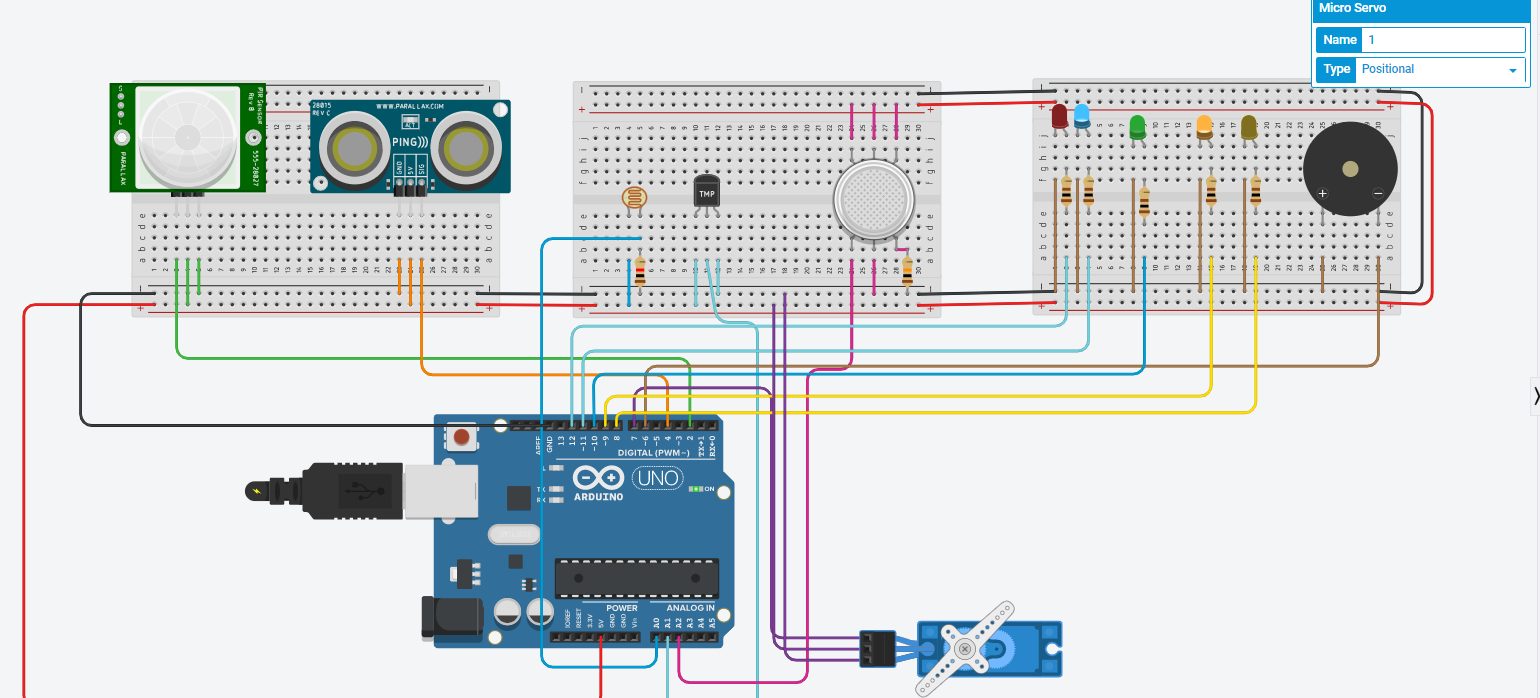
Vježba temperaturni senzor, gas, pir, fotootpornik, ultrasonik senzora i servomotor

Spojiti prema slici



#include <Servo.h>

int inches = 0;

int cm = 0;

const int ldr = A0 ; // photoresistor

int s1,x;

int gas = A2;

int pir;

Servo servoMotor;

long readUltrasonicDistance(int pin)

{

pinMode(pin, OUTPUT);

digitalWrite(pin, LOW);

delayMicroseconds(2);

digitalWrite(pin, HIGH);

delayMicroseconds(10);

digitalWrite(pin, LOW);

pinMode(pin, INPUT);

return pulseIn(pin, HIGH);

}

void setup()

{

pinMode(12, OUTPUT);

pinMode(11, OUTPUT);

pinMode(10, OUTPUT);

pinMode(9, OUTPUT);

pinMode(8, OUTPUT);

pinMode(6, OUTPUT);

pinMode(A2,INPUT); // gas sensor

pinMode(A1, INPUT); // temperature sensor

pinMode(4, INPUT); // ultrasonic sensor

pinMode(2, INPUT); // PIR sensor

Serial.begin(9600);

servoMotor.attach(7);

}

void loop()

{

// ultrasonic sensor and servomotor

cm = 0.01723 \* readUltrasonicDistance(4);

Serial.print(cm);

servoMotor.write(cm);

Serial.println("cm");

// temperature sensor

float temp = ((analogRead(A1) \* (5.0/1024))-0.5)/0.01;

Serial.print( temp );

Serial.println(" C");

if(temp >= 50)

{

Serial.println("Overheated");

digitalWrite(12, HIGH);

digitalWrite(11, LOW);

}

else

{

digitalWrite(12, LOW);

digitalWrite(11, HIGH);

}

// photoresistor

s1 = analogRead(ldr);

x=(676-s1)/4;

analogWrite(10, x);

// gas sensor

gas = analogRead (A2);

if (gas > 500 )

{

digitalWrite(9, LOW);

tone(6,255,1000);

Serial.println("Smoke detected");

}

else

{

digitalWrite(9, HIGH);

digitalWrite(6, LOW);

}

// pir sensor

pir = digitalRead(2);

if ( pir == HIGH)

{

Serial.println("Object detected");

tone(6,100,1000);

digitalWrite(8, HIGH);

}

else

{

digitalWrite(8, LOW);

digitalWrite(6, LOW);

}

delay(1000);

Serial.print("\n");

Serial.print("\n");

}

Na osnovu prethodnog zadatka napraviti zadatak „pametni grad“ u kojem ćete riješiti problem paljenja i gašenja javne rasvjete, problem zagađenja, problem slobodnog mjesta na parkingu, …