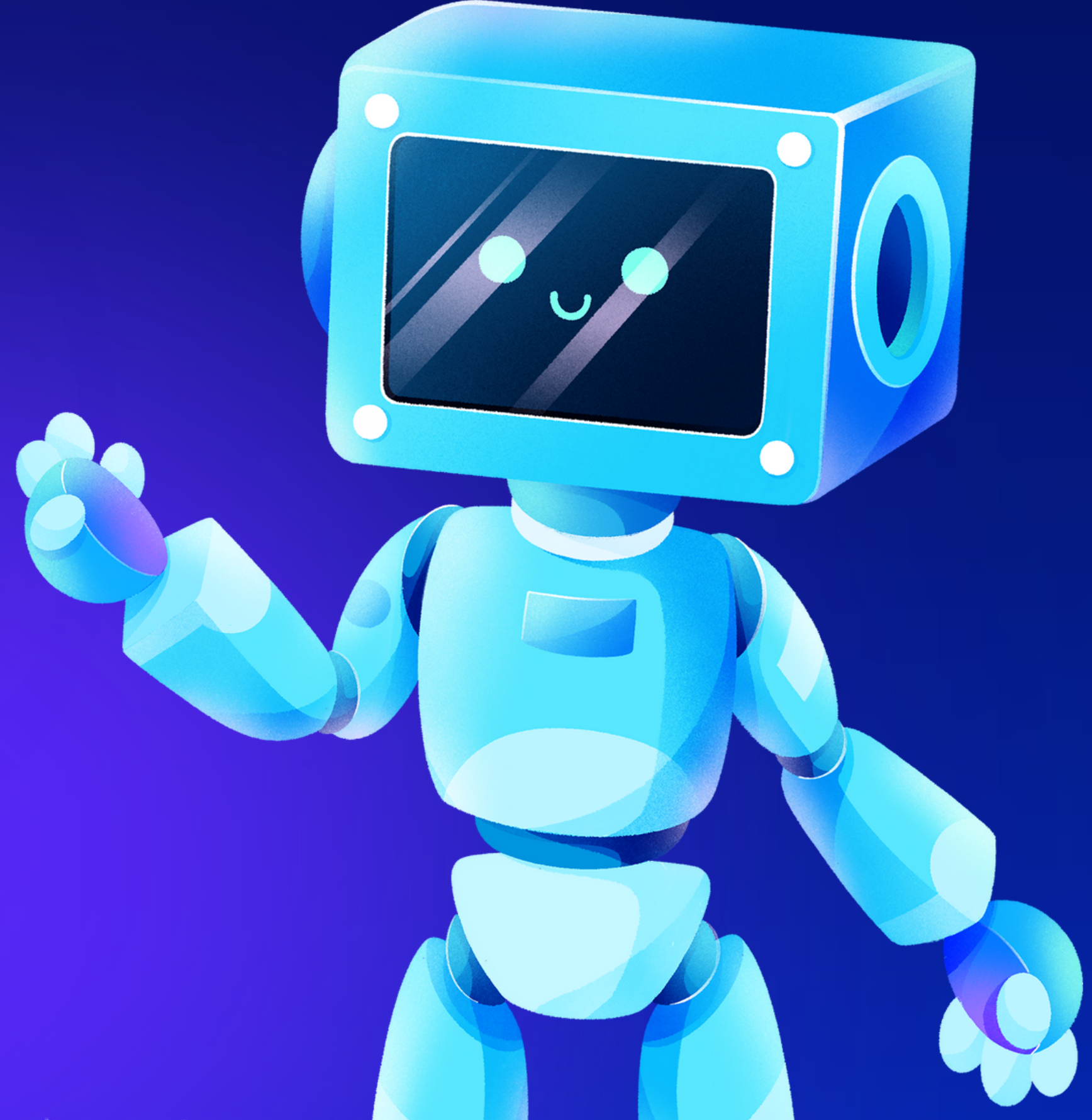
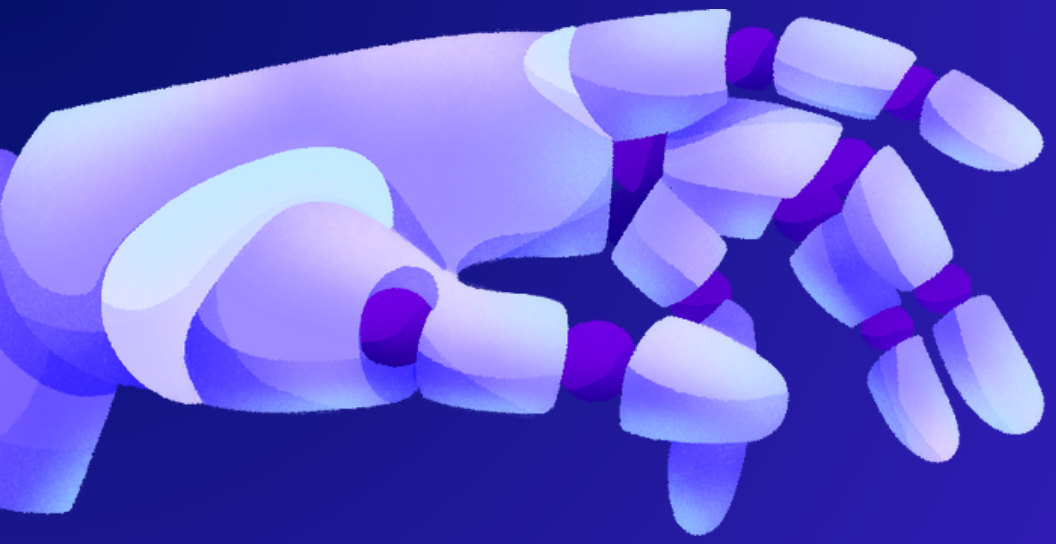


