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LAMPIRAN.1

Lampiran: Script Program Prototype IR-GluchoM untuk mendeteksi cholesterol dan glukosa darah noninvasive.

```
#include <LiquidCrystal.h>
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
float y1=0,rata=0.0,rata2=0.0,y2=0,rata3=0,rata4=0;
float b=0,c=0,d=0,koef1,koef2;
int a=0;
int NilaiSensor;
float Tegangan1,Tegangan2;
void setup() {
  // put your setup code here, to run once:
Serial.begin(9600);
lcd.begin(16, 4);
pinMode(9,OUTPUT);
pinMode(10,OUTPUT);
}
void loop() {
  // put your main code here, to run repeatedly:
if(a<20)
{
digitalWrite(9,HIGH);
digitalWrite(10,LOW);
NilaiSensor = analogRead(0);
Tegangan1 = NilaiSensor * (5.0 / 1023.0);
Serial.print(Tegangan1,3);
Serial.println(" Gluco ");
delay(1000);
a=a+1;
lcd.setCursor(0, 0);
```

Script Program Prototype IR-GluchoM untuk mendeteksi cholesterol dan glukosa darah noninvasive

```
lcd.print("   Time :  ");
lcd.print(a);
if (a>9)
{
rata=rata+Tegangan1;
}
 if (a==19)
 {
   rata2=rata/10;
   koef1=rata2*rata2;
   koef2=rata2;
   //y1=914.01*rata2-212.38;
   //y1=2240*koef1-3420*koef2+1386;
     y1=5612.7*koef1-6266*koef2+1816.2;
    //y1=-55.612*koef1-214.39*koef2+391.19;
    Serial.print("rata:");
 Serial.println(rata2);
 Serial.print("hasil:");
 Serial.println(y1);
delay(3000);
 }
}
if((a>18)&&(a<=39))
{
digitalWrite(9,LOW);
digitalWrite(10,HIGH);
NilaiSensor = analogRead(0);
Tegangan2= NilaiSensor * (5.0 / 1023.0);
```

Script Program Prototype IR-GluchoM untuk mendeteksi cholesterol dan glukosa darah noninvasive

```
Serial.print(Tegangan2,3);
Serial.println(" Chol ");
delay(1000);
a=a+1;
lcd.setCursor(0, 0);
lcd.print("   Time :  ");
lcd.print(a);
if((a>20)&&(a<=40))
{
  rata3=rata3+Tegangan2;
}
 if (a==40)
 {
   rata4=rata3/20;
   koef1=rata4*rata4;
   koef2=rata4;
  // y2=608.45*rata4-31.43;
   //y2=174.83*koef1-607.04*koef2+602.22;
   //y2=98.857*koef1-495.26*koef2+565.38;
    //y2=198.16*koef1-640.24*koef2+616.92;
    y2=-873.12*koef1+2065.1*koef2-757.81;
  Serial.print("rata:");
 Serial.println(rata4);
 Serial.print("hasil:");
 Serial.println(y2);
 }
}
if (a==40) {
```

Script Program Prototype IR-GluchoM untuk mendeteksi cholesterol dan glukosa darah noninvasive

```
lcd.setCursor(0, 0);
lcd.print("CHOL: ");
lcd.print(y2,0);
lcd.print(" mg/dl");
if (y2<200)
{
lcd.setCursor(0, 2);
lcd.print("Chol Normal");
}
if ((y2>200) &&(y2<240))
{
 lcd.setCursor(0, 2);
 lcd.print("Chol Medium");
}
if (y2>240)
{
 lcd.setCursor(0, 2);
 lcd.print("Chol High");
}
lcd.setCursor(0,1);
lcd.print("gula: ");
lcd.print(y1,0);
lcd.print(" mg/dl");
if (y1<70)
{
lcd.setCursor(0, 3);
lcd.print("Gula Normal");
}
```

Script Program Prototype IR-GluchoM untuk mendeteksi cholesterol dan glukosa darah noninvasive

```
if ((y1>70) &&(y1<180))
{
  lcd.setCursor(0, 3);
  lcd.print("Gula Medium");
}
if (y1>180)
{
  lcd.setCursor(0, 3);
  lcd.print("Gula High");
}
delay(5000);
if (y1<0)
{
lcd.clear();
lcd.setCursor(0, 0);
lcd.print("0");
lcd.print(" mg/dl");
delay (1000);
//lcd.clear();
}
}
}
```

LAMPIRAN 2:

