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#include <LiquidCrystal.h> //include library LCD

LiquidCrystal lcd(2, 3, 4, 5, 6, 7);
#define SensorPin A1          // the pH meter Analog output is connected with
the Arduino's Analog
unsigned long int avgValue; //Store the average value of the sensor feedback
float b;
int buf[10],temp;

void setup()
{
  pinMode (A0,INPUT);
  pinMode (A1,INPUT);
  pinMode (A2,INPUT);
  pinMode (A3,INPUT);
  pinMode (A4,INPUT);
  pinMode (8,OUTPUT);
  pinMode(9,OUTPUT);
  pinMode (10, OUTPUT);
  pinMode (11, OUTPUT);
  Serial.begin(9600);
}
void loop()
{
  //Photodiode 1
  int value1=analogRead(A0);
  //Serial.println(value);
  lcd.begin(16, 2);
  lcd.setCursor(0, 0);
  lcd.print("Kondisi Air");

  if(value<300)
  {
    digitalWrite(9,HIGH); //pompa filter hidup
    lcd.setCursor(1, 1);
    lcd.print("Keruh");
    delay(500);
  }
  else
  {
    digitalWrite(9,LOW); //pompa filter mati
    lcd.setCursor(1, 1);
    lcd.print("Jernih");
    delay(500);
  }

  //Photodiode 2
  int value2=analogRead(A1);
  if(value<300)
  {
    digitalWrite(1,HIGH); //pompa filter hidup
  }
}

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    else
    {
        digitalWrite(1,LOW); //pompa filter mati
    }

//Water level asam
int watervalue = analogRead(A2);
//Serial.println(watervalue);
if (watervalue > 500)
{
    digitalWrite(8,LOW);
}
else
{
    digitalWrite (8,HIGH);
}

//Water level basa
int watervalue = analogRead(A2);
//Serial.println(watervalue);
if (watervalue > 500)
{
    digitalWrite(8,LOW);
}
else
{
    digitalWrite (8,HIGH);
}

//pH meter
for(int i=0;i<10;i++)          //Get 10 sample value from the sensor for smooth
the value
{
    buf[i]=analogRead(SensorPin);
    delay(10);
}
for(int i=0;i<9;i++)          //sort the analog from small to large
{
    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++)          //take the average value of 6
center sample
    avgValue+=buf[i];

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    float pHValue=(float)avgValue*5.0/1024/6; //convert the analog into
millivolt
    pHValue=3.5*pHValue; //convert the millivolt into pH
value
    //Serial.print("    pH:");
    //Serial.print(pHValue,2);
    //Serial.println(" ");
    //delay(100);

    lcd.begin(16, 2);
    lcd.setCursor(0, 0);
    lcd.print("Nilai pH air");
    lcd.setCursor(1, 1);
    lcd.print(pHValue); //menampilkan data suhu
    delay(500); //waktu tunggu 0,1 detik

    if (pHValue < 6.0){
        digitalWrite (10, LOW);
        digitalWrite (11, HIGH);
    }
    else if (pHValue > 7.0){
        digitalWrite (10, HIGH);
        digitalWrite (11, LOW);
    }
    else {
        digitalWrite (10,LOW);
        digitalWrite (11,LOW);
    }
}

```