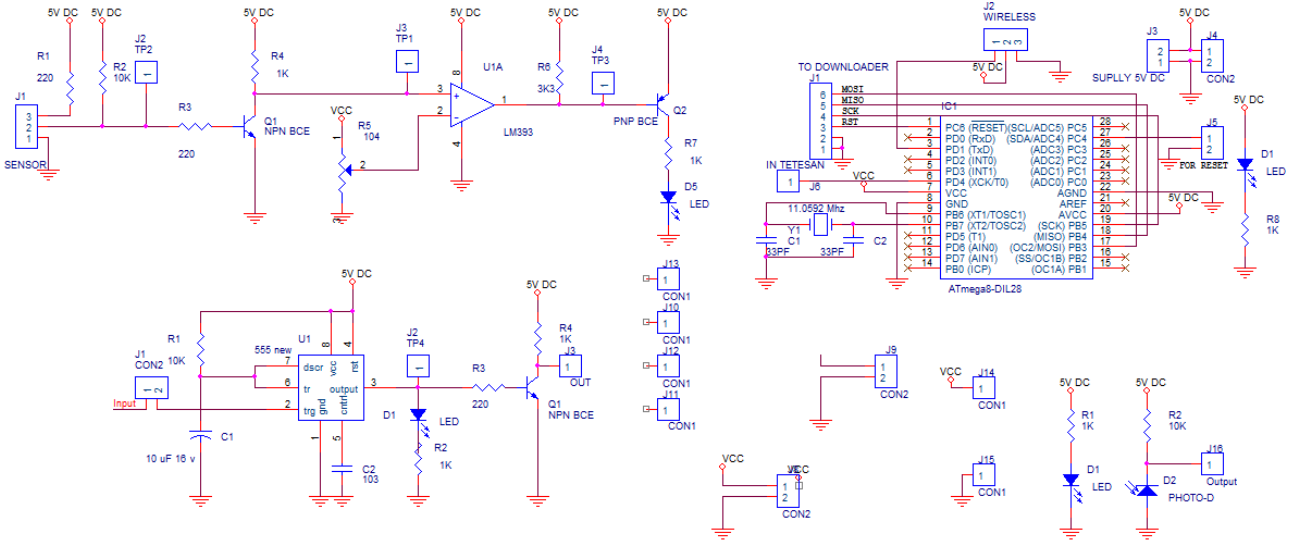
LAMPIRAN

Rangkaian keseluruhan :



Listing Program CodeVision AVR:

Program Infus 1

```
/*****************************************************
**
This program was produced by the
CodeWizardAVR V2.05.0 Professional
Automatic Program Generator
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http://www.hpinfotech.com
Project :
Version :
Date    : 5/23/2015
Author  : JOHN
Company :
Comments:
Chip type               : ATmega8
Program type            : Application
AVR Core Clock frequency: 11.059200 MHz
Memory model            : Small
External RAM size       : 0
```

```
Data Stack size        : 256
*****************************************************
******/

#include <mega8.h>
#include <delay.h>
//#include <stdlib.h>
#include <stdio.h>

unsigned int i=500,a,b,c,d,e;
unsigned char temp [4];
void main(void)
{

PORTB=0x00;
DDRB=0x00;

PORTC=0x10;
DDRC=0x00;

PORTD=0x20;
```

```
DDRD=0x00;

TCCR0=0x06;
TCNT0=0x00;

TCCR1A=0x00;
TCCR1B=0x00;
TCNT1H=0x00;
TCNT1L=0x00;
ICR1H=0x00;
ICR1L=0x00;
OCR1AH=0x00;
OCR1AL=0x00;
OCR1BH=0x00;
OCR1BL=0x00;

ASSR=0x00;
TCCR2=0x00;
TCNT2=0x00;
OCR2=0x00;
```

```
MCUCR=0x00;

TIMSK=0x00;

UCSRA=0x00;
UCSRB=0x08;
UCSRC=0x86;
UBRRH=0x00;
UBRRL=0x47;

ACSR=0x80;
SFIOR=0x00;

ADCSRA=0x00;
SPCR=0x00;
TWCR=0x00;

while (1)
 {
  if (TCNT0==18)
```

```
{
 i--;
 a++;
 b++;
 c++;
 d++;
 e++;
 TCNT0=0;
 itoa(i,temp);
 printf("%sa",temp);
 putchar(13);
 putchar(10);
 delay_ms(500);
 }
 if (a==100)
  {
     if (a>=100)
     {a=101;
     }
  printf("b");
```

```
 putchar(13);
 putchar(10);
 delay_ms(500);
 }
if (b==200)
 {
   if (b>=200)
   {b=201;
   }
 printf("c");
 putchar(13);
 putchar(10);
 delay_ms(500);
 }
if (c==300)
 {
   if (c>=300)
   {c=301;
   }
 printf("d");
```

```
 putchar(13);
 putchar(10);
 delay_ms(500);
 }
if (d==400)
 {
   if (d>=400)
   {d=401;
   }
 printf("e");
 putchar(13);
 putchar(10);
 delay_ms(500);
 }
if (e==500)
 {
   if(e>=500)
   {e=501;
   }
 printf("f");
```

```
 putchar(13);
 putchar(10);
 delay_ms(500);
 }
if (PINC.4==0)
{
i=500;
a=0;
b=0;
c=0;
d=0;
e=0;
TCNT0=0;
printf("g");
putchar(13);
putchar(10);
delay_ms(100);
}
if (i==0)
{break;
```

```
    }
  }
```