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	; L-ZF
b	Usia	: 57 Tahun
c	Cholesterol	:220 mg/dl
d	Glukosa	: 100 mg/dl
e	Pengukuran	; 02 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.387 Gluco	3.382 Gluco	3.363 Gluco	3.368 Gluco	3.368 Gluco
2	2.229 Gluco	2.209 Gluco	2.146 Gluco	2.151 Gluco	2.151 Gluco
3	1.647 Gluco	1.623 Gluco	1.535 Gluco	1.549 Gluco	1.549 Gluco
4	1.408 Gluco	1.388 Gluco	1.290 Gluco	1.300 Gluco	1.300 Gluco
5	1.315 Gluco	1.290 Gluco	1.188 Gluco	1.202 Gluco	1.207 Gluco
6	1.281 Gluco	1.251 Gluco	1.149 Gluco	1.163 Gluco	1.163 Gluco
7	1.261 Gluco	1.237 Gluco	1.134 Gluco	1.149 Gluco	1.149 Gluco
8	1.261 Gluco	1.232 Gluco	1.124 Gluco	1.144 Gluco	1.139 Gluco
9	1.256 Gluco	1.227 Gluco	1.124 Gluco	1.139 Gluco	1.134 Gluco
10	1.256 Gluco	1.222 Gluco	1.119 Gluco	1.139 Gluco	1.134 Gluco
11	1.251 Gluco	1.222 Gluco	1.119 Gluco	1.139 Gluco	1.134 Gluco
12	1.256 Gluco	1.222 Gluco	1.119 Gluco	1.134 Gluco	1.134 Gluco
13	1.256 Gluco	1.227 Gluco	1.119 Gluco	1.134 Gluco	1.129 Gluco
14	1.256 Gluco	1.232 Gluco	1.119 Gluco	1.139 Gluco	1.134 Gluco
15	1.256 Gluco	1.232 Gluco	1.124 Gluco	1.134 Gluco	1.134 Gluco
16	1.261 Gluco	1.232 Gluco	1.124 Gluco	1.139 Gluco	1.134 Gluco
17	1.256 Gluco	1.232 Gluco	1.129 Gluco	1.134 Gluco	1.134 Gluco
18	1.261 Gluco	1.237 Gluco	1.124 Gluco	1.139 Gluco	1.134 Gluco
19	1.256 Gluco	1.207 Gluco	1.124 Gluco	1.134 Gluco	1.134 Gluco
20	1.261 Chol	1.217 Chol	1.129 Chol	1.134 Chol	1.139 Chol
21	1.266 Chol	1.222 Chol	1.134 Chol	1.139 Chol	1.144 Chol
22	1.266 Chol	1.227 Chol	1.134 Chol	1.144 Chol	1.149 Chol
23	1.271 Chol	1.227 Chol	1.134 Chol	1.144 Chol	1.149 Chol
24	1.271 Chol	1.232 Chol	1.134 Chol	1.144 Chol	1.153 Chol
25	1.271 Chol	1.237 Chol	1.139 Chol	1.144 Chol	1.149 Chol
26	1.276 Chol	1.237 Chol	1.139 Chol	1.144 Chol	1.149 Chol
27	1.271 Chol	1.232 Chol	1.139 Chol	1.149 Chol	1.149 Chol
28	1.276 Chol	1.237 Chol	1.144 Chol	1.144 Chol	1.149 Chol
29	1.271 Chol	1.237 Chol	1.139 Chol	1.139 Chol	1.149 Chol
30	1.271 Chol	1.241 Chol	1.139 Chol	1.134 Chol	1.153 Chol
31	1.271 Chol	1.241 Chol	1.139 Chol	1.134 Chol	1.153 Chol
32	1.271 Chol	1.241 Chol	1.139 Chol	1.134 Chol	1.153 Chol
33	1.271 Chol	1.241 Chol	1.144 Chol	1.134 Chol	1.153 Chol
34	1.271 Chol	1.246 Chol	1.144 Chol	1.134 Chol	1.158 Chol
35	1.271 Chol	1.246 Chol	1.139 Chol	1.134 Chol	1.153 Chol
36	1.271 Chol	1.246 Chol	1.139 Chol	1.139 Chol	1.153 Chol
37	1.276 Chol	1.246 Chol	1.144 Chol	1.134 Chol	1.153 Chol
38	1.276 Chol	1.251 Chol	1.144 Chol	1.139 Chol	1.153 Chol
39	1.276 Chol	1.251 Chol	1.139 Chol	1.134 Chol	1.153 Chol
40	1.276 Chol	1.251 Chol	1.144 Chol	1.134 Chol	1.153 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama ; P-SW
b Usia : 41 Tahun
c Cholesterol :222 mg/dl
d Glukosa : 96 mg/dl
e Pengukuran ; 02 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.314 Gluco	3.324 Gluco	3.324 Gluco	3.324 Gluco	3.319 Gluco
2	1.994 Gluco	2.009 Gluco	2.004 Gluco	2.004 Gluco	1.994 Gluco
3	1.334 Gluco	1.349 Gluco	1.354 Gluco	1.354 Gluco	1.344 Gluco
4	1.056 Gluco	1.075 Gluco	1.075 Gluco	1.075 Gluco	1.065 Gluco
5	0.943 Gluco	0.958 Gluco	0.963 Gluco	0.963 Gluco	0.953 Gluco
6	0.899 Gluco	0.914 Gluco	0.914 Gluco	0.914 Gluco	0.909 Gluco
7	0.885 Gluco	0.894 Gluco	0.894 Gluco	0.894 Gluco	0.890 Gluco
8	0.875 Gluco	0.885 Gluco	0.890 Gluco	0.890 Gluco	0.880 Gluco
9	0.875 Gluco	0.890 Gluco	0.885 Gluco	0.885 Gluco	0.875 Gluco
10	0.880 Gluco	0.885 Gluco	0.880 Gluco	0.880 Gluco	0.875 Gluco
11	0.880 Gluco	0.885 Gluco	0.880 Gluco	0.880 Gluco	0.875 Gluco
12	0.890 Gluco	0.885 Gluco	0.880 Gluco	0.880 Gluco	0.875 Gluco
13	0.894 Gluco	0.885 Gluco	0.880 Gluco	0.880 Gluco	0.870 Gluco
14	0.899 Gluco	0.885 Gluco	0.880 Gluco	0.880 Gluco	0.870 Gluco
15	0.899 Gluco	0.885 Gluco	0.880 Gluco	0.880 Gluco	0.870 Gluco
16	0.890 Gluco	0.885 Gluco	0.885 Gluco	0.885 Gluco	0.870 Gluco
17	0.894 Gluco	0.885 Gluco	0.880 Gluco	0.880 Gluco	0.870 Gluco
18	0.894 Gluco	0.885 Gluco	0.880 Gluco	0.880 Gluco	0.870 Gluco
19	0.890 Gluco	0.885 Gluco	0.880 Gluco	0.880 Gluco	0.870 Gluco
20	0.890 Chol	0.890 Chol	0.875 Chol	0.875 Chol	0.875 Chol
21	0.899 Chol	0.894 Chol	0.880 Chol	0.880 Chol	0.875 Chol
22	0.899 Chol	0.894 Chol	0.885 Chol	0.885 Chol	0.875 Chol
23	0.899 Chol	0.894 Chol	0.885 Chol	0.885 Chol	0.875 Chol
24	0.899 Chol	0.899 Chol	0.890 Chol	0.890 Chol	0.875 Chol
25	0.899 Chol	0.894 Chol	0.890 Chol	0.890 Chol	0.875 Chol
26	0.904 Chol	0.894 Chol	0.890 Chol	0.890 Chol	0.875 Chol
27	0.904 Chol	0.894 Chol	0.890 Chol	0.890 Chol	0.875 Chol
28	0.899 Chol	0.894 Chol	0.890 Chol	0.890 Chol	0.875 Chol
29	0.899 Chol	0.894 Chol	0.890 Chol	0.890 Chol	0.875 Chol
30	0.899 Chol	0.890 Chol	0.890 Chol	0.890 Chol	0.875 Chol
31	0.899 Chol	0.890 Chol	0.894 Chol	0.894 Chol	0.880 Chol
32	0.899 Chol	0.890 Chol	0.890 Chol	0.890 Chol	0.875 Chol
33	0.904 Chol	0.890 Chol	0.890 Chol	0.890 Chol	0.880 Chol
34	0.904 Chol	0.890 Chol	0.890 Chol	0.890 Chol	0.880 Chol
35	0.899 Chol	0.885 Chol	0.890 Chol	0.890 Chol	0.875 Chol
36	0.899 Chol	0.885 Chol	0.890 Chol	0.890 Chol	0.880 Chol
37	0.899 Chol	0.885 Chol	0.890 Chol	0.890 Chol	0.875 Chol
38	0.899 Chol	0.885 Chol	0.890 Chol	0.890 Chol	0.875 Chol
39	0.899 Chol	0.885 Chol	0.890 Chol	0.890 Chol	0.875 Chol
40	0.899 Chol	0.885 Chol	0.890 Chol	0.890 Chol	0.875 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama ; L-SY
b Usia : 58 Tahun
c Cholesterol :231 mg/dl
d Glukosa : 84 mg/dl
e Pengukuran ; 02 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.324 Gluco	3.324 Gluco	3.324 Gluco	3.324 Gluco	3.324 Gluco
2	1.994 Gluco	1.989 Gluco	1.989 Gluco	1.989 Gluco	1.994 Gluco
3	1.334 Gluco	1.334 Gluco	1.334 Gluco	1.339 Gluco	1.339 Gluco
4	1.061 Gluco	1.061 Gluco	1.061 Gluco	1.061 Gluco	1.065 Gluco
5	0.948 Gluco	0.948 Gluco	0.948 Gluco	0.948 Gluco	0.948 Gluco
6	0.904 Gluco	0.904 Gluco	0.904 Gluco	0.909 Gluco	0.909 Gluco
7	0.885 Gluco	0.885 Gluco	0.885 Gluco	0.890 Gluco	0.890 Gluco
8	0.875 Gluco	0.875 Gluco	0.880 Gluco	0.880 Gluco	0.885 Gluco
9	0.870 Gluco	0.875 Gluco	0.875 Gluco	0.880 Gluco	0.875 Gluco
10	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.875 Gluco	0.875 Gluco
11	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.875 Gluco
12	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.875 Gluco
13	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.875 Gluco
14	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.875 Gluco	0.875 Gluco
15	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.875 Gluco
16	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.875 Gluco
17	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.875 Gluco	0.875 Gluco
18	0.870 Gluco	0.875 Gluco	0.875 Gluco	0.870 Gluco	0.875 Gluco
19	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.870 Gluco	0.875 Gluco
20	0.865 Chol	0.860 Chol	0.865 Chol	0.865 Chol	0.870 Chol
21	0.870 Chol	0.865 Chol	0.865 Chol	0.865 Chol	0.875 Chol
22	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.875 Chol
23	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.875 Chol
24	0.875 Chol	0.870 Chol	0.870 Chol	0.875 Chol	0.875 Chol
25	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.875 Chol
26	0.870 Chol	0.870 Chol	0.875 Chol	0.870 Chol	0.880 Chol
27	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.880 Chol
28	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.880 Chol
29	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.875 Chol
30	0.875 Chol	0.875 Chol	0.870 Chol	0.870 Chol	0.875 Chol
31	0.875 Chol	0.875 Chol	0.870 Chol	0.870 Chol	0.875 Chol
32	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.875 Chol
33	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.875 Chol
34	0.875 Chol	0.875 Chol	0.870 Chol	0.870 Chol	0.875 Chol
35	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.875 Chol
36	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.875 Chol
37	0.875 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.880 Chol
38	0.870 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.880 Chol
39	0.875 Chol	0.870 Chol	0.870 Chol	0.870 Chol	0.880 Chol
40	0.875 Chol	0.870 Chol	0.875 Chol	0.870 Chol	0.885 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama ; L- UU
b Usia : 49 Tahun
c Cholesterol :235 mg/dl
d Glukosa : 104 mg/dl
e Pengukuran ; 04 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.172 Gluco	3.211 Gluco	3.211 Gluco	3.206 Gluco	3.216 Gluco
2	1.808 Gluco	1.838 Gluco	1.848 Gluco	1.838 Gluco	1.852 Gluco
3	1.188 Gluco	1.207 Gluco	1.217 Gluco	1.207 Gluco	1.222 Gluco
4	0.948 Gluco	0.953 Gluco	0.953 Gluco	0.948 Gluco	0.968 Gluco
5	0.836 Gluco	0.850 Gluco	0.850 Gluco	0.846 Gluco	0.860 Gluco
6	0.811 Gluco	0.806 Gluco	0.811 Gluco	0.802 Gluco	0.821 Gluco
7	0.787 Gluco	0.787 Gluco	0.787 Gluco	0.782 Gluco	0.802 Gluco
8	0.767 Gluco	0.782 Gluco	0.782 Gluco	0.777 Gluco	0.797 Gluco
9	0.767 Gluco	0.777 Gluco	0.782 Gluco	0.767 Gluco	0.797 Gluco
10	0.777 Gluco	0.782 Gluco	0.777 Gluco	0.772 Gluco	0.792 Gluco
11	0.772 Gluco	0.782 Gluco	0.772 Gluco	0.772 Gluco	0.792 Gluco
12	0.758 Gluco	0.782 Gluco	0.772 Gluco	0.767 Gluco	0.797 Gluco
13	0.733 Gluco	0.782 Gluco	0.772 Gluco	0.772 Gluco	0.792 Gluco
14	0.738 Gluco	0.782 Gluco	0.777 Gluco	0.772 Gluco	0.797 Gluco
15	0.733 Gluco	0.787 Gluco	0.777 Gluco	0.767 Gluco	0.792 Gluco
16	0.733 Gluco	0.782 Gluco	0.777 Gluco	0.777 Gluco	0.792 Gluco
17	0.733 Gluco	0.777 Gluco	0.772 Gluco	0.772 Gluco	0.792 Gluco
18	0.728 Gluco	0.782 Gluco	0.772 Gluco	0.772 Gluco	0.792 Gluco
19	0.728 Gluco	0.787 Gluco	0.772 Gluco	0.772 Gluco	0.792 Gluco
20	0.753 Chol	0.777 Chol	0.762 Chol	0.772 Chol	0.787 Chol
21	0.753 Chol	0.782 Chol	0.767 Chol	0.777 Chol	0.792 Chol
22	0.758 Chol	0.782 Chol	0.772 Chol	0.777 Chol	0.797 Chol
23	0.758 Chol	0.777 Chol	0.767 Chol	0.777 Chol	0.792 Chol
24	0.762 Chol	0.777 Chol	0.767 Chol	0.777 Chol	0.792 Chol
25	0.762 Chol	0.782 Chol	0.767 Chol	0.777 Chol	0.797 Chol
26	0.767 Chol	0.782 Chol	0.767 Chol	0.777 Chol	0.792 Chol
27	0.762 Chol	0.782 Chol	0.767 Chol	0.777 Chol	0.797 Chol
28	0.777 Chol	0.772 Chol	0.767 Chol	0.777 Chol	0.797 Chol
29	0.777 Chol	0.777 Chol	0.767 Chol	0.777 Chol	0.797 Chol
30	0.782 Chol	0.772 Chol	0.767 Chol	0.782 Chol	0.797 Chol
31	0.777 Chol	0.777 Chol	0.767 Chol	0.782 Chol	0.797 Chol
32	0.772 Chol	0.777 Chol	0.767 Chol	0.782 Chol	0.802 Chol
33	0.777 Chol	0.772 Chol	0.767 Chol	0.782 Chol	0.802 Chol
34	0.772 Chol	0.792 Chol	0.767 Chol	0.782 Chol	0.802 Chol
35	0.792 Chol	0.792 Chol	0.772 Chol	0.777 Chol	0.802 Chol
36	0.777 Chol	0.787 Chol	0.772 Chol	0.782 Chol	0.806 Chol
37	0.782 Chol	0.782 Chol	0.767 Chol	0.782 Chol	0.806 Chol
38	0.777 Chol	0.782 Chol	0.767 Chol	0.777 Chol	0.806 Chol
39	0.777 Chol	0.782 Chol	0.767 Chol	0.782 Chol	0.802 Chol
40	0.787 Chol	0.787 Chol	0.777 Chol	0.782 Chol	0.802 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama ; L- JR
b Usia : 26 Tahun
c Cholesterol : 210 mg/dl
d Glukosa : 95 mg/dl
e Pengukuran ; 04 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.250 Gluco	3.240 Gluco	3.255 Gluco	3.236 Gluco	3.231 Gluco
2	1.843 Gluco	1.838 Gluco	1.857 Gluco	1.848 Gluco	1.838 Gluco
3	1.197 Gluco	1.202 Gluco	1.237 Gluco	1.217 Gluco	1.212 Gluco
4	0.948 Gluco	0.943 Gluco	0.973 Gluco	0.963 Gluco	0.953 Gluco
5	0.841 Gluco	0.841 Gluco	0.875 Gluco	0.855 Gluco	0.855 Gluco
6	0.797 Gluco	0.797 Gluco	0.826 Gluco	0.816 Gluco	0.811 Gluco
7	0.777 Gluco	0.777 Gluco	0.806 Gluco	0.797 Gluco	0.792 Gluco
8	0.762 Gluco	0.772 Gluco	0.797 Gluco	0.792 Gluco	0.782 Gluco
9	0.758 Gluco	0.767 Gluco	0.792 Gluco	0.792 Gluco	0.782 Gluco
10	0.758 Gluco	0.777 Gluco	0.792 Gluco	0.787 Gluco	0.787 Gluco
11	0.758 Gluco	0.767 Gluco	0.792 Gluco	0.782 Gluco	0.777 Gluco
12	0.758 Gluco	0.762 Gluco	0.792 Gluco	0.782 Gluco	0.777 Gluco
13	0.758 Gluco	0.767 Gluco	0.792 Gluco	0.792 Gluco	0.777 Gluco
14	0.758 Gluco	0.762 Gluco	0.792 Gluco	0.787 Gluco	0.777 Gluco
15	0.758 Gluco	0.772 Gluco	0.787 Gluco	0.782 Gluco	0.777 Gluco
16	0.758 Gluco	0.767 Gluco	0.787 Gluco	0.782 Gluco	0.777 Gluco
17	0.758 Gluco	0.767 Gluco	0.792 Gluco	0.782 Gluco	0.782 Gluco
18	0.758 Gluco	0.777 Gluco	0.787 Gluco	0.787 Gluco	0.777 Gluco
19	0.758 Gluco	0.767 Gluco	0.787 Gluco	0.782 Gluco	0.777 Gluco
20	0.743 Chol	0.753 Chol	0.772 Chol	0.772 Chol	0.762 Chol
21	0.738 Chol	0.753 Chol	0.767 Chol	0.767 Chol	0.758 Chol
22	0.738 Chol	0.748 Chol	0.767 Chol	0.767 Chol	0.767 Chol
23	0.738 Chol	0.748 Chol	0.767 Chol	0.758 Chol	0.762 Chol
24	0.738 Chol	0.758 Chol	0.767 Chol	0.762 Chol	0.758 Chol
25	0.738 Chol	0.748 Chol	0.762 Chol	0.762 Chol	0.758 Chol
26	0.738 Chol	0.753 Chol	0.762 Chol	0.762 Chol	0.758 Chol
27	0.738 Chol	0.753 Chol	0.762 Chol	0.758 Chol	0.758 Chol
28	0.738 Chol	0.748 Chol	0.767 Chol	0.762 Chol	0.758 Chol
29	0.733 Chol	0.758 Chol	0.762 Chol	0.762 Chol	0.758 Chol
30	0.738 Chol	0.748 Chol	0.762 Chol	0.762 Chol	0.758 Chol
31	0.738 Chol	0.758 Chol	0.762 Chol	0.772 Chol	0.758 Chol
32	0.738 Chol	0.743 Chol	0.762 Chol	0.758 Chol	0.762 Chol
33	0.738 Chol	0.743 Chol	0.762 Chol	0.767 Chol	0.767 Chol
34	0.738 Chol	0.748 Chol	0.767 Chol	0.767 Chol	0.758 Chol
35	0.738 Chol	0.733 Chol	0.762 Chol	0.762 Chol	0.762 Chol
36	0.738 Chol	0.738 Chol	0.762 Chol	0.762 Chol	0.758 Chol
37	0.738 Chol	0.767 Chol	0.762 Chol	0.762 Chol	0.758 Chol
38	0.738 Chol	0.767 Chol	0.762 Chol	0.772 Chol	0.758 Chol
39	0.738 Chol	0.772 Chol	0.762 Chol	0.758 Chol	0.758 Chol
40	0.738 Chol	0.772 Chol	0.762 Chol	0.762 Chol	0.758 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama : P- RS
b Usia : 50 Tahun
c Cholesterol : 216 mg/dl
d Glukosa : 89 mg/dl
e Pengukuran ; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.187 Gluco	3.192 Gluco	3.192 Gluco	3.177 Gluco	3.177 Gluco
2	1.804 Gluco	1.823 Gluco	3.206 Gluco	1.794 Gluco	1.794 Gluco
3	1.109 Gluco	1.124 Gluco	1.828 Gluco	1.100 Gluco	1.100 Gluco
4	0.811 Gluco	0.826 Gluco	1.139 Gluco	0.802 Gluco	0.802 Gluco
5	0.689 Gluco	0.714 Gluco	0.841 Gluco	0.684 Gluco	0.684 Gluco
6	0.645 Gluco	0.655 Gluco	0.718 Gluco	0.630 Gluco	0.630 Gluco
7	0.621 Gluco	0.635 Gluco	0.674 Gluco	0.626 Gluco	0.626 Gluco
8	0.611 Gluco	0.630 Gluco	0.655 Gluco	0.601 Gluco	0.601 Gluco
9	0.611 Gluco	0.626 Gluco	0.665 Gluco	0.596 Gluco	0.596 Gluco
10	0.606 Gluco	0.626 Gluco	0.655 Gluco	0.596 Gluco	0.596 Gluco
11	0.606 Gluco	0.626 Gluco	0.650 Gluco	0.596 Gluco	0.596 Gluco
12	0.606 Gluco	0.635 Gluco	0.655 Gluco	0.596 Gluco	0.596 Gluco
13	0.606 Gluco	0.626 Gluco	0.660 Gluco	0.596 Gluco	0.596 Gluco
14	0.606 Gluco	0.621 Gluco	0.660 Gluco	0.596 Gluco	0.596 Gluco
15	0.606 Gluco	0.626 Gluco	0.679 Gluco	0.596 Gluco	0.596 Gluco
16	0.606 Gluco	0.626 Gluco	0.723 Gluco	0.596 Gluco	0.596 Gluco
17	0.606 Gluco	0.626 Gluco	0.714 Gluco	0.596 Gluco	0.596 Gluco
18	0.606 Gluco	0.626 Gluco	0.748 Gluco	0.596 Gluco	0.596 Gluco
19	0.621 Gluco	0.626 Gluco	0.694 Gluco	0.596 Gluco	0.596 Gluco
20	0.567 Gluco	0.577 Gluco	0.582 Gluco	0.582 Gluco	0.582 Gluco
21	0.587 Chol	0.611 Chol	hasil:541.86	0.577 Chol	0.577 Chol
22	0.591 Chol	0.611 Chol	0.621 Chol	0.577 Chol	0.577 Chol
23	0.596 Chol	0.616 Chol	0.621 Chol	0.582 Chol	0.582 Chol
24	0.596 Chol	0.616 Chol	0.621 Chol	0.577 Chol	0.577 Chol
25	0.596 Chol	0.626 Chol	0.621 Chol	0.577 Chol	0.577 Chol
26	0.596 Chol	0.621 Chol	0.621 Chol	0.577 Chol	0.577 Chol
27	0.601 Chol	0.621 Chol	0.621 Chol	0.577 Chol	0.577 Chol
28	0.601 Chol	0.621 Chol	0.630 Chol	0.577 Chol	0.577 Chol
29	0.616 Chol	0.626 Chol	0.621 Chol	0.577 Chol	0.577 Chol
30	0.601 Chol	0.626 Chol	0.621 Chol	0.582 Chol	0.582 Chol
31	0.601 Chol	0.626 Chol	0.626 Chol	0.577 Chol	0.577 Chol
32	0.606 Chol	0.630 Chol	0.621 Chol	0.577 Chol	0.577 Chol
33	0.601 Chol	0.626 Chol	0.621 Chol	0.577 Chol	0.577 Chol
34	0.601 Chol	0.630 Chol	0.621 Chol	0.577 Chol	0.577 Chol
35	0.611 Chol	0.630 Chol	0.621 Chol	0.577 Chol	0.577 Chol
36	0.601 Chol	0.626 Chol	0.616 Chol	0.582 Chol	0.582 Chol
37	0.606 Chol	0.630 Chol	0.616 Chol	0.577 Chol	0.577 Chol
38	0.601 Chol	0.626 Chol	0.616 Chol	0.577 Chol	0.577 Chol
39	0.606 Chol	0.626 Chol	0.616 Chol	0.577 Chol	0.577 Chol
40	0.616 Chol	0.626 Chol	0.616 Chol	0.572 Chol	0.572 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama : P- ST
b Usia : 30 Tahun
c Cholesterol : 236 mg/dl
d Glukosa : 92 mg/dl
e Pengukuran ; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.226 Gluco	3.289 Gluco	3.211 Gluco	3.216 Gluco	3.206 Gluco
2	1.843 Gluco	1.965 Gluco	1.823 Gluco	1.818 Gluco	1.818 Gluco
3	1.144 Gluco	1.271 Gluco	1.124 Gluco	1.119 Gluco	1.114 Gluco
4	0.841 Gluco	0.978 Gluco	0.811 Gluco	0.806 Gluco	0.806 Gluco
5	0.714 Gluco	0.904 Gluco	0.689 Gluco	0.684 Gluco	0.684 Gluco
6	0.670 Gluco	0.821 Gluco	0.635 Gluco	0.640 Gluco	0.635 Gluco
7	0.650 Gluco	0.816 Gluco	0.621 Gluco	0.616 Gluco	0.611 Gluco
8	0.640 Gluco	0.616 Gluco	0.606 Gluco	0.601 Gluco	0.601 Gluco
9	0.640 Gluco	0.621 Gluco	0.611 Gluco	0.596 Gluco	0.596 Gluco
10	0.645 Gluco	0.626 Gluco	0.596 Gluco	0.596 Gluco	0.596 Gluco
11	0.635 Gluco	0.635 Gluco	0.601 Gluco	0.596 Gluco	0.596 Gluco
12	0.635 Gluco	0.665 Gluco	0.596 Gluco	0.591 Gluco	0.596 Gluco
13	0.635 Gluco	0.660 Gluco	0.596 Gluco	0.596 Gluco	0.596 Gluco
14	0.645 Gluco	0.645 Gluco	0.596 Gluco	0.596 Gluco	0.596 Gluco
15	0.635 Gluco	0.640 Gluco	0.596 Gluco	0.596 Gluco	0.596 Gluco
16	0.640 Gluco	0.640 Gluco	0.596 Gluco	0.591 Gluco	0.596 Gluco
17	0.640 Gluco	0.630 Gluco	0.596 Gluco	0.591 Gluco	0.596 Gluco
18	0.640 Gluco	0.626 Gluco	0.596 Gluco	0.596 Gluco	0.596 Gluco
19	0.640 Gluco	0.621 Gluco	0.601 Gluco	0.596 Gluco	0.596 Gluco
20	0.640 Gluco	0.621 Gluco	0.601 Gluco	0.596 Gluco	0.596 Gluco
21	0.728 Chol	0.582 Chol	0.567 Chol	0.577 Chol	0.582 Chol
22	0.674 Chol	0.591 Chol	0.567 Chol	0.587 Chol	0.582 Chol
23	0.748 Chol	0.591 Chol	0.562 Chol	0.577 Chol	0.582 Chol
24	0.670 Chol	0.591 Chol	0.572 Chol	0.587 Chol	0.582 Chol
25	0.635 Chol	0.601 Chol	0.577 Chol	0.577 Chol	0.582 Chol
26	0.660 Chol	0.587 Chol	0.591 Chol	0.577 Chol	0.591 Chol
27	0.748 Chol	0.582 Chol	0.577 Chol	0.577 Chol	0.582 Chol
28	0.645 Chol	0.587 Chol	0.577 Chol	0.577 Chol	0.582 Chol
29	0.748 Chol	0.587 Chol	0.582 Chol	0.577 Chol	0.587 Chol
30	0.748 Chol	0.591 Chol	0.582 Chol	0.577 Chol	0.587 Chol
