```
#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);
            digitalWrite(triggerPin, LOW);
            delayMicroseconds(2);
            digitalWrite(triggerPin, HIGH);
            delayMicroseconds(10);
            digitalWrite(triggerPin, LOW);
            pinMode(echoPin, INPUT);

            return pulseIn(echoPin, HIGH);
          }
          Servo servo_7;
          void setup()
          {
             Serial.begin(9600);
            pinMode(A0, INPUT);
            pinMode(A1,INPUT);
            pinMode(13, OUTPUT);
            servo_7.attach(7, 500, 2500);
            pinMode(8,OUTPUT);
            pinMode(9, INPUT);
            pinMode(10, OUTPUT);
            pinMode(4, OUTPUT);
            pinMode(3, OUTPUT);

          }
          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);
         digitalWrite(4, HIGH);
         digitalWrite(3, LOW);
      Serial.print("     || NO Motion Detected     " );
         }


   if (sen2Value == 1)
         {
         digitalWrite(10, HIGH);//npn as switch ON
      delay(5000);
         digitalWrite(4, LOW); // RED LED OFF
         digitalWrite(3, HIGH);//GREEN LED ON , indicating motion detected
       Serial.print("      || Motion Detected!      " );
         }



       // ------- 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);
}
```