Program Infus 2

```
/*****************************************************
**

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```

```
Chip type               : ATmega8
Program type            : Application
AVR Core Clock frequency: 11.059200 MHz
Memory model            : Small
External RAM size       : 0
Data Stack size         : 256
*****************************************************
**/

#include <mega8.h>
#include <delay.h>
#include <stdlib.h>
#include <stdio.h>

unsigned int i=500,a,b,c,d,e;
```

```
unsigned char temp [];

void main(void)

{

PORTB=0x00;

DDRB=0x00;


\PORTC=0x10;

DDRC=0x00;


PORTD=0x20;

DDRD=0x00;


TCCR0=0x06;

TCNT0=0x00;

TCCR1A=0x00;

TCCR1B=0x00;

TCNT1H=0x00;
```

```
TCNT1L=0x00;

ICR1H=0x00;

ICR1L=0x00;

OCR1AH=0x00;

OCR1AL=0x00;

OCR1BH=0x00;

OCR1BL=0x00;


ASSR=0x00;

TCCR2=0x00;

TCNT2=0x00;

OCR2=0x00;


MCUCR=0x00;

TIMSK=0x00;


UCSRA=0x00;
```

```
UCSRB=0x08;

UCSRC=0x86;

UBRRH=0x00;

UBRRL=0x47;

ACSR=0x80;

SFIOR=0x00;

ADCSRA=0x00;

SPCR=0x00;

TWCR=0x00;


while (1)

    {

    if (TCNT0==18)

    {

    i--;

    a++;

    b++;
```

```
c++;
d++;
e++;
TCNT0=0;
itoa(i,temp);
printf("%sh",temp);
putchar(13);
putchar(10);
delay_ms(500);
}
if (a==100)
 {
    if (a>=100)
    {a=101;
    }
 printf("i");
 putchar(13);
```

```
 putchar(10);
 delay_ms(500);
 }
if (b==200)
 {
   if (b>=200)
   {b=201;
   }
 printf("j");
 putchar(13);
 putchar(10);
 delay_ms(500);
 }
if (c==300)
 {
   if (c>=300)
   {c=301;
```

```
    }
 printf("k");
 putchar(13);
 putchar(10);
 delay_ms(500);
 }
if (d==400)
 {
  if (d>=400)
  {d=401;
  }
 printf("l");
 putchar(13);
 putchar(10);
 delay_ms(500);
 }
if (e==500)
```

```
 {
   if(e>=500)
   {e=501;
   }
 printf("m");
 putchar(13);
 putchar(10);
 delay_ms(500);
 }
if (PINC.4==0)
{
i=500;
a=0;
b=0;
c=0;
d=0;
e=0;
```