ROBOBOARD M1

PROJE

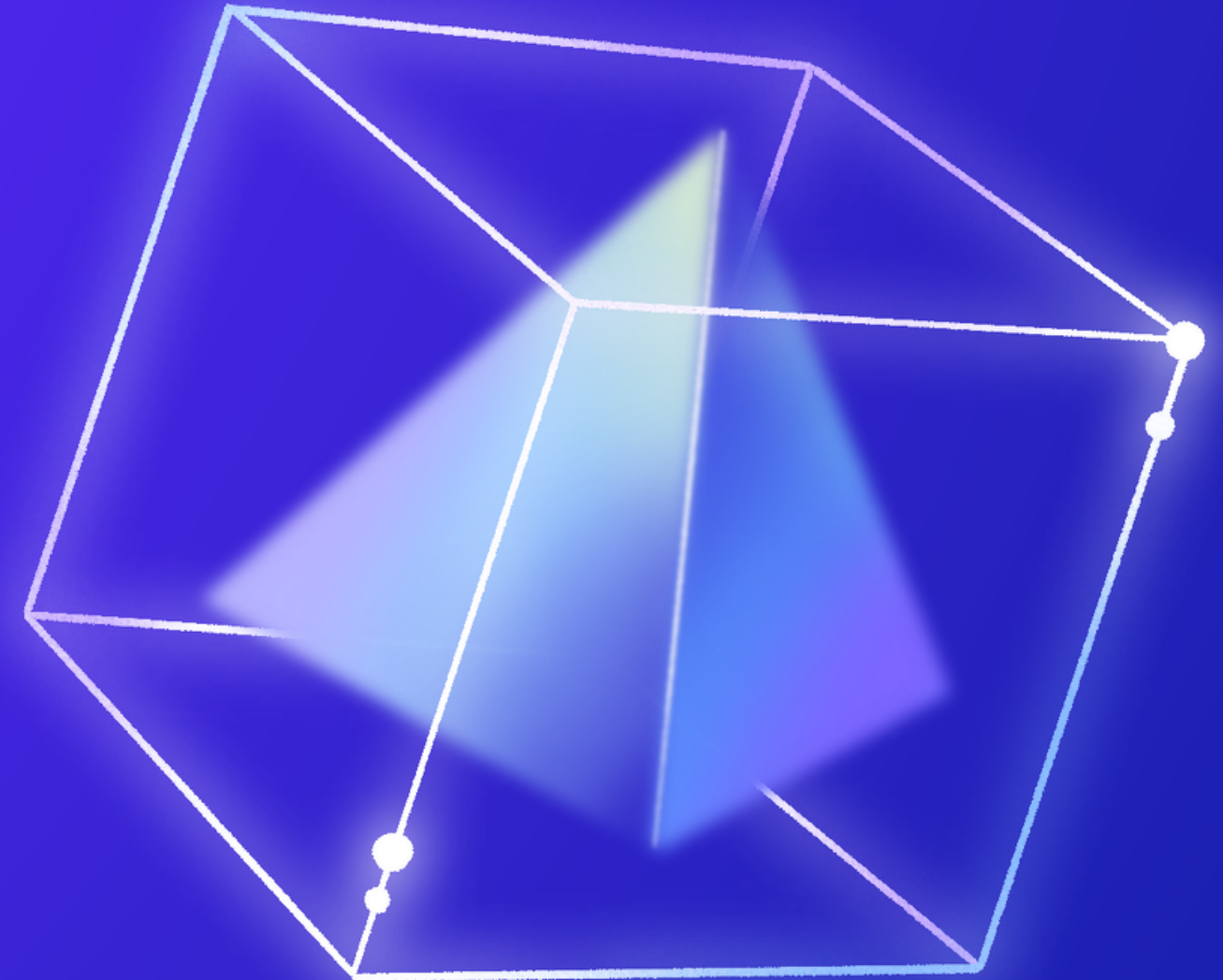
SETİ



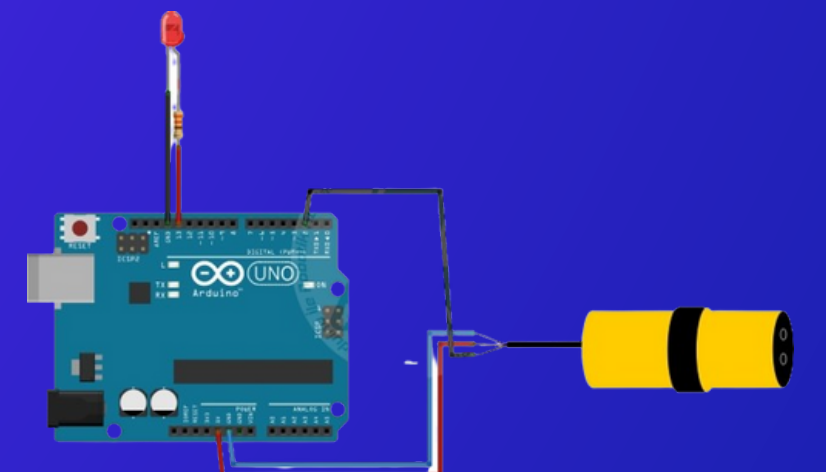
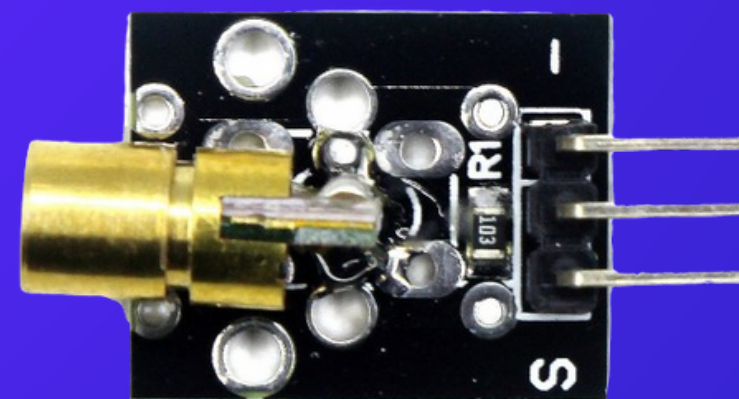
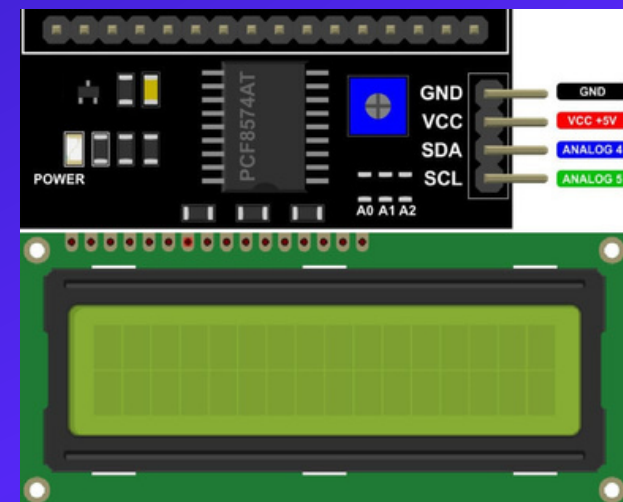
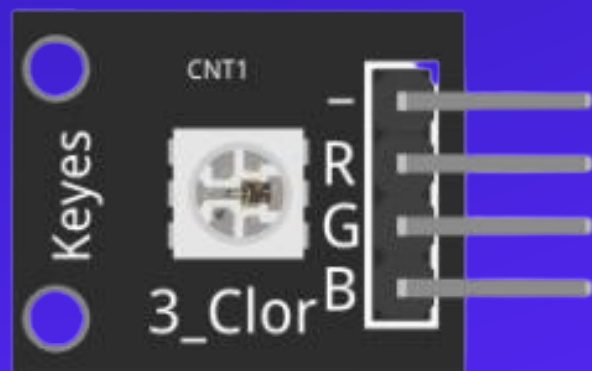
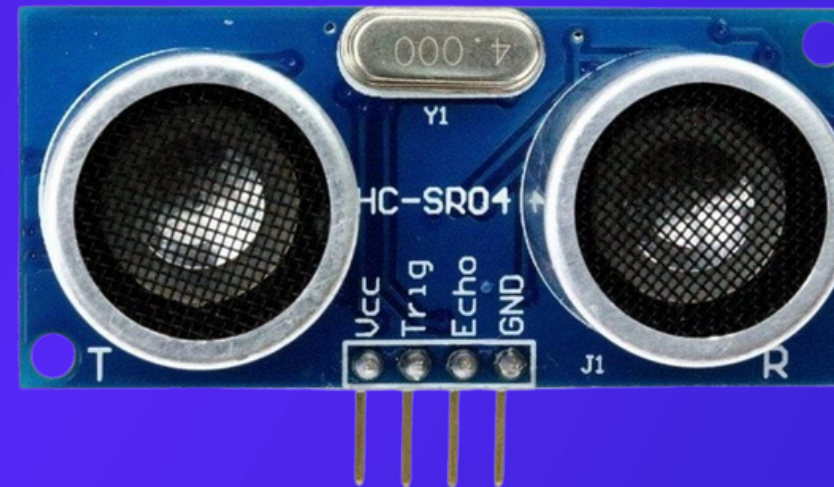
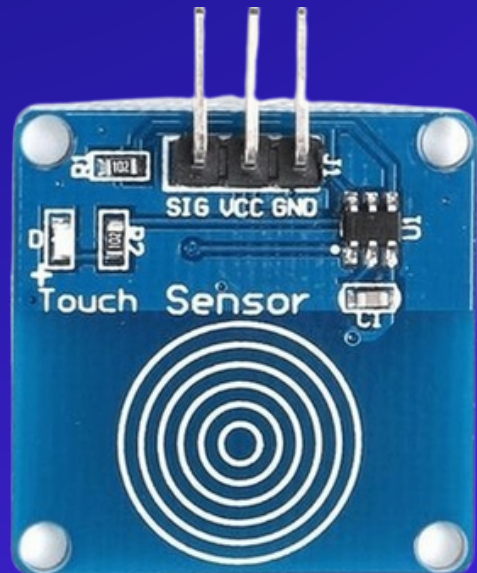


İÇİNDEKİLER

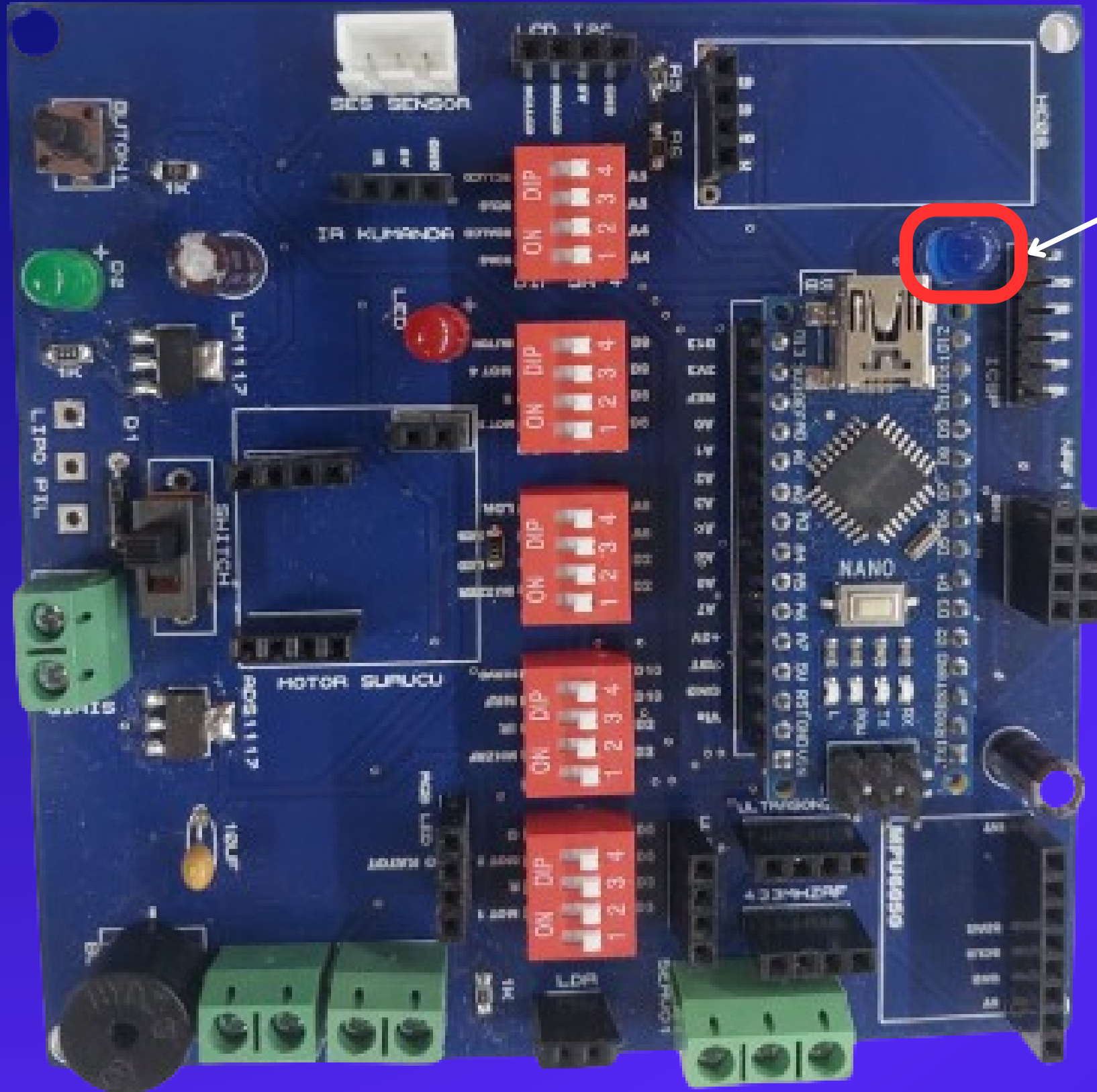
- LED YAKMA
- KARA ŞİMŞEK
- TRAFİK IŞIĞI
- BUTON İLE LED YAKMA
- KORNA YAPIMI
- MASA LAMBASI YAPIMI
- SERVO KONTROL
- PARK SENSÖRÜ
- ENGELLİ BASTONU
- ELEKTRONİK METRE
- DOKUNMATİK SENSÖR
- LAZER MODÜLÜ
- MZ80 KULLANIMI



MALZEMELER



D4 Pinine baęlı ledimiz
yazılan kod
doęrultusunda
yanacaktır.

