digitalRead (limit4);
if (putar_kiri2 != g){
  if (putar_kiri2 == LOW){
    digitalWrite(relay2, LOW);
  }
}
g=putar_kiri2;

digitalWrite(motor1, HIGH);
```

```

    delay(32);
    digitalWrite(motor1, LOW);
    digitalWrite(motor2, LOW);
    delay(100);
        digitalWrite(motor1, LOW);
        digitalWrite(motor2, HIGH);
    delayMicroseconds(3500);
}
delay(100);
}

```

2. Listing Program Keseluruhan Alat Kompres

```

#include <OneWire.h>
#include <DallasTemperature.h>

#define ONE_WIRE_BUS1 10
#define ONE_WIRE_BUS2 9

OneWire oneWire1(ONE_WIRE_BUS1);
OneWire oneWire2(ONE_WIRE_BUS2);

DallasTemperature sensorSuhu1(&oneWire1);
DallasTemperature sensorSuhu2(&oneWire2);

float suhuSekarang1;
float suhuSekarang2;
float seting = 57.00;
int heater1 = 6;
int heater2 = 5;
int waktu = -1;
unsigned long timer;
unsigned long durasi;
const unsigned long setting = 900000;
int star = 1;
int buzzer = 3;
int mulai;
int selesai= 0;
int bunyi = 0;

```

```
void setup(void)
{
  Serial.begin(9600);
  sensorSuhul.begin();
  sensorSuhu2.begin();
  pinMode(heater1, OUTPUT);
  pinMode(heater2, OUTPUT);
  pinMode(buzzer, OUTPUT);
  pinMode(star, INPUT);
  digitalWrite(buzzer, HIGH);
  delay(100);
  digitalWrite(buzzer, LOW);
  delay(100);
  digitalWrite(buzzer, HIGH);
  delay(100);
  digitalWrite(buzzer, LOW);
  delay(100);
  digitalWrite(buzzer, HIGH);
  delay(100);
  digitalWrite(buzzer, LOW);
}
void loop(void)
{
  durasi = millis();
  waktu = -1;
  suhuSekarang1 = ambilSuhul();
  if (suhuSekarang1 <= seting){
    digitalWrite(heater1, HIGH);
  }
  else{
    digitalWrite(heater1, LOW);
  }
  suhuSekarang2 = ambilSuhu2();
  if (suhuSekarang2 <= seting){
    digitalWrite(heater2, HIGH);
  }
  else{
    digitalWrite(heater2, LOW);
  }
}
```

```
delay(100);
mulai = digitalRead(star);
if (mulai == LOW){
    digitalWrite(buzzer, HIGH);
    delay(100);
    digitalWrite(buzzer, LOW);
    delay(100);
    digitalWrite(buzzer, HIGH);
    delay(100);
    digitalWrite(buzzer, LOW);
    delay(100);
    digitalWrite(buzzer, HIGH);
    delay(100);
    digitalWrite(buzzer, LOW);
    waktu = 1;
    timer = durasi;
}
while (waktu >= 0){
    durasi = millis();
    if ((durasi - timer)>=setting){
        selesai = 1;
    }
    while (selesai == 1){
        digitalWrite(heater1, LOW);
        digitalWrite(heater2, LOW);
        bunyi = 0;
        if (bunyi <= 1){
            for (int fadeValue = 225 ; fadeValue >= 50; fadeValue -= 1)
            {
                analogWrite(buzzer, fadeValue);
                delay(5);
            }
            for (int fadeValue = 225 ; fadeValue >= 50; fadeValue -= 1)
            {
                analogWrite(buzzer, fadeValue);

