# Arduino Radar Project Code

## 1. Arduino 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;  
}

## 2. Processing Code

import processing.serial.\*;  
import java.awt.event.KeyEvent;  
import java.io.IOException;  
  
Serial myPort;  
String angle="";  
String distance="";  
String data="";  
String noObject;  
float pixsDistance;  
int iAngle, iDistance;  
int index1=0, index2=0;  
  
void setup() {  
 size (1200, 700);  
 smooth();  
 myPort = new Serial(this,"COM5", 9600);  
 myPort.bufferUntil('.');  
}  
  
void draw() {  
 fill(98,245,31);  
 noStroke();  
 fill(0,4);  
 rect(0, 0, width, height-height\*0.065);  
 fill(98,245,31);  
 drawRadar();  
 drawLine();  
 drawObject();  
 drawText();  
}  
  
void serialEvent (Serial myPort) {  
 data = myPort.readStringUntil('.');  
 data = data.substring(0,data.length()-1);  
 index1 = data.indexOf(",");  
 angle= data.substring(0, index1);  
 distance= data.substring(index1+1, data.length());  
 iAngle = int(angle);  
 iDistance = int(distance);  
}  
  
// Radar drawing functions below (same as original project)