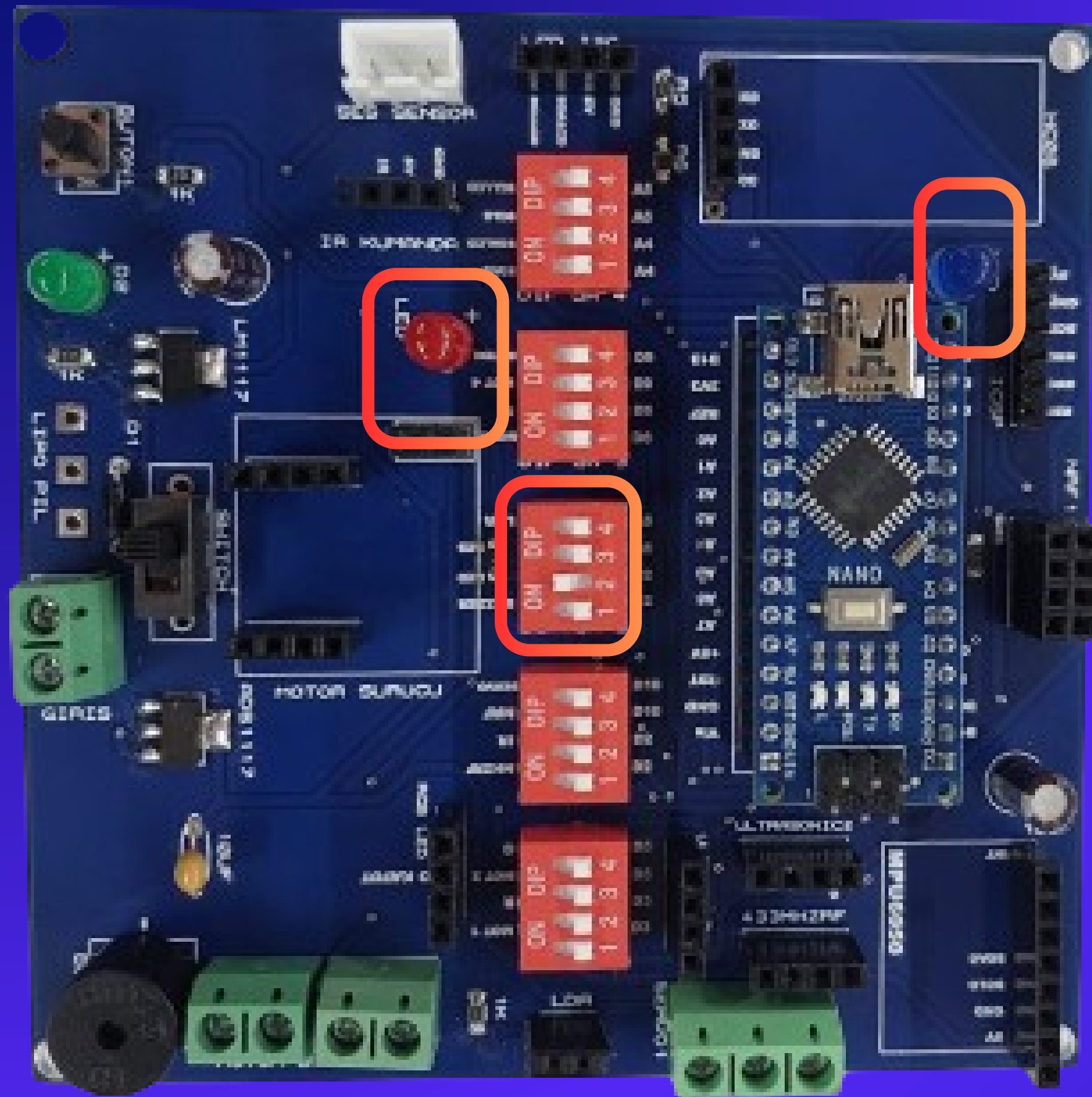


```
LED YAKMA

int led1=4;

void setup()
{
  pinMode(led1,OUTPUT);
}

void loop()
{
  digitalWrite(led1,HIGH);
  delay(1000);
  digitalWrite(led1,LOW);
  delay(1000);
}
```



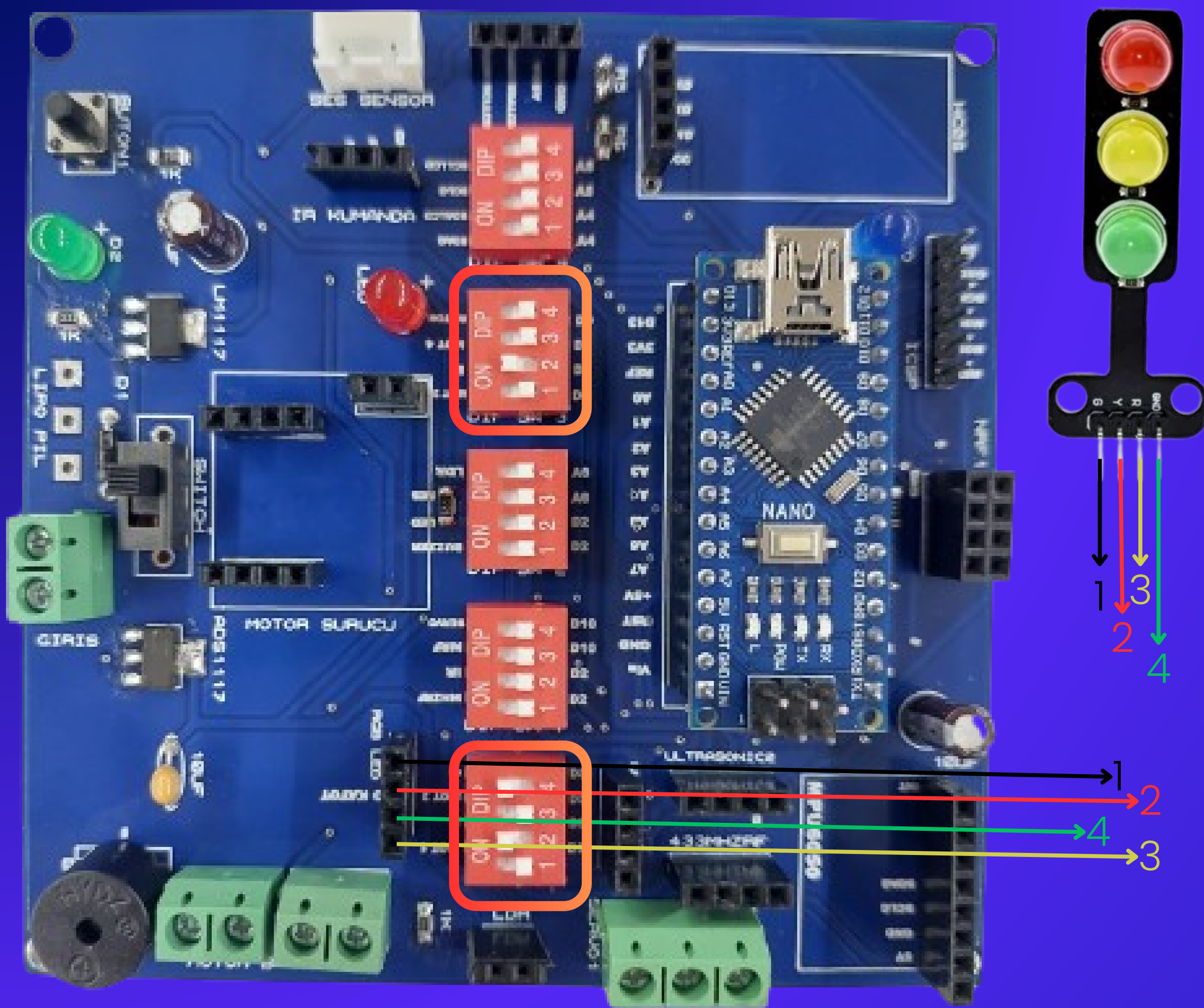
```
KARA ŞİMŞEK

int led1 =2;
int led2=4;

void setup()
{
  pinMode(led1, OUTPUT);
  pinMode(led2, OUTPUT);
}

void loop()
{
  digitalWrite(led1,HIGH);
  delay(100);
  digitalWrite(led1,LOW);
  digitalWrite(led2,HIGH);
  delay(100);
  digitalWrite(led2,LOW);
  delay(100);
}
}
```

Öncelikle kırmızı ledimize bağlı olan D2 pinindeki dip switch aşağı konuma alınır. Örnek uygulama kodumuz yüklenerek d2 ve d4 pini sırası ile yanıp söner.



```
TRAFİK IŞIĞI

const int kirmiziPin = 9; // Kırmızı ışık pin'i
const int sariPin = 10; // Sarı ışık pin'i
const int yesilPin = 11; // Yeşil ışık pin'i

void setup() {
  pinMode(kirmiziPin, OUTPUT);
  pinMode(sariPin, OUTPUT);
  pinMode(yesilPin, OUTPUT);
}

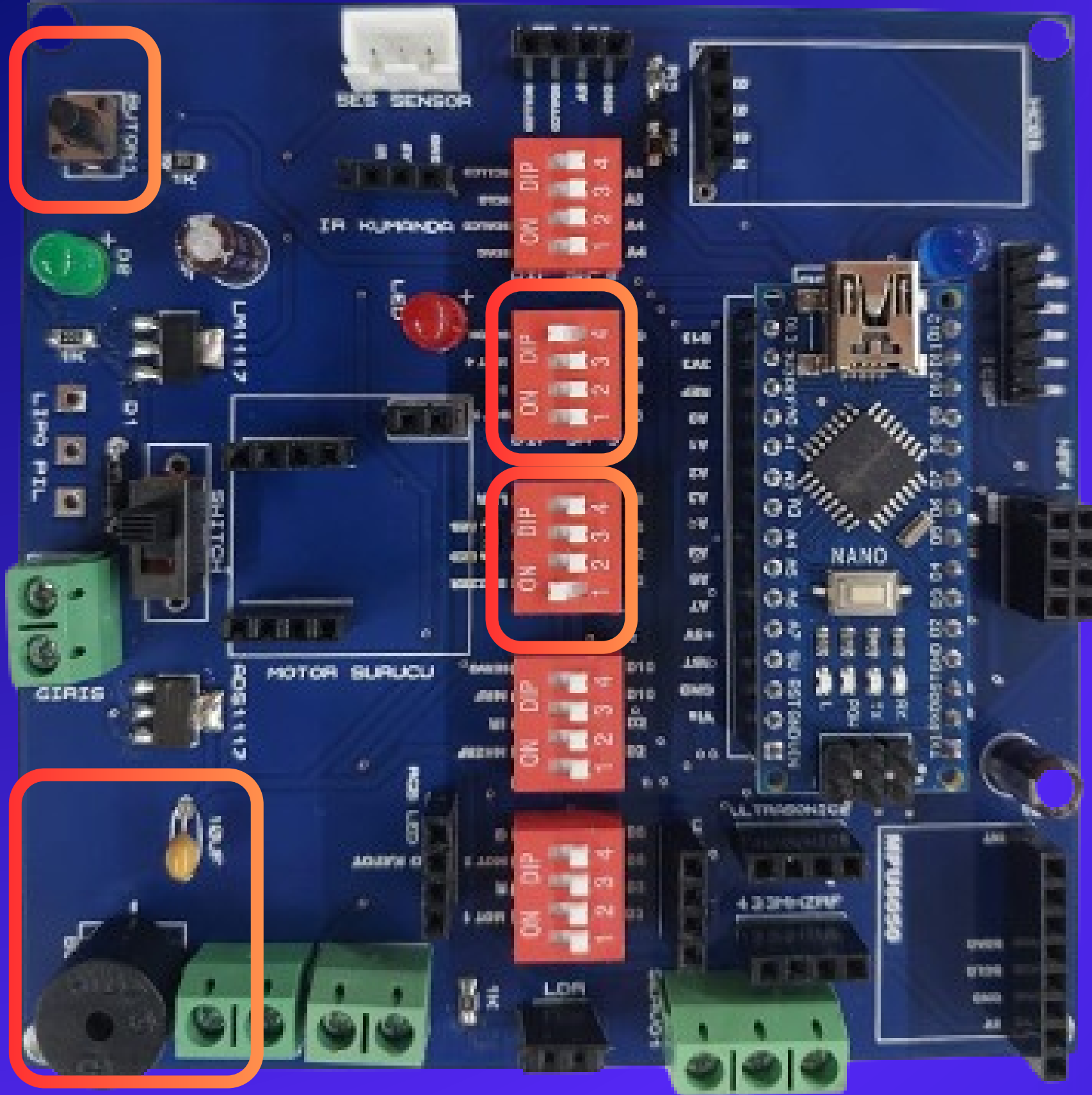
void loop() {
  // Trafik ışığını kırmızı yap
  digitalWrite(kirmiziPin, HIGH);
  digitalWrite(sariPin, LOW);
  digitalWrite(yesilPin, LOW);
  delay(2000); // 2 saniye bekle

  // Trafik ışığını sarı yap
  digitalWrite(kirmiziPin, LOW);
  digitalWrite(sariPin, HIGH);
  digitalWrite(yesilPin, LOW);
  delay(1000); // 1 saniye bekle

  // Trafik ışığını yeşil yap
  digitalWrite(kirmiziPin, LOW);
  digitalWrite(sariPin, LOW);
  digitalWrite(yesilPin, HIGH);
  delay(2000); // 2 saniye bekle

  // Trafik ışığını sarı yap
  digitalWrite(kirmiziPin, LOW);
  digitalWrite(sariPin, HIGH);
  digitalWrite(yesilPin, LOW);
  delay(1000); // 1 saniye bekle
}
```

