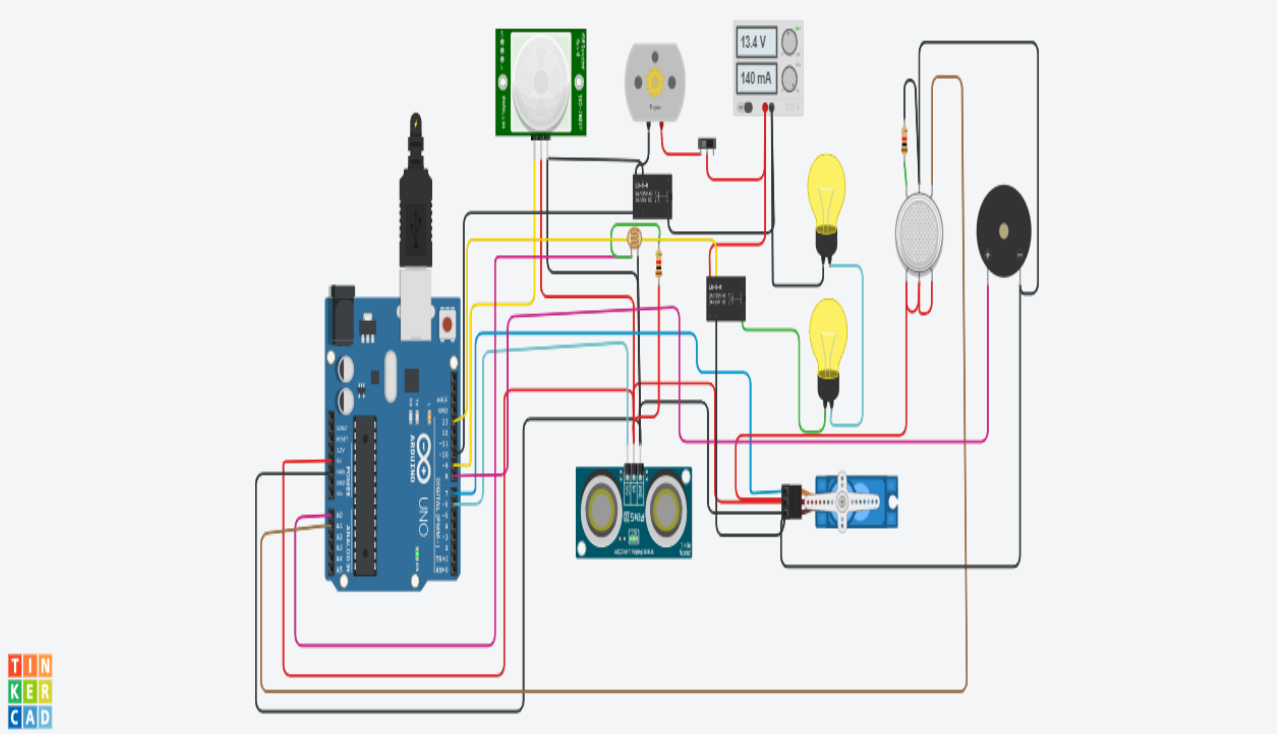
ASSIGNMENT-1

NAME: LAKSHMITHA REDDY DANDOLU

ROLL NO: 113119UG03017



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
}
```

https://www. tinkercad. com/things/jOstfGqHCMO-shiny-lahdi/editel? tenant=circuits