ASSIGNMENT

C PROGRAMMING

Student Name	S.karthickraj
Student Roll Number	821719104014
Maximum Mark	2 Mark

Question

      Make a smart Home in Tinker cad using 2+Sensor,led ,Buzzer in Single code and Circuit.

Solution:

```
#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
```

```arduino
  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);
```
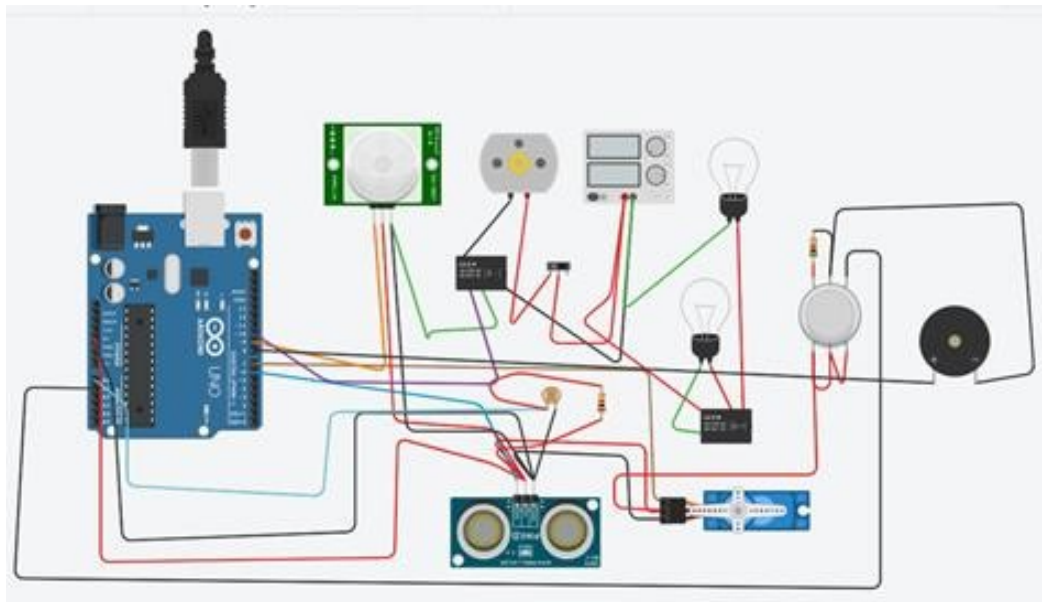
Serial.print(" || Door Closed! ; Distance = "); Serial.print(sen1Value);

Serial.print("\n");

}

delay(10); // Delay a little bit to improve simulation performance

}

BEFORE SIMULATION:

AFTER SIMULATION: