#include <Servo.h>

#define ALARM 5

const int EchoPin = 5;

const int TriggerPin = 6;

float distancia;

long tiempo;

int sig = 6;

Servo servo;

int pin = 10;

int led\_1 = 11;

int led\_2 = 12;

int led\_3 = 13;

char valor;

int ultra=0;

//sensor de ultrasonido

long u\_tiempo(int trigger\_pin, int echo\_pin);

long u\_distancia(int trigger\_pin, int echo\_pin);

void setup() {

pinMode(led\_1, OUTPUT);

pinMode(led\_2, OUTPUT);

pinMode(led\_3, OUTPUT);

Serial.begin(9600);

pinMode(TriggerPin, OUTPUT);

pinMode(EchoPin, INPUT);

servo.attach(pin);

}

void loop() {

ultra=u\_distancia(3,2);

pinMode(sig, OUTPUT);

digitalWrite(sig, LOW);

delayMicroseconds(2);

digitalWrite(sig, HIGH);

delayMicroseconds(10);

digitalWrite(sig, LOW);

digitalWrite(TriggerPin, HIGH);

delayMicroseconds(10);

digitalWrite(TriggerPin, LOW);

Serial.print("Distancia: ");

Serial.println(ultra;

if(ultra <= ALARM)

{

delay(50);

servo.write(90);

}

else

{

servo.write(0);

delay(50);

}

if(Serial.available())

{

valor=Serial.read();

if(valor=='A')

digitalWrite(led\_1, HIGH);

if(valor=='B')

digitalWrite(led\_1, LOW);

if(valor=='C')

digitalWrite(led\_2, HIGH);

if(valor=='D')

digitalWrite(led\_2, LOW);

if(valor=='E')

digitalWrite(led\_3, HIGH);

if(valor=='F')

digitalWrite(led\_3, LOW);

}

delay(100);

}

long u\_tiempo(int trigger\_pin, int echo\_pin)

{

digitalWrite(trigger\_pin, LOW);

delayMicroseconds(2);

digitalWrite(trigger\_pin, HIGH);

delayMicroseconds(10);

digitalWrite(trigger\_pin, LOW);

long microseconds = pulseIn(echo\_pin ,HIGH);

return microseconds;

}

long u\_distancia(int trigger\_pin, int echo\_pin)

{

long microseconds = u\_tiempo(trigger\_pin, echo\_pin);

long u\_distancia;

u\_distancia = microseconds/29/2;

if (u\_distancia == 0){

u\_distancia = 999;

}

return u\_distancia;

}