31	0.718 Chol	0.587 Chol	0.582 Chol	0.562 Chol	0.591 Chol
32	0.621 Chol	0.587 Chol	0.582 Chol	0.567 Chol	0.587 Chol
33	0.616 Chol	0.587 Chol	0.582 Chol	0.572 Chol	0.587 Chol
34	0.733 Chol	0.591 Chol	0.582 Chol	0.562 Chol	0.582 Chol
35	0.626 Chol	0.587 Chol	0.582 Chol	0.562 Chol	0.591 Chol
36	0.621 Chol	0.591 Chol	0.582 Chol	0.572 Chol	0.587 Chol
37	0.611 Chol	0.587 Chol	0.582 Chol	0.562 Chol	0.587 Chol
38	0.718 Chol	0.587 Chol	0.582 Chol	0.577 Chol	0.582 Chol
39	0.718 Chol	0.587 Chol	0.582 Chol	0.572 Chol	0.587 Chol
40	0.670 Chol	0.587 Chol	0.582 Chol	0.582 Chol	0.587 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama : P - ID
b Usia : 35 Tahun
c Cholesterol : 256 mg/dl
d Glukosa : 76 mg/dl
e Pengukuran ; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.231 Gluco	3.231 Gluco	3.226 Gluco	3.231 Gluco	3.231 Gluco
2	1.804 Gluco	1.813 Gluco	1.808 Gluco	1.808 Gluco	1.808 Gluco
3	1.188 Gluco	1.168 Gluco	1.163 Gluco	1.163 Gluco	1.163 Gluco
4	0.938 Gluco	0.904 Gluco	0.894 Gluco	0.899 Gluco	0.894 Gluco
5	0.846 Gluco	0.797 Gluco	0.787 Gluco	0.792 Gluco	0.797 Gluco
6	0.806 Gluco	0.753 Gluco	0.753 Gluco	0.753 Gluco	0.743 Gluco
7	0.787 Gluco	0.738 Gluco	0.728 Gluco	0.728 Gluco	0.728 Gluco
8	0.782 Gluco	0.728 Gluco	0.728 Gluco	0.723 Gluco	0.728 Gluco
9	0.772 Gluco	0.728 Gluco	0.718 Gluco	0.723 Gluco	0.723 Gluco
10	0.762 Gluco	0.723 Gluco	0.718 Gluco	0.718 Gluco	0.718 Gluco
11	0.758 Gluco	0.728 Gluco	0.714 Gluco	0.718 Gluco	0.718 Gluco
12	0.753 Gluco	0.718 Gluco	0.714 Gluco	0.718 Gluco	0.718 Gluco
13	0.758 Gluco	0.723 Gluco	0.714 Gluco	0.718 Gluco	0.718 Gluco
14	0.758 Gluco	0.723 Gluco	0.714 Gluco	0.714 Gluco	0.728 Gluco
15	0.758 Gluco	0.718 Gluco	0.718 Gluco	0.723 Gluco	0.718 Gluco
16	0.758 Gluco	0.718 Gluco	0.718 Gluco	0.714 Gluco	0.718 Gluco
17	0.767 Gluco	0.718 Gluco	0.718 Gluco	0.714 Gluco	0.718 Gluco
18	0.782 Gluco	0.723 Gluco	0.718 Gluco	0.714 Gluco	0.718 Gluco
19	0.753 Gluco	0.718 Gluco	0.714 Gluco	0.709 Gluco	0.718 Gluco
20	0.753 Gluco	0.718 Gluco	0.714 Gluco	0.709 Gluco	0.718 Gluco
21	0.704 Chol	0.704 Chol	0.709 Chol	0.699 Chol	0.709 Chol
22	0.704 Chol	0.709 Chol	0.704 Chol	0.694 Chol	0.704 Chol
23	0.694 Chol	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol
24	0.694 Chol	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol
25	0.694 Chol	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol
26	0.694 Chol	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol
27	0.694 Chol	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol
28	0.699 Chol	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol
29	0.699 Chol	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol
30	0.694 Chol	0.709 Chol	0.704 Chol	0.699 Chol	0.704 Chol
31	0.694 Chol	0.699 Chol	0.709 Chol	0.699 Chol	0.704 Chol
32	0.694 Chol	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol
33	0.699 Chol	0.704 Chol	0.704 Chol	0.704 Chol	0.704 Chol
34	0.699 Chol	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol
35	0.699 Chol	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol
36	0.699 Chol	0.704 Chol	0.709 Chol	0.694 Chol	0.704 Chol
37	0.699 Chol	0.699 Chol	0.714 Chol	0.694 Chol	0.704 Chol
38	0.699 Chol	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol
39	0.699 Chol	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol
40	0.704 Chol	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: L- SM
b	Usia	: 32 Tahun
c	Cholesterol	: 145 mg/dl
d	Glukosa	: 126 mg/dl
e	Pengukuran	; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.152 Gluco	3.167 Gluco	3.177 Gluco	3.172 Gluco	3.172 Gluco
2	1.784 Gluco	1.799 Gluco	1.799 Gluco	1.804 Gluco	1.804 Gluco
3	1.085 Gluco	1.100 Gluco	1.100 Gluco	1.105 Gluco	1.105 Gluco
4	0.777 Gluco	0.802 Gluco	0.802 Gluco	0.802 Gluco	0.802 Gluco
5	0.655 Gluco	0.679 Gluco	0.674 Gluco	0.679 Gluco	0.689 Gluco
6	0.606 Gluco	0.630 Gluco	0.626 Gluco	0.626 Gluco	0.630 Gluco
7	0.587 Gluco	0.606 Gluco	0.601 Gluco	0.601 Gluco	0.606 Gluco
8	0.577 Gluco	0.596 Gluco	0.606 Gluco	0.591 Gluco	0.601 Gluco
9	0.572 Gluco	0.591 Gluco	0.596 Gluco	0.587 Gluco	0.591 Gluco
10	0.577 Gluco	0.587 Gluco	0.587 Gluco	0.587 Gluco	0.596 Gluco
11	0.582 Gluco	0.587 Gluco	0.582 Gluco	0.587 Gluco	0.591 Gluco
12	0.567 Gluco	0.587 Gluco	0.582 Gluco	0.582 Gluco	0.591 Gluco
13	0.567 Gluco	0.587 Gluco	0.582 Gluco	0.582 Gluco	0.591 Gluco
14	0.567 Gluco	0.587 Gluco	0.582 Gluco	0.582 Gluco	0.591 Gluco
15	0.567 Gluco	0.591 Gluco	0.582 Gluco	0.591 Gluco	0.601 Gluco
16	0.567 Gluco	0.577 Gluco	0.582 Gluco	0.582 Gluco	0.596 Gluco
17	0.567 Gluco	0.577 Gluco	0.582 Gluco	0.582 Gluco	0.596 Gluco
18	0.572 Gluco	0.572 Gluco	0.582 Gluco	0.582 Gluco	0.601 Gluco
19	0.567 Gluco	0.577 Gluco	0.582 Gluco	0.582 Gluco	0.601 Gluco
20	0.567 Gluco	0.577 Gluco	0.582 Gluco	0.582 Gluco	0.601 Gluco
21	0.557 Chol	0.572 Chol	0.572 Chol	0.577 Chol	0.582 Chol
22	0.567 Chol	0.577 Chol	0.582 Chol	0.582 Chol	0.591 Chol
23	0.572 Chol	0.582 Chol	0.587 Chol	0.587 Chol	0.596 Chol
24	0.572 Chol	0.582 Chol	0.587 Chol	0.591 Chol	0.591 Chol
25	0.572 Chol	0.587 Chol	0.587 Chol	0.591 Chol	0.591 Chol
26	0.572 Chol	0.587 Chol	0.596 Chol	0.591 Chol	0.591 Chol
27	0.572 Chol	0.587 Chol	0.591 Chol	0.591 Chol	0.596 Chol
28	0.577 Chol	0.582 Chol	0.591 Chol	0.591 Chol	0.601 Chol
29	0.572 Chol	0.582 Chol	0.591 Chol	0.596 Chol	0.596 Chol
30	0.572 Chol	0.582 Chol	0.591 Chol	0.596 Chol	0.606 Chol
31	0.577 Chol	0.582 Chol	0.596 Chol	0.596 Chol	0.596 Chol
32	0.577 Chol	0.582 Chol	0.596 Chol	0.596 Chol	0.606 Chol
33	0.577 Chol	0.582 Chol	0.591 Chol	0.596 Chol	0.601 Chol
34	0.582 Chol	0.587 Chol	0.596 Chol	0.596 Chol	0.601 Chol
35	0.577 Chol	0.587 Chol	0.596 Chol	0.601 Chol	0.601 Chol
36	0.582 Chol	0.582 Chol	0.596 Chol	0.601 Chol	0.601 Chol
37	0.596 Chol	0.587 Chol	0.606 Chol	0.601 Chol	0.596 Chol
38	0.591 Chol	0.582 Chol	0.596 Chol	0.601 Chol	0.601 Chol
39	0.587 Chol	0.582 Chol	0.596 Chol	0.606 Chol	0.601 Chol
40	0.587 Chol	0.587 Chol	0.596 Chol	0.611 Chol	0.601 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: L- YS
b	Usia	: 21 Tahun
c	Cholesterol	:129 mg/dl
d	Glukosa	: 108 mg/dl
e	Pengukuran	; 02 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.055 Gluco	3.104 Gluco	3.065 Gluco	0.3Gluco	2.977 Gluco
2	1.760 Gluco	1.769 Gluco	1.745 Gluco	0.357 Gluco	1.603 Gluco
3	1.056 Gluco	1.065 Gluco	1.056 Gluco	2.977 Gluco	0.885 Gluco
4	0.753 Gluco	0.758 Gluco	0.753 Gluco	1.598 Gluco	0.572 Gluco
5	0.640 Gluco	0.635 Gluco	0.630 Gluco	0.885 Gluco	0.445 Gluco
6	0.582 Gluco	0.582 Gluco	0.582 Gluco	0.572 Gluco	0.391 Gluco
7	0.562 Gluco	0.562 Gluco	0.562 Gluco	0.445 Gluco	0.371 Gluco
8	0.552 Gluco	0.552 Gluco	0.552 Gluco	0.396 Gluco	0.362 Gluco
9	0.547 Gluco	0.547 Gluco	0.547 Gluco	0.371 Gluco	0.357 Gluco
10	0.547 Gluco	0.547 Gluco	0.547 Gluco	0.362 Gluco	0.357 Gluco
11	0.547 Gluco	0.547 Gluco	0.543 Gluco	0.357 Gluco	0.352 Gluco
12	0.547 Gluco	0.543 Gluco	0.543 Gluco	0.357 Gluco	0.357 Gluco
13	0.547 Gluco	0.543 Gluco	0.543 Gluco	0.357 Gluco	0.352 Gluco
14	0.543 Gluco	0.543 Gluco	0.547 Gluco	0.357 Gluco	0.352 Gluco
15	0.543 Gluco	0.543 Gluco	0.543 Gluco	0.362 Gluco	0.352 Gluco
16	0.543 Gluco	0.543 Gluco	0.547 Gluco	0.357 Gluco	0.352 Gluco
17	0.543 Gluco	0.543 Gluco	0.543 Gluco	0.352 Gluco	0.357 Gluco
18	0.543 Gluco	0.543 Gluco	0.543 Gluco	0.362 Gluco	0.352 Gluco
19	0.543 Gluco	0.547 Gluco	0.543 Gluco	0.352 Gluco	0.357 Gluco
20	0.538 Chol	0.543 Chol	0.543 Chol	0.357 Gluco	0.352 Chol
21	0.547 Chol	0.547 Chol	0.547 Chol	0.352 Gluco	0.357 Chol
22	0.557 Chol	0.547 Chol	0.547 Chol	0.352 Chol	0.357 Chol
23	0.552 Chol	0.552 Chol	0.547 Chol	0.357 Chol	0.362 Chol
24	0.552 Chol	0.552 Chol	0.547 Chol	0.362 Chol	0.362 Chol
25	0.557 Chol	0.552 Chol	0.538 Chol	0.362 Chol	0.362 Chol
26	0.557 Chol	0.552 Chol	0.543 Chol	0.362 Chol	0.362 Chol
27	0.557 Chol	0.552 Chol	0.538 Chol	0.367 Chol	0.362 Chol
28	0.557 Chol	0.557 Chol	0.547 Chol	0.362 Chol	0.362 Chol
29	0.557 Chol	0.552 Chol	0.538 Chol	0.367 Chol	0.362 Chol
30	0.557 Chol	0.552 Chol	0.543 Chol	0.367 Chol	0.362 Chol
31	0.557 Chol	0.547 Chol	0.538 Chol	0.362 Chol	0.367 Chol
32	0.557 Chol	0.547 Chol	0.538 Chol	0.362 Chol	0.362 Chol
33	0.557 Chol	0.547 Chol	0.538 Chol	0.367 Chol	0.371 Chol
34	0.557 Chol	0.552 Chol	0.538 Chol	0.367 Chol	0.357 Chol
35	0.557 Chol	0.547 Chol	0.547 Chol	0.367 Chol	0.362 Chol
36	0.562 Chol	0.557 Chol	0.543 Chol	0.367 Chol	0.362 Chol
37	0.557 Chol	0.547 Chol	0.543 Chol	0.367 Chol	0.362 Chol
38	0.557 Chol	0.547 Chol	0.543 Chol	0.367 Chol	0.362 Chol
39	0.557 Chol	0.552 Chol	0.543 Chol	0.367 Chol	0.362 Chol
40	0.557 Chol	0.552 Chol	0.543 Chol	0.367 Chol	0.362 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama : P-SD
b Usia : 60 Tahun
c Cholesterol : 247 mg/dl
d Glukosa : 93 mg/dl
e Pengukuran ; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.275 Gluco	3.250 Gluco	3.250 Gluco	3.275 Gluco	3.250 Gluco
2	1.975 Gluco	1.862 Gluco	1.862 Gluco	1.975 Gluco	1.862 Gluco
3	1.305 Gluco	1.227 Gluco	1.222 Gluco	1.305 Gluco	1.227 Gluco
4	1.051 Gluco	0.963 Gluco	0.963 Gluco	1.051 Gluco	0.963 Gluco
5	0.938 Gluco	0.855 Gluco	0.855 Gluco	0.938 Gluco	0.855 Gluco
6	0.904 Gluco	0.806 Gluco	0.811 Gluco	0.904 Gluco	0.806 Gluco
7	0.870 Gluco	0.787 Gluco	0.792 Gluco	0.870 Gluco	0.787 Gluco
8	0.860 Gluco	0.782 Gluco	0.787 Gluco	0.860 Gluco	0.782 Gluco
9	0.855 Gluco	0.782 Gluco	0.777 Gluco	0.855 Gluco	0.782 Gluco
10	0.855 Gluco	0.777 Gluco	0.782 Gluco	0.855 Gluco	0.777 Gluco
11	0.850 Gluco	0.777 Gluco	0.782 Gluco	0.850 Gluco	0.777 Gluco
12	0.787 Gluco	0.777 Gluco	0.777 Gluco	0.787 Gluco	0.777 Gluco
13	0.787 Gluco	0.777 Gluco	0.772 Gluco	0.787 Gluco	0.777 Gluco
14	0.787 Gluco	0.777 Gluco	0.772 Gluco	0.787 Gluco	0.777 Gluco
15	0.787 Gluco	0.782 Gluco	0.772 Gluco	0.787 Gluco	0.782 Gluco
16	0.787 Gluco	0.777 Gluco	0.777 Gluco	0.787 Gluco	0.777 Gluco
17	0.777 Gluco	0.772 Gluco	0.772 Gluco	0.777 Gluco	0.772 Gluco
18	0.782 Gluco	0.777 Gluco	0.767 Gluco	0.782 Gluco	0.777 Gluco
19	0.777 Gluco	0.777 Gluco	0.767 Gluco	0.777 Gluco	0.777 Gluco
20	0.777 Gluco	0.777 Gluco	0.767 Gluco	0.777 Gluco	0.777 Gluco
21	0.743 Chol	0.728 Chol	0.723 Chol	0.743 Chol	0.728 Chol
22	0.748 Chol	0.728 Chol	0.718 Chol	0.748 Chol	0.728 Chol
23	0.748 Chol	0.718 Chol	0.718 Chol	0.748 Chol	0.718 Chol
24	0.748 Chol	0.723 Chol	0.714 Chol	0.748 Chol	0.723 Chol
25	0.738 Chol	0.723 Chol	0.718 Chol	0.738 Chol	0.723 Chol
26	0.743 Chol	0.723 Chol	0.718 Chol	0.743 Chol	0.723 Chol
27	0.738 Chol	0.723 Chol	0.718 Chol	0.738 Chol	0.723 Chol
28	0.738 Chol	0.723 Chol	0.718 Chol	0.738 Chol	0.723 Chol
29	0.738 Chol	0.723 Chol	0.718 Chol	0.738 Chol	0.723 Chol
30	0.743 Chol	0.723 Chol	0.723 Chol	0.743 Chol	0.723 Chol
31	0.738 Chol	0.723 Chol	0.723 Chol	0.738 Chol	0.723 Chol
32	0.738 Chol	0.728 Chol	0.728 Chol	0.738 Chol	0.728 Chol
33	0.738 Chol	0.728 Chol	0.723 Chol	0.738 Chol	0.728 Chol
34	0.738 Chol	0.723 Chol	0.723 Chol	0.738 Chol	0.723 Chol
35	0.738 Chol	0.723 Chol	0.723 Chol	0.738 Chol	0.723 Chol
36	0.738 Chol	0.728 Chol	0.723 Chol	0.738 Chol	0.728 Chol
37	0.738 Chol	0.733 Chol	0.723 Chol	0.738 Chol	0.733 Chol
38	0.738 Chol	0.728 Chol	0.723 Chol	0.738 Chol	0.728 Chol
39	0.733 Chol	0.728 Chol	0.723 Chol	0.733 Chol	0.728 Chol
40	0.733 Chol	0.728 Chol	0.723 Chol	0.733 Chol	0.728 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: P-JM
b	Usia	: 56 Tahun
c	Cholesterol	:293 mg/dl
d	Glukosa	:104 mg/dl
e	Pengukuran	; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.265 Gluco	3.211 Gluco	3.211 Gluco	3.226 Gluco	3.211 Gluco
2	1.779 Gluco	1.779 Gluco	1.779 Gluco	1.779 Gluco	1.779 Gluco
3	1.779 Gluco	1.119 Gluco	1.124 Gluco	1.124 Gluco	1.124 Gluco
4	1.134 Gluco	0.846 Gluco	0.850 Gluco	0.855 Gluco	0.855 Gluco
5	0.870 Gluco	0.733 Gluco	0.743 Gluco	0.748 Gluco	0.748 Gluco
6	0.762 Gluco	0.689 Gluco	0.694 Gluco	0.699 Gluco	0.704 Gluco
7	0.723 Gluco	0.670 Gluco	0.679 Gluco	0.679 Gluco	0.684 Gluco
8	0.704 Gluco	0.660 Gluco	0.670 Gluco	0.674 Gluco	0.674 Gluco
9	0.694 Gluco	0.660 Gluco	0.670 Gluco	0.670 Gluco	0.670 Gluco
10	0.689 Gluco	0.655 Gluco	0.665 Gluco	0.670 Gluco	0.670 Gluco
11	0.689 Gluco	0.655 Gluco	0.665 Gluco	0.670 Gluco	0.670 Gluco
12	0.689 Gluco	0.655 Gluco	0.665 Gluco	0.670 Gluco	0.670 Gluco
13	0.689 Gluco	0.655 Gluco	0.665 Gluco	0.665 Gluco	0.670 Gluco
14	0.689 Gluco	0.655 Gluco	0.665 Gluco	0.665 Gluco	0.670 Gluco
15	0.674 Gluco	0.655 Gluco	0.665 Gluco	0.670 Gluco	0.670 Gluco
16	0.665 Gluco	0.655 Gluco	0.665 Gluco	0.665 Gluco	0.670 Gluco
17	0.660 Gluco	0.655 Gluco	0.665 Gluco	0.665 Gluco	0.670 Gluco
18	0.660 Gluco	0.655 Gluco	0.665 Gluco	0.665 Gluco	0.670 Gluco
19	0.660 Gluco	0.655 Gluco	0.665 Gluco	0.665 Gluco	0.670 Gluco
20	0.660 Gluco	0.655 Gluco	0.665 Gluco	0.665 Gluco	0.670 Gluco
21	0.645 Chol	0.645 Chol	0.655 Chol	0.655 Chol	0.728 Chol
22	0.645 Chol	0.645 Chol	0.650 Chol	0.650 Chol	0.733 Chol
23	0.645 Chol	0.645 Chol	0.655 Chol	0.650 Chol	0.733 Chol
24	0.645 Chol	0.645 Chol	0.655 Chol	0.650 Chol	0.733 Chol
25	0.645 Chol	0.645 Chol	0.655 Chol	0.650 Chol	0.738 Chol
26	0.645 Chol	0.645 Chol	0.655 Chol	0.650 Chol	0.738 Chol
27	0.645 Chol	0.645 Chol	0.655 Chol	0.650 Chol	0.738 Chol
28	0.645 Chol	0.645 Chol	0.655 Chol	0.650 Chol	0.743 Chol
29	0.645 Chol	0.645 Chol	0.655 Chol	0.650 Chol	0.743 Chol
30	0.645 Chol	0.645 Chol	0.655 Chol	0.650 Chol	0.743 Chol
31	0.645 Chol	0.645 Chol	0.655 Chol	0.650 Chol	0.748 Chol
32	0.645 Chol	0.645 Chol	0.655 Chol	0.650 Chol	0.733 Chol
33	0.645 Chol	0.645 Chol	0.650 Chol	0.650 Chol	0.733 Chol
34	0.645 Chol	0.645 Chol	0.650 Chol	0.655 Chol	0.738 Chol
35	0.645 Chol	0.645 Chol	0.650 Chol	0.650 Chol	0.733 Chol
36	0.645 Chol	0.645 Chol	0.650 Chol	0.650 Chol	0.738 Chol
37	0.645 Chol	0.645 Chol	0.650 Chol	0.650 Chol	0.738 Chol
38	0.645 Chol	0.645 Chol	0.650 Chol	0.650 Chol	0.738 Chol
39	0.645 Chol	0.645 Chol	0.650 Chol	0.650 Chol	0.738 Chol
40	0.645 Chol	0.645 Chol	0.650 Chol	0.650 Chol	0.738 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama : L- AN
b Usia : 35 Tahun
c Cholesterol : 153 mg/dl
d Glukosa : 104 mg/dl
e Pengukuran ; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.240 Gluco	3.245 Gluco	3.245 Gluco	3.275 Gluco	3.265 Gluco
2	1.828 Gluco	1.833 Gluco	1.833 Gluco	1.877 Gluco	1.872 Gluco
3	1.158 Gluco	1.168 Gluco	1.163 Gluco	1.212 Gluco	1.197 Gluco
4	0.880 Gluco	0.885 Gluco	0.885 Gluco	0.938 Gluco	0.919 Gluco
5	0.762 Gluco	0.772 Gluco	0.772 Gluco	0.826 Gluco	0.806 Gluco
6	0.714 Gluco	0.728 Gluco	0.723 Gluco	0.782 Gluco	0.762 Gluco
7	0.699 Gluco	0.709 Gluco	0.704 Gluco	0.777 Gluco	0.743 Gluco
8	0.689 Gluco	0.699 Gluco	0.694 Gluco	0.748 Gluco	0.738 Gluco
9	0.689 Gluco	0.694 Gluco	0.694 Gluco	0.753 Gluco	0.733 Gluco
10	0.689 Gluco	0.694 Gluco	0.689 Gluco	0.758 Gluco	0.733 Gluco
11	0.689 Gluco	0.694 Gluco	0.694 Gluco	0.762 Gluco	0.733 Gluco
12	0.689 Gluco	0.694 Gluco	0.689 Gluco	0.767 Gluco	0.733 Gluco
13	0.689 Gluco	0.694 Gluco	0.689 Gluco	0.782 Gluco	0.733 Gluco
14	0.684 Gluco	0.689 Gluco	0.689 Gluco	0.753 Gluco	0.728 Gluco
15	0.689 Gluco	0.689 Gluco	0.689 Gluco	0.758 Gluco	0.733 Gluco
16	0.684 Gluco	0.694 Gluco	0.689 Gluco	0.816 Gluco	0.738 Gluco
17	0.689 Gluco	0.694 Gluco	0.689 Gluco	0.762 Gluco	0.733 Gluco
18	0.684 Gluco	0.694 Gluco	0.689 Gluco	0.767 Gluco	0.733 Gluco
19	0.684 Gluco	0.694 Gluco	0.689 Gluco	0.777 Gluco	0.733 Gluco
20	0.684 Gluco	0.694 Gluco	0.689 Gluco	0.777 Gluco	0.733 Gluco
21	0.645 Chol	0.665 Chol	0.665 Chol	0.714 Chol	0.714 Chol
22	0.645 Chol	0.660 Chol	0.660 Chol	0.709 Chol	0.709 Chol
23	0.645 Chol	0.660 Chol	0.660 Chol	0.704 Chol	0.709 Chol
24	0.640 Chol	0.660 Chol	0.660 Chol	0.704 Chol	0.709 Chol
25	0.640 Chol	0.655 Chol	0.660 Chol	0.699 Chol	0.709 Chol
26	0.640 Chol	0.655 Chol	0.660 Chol	0.699 Chol	0.709 Chol
27	0.650 Chol	0.660 Chol	0.660 Chol	0.694 Chol	0.709 Chol
28	0.650 Chol	0.655 Chol	0.655 Chol	0.689 Chol	0.709 Chol
29	0.650 Chol	0.660 Chol	0.655 Chol	0.684 Chol	0.709 Chol
30	0.650 Chol	0.660 Chol	0.660 Chol	0.684 Chol	0.714 Chol
31	0.650 Chol	0.660 Chol	0.655 Chol	0.684 Chol	0.714 Chol
32	0.650 Chol	0.660 Chol	0.655 Chol	0.684 Chol	0.714 Chol
33	0.650 Chol	0.660 Chol	0.655 Chol	0.684 Chol	0.714 Chol
34	0.655 Chol	0.660 Chol	0.655 Chol	0.689 Chol	0.714 Chol
35	0.655 Chol	0.660 Chol	0.655 Chol	0.689 Chol	0.709 Chol
36	0.655 Chol	0.660 Chol	0.655 Chol	0.689 Chol	0.704 Chol
37	0.655 Chol	0.655 Chol	0.650 Chol	0.689 Chol	0.704 Chol
38	0.655 Chol	0.660 Chol	0.655 Chol	0.689 Chol	0.704 Chol
39	0.655 Chol	0.660 Chol	0.655 Chol	0.689 Chol	0.704 Chol
40	0.655 Chol	0.660 Chol	0.660 Chol	0.689 Chol	0.704 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: P-HS
b	Usia	: 49Tahun
c	Cholesterol	: 188 mg/dl
d	Glukosa	: 128 mg/dl
e	Pengukuran	; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.280 Gluco	3.275 Gluco	3.275 Gluco	3.275 Gluco	3.270 Gluco
2	1.877 Gluco	1.877 Gluco	1.877 Gluco	1.872 Gluco	1.872 Gluco
3	1.207 Gluco	1.207 Gluco	1.212 Gluco	1.207 Gluco	1.202 Gluco
4	0.929 Gluco	0.929 Gluco	0.929 Gluco	0.924 Gluco	0.919 Gluco
5	0.816 Gluco	0.811 Gluco	0.811 Gluco	0.806 Gluco	0.806 Gluco
6	0.762 Gluco	0.767 Gluco	0.767 Gluco	0.762 Gluco	0.758 Gluco
7	0.743 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.738 Gluco
8	0.738 Gluco	0.738 Gluco	0.738 Gluco	0.738 Gluco	0.733 Gluco
9	0.733 Gluco	0.733 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco
10	0.728 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.728 Gluco
11	0.728 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.723 Gluco
12	0.728 Gluco	0.728 Gluco	0.728 Gluco	0.728 Gluco	0.728 Gluco
13	0.728 Gluco	0.733 Gluco	0.728 Gluco	0.733 Gluco	0.723 Gluco
14	0.723 Gluco	0.738 Gluco	0.728 Gluco	0.728 Gluco	0.723 Gluco
15	0.723 Gluco	0.733 Gluco	0.728 Gluco	0.733 Gluco	0.723 Gluco
16	0.723 Gluco	0.733 Gluco	0.728 Gluco	0.728 Gluco	0.723 Gluco
17	0.728 Gluco	0.733 Gluco	0.728 Gluco	0.728 Gluco	0.723 Gluco
18	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.728 Gluco	0.723 Gluco
19	0.733 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.723 Gluco
20	0.733 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.723 Gluco
