SISTEM DE DESCHIDERE CU SENZOR ULTRASONIC

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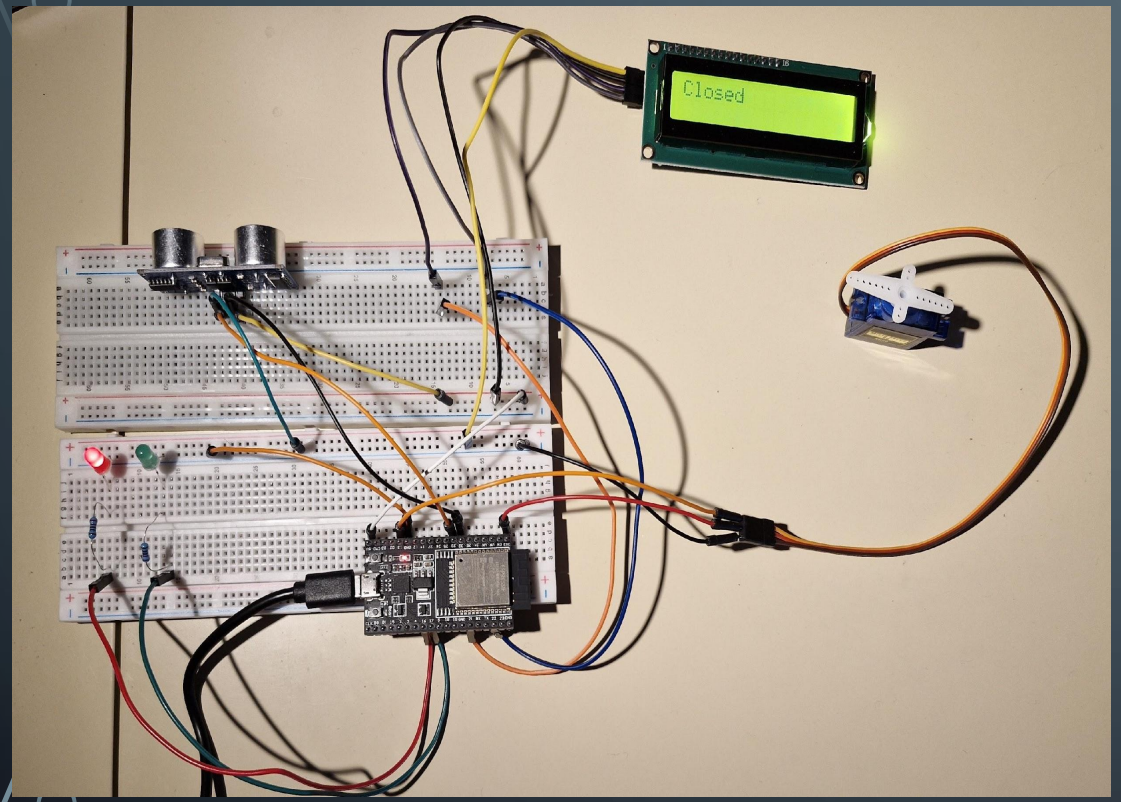
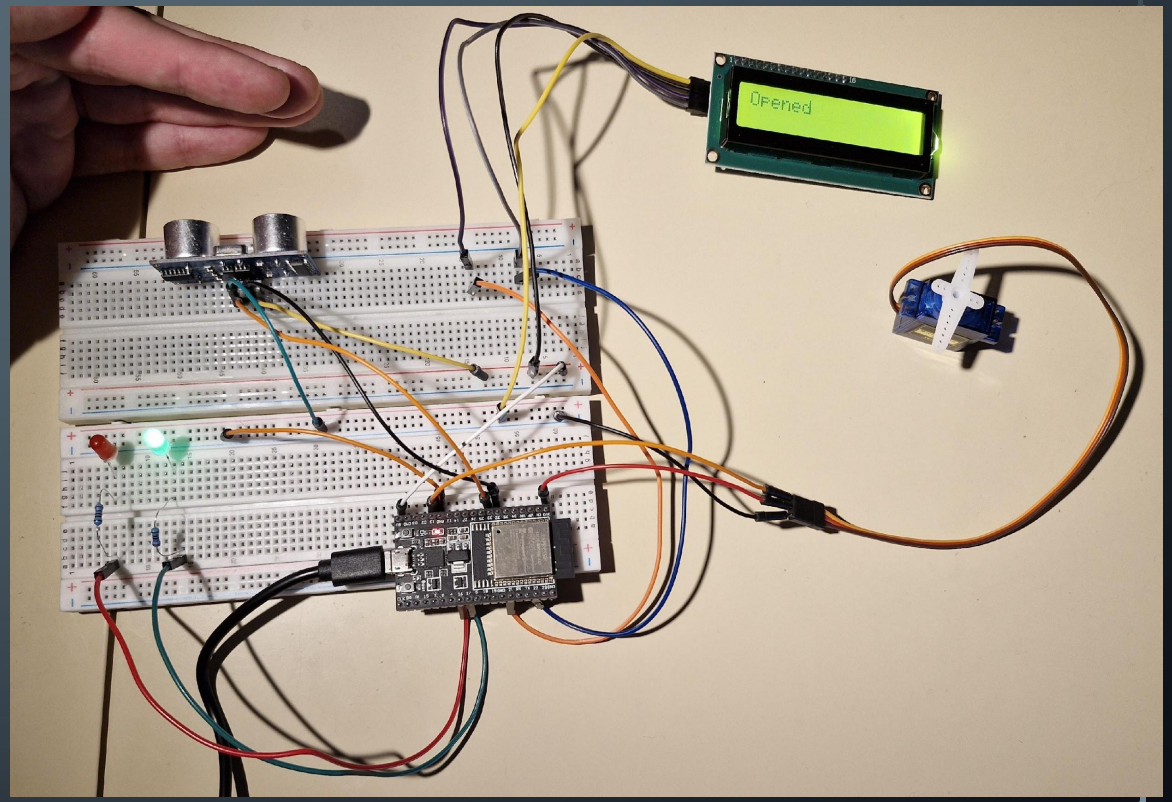
CADRU DIDACTIC ÎNDRUMĂTOR : TUFAN CLAUDIU