D3 D5 D6 pinine bağlı dip switchler aşağı konuma getirilerek trafik lambası ledlerine güç gitmesi sağlanır yazdığımız kod yüklenerek sırası ile kırmızı sarı yeşil yanarak sistem çalışır



```
KORNA YAPIMI

int korna=2;
int buton=9;

int butondurum;

void setup() {

  pinMode(korna, OUTPUT);
  pinMode(buton, INPUT);
}

void loop() {

  butondurum = digitalRead(buton);

  if (butondurum==HIGH) {

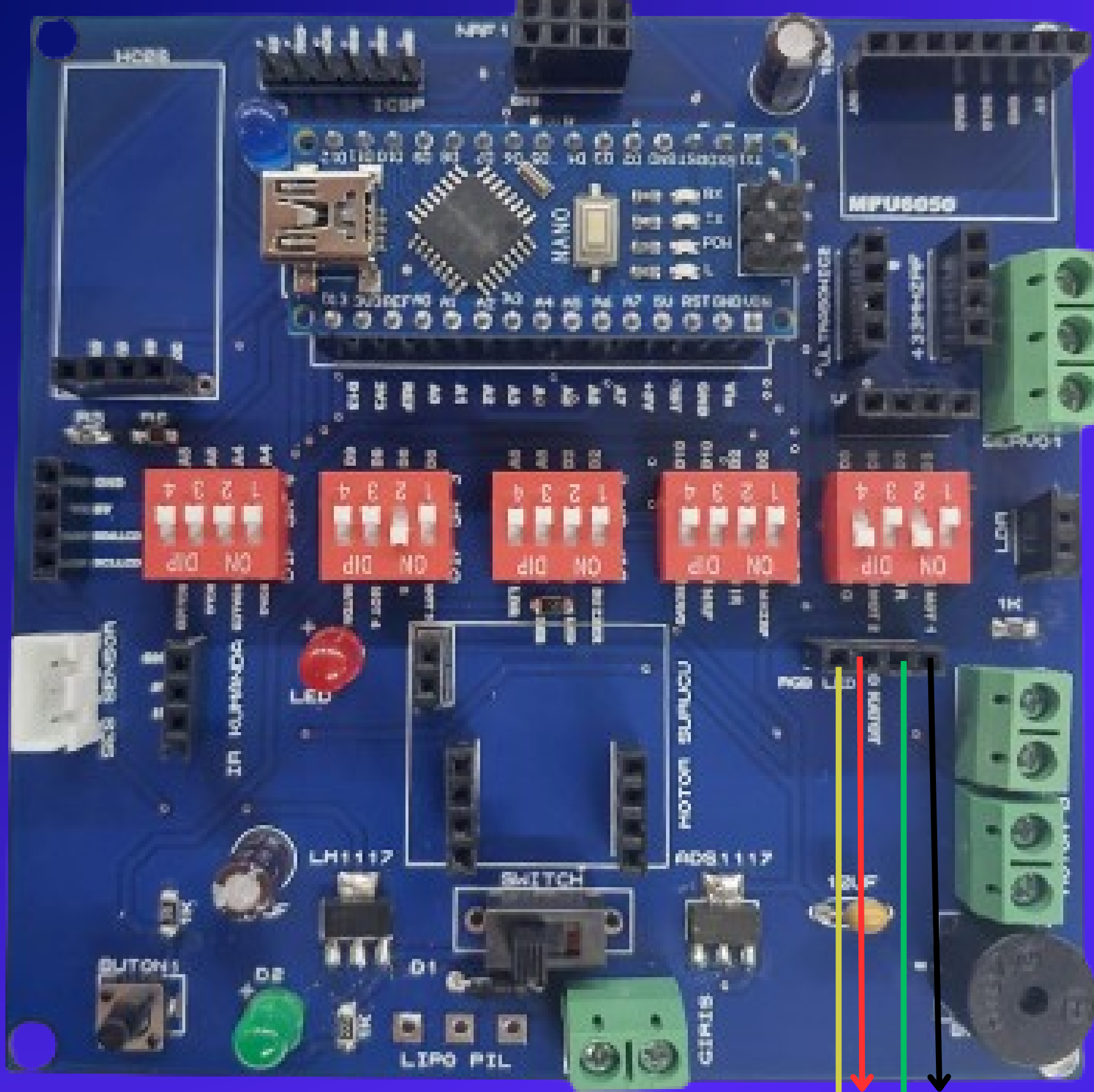
    digitalWrite(korna, HIGH);

  }
  else {

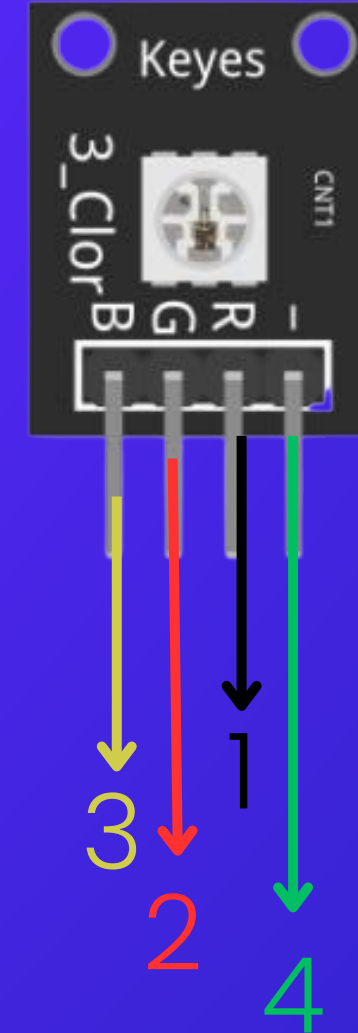
    digitalWrite(korna, LOW);

  }
}
```

D2 pinine baęlı buzzer D9 pinine baęlı buton switchleri ařaęı konuma getirilerek devreye g¼c gitmesi saęlanır kodlama ile butona bastıkęa buzzer korna g¼revi g¼recektir.



D3 D5 D6 pinine
bağlı switchler
aşağı konuma
getirilerek
Rgb ledi farklı
randomlarda
yakarak
rengarenk
görüntü
oluşturacaktır.



```
MASA LAMBASI YAPIMI

int kirmiziled=3;
int yesilled=5;
int maviled=6;

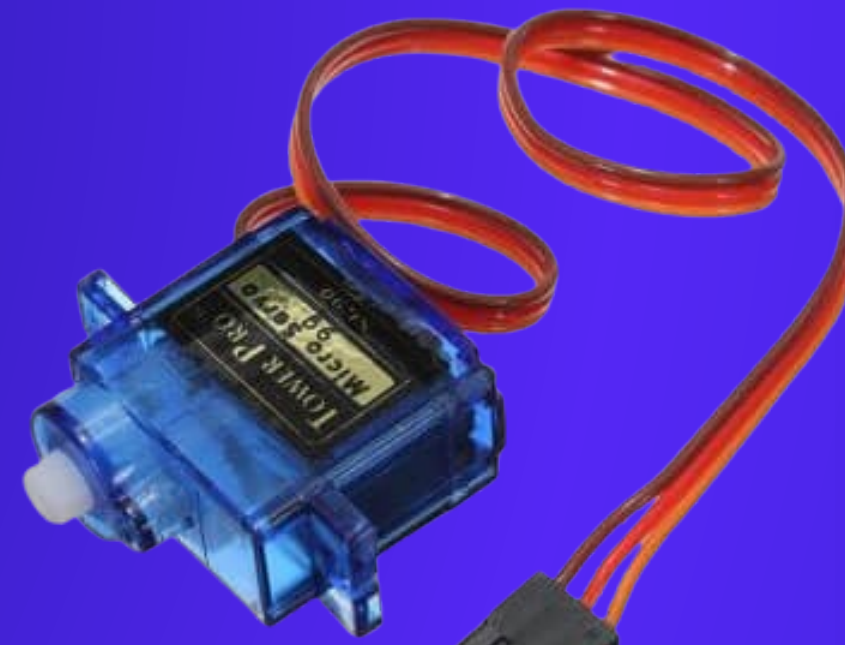
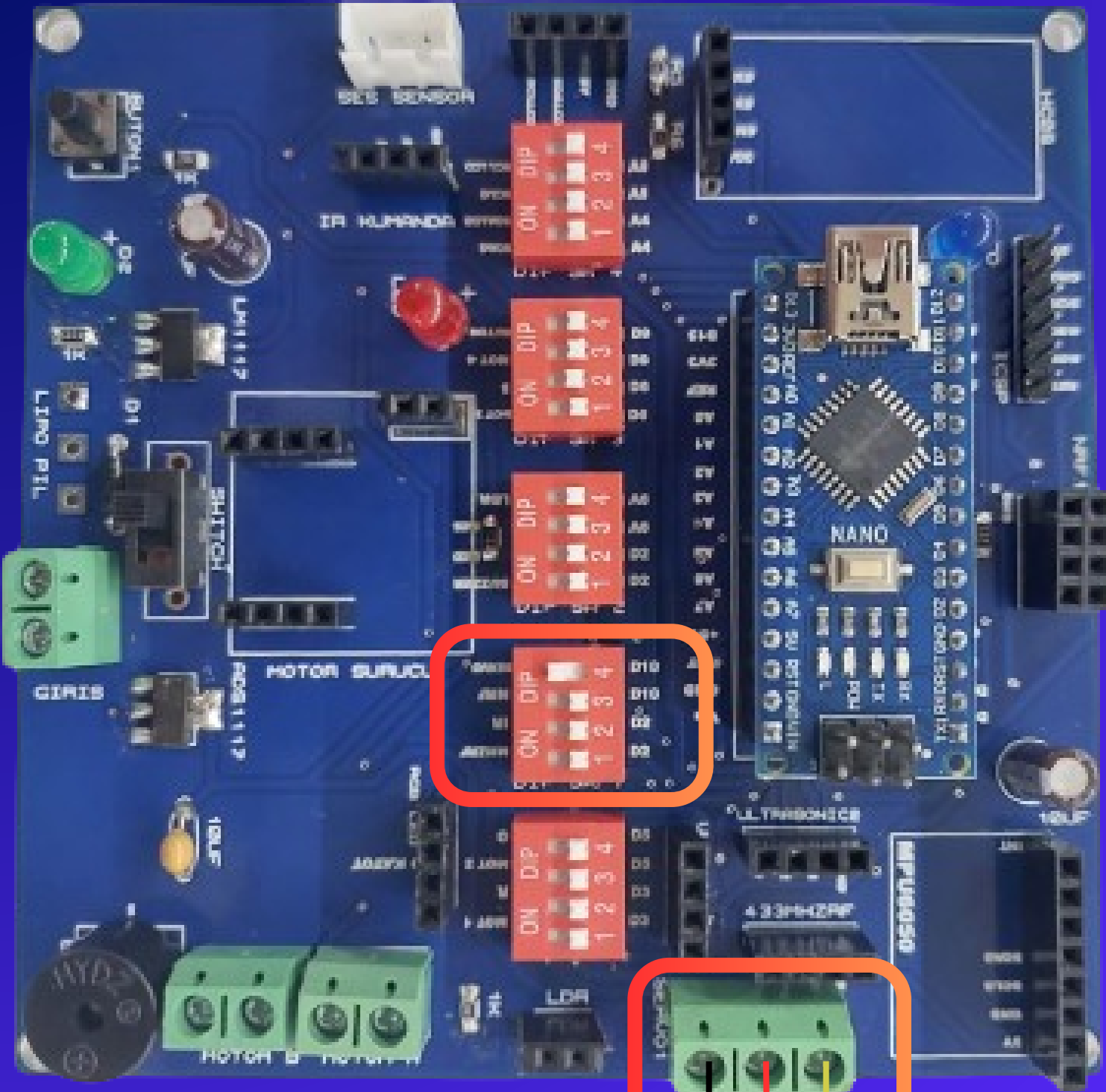
int kirmizi_random;
int yesil_random;
int mavi_random;

void setup(){
  pinMode(kirmiziled,OUTPUT);
  pinMode(yesilled,OUTPUT);
  pinMode(maviled,OUTPUT);
}

void loop (){

  kirmizi_random=random(0,256);
  yesil_random=random(0,256);
  mavi_random=random(0,256);

  analogWrite(kirmiziled,kirmizi_random);
  analogWrite(yesilled,yesil_random);
  analogWrite(maviled,mavi_random);
}
```