```
      TCNT0=0;
      printf("n");
      putchar(13);
      putchar(10);
      delay_ms(100);
      }
      if (i==0)
      {break;
      }
    }
}
```

Listing Program Delphi 7:

```
unit Unit1;
interface
uses
```

```
  Windows, Messages, SysUtils, Variants, Classes, Graphics,
Controls, Forms,

  Dialogs, StdCtrls, CPort, strUtils, ExtCtrls, sSkinManager,
jpeg, MMSystem,

  acPNG, SHDocVw, OleCtrls, MPlayer;

type

  TForm1 = class(TForm)

    Label2: TLabel;

    Button1: TButton;

    Button2: TButton;

    ComPort1: TComPort;

    Shape1: TShape;

    Shape2: TShape;

    Shape3: TShape;

    Shape4: TShape;

    Shape5: TShape;

    Shape6: TShape;
```

Shape7: TShape;

Shape8: TShape;

Shape9: TShape;

Shape10: TShape;

Button5: TButton;

Label4: TLabel;

Label6: TLabel;

Label7: TLabel;

Label8: TLabel;

Shape12: TShape;

Image1: TImage;

Label10: TLabel;

Label9: TLabel;

Label11: TLabel;

Label12: TLabel;

Label13: TLabel;

Memo3: TMemo;

Memo1: TMemo;

Memo2: TMemo;

Label1: TLabel;

Shape11: TShape;

sSkinManager1: TsSkinManager;

Image2: TImage;

Image3: TImage;

Image4: TImage;

procedure Button2Click(Sender: TObject);

procedure ComPort1RxChar(Sender: TObject; Count: Integer);

procedure Button1Click(Sender: TObject);

procedure Button3Click(Sender: TObject);

procedure FormCreate(Sender: TObject);

procedure Button5Click(Sender: TObject);

procedure Button4Click(Sender: TObject);

procedure Label9MouseEnter(Sender: TObject);

```
    procedure Label9MouseLeave(Sender: TObject);
    procedure Label9Click(Sender: TObject);
    procedure Image4Click(Sender: TObject);
  private
    { Private declarations }
  public
    { Public declarations }
  end;
var
  Form1: TForm1;
implementation
uses Unit2;

{$R *.dfm}
////////////////////////////Program Untuk Close//////////////////////////////
procedure TForm1.Button2Click(Sender: TObject);
begin
```

```
if messagedlg('Anda Yakin Ingin Menghentikan Monitoring?',mtconfirmation,

[mbYes,mbNo],0)=mrYes then

begin

close;

end;

end;

//////////////////////Program Untuk Menerima Data//////////////////////

procedure TForm1.ComPort1RxChar(Sender: TObject; Count: Integer);

var

buff:string;

begin

comport1.ReadStr(buff,count);          //Membaca data melalui comport1

memo1.Text:=memo1.Text+buff;

buff:=memo1.lines[memo1.lines.count-1];          //Menampung Seluruh data ke Memo1
```

```
//////////////////////Program Level Cairan Infus 2//////////////////////

//buff:=memo3.lines[memo3.lines.count-100];

if rightstr(buff,1)='i' then

begin

shape6.Brush.Color:=clwhite;

sndPlaySound('D:\TA\PROGRAM\DELPHI\buzzer.wav',

SND_NODEFAULT Or SND_ASYNC Or SND_LOOP);

showMessage('WARNING!!! SISA CAIRAN INFUS 1 TINGGAL 400mL');

end;

if rightstr(buff,1)='j' then

begin

shape6.Brush.Color:=clwhite;

shape7.Brush.Color:=clwhite;

sndPlaySound('D:\TA\PROGRAM\DELPHI\buzzer.wav',

SND_NODEFAULT Or SND_ASYNC Or SND_LOOP);
```

```
showMessage('WARNING!!! SISA CAIRAN INFUS 1 TINGGAL 300mL');

end;

if rightstr(buff,1)='k' then

begin

shape6.Brush.Color:=clwhite;

shape7.Brush.Color:=clwhite;

shape8.Brush.Color:=clwhite;