21	0.709 Chol	0.704 Chol	0.704 Chol	0.709 Chol	0.704 Chol
22	0.699 Chol	0.704 Chol	0.699 Chol	0.704 Chol	0.704 Chol
23	0.699 Chol	0.704 Chol	0.699 Chol	0.704 Chol	0.704 Chol
24	0.704 Chol	0.699 Chol	0.699 Chol	0.709 Chol	0.704 Chol
25	0.699 Chol	0.704 Chol	0.699 Chol	0.709 Chol	0.704 Chol
26	0.699 Chol	0.699 Chol	0.699 Chol	0.709 Chol	0.704 Chol
27	0.699 Chol	0.679 Chol	0.694 Chol	0.709 Chol	0.709 Chol
28	0.699 Chol	0.704 Chol	0.699 Chol	0.704 Chol	0.709 Chol
29	0.699 Chol	0.709 Chol	0.694 Chol	0.704 Chol	0.704 Chol
30	0.699 Chol	0.709 Chol	0.694 Chol	0.699 Chol	0.709 Chol
31	0.699 Chol	0.704 Chol	0.694 Chol	0.699 Chol	0.704 Chol
32	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol	0.704 Chol
33	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol	0.704 Chol
34	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol	0.704 Chol
35	0.709 Chol	0.704 Chol	0.699 Chol	0.704 Chol	0.704 Chol
36	0.699 Chol	0.694 Chol	0.694 Chol	0.704 Chol	0.704 Chol
37	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol	0.704 Chol
38	0.699 Chol	0.699 Chol	0.699 Chol	0.704 Chol	0.704 Chol
39	0.704 Chol	0.699 Chol	0.694 Chol	0.709 Chol	0.704 Chol
40	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol	0.704 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama : P - HW
b Usia : 52 Tahun
c Cholesterol : 234 mg/dl
d Glukosa : 109 mg/dl
e Pengukuran ; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.280 Gluco	3.275 Gluco	3.275 Gluco	3.275 Gluco	3.270 Gluco
2	1.877 Gluco	1.877 Gluco	1.877 Gluco	1.872 Gluco	1.872 Gluco
3	1.207 Gluco	1.207 Gluco	1.212 Gluco	1.207 Gluco	1.202 Gluco
4	0.929 Gluco	0.929 Gluco	0.929 Gluco	0.924 Gluco	0.919 Gluco
5	0.816 Gluco	0.811 Gluco	0.811 Gluco	0.806 Gluco	0.806 Gluco
6	0.762 Gluco	0.767 Gluco	0.767 Gluco	0.762 Gluco	0.758 Gluco
7	0.743 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.738 Gluco
8	0.738 Gluco	0.738 Gluco	0.738 Gluco	0.738 Gluco	0.733 Gluco
9	0.733 Gluco	0.733 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco
10	0.728 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.728 Gluco
11	0.728 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.723 Gluco
12	0.728 Gluco	0.728 Gluco	0.728 Gluco	0.728 Gluco	0.728 Gluco
13	0.728 Gluco	0.733 Gluco	0.728 Gluco	0.733 Gluco	0.723 Gluco
14	0.723 Gluco	0.738 Gluco	0.728 Gluco	0.728 Gluco	0.723 Gluco
15	0.723 Gluco	0.733 Gluco	0.728 Gluco	0.733 Gluco	0.723 Gluco
16	0.723 Gluco	0.733 Gluco	0.728 Gluco	0.728 Gluco	0.723 Gluco
17	0.728 Gluco	0.733 Gluco	0.728 Gluco	0.728 Gluco	0.723 Gluco
18	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.728 Gluco	0.723 Gluco
19	0.733 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.723 Gluco
20	0.733 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.723 Gluco
21	0.709 Chol	0.704 Chol	0.704 Chol	0.709 Chol	0.704 Chol
22	0.699 Chol	0.704 Chol	0.699 Chol	0.704 Chol	0.704 Chol
23	0.699 Chol	0.704 Chol	0.699 Chol	0.704 Chol	0.704 Chol
24	0.704 Chol	0.699 Chol	0.699 Chol	0.709 Chol	0.704 Chol
25	0.699 Chol	0.704 Chol	0.699 Chol	0.709 Chol	0.704 Chol
26	0.699 Chol	0.699 Chol	0.699 Chol	0.709 Chol	0.704 Chol
27	0.699 Chol	0.679 Chol	0.694 Chol	0.709 Chol	0.709 Chol
28	0.699 Chol	0.704 Chol	0.699 Chol	0.704 Chol	0.709 Chol
29	0.699 Chol	0.709 Chol	0.694 Chol	0.704 Chol	0.704 Chol
30	0.699 Chol	0.709 Chol	0.694 Chol	0.699 Chol	0.709 Chol
31	0.699 Chol	0.704 Chol	0.694 Chol	0.699 Chol	0.704 Chol
32	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol	0.704 Chol
33	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol	0.704 Chol
34	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol	0.704 Chol
35	0.709 Chol	0.704 Chol	0.699 Chol	0.704 Chol	0.704 Chol
36	0.699 Chol	0.694 Chol	0.694 Chol	0.704 Chol	0.704 Chol
37	0.704 Chol	0.704 Chol	0.694 Chol	0.704 Chol	0.704 Chol
38	0.699 Chol	0.699 Chol	0.699 Chol	0.704 Chol	0.704 Chol
39	0.704 Chol	0.699 Chol	0.694 Chol	0.709 Chol	0.704 Chol
40	0.699 Chol	0.704 Chol	0.694 Chol	0.704 Chol	0.704 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: L - MD
b	Usia	: 56 Tahun
c	Cholesterol	: 189 mg/dl
d	Glukosa	: 190 mg/dl
e	Pengukuran	; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.265 Gluco	3.275 Gluco	3.255 Gluco	3.260 Gluco	3.260 Gluco
2	1.891 Gluco	1.906 Gluco	1.862 Gluco	1.867 Gluco	1.872 Gluco
3	1.388 Gluco	1.393 Gluco	1.325 Gluco	1.329 Gluco	1.339 Gluco
4	1.193 Gluco	1.188 Gluco	1.114 Gluco	1.119 Gluco	1.129 Gluco
5	1.109 Gluco	1.114 Gluco	1.031 Gluco	1.036 Gluco	1.041 Gluco
6	1.080 Gluco	1.051 Gluco	0.997 Gluco	1.002 Gluco	1.007 Gluco
7	1.065 Gluco	1.031 Gluco	0.978 Gluco	0.987 Gluco	0.997 Gluco
8	1.065 Gluco	1.012 Gluco	0.973 Gluco	0.982 Gluco	0.992 Gluco
9	1.036 Gluco	1.002 Gluco	0.973 Gluco	0.978 Gluco	0.987 Gluco
10	1.026 Gluco	0.997 Gluco	0.973 Gluco	0.978 Gluco	0.987 Gluco
11	1.022 Gluco	0.992 Gluco	0.973 Gluco	0.978 Gluco	0.987 Gluco
12	1.017 Gluco	0.987 Gluco	0.982 Gluco	0.978 Gluco	0.987 Gluco
13	1.017 Gluco	0.978 Gluco	0.973 Gluco	0.978 Gluco	0.992 Gluco
14	1.017 Gluco	0.973 Gluco	0.973 Gluco	0.982 Gluco	0.987 Gluco
15	1.012 Gluco	0.968 Gluco	0.973 Gluco	0.978 Gluco	0.987 Gluco
16	1.012 Gluco	0.968 Gluco	0.973 Gluco	0.978 Gluco	0.987 Gluco
17	1.012 Gluco	0.978 Gluco	0.973 Gluco	0.978 Gluco	0.982 Gluco
18	1.002 Gluco	0.968 Gluco	0.973 Gluco	0.978 Gluco	0.982 Gluco
19	1.007 Gluco	0.973 Gluco	0.973 Gluco	0.978 Gluco	0.982 Gluco
20	1.007 Gluco	0.973 Gluco	0.973 Gluco	0.978 Gluco	0.982 Gluco
21	0.997 Chol	0.953 Chol	0.958 Chol	0.968 Chol	0.963 Chol
22	0.978 Chol	0.938 Chol	0.943 Chol	0.948 Chol	0.943 Chol
23	0.968 Chol	0.929 Chol	0.934 Chol	0.938 Chol	0.938 Chol
24	0.963 Chol	0.929 Chol	0.934 Chol	0.938 Chol	0.934 Chol
25	0.963 Chol	0.934 Chol	0.934 Chol	0.938 Chol	0.934 Chol
26	0.963 Chol	0.934 Chol	0.934 Chol	0.938 Chol	0.934 Chol
27	0.963 Chol	0.924 Chol	0.934 Chol	0.938 Chol	0.934 Chol
28	0.963 Chol	0.924 Chol	0.929 Chol	0.934 Chol	0.934 Chol
29	0.963 Chol	0.924 Chol	0.929 Chol	0.938 Chol	0.934 Chol
30	0.963 Chol	0.924 Chol	0.929 Chol	0.934 Chol	0.934 Chol
31	0.973 Chol	0.924 Chol	0.934 Chol	0.938 Chol	0.934 Chol
32	0.963 Chol	0.924 Chol	0.929 Chol	0.938 Chol	0.929 Chol
33	0.963 Chol	0.924 Chol	0.929 Chol	0.934 Chol	0.934 Chol
34	0.963 Chol	0.924 Chol	0.929 Chol	0.934 Chol	0.934 Chol
35	0.963 Chol	0.929 Chol	0.934 Chol	0.938 Chol	0.934 Chol
36	0.963 Chol	0.934 Chol	0.929 Chol	0.938 Chol	0.934 Chol
37	0.963 Chol	0.929 Chol	0.929 Chol	0.938 Chol	0.934 Chol
38	0.968 Chol	0.924 Chol	0.929 Chol	0.938 Chol	0.934 Chol
39	0.963 Chol	0.924 Chol	0.934 Chol	0.938 Chol	0.934 Chol
40	0.968 Chol	0.924 Chol	0.929 Chol	0.938 Chol	0.938 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama : L- LF
b Usia : 51 Tahun
c Cholesterol : 259 mg/dl
d Glukosa : 336 mg/dl
e Pengukuran ; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.192 Gluco	3.138 Gluco	3.148 Gluco	3.152 Gluco	3.152 Gluco
2	1.725 Gluco	1.696 Gluco	1.701 Gluco	1.701 Gluco	1.701 Gluco
3	1.036 Gluco	1.056 Gluco	1.070 Gluco	1.080 Gluco	1.090 Gluco
4	0.753 Gluco	0.802 Gluco	0.821 Gluco	0.836 Gluco	0.846 Gluco
5	0.635 Gluco	0.699 Gluco	0.723 Gluco	0.743 Gluco	0.748 Gluco
6	0.591 Gluco	0.650 Gluco	0.679 Gluco	0.699 Gluco	0.714 Gluco
7	0.577 Gluco	0.640 Gluco	0.665 Gluco	0.684 Gluco	0.694 Gluco
8	0.567 Gluco	0.626 Gluco	0.660 Gluco	0.679 Gluco	0.689 Gluco
9	0.577 Gluco	0.621 Gluco	0.655 Gluco	0.674 Gluco	0.684 Gluco
10	0.601 Gluco	0.621 Gluco	0.655 Gluco	0.679 Gluco	0.684 Gluco
11	0.611 Gluco	0.621 Gluco	0.655 Gluco	0.679 Gluco	0.684 Gluco
12	0.606 Gluco	0.621 Gluco	0.660 Gluco	0.684 Gluco	0.674 Gluco
13	0.606 Gluco	0.621 Gluco	0.655 Gluco	0.684 Gluco	0.679 Gluco
14	0.596 Gluco	0.621 Gluco	0.655 Gluco	0.684 Gluco	0.674 Gluco
15	0.582 Gluco	0.621 Gluco	0.660 Gluco	0.689 Gluco	0.674 Gluco
16	0.577 Gluco	0.626 Gluco	0.635 Gluco	0.694 Gluco	0.679 Gluco
17	0.577 Gluco	0.621 Gluco	0.626 Gluco	0.694 Gluco	0.684 Gluco
18	0.577 Gluco	0.626 Gluco	0.630 Gluco	0.684 Gluco	0.684 Gluco
19	0.577 Gluco	0.621 Gluco	0.640 Gluco	0.689 Gluco	0.684 Gluco
20	0.577 Gluco	0.621 Gluco	0.640 Gluco	0.689 Gluco	0.684 Gluco
21	0.587 Chol	0.611 Chol	0.665 Chol	0.665 Chol	0.670 Chol
22	0.577 Chol	0.587 Chol	0.635 Chol	0.630 Chol	0.640 Chol
23	0.587 Chol	0.577 Chol	0.626 Chol	0.626 Chol	0.626 Chol
24	0.557 Chol	0.567 Chol	0.626 Chol	0.616 Chol	0.630 Chol
25	0.547 Chol	0.567 Chol	0.630 Chol	0.616 Chol	0.626 Chol
26	0.543 Chol	0.567 Chol	0.626 Chol	0.616 Chol	0.621 Chol
27	0.543 Chol	0.562 Chol	0.630 Chol	0.616 Chol	0.621 Chol
28	0.543 Chol	0.567 Chol	0.626 Chol	0.616 Chol	0.626 Chol
29	0.543 Chol	0.562 Chol	0.626 Chol	0.616 Chol	0.626 Chol
30	0.543 Chol	0.562 Chol	0.626 Chol	0.616 Chol	0.626 Chol
31	0.543 Chol	0.562 Chol	0.626 Chol	0.616 Chol	0.626 Chol
32	0.543 Chol	0.562 Chol	0.626 Chol	0.616 Chol	0.630 Chol
33	0.547 Chol	0.562 Chol	0.626 Chol	0.616 Chol	0.626 Chol
34	0.543 Chol	0.562 Chol	0.630 Chol	0.616 Chol	0.626 Chol
35	0.543 Chol	0.562 Chol	0.630 Chol	0.616 Chol	0.626 Chol
36	0.543 Chol	0.567 Chol	0.626 Chol	0.616 Chol	0.626 Chol
37	0.543 Chol	0.562 Chol	0.626 Chol	0.616 Chol	0.630 Chol
38	0.543 Chol	0.567 Chol	0.626 Chol	0.616 Chol	0.626 Chol
39	0.543 Chol	0.567 Chol	0.630 Chol	0.616 Chol	0.626 Chol
40	0.547 Chol	0.567 Chol	0.630 Chol	0.611 Chol	0.626 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: L- AL
b	Usia	: 49Tahun
c	Cholesterol	:256 mg/dl
d	Glukosa	:398 mg/dl
e	Pengukuran	; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.275 Gluco	3.280 Gluco	3.275 Gluco	3.275 Gluco	3.280 Gluco
2	1.887 Gluco	1.882 Gluco	1.887 Gluco	1.882 Gluco	1.877 Gluco
3	1.222 Gluco	1.222 Gluco	1.222 Gluco	1.217 Gluco	1.212 Gluco
4	0.943 Gluco	0.943 Gluco	0.938 Gluco	0.929 Gluco	0.929 Gluco
5	0.826 Gluco	0.831 Gluco	0.826 Gluco	0.816 Gluco	0.816 Gluco
6	0.782 Gluco	0.782 Gluco	0.782 Gluco	0.772 Gluco	0.772 Gluco
7	0.762 Gluco	0.762 Gluco	0.762 Gluco	0.753 Gluco	0.758 Gluco
8	0.753 Gluco	0.753 Gluco	0.753 Gluco	0.743 Gluco	0.743 Gluco
9	0.753 Gluco	0.753 Gluco	0.748 Gluco	0.738 Gluco	0.738 Gluco
10	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.743 Gluco	0.738 Gluco
11	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.738 Gluco
12	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.738 Gluco
13	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.733 Gluco
14	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.733 Gluco
15	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.733 Gluco
16	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.733 Gluco
17	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.733 Gluco
18	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.733 Gluco
19	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.733 Gluco
20	0.748 Gluco	0.748 Gluco	0.748 Gluco	0.738 Gluco	0.733 Gluco
21	0.728 Chol	0.728 Chol	0.728 Chol	0.718 Chol	0.714 Chol
22	0.728 Chol	0.728 Chol	0.723 Chol	0.714 Chol	0.714 Chol
23	0.728 Chol	0.728 Chol	0.723 Chol	0.714 Chol	0.709 Chol
24	0.728 Chol	0.728 Chol	0.723 Chol	0.714 Chol	0.709 Chol
25	0.728 Chol	0.723 Chol	0.723 Chol	0.714 Chol	0.714 Chol
26	0.728 Chol	0.728 Chol	0.723 Chol	0.714 Chol	0.709 Chol
27	0.728 Chol	0.728 Chol	0.723 Chol	0.709 Chol	0.718 Chol
28	0.728 Chol	0.728 Chol	0.723 Chol	0.714 Chol	0.714 Chol
29	0.728 Chol	0.728 Chol	0.718 Chol	0.714 Chol	0.714 Chol
30	0.728 Chol	0.728 Chol	0.718 Chol	0.714 Chol	0.709 Chol
31	0.728 Chol	0.728 Chol	0.718 Chol	0.714 Chol	0.709 Chol
32	0.728 Chol	0.723 Chol	0.718 Chol	0.714 Chol	0.709 Chol
33	0.728 Chol	0.723 Chol	0.723 Chol	0.718 Chol	0.709 Chol
34	0.728 Chol	0.723 Chol	0.718 Chol	0.714 Chol	0.709 Chol
35	0.728 Chol	0.723 Chol	0.723 Chol	0.714 Chol	0.709 Chol
36	0.728 Chol	0.723 Chol	0.723 Chol	0.714 Chol	0.709 Chol
37	0.728 Chol	0.723 Chol	0.723 Chol	0.718 Chol	0.709 Chol
38	0.728 Chol	0.723 Chol	0.718 Chol	0.714 Chol	0.709 Chol
39	0.728 Chol	0.723 Chol	0.723 Chol	0.714 Chol	0.709 Chol
40	0.728 Chol	0.723 Chol	0.723 Chol	0.714 Chol	0.709 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: P - MY
b	Usia	: 50 Tahun
c	Cholesterol	: 173 mg/dl
d	Glukosa	: 86 mg/dl
e	Pengukuran	; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.211 Gluco	3.206 Gluco	3.206 Gluco	3.387 Gluco	3.255 Gluco
2	1.779 Gluco	1.779 Gluco	1.779 Gluco	1.779 Gluco	1.843 Gluco
3	1.105 Gluco	1.100 Gluco	1.100 Gluco	1.109 Gluco	1.183 Gluco
4	0.821 Gluco	0.816 Gluco	0.816 Gluco	0.826 Gluco	0.904 Gluco
5	0.699 Gluco	0.699 Gluco	0.699 Gluco	0.714 Gluco	0.782 Gluco
6	0.650 Gluco	0.655 Gluco	0.655 Gluco	0.665 Gluco	0.738 Gluco
7	0.630 Gluco	0.630 Gluco	0.635 Gluco	0.650 Gluco	0.718 Gluco
8	0.626 Gluco	0.626 Gluco	0.626 Gluco	0.640 Gluco	0.709 Gluco
9	0.621 Gluco	0.621 Gluco	0.621 Gluco	0.640 Gluco	0.709 Gluco
10	0.621 Gluco	0.621 Gluco	0.621 Gluco	0.640 Gluco	0.709 Gluco
11	0.616 Gluco	0.616 Gluco	0.621 Gluco	0.640 Gluco	0.709 Gluco
12	0.616 Gluco	0.616 Gluco	0.621 Gluco	0.640 Gluco	0.709 Gluco
13	0.616 Gluco	0.621 Gluco	0.621 Gluco	0.635 Gluco	0.709 Gluco
14	0.616 Gluco	0.616 Gluco	0.621 Gluco	0.640 Gluco	0.709 Gluco
15	0.616 Gluco	0.616 Gluco	0.626 Gluco	0.635 Gluco	0.709 Gluco
16	0.616 Gluco	0.616 Gluco	0.630 Gluco	0.640 Gluco	0.709 Gluco
17	0.616 Gluco	0.616 Gluco	0.630 Gluco	0.640 Gluco	0.709 Gluco
18	0.616 Gluco	0.616 Gluco	0.630 Gluco	0.694 Gluco	0.714 Gluco
19	0.616 Gluco	0.616 Gluco	0.630 Gluco	0.689 Gluco	0.714 Gluco
20	0.733 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco	0.723 Gluco
21	0.601 Chol	0.596 Chol	0.601 Chol	0.674 Chol	0.684 Chol
22	0.596 Chol	0.596 Chol	0.606 Chol	0.674 Chol	0.655 Chol
23	0.596 Chol	0.591 Chol	0.606 Chol	0.670 Chol	0.650 Chol
24	0.596 Chol	0.596 Chol	0.611 Chol	0.670 Chol	0.650 Chol
25	0.596 Chol	0.591 Chol	0.611 Chol	0.630 Chol	0.650 Chol
26	0.596 Chol	0.591 Chol	0.611 Chol	0.630 Chol	0.650 Chol
27	0.596 Chol	0.587 Chol	0.606 Chol	0.626 Chol	0.650 Chol
28	0.596 Chol	0.596 Chol	0.606 Chol	0.626 Chol	0.650 Chol
29	0.596 Chol	0.596 Chol	0.601 Chol	0.630 Chol	0.650 Chol
30	0.596 Chol	0.596 Chol	0.611 Chol	0.626 Chol	0.655 Chol
31	0.596 Chol	0.596 Chol	0.596 Chol	0.630 Chol	0.655 Chol
32	0.596 Chol	0.596 Chol	0.606 Chol	0.630 Chol	0.655 Chol
33	0.596 Chol	0.596 Chol	0.606 Chol	0.630 Chol	0.655 Chol
34	0.596 Chol	0.596 Chol	0.606 Chol	0.630 Chol	0.655 Chol
35	0.596 Chol	0.596 Chol	0.601 Chol	0.630 Chol	0.655 Chol
36	0.596 Chol	0.591 Chol	0.606 Chol	0.630 Chol	0.655 Chol
37	0.596 Chol	0.591 Chol	0.606 Chol	0.635 Chol	0.655 Chol
38	0.596 Chol	0.596 Chol	0.606 Chol	0.665 Chol	0.660 Chol
39	0.596 Chol	0.596 Chol	0.601 Chol	0.645 Chol	0.660 Chol
40	0.596 Chol	0.596 Chol	0.601 Chol	0.640 Chol	0.660 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: L- MS
b	Usia	: 49Tahun
c	Cholesterol	:256 mg/dl
d	Glukosa	: 111 mg/dl
e	Pengukuran	; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.275 Gluco	3.275 Gluco	3.275 Gluco	3.284 Gluco	3.284 Gluco
2	1.882 Gluco	1.882 Gluco	1.887 Gluco	1.891 Gluco	1.896 Gluco
3	1.217 Gluco	1.217 Gluco	1.222 Gluco	1.232 Gluco	1.237 Gluco
4	0.934 Gluco	0.938 Gluco	0.943 Gluco	0.953 Gluco	0.958 Gluco
5	0.821 Gluco	0.826 Gluco	0.826 Gluco	0.846 Gluco	0.846 Gluco
6	0.777 Gluco	0.782 Gluco	0.782 Gluco	0.797 Gluco	0.802 Gluco
7	0.758 Gluco	0.762 Gluco	0.762 Gluco	0.782 Gluco	0.782 Gluco
8	0.748 Gluco	0.753 Gluco	0.753 Gluco	0.772 Gluco	0.777 Gluco
9	0.748 Gluco	0.748 Gluco	0.753 Gluco	0.767 Gluco	0.772 Gluco
10	0.743 Gluco	0.748 Gluco	0.753 Gluco	0.767 Gluco	0.767 Gluco
11	0.743 Gluco	0.748 Gluco	0.748 Gluco	0.762 Gluco	0.767 Gluco
12	0.743 Gluco	0.748 Gluco	0.748 Gluco	0.767 Gluco	0.767 Gluco
13	0.743 Gluco	0.748 Gluco	0.748 Gluco	0.767 Gluco	0.767 Gluco
14	0.743 Gluco	0.748 Gluco	0.753 Gluco	0.767 Gluco	0.767 Gluco
15	0.743 Gluco	0.748 Gluco	0.753 Gluco	0.762 Gluco	0.767 Gluco
16	0.743 Gluco	0.748 Gluco	0.753 Gluco	0.762 Gluco	0.767 Gluco
17	0.743 Gluco	0.753 Gluco	0.753 Gluco	0.762 Gluco	0.767 Gluco
18	0.743 Gluco	0.748 Gluco	0.753 Gluco	0.762 Gluco	0.762 Gluco
19	0.743 Gluco	0.748 Gluco	0.753 Gluco	0.767 Gluco	0.762 Gluco
20	0.743 Gluco	0.748 Gluco	0.753 Gluco	0.767 Gluco	0.762 Gluco
21	0.723 Chol	0.723 Chol	0.733 Chol	0.743 Chol	0.743 Chol
22	0.723 Chol	0.728 Chol	0.743 Chol	0.748 Chol	0.748 Chol
23	0.723 Chol	0.733 Chol	0.743 Chol	0.748 Chol	0.753 Chol
24	0.728 Chol	0.733 Chol	0.743 Chol	0.748 Chol	0.753 Chol
25	0.728 Chol	0.733 Chol	0.748 Chol	0.753 Chol	0.753 Chol
26	0.728 Chol	0.733 Chol	0.748 Chol	0.753 Chol	0.753 Chol
27	0.728 Chol	0.733 Chol	0.748 Chol	0.753 Chol	0.753 Chol
28	0.728 Chol	0.733 Chol	0.748 Chol	0.753 Chol	0.753 Chol
29	0.728 Chol	0.733 Chol	0.748 Chol	0.753 Chol	0.753 Chol
30	0.723 Chol	0.733 Chol	0.748 Chol	0.753 Chol	0.753 Chol
31	0.728 Chol	0.733 Chol	0.748 Chol	0.753 Chol	0.753 Chol
32	0.728 Chol	0.733 Chol	0.748 Chol	0.753 Chol	0.753 Chol
33	0.728 Chol	0.733 Chol	0.748 Chol	0.758 Chol	0.753 Chol
34	0.728 Chol	0.733 Chol	0.748 Chol	0.758 Chol	0.753 Chol
35	0.728 Chol	0.733 Chol	0.748 Chol	0.758 Chol	0.753 Chol
36	0.723 Chol	0.738 Chol	0.748 Chol	0.758 Chol	0.753 Chol
37	0.728 Chol	0.738 Chol	0.748 Chol	0.758 Chol	0.753 Chol
38	0.728 Chol	0.738 Chol	0.748 Chol	0.758 Chol	0.753 Chol
39	0.728 Chol	0.738 Chol	0.748 Chol	0.758 Chol	0.753 Chol
40	0.728 Chol	0.738 Chol	0.748 Chol	0.758 Chol	0.753 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama : P- MR
b Usia : 48 Tahun
c Cholesterol : 150 mg/dl
d Glukosa : 116 mg/dl
e Pengukuran ; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.221 Gluco	3.778 Gluco	3.221 Gluco	3.226 Gluco	3.231 Gluco
2	1.799 Gluco	1.804 Gluco	1.808 Gluco	1.813 Gluco	1.818 Gluco
3	1.119 Gluco	1.124 Gluco	1.119 Gluco	1.129 Gluco	1.139 Gluco
4	0.831 Gluco	0.826 Gluco	0.826 Gluco	0.836 Gluco	0.850 Gluco
5	0.714 Gluco	0.709 Gluco	0.709 Gluco	0.718 Gluco	0.733 Gluco
6	0.665 Gluco	0.660 Gluco	0.665 Gluco	0.674 Gluco	0.689 Gluco
7	0.645 Gluco	0.635 Gluco	0.645 Gluco	0.660 Gluco	0.665 Gluco
8	0.635 Gluco	0.626 Gluco	0.635 Gluco	0.655 Gluco	0.660 Gluco
9	0.630 Gluco	0.626 Gluco	0.630 Gluco	0.650 Gluco	0.655 Gluco
10	0.630 Gluco	0.626 Gluco	0.635 Gluco	0.650 Gluco	0.655 Gluco