GND
VCC
VERİ
PINİ

D10 pinine bağlı servo dip switchi aşağı konuma getirilerek servoya güç gitmesini sağlar ve kodlama yüklenerek servonun hareketi sağlanır.

```
SERVO KONTROL

#include <Servo.h>

Servo myservo;

int servoPin = 10;
int derece = 0;

void setup()
{
  myservo.attach(servoPin);
}

void loop()
{
  for (derece=0; derece<=180; derece+=1) //0'dan 180'e kadar birer derece artır
  {
    myservo.write(derece);
    delay(15);
  }
  for(derece=180; derece>=0; derece-=1) //180'den 0'a kadar birer derece azalt
  {
    myservo.write(derece);
    delay(15);
  }
}

// servo 2

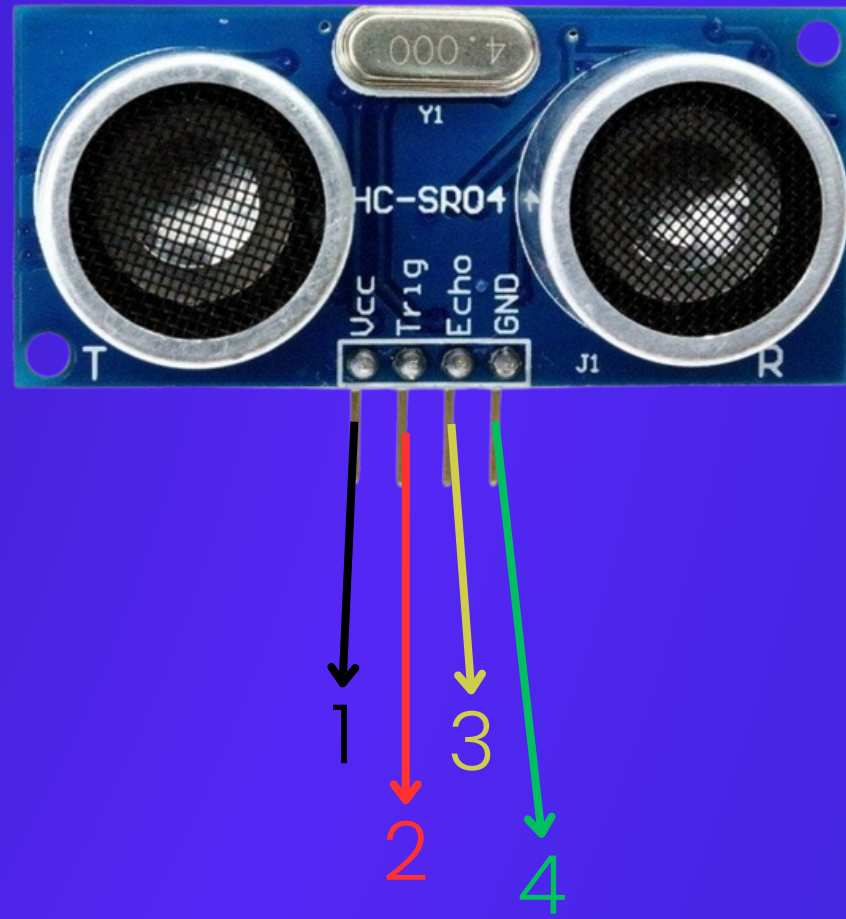
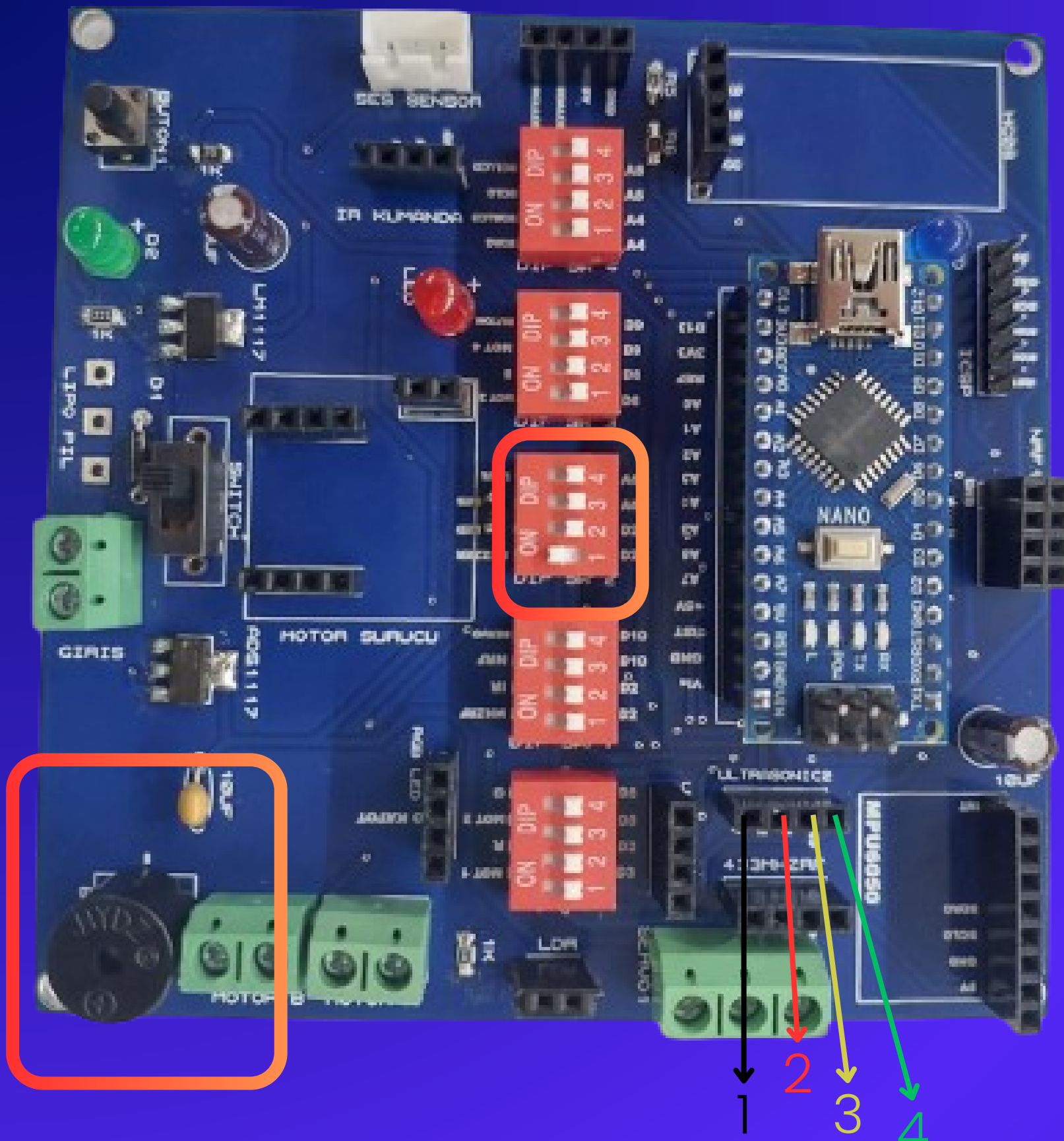
#include <Servo.h>

Servo myservo;

int servoPin = 10;

void setup()
{
  myservo.attach(servoPin);
}

void loop()
{
  myservo.write(0);
  delay(1000);
  myservo.write(45);
  delay(1000);
  myservo.write(90);
  delay(1000);
  myservo.write(120);
  delay(1000);
  myservo.write(180);
  delay(1000);
}
```



