//defining pins for the inputs and outputs

const int gas\_input = A0;

int gas = 0;

const int led = 6;

const int buzzer = 12;

int trigger\_pin = 2;

int echo\_pin = 3;

int buzzer\_pin = 10;

int time;

int distance;

void setup()

{

//setting up the correct pin modes

pinMode(led,OUTPUT);

pinMode(buzzer,OUTPUT);

pinMode (trigger\_pin, OUTPUT);

pinMode (echo\_pin, INPUT);

pinMode (buzzer\_pin, OUTPUT);

//initializing the serial monitor

Serial.begin(9600);

}

void loop()

{

//read the input from mq2 gas sensor

gas = analogRead(gas\_input);

//print the input om serial monitor

Serial.print(" The gas value is :");

Serial.println(gas);

//remapping the value of input from mq2 to 0-255

int led\_out = map(gas, 80, 400, 0, 255);

//send the output to buzzer

tone(buzzer,led\_out,100);

//send the pwm signal to led

analogWrite(led,led\_out);

//delay of 100ms

delay(100);

digitalWrite (trigger\_pin, HIGH);

delayMicroseconds (10);

digitalWrite (trigger\_pin, LOW);

time = pulseIn (echo\_pin, HIGH);

distance = (time \* 0.034) / 2;

if (distance <= 10)

{

Serial.println (" Door Open ");

Serial.print (" Distance= ");

Serial.println (distance);

digitalWrite (buzzer\_pin, HIGH);

delay (500);

}

else {

Serial.println (" Door closed ");

Serial.print (" Distance= ");

Serial.println (distance);

digitalWrite (buzzer\_pin, LOW);

delay (500);

}

}