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#include <Wire.h>
#include "Adafruit_TCS34725.h"
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>

// OLED setup
#define SCREEN_WIDTH 128
#define SCREEN_HEIGHT 64
Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire, -1);

// Sensor warna TCS34725
Adafruit_TCS34725 tcs = Adafruit_TCS34725(TCS34725_INTEGRATIONTIME_50MS,
TCS34725_GAIN_4X);

void setup() {
  Serial.begin(115200);
  Wire.begin(21, 22); // SDA, SCL

  // Inisialisasi OLED
  if (!display.begin(SSD1306_SWITCHCAPVCC, 0x3C)) {
    Serial.println(F("OLED tidak ditemukan!"));
    while (1);
  }
  display.clearDisplay();
  display.setTextColor(WHITE);
  display.setTextSize(1);

  // Inisialisasi sensor TCS34725
  if (!tcs.begin()) {
    Serial.println("Sensor warna tidak terdeteksi!");
    display.println("Sensor ERROR!");
    display.display();
    while (1);
  } else {
    Serial.println("Sensor warna siap.");
    display.println("Siap mendeteksi uang");
    display.display();
    delay(2000);
  }
}

void loop() {
  uint16_t r, g, b, c;
  float red, green, blue;

  tcs.getRawData(&r, &g, &b, &c);

  red = (float)r / c * 255.0;

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green = (float)g / c * 255.0;
blue = (float)b / c * 255.0;
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Serial.print("RGB: ");
Serial.print((int)red); Serial.print(" ");
Serial.print((int)green); Serial.print(" ");
Serial.println((int)blue);
```

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String nominal = "Tidak dikenali";
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if ((red >= 130 && red <= 190) && (green >= 40 && green <= 90) && (blue >= 60 && blue
<= 110)) {
    nominal = "Rp100.000";
} else if ((red >= 70 && red <= 120) && (green >= 110 && green <= 170) && (blue >= 150
&& blue <= 220)) {
    nominal = "Rp50.000";
} else if ((red >= 50 && red <= 100) && (green >= 120 && green <= 190) && (blue >= 90 &&
blue <= 140)) {
    nominal = "Rp20.000";
} else if ((red >= 80 && red <= 130) && (green >= 100 && green <= 160) && (blue >= 110
&& blue <= 180)) {
    nominal = "Rp10.000";
} else if ((red >= 90 && red <= 150) && (green >= 80 && green <= 130) && (blue >= 60 &&
blue <= 110)) {
    nominal = "Rp5.000";
} else if ((red >= 110 && red <= 160) && (green >= 100 && green <= 140) && (blue >= 70
&& blue <= 110)) {
    nominal = "Rp1.000";
}
```

```
// Tampilkan ke OLED
display.clearDisplay();
display.setCursor(0, 0);
display.println("Deteksi Uang");
display.println("=====");
display.print("R: "); display.println((int)red);
display.print("G: "); display.println((int)green);
display.print("B: "); display.println((int)blue);
display.println("-----");
display.println(nominal);
display.display();
```

```
delay(2000);
}
```