Hcsr04 engel sensörü engeli algıladığı an D2 pinine bağlı buzzer dip switch i aşağı konuma getirilerek buzzer çalıştırılır engel mesafesine göre ses tonu artış gösterir uyarı verir.

```
PARK SENSÖRÜ

#define echoPin A3
#define trigPin A2
#define buzzerPin 2

int maximum_menzil = 50;
int minimum_menzil= 0;

void setup() {
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  pinMode(buzzerPin, OUTPUT);
}

void loop() {

  int olcum = mesafe(maximum_menzil, minimum_menzil);
  melodi(olcum*10);
}

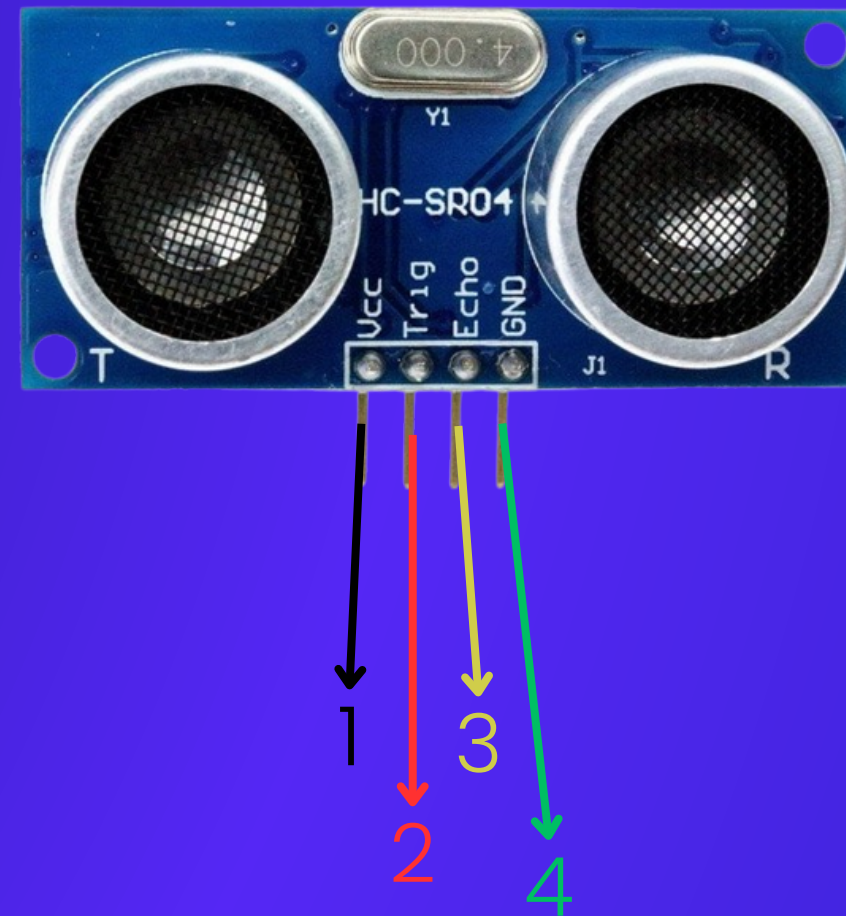
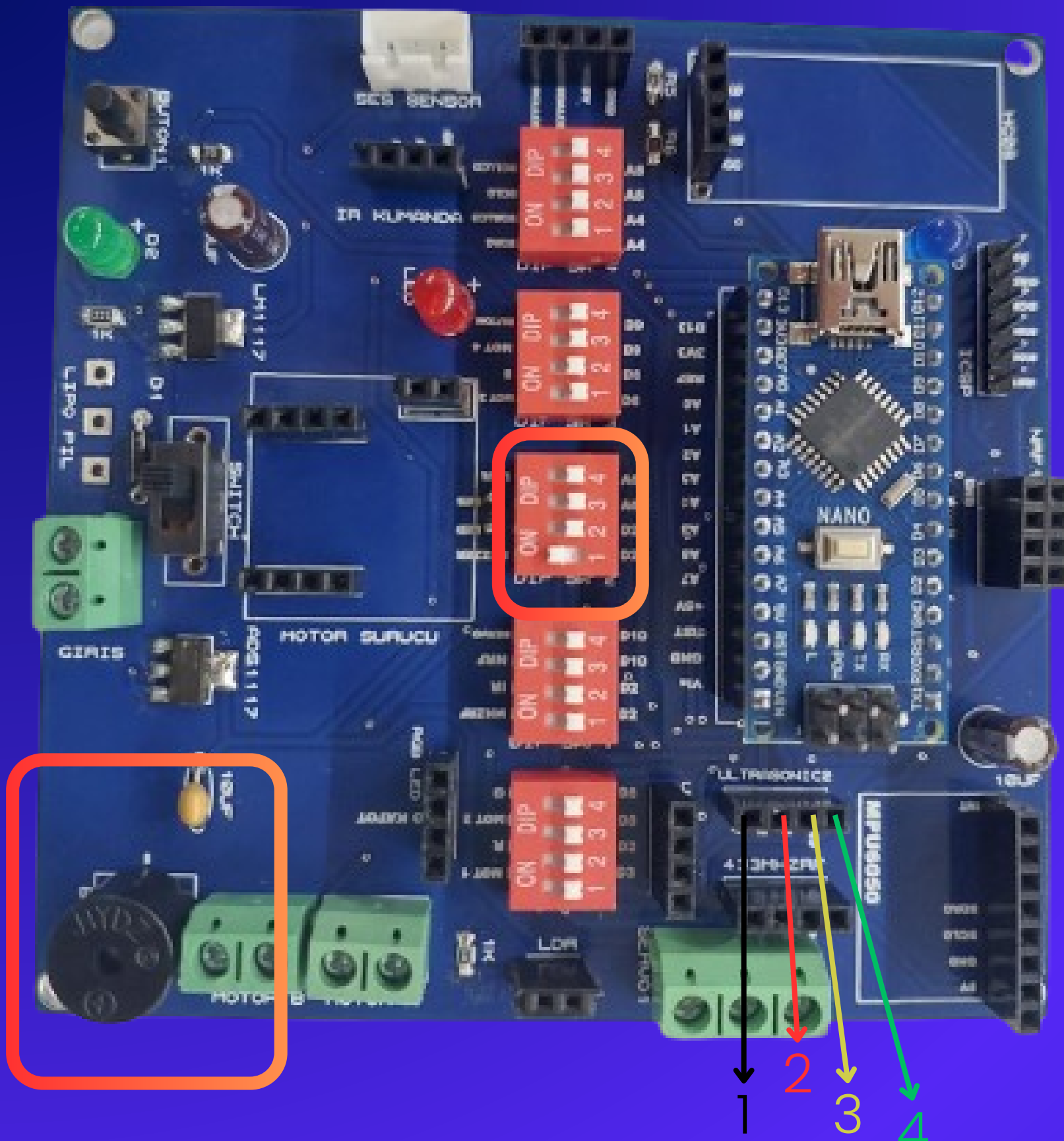
int mesafe(int max_menzil, int min_menzil)
{
  long sure, mesafe;

  digitalWrite(trigPin,LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);

  sure = pulseIn(echoPin, HIGH);
  mesafe = sure / 58.2;
  delay(50);

  if(mesafe >= max_menzil || mesafe <= min_menzil)
  return 0;
  return mesafe;
}

int melodi(int dly)
{
  tone(buzzerPin, 440);
  delay(dly);
  noTone(buzzerPin);
  delay(dly);
}
}
```



D2 pinine bağılı buzzer dip switchi aşağı konuma getirilir hcsr04 engeli algıladıgında kullanıcıya belirli tone de sesler vererek uyarır.

```
ENGELLİ BASTONU

int buzzer=2;
int echo_pin=A3;
int trig_pin=A2;

float mesafe, sure;

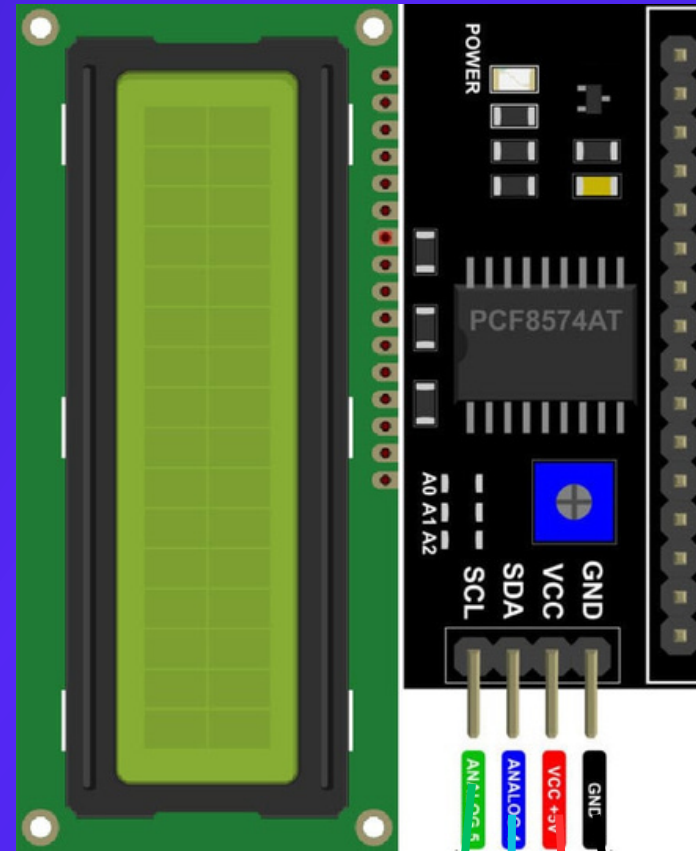
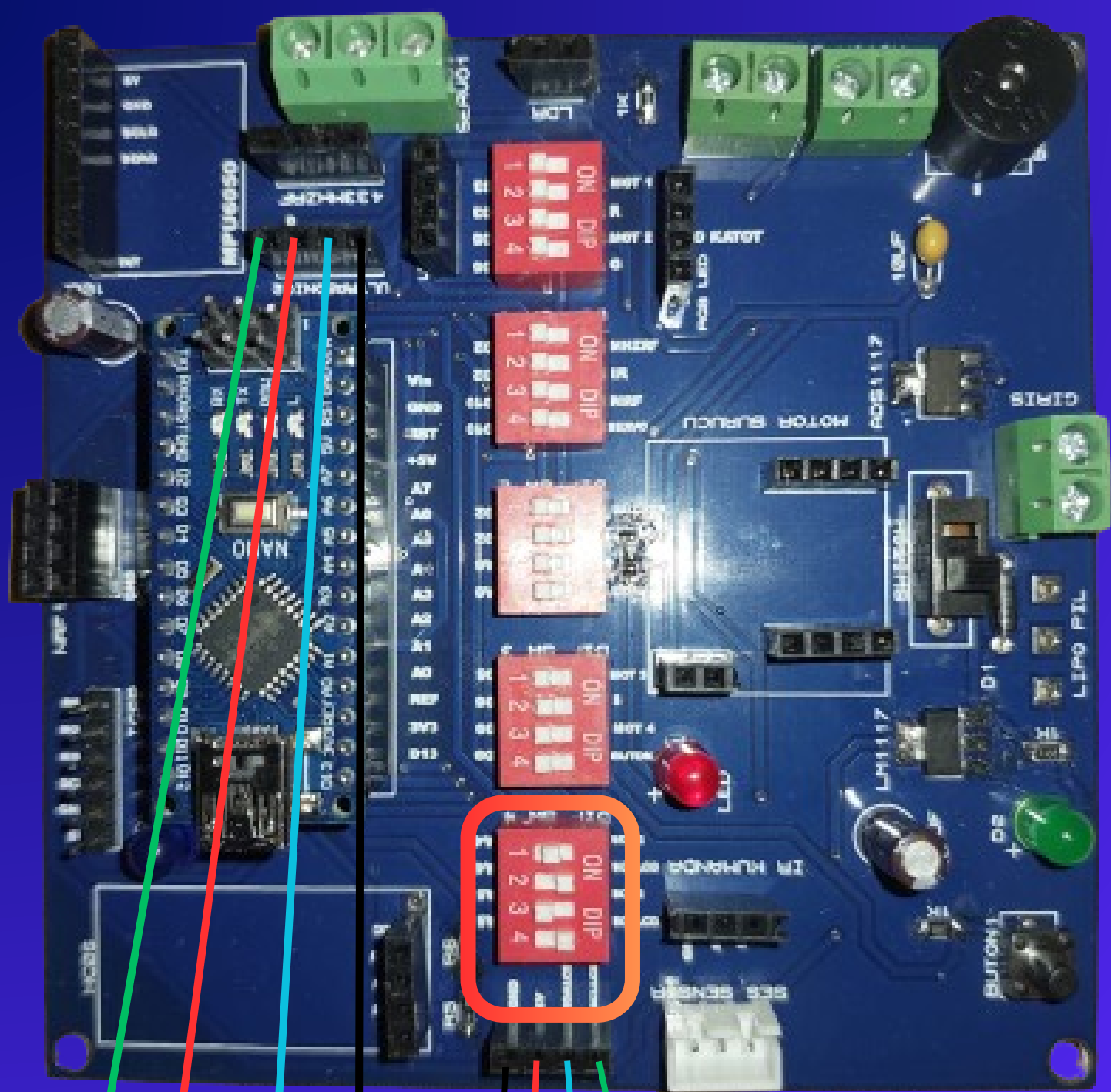
void setup(){
  pinMode(trig_pin, OUTPUT);
  pinMode(echo_pin, INPUT);
  pinMode(buzzer, OUTPUT);

  Serial.begin(9600);
}

void loop(){
  digitalWrite(trig_pin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trig_pin, LOW);
  sure = pulseIn(echo_pin, HIGH);
  mesafe= sure / 2 /29.1;
  Serial.print("Olculen Mesafe = ");
  Serial.print(mesafe);
  Serial.println(" cm ");

  if (mesafe<=50) {
    digitalWrite (buzzer, HIGH);
    delay (50);
    digitalWrite (buzzer, LOW);
    delay (100);
  }

  else {
    digitalWrite (buzzer, LOW);
  }
}
```



