**Arduino code**

**#include "ultrasonic.h"**

**//ultrasonic 1 pins**

**#define UltraEcho1 7**

**#define UltraTrigger1 8**

**#define UltraEcho2 12**

**#define UltraTrigger2 13**

**#define AllClearLed 2**

**#define TrappedLed 9**

**#define BuzzerTrigger 10**

**#define ultrasonic\_sensor\_one\_range 10**

**#define ultrasonic\_sensor\_two\_range 10**

**#define delay\_value 3000**

**Ultrasonic ultrasonic1(UltraTrigger1, UltraEcho1);**

**Ultrasonic ultrasonic2(UltraTrigger2, UltraEcho2);**

**bool ultrasonic\_sensor\_one\_is\_passed = false;**

**bool ultrasonic\_sensor\_two\_is\_passed = false;**

**int total\_number\_of\_people = 0;**

**void setup() {**

**Serial.begin(9600);//starts serial communication**

**ultrasonic1.initialize();**

**ultrasonic2.initialize();**

**pinMode(AllClearLed,OUTPUT);**

**pinMode(TrappedLed,OUTPUT);**

**pinMode(BuzzerTrigger,OUTPUT);**

**}**

**void loop() {**

**int sensor\_one\_distance = ultrasonic1.getDistance();**

**int sensor\_two\_distance = ultrasonic2.getDistance();**

**Serial.print("Ultrasonic 1 => ");**

**Serial.print(sensor\_one\_distance);**

**Serial.print(" Ultrasonic 2 => ");**

**Serial.println(sensor\_two\_distance);**

**Serial.print("Total persons inside => ");**

**Serial.println(total\_number\_of\_people);**

**if ((sensor\_one\_distance < ultrasonic\_sensor\_one\_range) && (ultrasonic\_sensor\_two\_is\_passed == false)) {**

**ultrasonic\_sensor\_one\_is\_passed = true;**

**Serial.println("ultrasonic 1 passed first");**

**delay(delay\_value);**

**}**

**else if ((sensor\_two\_distance < ultrasonic\_sensor\_two\_range) && (ultrasonic\_sensor\_one\_is\_passed == false)) {**

**ultrasonic\_sensor\_two\_is\_passed = true;**

**Serial.println("ultrasonic 2 passed first");**

**delay(delay\_value);**

**}**

**if (ultrasonic\_sensor\_one\_is\_passed) {**

**if (sensor\_two\_distance < ultrasonic\_sensor\_two\_range) {**

**ultrasonic\_sensor\_one\_is\_passed = false;**

**Serial.println("ultrasonic 2 passed last");**

**total\_number\_of\_people++;**

**delay(delay\_value);**

**}**

**}**

**else if (ultrasonic\_sensor\_two\_is\_passed) {**

**if (sensor\_one\_distance < ultrasonic\_sensor\_one\_range) {**

**ultrasonic\_sensor\_two\_is\_passed = false;**

**Serial.println("ultrasonic 1 passed last");**

**total\_number\_of\_people--;**

**delay(delay\_value);**

**}**

**}**

**if (total\_number\_of\_people < 0) total\_number\_of\_people = 0;**

**delay(1000);**

**if (total\_number\_of\_people > 0){**

**digitalWrite(TrappedLed,HIGH);**

**digitalWrite(BuzzerTrigger,HIGH);**

**delay(300);**

**digitalWrite(TrappedLed,LOW);;**

**digitalWrite(BuzzerTrigger,LOW);**

**delay(300);**

**}**

**if (total\_number\_of\_people <= 0){**

**digitalWrite(BuzzerTrigger,LOW);**

**digitalWrite(AllClearLed,HIGH);**

**delay(300);**

**digitalWrite(AllClearLed,LOW);**

**delay(300);**

**}**

**}**

**Ultrasonic.cpp**

**#include "ultrasonic.h"**

**Ultrasonic::Ultrasonic(int trig, int echo) {**

**trigPin = trig;**

**echoPin = echo;**

**}**

**void Ultrasonic::initialize() {**

**pinMode(trigPin, OUTPUT); // Sets the trigPin as an Output**

**pinMode(echoPin, INPUT); // Sets the echoPin as an Input**

**}**

**int Ultrasonic::getDistance() {**

**digitalWrite(trigPin, LOW);**

**delayMicroseconds(2);**

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

**digitalWrite(trigPin, HIGH);**

**delayMicroseconds(10);**

**digitalWrite(trigPin, LOW);**

**// Reads the echoPin, returns the sound wave travel time in microseconds**

**duration = pulseIn(echoPin, HIGH);**

**// Calculating the distance**

**distance = duration \* 0.034 / 2;**

**return distance;**

**}**

**Ultrasonic.h**

**#ifndef roboken\_ultrasonic**

**#define roboken\_ultrasonic**

**#include <Arduino.h>**

**class Ultrasonic {**

**public:**

**int trigPin;**

**int echoPin;**

**long duration;**

**int distance;**

**Ultrasonic(int trig, int echo);**

**void initialize();**

**int getDistance();**

**private:**

**protected:**

**};**

**#endif //roboken\_ultrasonic**