11	0.626 Gluco	0.621 Gluco	0.635 Gluco	0.645 Gluco	0.650 Gluco
12	0.626 Gluco	0.621 Gluco	0.630 Gluco	0.645 Gluco	0.650 Gluco
13	0.630 Gluco	0.621 Gluco	0.635 Gluco	0.645 Gluco	0.650 Gluco
14	0.626 Gluco	0.621 Gluco	0.630 Gluco	0.645 Gluco	0.650 Gluco
15	0.626 Gluco	0.621 Gluco	0.635 Gluco	0.645 Gluco	0.650 Gluco
16	0.626 Gluco	0.621 Gluco	0.635 Gluco	0.645 Gluco	0.650 Gluco
17	0.626 Gluco	0.621 Gluco	0.630 Gluco	0.655 Gluco	0.655 Gluco
18	0.626 Gluco	0.621 Gluco	0.635 Gluco	0.655 Gluco	0.655 Gluco
19	0.626 Gluco	0.621 Gluco	0.635 Gluco	0.655 Gluco	0.660 Gluco
20	0.626 Gluco	0.621 Gluco	0.635 Gluco	0.655 Gluco	0.660 Gluco
21	0.606 Chol	0.616 Chol	0.626 Chol	0.645 Chol	0.665 Chol
22	0.611 Chol	0.601 Chol	0.601 Chol	0.640 Chol	0.635 Chol
23	0.616 Chol	0.601 Chol	0.606 Chol	0.635 Chol	0.635 Chol
24	0.611 Chol	0.606 Chol	0.596 Chol	0.640 Chol	0.635 Chol
25	0.606 Chol	0.606 Chol	0.601 Chol	0.640 Chol	0.635 Chol
26	0.601 Chol	0.606 Chol	0.601 Chol	0.640 Chol	0.640 Chol
27	0.596 Chol	0.596 Chol	0.601 Chol	0.640 Chol	0.640 Chol
28	0.596 Chol	0.601 Chol	0.606 Chol	0.640 Chol	0.640 Chol
29	0.601 Chol	0.601 Chol	0.606 Chol	0.640 Chol	0.630 Chol
30	0.591 Chol	0.601 Chol	0.601 Chol	0.635 Chol	0.635 Chol
31	0.591 Chol	0.596 Chol	0.601 Chol	0.635 Chol	0.630 Chol
32	0.587 Chol	0.596 Chol	0.601 Chol	0.635 Chol	0.640 Chol
33	0.587 Chol	0.596 Chol	0.606 Chol	0.635 Chol	0.630 Chol
34	0.591 Chol	0.601 Chol	0.606 Chol	0.635 Chol	0.640 Chol
35	0.591 Chol	0.601 Chol	0.606 Chol	0.640 Chol	0.640 Chol
36	0.591 Chol	0.601 Chol	0.606 Chol	0.635 Chol	0.645 Chol
37	0.587 Chol	0.596 Chol	0.606 Chol	0.635 Chol	0.645 Chol
38	0.591 Chol	0.591 Chol	0.606 Chol	0.635 Chol	0.645 Chol
39	0.621 Chol	0.591 Chol	0.606 Chol	0.635 Chol	0.630 Chol
40	0.601 Chol	0.596 Chol	0.606 Chol	0.630 Chol	0.645 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a Nama : L - ML
b Usia : 57 Tahun
c Cholesterol : 275 mg/dl
d Glukosa : 292 mg/dl
e Pengukuran ; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.206 Gluco	3.196 Gluco	3.206 Gluco	3.255 Gluco	3.250 Gluco
2	1.779 Gluco	1.755 Gluco	1.764 Gluco	1.882 Gluco	1.891 Gluco
3	1.149 Gluco	1.158 Gluco	1.197 Gluco	1.349 Gluco	1.364 Gluco
4	0.885 Gluco	0.904 Gluco	0.958 Gluco	1.149 Gluco	1.153 Gluco
5	0.787 Gluco	0.802 Gluco	0.865 Gluco	1.061 Gluco	1.070 Gluco
6	0.743 Gluco	0.758 Gluco	0.860 Gluco	1.031 Gluco	1.036 Gluco
7	0.723 Gluco	0.738 Gluco	1.031 Gluco	1.017 Gluco	1.022 Gluco
8	0.718 Gluco	0.733 Gluco	1.119 Gluco	1.012 Gluco	1.022 Gluco
9	0.714 Gluco	0.728 Gluco	1.100 Gluco	1.007 Gluco	1.017 Gluco
10	0.714 Gluco	0.723 Gluco	1.090 Gluco	1.007 Gluco	1.012 Gluco
11	0.714 Gluco	0.723 Gluco	1.090 Gluco	0.997 Gluco	1.017 Gluco
12	0.714 Gluco	0.723 Gluco	1.100 Gluco	0.992 Gluco	1.036 Gluco
13	0.714 Gluco	0.723 Gluco	1.129 Gluco	0.992 Gluco	1.036 Gluco
14	0.718 Gluco	0.723 Gluco	1.075 Gluco	0.987 Gluco	1.041 Gluco
15	0.718 Gluco	0.733 Gluco	0.992 Gluco	0.987 Gluco	1.026 Gluco
16	0.714 Gluco	0.723 Gluco	0.948 Gluco	0.987 Gluco	1.022 Gluco
17	0.714 Gluco	0.723 Gluco	0.929 Gluco	0.982 Gluco	1.036 Gluco
18	0.723 Gluco	0.723 Gluco	0.924 Gluco	0.978 Gluco	1.031 Gluco
19	0.718 Gluco	0.723 Gluco	0.934 Gluco	0.973 Gluco	1.031 Gluco
20	0.718 Gluco	0.723 Gluco	0.934 Gluco	0.973 Gluco	1.031 Gluco
21	0.714 Chol	0.714 Chol	0.914 Chol	0.968 Chol	1.007 Chol
22	0.709 Chol	0.709 Chol	0.890 Chol	0.948 Chol	0.992 Chol
23	0.704 Chol	0.704 Chol	0.885 Chol	0.948 Chol	0.982 Chol
24	0.704 Chol	0.704 Chol	0.885 Chol	0.943 Chol	0.978 Chol
25	0.704 Chol	0.704 Chol	0.880 Chol	0.943 Chol	0.978 Chol
26	0.674 Chol	0.709 Chol	0.885 Chol	0.943 Chol	0.978 Chol
27	0.674 Chol	0.704 Chol	0.880 Chol	0.943 Chol	0.978 Chol
28	0.679 Chol	0.704 Chol	0.880 Chol	0.943 Chol	0.978 Chol
29	0.684 Chol	0.704 Chol	0.885 Chol	0.948 Chol	0.973 Chol
30	0.689 Chol	0.709 Chol	0.894 Chol	0.948 Chol	0.978 Chol
31	0.689 Chol	0.709 Chol	0.885 Chol	0.948 Chol	0.978 Chol
32	0.694 Chol	0.709 Chol	0.885 Chol	0.958 Chol	0.978 Chol
33	0.699 Chol	0.709 Chol	0.885 Chol	0.968 Chol	0.978 Chol
34	0.699 Chol	0.709 Chol	0.890 Chol	0.973 Chol	0.978 Chol
35	0.709 Chol	0.709 Chol	0.890 Chol	0.968 Chol	0.982 Chol
36	0.704 Chol	0.709 Chol	0.890 Chol	0.968 Chol	0.978 Chol
37	0.714 Chol	0.709 Chol	0.890 Chol	0.968 Chol	0.978 Chol
38	0.704 Chol	0.709 Chol	0.894 Chol	0.968 Chol	0.978 Chol
39	0.704 Chol	0.709 Chol	0.894 Chol	0.963 Chol	0.973 Chol
40	0.709 Chol	0.709 Chol	0.894 Chol	0.963 Chol	0.973 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: P - NR
b	Usia	: 48 Tahun
c	Cholesterol	: 226 mg/dl
d	Glukosa	: 107 mg/dl
e	Pengukuran	; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.201 Gluco	3.216 Gluco	3.602 Gluco	3.221 Gluco	3.226 Gluco
2	1.764 Gluco	1.799 Gluco	1.799 Gluco	1.799 Gluco	1.804 Gluco
3	1.085 Gluco	1.124 Gluco	1.129 Gluco	1.129 Gluco	1.129 Gluco
4	0.802 Gluco	0.841 Gluco	0.846 Gluco	0.846 Gluco	0.841 Gluco
5	0.684 Gluco	0.723 Gluco	0.733 Gluco	0.733 Gluco	0.728 Gluco
6	0.640 Gluco	0.679 Gluco	0.684 Gluco	0.684 Gluco	0.679 Gluco
7	0.621 Gluco	0.660 Gluco	0.665 Gluco	0.665 Gluco	0.660 Gluco
8	0.611 Gluco	0.650 Gluco	0.655 Gluco	0.660 Gluco	0.650 Gluco
9	0.606 Gluco	0.645 Gluco	0.650 Gluco	0.655 Gluco	0.645 Gluco
10	0.606 Gluco	0.640 Gluco	0.650 Gluco	0.655 Gluco	0.645 Gluco
11	0.606 Gluco	0.635 Gluco	0.650 Gluco	0.650 Gluco	0.645 Gluco
12	0.606 Gluco	0.635 Gluco	0.650 Gluco	0.650 Gluco	0.645 Gluco
13	0.606 Gluco	0.635 Gluco	0.650 Gluco	0.650 Gluco	0.640 Gluco
14	0.606 Gluco	0.635 Gluco	0.650 Gluco	0.650 Gluco	0.640 Gluco
15	0.606 Gluco	0.645 Gluco	0.650 Gluco	0.650 Gluco	0.640 Gluco
16	0.606 Gluco	0.635 Gluco	0.650 Gluco	0.640 Gluco	0.640 Gluco
17	0.606 Gluco	0.635 Gluco	0.650 Gluco	0.645 Gluco	0.640 Gluco
18	0.606 Gluco	0.635 Gluco	0.650 Gluco	0.645 Gluco	0.640 Gluco
19	0.606 Gluco	0.635 Gluco	0.650 Gluco	0.645 Gluco	0.645 Gluco
20	0.606 Gluco	0.635 Gluco	0.650 Gluco	0.645 Gluco	0.645 Gluco
21	0.582 Chol	0.621 Chol	0.645 Chol	0.626 Chol	0.626 Chol
22	0.547 Chol	0.616 Chol	0.630 Chol	0.621 Chol	0.621 Chol
23	0.543 Chol	0.616 Chol	0.630 Chol	0.621 Chol	0.626 Chol
24	0.543 Chol	0.616 Chol	0.630 Chol	0.621 Chol	0.621 Chol
25	0.543 Chol	0.616 Chol	0.626 Chol	0.621 Chol	0.626 Chol
26	0.562 Chol	0.601 Chol	0.630 Chol	0.630 Chol	0.621 Chol
27	0.547 Chol	0.616 Chol	0.626 Chol	0.630 Chol	0.626 Chol
28	0.547 Chol	0.616 Chol	0.630 Chol	0.630 Chol	0.626 Chol
29	0.547 Chol	0.616 Chol	0.630 Chol	0.630 Chol	0.626 Chol
30	0.543 Chol	0.611 Chol	0.630 Chol	0.626 Chol	0.626 Chol
31	0.543 Chol	0.596 Chol	0.630 Chol	0.630 Chol	0.626 Chol
32	0.547 Chol	0.606 Chol	0.630 Chol	0.630 Chol	0.626 Chol
33	0.547 Chol	0.611 Chol	0.626 Chol	0.635 Chol	0.626 Chol
34	0.543 Chol	0.601 Chol	0.630 Chol	0.630 Chol	0.626 Chol
35	0.547 Chol	0.616 Chol	0.626 Chol	0.630 Chol	0.626 Chol
36	0.547 Chol	0.611 Chol	0.626 Chol	0.630 Chol	0.626 Chol
37	0.547 Chol	0.626 Chol	0.626 Chol	0.635 Chol	0.626 Chol
38	0.547 Chol	0.621 Chol	0.626 Chol	0.635 Chol	0.626 Chol
39	0.543 Chol	0.626 Chol	0.630 Chol	0.630 Chol	0.626 Chol
40	0.543 Chol	0.626 Chol	0.626 Chol	0.630 Chol	0.626 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: P - KS
b	Usia	: 49 Tahun
c	Cholesterol	:280 mg/dl
d	Glukosa	: 88 mg/dl
e	Pengukuran	; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.265 Gluco	3.280 Gluco	3.280 Gluco	3.289 Gluco	3.294 Gluco
2	1.852 Gluco	1.857 Gluco	1.857 Gluco	1.896 Gluco	1.906 Gluco
3	1.202 Gluco	1.207 Gluco	1.207 Gluco	1.261 Gluco	1.271 Gluco
4	0.934 Gluco	0.938 Gluco	0.938 Gluco	0.997 Gluco	1.012 Gluco
5	0.821 Gluco	0.831 Gluco	0.831 Gluco	0.890 Gluco	0.904 Gluco
6	0.777 Gluco	0.787 Gluco	0.787 Gluco	0.846 Gluco	0.860 Gluco
7	0.762 Gluco	0.767 Gluco	0.767 Gluco	0.831 Gluco	0.846 Gluco
8	0.753 Gluco	0.762 Gluco	0.762 Gluco	0.826 Gluco	0.836 Gluco
9	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.821 Gluco	0.836 Gluco
10	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.821 Gluco	0.831 Gluco
11	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.821 Gluco	0.831 Gluco
12	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.816 Gluco	0.831 Gluco
13	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.821 Gluco	0.831 Gluco
14	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.821 Gluco	0.831 Gluco
15	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.821 Gluco	0.836 Gluco
16	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.816 Gluco	0.836 Gluco
17	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.816 Gluco	0.841 Gluco
18	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.816 Gluco	0.841 Gluco
19	0.748 Gluco	0.758 Gluco	0.758 Gluco	0.816 Gluco	0.841 Gluco
20	0.733 Chol	0.743 Chol	0.743 Chol	0.797 Chol	0.831 Chol
21	0.728 Chol	0.738 Chol	0.738 Chol	0.792 Chol	0.826 Chol
22	0.728 Chol	0.733 Chol	0.733 Chol	0.792 Chol	0.826 Chol
23	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.826 Chol
24	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.831 Chol
25	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.831 Chol
26	0.728 Chol	0.733 Chol	0.733 Chol	0.792 Chol	0.831 Chol
27	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.831 Chol
28	0.728 Chol	0.733 Chol	0.733 Chol	0.782 Chol	0.831 Chol
29	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.831 Chol
30	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.831 Chol
31	0.728 Chol	0.738 Chol	0.738 Chol	0.787 Chol	0.831 Chol
32	0.728 Chol	0.738 Chol	0.738 Chol	0.787 Chol	0.836 Chol
33	0.728 Chol	0.738 Chol	0.738 Chol	0.787 Chol	0.836 Chol
34	0.728 Chol	0.738 Chol	0.738 Chol	0.787 Chol	0.841 Chol
35	0.728 Chol	0.738 Chol	0.738 Chol	0.787 Chol	0.841 Chol
36	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.841 Chol
37	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.846 Chol
38	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.841 Chol
39	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.846 Chol
40	0.728 Chol	0.733 Chol	0.733 Chol	0.787 Chol	0.846 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: P - RT
b	Usia	: 50 Tahun
c	Cholesterol	:256 mg/dl
d	Glukosa	:86 mg/dl
e	Pengukuran	; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.245 Gluco	3.260 Gluco	3.837 Gluco	3.250 Gluco	3.250 Gluco
2	1.823 Gluco	1.828 Gluco	1.828 Gluco	1.823 Gluco	1.828 Gluco
3	1.823 Gluco	1.173 Gluco	1.168 Gluco	1.168 Gluco	1.173 Gluco
4	1.823 Gluco	0.904 Gluco	0.899 Gluco	0.899 Gluco	0.899 Gluco
5	1.158 Gluco	0.797 Gluco	0.787 Gluco	0.787 Gluco	0.787 Gluco
6	0.880 Gluco	0.753 Gluco	0.743 Gluco	0.743 Gluco	0.743 Gluco
7	0.772 Gluco	0.733 Gluco	0.723 Gluco	0.723 Gluco	0.728 Gluco
8	0.723 Gluco	0.723 Gluco	0.714 Gluco	0.718 Gluco	0.718 Gluco
9	0.709 Gluco	0.718 Gluco	0.714 Gluco	0.714 Gluco	0.714 Gluco
10	0.699 Gluco	0.718 Gluco	0.709 Gluco	0.714 Gluco	0.709 Gluco
11	0.694 Gluco	0.714 Gluco	0.709 Gluco	0.714 Gluco	0.709 Gluco
12	0.694 Gluco	0.714 Gluco	0.709 Gluco	0.714 Gluco	0.709 Gluco
13	0.694 Gluco	0.714 Gluco	0.709 Gluco	0.714 Gluco	0.709 Gluco
14	0.699 Gluco	0.714 Gluco	0.709 Gluco	0.709 Gluco	0.714 Gluco
15	0.694 Gluco	0.714 Gluco	0.709 Gluco	0.714 Gluco	0.714 Gluco
16	0.694 Gluco	0.709 Gluco	0.714 Gluco	0.714 Gluco	0.714 Gluco
17	0.699 Gluco	0.714 Gluco	0.709 Gluco	0.709 Gluco	0.714 Gluco
18	0.694 Gluco	0.714 Gluco	0.709 Gluco	0.709 Gluco	0.714 Gluco
19	0.699 Gluco	0.714 Gluco	0.709 Gluco	0.714 Gluco	0.714 Gluco
20	0.699 Gluco	0.714 Gluco	0.709 Gluco	0.714 Gluco	0.714 Gluco
21	0.684 Chol	0.714 Chol	0.694 Chol	0.689 Chol	0.684 Chol
22	0.689 Chol	0.704 Chol	0.704 Chol	0.699 Chol	0.704 Chol
23	0.694 Chol	0.704 Chol	0.704 Chol	0.704 Chol	0.709 Chol
24	0.694 Chol	0.709 Chol	0.704 Chol	0.709 Chol	0.709 Chol
25	0.694 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.709 Chol
26	0.694 Chol	0.709 Chol	0.704 Chol	0.709 Chol	0.709 Chol
27	0.694 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.709 Chol
28	0.694 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.709 Chol
29	0.694 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.709 Chol
30	0.699 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.709 Chol
31	0.694 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.704 Chol
32	0.694 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.704 Chol
33	0.699 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.704 Chol
34	0.699 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.699 Chol
35	0.704 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.699 Chol
36	0.704 Chol	0.709 Chol	0.704 Chol	0.699 Chol	0.699 Chol
37	0.704 Chol	0.709 Chol	0.704 Chol	0.699 Chol	0.699 Chol
38	0.709 Chol	0.714 Chol	0.704 Chol	0.704 Chol	0.704 Chol
39	0.709 Chol	0.714 Chol	0.704 Chol	0.704 Chol	0.704 Chol
40	0.709 Chol	0.709 Chol	0.704 Chol	0.704 Chol	0.699 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: P - RS
b	Usia	: 40 Tahun
c	Cholesterol	: 148 mg/dl
d	Glukosa	: 110 mg/dl
e	Pengukuran	; 23 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.265 Gluco	3.260 Gluco	3.265 Gluco	3.280 Gluco	3.319 Gluco
2	1.862 Gluco	1.857 Gluco	1.862 Gluco	1.887 Gluco	1.955 Gluco
3	1.193 Gluco	1.193 Gluco	1.197 Gluco	1.227 Gluco	1.290 Gluco
4	0.914 Gluco	0.909 Gluco	0.914 Gluco	0.958 Gluco	0.982 Gluco
5	0.802 Gluco	0.797 Gluco	0.802 Gluco	0.846 Gluco	0.875 Gluco
6	0.753 Gluco	0.748 Gluco	0.758 Gluco	0.811 Gluco	0.831 Gluco
7	0.728 Gluco	0.728 Gluco	0.738 Gluco	0.797 Gluco	0.816 Gluco
8	0.723 Gluco	0.723 Gluco	0.728 Gluco	0.802 Gluco	0.806 Gluco
9	0.718 Gluco	0.718 Gluco	0.723 Gluco	0.802 Gluco	0.806 Gluco
10	0.718 Gluco	0.714 Gluco	0.723 Gluco	0.777 Gluco	0.811 Gluco
11	0.718 Gluco	0.714 Gluco	0.723 Gluco	0.758 Gluco	0.816 Gluco
12	0.718 Gluco	0.714 Gluco	0.723 Gluco	0.758 Gluco	0.826 Gluco
13	0.718 Gluco	0.714 Gluco	0.723 Gluco	0.758 Gluco	0.846 Gluco
14	0.714 Gluco	0.714 Gluco	0.723 Gluco	0.758 Gluco	0.836 Gluco
15	0.714 Gluco	0.714 Gluco	0.723 Gluco	0.767 Gluco	0.802 Gluco
16	0.714 Gluco	0.714 Gluco	0.723 Gluco	0.758 Gluco	0.777 Gluco
17	0.718 Gluco	0.714 Gluco	0.723 Gluco	0.762 Gluco	0.767 Gluco
18	0.714 Gluco	0.714 Gluco	0.723 Gluco	0.762 Gluco	0.753 Gluco
19	0.718 Gluco	0.714 Gluco	0.723 Gluco	0.767 Gluco	0.748 Gluco
20	0.718 Gluco	0.714 Gluco	0.723 Gluco	0.767 Gluco	0.748 Gluco
21	0.694 Chol	0.684 Chol	0.704 Chol	0.743 Chol	0.709 Chol
22	0.694 Chol	0.684 Chol	0.699 Chol	0.738 Chol	0.704 Chol
23	0.704 Chol	0.684 Chol	0.699 Chol	0.738 Chol	0.699 Chol
24	0.694 Chol	0.684 Chol	0.694 Chol	0.733 Chol	0.699 Chol
25	0.694 Chol	0.684 Chol	0.694 Chol	0.738 Chol	0.699 Chol
26	0.694 Chol	0.684 Chol	0.694 Chol	0.738 Chol	0.699 Chol
27	0.689 Chol	0.684 Chol	0.694 Chol	0.738 Chol	0.699 Chol
28	0.689 Chol	0.684 Chol	0.694 Chol	0.738 Chol	0.704 Chol
29	0.689 Chol	0.684 Chol	0.694 Chol	0.733 Chol	0.704 Chol
30	0.689 Chol	0.684 Chol	0.694 Chol	0.733 Chol	0.704 Chol
31	0.689 Chol	0.689 Chol	0.689 Chol	0.743 Chol	0.704 Chol
32	0.689 Chol	0.689 Chol	0.694 Chol	0.738 Chol	0.704 Chol
33	0.694 Chol	0.684 Chol	0.694 Chol	0.738 Chol	0.704 Chol
34	0.694 Chol	0.684 Chol	0.694 Chol	0.733 Chol	0.704 Chol
35	0.699 Chol	0.684 Chol	0.694 Chol	0.733 Chol	0.704 Chol
36	0.699 Chol	0.684 Chol	0.694 Chol	0.738 Chol	0.704 Chol
37	0.699 Chol	0.684 Chol	0.694 Chol	0.728 Chol	0.704 Chol
38	0.679 Chol	0.689 Chol	0.694 Chol	0.733 Chol	0.704 Chol
39	0.694 Chol	0.684 Chol	0.694 Chol	0.728 Chol	0.704 Chol
40	0.694 Chol	0.684 Chol	0.694 Chol	0.728 Chol	0.704 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: L - SL
b	Usia	: 50 Tahun
c	Cholesterol	: 256 mg/dl
d	Glukosa	: 126 mg/dl
e	Pengukuran	; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.226 Gluco	3.226 Gluco	3.221 Gluco	3.231 Gluco	3.221 Gluco
2	1.818 Gluco	1.818 Gluco	1.813 Gluco	1.823 Gluco	1.808 Gluco
3	1.153 Gluco	1.153 Gluco	1.149 Gluco	1.163 Gluco	1.144 Gluco
4	0.875 Gluco	0.880 Gluco	0.870 Gluco	0.890 Gluco	0.870 Gluco
5	0.762 Gluco	0.767 Gluco	0.758 Gluco	0.777 Gluco	0.762 Gluco
6	0.718 Gluco	0.718 Gluco	0.714 Gluco	0.728 Gluco	0.714 Gluco
7	0.704 Gluco	0.699 Gluco	0.694 Gluco	0.709 Gluco	0.704 Gluco
8	0.694 Gluco	0.694 Gluco	0.689 Gluco	0.699 Gluco	0.689 Gluco
9	0.689 Gluco	0.689 Gluco	0.694 Gluco	0.694 Gluco	0.684 Gluco
10	0.689 Gluco	0.689 Gluco	0.684 Gluco	0.694 Gluco	0.684 Gluco
11	0.689 Gluco	0.689 Gluco	0.684 Gluco	0.694 Gluco	0.684 Gluco
12	0.689 Gluco	0.689 Gluco	0.684 Gluco	0.694 Gluco	0.684 Gluco
13	0.684 Gluco	0.689 Gluco	0.689 Gluco	0.689 Gluco	0.684 Gluco
14	0.684 Gluco	0.684 Gluco	0.689 Gluco	0.689 Gluco	0.684 Gluco
15	0.689 Gluco	0.684 Gluco	0.689 Gluco	0.694 Gluco	0.684 Gluco
16	0.689 Gluco	0.674 Gluco	0.689 Gluco	0.689 Gluco	0.684 Gluco
17	0.689 Gluco	0.670 Gluco	0.684 Gluco	0.689 Gluco	0.689 Gluco
18	0.665 Gluco	0.674 Gluco	0.684 Gluco	0.684 Gluco	0.679 Gluco
19	0.660 Gluco	0.674 Gluco	0.684 Gluco	0.689 Gluco	0.679 Gluco
20	0.660 Gluco	0.674 Gluco	0.684 Gluco	0.689 Gluco	0.679 Gluco
21	0.635 Chol	0.635 Chol	0.650 Chol	0.640 Chol	0.640 Chol
22	0.630 Chol	0.635 Chol	0.645 Chol	0.635 Chol	0.635 Chol
23	0.630 Chol	0.635 Chol	0.645 Chol	0.635 Chol	0.640 Chol
24	0.630 Chol	0.635 Chol	0.645 Chol	0.635 Chol	0.635 Chol
25	0.630 Chol	0.630 Chol	0.645 Chol	0.630 Chol	0.635 Chol
26	0.630 Chol	0.635 Chol	0.645 Chol	0.640 Chol	0.635 Chol
27	0.630 Chol	0.635 Chol	0.645 Chol	0.635 Chol	0.635 Chol
28	0.650 Chol	0.640 Chol	0.650 Chol	0.635 Chol	0.635 Chol
29	0.650 Chol	0.635 Chol	0.650 Chol	0.635 Chol	0.635 Chol
30	0.655 Chol	0.640 Chol	0.645 Chol	0.635 Chol	0.635 Chol
31	0.655 Chol	0.635 Chol	0.645 Chol	0.635 Chol	0.640 Chol
32	0.655 Chol	0.635 Chol	0.645 Chol	0.635 Chol	0.635 Chol
33	0.655 Chol	0.635 Chol	0.645 Chol	0.630 Chol	0.640 Chol
34	0.660 Chol	0.635 Chol	0.645 Chol	0.630 Chol	0.635 Chol
35	0.655 Chol	0.635 Chol	0.645 Chol	0.630 Chol	0.635 Chol
36	0.655 Chol	0.640 Chol	0.655 Chol	0.630 Chol	0.635 Chol
37	0.660 Chol	0.635 Chol	0.650 Chol	0.630 Chol	0.635 Chol
38	0.635 Chol	0.635 Chol	0.660 Chol	0.640 Chol	0.635 Chol
39	0.630 Chol	0.635 Chol	0.655 Chol	0.630 Chol	0.635 Chol
40	0.630 Chol	0.635 Chol	0.645 Chol	0.630 Chol	0.635 Chol

