

Assignment -1

Assignment Date	08.09.2022
Student Name	NIRMAL S
Student Roll Number	142219106066
Maximum Marks	2 Marks

Question-1:

Smart home automation using tinkercad, by interfacing 2 or more sensors?

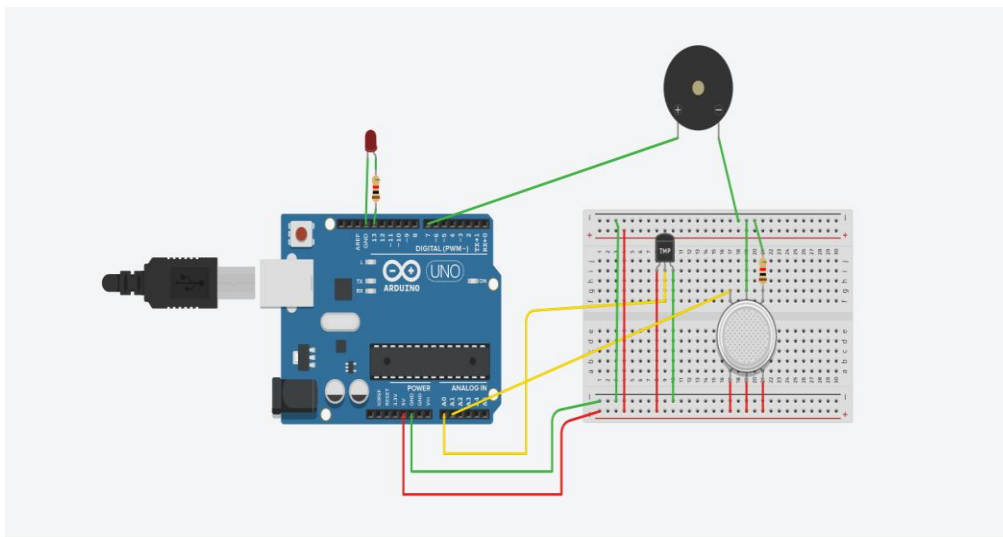
SMART HOME AUTOMATION

CODE:

```
float temp;
float vout;
float vout1;
int LED=13;
int gasSensor;
int piezo=7;
void setup()
{
  pinMode(A0, INPUT);
  pinMode(A1, INPUT);
  pinMode(LED, OUTPUT);
  pinMode(piezo,OUTPUT);
  Serial.begin(9600);
}
void loop()
{
  vout=analogRead(A0);
  vout1=(vout/1023)*5000;
  temp=(vout1-500)/10;
  gasSensor=analogRead(A1);
  if(temp>=80)
  {
    digitalWrite(LED,HIGH);
  }
  else
  {
    digitalWrite(LED,LOW);
  }
}
```

```
if(gasSensor >=100)
{
digitalWrite(piezo,HIGH);
}
else
{
digitalWrite(piezo,LOW);
Serial.print("in degrees =");
Serial.print(" ");
Serial.print(temp);
Serial.print("\t");
Serial.print("gasSensor");
Serial.print(" ");
Serial.print(gasSensor);
Serial.println();
delay(1000);
}
}
```

CIRCUIT SETUP:



The image shows a screenshot of the Arduino IDE interface. On the left, a circuit diagram is displayed, showing an Arduino Uno R3 connected to a breadboard. The breadboard contains a piezo sensor, an LED, and a buzzer. Wires connect the components to the Arduino pins. On the right, the C++ code is shown in the Text editor. The code defines variables for temperature, voltage, and gas sensor readings, and includes logic to control an LED and a buzzer based on these readings. The Serial Monitor is also visible at the bottom right.

```
1 float temp;
2 float vout;
3 float vout1;
4 int LED=13;
5 int gasSensor;
6 int piezo=7;
7 void setup()
8 {
9   pinMode(A0, INPUT);
10  pinMode(A1, INPUT);
11  pinMode(LED, OUTPUT);
12  pinMode(piezo, OUTPUT);
13  Serial.begin(9600);
14 }
15 void loop()
16 {
17   vout=analogRead(A0);
18   vout1=(vout/1023)*5000;
19   temp=(vout1-500)/10;
20   gasSensor=analogRead(A1);
21   if(temp>=50)
22   {
23     digitalWrite(LED,HIGH);
24   }
25   else
26   {
27     digitalWrite(LED,LOW);
28   }
29   if(gasSensor >=100)
30   {
31     digitalWrite(piezo,HIGH);
32   }
33   else
34   {
35     digitalWrite(piezo,LOW);
36   }
37 }
```

Serial Monitor