#include <Servo.h>

// Define objects and constants

Servo servo;

const int trigPin = 11;

const int echoPin = 12;

const int distanceThreshold = 100; // Distance threshold in cm

long duration;

int distance;

const int delayTime = 2000; // Time delay in milliseconds (2 seconds)

void setup() {

servo.attach(13); // Attach servo to pin 13

pinMode(trigPin, OUTPUT); // Set trigPin as OUTPUT

pinMode(echoPin, INPUT); // Set echoPin as INPUT

}

void loop() {

// Measure distance

digitalWrite(trigPin, LOW);

delayMicroseconds(2);

digitalWrite(trigPin, HIGH);

delayMicroseconds(10);

digitalWrite(trigPin, LOW);

duration = pulseIn(echoPin, HIGH);

// Check for invalid duration and calculate distance

if (duration > 0) {

distance = duration \* 0.034 / 2; // Convert duration to distance in cm

} else {

distance = 100; // Set to a default maximum distance if pulseIn times out

}

// Control servo based on distance with time delay

if (distance >= distanceThreshold) {

servo.write(90); // Move servo to 180°

delay(delayTime); // Wait for specified delay time

} else {

servo.write(180); // Move servo to 90°

delay(delayTime); // Wait for specified delay time

}

}