Data Pengukuran Cholesterol Dan Glukosa Invasive Dan Output Sensor NIR

a	Nama	: P - RN
b	Usia	: 50 Tahun
c	Cholesterol	: 216 mg/dl
d	Glukosa	: 89 mg/dl
e	Pengukuran	; 18 Juli 2021

No	X1 (volt)	X2(volt)	X3 (volt)	X4 (volt)	X5 (volt)
1	3.187 Gluco	3.192 Gluco	3.192 Gluco	3.177 Gluco	3.177 Gluco
2	1.804 Gluco	1.823 Gluco	3.206 Gluco	1.794 Gluco	1.794 Gluco
3	1.109 Gluco	1.124 Gluco	1.828 Gluco	1.100 Gluco	1.100 Gluco
4	0.811 Gluco	0.826 Gluco	1.139 Gluco	0.802 Gluco	0.802 Gluco
5	0.689 Gluco	0.714 Gluco	0.841 Gluco	0.684 Gluco	0.684 Gluco
6	0.645 Gluco	0.655 Gluco	0.718 Gluco	0.630 Gluco	0.630 Gluco
7	0.621 Gluco	0.635 Gluco	0.674 Gluco	0.626 Gluco	0.626 Gluco
8	0.611 Gluco	0.630 Gluco	0.655 Gluco	0.601 Gluco	0.601 Gluco
9	0.611 Gluco	0.626 Gluco	0.665 Gluco	0.596 Gluco	0.596 Gluco
10	0.606 Gluco	0.626 Gluco	0.655 Gluco	0.596 Gluco	0.596 Gluco
11	0.606 Gluco	0.626 Gluco	0.650 Gluco	0.596 Gluco	0.596 Gluco
12	0.606 Gluco	0.635 Gluco	0.655 Gluco	0.596 Gluco	0.596 Gluco
13	0.606 Gluco	0.626 Gluco	0.660 Gluco	0.596 Gluco	0.596 Gluco
14	0.606 Gluco	0.621 Gluco	0.660 Gluco	0.596 Gluco	0.596 Gluco
15	0.606 Gluco	0.626 Gluco	0.679 Gluco	0.596 Gluco	0.596 Gluco
16	0.606 Gluco	0.626 Gluco	0.723 Gluco	0.596 Gluco	0.596 Gluco
17	0.606 Gluco	0.626 Gluco	0.714 Gluco	0.596 Gluco	0.596 Gluco
18	0.606 Gluco	0.626 Gluco	0.748 Gluco	0.596 Gluco	0.596 Gluco
19	0.621 Gluco	0.626 Gluco	0.694 Gluco	0.596 Gluco	0.596 Gluco
20	0.567 Gluco	0.577 Gluco	0.582 Gluco	0.582 Gluco	0.582 Gluco
21	0.587 Chol	0.611 Chol	hasil:541.86	0.577 Chol	0.577 Chol
22	0.591 Chol	0.611 Chol	0.621 Chol	0.577 Chol	0.577 Chol
23	0.596 Chol	0.616 Chol	0.621 Chol	0.582 Chol	0.582 Chol
24	0.596 Chol	0.616 Chol	0.621 Chol	0.577 Chol	0.577 Chol
25	0.596 Chol	0.626 Chol	0.621 Chol	0.577 Chol	0.577 Chol
26	0.596 Chol	0.621 Chol	0.621 Chol	0.577 Chol	0.577 Chol
27	0.601 Chol	0.621 Chol	0.621 Chol	0.577 Chol	0.577 Chol
28	0.601 Chol	0.621 Chol	0.630 Chol	0.577 Chol	0.577 Chol
29	0.616 Chol	0.626 Chol	0.621 Chol	0.577 Chol	0.577 Chol
30	0.601 Chol	0.626 Chol	0.621 Chol	0.582 Chol	0.582 Chol
31	0.601 Chol	0.626 Chol	0.626 Chol	0.577 Chol	0.577 Chol
32	0.606 Chol	0.630 Chol	0.621 Chol	0.577 Chol	0.577 Chol
33	0.601 Chol	0.626 Chol	0.621 Chol	0.577 Chol	0.577 Chol
34	0.601 Chol	0.630 Chol	0.621 Chol	0.577 Chol	0.577 Chol
35	0.611 Chol	0.630 Chol	0.621 Chol	0.577 Chol	0.577 Chol
36	0.601 Chol	0.626 Chol	0.616 Chol	0.582 Chol	0.582 Chol
37	0.606 Chol	0.630 Chol	0.616 Chol	0.577 Chol	0.577 Chol
38	0.601 Chol	0.626 Chol	0.616 Chol	0.577 Chol	0.577 Chol
39	0.606 Chol	0.626 Chol	0.616 Chol	0.577 Chol	0.577 Chol
40	0.616 Chol	0.626 Chol	0.616 Chol	0.572 Chol	0.572 Chol

TABEL 1. Data pengukuran Kolesterol invasive dengan tengangan output sensor NIR

No	Partisipan	Cholesterol Invasive (mg/dl)	Tegangan output sensor (volt)					
		Y	X_1	X_2	X_3	X_4	X_5	X_r
1	L-ZF	220	1.27	1.24	1.14	1.14	1.15	1.188
2	P - SW	222	0.9	0.89	0.89	0.89	0.88	0.89
3	L - SY	231	0.87	0.87	0.87	0.87	0.88	0.872
4	L - UM	235	0.77	0.78	0.77	0.78	0.8	0.78
5	P - RY	245	0.76	0.76	0.75	0.74	0.75	0.752
6	L - JM	210	0.74	0.75	0.76	0.76	0.76	0.754
7	L-YS	129	1.12	1.24	1.19	1.19	1.12	1.172
8	L-ZF	198	0.9	0.86	0.87	0.87	0.86	0.872
9	L-RR	209	0.81	0.81	0.81	0.83	0.84	0.82
10	P-IR	230	0.82	0.81	0.81	0.81	0.81	0.812
11	L-MC	244	1.07	1.07	1.05	1.08	1.05	1.064
12	L-LF	259	0.55	0.57	0.63	0.62	0.63	0.6
13	P-SD	247	0.74	0.73	0.72	0.73	0.73	0.73
14	L-ML	275	0.7	0.71	0.89	0.96	0.98	0.848
15	P-HS	234	0.77	0.8	0.99	0.98	0.98	0.904
16	L-MD	189	0.96	0.93	0.93	0.94	0.93	0.938
17	L-SL	256	0.64	0.64	0.65	0.63	0.64	0.64
18	P-ID	256	0.7	0.7	0.7	0.7	0.7	0.7
19	P-ST	236	0.68	0.59	0.58	0.57	0.59	0.602
20	L-SM	145	0.58	0.58	0.59	0.6	0.6	0.59
21	P-RS	216	0.58	0.59	0.59	0.58	0.6	0.588
22	P-KM	280	0.73	0.73	0.73	0.79	0.83	0.762
23	P-JD	293	0.65	0.65	0.65	0.65	0.74	0.668
24	P-RN	256	0.7	0.7	0.7	0.7	0.7	0.7
25	P-MY	173	0.6	0.59	0.61	0.64	0.65	0.618
26	P-NS	226	0.55	0.61	0.63	0.63	0.62	0.608
27	P-MN	150	0.6	0.6	0.6	0.6	0.6	0.6
28	L-AD	153	0.65	0.66	0.66	0.69	0.71	0.674
29	P -RSp	148	0.69	0.68	0.69	0.73	0.7	0.698
30	L- MS	253	0.73	0.73	0.75	0.75	0.75	0.742
31	L - LF	256	0.73	0.73	0.72	0.71	0.71	0.72
32	P - HS	188	0.7	0.7	0.7	0.7	0.7	0.7

TABEL 2: Data pengukuran Glukosa invasive dengan tengangan output sensor NIR

No	Partisipan	Glucose Invasive (mg/dl)	Tegangan output sensor (volt)					
		Y	X_1	X_2	X_3	X_4	X_5	X_r
1	L-ZF	100	1.26	1.23	1.12	1.14	1.13	1.176
2	P-SW	96	0.89	0.88	0.88	0.88	0.87	0.88
3	L- SY	84	0.87	0.87	0.87	0.87	0.87	0.87
4	L-UU	104	0.74	0.78	0.77	0.77	0.79	0.77
5	P-RY	116	0.79	0.78	0.77	0.76	0.76	0.772
6	L-JM	95	0.76	0.77	0.79	0.78	0.78	0.776
7	L-YS	108	1.22	0.95	1.18	1.18	1.16	1.138
8	L-ZK	91	0.91	0.91	0.91	0.91	0.91	0.91
9	L-RR	112	0.84	0.84	0.85	0.86	0.87	0.852
10	P-ID	89	0.84	0.82	0.82	0.82	0.82	0.824
11	L-MC	177	1.1	1.09	1.11	1.11	1.08	1.098
12	L-LF	336	0.59	0.62	0.65	0.69	0.68	0.646
13	P-SD	93	0.8	0.78	0.77	0.77	0.77	0.778
14	L-ML	292	0.72	0.72	1.02	0.99	1.03	0.896
15	P-HS	109	1.02	0.83	1.02	1.03	1.02	0.984
16	L-MD	190	1.01	0.98	0.97	0.98	0.99	0.986
17	L-SL	126	0.68	0.68	0.69	0.69	0.68	0.684
18	P-ND	76	0.76	0.72	0.72	0.72	0.72	0.728
19	P-ST	92	0.64	0.64	0.6	0.59	0.6	0.614
20	L-SM	126	0.57	0.58	0.58	0.58	0.6	0.582
21	P-RN	89	0.67	0.64	0.64	0.64	0.64	0.646
22	P-KS	88	0.75	0.76	0.76	0.82	0.83	0.784
23	P-JD	104	0.67	0.65	0.66	0.67	0.67	0.664
24	P-RT	86	0.7	0.71	0.71	0.71	0.71	0.708
25	P-MY	86	0.62	0.62	0.63	0.65	0.71	0.646
26	P-NS	107	0.61	0.64	0.65	0.65	0.64	0.638
27	P-MN	116	0.63	0.62	0.63	0.65	0.65	0.636
28	L-AD	104	0.69	0.69	0.69	0.77	0.73	0.714
29	P-RS	110	0.72	0.71	0.72	0.76	0.8	0.742
30	L-MH	111	0.74	0.75	0.75	0.76	0.77	0.754
31	L-LF	398	0.75	0.75	0.75	0.74	0.73	0.744
32	P-HS	128	0.73	0.73	0.73	0.73	0.72	0.728

LAMPIRAN 3

Script Pelatihan citra

```
clc; clear; close all; warning off all;

% menetapkan nama folder
nama_folder = 'Data Latih';
% membaca nama file yg berekstensi .jpg
nama_file = dir(fullfile(nama_folder,'*.jpg'));
% membaca jumlah file
jumlah_file = numel(nama_file);
% menginisialisasi variabel data_latih
data_latih = zeros(jumlah_file,4);
% melakukan pengolahan terhadap seluruh file
for k = 1:jumlah_file
    % membaca citra rgb
    Img =
imread(fullfile(nama_folder,nama_file(k).name));
    % mengkonversi citra rgb menjadi citra
grayscale
    Img_gray = rgb2gray(Img);
    % melakukan pre-processing intensity
adjustment
    Img_gray = imadjust(Img_gray);
    % menyusun matriks kookurensi
    pixel_dist = 1;
    GLCM = graycomatrix(Img_gray,'Offset',...
        [0 pixel_dist; -pixel_dist pixel_dist;...
        -pixel_dist 0; -pixel_dist -pixel_dist]);
    % mengekstrak fitur GLCM
    stats =
graycoprops(GLCM,{'contrast','correlation','energ
y','homogeneity'});
    Contrast = mean(stats.Contrast);
    Correlation = mean(stats.Correlation);
    Energy = mean(stats.Energy);
    Homogeneity = mean(stats.Homogeneity);
    % menyusun variabel data_latih
    data_latih(k,1) = Contrast;
    data_latih(k,2) = Correlation;
    data_latih(k,3) = Energy;
    data_latih(k,4) = Homogeneity;
end

% membaca data dari file excel
data_excel = xlsread('Book1.xlsx',1,'E5:F48');
```

```
%%% Kolesterol
% membaca data kolesterol
data_cholesterol = data_excel(:,1);

% menyusun variabel target_latih
training_target = [];
for k = 1:numel(data_cholesterol)
   training_target =
[training_target;data_cholesterol(k)*ones(4,1)];
end

% melakukan operasi transpose thd data_latih dan
target_latih
data_latih = data_latih';
training_target = training_target';

% membentuk arsitektur jaringan
jaringan = newff(minmax(data_latih),[60 1],...
    {'logsig','purelin'},'trainlm');
% melakukan pelatihan jaringan
rng('default')
jaringan =
train(jaringan,data_latih,training_target);
% membaca nilai keluaran jaringan
nilai_keluaran = round(sim(jaringan,data_latih));

% plot regression
figure
plotregression(nilai_keluaran,training_target,'ch
olesterol')

% menyimpan arsitektur jaringan kolesterol
save jaringan_cholesterol jaringan

%%% Glukosa
% membaca data glukosa
data_cholesterol = data_excel(:,2);

% menyusun variabel target_latih
training_target = [];
for k = 1:numel(data_cholesterol)
    training_target =
[training_target;data_cholesterol(k)*ones(4,1)];
end

% melakukan operasi transpose thd target_latih
```

```
training_target = training_target';

% membentuk arsitektur jaringan
jaringan = newff(minmax(data_latih),[60 1],...
    {'logsig','purelin'},'trainlm');
% melakukan pelatihan jaringan
rng('default')
jaringan =
train(jaringan,data_latih,training_target);
% membaca nilai keluaran jaringan
nilai_keluaran = round(sim(jaringan,data_latih));

% plot regression
figure
plotregression(nilai_keluaran,training_target,'Gl
ucose')

% menyimpan arsitektur jaringan glukosa
save jaringan_glucose jaringan
```

LAMPIRAN 4

Script Cropping citra

```
clc; clear; close all; warning off all;

[nama_file, nama_folder] = uigetfile('*.jpg');

if ~isequal(nama_file,0)
    Img =
imread(fullfile(nama_folder,nama_file));
    figure, imshow(Img)

    h = drawrectangle('Position',[999, 999, 999,
999],...
        'FixedAspectRatio',1);
    pos = customWait(h);

    Img_crop = imcrop(Img,pos);

    [nama_file, nama_folder] =
uiputfile('*.jpg');

imwrite(Img_crop,fullfile(nama_folder,nama_file))

end

close all;
```

LAMPIRAN 5

Script Pengujian Data Citra

```
function varargout = program_gui(varargin)
% PROGRAM_GUI MATLAB code for program_gui.fig
%      PROGRAM_GUI, by itself, creates a new
PROGRAM_GUI or raises the existing
%      singleton*.
%
%      H = PROGRAM_GUI returns the handle to a
new PROGRAM_GUI or the handle to
%      the existing singleton*.
%
%
PROGRAM_GUI('CALLBACK',hObject,eventData,handles,
...) calls the local
%      function named CALLBACK in PROGRAM_GUI.M
with the given input arguments.
%
%      PROGRAM_GUI('Property','Value',...)
creates a new PROGRAM_GUI or raises the
%      existing singleton*.  Starting from the
left, property value pairs are
%      applied to the GUI before
program_gui_OpeningFcn gets called.  An
%      unrecognized property name or invalid
value makes property application
%      stop.  All inputs are passed to
program_gui_OpeningFcn via varargin.
%
%      *See GUI Options on GUIDE's Tools menu.
Choose "GUI allows only one
%      instance to run (singleton)".
%
% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to
help program_gui

% Last Modified by GUIDE v2.5 03-Feb-2022
13:51:17

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename,
...
```

```
    'gui_Singleton',  gui_Singleton, ...
    'gui_OpeningFcn', @program_gui_OpeningFcn,
...
    'gui_OutputFcn',  @program_gui_OutputFcn, ...
    'gui_LayoutFcn',  [] , ...
    'gui_Callback',   []);
if nargin && ischar(varargin{1})
    gui_State.gui_Callback =
str2func(varargin{1});
end

if nargout
    [varargout{1:nargout}] =
gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT
% --- Executes just before program_gui is made
visible.
function program_gui_OpeningFcn(hObject,
eventdata, handles, varargin)
% This function has no output args, see
OutputFcn.
% hObject    handle to figure
% eventdata  reserved - to be defined in a future
version of MATLAB
% handles    structure with handles and user data
(see GUIDATA)
% varargin   command line arguments to
program_gui (see VARARGIN)
% Choose default command line output for
program_gui
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);
movegui(hObject,'center');

% UIWAIT makes program_gui wait for user response
(see UIRESUME)
% uiwait(handles.figure1);

% --- Outputs from this function are returned to
the command line.
```

```
function varargout =
program_gui_OutputFcn(hObject, eventdata,
handles)
% varargout  cell array for returning output args
(see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future
version of MATLAB
% handles    structure with handles and user data
(see GUIDATA)

% Get default command line output from handles
structure
varargout{1} = handles.output;
function edit1_Callback(hObject, eventdata,
handles)
% hObject    handle to edit1 (see GCBO)
% eventdata  reserved - to be defined in a future
version of MATLAB
% handles    structure with handles and user data
(see GUIDATA)
% Hints: get(hObject,'String') returns contents
of edit1 as text
%        str2double(get(hObject,'String'))
returns contents of edit1 as a double
% --- Executes during object creation, after
setting all properties.
function edit1_CreateFcn(hObject, eventdata,
handles)
% hObject    handle to edit1 (see GCBO)
% eventdata  reserved - to be defined in a future
version of MATLAB
% handles    empty - handles not created until
after all CreateFcns called

% Hint: edit controls usually have a white
background on Windows.
%       See ISPC and COMPUTER.
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function edit2_Callback(hObject, eventdata,
handles)
% hObject    handle to edit2 (see GCBO)
```

```
% eventdata  reserved - to be defined in a future
version of MATLAB
% handles    structure with handles and user data
(see GUIDATA)
% Hints: get(hObject,'String') returns contents
of edit2 as text
%        str2double(get(hObject,'String'))
returns contents of edit2 as a double

% --- Executes during object creation, after
setting all properties.
function edit2_CreateFcn(hObject, eventdata,
handles)
% hObject    handle to edit2 (see GCBO)
% eventdata  reserved - to be defined in a future
version of MATLAB
% handles    empty - handles not created until
after all CreateFcns called

% Hint: edit controls usually have a white
background on Windows.
%       See ISPC and COMPUTER.
if ispc &&
isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on button press in pushbutton1.
function pushbutton1_Callback(hObject, eventdata,
handles)
% hObject    handle to pushbutton1 (see GCBO)
% eventdata  reserved - to be defined in a future
version of MATLAB
% handles    structure with handles and user data
(see GUIDATA)

% menampilkan menu "browse file"
[nama_file, nama_folder] = uigetfile('*.jpg');
% jika ada nama file yg dipilih maka akan
mengeksekusi perintah di bawah
% ini
if ~isequal(nama_file,0)
    % mereset gui
    axes(handles.axes2)
    cla reset
    set(gca,'XTick',[])
```

```
    set(gca,'YTick',[])
    set(handles.edit1,'String',[])
    set(handles.edit2,'String',[])
    set(handles.uitable1,'data',[],'RowName',{''
'' '' ''})
    % membaca citra rgb
    Img =
imread(fullfile(nama_folder,nama_file));
    % menampilkan citra pada axes
    axes(handles.axes1)
    imshow(Img)
    title('Citra Asli')
    % menampilkan nama file pada text
    set(handles.text7,'String',nama_file)
    % menyimpan variabel Img pada lokasi handles
supaya bisa dipanggil oleh
    % pushbutton yg lain
    handles.Img = Img;
    guidata(hObject, handles)
    % mereset gui
    set(handles.pushbutton2,'Enable','on')
    set(handles.pushbutton3,'Enable','off')
end

% --- Executes on button press in pushbutton2.
function pushbutton2_Callback(hObject, eventdata,
handles)
% hObject    handle to pushbutton2 (see GCBO)
% eventdata  reserved - to be defined in a future
version of MATLAB
% handles    structure with handles and user data
(see GUIDATA)
% mereset gui
set(handles.edit1,'String',[])
set(handles.edit2,'String',[])
set(handles.uitable1,'data',[],'RowName',{'' ''
'' ''})
% memanggil variabel Img yg ada di lokasi handles
Img = handles.Img;
% melakukan cropping
axes(handles.axes1)
h = drawrectangle('Position',[999, 999, 999,
999],...
    'FixedAspectRatio',1);
pos = customWait(h);
Img_crop = imcrop(Img,pos);
% menampilkan citra hasil cropping pada axes
```

```
axes(handles.axes2)
imshow(Img_crop)
title('Hasil Cropping')
% menyimpan variabel Img_crop pada lokasi handles
supaya bisa dipanggil
% oleh pushbutton yg lain
handles.Img_crop = Img_crop;
guidata(hObject, handles)
% mereset gui
set(handles.pushbutton3,'Enable','on')
% --- Executes on button press in pushbutton3.
function pushbutton3_Callback(hObject, eventdata,
handles)
% hObject    handle to pushbutton3 (see GCBO)
% eventdata  reserved - to be defined in a future
version of MATLAB
% handles    structure with handles and user data
(see GUIDATA)
% memanggil variabel Img_crop yg ada di lokasi
handles
Img_crop = handles.Img_crop;
% mengkonversi citra rgb menjadi citra grayscale
Img_gray = rgb2gray(Img_crop);
% melakukan pre-processing intensity adjustment
Img_gray = imadjust(Img_gray);
% menyusun matriks kookurensi
pixel_dist = 1;
GLCM = graycomatrix(Img_gray,'Offset',...
    [0 pixel_dist; -pixel_dist pixel_dist;...
    -pixel_dist 0; -pixel_dist -pixel_dist]);
% mengekstrak fitur GLCM
stats =
graycoprops(GLCM,{'contrast','correlation','energ
y','homogeneity'});
Contrast = mean(stats.Contrast);
Correlation = mean(stats.Correlation);
Energy = mean(stats.Energy);
Homogeneity = mean(stats.Homogeneity);
% menampilkan fitur GLCM pada tabel
fitur_GLCM = cell(4,2);
fitur_GLCM{1,1} = 'Contrast';
fitur_GLCM{2,1} = 'Correlation';
fitur_GLCM{3,1} = 'Energy';
fitur_GLCM{4,1} = 'Homogeneity';
fitur_GLCM{1,2} = num2str(Contrast);
fitur_GLCM{2,2} = num2str(Correlation);
fitur_GLCM{3,2} = num2str(Energy);
```

```
fitur_GLCM{4,2} = num2str(Homogeneity);
set(handles.uitable1,'Data',fitur_GLCM,'RowName',
1:4)
% menyusun data_uji
data_uji =
[Contrast;Correlation;Energy;Homogeneity];
% memanggil jaringan hasil pelatihan
load jaringan_kolesterol
% membaca nilai keluaran hasil regresi
nilai_keluaran = sim(jaringan,data_uji);
% menampilkan nilai keluaran pada edit text
set(handles.edit1,'String',round(nilai_keluaran))
% memanggil jaringan hasil pelatihan
load jaringan_glukosa
% membaca nilai keluaran hasil regresi
nilai_keluaran = sim(jaringan,data_uji);
% menampilkan nilai keluaran pada edit text
set(handles.edit2,'String',round(nilai_keluaran))

% --- Executes on button press in pushbutton4.
function pushbutton4_Callback(hObject, eventdata,
handles)
% hObject    handle to pushbutton4 (see GCBO)
% eventdata  reserved - to be defined in a future
version of MATLAB
% handles    structure with handles and user data
(see GUIDATA)
% mereset gui
axes(handles.axes1)
cla reset
set(gca,'XTick',[])
set(gca,'YTick',[])
axes(handles.axes2)
cla reset
set(gca,'XTick',[])
set(gca,'YTick',[])
set(handles.edit1,'String',[])
set(handles.edit2,'String',[])
set(handles.text7,'String',[])
set(handles.uitable1,'data',[],'RowName',{'' ''
'' ''})
set(handles.pushbutton2,'Enable','off')
set(handles.pushbutton3,'Enable','off')
```

