#include <Servo.h>

Servo servo;

int servoPin = 9;

int angle = 0; // servo position in degrees

int mMax = -1;

void setup()

{

Serial.begin(9600);

pinMode(2,OUTPUT); // 센서 Trig 핀

pinMode(3,INPUT); // 센서 Echo 핀

servo.attach(servoPin);

}

void loop()

{

long duration;

digitalWrite(2,HIGH); // 센서에 Trig 신호 입력

delayMicroseconds(10); // 10us 정도 유지

digitalWrite(2,LOW); // Trig 신호 off

duration = pulseIn(3,HIGH); // Echo pin: HIGH->Low 간격을 측정

float cm = microsecondsToCentimeters(duration); // 거리(cm)로 변환

if(mMax<0){

mMax = cm;

}else{

mMax = max(mMax, cm);

}

float mPer = (cm / mMax) \* 100.0;

int sAngle = mPer \* 180 / 100;

Serial.print(cm);

Serial.print(" cm, max:");

Serial.print(mMax);

Serial.print(", percent:");

Serial.print(mPer);

Serial.print(", setAngle:");

Serial.print(sAngle);

Serial.println();

servo.write(sAngle);

delay(150);

}

long microsecondsToInches(long microseconds)

{

// According to Parallax's datasheet for the PING))), there are

// 73.746 microseconds per inch (i.e. sound travels at 1130 feet per

// second). This gives the distance travelled by the ping, outbound

// and return, so we divide by 2 to get the distance of the obstacle.

// See: http://www.parallax.com/dl/docs/prod/acc/28015-PING-v1.3.pdf

return microseconds / 74 / 2;

}

long microsecondsToCentimeters(long microseconds)

{

// The speed of sound is 340 m/s or 29 microseconds per centimeter.

// The ping travels out and back, so to find the distance of the

// object we take half of the distance travelled.

return microseconds / 29 / 2;

}

