

### 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);
}
```