// Code for Smart Home //

// include the library code:

#include <LiquidCrystal.h>

// initialize the library with the numbers of the interface pins LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

//For ultrasound sensor int distanceThreshold = 0; int cm = 0;

int inches = 0;

//for Relay Control int releNO = 13; int inputPir = 8;

int val = 0;

int resuldoSensorLDR; int sensorLDR = A0;

//For Gas sensor

int const PINO\_SGAS = A1;

long readUltrasonicDistance(int triggerPin, int echoPin)

{

pinMode(triggerPin, OUTPUT); // Clear the trigger digitalWrite(triggerPin, LOW); delayMicroseconds(2);

// Sets the trigger pin to HIGH state for 10 microseconds digitalWrite(triggerPin, HIGH);

delayMicroseconds(10); digitalWrite(triggerPin, LOW); pinMode(echoPin, INPUT);

// Reads the echo pin, and returns the sound wave travel time in microseconds return pulseIn(echoPin, HIGH);

}

void setup() {

// set up the LCD's number of columns and rows:

lcd.begin(16, 2); pinMode(releNO, OUTPUT); pinMode(inputPir, INPUT); pinMode(sensorLDR, INPUT); Serial.begin(9600);

}

void loop() {

// set threshold distance to activate LEDs distanceThreshold = 350;

// measure the ping time in cm

cm = 0.01723 \* readUltrasonicDistance(7, 6);

// convert to inches by dividing by 2.54 inches = (cm / 2.54);

lcd.setCursor(0,0); // Sets the location at which subsequent text written to the LCD will be displayed

lcd.print("D:"); // Prints string "Distance" on the LCD lcd.print(cm); // Prints the distance value from the sensor lcd.print("cm");

delay(10);

val = digitalRead(inputPir); resuldoSensorLDR = analogRead(sensorLDR); if(resuldoSensorLDR<600)

{

if(val == HIGH)

{

digitalWrite(releNO, HIGH);

lcd.setCursor(0,1); lcd.print("L: On ");

delay(5000);

}

else{

digitalWrite(releNO, LOW);lcd.setCursor(0,1); lcd.print("L: Off");

delay(300);

}

}

else{ digitalWrite (releNO, LOW); Serial.println(resuldoSensorLDR); delay(500);

}

int color = analogRead(PINO\_SGAS); lcd.setCursor(8,0);

//lcd.print(""); if(color <= 85){ lcd.print("G:Low ");

} else if(color <= 120){ lcd.print("G:Med ");

} else if(color <= 200){ lcd.print("G:High");

} else if(color <= 300){ lcd.print("G:Ext ");

}

delay(250);

}