sndPlaySound('D:\TA\PROGRAM\DELPHI\buzzer.wav',

SND_NODEFAULT Or SND_ASYNC Or SND_LOOP);

showMessage('WARNING!!! SISA CAIRAN INFUS 1 TINGGAL 200mL');

end;


if rightstr(buff,1)='l' then

begin

shape6.Brush.Color:=clwhite;
```

```
shape7.Brush.Color:=clwhite;

shape8.Brush.Color:=clwhite;

shape9.Brush.Color:=clwhite;

sndPlaySound('D:\TA\PROGRAM\DELPHI\buzzer.wav',

SND_NODEFAULT Or SND_ASYNC Or SND_LOOP);

showMessage('WARNING!!! SISA CAIRAN INFUS 1 TINGGAL 100mL');

end;

if rightstr(buff,1)='m' then

begin

shape6.Brush.Color:=clwhite;

shape7.Brush.Color:=clwhite;

shape8.Brush.Color:=clwhite;

shape9.Brush.Color:=clwhite;

shape10.Brush.Color:=clwhite;

sndPlaySound('D:\TA\PROGRAM\DELPHI\buzzer.wav',

SND_NODEFAULT Or SND_ASYNC Or SND_LOOP);
```

```
showMessage('CAIRAN INFUS 2 TELAH HABIS');

end;

////////////////Program Perubahan 1mL infus 2//////////////////////////////

if rightstr(buff,1)='h' then

begin

label8.caption:=leftstr(buff,length(buff)-1);

memo3.Text:=memo3.Text+buff;

end;

/////////////////Program Reset Infus 2/////////////////////////////////////

if rightstr(buff,1)='n' then

begin

label8.caption:='500';

memo1.Text:='';

memo3.Text:='';

shape6.Brush.Color:=clGradientInactiveCaption;

shape7.Brush.Color:=clGradientActiveCaption;

shape8.Brush.Color:=clHighlight;
```

```
shape9.Brush.Color:=clBlue;

shape10.Brush.Color:=clNavy;

end;

//////////////////////Program Level Cairan Infus 1//////////////////////

if rightstr(buff,1)='b' then

begin

shape1.Brush.Color:=clwhite;

sndPlaySound('D:\TA\PROGRAM\DELPHI\buzzer.wav',

SND_NODEFAULT Or SND_ASYNC Or SND_LOOP);

showMessage('WARNING!!! SISA CAIRAN INFUS 1 TINGGAL 400mL');

end;

if rightstr(buff,1)='c' then

begin

shape1.Brush.Color:=clwhite;

shape2.Brush.Color:=clwhite;

sndPlaySound('D:\TA\PROGRAM\DELPHI\buzzer.wav',
```

```
SND_NODEFAULT Or SND_ASYNC Or SND_LOOP);

showMessage('WARNING!!! SISA CAIRAN INFUS 1 TINGGAL 300mL');

end;

if rightstr(buff,1)='d' then

begin

shape1.Brush.Color:=clwhite;

shape2.Brush.Color:=clwhite;

shape3.Brush.Color:=clwhite;

sndPlaySound('D:\TA\PROGRAM\DELPHI\buzzer.wav',

SND_NODEFAULT Or SND_ASYNC Or SND_LOOP);

showMessage('WARNING!!! SISA CAIRAN INFUS 1 TINGGAL 200mL');

end;

if rightstr(buff,1)='e' then

begin

shape1.Brush.Color:=clwhite;
```

```
shape2.Brush.Color:=clwhite;

shape3.Brush.Color:=clwhite;

shape4.Brush.Color:=clwhite;

sndPlaySound('D:\TA\PROGRAM\DELPHI\buzzer.wav',

SND_NODEFAULT Or SND_ASYNC Or SND_LOOP);

showMessage('WARNING!!! SISA CAIRAN INFUS 1 TINGGAL 100mL');

end;

if rightstr(buff,1)='f' then

begin

shape1.Brush.Color:=clwhite;

shape2.Brush.Color:=clwhite;

shape3.Brush.Color:=clwhite;

shape4.Brush.Color:=clwhite;

shape5.Brush.Color:=clwhite;

sndPlaySound('D:\TA\PROGRAM\DELPHI\buzzer.wav',

SND_NODEFAULT Or SND_ASYNC Or SND_LOOP);
```

```
showMessage('CAIRAN INFUS 1 TELAH HABIS!!!');

end;

