

PROGRAM

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#include <LiquidCrystal.h>

int ph_pin = A0; //This is the pin number connected to Po
int amoniak = A2;

#define S0 12
#define S1 11
#define S2 9
#define S3 10
#define sensorOut 8

#define lampu_hijau 53
#define lampu_merah 51
#define tombol 13

int frequency1 = 0;
int frequency2 = 0;
int frequency3 = 0;

int t1=1;

//urutan kaki pada lcd (rs(4),e(6),d4(11),d5(12),d6(13),d7(14))
LiquidCrystal lcd(2,3,4,5,6,7);

int red = 0;
int green = 0;
int blue = 0;

void setup() {
  Serial.begin(9600);
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lcd.begin(16,2);
pinMode(S0, OUTPUT);
pinMode(S1, OUTPUT);
pinMode(S2, OUTPUT);
pinMode(S3, OUTPUT);
pinMode(sensorOut, INPUT);

//led
pinMode(lampu_merah, OUTPUT);
pinMode(lampu_hijau, OUTPUT);

// Setting frequency-scaling to 20%
digitalWrite(S0,HIGH);
digitalWrite(S1,LOW);

//Tombol
pinMode(tombol,INPUT);
}

void loop() {
lcd.setCursor(2,0);
lcd.print("UJI KUALITAS");
lcd.setCursor(5,1);
lcd.print("DAGING");

t1= digitalRead(tombol);
if (t1==LOW){
lcd.setCursor(1,0);
delay(15000);
lcd.clear();
baca_sensor();
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}
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}
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void baca_sensor(){  
    color();  
    int measure1 = analogRead(ph_pin);  
    delay(100);  
    int measure2 = analogRead(ph_pin);  
    delay(100);  
    int measure3 = analogRead(ph_pin);  
    delay(100);  
    int measure_total=(measure1+measure2+measure3)/3;  
    int amo = analogRead(amoniak);  
    //if (amo<=256) {amo=256;}  
  
    float Po=(measure_total-770)/(-16.66);  
  
    float ppm= (0.166*amo)- 6.333 ;  
  
    if (ppm<=0) {ppm=0;}  
    if (ppm>=30){ppm=30;}  
    if (Po>=14){Po=14;}  
    delay(100);  
    lcd.setCursor(0,0);                lcd.print(frequency1);//lcd.setCursor(5,0);  
    lcd.print(frequency3);lcd.setCursor(10,0); lcd.print(frequency2);  
    lcd.setCursor(0,1);lcd.print("PH:");lcd.print(Po,1);  
    lcd.setCursor(8,1);lcd.print("AM:");lcd.print(ppm,1);  
    // lcd.setCursor(8,1);lcd.print("AM:");lcd.print(amo,1);
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Serial.print("AM:");

if (ppm>1 && frequency1<80)
{digitalWrite(lampu_merah,HIGH);digitalWrite(lampu_hijau,LOW);
}
else
{digitalWrite(lampu_hijau,HIGH);digitalWrite(lampu_merah,LOW);
}
delay(500);
lcd.clear();

baca_sensor();
}
void color()
{
    // Setting red filtered photodiodes to be read
    digitalWrite(S2,LOW);
    digitalWrite(S3,LOW);
    // Reading the output frequency
    frequency1 = pulseIn(sensorOut, LOW);

    //Remaping the value of the frequency to the RGB Model of 0 to 255
    frequency1 = map(frequency1,60,225,255,0);
    if(frequency1<=0){frequency1=0;}
    else if(frequency1>=0 && frequency1<79){
        lcd.setCursor(5,0);
        lcd.print("MERAH PUCAT");}
    else if(frequency1>=80 && frequency1<=160){
        lcd.setCursor(5,0);
        lcd.print("MERAH GELAP");}
    else if(frequency1>=150 && frequency1<255){frequency3<=50;}

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else if(frequency1>=255){ frequency1=255; }

// Printing the value on the serial monitor
Serial.print("G= "); //printing name
Serial.print(frequency1); //printing RED color frequency
Serial.print(" ");
delay(100);

// Setting Green filtered photodiodes to be read
digitalWrite(S2,HIGH);
digitalWrite(S3,HIGH);
// Reading the output frequency
frequency2 = pulseIn(sensorOut, LOW);
//Remaping the value of the frequency to the RGB Model of 0 to 255
frequency2 = map(frequency2,107,225,255,0);
if(frequency2<=0){ frequency2=0;}
if(frequency2>=255){ frequency2=255;}
// if(frequency1>=150 && frequency1<255){ frequency2<=50;}
// Printing the value on the serial monitor
Serial.print("B= "); //printing name
Serial.print(frequency2); //printing RED color frequency
Serial.print(" ");
delay(100);

// Setting Blue filtered photodiodes to be read
digitalWrite(S2,LOW);
digitalWrite(S3,HIGH);
// Reading the output frequency
frequency3 = pulseIn(sensorOut, LOW);

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//Remaping the value of the frequency to the RGB Model of 0 to 255
frequency3 = map(frequency3,85,225,255,0);
if(frequency3<=0){frequency3=0;}
if(frequency3>=255){frequency3=255;}

//if(frequency1>=150 && frequency1<255){frequency2<=50;}
// Printing the value on the serial monitor
Serial.print("B= ");//printing name
Serial.print(frequency3);//printing RED color frequency
Serial.println(" ");
delay(100);

}
```

DOKUMENTASI

PENGUJIAN DAGING < 12 JAM





PENGUJIAN DAGING 12 - 24 JAM



64 MERAH PUCAT
PH:4.3 AM:2.1

62 MERAH PUCAT
PH:4.6 AM:2.1

62 MERAH PUCAT
PH:4.5 AM:2.1

PENGUJIAN DAGING >24 JAM



50 MERAH PUCAT
PH: 3.6 AM: 30.0

50 MERAH PUCAT
PH: 3.6 AM: 30.0