# Interfacing the Arduino Uno with ultrasonic sensor and servo motor

**Components:**

* Arduino Uno
* Ultrasonic sensor (HC-SR04)
* Servo motor
* Software’s : processing , arduino

**Connections:**

|  |  |  |
| --- | --- | --- |
| HC-SR04 | Servo motor | Arduino Uno |
| Vcc | Vcc (brown) | +5v |
| Gnd | Gnd (red/orange) | Gnd |
|  | Data (yellow/orange) | 12 |
| Trig |  | 10 |
| Echo |  | 11 |

**Code:**

#include <Servo.h>

const int trigPin = 10;

const int echoPin = 11;

long duration;

int distance;

Servo myServo;

void setup() {

pinMode(trigPin, OUTPUT);

pinMode(echoPin, INPUT);

Serial.begin(9600);

myServo.attach(12);

}

void loop() {

for(int i=15;i<=165;i++){

myServo.write(i);

delay(30);

distance = calculateDistance();

Serial.print(i);

Serial.print(",");

Serial.print(distance);

Serial.print(".");

}

for(int i=165;i>15;i--){

myServo.write(i);

delay(30);

distance = calculateDistance();

Serial.print(i);

Serial.print(",");

Serial.print(distance);

Serial.print(".");

}

}

int calculateDistance(){

digitalWrite(trigPin, LOW);

delayMicroseconds(2);

digitalWrite(trigPin, HIGH);

delayMicroseconds(10);

digitalWrite(trigPin, LOW);

duration = pulseIn(echoPin, HIGH);

distance= duration\*0.034/2;

return distance;

}