# Reading 4 ultrasonic sensors simultaneously:

#define trigPin1 4

#define echoPin1 5

#define trigPin2 6

#define echoPin2 7

#define trigPin3 8

#define echoPin3 9

#define trigPin4 10

#define echoPin4 11

int buffer\_size=5;

int duration, distance;

float Right,Back,Front,Left;

bool Right\_obstacle,Back\_obstacle,Front\_obstacle,Left\_obstacle;

int threshold\_dist=40;

void setup()

{

Serial.begin (9600);

pinMode(trigPin1, OUTPUT);

pinMode(echoPin1, INPUT);

pinMode(trigPin2, OUTPUT);

pinMode(echoPin2, INPUT);

pinMode(trigPin3, OUTPUT);

pinMode(echoPin3, INPUT);

pinMode(trigPin4, OUTPUT);

pinMode(echoPin4, INPUT);

}

void loop() {

Front=0;

Right=0;

Left=0;

Back=0;

for (int i=0; i<buffer\_size; i++)

{

Front += SonarSensor(trigPin1, echoPin1);

Left += SonarSensor(trigPin2, echoPin2);

Right += SonarSensor(trigPin3, echoPin3);

Back += SonarSensor(trigPin4, echoPin4);

}

if(Front/5.0 > 0.5) Front\_obstacle = true;

else Front\_obstacle = false;

if(Left/5.0 > 0.5) Left\_obstacle = true;

else Left\_obstacle = false;

if(Right/5.0 >0.5) Right\_obstacle = true;

else Right\_obstacle = false;

if(Back/5.0 >0.5) Back\_obstacle = true;

else Back\_obstacle = false;

Serial.print(Front\_obstacle);

Serial.print(" - ");

Serial.print(Left\_obstacle);

Serial.print(" - ");

Serial.print(Right\_obstacle);

Serial.print(" - ");

Serial.println(Back\_obstacle);

}

int SonarSensor(int trigPin,int echoPin)

{

digitalWrite(trigPin, LOW);

delayMicroseconds(2);

digitalWrite(trigPin, HIGH);

delayMicroseconds(10);

digitalWrite(trigPin, LOW);

duration = pulseIn(echoPin, HIGH);

distance = (duration/2) / 29.1;

if (distance < threshold\_dist)

return 1;

else return 0;

}