//////////////////////Program Perubahan 1mL infus 1//////////////////////

if rightstr(buff,1)='a' then

begin

label4.caption:=leftstr(buff,length(buff)-1);

memo2.Text:=memo2.Text+buff;

end;

//////////////////////Program Reset Infus 1///////////////////////////////

if rightstr(buff,1)='g' then

begin

memo1.Text:='';

memo2.Text:='';

shape1.Brush.Color:=clGradientInactiveCaption;

shape2.Brush.Color:=clGradientActiveCaption;

shape3.Brush.Color:=clHighlight;

shape4.Brush.Color:=clBlue;
```

```
shape5.Brush.Color:=clNavy;

label4.caption:='500';

end;

end;

//////////////////////////Program Untuk Start dan Stop//////////////////


procedure TForm1.Button1Click(Sender: TObject);

begin

if Button1.Caption='START' then

begin

ComPort1.Open;

button1.Caption:='STOP';

  end

  else if Button1.Caption='STOP' then

  begin

    ComPort1.Close;

    Button1.Caption:='START';
```

```
end;

end;

procedure TForm1.Button3Click(Sender: TObject);

begin

if messagedlg('Anda Yakin Ingin Memonitoring Infus 1 Dari Awal?',mtconfirmation,

[mbYes,mbNo],0)=mrYes then

begin

memo2.Clear;

shape1.Brush.Color:=clGradientInactiveCaption;

shape2.Brush.Color:=clGradientActiveCaption;

shape3.Brush.Color:=clHighlight;

shape4.Brush.Color:=clBlue;

shape5.Brush.Color:=clNavy;

sndPlaySound(nil, 0); // Stops the sound

end;

end;
```

```
procedure TForm1.FormCreate(Sender: TObject);

begin

label10.Hide;

label6.Color:=clBlue;

shape1.Brush.Color:=clGradientInactiveCaption;

shape2.Brush.Color:=clGradientActiveCaption;

shape3.Brush.Color:=clHighlight;

shape4.Brush.Color:=clBlue;

shape5.Brush.Color:=clNavy;

shape6.Brush.Color:=clGradientInactiveCaption;

shape7.Brush.Color:=clGradientActiveCaption;

shape8.Brush.Color:=clHighlight;

shape9.Brush.Color:=clBlue;

shape10.Brush.Color:=clNavy;

//memo1.Hide;

//memo2.Hide;

//memo3.Hide;
```

```
end;

procedure TForm1.Button5Click(Sender: TObject);

begin

form1.Hide;

form2.Show;

end;

procedure TForm1.Button4Click(Sender: TObject);

begin

if messagedlg('Anda Yakin Ingin Memonitoring Infus 2 Dari Awal?',mtconfirmation,

[mbYes,mbNo],0)=mrYes then

begin

memo3.Clear;

shape6.Brush.Color:=clGradientInactiveCaption;

shape7.Brush.Color:=clGradientActiveCaption;

shape8.Brush.Color:=clHighlight;

shape9.Brush.Color:=clBlue;
```

```
shape10.Brush.Color:=clNavy;

sndPlaySound(nil, 0); // Stops the sound

end;

end;

procedure TForm1.Label9MouseEnter(Sender: TObject);

begin

label10.Show;

end;

procedure TForm1.Label9MouseLeave(Sender: TObject);

begin

label10.Hide;

end;

procedure TForm1.Label9Click(Sender: TObject);

begin

sndPlaySound(nil,0);

end;

