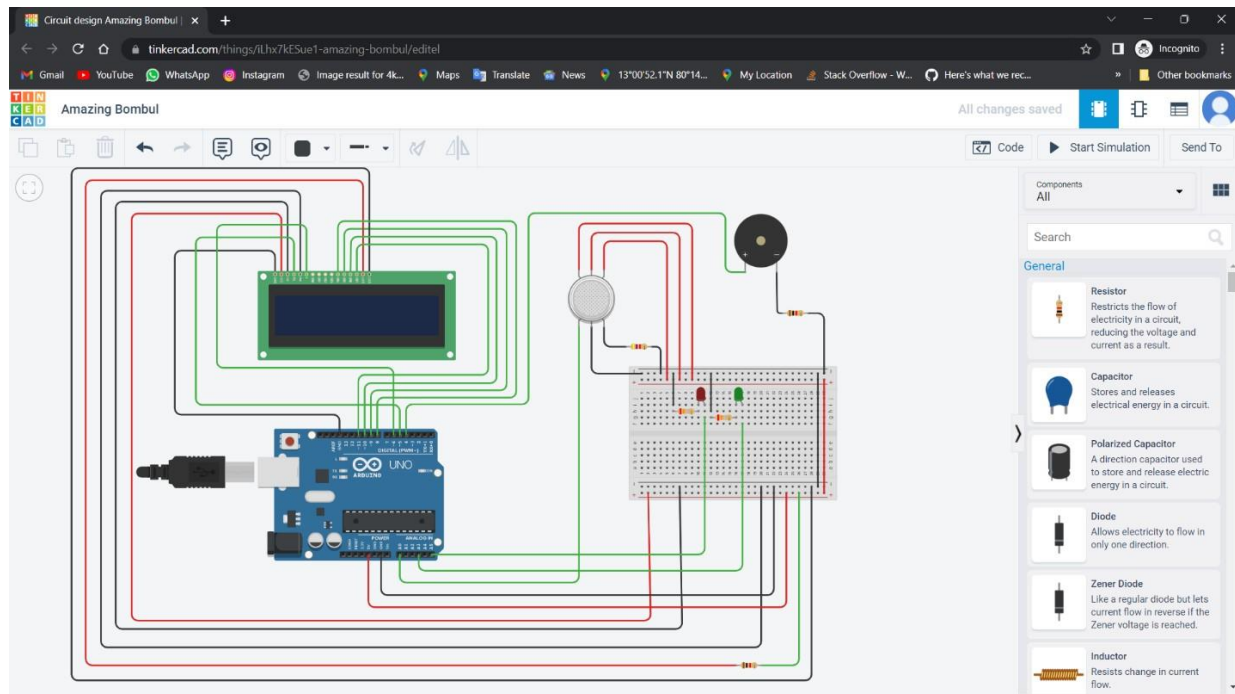


## SPRINT-I SIMULATON CREATION

Date	29 <sup>th</sup> OCTOBER 2022
Team ID	PNT2022TMID29330
Project Name	Gas Leakage Monitoring and Alerting System

### Connect Sensor with Python Code:



## CODE:

```
#include <LiquidCrystal.h>
LiquidCrystal lcd(5,6,8,9,10,11);

int redled = A5;
int greenled = A3;
int buzzer = 4;
int sensor = A0;
int sensorThresh = 400;

void setup()
{
  pinMode(redled, OUTPUT);
  pinMode(greenled,OUTPUT);
  pinMode(buzzer,OUTPUT);
  pinMode(sensor,INPUT);
  Serial.begin(9600);
  lcd.begin(16,2);
}

void loop()
{
  int analogValue = analogRead(sensor);
  Serial.println(analogValue);
  if(analogValue>sensorThresh)
  {
    digitalWrite(redled,HIGH);
    digitalWrite(greenled,LOW);
    tone(buzzer,1000,10000);
    lcd.clear();
    lcd.setCursor(0,1);
    lcd.print("ALERT");
    Serial.print("ALERT");
  }
}
```

```
    delay(1000);
    lcd.clear();
    lcd.setCursor(0,1);
    lcd.print("EVACUATE");
    Serial.println(" -- EVACUATE");
    delay(1000);
}
else
{
    digitalWrite(greenled,HIGH);
    digitalWrite(redled,LOW);
    noTone(buzzer);
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("SAFE");
    Serial.print("SAFE");
    delay(1000);
    lcd.clear();
    lcd.setCursor(0,1);
    lcd.print("ALL CLEAR");
    Serial.println(" -- ALL CLEAR");
    delay(1000);

}

}
```

## OUTPUT:

The screenshot shows a Tinkercad simulation of an Arduino Uno R3 connected to an LCD screen, a gas sensor, and a buzzer. The LCD screen displays "ALL CLEAR". The gas sensor is connected to the Arduino's A0 pin, and the buzzer is connected to the Arduino's 4th pin. The code in the Serial Monitor shows the following:

```
1 #include <LiquidCrystal.h>
2 LiquidCrystal lcd(5,6,8,9,10,11);
3
4 int redled = A5;
5 int greenled = A3;
6 int buzzer = 4;
7 int sensor = A0;
8 int sensorThresh = 400;
9
10 void setup()
11 {
12   pinMode(redled, OUTPUT);
13   pinMode(greenled, OUTPUT);
14   pinMode(buzzer, OUTPUT);
15   pinMode(sensor, INPUT);
16   Serial.begin(9600);
17   lcd.begin(16,2);
18 }
19
20 void loop()
21 {
22   int sensorValue = analogRead(sensor);
23   if (sensorValue > sensorThresh)
24   {
25     digitalWrite(redled, HIGH);
26     digitalWrite(greenled, LOW);
27     digitalWrite(buzzer, HIGH);
28     lcd.print("ALERT -- EVACUATE");
29   }
30   else
31   {
32     digitalWrite(redled, LOW);
33     digitalWrite(greenled, HIGH);
34     digitalWrite(buzzer, LOW);
35     lcd.print("SAFE -- ALL CLEAR");
36   }
37   delay(1000);
38 }
```

The screenshot shows the same Tinkercad simulation as above, but the LCD screen now displays "EVACUATE". The gas sensor is connected to the Arduino's A0 pin, and the buzzer is connected to the Arduino's 4th pin. The code in the Serial Monitor shows the following:

```
1 #include <LiquidCrystal.h>
2 LiquidCrystal lcd(5,6,8,9,10,11);
3
4 int redled = A5;
5 int greenled = A3;
6 int buzzer = 4;
7 int sensor = A0;
8 int sensorThresh = 400;
9
10 void setup()
11 {
12   pinMode(redled, OUTPUT);
13   pinMode(greenled, OUTPUT);
14   pinMode(buzzer, OUTPUT);
15   pinMode(sensor, INPUT);
16   Serial.begin(9600);
17   lcd.begin(16,2);
18 }
19
20 void loop()
21 {
22   int sensorValue = analogRead(sensor);
23   if (sensorValue > sensorThresh)
24   {
25     digitalWrite(redled, HIGH);
26     digitalWrite(greenled, LOW);
27     digitalWrite(buzzer, HIGH);
28     lcd.print("ALERT -- EVACUATE");
29   }
30   else
31   {
32     digitalWrite(redled, LOW);
33     digitalWrite(greenled, HIGH);
34     digitalWrite(buzzer, LOW);
35     lcd.print("SAFE -- ALL CLEAR");
36   }
37   delay(1000);
38 }
```