INTRODUCERE



Poziția Closed



Poziția Opened

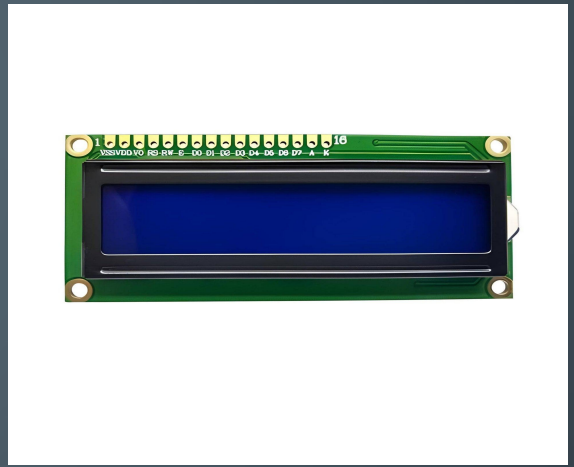
APLICAȚII ȘI BENEFICII

ELEMENTE DE CIRCUIT

PLACĂ ESP32

SERVOMOTOR SG90

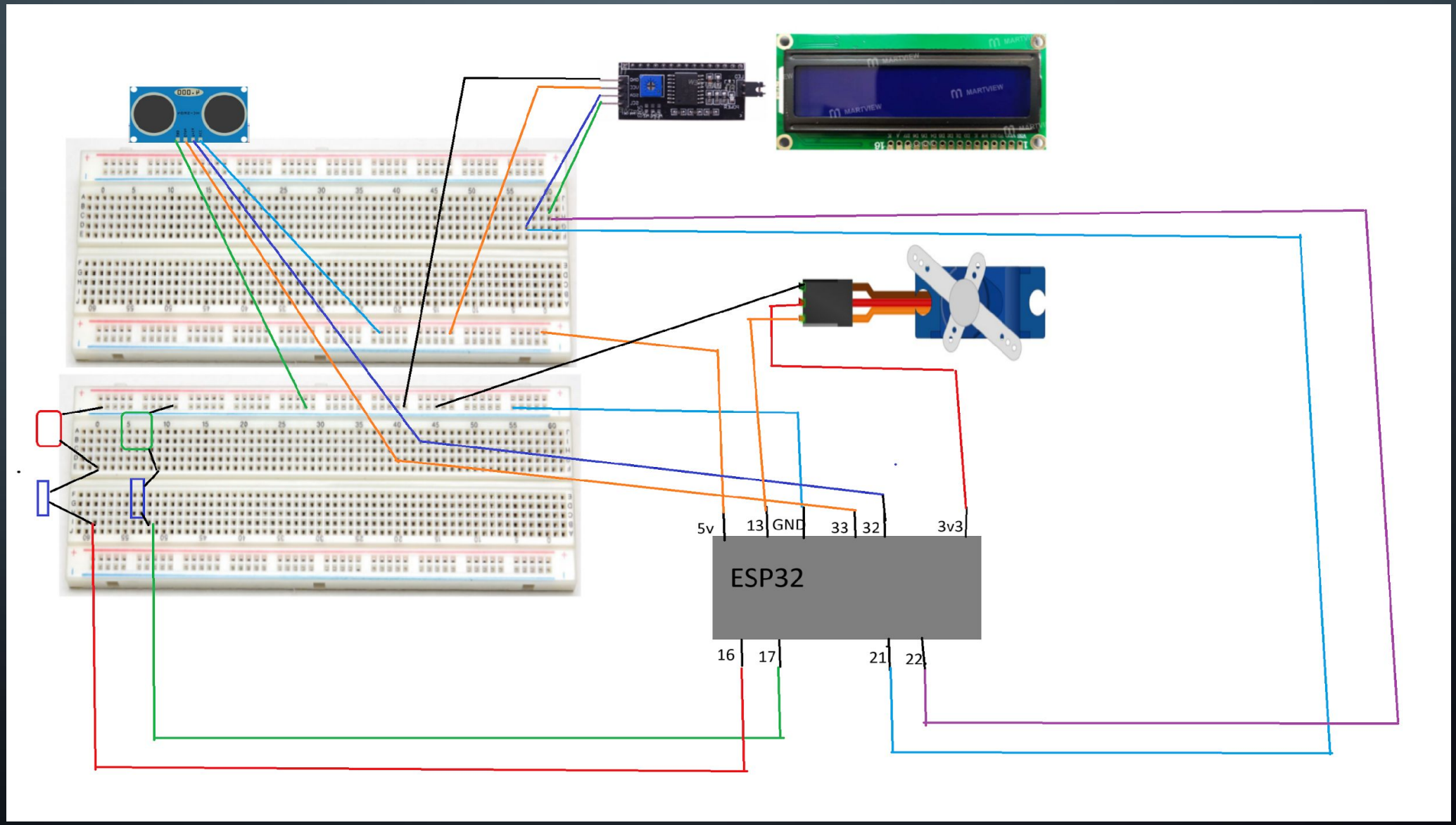
SENZOR ULTRASONIC
HC-SR04



LCD 16X2

LED-uri

EXPILCAREA CIRCUITULUI

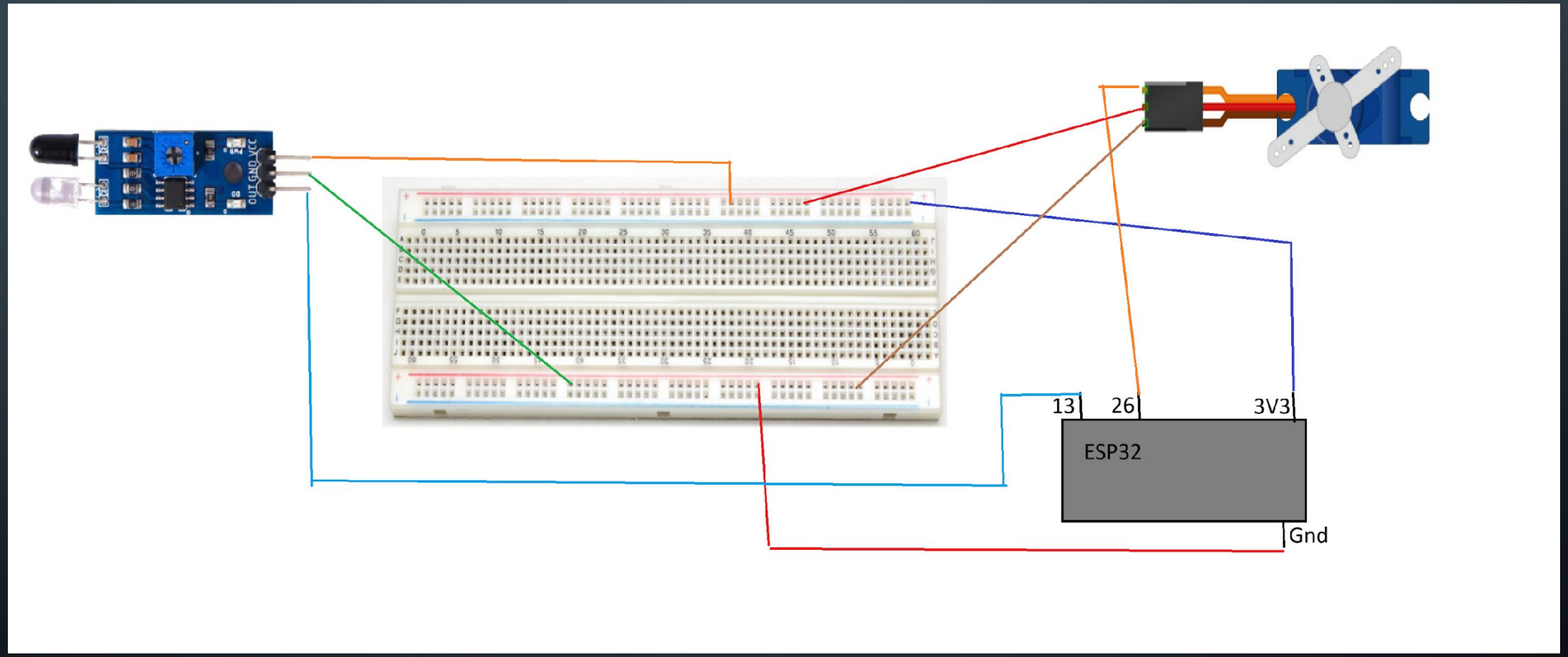


EXPLICAREA CODULUI DIN ARDUINO

```
#include <ESP32Servo.h>
#include <LiquidCrystal_I2C.h>

LiquidCrystal_I2C lcd(0x27,16,2);
Servo s;
void setup() {
  Serial.begin(9600);
 pinMode(33,INPUT);
  pinMode(32,OUTPUT);
  pinMode(13,OUTPUT);
  pinMode(16,OUTPUT);
  pinMode(17,OUTPUT);
  s.attach(13);
  lcd.init();
  lcd.backlight();
  lcd.clear();
}

void loop() {
  digitalWrite(32,LOW);
  delay(2);
  digitalWrite(32,HIGH);
  delay(10);
   digitalWrite(32,LOW);
  delay(2);
```

```
int sensordata=pulseIn(33,HIGH);
  Serial.println(sensordata);
  lcd.setCursor(0,0);
  if(sensordata<500){
    s.write(90);
    digitalWrite(16,LOW);;
    digitalWrite(17,HIGH);
    lcd.setCursor(0,0);
    lcd.print("Opened");

  }
  else {
    s.write(0);
    digitalWrite(17,LOW);
    digitalWrite(16,HIGH);
     lcd.setCursor(0,0);
    lcd.print("Closed");

  }
  delay(1000);
}
```

