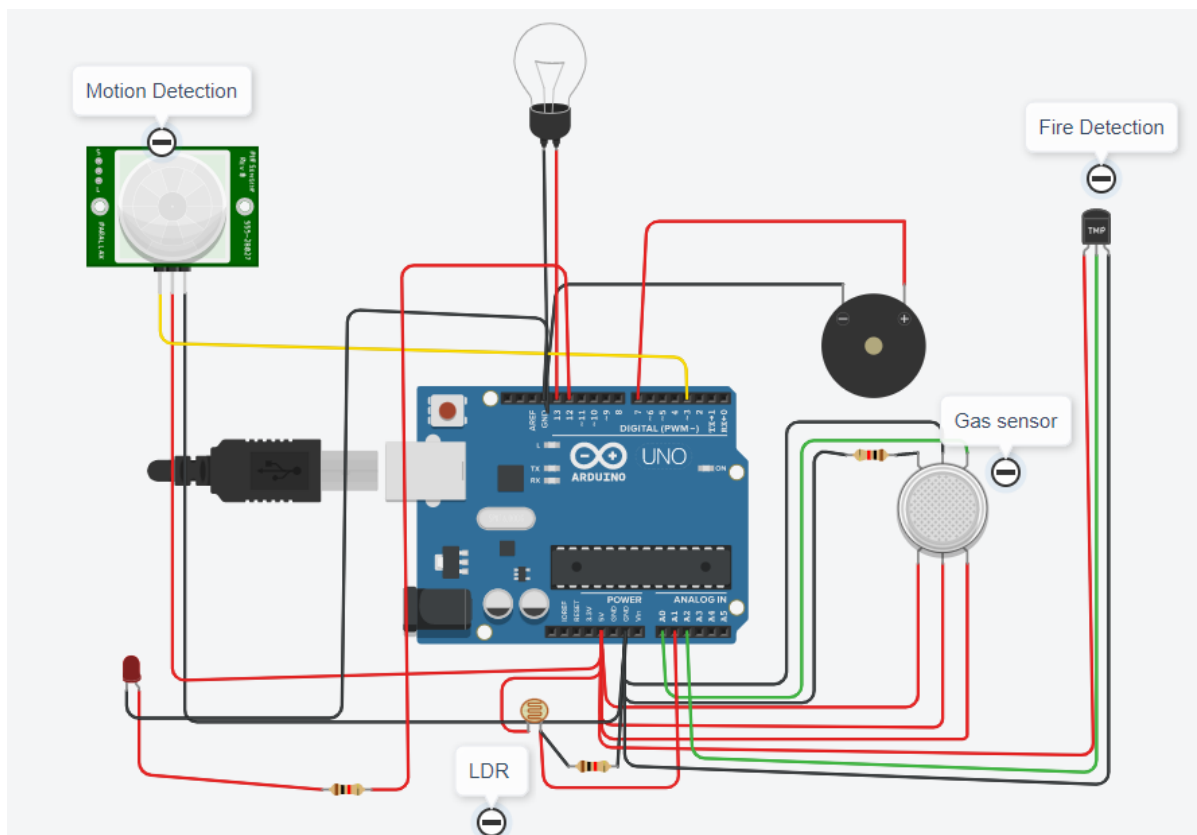


# ASSIGNMENT – 1

## SMART HOME AUTOMATION

Assignment Date	16 September 2022
Student Name	Ajay A
Student Roll Number	212219040006
Maximum Marks	2 Marks

### CIRCUIT DIAGRAM:



### CODE:

```
#include <Servo.h>

Servo s;

int gas_sensor = 0;

const int bulbpin=13;

const int LDR=A1;
```

```
int baselineTemp = 0;
int celsius = 0;
int trig=3;
int ec=4;
void setup()
{
  pinMode(A0, INPUT);
  pinMode(7, OUTPUT);
  pinMode(13,OUTPUT);
  pinMode(A1,INPUT);
  pinMode(3,INPUT);
  pinMode(12,OUTPUT);
}

void loop()
{
  gas_sensor = analogRead(A0);
  if (gas_sensor >= 250) {
    tone(7, 523, 1000);
  }
  delay(10);
  int Ldr_s=analogRead(LDR);
  if(Ldr_s<=500){
    digitalWrite(bulbpin,HIGH);
    Serial.println(Ldr_s);
```

```
}  
else{  
    digitalWrite(bulbpin,LOW);  
    Serial.println(Ldr_s);  
}
```

```
baselineTemp = 40;
```

```
celsius = map(((analogRead(A2) - 20) * 3.04), 0, 1023, -40, 125);  
if (celsius >= baselineTemp + 30) {  
    tone(7, 220, 100);  
    delay(100);  
}
```

```
int motion=digitalRead(3);  
if(motion){  
    digitalWrite(12,HIGH);  
    delay(1000);  
    digitalWrite(12,LOW);  
    delay(1000);  
}  
}
```

Diagram of an Arduino Uno R3 circuit setup for a motion and light detection system. The circuit includes a Motion Detection sensor, a Gas sensor, an LDR sensor, a servo motor, and a light bulb. The Arduino Uno R3 is connected to these components via various pins. The code in the Serial Monitor shows the logic for controlling the servo motor based on the sensor inputs.

**Components and Connections:**

- Motion Detection:** Connected to digital pin 13 (VCC) and digital pin 12 (GND).
- Gas sensor:** Connected to analog pin A0 (VCC), digital pin 3 (GND), and digital pin 12 (GND).
- LDR:** Connected to analog pin A0 (VCC), digital pin 3 (GND), and digital pin 12 (GND).
- Servo Motor:** Connected to digital pin 7 (VCC), digital pin 13 (GND), and digital pin 12 (GND).
- Light Bulb:** Connected to digital pin 13 (VCC) and digital pin 12 (GND).

**Code in Serial Monitor:**

```
1 #include <Servo.h>
2 Servo s;
3 int gas_sensor = 0;
4 const int bulbpin=13;
5 const int LDR=A1;
6 int baselineTemp = 0;
7 int celsius = 0;
8 int trig=3;
9 int ec=4;
10 void setup()
11 {
12   pinMode(A0, INPUT);
13   pinMode(7, OUTPUT);
14   pinMode(13, OUTPUT);
15   pinMode(A1, INPUT);
16   pinMode(3, INPUT);
17   pinMode(12, OUTPUT);
18 }
19
20 void loop()
21 {
22   gas_sensor = analogRead(A0);
23   if (gas_sensor >= 250) {
24     tone(7, 523, 1000);
25   }
26   delay(10);
27   int Ldr_s=analogRead(LDR);
28   if (Ldr_s<=500){
29     digitalWrite(bulbpin,HIGH);
30     Serial.println(Ldr_s);
31   }
32   else{
33     digitalWrite(bulbpin,LOW);
34     Serial.println(Ldr_s);
35   }
```