end.
```

Pembahasan Perhitungan Statistik

Setting Kecepatan 25mL/Jam

Rata-rata modul

$$\overline{X} = \frac{\sum X_n}{n}$$

$$\overline{X} = \frac{26 + 26 + 25 + 25 + 25}{5}$$

$$\overline{X} = \frac{127}{5}$$

$$\overline{X} = 25{,}4$$

Pembanding $\overline{Y} = 25$

$$Error\% = \frac{\bar{Y} - \bar{X}}{\bar{Y}} \text{x } 100\%$$

$$Error\% = \frac{25 - 25{,}4}{25} \text{x } 100\%$$

$$Error\% = -1{,}6\%$$

$$STD = \sqrt{\frac{(X_1 - \bar{Y})^2 + (X_2 - \bar{Y})^2 + \cdots + (X_5 - \bar{Y})^2}{(n-1)}}$$

$$STD = \sqrt{\frac{(26-25)^2 + (26-25)^2 + (25-25)^2 + (25-25)^2 + (25-25)^2}{(5-1)}}$$

$$STD = \sqrt{\frac{(1)^2 + (1)^2 + (0)^2 + (0)^2 + (0)^2}{4}}$$

$$STD = \sqrt{\frac{2}{4}}$$

$$STD = 0{,}707$$

$$Ua = \frac{SD}{\sqrt{n}}$$

$$Ua = \frac{0{,}707}{\sqrt{5}}$$

$$Ua = 0{,}316$$

Setting Kecepatan 50mL/Jam

Rata-rata modul

$$\overline{X} = \frac{\sum X_n}{n}$$

$$\overline{X} = \frac{51 + 50 + 51 + 52 + 50}{5}$$

$$\overline{X} = \frac{254}{5}$$

$$\overline{X} = 50{,}8$$

Pembanding $\overline{Y} = 50$

$$Error\% = \frac{\bar{Y} - \bar{X}}{\bar{Y}} \text{x } 100\%$$

$$Error\% = \frac{50{,}8 - 50}{50} \text{x } 100\%$$

$$Error\% = -1{,}6\%$$

$$STD = \sqrt{\frac{(X_1 - \bar{Y})^2 + (X_2 - \bar{Y})^2 + \cdots + (X_5 - \bar{Y})^2}{(n-1)}}$$

$$STD = \sqrt{\frac{(51-50)^2 + (50-50)^2 + (52-50)^2 + (51-50)^2 + (50-50)^2}{(5-1)}}$$

$$STD = \sqrt{\frac{(1)^2 + (0)^2 + (2)^2 + (1)^2 + (0)^2}{4}}$$

$$STD = \sqrt{\frac{6}{4}}$$

$$STD = 1{,}224$$

$$Ua = \frac{SD}{\sqrt{n}}$$

$$Ua = \frac{1{,}224}{\sqrt{5}}$$

$$Ua = 0{,}549$$

Setting Kecepatan 100mL/Jam

Rata-rata modul

$$\overline{X} = \frac{\sum X_n}{n}$$

$$\overline{X} = \frac{101 + 102 + 102 + 101 + 100}{5}$$

$$\overline{X} = \frac{506}{5}$$

$$\overline{X} = 101{,}2$$

Pembanding $\overline{Y} = 100$

$$Error\% = \frac{\bar{Y} - \bar{X}}{\bar{Y}} \text{x } 100\%$$

$$Error\% = \frac{101{,}2 - 100}{100} \text{x } 100\%$$

$$Error\% = -1{,}2\%$$

$$STD = \sqrt{\frac{(X_1 - \bar{Y})^2 + (X_2 - \bar{Y})^2 + \cdots + (X_5 - \bar{Y})^2}{(n-1)}}$$

$$STD = \sqrt{\frac{(101 - 100)^2 + (102 - 100)^2 + (102 - 100)^2 + (101 - 100)^2 + (100 - 100)^2}{(5-1)}}$$

$$STD = \sqrt{\frac{(1)^2 + (2)^2 + (2)^2 + (1)^2 + (0)^2}{4}}$$

$$STD = \sqrt{\frac{10}{4}}$$

$$STD = 1{,}58$$

$$Ua = \frac{SD}{\sqrt{n}}$$

$$Ua = \frac{1{,}58}{\sqrt{5}}$$

$$Ua = 0{,}708$$

