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LAMPIRAN

Lampiran 1 Program Arduino uno

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

#define ONE_WIRE_BUS A0
OneWire oneWire(ONE_WIRE_BUS);
DallasTemperature sensors(&oneWire);

const int phPin = A2;
const float PH_CALIBRATION = 21.34;
void setup() {
  sensors.begin();
  Serial.begin(9600);
}
void loop() {
  String minta ="";
  while (Serial.available()>0) {
    minta += char(Serial.read());
  }
  minta.trim();
  if(minta = "Ya"){
```

```
  delay(1000);
}

void kirimData(){
  float ldr = analogRead(1);
  // float volt = analogRead(0);
  int sensorPH = analogRead(2);
  sensors.requestTemperatures();
  float temp = sensors.getTempCByIndex(0);

  float voltage = sensorPH * (5.0 / 1023.0);
  float pH = -5.70 * voltage + PH_CALIBRATION;
  float A0 = 2.755
  float C0 = 5
  float I0 = 2528
  float I1 = ldr * 2.622 - 57.089
  float A1 = log10(I0/I1)
  float C1 = A1/A0*C0
  float konsDegrads = (C0 - C1)/C0 * 100
  float ksdgr =
  String kirimData = String(temp) + "#" + String(ldr) + "#" + String(pH) + "#" +
String(konsDegrads);
```

Data);

Lampiran 2 Program NodeMCU ESP8226

```
//"InformasiUdaraPLTD"

#include <SoftwareSerial.h>

#include <ESP8266WiFi.h>

#include "CTBot.h"

SoftwareSerial DataSerial(12, 13); //D6/12=Rx, D7/13=Tx

CTBot myBot;

#ifndef STASSID

#define STASSID "GARASI"

#define STAPWDS  "tanahairku"

#define TELEGRAM "6419784797:AAESZ4IrQTzS-
EqaNhFZfMfvbO7U28MxG0E"

#endif

String arrData[4];

unsigned long previousMillis = 0;

const long interval = 3000;

const char* ssid     = STASSID;

const char* pass     = STAPWDS;

const char* token    = TELEGRAM;

const int id = 6975165044;

void setup() {
```

```
  0);

  (9600);
```

```
  Serial.println("Starting TelegramBot...");
  myBot.wifiConnect(ssid, pass);
  myBot.setTelegramToken(token);
  if (myBot.testConnection()) {
    Serial.println("Koneksi Baik");
  } else {
    Serial.println("Koneksi Tidak Baik");
  }

  myBot.sendMessage(id, "Haiii!! Koneksi Baik... ");
  myBot.sendMessage(id, "Untuk menjalankan, silahkan klik : ");
  myBot.sendMessage(id, "/start");
  Serial.println("Mengirim Pesan ke Telegram....");
}

void loop() {
  TBMessage msg;
  //konfigurasi millis
  unsigned long currentMillis = millis();
  if(currentMillis - previousMillis >= interval)
  {
                                    : currentMillis;
                                    ;
                                    al.available()>0)
```

```
{
  data += char(DataSerial.read());
}

data.trim();
//uji data
if(data != ""){//partsing data
  int index = 0;
  for(int i=0; i<= data.length(); i++){
    char delimiter = '#';
    if (data[i] != delimiter){ //TERSTACK
      arrData[index] += data[i];
    }
    else{
      index++;
  }
  }
  if (index == 2)
  {
    Serial.println("Data Sensor Lengkap");
    //========== Pesan dari telegram
                wMessage(msg)){
                qualsIgnoreCase("/start")){
                ("Mengirim pesan ke Telegram...");
```

```
myBot.sendMessage(id, "Selamat Datang! Monitoring degradasi MB");

delay(100);

myBot.sendMessage(id, "/InfoLajuMB");

}


if (msg.text.equalsIgnoreCase("/InfoLajuMB")){

Serial.println("Mengirim Pesan Balasan....");

myBot.sendMessage(id, "Baik, tunggu sejenak..."); //Mengirim balasan Oke

String akhir;

Serial.println("Mengirim Pesan Balasan....");

akhir = (String)"Berikut Nilai Laju Degradasi MB" + "\n" +

        (String)">>" + "\n" +

        (String)"Suhu Larutan      : " + arrData[0].toInt() + " °C" + "\n" +

        (String)"Intensitas Cahaya     : " + arrData[2].toInt() + " Lux" + "\n" +

        (String)"pH        : " + arrData[1].toInt() + "\n" +

        (String)"Konsentrasi Terdegradasi          : " + arrData[3].toInt() + "\n" +

        (String)">>" + "\n" +

        (String)"Monitor : /InfoLajuMB";

                Message(id, akhir);
```

```
      }
        arrData[0] = "";
        arrData[1] = "";
        arrData[2] = "";
        arrData[3] = "";
      }
      DataSerial.println("Ya");
    }
  }
```

Lampiran 3 Tabel data pengujian sensor suhu DSB18B20

Termometer (°C)	Nilai Sensor (°C)
15,82	16,04
17,01	17,42
18,1	18,39
18,77	19,08
19,6	20,07
21,25	21,55
21,81	22,01
22,98	23,17
23,93	24,04
24,73	25,21
25,57	26,32
26,97	27,89
27,89	28,53
29,14	29,03
30,5	29,67
31,41	31,12
32,65	32,34
33,82	33,64
34,41	34,12
35,67	35,29
36,88	36,64
38,02	37,42
38,98	38,8

Lampiran 4 Tabel data pengujian sensor pH 4502C

Sensor (pH)	pH meter (pH)
3,97	4,01
3,99	4,24
4,46	4,64
4,71	4,95
4,94	5,21
5,27	5,51
5,65	5,76
6,03	6,25
6,39	6,45
6,78	6,72
7,09	7,02
7,33	7,43
7,64	7,58
7,92	7,92
8,22	8,11
8,58	8,43
8,89	8,79
9,18	9,02
9,51	9,35
9,82	9,67
10,14	10,01

Lampiran 5 Tabel data pengujian fotodioda RW-157

Fotodioda (ADC)	luxmeter (Lux)
25	0
249	380
255	548
260	590
288	728
284	733
304	898
337	905
500	1273
554	1506
793	2120
1008	2728


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