

## Assignment -1

Assignment Date	08.09.2022
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Maximum Marks	2 Marks

### Question-1:

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

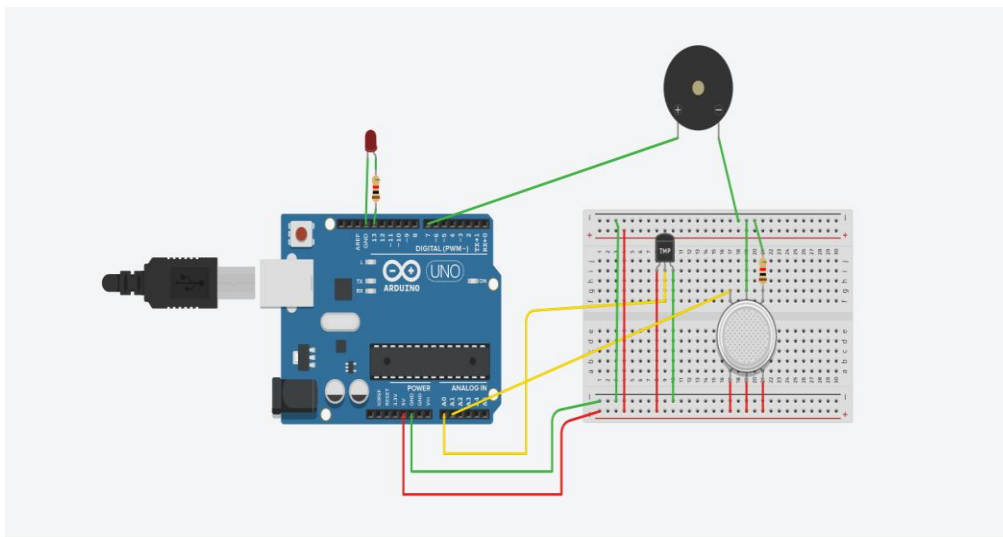
### SMART HOME AUTOMATION

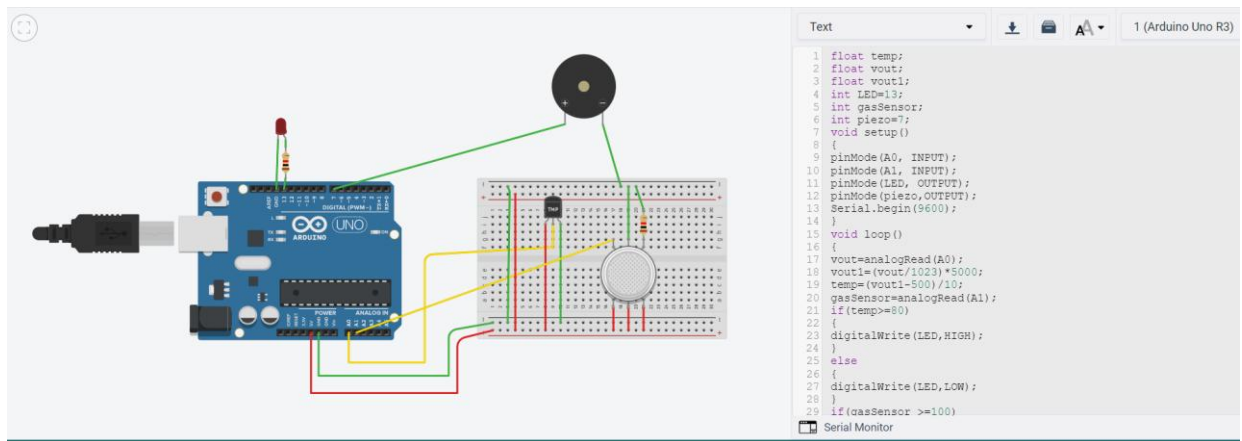
#### CODE:

```
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 board connected to a breadboard. A black circular sensor is connected to the A0 pin and ground. A piezo sensor is connected to the A1 pin and ground. A red LED is connected to the D13 pin and ground. The code on the right is a C++ program that reads the sensor values and controls the LED.

```
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     Serial Monitor
```