Hcsr04 engel sensörü mesafeyi algıladığı süreç içerisinde lcd ye giden dip switch ler aşağı konumda olarak lcd ye güç verip aradaki mesafeyi hesaplayıp lcd ye yazacaktır.

```
ELEKTRONİK METRE

#include <LiquidCrystal_I2C_AvrI2C.h>

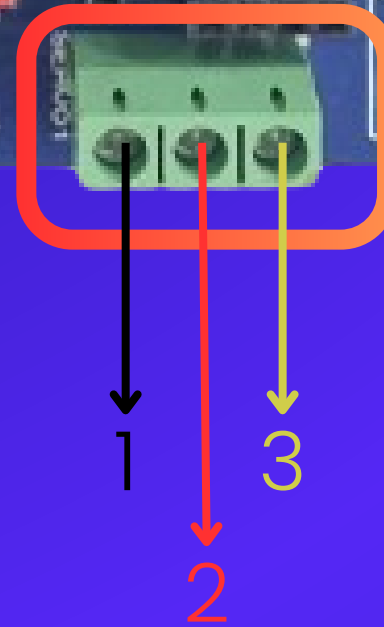
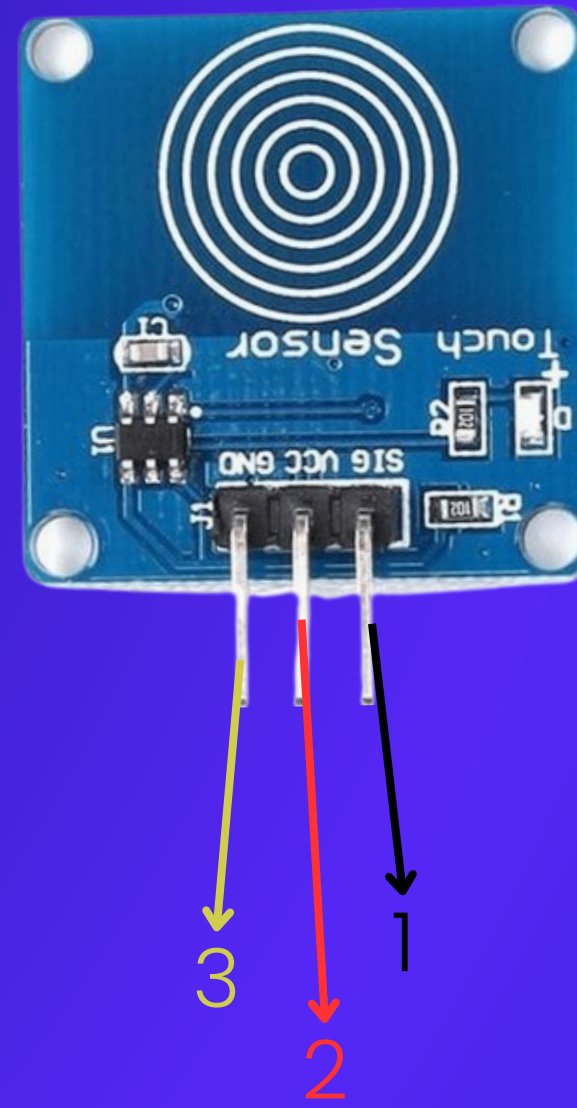
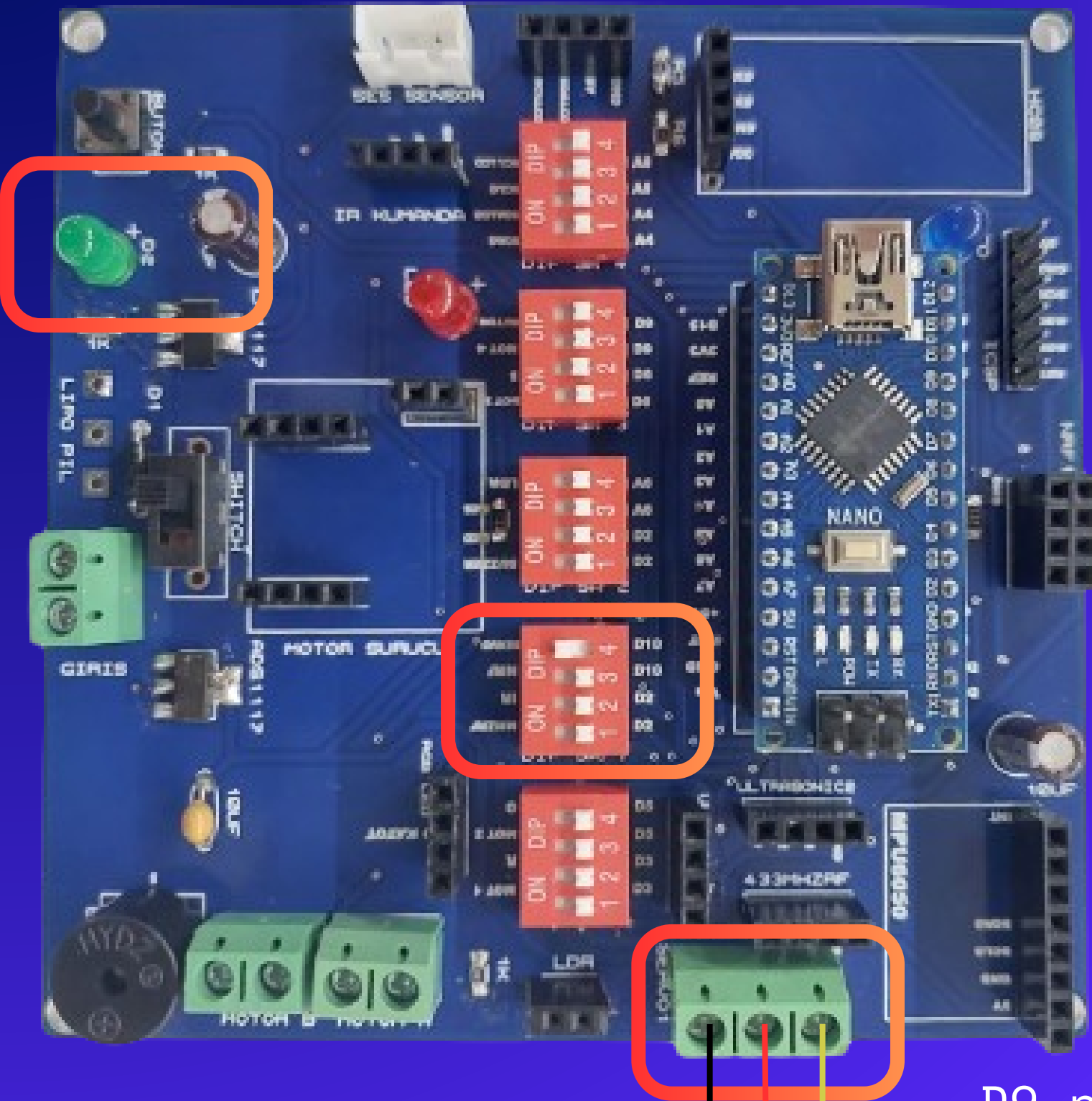
LiquidCrystal_I2C_AvrI2C lcd(0x27,16,2);

int trigPin = A2;
int echoPin = A3;
long zaman;
long mesafe;

void setup(){
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  lcd.begin(); //lcd'yi başlatıyoruz
  lcd.backlight(); //lcd arka ışığını açıyoruz.
}

void loop(){
  digitalWrite(trigPin, LOW);
  delayMicroseconds(5);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);
  zaman = pulseIn(echoPin, HIGH);
  mesafe= (zaman /29.1)/2;
  if(mesafe<4){mesafe=4;}
  else if(mesafe>100){mesafe=100;}

  lcd.clear();
  lcd.setCursor(0,0);
  lcd.print("MESAFE OLCER");
  lcd.setCursor(0,1);
  lcd.print(mesafe);
  lcd.setCursor(4,1);
  lcd.print("cm");
  delay(500);
}
```