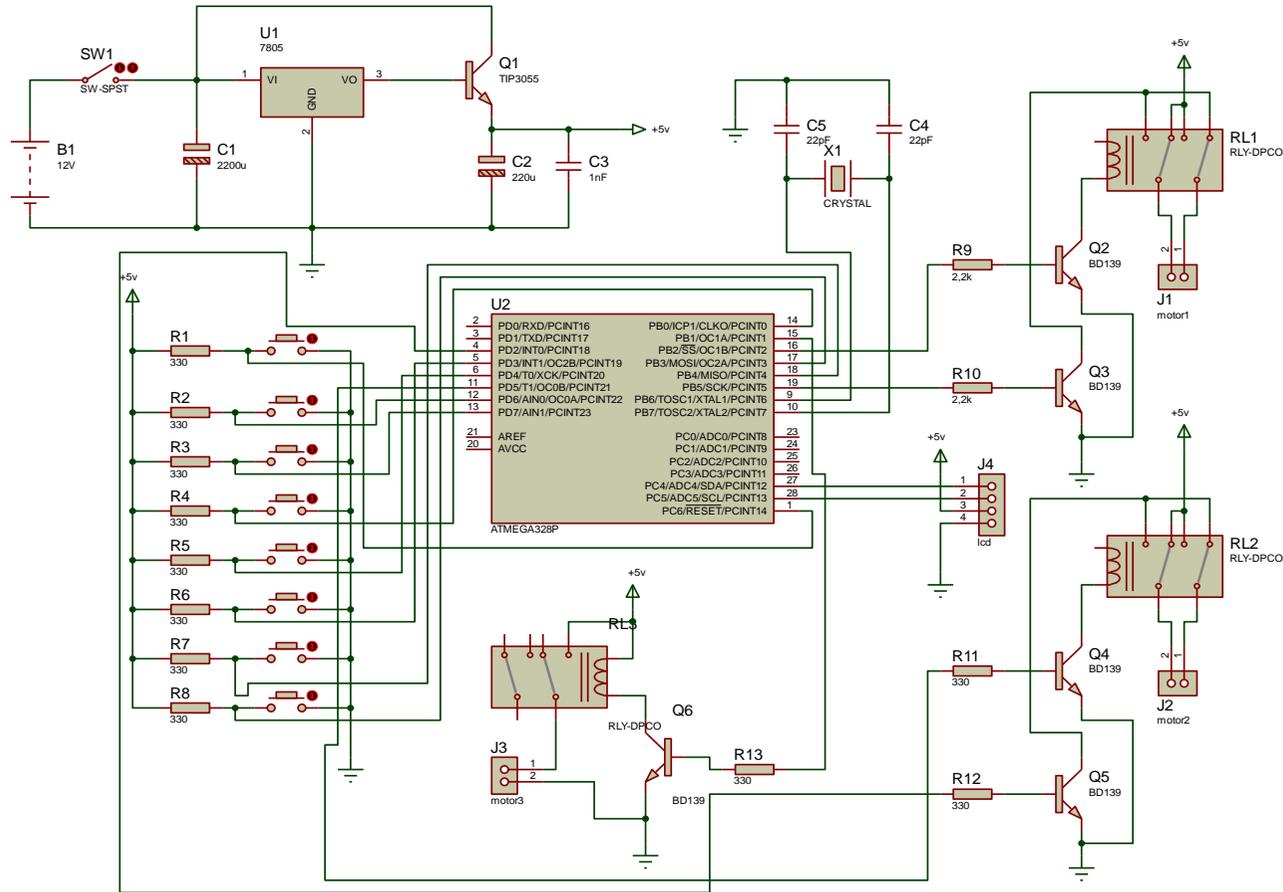
                delay(5);
            }
        }
    }
}
```

```

for (int fadeValue = 225 ; fadeValue >= 50; fadeValue -= 1)
{
    analogWrite(buzzer, fadeValue);
    delay(5);
}
for (int fadeValue = 225 ; fadeValue >= 0; fadeValue -= 1)
{
    analogWrite(buzzer, fadeValue);
    delay(5);
}
}
bunyi ++;
}
suhuSekarang1 = ambilSuhu1();
if (suhuSekarang1 <= seting){
digitalWrite(heater1, HIGH);
}
else{
digitalWrite(heater1, LOW);
}
suhuSekarang2 = ambilSuhu2();
if (suhuSekarang2 <= seting){
digitalWrite(heater2, HIGH);
}
else{
digitalWrite(heater2, LOW);
}
delay(80);
}}
float ambilSuhu1()
{
    sensorSuhu1.requestTemperatures();
    float suhu1 = sensorSuhu1.getTempCByIndex(0);
    return suhu1; }
float ambilSuhu2()
{
    sensorSuhu2.requestTemperatures();
    float suhu2 = sensorSuhu2.getTempCByIndex(0);
    return suhu2; }

```

3. Rangkaian Keseluruhan Alat Pijat



4. Rangkaian Keseluruhan Alat Kompres

