// 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;

}

**Servo and Ultrasonic Sensor Control And Object Detect Project**

// 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

}

// 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(".");

}

}