LAMPIRAN 6

Script C-EGA Cholesterol

```
function [total, percentage] = clarke(y,yp)
% CLARKE    Performs Clarke Error Grid Analysis
%
% The Clarke error grid approach is used to
assess the clinical
% significance of differences between the glucose
measurement technique
% under test and the venous blood glucose
reference measurements. The
% method uses a Cartesian diagram, in which the
values predicted by the
% technique under test are displayed on the y-
axis, whereas the values
% received from the reference method are
displayed on the x-axis. The
% diagonal represents the perfect agreement
between the two, whereas the
% points below and above the line indicate,
respectively, overestimation
% and underestimation of the actual values. Zone
A (acceptable) represents
% the glucose values that deviate from the
reference values by ±20% or are
% in the hypoglycemic range (<70 mg/dl), when the
reference is also within
% the hypoglycemic range. The values within this
range are clinically exact
% and are thus characterized by correct clinical
treatment. Zone B (benign
% errors) is located above and below zone A; this
zone represents those
% values that deviate from the reference values,
which are incremented by
% 20%. The values that fall within zones A and B
are clinically acceptable,
% whereas the values included in areas C-E are
potentially dangerous, and
% there is a possibility of making clinically
significant mistakes. [1-4]
%
% SYNTAX:
%
% [total, percentage] = clarke(y,yp)
```

```
%
% INPUTS:
% y             Reference values (mg/dl)
% yp            Predicted/estimtated values
(mg/dl)
%
% OUTPUTS:
% total         Total points per zone:
%               total(1) = zone A,
%               total(2) = zone B, and so on
% percentage    Percentage of data which fell in
certain region:
%               percentage(1) = zone A,
%               percentage(2) = zone B, and so
on.
%
% EXAMPLE:      load example_data.mat
%               [tot, per] = clarke(y,yp)
%
% References:
% [1]   A. Maran et al. "Continuous Subcutaneous
Glucose Monitoring in Diabetic
%       Patients" Diabetes Care, Volume 25,
Number 2, February 2002
% [2]   B.P. Kovatchev et al. "Evaluating the
Accuracy of Continuous Glucose-
%       Monitoring Sensors" Diabetes Care, Volume
27, Number 8, August 2004
% [3]   E. Guevara and F. J. Gonzalez,
“Prediction of Glucose Concentration by
%       Impedance Phase Measurements,” in MEDICAL
PHYSICS: Tenth Mexican
%       Symposium on Medical Physics, Mexico City
(Mexico), 2008, vol. 1032, pp.
%       259-261.
% [4]   E. Guevara and F. J. Gonzalez, “Joint
optical-electrical technique for
%       noninvasive glucose monitoring,” REVISTA
MEXICANA DE FISICA, vol. 56,
%       no. 5, pp. 430-434, Sep. 2010.
%
% © Edgar Guevara Codina
% codina@REMOVETHIScactus.iico.uaslp.mx
% File Version 1.2
% March 29 2013
%
```

```
% Ver. 1.2 Statistics verified, fixed some errors
in the display; thanks to Tim
% Ruchti from Hospira Inc. for the corrections
% Ver. 1.1 corrected upper B-C boundary, lower B-
C boundary slope ok; thanks to
% Steven Keith from BD Technologies for the
corrections!
%
% MATLAB ver. 7.10.0.499 (R2010a)
% ------------------------------------------------
------------------------------

% Error checking
if nargin == 0
 error('clarke:Inputs','there are not input.')
end
if length(yp) ~= length(y)
    error('clarke:Inputs','Vectors y and yp must
be the same length.')
end
if (max(y) > 380) || (max(yp) > 380) || (min(y) <
0) || (min(yp) < 0)
    error('clarke:Inputs','Vectors y and yp are
not in the physiological range of cholesetrol
(<500mg/dl).')
end
% -------------------------- Print figure flag --
------------------------------
PRINT_FIGURE = true;
% ------------------------- Determine data length
------------------------------
n = length(y);
% ------------------------- Plot Clarke's Error
Grid ---------------------------
h = figure;
plot(y,yp,'ko','MarkerSize',3,'MarkerFaceColor','
b','MarkerEdgeColor','b');
xlabel('Reference Blood Cholesterol [mg/dl]');
ylabel ('Predicted Blood Cholesterol [mg/dl]');
title('Clarke''s Error Grid Analysis');
set(gca,'XLim',[0 500]);
set(gca,'YLim',[0 500]);
axis square
hold on
plot([0 500],[0 500],'k:')                    %
Theoretical 45° regression line
plot([0 240/2],[140 140],'r-')
```

```
% plot([175/3 320],[70 400],'k-')
plot([240/2 500/1.110],[140 500],'r-')          %
replace 320 with 400/1.2 because 100*(400 -
400/1.2)/(400/1.2) =  20% error
plot([120 120],[140 500],'k-')
plot([0 120],[250 250],'k-')
plot([120 350],[250 500],'k-')                  %
Corrected upper B-C boundary
% plot([70 70],[0 175/3],'k-')
plot([120 120],[0 100],'r-')                      %
replace 175.3 with 56 because 100*abs(56-70)/70)
= 20% error
% plot([70 400],[175/3 320],'k-')
plot([120 500],[100 450],'r-')
plot([240 240],[0 130],'k-')
plot([240 500],[130 130],'k-')
plot([300 300],[130 240],'k-')
plot([300 500],[240 240],'k-')
plot([120 240],[0 130],'k-')                     %
Lower B-C boundary slope OK
text(30,20,'A','FontSize',12);
text(30,170,'D','FontSize',12);
text(30,450,'E','FontSize',12);
text(150,450,'C','FontSize',12);
text(160,30,'C','FontSize',12);
text(450,20,'E','FontSize',12);
text(450,170,'D','FontSize',12);
text(450,350,'B','FontSize',12);
text(310,450,'B','FontSize',12);
set(h, 'color', 'white');                       %
sets the color to white
% Specify window units
set(h, 'units', 'inches')
% Change figure and paper size (Fixed to 3x3 in)
set(h, 'Position', [0.1 0.1 3 3])
set(h, 'PaperPosition', [0.1 0.1 3 3])
if PRINT_FIGURE
    % Saves plot as a Enhanced MetaFile
    print(h,'-dmeta','Clarke_EGA');
    % Saves plot as PNG at 300 dpi
    print(h, '-dpng', 'Clarke_EGA', '-r500');
end
total = zeros(5,1);                             %
Initializes output
% ------------------------------ Statistics ----
------------------------------
for i=1:n,
```

```
    if (yp(i) <= 130 && y(i) <= 130) || (yp(i) <=
1.155*y(i) && yp(i) >= 0.8*y(i))
        total(1) = total(1) + 1;            %
Zone A
    else
        if ( (y(i) >= 240) && (yp(i) <= 130) ) ||
( (y(i) <= 130) && yp(i) >= 240 )
            total(5) = total(5) + 1;        %
Zone E
        else
            if ((y(i) >= 130 && y(i) <= 350) &&
(yp(i) >= y(i) + 110) ) || ((y(i) >= 130 && y(i)
<= 240)&& (yp(i) <= (6/5)*y(i) - 242))
                total(3) = total(3) + 1;    %
Zone C
            else
                if ((y(i) >= 300) && ((yp(i) >=
130) && (yp(i) <= 240))) || (y(i) <= 240/3 &&
(yp(i) <= 240) && (yp(i) >= 130)) || ((y(i) >=
240/3 && y(i) <= 130) && (yp(i) >= (6/5)*y(i)))
                    total(4) = total(4) + 1;%
Zone D
                else
                    total(2) = total(2) + 1;%
Zone B
                end                         % End
of 4th if
            end                             % End
of 3rd if
        end                                 % End
of 2nd if
    end                                     % End
of 1st if
end                                         % End
of for loop
percentage = (total./n)*100;
% ------------------------------------------------
--------------------------------
% EOF
```

LAMPIRAN 7

Script C-EGA Glucose

```
function [total, percentage] = clarke(y,yp)
% CLARKE    Performs Clarke Error Grid Analysis
%
% The Clarke error grid approach is used to
assess the clinical
% significance of differences between the glucose
measurement technique
% under test and the venous blood glucose
reference measurements. The
% method uses a Cartesian diagram, in which the
values predicted by the
% technique under test are displayed on the y-
axis, whereas the values
% received from the reference method are
displayed on the x-axis. The
% diagonal represents the perfect agreement
between the two, whereas the
% points below and above the line indicate,
respectively, overestimation
% and underestimation of the actual values. Zone
A (acceptable) represents
% the glucose values that deviate from the
reference values by ±20% or are
% in the hypoglycemic range (<70 mg/dl), when the
reference is also within
% the hypoglycemic range. The values within this
range are clinically exact
% and are thus characterized by correct clinical
treatment. Zone B (benign
% errors) is located above and below zone A; this
zone represents those
% values that deviate from the reference values,
which are incremented by
% 20%. The values that fall within zones A and B
are clinically acceptable,
% whereas the values included in areas C-E are
potentially dangerous, and
% there is a possibility of making clinically
significant mistakes. [1-4]
%
% SYNTAX:
%
% [total, percentage] = clarke(y,yp)
```

```
%
% INPUTS:
% y             Reference values (mg/dl)
% yp            Predicted/estimtated values
(mg/dl)
%
% OUTPUTS:
% total         Total points per zone:
%               total(1) = zone A,
%               total(2) = zone B, and so on
% percentage    Percentage of data which fell in
certain region:
%               percentage(1) = zone A,
%               percentage(2) = zone B, and so
on.
%
% EXAMPLE:      load example_data.mat
%               [tot, per] = clarke(y,yp)
%
% References:
% [1]   A. Maran et al. "Continuous Subcutaneous
Glucose Monitoring in Diabetic
%       Patients" Diabetes Care, Volume 25,
Number 2, February 2002
% [2]   B.P. Kovatchev et al. "Evaluating the
Accuracy of Continuous Glucose-
%       Monitoring Sensors" Diabetes Care, Volume
27, Number 8, August 2004
% [3]   E. Guevara and F. J. Gonzalez,
“Prediction of Glucose Concentration by
%       Impedance Phase Measurements,” in MEDICAL
PHYSICS: Tenth Mexican
%       Symposium on Medical Physics, Mexico City
(Mexico), 2008, vol. 1032, pp.
%       259-261.
% [4]   E. Guevara and F. J. Gonzalez, “Joint
optical-electrical technique for
%       noninvasive glucose monitoring,” REVISTA
MEXICANA DE FISICA, vol. 56,
%       no. 5, pp. 430-434, Sep. 2010.
%
% © Edgar Guevara Codina
% codina@REMOVETHIScactus.iico.uaslp.mx
% File Version 1.2
% March 29 2013
%
```

```
% Ver. 1.2 Statistics verified, fixed some errors
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C boundary slope ok; thanks to
% Steven Keith from BD Technologies for the
corrections!
%
% MATLAB ver. 7.10.0.499 (R2010a)
% ------------------------------------------------
------------------------------

% Error checking
if nargin == 0
 error('clarke:Inputs','there are not input.')
end
if length(yp) ~= length(y)
    error('clarke:Inputs','Vectors y and yp must
be the same length.')
end
if (max(y) > 400) || (max(yp) > 400) || (min(y) <
0) || (min(yp) < 0)
    error('clarke:Inputs','Vectors y and yp are
not in the physiological range of glucose
(<400mg/dl).')
end
% -------------------------- Print figure flag --
------------------------------
PRINT_FIGURE = true;
% ------------------------- Determine data length
------------------------------
n = length(y);
% ------------------------ Plot Clarke's Error
Grid --------------------------
h = figure;
plot(y,yp,'ko','MarkerSize',4,'MarkerFaceColor','
r','MarkerEdgeColor','r');
xlabel('Reference Blood Glucose [mg/dl]');
ylabel ('Predicted Blood Glucose [mg/dl]');
title('Clarke''s Error Grid Analysis');
set(gca,'XLim',[0 400]);
set(gca,'YLim',[0 400]);
axis square
hold on
plot([0 400],[0 400],'b:')                    %
Theoretical 45° regression line
plot([0 175/3],[70 70],'b-')
```

```
% plot([175/3 320],[70 400],'k-')
plot([175/3 400/1.2],[70 400],'b-')          %
replace 320 with 400/1.2 because 100*(400 -
400/1.2)/(400/1.2) =  20% error
plot([70 70],[84 400],'k-')
plot([0 70],[180 180],'k-')
plot([70 290],[180 400],'k-')                %
Corrected upper B-C boundary
% plot([70 70],[0 175/3],'k-')
plot([70 70],[0 56],'b-')                    %
replace 175.3 with 56 because 100*abs(56-70)/70)
= 20% error
% plot([70 400],[175/3 320],'k-')
plot([70 400],[56 320],'b-')
plot([180 180],[0 70],'k-')
plot([180 400],[70 70],'k-')
plot([240 240],[70 180],'k-')
plot([240 400],[180 180],'k-')
plot([130 180],[0 70],'k-')                  %
Lower B-C boundary slope OK
text(30,20,'A','FontSize',12);
text(30,150,'D','FontSize',12);
text(30,380,'E','FontSize',12);
text(150,380,'C','FontSize',12);
text(160,20,'C','FontSize',12);
text(380,20,'E','FontSize',12);
text(380,120,'D','FontSize',12);
text(380,260,'B','FontSize',12);
text(280,380,'B','FontSize',12);
set(h, 'color', 'white');                    %
sets the color to white
% Specify window units
set(h, 'units', 'inches')
% Change figure and paper size (Fixed to 3x3 in)
set(h, 'Position', [0.1 0.1 3 3])
set(h, 'PaperPosition', [0.1 0.1 3 3])
if PRINT_FIGURE
    % Saves plot as a Enhanced MetaFile
    print(h,'-dmeta','Clarke_EGA');
    % Saves plot as PNG at 300 dpi
    print(h, '-dpng', 'Clarke_EGA', '-r500');
end
total = zeros(5,1);                          %
Initializes output
% ------------------------------ Statistics ----
------------------------------
for i=1:n,
```

```
    if (yp(i) <= 70 && y(i) <= 70) || (yp(i) <=
1.2*y(i) && yp(i) >= 0.8*y(i))
        total(1) = total(1) + 1;            %
Zone A
    else
        if ( (y(i) >= 180) && (yp(i) <= 70) ) ||
( (y(i) <= 70) && yp(i) >= 180 )
            total(5) = total(5) + 1;        %
Zone E
        else
            if ((y(i) >= 70 && y(i) <= 290) &&
(yp(i) >= y(i) + 110) ) || ((y(i) >= 130 && y(i)
<= 180)&& (yp(i) <= (7/5)*y(i) - 182))
                total(3) = total(3) + 1;    %
Zone C
            else
                if ((y(i) >= 240) && ((yp(i) >=
70) && (yp(i) <= 180))) || (y(i) <= 175/3 &&
(yp(i) <= 180) && (yp(i) >= 70)) || ((y(i) >=
175/3 && y(i) <= 70) && (yp(i) >= (6/5)*y(i)))
                    total(4) = total(4) + 1;%
Zone D
                else
                    total(2) = total(2) + 1;%
Zone B
                end                         % End
of 4th if
            end                             % End
of 3rd if
        end                                 % End
of 2nd if
    end                                     % End
of 1st if
end                                         % End
of for loop
percentage = (total./n)*100;
% ------------------------------------------------
--------------------------------
% EOF
```

LAMPIRAN 8

PENGUJIAN ALAT DI RSUD SYEKH YUSUF GOWA

PENGUJIAN ALAT UKUR
KOLESTEROL DAN GLUKOSA DARAH NON-INVASIVE

Bahwa pada hari ..Rabu.. tanggal..24.. bulan ..Agustus.., tahun 2022, melakukan pengujian *PROTOTYPE* ALAT UKUR GLUKOSA DAN KOLESTEROL DARAH *NON-INVASIVE* menggunakan sensor optik dengan LED IR 940 nm dan photodiode yang dirancang oleh Usman Umar.

1. Pengujian dilaksanakan di: RSUD Syeh Yusuf Gowa.
2. Nama Dokter: dr. Adistrisna.
   Jabatan : Dokter Muda / Umum.

Paremeter pengujian:

No	Paramater	Sangat Baik	Cukup Baik	Baik	Kurang baik	Tidak Baik
1	Desain alat ukur			✓		
2	Fungsi Alat ukur			✓		
3	Akurasi alat ukur		✓			
4	Cara penggunaan			✓		
5	Kenyaman penggunaan alat	✓				
6	Kecepatan pembacaan			✓		

Saran saran

- Alat yang dibuat masih perlu di tingkatkan kualitasnya dan diproduksi untuk dikomersialkan
- Akurasi pembacaan kadar kolesterol dan glukosa masih harus ditingkatkan agar dapat menjadi referensi dan alat ukur di klinik-klinik rumah sakit
- Desain alat dibuat lebih kecil untuk memudahkan mobilisasi

Makassar, ...2022

Dokter

dr. Adis K

PENGUJIAN ALAT UKUR NON -INVASIVE
GLUKOSA DAN KOLESTEROL DARAH

Tempat Pengujian : RSUD Syekh Yusuf Gowa

Tanggal Pelaksanaan : 24- Agustus 2022

Tabel Hasil Pengujian Prototype Alat Ukur Kadar Kolesterol Glukosa Non-Invasive

No	Nama Partisipan/Pasien	Data Laboratorium		Data Prototype Alat	
		Kolesterol (mg/dl)	Glukosa (mg/dl)	Kolesterol (mg/dl)	Glukosa (mg/dl)
1	dr. Darmawati Jalil. M.kes	265	215	289	237
2	dr. Adit Krisna	232	195	213	188
3	Agus	215	189	235	205
4	Dg. Sugi	176	201	200	188
5	Zulkifli	213	165	230	179

Makassar, 24-08-2022

Dokter

dr. Ady K

Gambar Kegiatan Pengujian Prototype IR-GluchoM untuk deteksi Kolesterol dan glukosa non-invasive

Di RSUD Syekh Yusuf Gowa.

PENGUJIAN ALAT DI RSIA PERTIWI MAKASSAR

PENGUJIAN ALAT UKUR
KOLESTEROL DAN GLUKOSA DARAH NON-INVASIVE

Bahwa pada hari SENIN tanggal 22 bulan AGUSTUS, tahun 2022, melakukan pengujian *PROTOTYPE* ALAT UKUR GLUKOSA DAN KOLESTEROL DARAH *NON-INVASIVE* menggunakan sensor optik dengan LED IR 940 nm dan photodiode yang dirancang oleh Usman Umar.

1. Pengujian dilaksanakan di: RSKD Ibu dan Anak Pertiwi
2. Nama Dokter: dr. NUR RISDIANTY IDRIS
   Jabatan : Dokter Muda

Paremeter pengujian:

No	Paramater	Sangat Baik	Cukup Baik	Baik	Kurang baik	Tidak Baik
1	Desain alat ukur			✓		
2	Fungsi Alat ukur	✓				
3	Akurasi alat ukur			✓		
4	Cara penggunaan	✓				
5	Kenyaman penggunaan alat	✓				
6	Kecepatan pembacaan	✓				

Saran saran

1. Alat yg dibuat jauh lebih baik seandainya dibuat lebih kecil, lebih flexibel untuk dibawa
2. Cara penggunaan sangat simple termasuk kecepatan dalam pembacaan hasil pemeriksaan
3. Nyaman dalam penggunaan alatnya
4. Akurasi dari beberapa pengujian sample (perhapos) mendekati hasil rekasih antara In vasive dan alat non-invasive tdk jauh beda
5. Hasil pengujian lebih cepat diperoleh sehingga penggunaan lebih efektif

Makassar, 22 - 8 - 2022
Dokter

dr. Nur Risdianty Idris

PEMERINTAH PROVINSI SULAWESI SELATAN
DINAS KESEHATAN

PENGUJIAN ALAT UKUR
KOLESTEROL DAN GLUKOSA DARAH NON-INVASIVE

Bahwa pada hari Jum'at tanggal 19 bulan Agustus, tahun 2022, melakukan pengujian *PROTOTYPE* ALAT UKUR GLUKOSA DAN KOLESTEROL DARAH *NON-INVASIVE* menggunakan sensor optik dengan LED IR 940 nm dan photodiode yang dirancang oleh Usman Umar.

