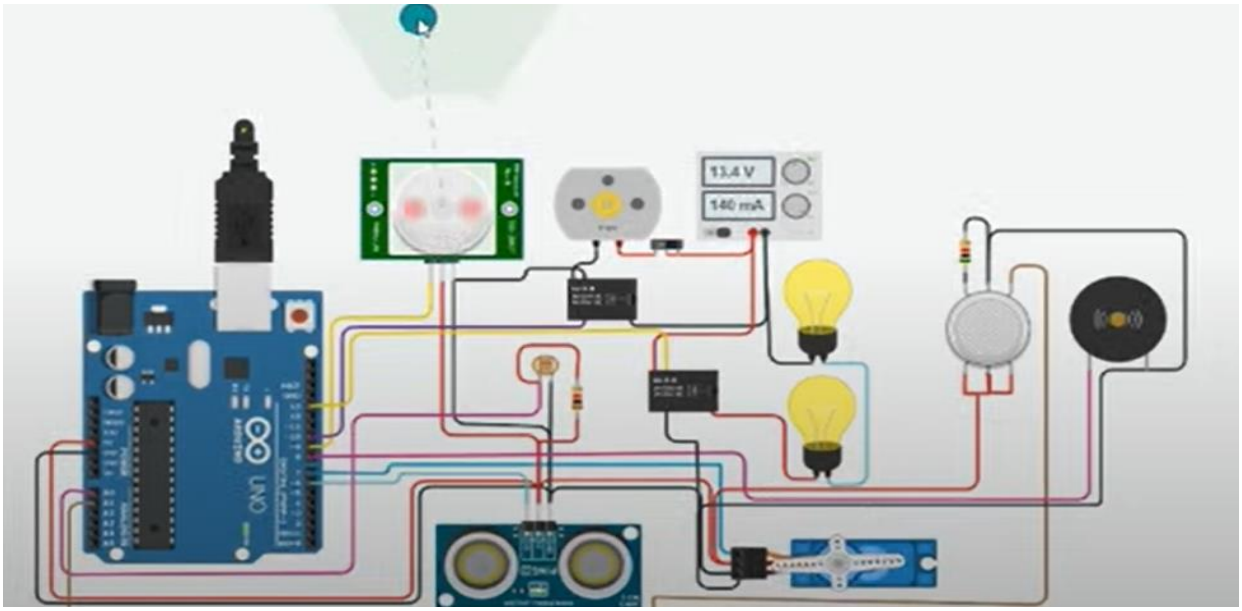
Code

```
#include <Servo.h>

Int output1Value = 0;
Int sen1Value = 0;
Int sen2Value = 0;
Int const gas_sensor = A1;
Int const LDR = A0;
Int limit = 400;

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);
}

Servo servo_7;

Void setup()
{
   Serial.begin(9600);                //initialize serial communication
```

```
  pinMode(A0, INPUT);            //LDR
  pinMode(A1,INPUT);             //gas sensor
  pinMode(13, OUTPUT);                  //connected to relay
  servo_7.attach(7, 500, 2500); //servo motor

  pinMode(8,OUTPUT);             //signal to piezo buzzer
  pinMode(9, INPUT);             //signal to PIR
  pinMode(10, OUTPUT);                  //signal to npn as switch
  pinMode(4, OUTPUT);                   //Red LED
  pinMode(3, OUTPUT);                   //Green LED

}

Void loop()
{

    //------light intensity control------//
//-------------------------------------------------------------
   Int val1 = analogRead(LDR);
  If (val1 > 500)
          {
          digitalWrite(13, LOW);
   Serial.print("Bulb ON = ");
   Serial.print(val1);
          }
  Else
          {
          digitalWrite(13, HIGH);
    Serial.print("Bulb OFF = ");
   Serial.print(val1);
```

```
        }

//-------------------------------------------------------------
    //------ light & fan control --------//
//-------------------------------------------------------------
  Sen2Value = digitalRead(9);
  If (sen2Value == 0)
        {
        digitalWrite(10, LOW); //npn as switch OFF
        digitalWrite(4, HIGH); // Red LED ON,indicating no motion
        digitalWrite(3, LOW); //Green LED OFF, since no Motion detected
    Serial.print("     || NO Motion Detected    " );
        }

  If (sen2Value == 1)
        {
        digitalWrite(10, HIGH);//npn as switch ON
    delay(3000);
        digitalWrite(4, LOW); // RED LED OFF
        digitalWrite(3, HIGH);//GREEN LED ON , indicating motion detected
     Serial.print("               || Motion Detected!      " );
        }
  Delay(300);

//-------------------------------------------------------------
    // ------- Gas Sensor --------//
//-------------------------------------------------------------
Int val = analogRead(gas_sensor);      //read sensor value
  Serial.print("|| Gas Sensor Value = ");
  Serial.print(val);                                    //Printing in serial monitor
```

```
//val = map(val, 300, 750, 0, 100);
  If (val > limit)
            {
            Tone(8, 650);
            }
            Delay(300);
            noTone(8);

 //-------------------------------------------------------------
     //-------  servo motor  ---------//
 //-------------------------------------------------------------
  Sen1Value = 0.01723 * readUltrasonicDistance(6, 6);

  If (sen1Value < 100)
            {
            Servo_7.write(90);
    Serial.print("   || Door Open!  ; Distance = ");
    Serial.print(sen1Value);
   Serial.print("\n");

            }
  Else
            {
            Servo_7.write(0);
    Serial.print("   || Door Closed! ; Distance =  ");
    Serial.print(sen1Value);
    Serial.print("\n");
  }
  Delay(10); // Delay a little bit to improve simulation performance
}
```


13.4 V
140 mA
UNO