// change distance measurement parameter below if you want

#include <Servo.h> //servo library

Servo servo;

int trigPin = 2;

int echoPin = 3;

int servoPin = 9; //pin choice is yours

long duration, dist, average;

long aver[3]; //array for average

void setup() {

 servo.attach(servoPin);

 pinMode(trigPin, OUTPUT);

 pinMode(echoPin, INPUT);

 servo.write(0); //close cap on power on

 delay(1000);

 servo.detach();

}

void measure() {

digitalWrite(trigPin, LOW);

delayMicroseconds(5);

digitalWrite(trigPin, HIGH);

delayMicroseconds(15);

digitalWrite(trigPin, LOW);

pinMode(echoPin, INPUT);

duration = pulseIn(echoPin, HIGH);

dist = (duration/2) / 29.1; //obtain distance

}

void loop() {

 for (int i=0;i<=2;i++) { //average distance

 measure();

 aver[i]=dist;

 delay(50); //delay between measurements

 }

 dist=(aver[0]+aver[1]+aver[2])/3; //average distance by 3 measurements

if ( dist<15 ) {

 //if hand on the distance 10...15 cm

 servo.attach(servoPin);

 delay(1);

 servo.write(150);

 delay(3000); //wait 5 seconds or u can change this value

 servo.write(0);

 delay(1000);

 servo.detach();

}

}