1. Pengujian dilaksanakan di:.....
2. Nama Dokter: dr. Rahmiany Syam, Sp. PA
   Jabatan : dokter muda

Paremeter pengujian:

No	Paramater	Sangat Baik	Cukup Baik	Baik	Kurang baik	Tidak Baik
1	Desain alat ukur		✓			
2	Fungsi Alat ukur		✓			
3	Akurasi alat ukur				✓	
4	Cara penggunaan			✓		
5	Kenyaman penggunaan alat	✓				
6	Kecepatan pembacaan	✓				

Saran saran

-Desain alat dibuat lebih minimalis agar mudah dibawa.
- Untuk akurasi pengukuran : cholesterol masih dalam bias sedikit, tetapi untuk gluhosa masih perlu dikoreksi perbedaan nilai hasilnya.
- Cara penggunaan cukup simpel termasuk kecepatan hasil pembacaan dan kenyamanan penggunaannya karena prinsipnya yang non-invasif

Makassar, 19 - 8 - 2022
Dokter

dr. Rahmiany Syam

PEMERINTAH PROVINSI SULAWESI SELATAN
DINAS KESEHATAN

PENGUJIAN ALAT UKUR NON -INVASIVE

GLUKOSA DAN KOLESTEROL DARAH

Tempat Pengujian : RSIA Pertiwi Makassar

Tanggal Pelaksanaan : 19 s.d 22 Agustus 2022

Tabel Hasil Pengujian Prototype Alat Ukur Kadar Kolesterol Glukosa Non-Invasive

No	Nama Partisipan/Pasien	Data Laboratorium		Data Prototype Alat	
		Kolesterol (mg/dl)	Glukosa (mg/dl)	Kolesterol (mg/dl)	Glukosa (mg/dl)
1.	Mustapa. SKM. M.Adm Kes	238	121	243	113
2	Drg. Andi Intan	190	146	215	165.
3	Asmawati	213	97	232	103
4	Murniati	260	160	281	147
5	Indah Pratiwi	244	135	222	118
6	Jumolana	167	84	189	101.

Makassar, 22 - 8 - 2022

Dokter

(Nur Asbianty Idris)

Gambar Kegiatan Pengujian Prototype IR-GluchoM untuk deteksi Kolesterol dan glukosa non-invasive

Di RSIA Pertiwi Makassar

PENGUJIAN ALAT DI PUSKESMAS BAROMBONG MAKASSAR

PENGUJIAN ALAT UKUR
KOLESTEROL DAN GLUKOSA DARAH NON-INVASIVE

Bahwa pada hari Jumat tanggal 19 bulan agustus tahun 2022, melakukan pengujian *PROTOTYPE* ALAT UKUR GLUKOSA DAN KOLESTEROL DARAH *NON-INVASIVE* menggunakan sensor optik dengan LED IR 940 nm dan photodiode yang dirancang oleh Usman Umar.

1. Pengujian dilaksanakan di: Puskesmas Barombong
2. Nama Dokter: dr Andi Ruskayani
   Jabatan ; Dokter Poli Umum

Paremeter pengujian:

No	Paramater	Sangat Baik	Cukup Baik	Baik	Kurang baik	Tidak Baik
1	Desain alat ukur			✓		
2	Fungsi Alat ukur		✓			
3	Akurasi alat ukur	✓				
4	Cara penggunaan		✓			
5	Kenyaman penggunaan alat	✓				
6	Kecepatan pembacaan		✓			

Saran saran

Alat ini bisa dikembangkan agar masyarakat tidak takut dalam melakukan pemeriksaan Gluksosa dan kolesterol.

- Saran :
agar alat ini di desain menjadi lebih simple, tidak terlalu besar

Makassar, 19 agus 2022
Dokter

PEMERINTAH KOTA MAKASSAR
PUSKESMAS BAROMBONG

(dr. Andi Ruskayani Rusman)
NIP. 19900917202203200 5

PENGUJIAN ALAT UKUR NON -INVASIVE

GLUKOSA DAN KOLESTEROL DARAH

Tempat Pengujian : Puskesmas Barombong

Tanggal Pelaksanaan : 19 Agustus 2022

Tabel Hasil Pengujian Prototype Alat Ukur Kadar Kolesterol Glukosa Non-Invasive

No	Nama Partisipan/Pasien	Data Laboratorium		Data Prototype Alat	
		Kolesterol (mg/dl)	Glukosa (mg/dl)	Kolesterol (mg/dl)	Glukosa (mg/dl)
1.	Fatmawati Wilo	246	210	269	193
2	Maryam	226	118	241	121
3	Dg. Nurung	253	135	277	127
4	Ahmad	167	89	142	100
5	Linda	187	96	177	85
6	Dg. Kanang	210	112	231	97
7	Bahar	268	145	289	161.

Makassar, 19 Agustus 2022

Dokter

PEMERINTAH KOTA MAKASSAR
PUSKESMAS BAROMBONG

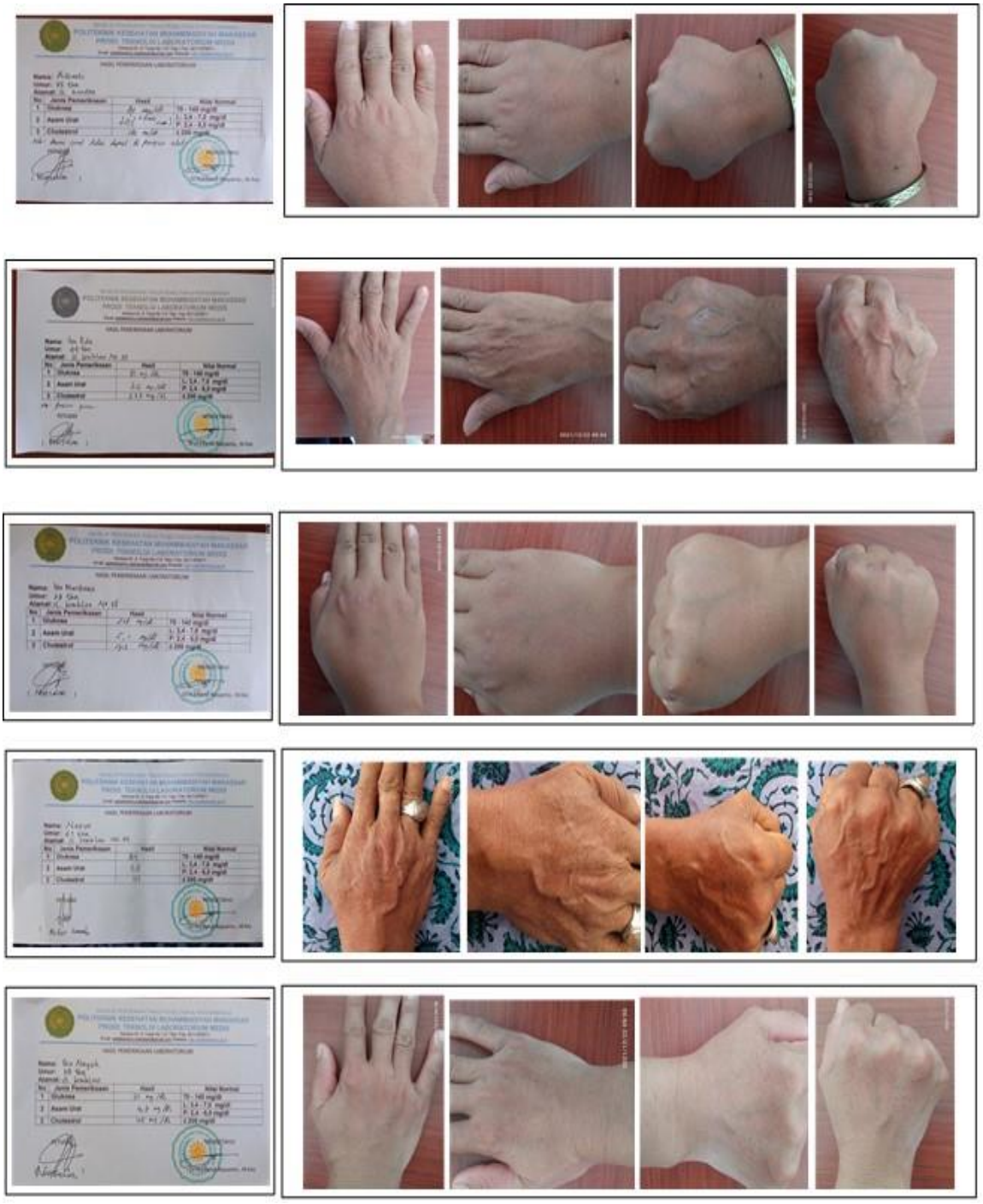
(Hj. Fatmawati Rusman)
NIP. 19690917202203200S

Gambar Kegiatan Pengujian Prototype IR-GluchoM untuk deteksi Kolesterol dan glukosa non-invasive

Di Puskesmas Barombong Kota Makassar

LAMPIRAN 9

Data Kolesterol dan glukasa darah invasive dan citra kulit tangan









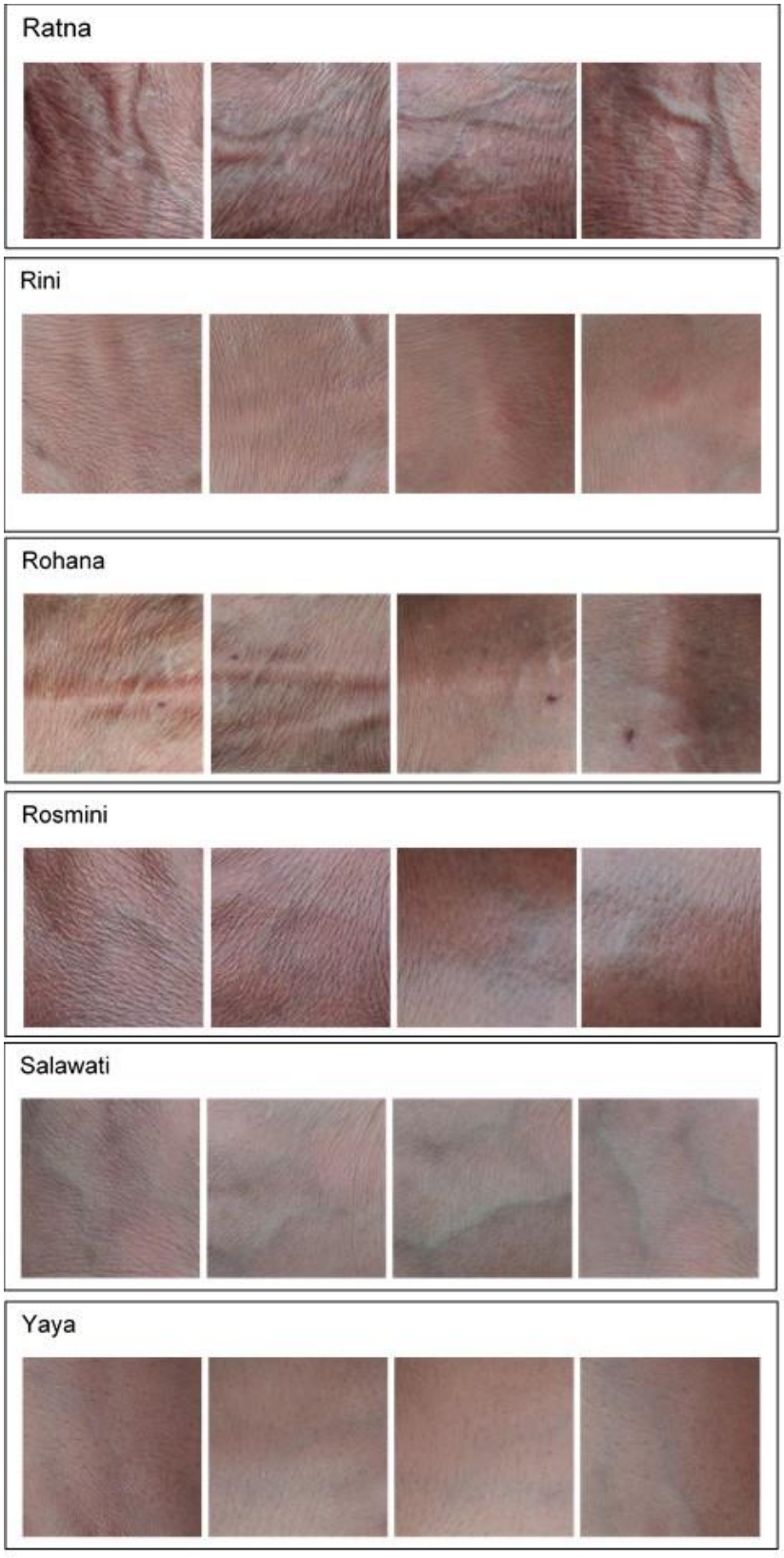
LAMPIRAN 10: Cropping citra latih


Danial
Deti Tunita
Eda
Hadayati
Hania
Ida


Jumiati
Kamisa
Kurnia
Lina
Maemuna
Mardiah


Mardiana
Maswati
Norma
Nasrum
Reni
Santi


Mashud
Nahdiah
Ningsih
Rahayu
Rahmawati
Ramalia


Ratna
Rini
Rohana
Rosmini
Salawati
Yaya

Lampiran 11:

Surat Permohonan kaliberasi IR-GluchoM di Balai Pengamanan Fasilitas Kesehatan (BPFK) Sulawesi Selatan.

KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN
FAKULTAS TEKNIK
PROGRAM STUDI S3 TEKNIK ELEKTRO
Jl. Poros Malino KM. 6 Bontomarannu (92127) Gowa Sulawesi Selatan.0411 – 586015, 586262
http://eng.unhas.ac.id. E-mail:teknik@unhas.ac.id

Nomor : 27259/UN4.7.8/PT.01.04/2022
Lamp :
Hal : Pengambilan Data

Yth. : Kepala Kantor Balai Pengamanan Fasilitas Kesehatan (BPFK)
Jl. Perintis Kemerdekaan KM. 14 Tamalanrea

Di
Makassar

Dengan hormat, disampaikan bahwa mahasiswa Program S3 Teknik Elektro Fakultas Teknik Unhas yang tersebut di bawah ini :

Nama : Usman Umar
Nim : D053171005
Program Studi : S3 Teknik Elektro Unhas

Bermaksud melakukan Kaliberasi Alat Monitoring Kadar Glukosa dan Kolesterol Non Invasive.

Sehubungan dengan hal tersebut kami mohon kepada bapak/ibu kiranya dapat menerima dan membimbing mahasiswa kami dalam Kaliberasi tersebut.

Atas perhatian dan kerjasamanya disampaikan terima kasih.

Mengetahui
Ketua Departemen Teknik Elektro

Dr. Eng. Ir. Dewiani, MT.
Nip. 19691026 199412 2 001

Gowa, 6 Desember 2022
Ketua Program S3 Teknik Elektro

Prof. Dr. Ir. H. Andani Achmad, MT.
Nip. 19601231 198703 1 022

Lampiran 12

Surat Balasan Dari BPFK, Sulawesi Selatan

KEMENTERIAN KESEHATAN RI
DIREKTORAT JENDERAL PELAYANAN KESEHATAN
BALAI PENGAMANAN FASILITAS KESEHATAN MAKASSAR
Jalan Perintis Kemerdekaan Km.11 Makassar 90245 Tlp./Fax : 0411 - 582345
website : www.bpfkmakassar.go.id | e-mail : bpfk_makassar@yahoo.com

Nomor : DM.03.02/3/6372/2022 9 Desember 2022
Hal : Penyampaian Permohonan

Yth. Ketua Departemen Teknik Elektro
Universitas Hasanuddin
Di -
Makassar

Sehubungan dengan surat nomor 27259/UN4.7.8/PT.01.04/2022 tanggal 6 Desember 2022 perihal pengambilan data dan melakukan kalibrasi alat monitoring Kadar Glukosa dan Kolesterol Non Invasive.

Kami sampaikan bahwa kami belum bersedia menerima mahasiswa (i) tersebut untuk melakukan kalibrasi alat monitoring Kadar Glukosa dan Kolesterol Non Invasive dikarenakan alat tersebut diluar kemampuan BPFK Makassar.

Demikian penyampaian kami, terima kasih atas kepercayaan dan perhatiannya kami ucapkan terima kasih.

Koordinator Tata Operasional

Kamaruddin, ST, M.Adm.Kes
NIP. 197701132001121004

BIODATA

Nama : Dr. Ir. Usman Umar,S.T.M.T
NIDN : 0918107201
Tempat/Tgl Lahir : Libureng (Bone) , 18- 10 - 1972
Nomr Telpon/HP : 082111778501,
Jabatan Fungsional : Lektor
E-Mail ; usmanmr4@gmail.com
Alama : Jl. Dr.Ratulangi Lr.1 No 33 Makassar

Nama Orang Tua :
Ayah : H. Umar Malatta, BA (Almarhum)
Ibu : Hj Radiah
Nama Istri : Ir. Risnawaty Alyah MT
Nama Anak
Anak Pertama : Awal Muhammad Usry A.Md
Anak Kedua : Arief Muhammad Usry
Anak Ketiga : Aisyah Mufidah Usry

RIWAYAT PENDIDIKAN FORMAL

Sekolah	Nama Sekolah	Program Studi	Tahun
SD	SDN147 Bengo Kab. Bone		1979 -1985
SMP	SMPN 2 Lappariaja Kab		1985-1988
SMA	SMAN 5 Kab Bone	Fisika	1988 -1991
Ahli Madya	Politeknik Negeri UNHAS /PNUP	Teknik Mesin Konstruksi	1991 - 1995
Sarjana	Universitas Sawerigading (UNSAW) Makassar	Teknik Elektro	2006 - 2008
Magister	Universitas Mercu Buana (UMB) Jakarta Pusat	Manajemen teknik Industri	2012- 2014
Profesi	Universitas Muslim Indonesia	FTI, Program Profesi Insinyur	Tahun 2017
Doktor	Universitas Hasanuddin Makassar	S3 Teknik Elektro	2017-2023

ORGANISASI PROFESIONAL

NO	ORGANISASI	JABATAN /FUNGSI	PERODE
1	APINDO DPK MAKASSAR	Koodinator Kerjasama dan pengabdian kemasyarakat	2022 - 2027
2	Persaudaraan Dosen Republik Indonesia (PDRI)	Pengurus, bagian kerja sama dan hubungan masyarakat	2019 - 2024
3	PCM Mamajang	Anggota MPKU	2017 - 2020
4	ADPERTISI	Anggota	2020 – 2024
6	Assosiasi Perguruan Tinggi Elektromedik Indonesia (APTEMI)	Pengurus Pusat bidang penelitian dan pengabdian kepada masyarakat	2019 - 2024

RIWAYAT PEKERJAAN

NO	INSTANSI/ PERUSAHAAN	JABATAN /FUNGSI	PERIODE
1	Politeknik Muhammadiyah Makassar	Dosen Tetap : Ketua Prodi D3 Teknologi Elektro-medis	2018 – 2022
2	PT. Lippo Mall Indonesia	General Manager Global Trade Centre Makassar (Mall GTC)	2014 – 2017
3	PT Mayora Group	Engineering Manager PT. Tirta Fresindo Jaya Gowa	2013- 2014
4	PT. Lumbung Nasional Flour Mills Bekasi Jawa Barat	Maintenance Manager	2010 – 2013
5	PT. Cerestar Flour Mills Cilegon Banten	Maintenance Manager	2009 - 2010
6	PT. Eastern Pearl Flour Mills Makassar	Kepala Seksi Maintenance	1996 - 2009

KARYA ILMIAH /ARTIKEL YANG TELAH DIPUBLIKASI DALAM 5 TAHUN TERAKHIR

NO	Judul Artikel Ilmiah	Nama Jurnal	Tahun
1	A Real Time Non-invasive Cholesterol Monitoring System.	International Conference on Urban Disaster Resilience (ICUDR 2019). April 25 – 27 2019. Faculty of Engineering Uviversitas Tadulako. Palu Indonesia.	2019
2	Development Reflective Optical Sensor for Blood Cholesterol Measurement Using LED Infrared 940 nm	International Journal of Engineering Research and Technology. Vol: 13, No:12, Hal:4899-4907	2020
3	A Non-Invasive Method Applied to Measure Cholesterol and Glucose Levels.	Journal of Hunan University (Natural Science) Vol: 49, No: 10, Hal: 163-173, (Q2).	2022
4	Developing a Non-Invasive Technique to Monitor Cholesterol Using Image Processing	Journal of Southwest Jiaotong University, Vol; 57, No: 5, Hal; 610-620, (Q2).	2022
5	Application of Artificial Neural Network and Gray Level Co-occurrence Matrix to detect blood glucose levels through the skin of the hands	Teknologi Elekterika, Vol: 6, No: 2, Hal: 78 – 88, , (S4), e-ISSN 2656-0143	2022
6	Design of a Safety Device Ultra Violet Light for Mercury Identification in Whitening Cream with Thin Layer Chromatography Method Using Camera OV7670 Based on Arduino Uno	Jurnal Teknokes, Vol: 15, No: 4 Hal: 189-194,	2022
7	A Non-invasive Approach to Detection Blood Glucose Levels with Hand Skin Image Processing Using Smartphone	Jurnal Teknokes, Vol: 15, No: 4 Hal: 181-188,.	2022

8	Implementasi Teknik Non-Invasive Menggunakan Jaringan Syaraf Tiruan Untuk Mendeteksi Kadar Glukosa Darah Dengan Proses Citra	Seminar Nasional Hasil Penelitian & Pengabdian Kepada Masyarakat (SNP2M), Vol: 7, No: 1, Hal: 74 – 82,.	2022
9	Desain Alat Ukur Kadar Asam Urat Non- Invasive Dengan Sensor Near Infrared	Lontara journal of health Science and Technology, Vol: 2, No: 2, Hal: 69 – 81,	2021
10	Pemantauan Hemoglobin Darah Dengan Non-Invasive Menggunakan Sensor Near Infrared Led Ir 940Nm	Jurnal INSTEK (Informatika Sains dan Teknologi), Vol: 5, No: 1, Hal: 93 – 102, (S4)	2020
11	A Real Time Non-Invasive Hemoglobin Monitoring System	Seminar Nasional Hasil Penelitian & Pengabdian Kepada Masyarakat (SNP2M), Vol: 4, No: 1, Hal: 63 – 68,.	2020
12	Pendekatan Non-invasif Untuk Memantau Kadar Glukosa Darah Dengan Jaringan Syaraf Tiruan (JST) menggunakan Gray Level Co-Occurrence Matrix (GLCM) Pada Citra Digital	Seminar Nasional Teknik Elektro dan Informatika (SNTEI), Vol: 6, No: 1, Hal: 61-67,.	2023
13	MonitoringKadar Glukosa Darah Non-Invasif Menggunakan Sensor Photoacoutic	Celebes Health Journal, Vol: 1, No: 2, Hal: 99-111,p-ISSN:2657-2281, e-ISSN: 2685-1970	2019
14	Alat terapi vitiligo dengan ultra violet B (UVB) berbasis mikrokontroller arduinno uno	Jurnal INSTEK UIN Makassar, Vol: 2, No: 2, Hal: 71-80, E-ISSN 2581-1711, P-ISSN 254-117	2017