SIR ISSAC NEWTON COLLEGE OF ENGINEERING AND TECHNOLOGY

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SMOKE DETECTOR FOR SMART HOME

CODING

```
#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);
```

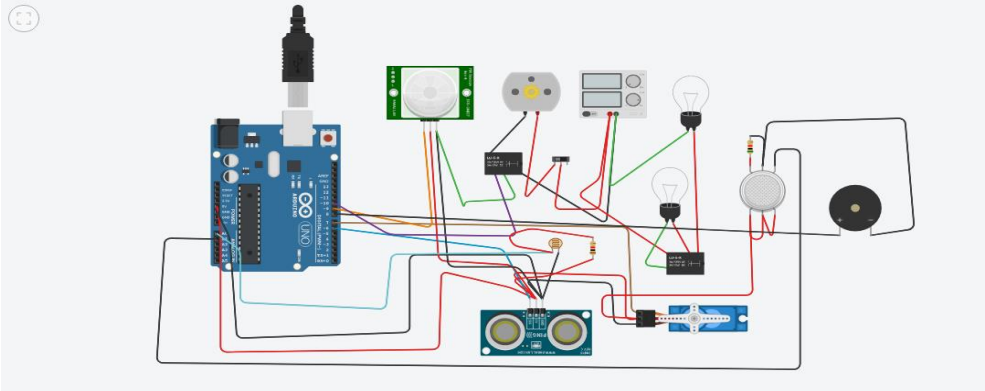
```
delayMicroseconds(10); digitalWrite(triggerPin, LOW); pinMode(echoPin,
INPUT);

// 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
}
```

CIRCUIT DIAGRAM



Stimulation: