```
//code for aduino

// Includes the Servo library
#include <Servo.h>.
// Defines Tirg and Echo pins of the Ultrasonic Sensor
const int trigPin = 10;
const int echoPin = 11;
// Variables for the duration and the distance
long duration;
int distance;
Servo myServo; // Creates a servo object for controlling the servo motor
void setup() {
  pinMode(trigPin, OUTPUT); // Sets the trigPin as an Output
  pinMode(echoPin, INPUT); // Sets the echoPin as an Input
  Serial.begin(9600);
  myServo.attach(12); // Defines on which pin is the servo motor attached
}
void loop() {
  // rotates the servo motor from 15 to 165 degrees
  for(int i=15;i<=165;i++){
  myServo.write(i);
  delay(30);
  distance = calculateDistance();// Calls a function for calculating the distance measured by the
Ultrasonic sensor for each degree


  Serial.print(i); // Sends the current degree into the Serial Port
  Serial.print(","); // Sends addition character right next to the previous value needed later in the
Processing IDE for indexing
  Serial.print(distance); // Sends the distance value into the Serial Port
  Serial.print("."); // Sends addition character right next to the previous value needed later in the
Processing IDE for indexing
  }
```

```arduino
  // Repeats the previous lines from 165 to 15 degrees

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

  myServo.write(i);

  delay(30);

  distance = calculateDistance();

  Serial.print(i);

  Serial.print(",");

  Serial.print(distance);

  Serial.print(".");

  }

}

// Function for calculating the distance measured by the Ultrasonic sensor

int calculateDistance(){


  digitalWrite(trigPin, LOW);

  delayMicroseconds(2);

  // Sets the trigPin on HIGH state for 10 micro seconds

  digitalWrite(trigPin, HIGH);

  delayMicroseconds(10);

  digitalWrite(trigPin, LOW);

  duration = pulseIn(echoPin, HIGH); // Reads the echoPin, returns the sound wave travel time in microseconds

  distance= duration*0.034/2;

  return distance;

}
```