Setting Kecepatan 150mL/Jam

Rata-rata modul

$$\overline{X} = \frac{\sum X_n}{n}$$

$$\overline{X} = \frac{149 + 147 + 148 + 149 + 148}{5}$$

$$\overline{X} = \frac{741}{5}$$

$$\overline{X} = 148{,}2$$

Pembanding $\overline{Y} = 150$

$$Error\% = \frac{\bar{Y} - \bar{X}}{\bar{Y}} \text{x } 100\%$$

$$Error\% = \frac{148{,}2 - 150}{150} \text{x } 100\%$$

$$Error\% = -1{,}2\%$$

$$STD = \sqrt{\frac{(X_1 - \bar{Y})^2 + (X_2 - \bar{Y})^2 + \cdots + (X_5 - \bar{Y})^2}{(n-1)}}$$

$$STD = \sqrt{\frac{(149 - 150)^2 + (147 - 150)^2 + (148 - 150) + (149 - 150) + (148 - 150)^2}{(5-1)}}$$

$$STD = \sqrt{\frac{(-1)^2 + (-3)^2 + (-2)^2 + (-1)^2 + (-2)^2}{4}}$$

$$STD = \sqrt{\frac{19}{4}}$$

$$STD = 2{,}17$$

$$Ua = \frac{SD}{\sqrt{n}}$$

$$Ua = \frac{2{,}17}{\sqrt{5}}$$

$$Ua = 0{,}973$$

Setting Kecepatan 200mL/Jam

Rata-rata modul

$$\overline{X} = \frac{\sum X_n}{n}$$

$$\overline{X} = \frac{196 + 195 + 197 + 196 + 195}{5}$$

$$\overline{X} = \frac{979}{5}$$

$$\overline{X} = 195{,}8$$

Pembanding $\overline{Y} = 200$

$$Error\% = \frac{\bar{Y} - \bar{X}}{\bar{Y}} \text{x } 100\%$$

$$Error\% = \frac{195{,}8 - 200}{200} \text{x } 100\%$$

$$Error\% = -2{,}1\%$$

$$STD = \sqrt{\frac{(X_1 - \bar{Y})^2 + (X_2 - \bar{Y})^2 + \cdots + (X_5 - \bar{Y})^2}{(n-1)}}$$

$$STD = \sqrt{\frac{(196 - 200)^2 + (195 - 200)^2 + (197 - 200)^2 + (196 - 200)^2 + (195 - 200)^2}{(5-1)}}$$

$$STD = \sqrt{\frac{(-4)^2 + (-5)^2 + (-3)^2 + (-4)^2 + (-5)^2}{4}}$$

$$STD = \sqrt{\frac{91}{4}}$$

$$STD = 22{,}75$$

$$Ua = \frac{SD}{\sqrt{n}}$$

$$Ua = \frac{22{,}75}{\sqrt{5}}$$

$$Ua = 10{,}20$$

Setting Kecepatan 300mL/Jam

Rata-rata modul

$$\overline{X} = \frac{\sum X_n}{n}$$

$$\overline{X} = \frac{294 + 293 + 292 + 293 + 294}{5}$$

$$\overline{X} = \frac{1466}{5}$$

$$\overline{X} = 293{,}2$$

Pembanding $\overline{Y} = 300$

$$Error\% = \frac{\bar{Y} - \bar{X}}{\bar{Y}} \text{x } 100\%$$

$$Error\% = \frac{293{,}2 - 300}{300} \text{x } 100\%$$

$$Error\% = -2{,}26\%$$

$$STD = \sqrt{\frac{(X_1 - \bar{Y})^2 + (X_2 - \bar{Y})^2 + \cdots + (X_5 - \bar{Y})^2}{(n-1)}}$$

$$STD = \sqrt{\frac{(294 - 300)^2 + (293 - 300)^2 + (292 - 300)^2 + (293 - 300)^2 + (294 - 300)^2}{(5-1)}}$$

$$STD = \sqrt{\frac{(6)^2 + (7)^2 + (8)^2 + (7)^2 + (6)^2}{4}}$$

$$STD = \sqrt{\frac{234}{4}}$$

$$STD = 58{,}5$$

$$Ua = \frac{SD}{\sqrt{n}}$$

$$Ua = \frac{58{,}5}{\sqrt{5}}$$

$$Ua = 26{,}23$$