LAMPIRAN

SCRIPT ARDUINO

****

```
#include <OneWire.h>
#define SensorPin 0
#include <LiquidCrystal.h> // penentuan pin lcd

LiquidCrystal lcd(7, 6, 5, 4, 3, 2);
//
const int suhubatasbawah=25; //menentukan suhu
const int suhubatasatas=35;
const int phbatasbawah=6; // menentukan ph
const int phbatasatas=8;
//
int buf[10],temp;
int DS18S20_Pin = 8; // penentuan pin suhu
unsigned long int avgValue;
float b;
OneWire ds(DS18S20_Pin);

void setup(void)
{
Serial.begin(57600); // baudrate
pinMode(9,OUTPUT); // relay heater
pinMode(10,OUTPUT); // relay cooler
}
//
void normal(void)
{
  digitalWrite(10,HIGH); // ket.high=mati & low=hidup (pendingin off
  digitalWrite(9,HIGH); // ket.high=mati & low=hidup (pemanas off
  Serial.print("suhu normal"); // ket.kondisi
  Serial.print(";");
  Serial.print("Alat OFF"); // ket.pengontrol
  Serial.print(";");
}

void pendingin(void)
{
  digitalWrite(10,LOW); // pendingin on
  digitalWrite(9,HIGH); // pemanas off
  Serial.print("suhu terlalu panas");
  Serial.print(";");
  Serial.print("pendingin hidup");
  Serial.print(";");
```

```
}

void pemanas(void)
{
  digitalWrite(10,HIGH); // pendingin off
  digitalWrite(9,LOW); // pemanas on
  Serial.print("suhu terlalu dingin");
  Serial.print(";");
  Serial.print("pemanas hidup");
 Serial.print(";");
}
//
void phok(void)
{
  Serial.print("pH normal");
  Serial.println("*");
  delay (500);
}

void phup(void)
{
  Serial.print("pH rendah");
  Serial.println("*");
  delay (500);
}

void phdown(void)
{
  Serial.print("pH tinggi");
  Serial.println("*");
 delay (500);
}
//
void loop(void)
{
  for(int i=0;i<10;i++)
  {
    buf[i]=analogRead(SensorPin);
    delay(10);
  }
  for(int i=0;i<9;i++)
  {
    for(int j=i+1;j<10;j++)
    {
      if(buf[i]>buf[j])
      {
```

```
        temp=buf[i];
        buf[i]=buf[j];
        buf[j]=temp;
      }
    }
  }
  avgValue=0;
  for(int i=2;i<8;i++)
    avgValue+=buf[i];
  float phValue=(float)avgValue*5.0/1024/6;
  phValue=3.5*phValue;
  digitalWrite(13, HIGH);

Serial.println("");
Serial.println("");
Serial.println("");
delay(2000);
  Serial.print("#");
  Serial.print(phValue,2);//////////////////////////////
  Serial.print("");
  delay(0);
  float temperature =0.5+getTemp();
  Serial.print(";"); //("suhu         :");
  Serial.print(temperature);   ////////////////////////////////////
  Serial.print(";");
  delay(0);

          lcd.begin(16, 2);
          lcd.setCursor(0, 0);
          lcd.print("SUHU:");
              lcd.setCursor(6, 0);
              lcd.print(temperature);
                  lcd.setCursor(12, 0);
                  lcd.print("Ce");
          lcd.setCursor(0, 1);
          lcd.print("PH  :");
              lcd.setCursor(6, 1);
              lcd.print(phValue);
                  lcd.setCursor(12, 1);
                  lcd.print("pH");
//
Serial.print ("");  //("kondisi suhu :");
if(temperature <= suhubatasbawah)
   {
    pemanas();
    lcd.setCursor(15, 0);
```

```
  lcd.print("H");
 }
if(temperature > suhubatasbawah && temperature <= suhubatasatas)
{
 normal();
 lcd.setCursor(15, 0);
 lcd.print("N");
}
if(temperature >suhubatasatas)
{
  pendingin();
  lcd.setCursor(15, 0);
  lcd.print("C");
}
delay(0);

//
Serial.print ("");  //("kondisi pH   :");
if(phValue <= phbatasbawah)
 {
  phup();
  lcd.setCursor(15, 1);
  lcd.print("L");
 }
if(phValue > phbatasbawah && phValue <= phbatasatas)
{
 phok();
 lcd.setCursor(15, 1);
 lcd.print("N");
}
if(phValue >phbatasatas)
{
  phdown();
  lcd.setCursor(15, 1);
  lcd.print("H");
}
Serial.println(" ");
delay(0);


digitalWrite(13, LOW);
delay(000);
//

}
```

```
float getTemp(){
//returns the temperature from one DS18S20 in DEG Celsius

byte data[12];
byte addr[8];

if ( !ds.search(addr)) {
//no more sensors on chain, reset search
ds.reset_search();
return -1000;
}

if ( OneWire::crc8( addr, 7) != addr[7]) {
Serial.println("CRC is not valid!");
return -1000;
}

if ( addr[0] != 0x10 && addr[0] != 0x28) {
Serial.print("Device is not recognized");
return -1000;
}

ds.reset();
ds.select(addr);
ds.write(0x44,1); // start conversion, with parasite power on at the end

byte present = ds.reset();
ds.select(addr);
ds.write(0xBE); // Read Scratchpad

for (int i = 0; i < 9; i++) { // we need 9 bytes
data[i] = ds.read();
}

ds.reset_search();

byte MSB = data[1];
byte LSB = data[0];

float tempRead = ((MSB << 8) | LSB); //using two’s compliment
float TemperatureSum = tempRead / 16;

return TemperatureSum;

}
```

SCRIPT VISUAL BASIC 6.0

****

```
Private Sub Command1_Click()
        On Error GoTo erh
ser.CommPort = cPort.Text
ser.Settings = tBaud.Text & ",N,8,1"
ser.PortOpen = True
Timer1.Interval = Int(tint.Text)
erh:
If Err.Number = 8002 Then
MsgBox "Error koneksi tidak tersambung"
End If
End Sub

Private Sub Timer1_Timer()
On Error Resume Next
If ser.PortOpen = True Then
Dim inWord As String
'inWord = ser.ReadLine()
tAll.Text = ser.Input
Dim Frst As Integer
Dim Lst As Integer
Dim Final As String
Dim lenn As Integer

lenn = Len(inWord)
Frst = InStr(1, inWord, "#")
Lst = InStr(1, inWord, "*")

Dim Data, Splitter As String
'Dim DataPart() As String
'kalau paket awal dan akhir ada * dan #, baru parsing
'If Frst = 0 And Lst = lenn Then
'Data = tAll.Text
```

```
Splitter = ";"
Data = tAll.Text

If Data <> "" Then
DataPart = Split(Data, Splitter)
If DataPart(0) <> "" Then
Dim data1 As String
data1 = Replace(DataPart(0), "#", "")
'buat ngehapus #
Text1 = data1
End If
If DataPart(1) <> "" Then Text2 = DataPart(1)
If DataPart(2) <> "" Then Text3 = DataPart(2)
If DataPart(3) <> "" Then Text4 = DataPart(3)
If DataPart(4) <> "" Then Text5 = DataPart(4)
If DataPart(5) <> "" Then
Dim data6 As String
data6 = Replace(DataPart(5), "*", "")
'buat ngehapus *
Text6 = data6
End If

End If
'End If

End If
End Sub
Sub TestSub()
'MsgBox DataPart(0)
'MsgBox DataPart(1)
'MsgBox DataPart(2)
End Sub
```