LAMPIRAN

1. Program Modul

```
/*****************************************************
This program was produced by the
CodeWizardAVR V2.05.3 Standard
Automatic Program Generator
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Project :
Version :
Date    : 5/27/2017
Author  : User
Company :
Comments:
Chip type           : ATmega8
Program type        : Application
AVR Core Clock frequency: 12.000000 MHz
Memory model        : Small
External RAM size   : 0
Data Stack size     : 256
*****************************************************/
#include <mega8.h>
#include <stdlib.h>
#include <stdio.h>
#include <delay.h>
#include <alcd.h>
#define door  PINC.0
#define start PINC.1
#define blower  PORTB.2
```

```
#define heater  PORTB.5
#define uv      PORTB.1
#define buzz    PORTB.4

int detik,menit;
char buf[33];
interrupt [TIM1_OVF] void timer1_ovf_isr(void)
{
TCNT1H=0xD23A >> 8;
TCNT1L=0xD23A & 0xff;
detik++;
}
#define ADC_VREF_TYPE 0x00
unsigned int read_adc(unsigned char adc_input)
{
ADMUX=adc_input | (ADC_VREF_TYPE & 0xff);
delay_us(10);
ADCSRA|=0x40;
while ((ADCSRA & 0x10)==0);
ADCSRA|=0x10;
return ADCW;
}
void run()
{
lcd_gotoxy(0,0);
lcd_putsf("                ");
lcd_gotoxy(0,1);
lcd_putsf("    LOCKED      ");
if(door){
```

```
lcd_gotoxy(0,1);
lcd_putsf("    UNLOCKED    ");
}
if(!start){ lcd_clear();
buzz=1;
delay_ms(1000);
detik=0;
menit=0;
while(1){
     buzz=0;
    lcd_gotoxy(0,0);
    lcd_putsf("   PROCESSING   ");

     if(door){
     lcd_clear();
     lcd_gotoxy(0,1);
     lcd_putsf("    UNLOCKED    ");
     break;}

     lcd_gotoxy(0,1);
     sprintf(buf,"TIME= %d:%d ",menit,detik);
     lcd_puts(buf);
     if(detik==60){detik=0;menit=menit+1
     if(menit<=45){blower=1
     if(menit<=20){heater=1;}
     if(menit>40) {heater=0;}
     if(menit>20 && menit<=30) {heater=0;}
     if(menit>30 && menit<=40) {heater=1;}
     if(menit>30 && menit<=45) {uv=1;}
```

```
    if(menit>45){uv=0;}
    if(menit>44){buzz=1;delay_ms(1000);buzz=0;lcd_clear();break;}
} } }
void main(void)
{
PORTB=0x00;
DDRB=0xFF;
PORTC=0x03;
DDRC=0x00;
PORTD=0x00;
DDRD=0x00;
TCCR0=0x00;
TCNT0=0x00;
TCCR1A=0x00;
TCCR1B=0x05;
TCNT1H=0xD2;
TCNT1L=0x3A;
ICR1H=0x00;
ICR1L=0x00;
OCR1AH=0x00;
OCR1AL=0x00;
OCR1BH=0x00;
OCR1BL=0x00;
ASSR=0x00;
TCCR2=0x00;
TCNT2=0x00;
OCR2=0x00;
MCUCR=0x00;
TIMSK=0x04;
```

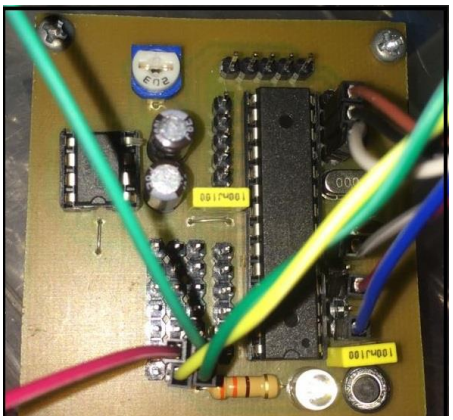
```
UCSRB=0x00;
ACSR=0x80;
SFIOR=0x00;
ADMUX=ADC_VREF_TYPE & 0xff;
ADCSRA=0x84;
SPCR=0x00;
TWCR=0x00;
lcd_init(16);

#asm("sei")
lcd_gotoxy(0,0);
lcd_putsf("Azzuhra Yolanda  ");
lcd_gotoxy(0,1);
lcd_putsf("   20143010047   ");
delay_ms(2000);
lcd_clear();
  lcd_gotoxy(0,0);
      lcd_putsf("   DISH DRYER   ");
      lcd_gotoxy(0,1);
      lcd_putsf(" DAN STERILISASI");

while (1)
      {
blower=0;
heater=0;
uv     =0;
buzz   =0;
door   =0;
```

