9512 JP COLLEGE OF ENGINEERING

AIR QUALITY MONTIORING SYSTEM

Proj_21193_TEAM_1

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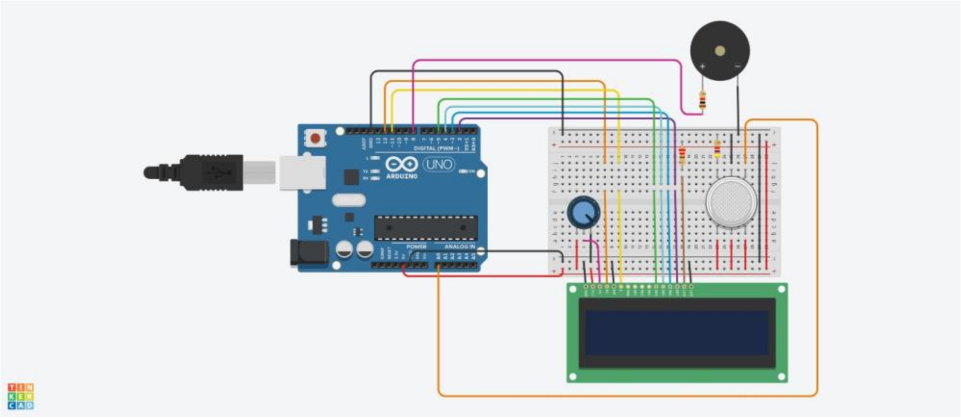
IOT_PHASE:4(DEVELOPMENT PART 2)

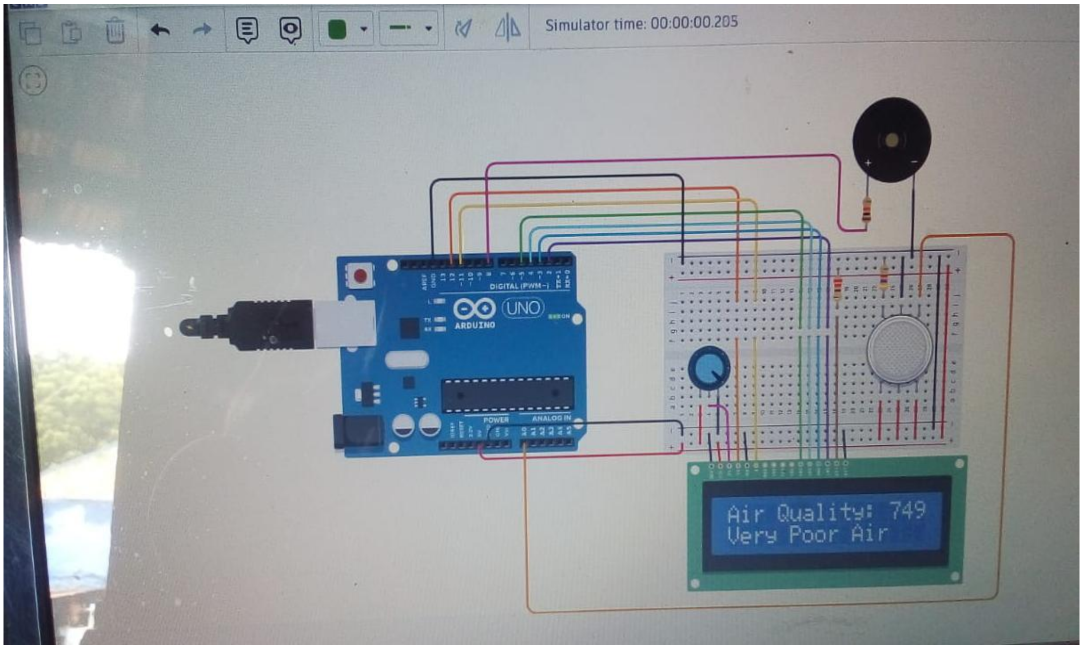
```
mport java.io.*;
import java.net.*;
import java.util.Date;

public class AirQualityMonitor {

  public static void main(String[] args) {
    int port = 8080; // Change to the appropriate port
    try {
      ServerSocket serverSocket = newerverSocket(port);
      System.out.println("Air Quality Monitoring Server is running on port " + port);
```

```
            while (true) {
                Socket clientSocket = serverSocket.accept();
                System.out.println("Client connected from: " + clientSocket.getInetAddress());

                // Handle client data (Assuming sensor data is sent as text)
                BufferedReader reader = new BufferedReader(new
InputStreamReader(clientSocket.getInputStream()));
                String sensorData = reader.readLine();
                System.out.println("Received data: " + sensorData);

                // You can parse and process the sensor data here

                // For simplicity, let's just log the data to a file
                logDataToFile(sensorData);

                clientSocket.close();
            }
        } catch (IOException e) {
            e.printStackTrace();
        }
    }

    private static void logDataToFile(String data) {
        try {
            PrintWriter writer = new PrintWriter(new FileWriter("air_quality_data.txt", true));
            writer.println(new Date() + ": " + data);
            writer.close();
        } catch (IOException e) {
            e.printStackTrace();
        }
  }
}
```



```
            // include the library code:
#include <LiquidCrystal.h>


// initialize the library with the numbers of the interface pins
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);


int pin8 = 8;
int analogPin = A0;
int sensorValue = 0;       // store the value read


void setup() {
  pinMode(analogPin, INPUT);
  pinMode(pin8, OUTPUT);
  // set up the LCD's number of columns and rows:
  lcd.begin(16, 2);
  // Print a message to the LCD.
  lcd.print("What is the air ");
  lcd.print("quality today?");
  Serial.begin(9600);
  lcd.display();
}

void loop() {

  delay(100);
  sensorValue = analogRead(analogPin);     // read the input pin
  Serial.print("Air Quality in PPM = ");
  Serial.println(sensorValue);            // debug value

  lcd.clear();
  lcd.setCursor(0,0);
  lcd.print ("Air Quality: ");
  lcd.print (sensorValue);

  if (sensorValue<=500)
   {
   Serial.print("Fresh Air ");
   Serial.print ("\r\n");
   lcd.setCursor(0,1);
   lcd.print("Fresh Air");
   }
  else if( sensorValue>500 && sensorValue<=650 )
   {
   Serial.print("Poor Air");
   Serial.print ("\r\n");
   lcd.setCursor(0,1);
   lcd.print("Poor Air");
   }
  else if (sensorValue>=650)
   {
   Serial.print("Very Poor Air");
   Serial.print ("\r\n");
   lcd.setCursor(0,1);
   lcd.print("Very Poor Air");
   }

  if (sensorValue >650) {
    // Activate digital output
    digitalWrite(pin8, HIGH);
  }
  else {
    // Deactivate digital output
    digitalWrite(pin8, LOW);
  }
}
```

Output of air quality monitoring system



Simulator time: 00:00:00.205

```
Air Quality: 749
Very Poor Air
```