ASSIGNMENT 1

```
#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 --------//  //-----------------------------------------------
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 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);
```