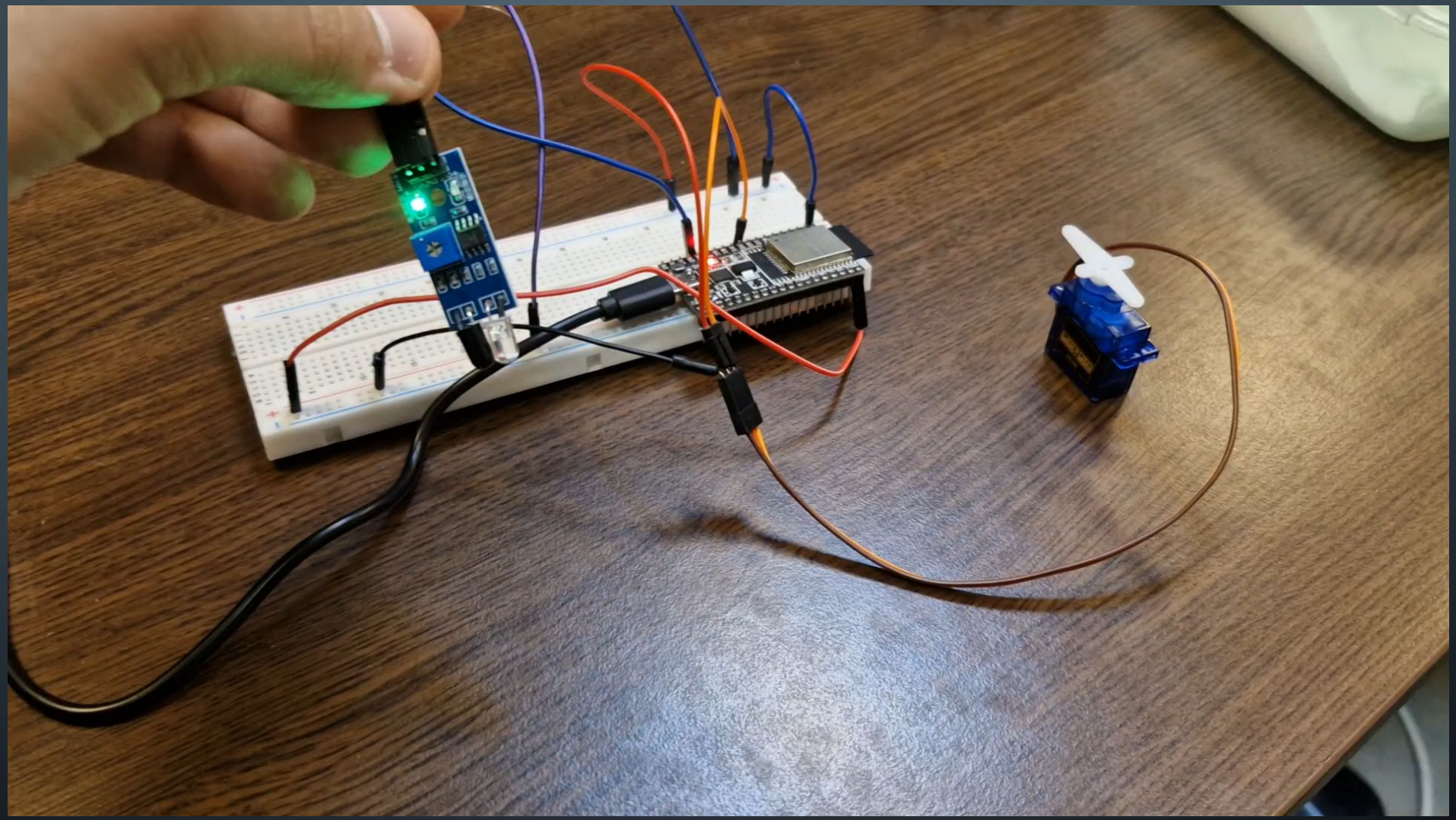
CIRCUIT CU SENZOR INFRAROȘU



CODUL CIRCUITULUI CU SENZOR INFRAROȘU

proiect_servo_infrared.ino

```
1   #include <ESP32Servo.h>
2   #define pin_servo 26
3   Servo s;
4   void setup() {
5     pinMode(13,INPUT_PULLUP);
6     Serial.begin(9600);
7     s.attach(pin_servo);
8   }
9   void loop() {
10    if(digitalRead(13)==0)
11      s.write(90);
12
13      else if(digitalRead(13)==1)  s.write(0);
14      }
15
16
```



MULȚUMESC PENTRU ATENȚIA ACORDATĂ!