

## Assignment -1

Assignment Date	08.09.2022
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Student Roll Number	142219106037
Maximum Marks	2 Marks

### Question-1:

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

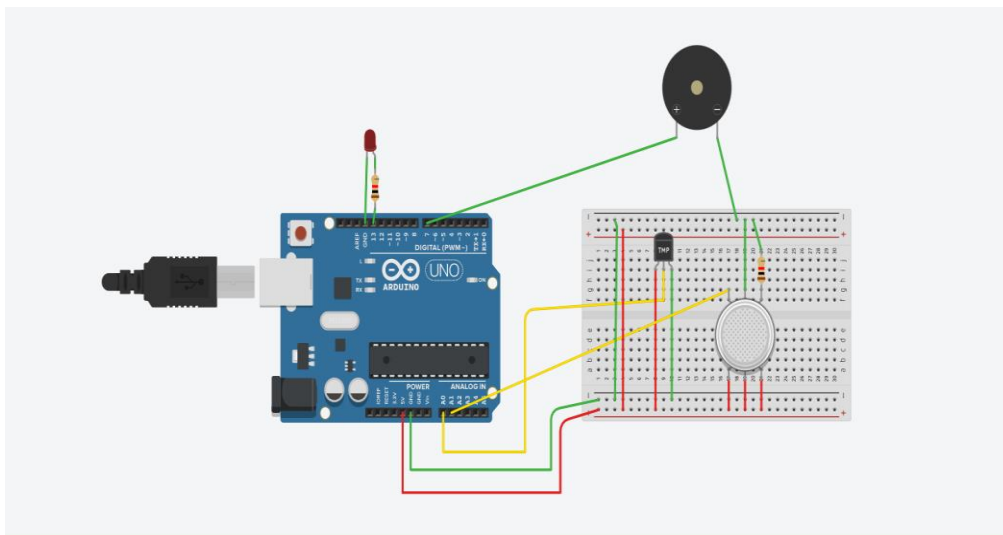
### SMART HOME AUTOMATION

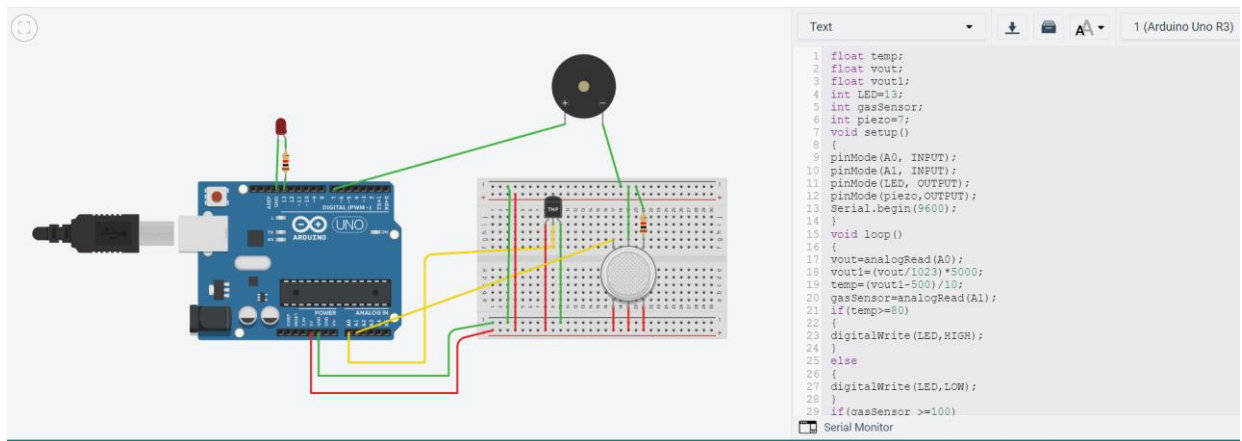
#### CODE:

```
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. A yellow resistor is connected to the 5V pin and D13. On the right, the C++ code is shown in the Text editor. The code defines variables for temperature, voltage, and gas sensor readings, and sets up the pins for the LED and sensors. The loop function reads the sensor values and controls the LED based on the temperature and gas sensor readings.

```
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
```