SPRINT -1

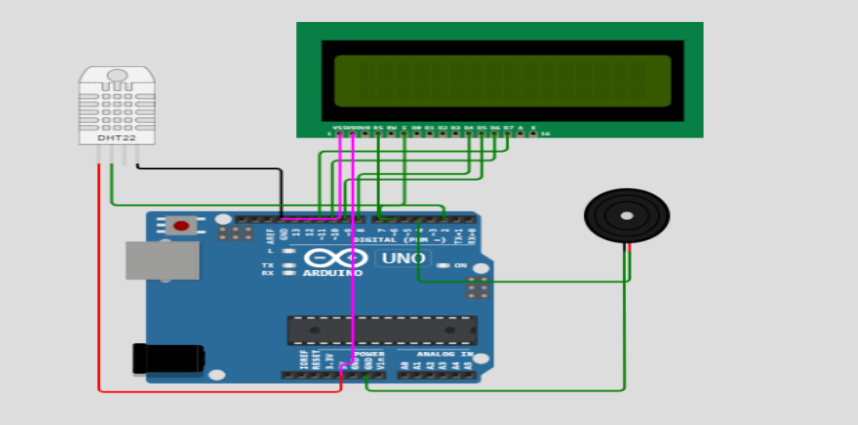
Date	8 NOV 2022
Team ID	PNT2022TMID35909
Project Name	Project - Gas Leakage Monitoring and Alerting Systems for Industries

SIMULATION :

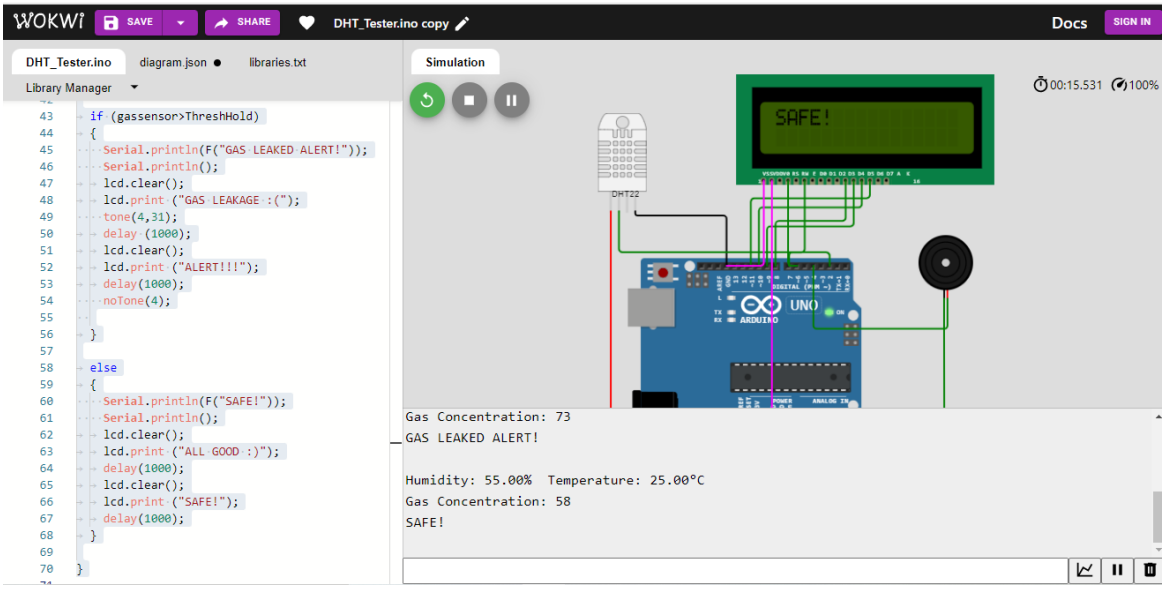
```
#include "DHT.h"
#include <LiquidCrystal.h>
#define DHTPIN 2
#define DHTTYPE DHT22
DHT dht(DHTPIN, DHTTYPE);
LiquidCrystal lcd(6,7,8,9,10,11);
int ThreshHold = 60;
void setup() {
  Serial.begin(9600);
  dht.begin();
  lcd.begin(16,2);
  pinMode(4, OUTPUT);
}
void loop() {

  delay(2000);


  float h = dht.readHumidity();
  float t = dht.readTemperature();

  // Check if any reads failed and exit early (to try again).
  if (isnan(h) || isnan(t)) {
    Serial.println(F("Failed to read from DHT sensor!"));
    return;
  }



  Serial.print(F("Humidity: "));
  Serial.print(h);
  Serial.print(F("%  Temperature: "));
  Serial.print(t);
```