D9 pinine bağlı dip switch aşağı konuma getirilerek touch sensör aktif edilir D4 pininde ki led yanar konuma geçer.

```
DOKUNMATİK SENSÖR

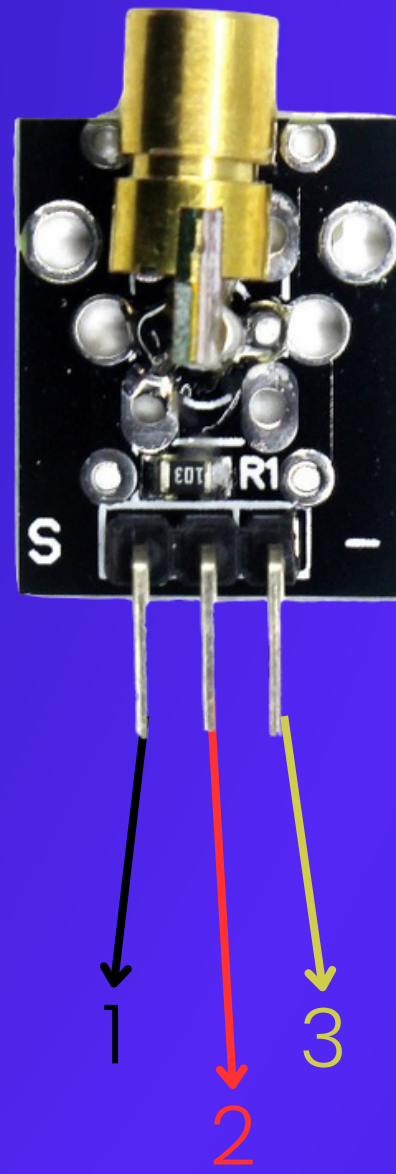
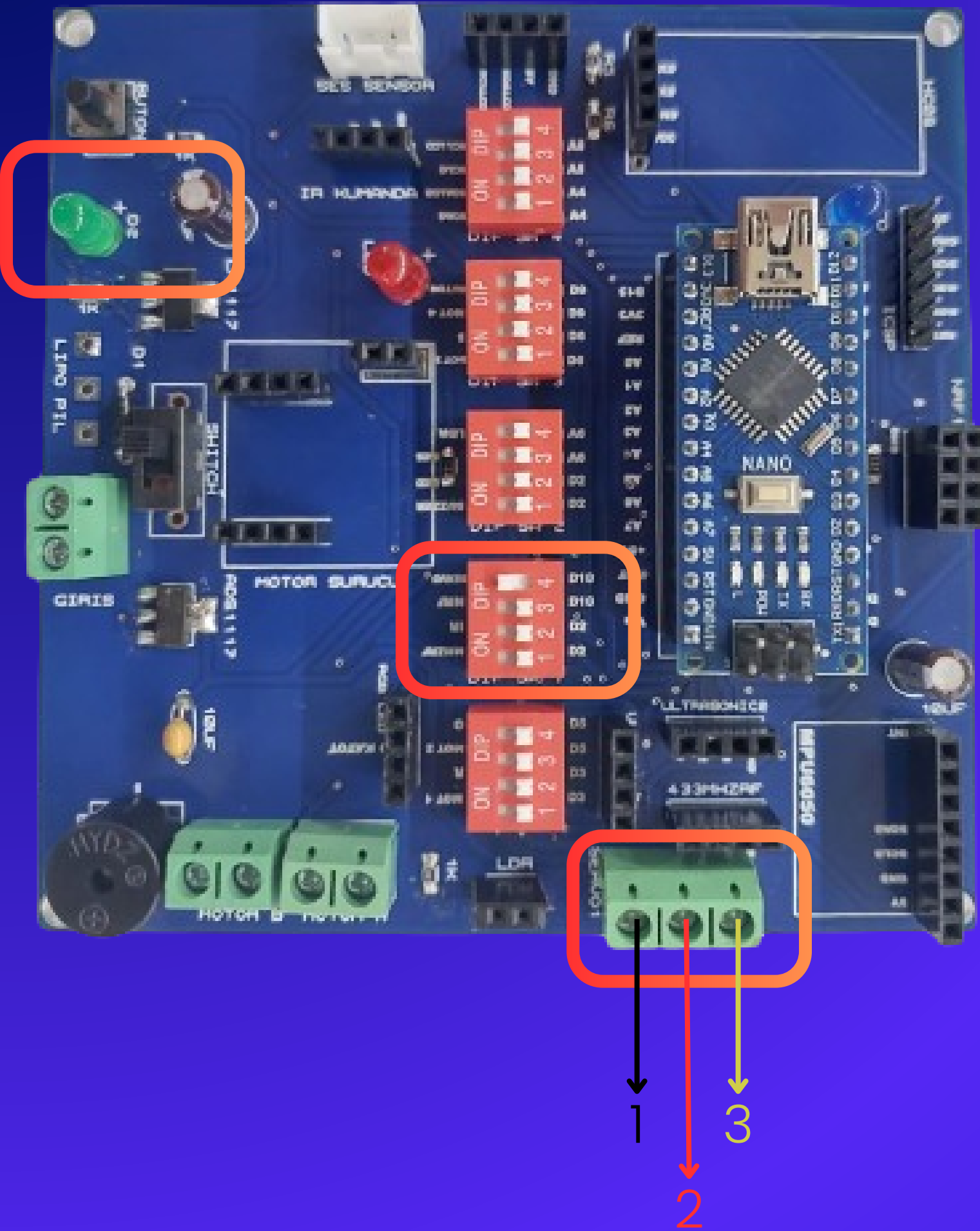
const int touchPin = 2;
const int ledPin = 13;

void setup() {
  pinMode(ledPin, OUTPUT);
  Serial.begin(9600);
}

void loop() {
  int touchValue = digitalRead(touchPin);

  if (touchValue == HIGH) {
    Serial.println("Dokunmatik sensöre dokunuldu!");
    digitalWrite(ledPin, HIGH);
  } else {
    Serial.println("Dokunmatik sensöre dokunulmadı.");
    digitalWrite(ledPin, LOW);
  }

  delay(1000);
}
```

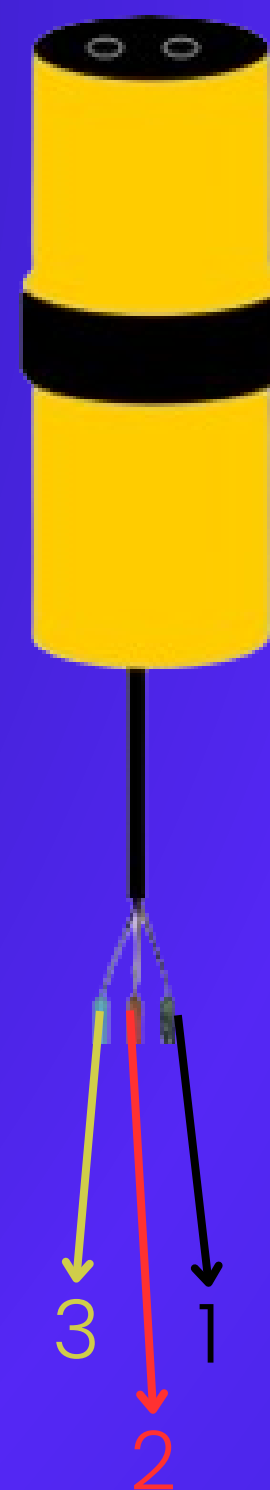
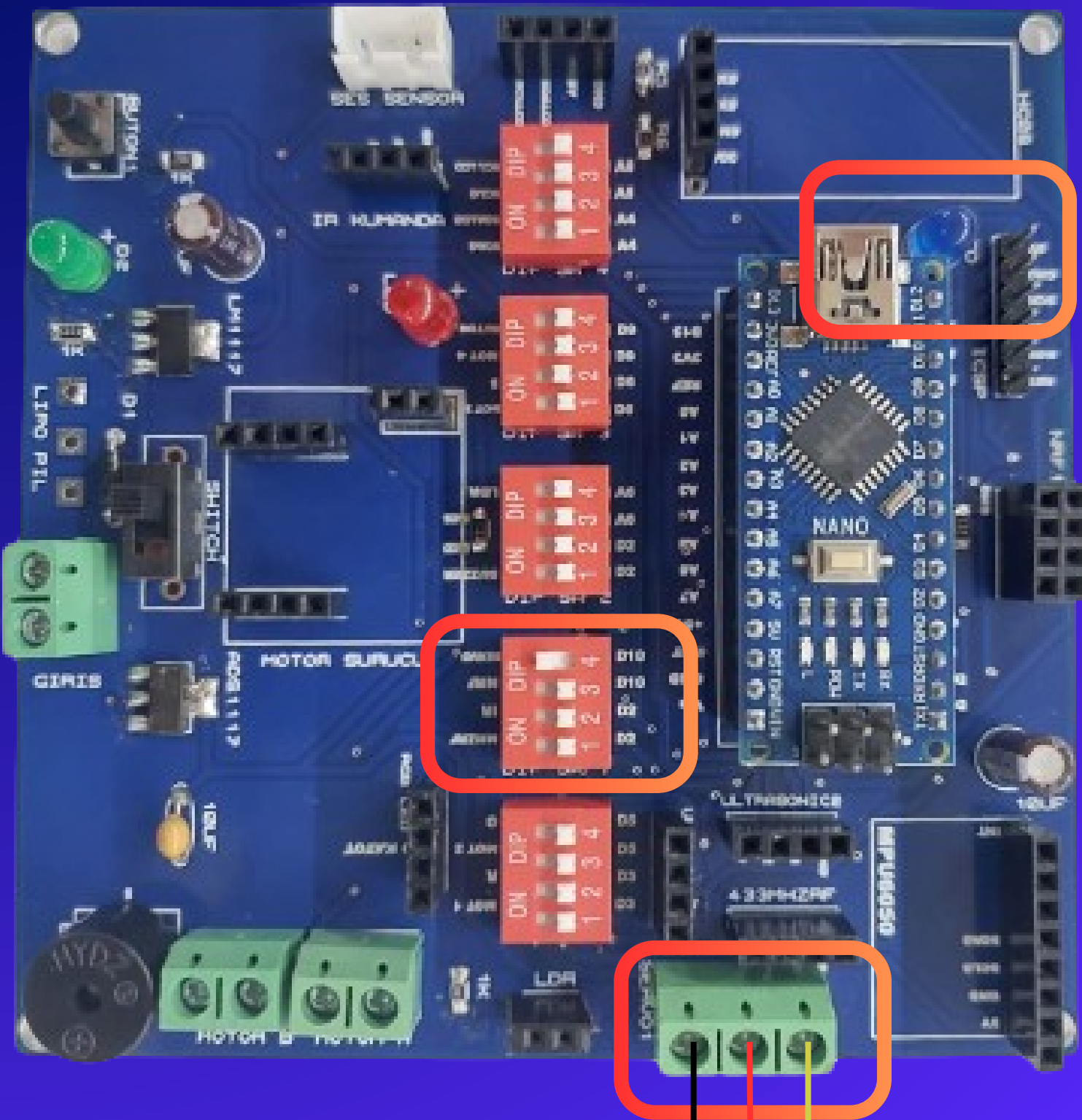


```
LAZER MODÜLÜ

void setup() {
  pinMode(lazerPin, OUTPUT);
}

void loop() {
  digitalWrite(lazerPin, HIGH);
  delay(1000);
  digitalWrite(lazerPin, LOW);
  delay(1000);
}
```

D9 pinine bağlı dip switch aşağı konuma getirilerek lazer sensör aktif edilir

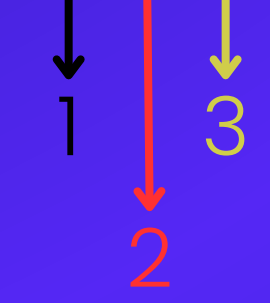


```
MZ80 KULLANIMI

int ledPin = 4;
int inputPin = 2;
int val = 0;

void setup()
{
  pinMode(ledPin, OUTPUT);
  pinMode(inputPin, INPUT);
}

void loop(){
  val = digitalRead(inputPin);
  if (val == HIGH) {
    digitalWrite(ledPin, LOW);
  } else {
    digitalWrite(ledPin, HIGH);
  }
}
```



Mz80 sensör girişine bağladığımızda D9 pinindeki dip switch aşağı konumda olarak sinyal gitmesini sağlayacaktır .sinyal geldikçe led yanıp sökecektir.