

Assignment -1

Assignment Date	08.09.2022
Student Name	KARTHICK S
Student Roll Number	142219106043
Maximum Marks	2 Marks

Question-1:

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

SMART HOME AUTOMATION

CODE:

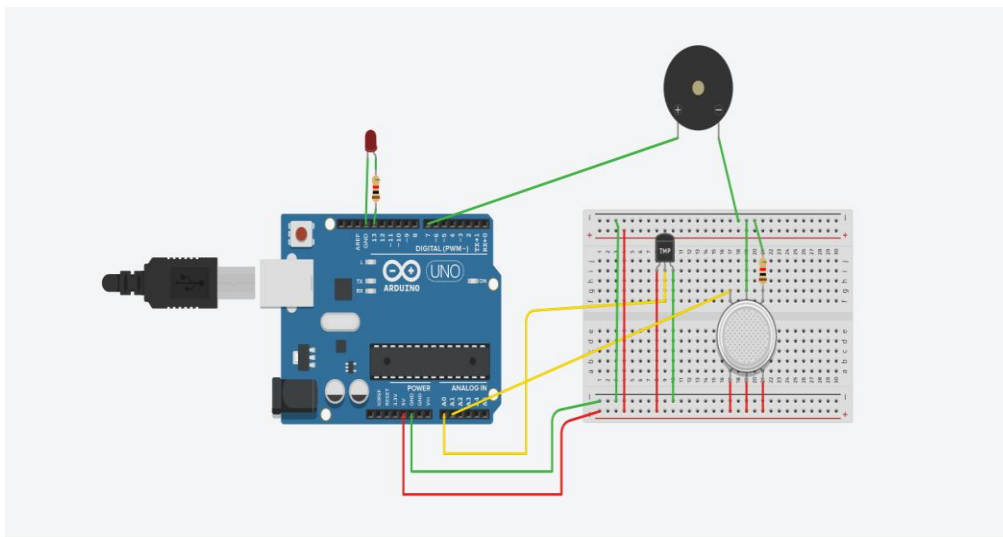
```
float temp;
float vout;
float vout1;
int LED=13;
int gasSensor;
int piezo=7;
void setup()
{
  pinMode(A0, INPUT);
  pinMode(A1, INPUT);
  pinMode(LED, OUTPUT);
  pinMode(piezo,OUTPUT);
  Serial.begin(9600);
}
void loop()
{
  vout=analogRead(A0);
  vout1=(vout/1023)*5000;
  temp=(vout1-500)/10;
 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

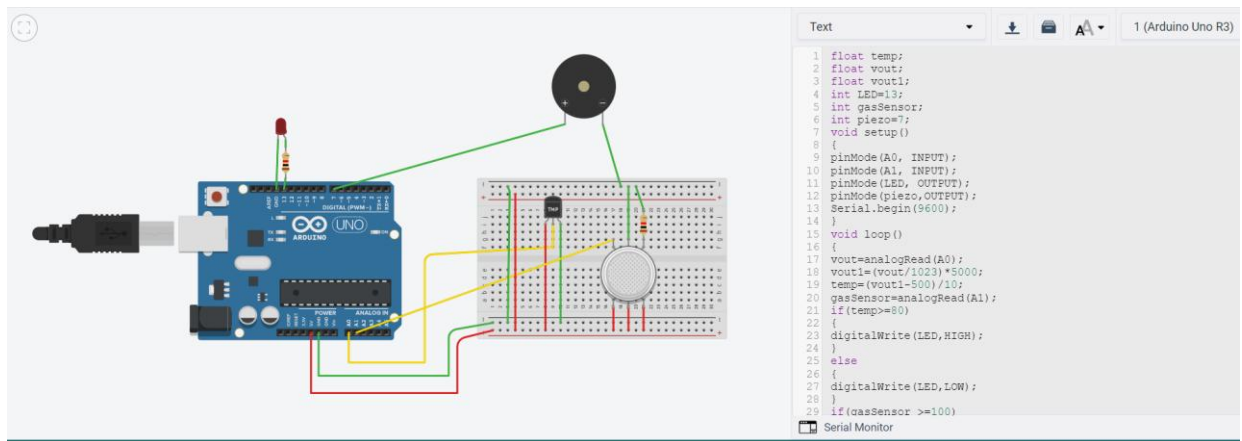
```

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, featuring an Arduino Uno R3 board 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 visible in the Text editor. The code defines variables for temperature, output voltage, and output level. It sets up pins A0, A1, LED, and piezo. The loop function reads the piezo sensor value, calculates the output voltage, and controls the LED and buzzer based on the calculated value. 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(LED,HIGH);
32   }
33   else
34   {
35     digitalWrite(LED,LOW);
36   }
37 }
```