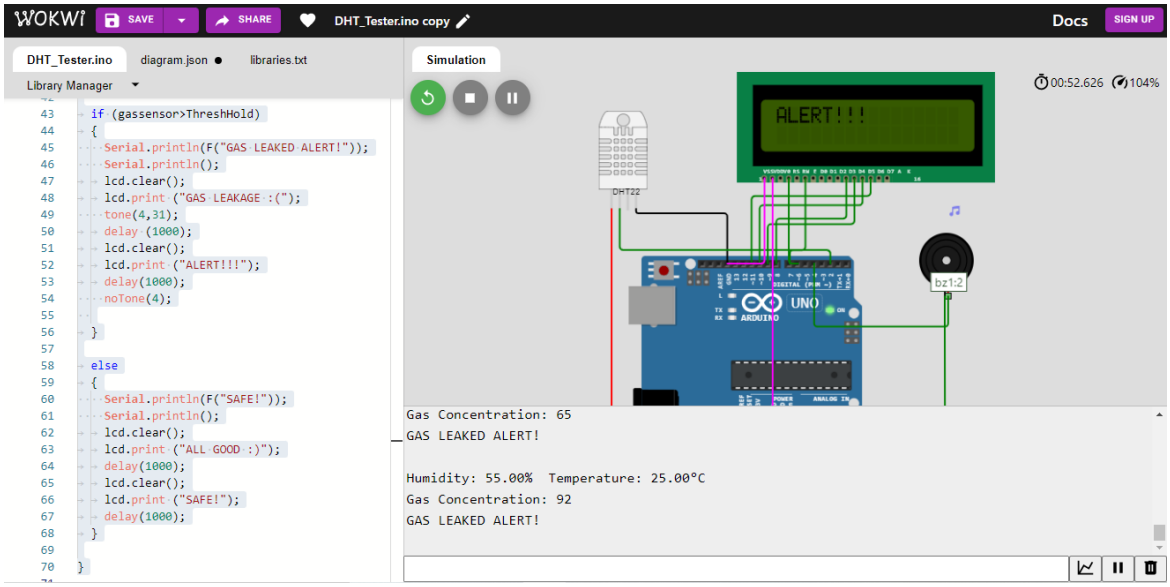
```
  Serial.print(F("°C "));
  Serial.println();


  int gassensor=random(0,100);
  Serial.print(F("Gas Concentration: "));
  Serial.println(gassensor);

  if (gassensor>ThreshHold)
  {
    Serial.println(F("GAS LEAKED ALERT!"));
    Serial.println();
    lcd.clear();
    lcd.print ("GAS LEAKAGE :(");
    tone(4,31);
    delay (1000);
    lcd.clear();
    lcd.print ("ALERT!!!");
    delay(1000);
    noTone(4);

  }

  else
  {
    Serial.println(F("SAFE!"));
    Serial.println();
    lcd.clear();
    lcd.print ("ALL GOOD :)");
    delay(1000);
    lcd.clear();
    lcd.print ("SAFE!");
    delay(1000);
  }

}
```

CIRCUIT DIAGRAM :



RESULT :






```
if (gassensor>ThreshHold)
{
  Serial.println(F("GAS LEAKED ALERT!"));
  Serial.println();
  lcd.clear();
  lcd.print ("GAS LEAKAGE :(");
  tone(4,31);
  delay (1000);
  lcd.clear();
  lcd.print ("ALERT!!!");
  delay(1000);
  noTone(4);

}

else
{
  Serial.println(F("SAFE!"));
  Serial.println();
  lcd.clear();
  lcd.print ("ALL GOOD :)");
  delay(1000);
  lcd.clear();
  lcd.print ("SAFE!");
  delay(1000);
}

}
```

LINK: https://wokwi.com/projects/347772124486697554

DEVELOP A PYTHON CODE:

```
import random
while(True):


    temp=random.uniform(92,110)
    Humid=random.uniform(60,100)
    ThreshHold = 60
    gassensor = random.uniform(0,100)
    print("Temperature : {:.2f}°C  Humidity :
{:.2f}%".format(temp,Humid))
    print("Gas Concentration: {:.2f}".format(gassensor))
    if(gassensor>=ThreshHold):
        print("GAS LEAKAGE ALERT!!")
        print("BUZZER ON")
    else:
        print("ALL GOOD SAFE!")
        print("BUZZER OFF")
    print()
```

RESULT:

```
Temperature : 105.29°C  Humidity : 82.65%
Gas Concentration: 54.03
ALL GOOD SAFE!
BUZZER OFF

Temperature : 99.26°C  Humidity : 70.87%
Gas Concentration: 69.01
GAS LEAKAGE ALERT!!
BUZZER ON

Temperature : 96.67°C  Humidity : 97.06%
Gas Concentration: 7.47
ALL GOOD SAFE!
BUZZER OFF

Temperature : 97.92°C  Humidity : 96.80%
Gas Concentration: 59.38
ALL GOOD SAFE!
BUZZER OFF

Temperature : 94.32°C  Humidity : 78.68%
Gas Concentration: 77.14
GAS LEAKAGE ALERT!!
BUZZER ON

Temperature : 93.49°C  Humidity : 81.80%
Gas Concentration: 39.00
ALL GOOD SAFE!
BUZZER OFF

Temperature : 103.38°C  Humidity : 73.10%
Gas Concentration: 11.77
ALL GOOD SAFE!
BUZZER OFF

Temperature : 95.96°C  Humidity : 88.03%
Gas Concentration: 6.27
ALL GOOD SAFE!
```