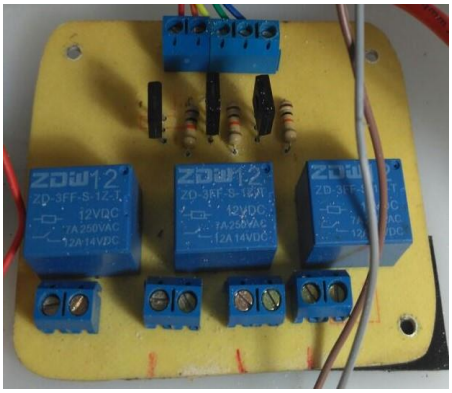
```
    if(!door){run();
run()
    }
}
}
```

2. Perangkat Keras Pada Alat



Rangkaian Minimum Sistem

Rangkaian Power Supply



Rangkaian Driver

Rangkaian Secara Keseluruhan

3. Pembuatan Alat

Proses Pemasangan Lampu UV

Pemasangan Pintu Pada Alat

4. Pengujian Alat

Pengujian Alat di Lab Mikrobiologi UMY

Bakteri sesudah dan sebelum penggunaan alat

Thermometer Air Raksa untuk mengukur Suhu Pada Alat

5. Gambar Alat

Alat Sterilizer Peralatan Makan Bayi

6. Hasil Pengukuran Timer Pada Alat

No	Modul	Stopwatch
1	44,58	45
2	44,59	45
3	45,05	45
4	44,58	45
5	45	45
6	44,59	45
7	44,57	45
8	44,59	45
9	45,05	45
10	45	45
11	44,48	45
12	45	45
13	45	45
14	44,59	45
15	45	45
16	44,58	45
17	45	45
18	44,58	45
19	44,57	45
20	45	45

A. Rata-rata

Dirumuskan sebagai berikut :

Rata – Rata $(\bar{x}) = \frac{\sum Xi}{n}$

1. Alat

$$(\bar{X}) = \frac{45+45+45+45+45+45+45+45+45+45+45+45+45+45+45+45+45+45+45+45}{20}$$

$(\bar{X}) =$ 45S

2. Pembanding

$$(Xn) = \frac{45{,}05+45+44{,}48+45+45+44{,}59+45+44{,}58+45+44{,}58+44{,}57+44{,}58+44{,}59+45{,}05+44{,}58+45+44{,}59+44{,}57+44{,}59}{20}$$

$(Xn) =$ 44.77

B. Simpangan

Dirumuskan sebagai berikut :

Simpangan = $\bar{X}$- Xn

Simpangan = 45-44.77

Simpangan = 0.23

C. Error

Dirumuskan sebagai berikut :

Error % $= \frac{simpangan}{Rerata\ Pembanding}\ X\ 100\ \%$

Error % $= \frac{0.23}{44.77}\ x\ 100\ \%$

Error % = 1%

D. Standar deviasi

Dirumuskan sebagai berikut :

$$SD = \sqrt{\frac{\sum_{i=1}^{n}\left(X_i - \overline{X}\right)^2}{(n-1)}}$$

$$SD = \sqrt{\frac{900}{19}}$$

$$SD = 6.8825$$

E. Ketidakpastian

Dirumuskan sebagai berikut :

$$\text{Ketidakpastian} = \frac{stdv}{\sqrt{n}}$$

$$\text{Ketidakpastian} = \frac{6.8825}{\sqrt{20}}$$

Ketidakpastian = 1.5389