

LAMPIRAN

```
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 16, 2);
#define pinSensor A0
#define Buzzer 10
#define Start 3
#define Reset 4

    long RL = 1000;
    long Ro = 800;
    int start = 0; int Warming_UP = 0;
    int COUNT_DOWN = 5;
    float Save_ppm;
    float Save_coHb;
    int menunggu = 30;

void setup() {
Serial.begin(9600);
pinMode(3, INPUT_PULLUP);
digitalWrite(3,HIGH);
pinMode(4, INPUT_PULLUP);
digitalWrite(4,HIGH);
pinMode(Buzzer, OUTPUT);
pinMode(97,INPUT);
digitalWrite(97,LOW);

    lcd.init();
    lcd.backlight();
```

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lcd.setCursor(0, 0);

    lcd.print("Utary Anggriani");

    lcd.setCursor(0, 1);

    lcd .print("20163010008 ");

    delay(4000);

}

////////////////////////////////////// warming up

if (Warming_UP <= menunggu)

    lcd.setCursor(0, 0);

    lcd.print("  WARMING UP  ");

    lcd.setCursor(0, 1);

    lcd.print(" WAITING ... ");

    lcd.setCursor(14, 1);

    lcd.print(Warming_UP);

    digitalWrite(Buzzer, HIGH);

    delay(100);

    digitalWrite(Buzzer, LOW);

    delay(500);

    if (Warming_UP == menunggu)

        digitalWrite(Buzzer, HIGH);

        delay(1500);

        digitalWrite(Buzzer, LOW);

    }

}

////////////////////////////////////// menunggu tombol

else if (Warming_UP > menunggu)

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{
    if (digitalRead(Start) == LOW)
        start = 1;
}

if (digitalRead(Reset) == LOW) {
    RESET();
}

if (start == 0) {
    float rs = ( 5.00 * RL / VRL ) - RL;
    float ppm = 100 * pow((rs / Ro), -1.53); // ppm = 100
* ((rs/ro)^-1.53);
    float coHb = ppm * 0.16 + 0.63;
    Save_ppm = ppm;
    Save_coHb = coHb;
    if (Save_ppm < 1)
{
        Save_ppm = 0;
        Save_coHb = 0;
    }
    lcd.setCursor(0, 0);
    //lcd.print(" Tekan Tombol ");
    lcd.print("CO : " + String(Save_ppm) + " ppm");
    lcd.setCursor(0, 1); //baris kedua
    lcd.print("RESET      START");

////////// proses Alat saat ditiup

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else if (start == 1)
{
    lcd.setCursor(0, 0);
    lcd.print(" Tiup perlahan ");
    lcd.setCursor(0, 1);
    lcd.print(" Pembacaan " + String(COUNT_DOWN));
digitalWrite(Buzzer, HIGH);

    delay(100);

    digitalWrite(Buzzer, LOW);

    delay(900);

    COUNT_DOWN = COUNT_DOWN - 1;

    float rs = ( 5.00 * RL / VRL ) - RL;

    float ppm = 100 * pow((rs / Ro), -1.53); // ppm = 100
* ((rs/ro)^-1.53);

    float coHb = ppm * 0.16 + 0.63;

    Save_ppm = ppm;

    Save_coHb = coHb;

    if (COUNT_DOWN <= 0)
    {

        start = 2;

        COUNT_DOWN = 5;

    }

}

//////////////////////////////////// Hasil Sensor

else if (start == 2)

{
    if (Save_ppm < 1) { Save_ppm = 0;

```

```

{
    lcd.setCursor(0, 0);
    lcd.print(" Tiup perlahan ");
    lcd.setCursor(0, 1);
    lcd.print(" Pembacaan " + String(COUNT_DOWN));
digitalWrite(Buzzer, HIGH);

    delay(100);

    digitalWrite(Buzzer, LOW);

    delay(900);

    COUNT_DOWN = COUNT_DOWN - 1;

    float rs = ( 5.00 * RL / VRL ) - RL;

    float ppm = 100 * pow((rs / Ro), -1.53); // ppm = 100
* ((rs/ro)^-1.53);

    float coHb = ppm * 0.16 + 0.63;

    Save_ppm = ppm;

    Save_coHb = coHb;

    if (COUNT_DOWN <= 0)
    {
        start = 2;

        COUNT_DOWN = 5;

    }

}

//////////////////////////////////// Hasil Sensor
else if (start == 2)
{
    if (Save_ppm < 1) {
        Save_ppm = 0;
    }
}

```

```

Save_coHb = 0;
}
lcd.setCursor(0, 0);
lcd.print("CO : " + String(Save_ppm) + " ppm");
lcd.setCursor(0, 1);
lcd.print("COHb : " + String(Save_coHb) + " %");
delay(1000);
lcd.clear();
lcd.setCursor(0, 0);
lcd.print(" Tingkat CO ");
////////////////////////// menentukan Kategori Perokok
}
else if (Save_ppm >= 6.0 && Save_ppm <= 10.0) {
    lcd.setCursor(0, 1);
    lcd.print(" Light Smoker ");
}
else if (Save_ppm >= 10.0) {
    lcd.setCursor(0, 1);
    lcd.print(" Reguler Smoker");
    delay(1000);
}
}
delay(500);
lcd.clear();}

```