```
// TCS230 or TCS3200 pins wiring to Arduino
#define S0 4
#define S1 5
#define S2 6
#define S3 7
#define sensorOut 8

// Stores frequency read by the photodiodes
int redFrequency = 0;
int greenFrequency = 0;
int blueFrequency = 0;

int redColor = 0;
int greenColor = 0;
int blueColor = 0;
String lastColor = "";
int colorCount = 0;
const int lightThreshold = 400; // Sum of RGB values to determine light or
dark


void setup() {
  // Setting the outputs
  pinMode(S0, OUTPUT);
  pinMode(S1, OUTPUT);
  pinMode(S2, OUTPUT);
  pinMode(S3, OUTPUT);


  pinMode(sensorOut, INPUT);


  digitalWrite(S0,HIGH);
  digitalWrite(S1,LOW);


  Serial.begin(9600);

}
```

```
void loop() {

  digitalWrite(S2,LOW);
  digitalWrite(S3,LOW);


  redFrequency = pulseIn(sensorOut, LOW);
  redColor = map(redFrequency, 70, 120, 255,0);

  Serial.print("R = ");
  Serial.print(redColor);
  delay(100);


  digitalWrite(S2,HIGH);
  digitalWrite(S3,HIGH);


  greenFrequency = pulseIn(sensorOut, LOW);
  greenColor = map(greenFrequency, 100, 199, 255, 0);

  Serial.print(" G = ");
  Serial.print(greenColor);
  delay(100);


  digitalWrite(S2,LOW);
  digitalWrite(S3,HIGH);


  blueFrequency = pulseIn(sensorOut, LOW);
  blueColor = map(blueFrequency, 38, 84, 200, 0);

  Serial.print(" B = ");
  Serial.println(blueColor);
  delay(100);

 String detectedColor = "";

  if (redColor > greenColor && redColor > blueColor) {
```

```
    detectedColor = "RED";
    Serial.println(" - RED detected!"); }
  else if (greenColor > redColor && greenColor > blueColor) {
    detectedColor = "GREEN";
    Serial.println(" - GREEN detected!"); }
  else if (blueColor > redColor && blueColor > greenColor) {
    detectedColor = "BLUE";
    Serial.println(" - BLUE detected!"); }
  else if (redColor > 200 && greenColor > 200 && blueColor < 100) {
    detectedColor = "YELLOW";
     Serial.println(" - YELLOW detected!"); }
  else if (redColor > 200 && blueColor > 200 && greenColor < 100) {
    detectedColor = "PURPLE";
    Serial.println(" - PURPLE detected!"); }
  else if (redColor > 200 && greenColor > 100 && blueColor < 100) {
    detectedColor = "ORANGE";
    Serial.println(" - ORANGE detected!"); }

  int colorSum = redColor + greenColor + blueColor;
  String lightOrDark = (colorSum > lightThreshold) ? "light" : "dark";
  Serial.println(" - The color is " + lightOrDark + ".");

  if (detectedColor == lastColor) {
    colorCount++;
  if (colorCount == 10) {
    Serial.println("Pausing for 20 seconds...");
    delay(20000); // Pause for 20 seconds
    colorCount = 0; // Reset the counter
}

  }
  else {
    lastColor = detectedColor;
    colorCount = 1; // Reset counter for new color }
}
}
```