AIR QUALITY MONITORING SYSTEM

Phase_4:

PROBLEM STATEMENT:

Air pollution poses a significant threat to public health and the environment, with growing concerns about its adverse effects on respiratory diseases, cardiovascular problems, and environmental degradation. In our urban area, there is a pressing need for an effective Air Quality Monitoring System (AQMS) to address the following critical issues like inadequate air quality data,lack of public awareness,ineffective emergency response,compilance with regulatory standards,limited research and policy support.

PROJECT IMPLEMENTATION:

Code:

aqm.html:

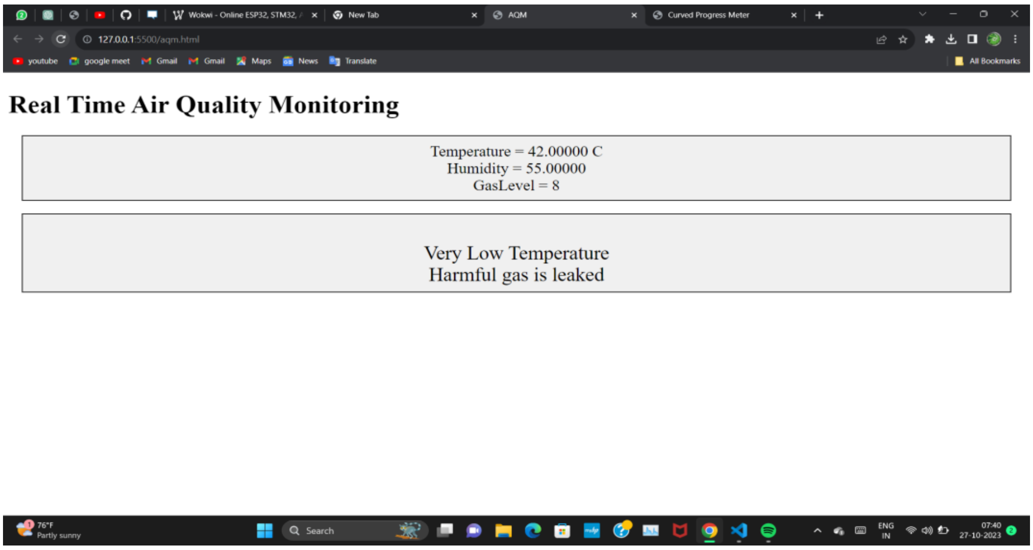
```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>AQM</title>
    <script src="script.js"></script>
    <style>
        *{
            text-align: center;
        }
            #data-container {
            font-size: 24px;
            margin: 20px;
            padding: 10px;
            border: 2px solid #333;
            background-color: #f0f0f0;
            text-align: center;
        }
        #result{
            font-size: 30px;
            text-align: center;
            margin: 20px;
            padding: 10px;
            border: 2px solid #333;
            background-color: #f0f0f0;

        }
    </style>
</head>
<body>
    <h1>Real Time Air Quality Monitoring</h1>
    <div id="data-container">

    </div>
    <div id="result">

    </div>
</body>
</html>
```

Script.js

```
// Replace with your ThingSpeak channel ID and read API key
```

```
const channelID = '2320479';
const readAPIKey = 'NUWWKS8J4GUMC6SX';

// The field number you want to retrieve
const fieldNumber = 1;
var i ;
// ThingSpeak API URL
const apiUrl =
`https://api.thingspeak.com/channels/${channelID}/feeds.json?api_key=${read
APIKey}`;

// Perform an HTTP GET request to retrieve data
function latest(){
    {fetch(apiUrl)
        .then((response) => response.json())
        .then((data) =>{
           // i = data.feeds.length-4;
           i=0;

        })
    }
}
latest();
function fetchdata()
{fetch(apiUrl)
  .then((response) => response.json())
  .then((data) => {
    const f1 = data.channel.field1;
    const f2 = data.channel.field2;
    const f3 = data.channel.field3;

    if (data.feeds.length > 0 && i <data.feeds.length) {
      var value1 = data.feeds[i].field1;
      var value2 = data.feeds[i].field2;
      var value3 = data.feeds[i].field3; // Change field1 to match your field number
      console.log(`Data from ThingSpeak:`);
      console.log(f1," ",value1);
      console.log(f2," ",value2);
      console.log(f3," ",value3);

      i=i+1;
      document.getElementById('data-container').innerHTML=`Temperature = ${value1} C<br> Humidity = ${value2} <br> GasLevel = ${value3}`;
      if(value1 > 50 && value2 > 50){
        document.getElementById('result').innerHTML = "<br>Very High Temperature <br> Harmful gas is leaked";
      }
      else if(value1 > 50){
        document.getElementById('result').innerHTML = "<br>Very High Temperature";
      }
      else if(value1 < 20){
        document.getElementById('result').innerHTML = "<br>Very Low Temperature";
      }
      else if(value1 < 20 && value2>100){
        document.getElementById('result').innerHTML = "<br>Very Low Temperature  <br> Harmful gas is leaked";
      }
      else if(value2>50){
        document.getElementById('result').innerHTML = " <br> Harmful gas is
leaked";
      }
      else{
        document.getElementById('result').innerHTML = "<br>Normal
Condition";
      }
    }
  })
  .catch((error) => {
    console.error('Error fetching data:', error);
  });
}

fetchdata();

setInterval(fetchdata,5000);
```

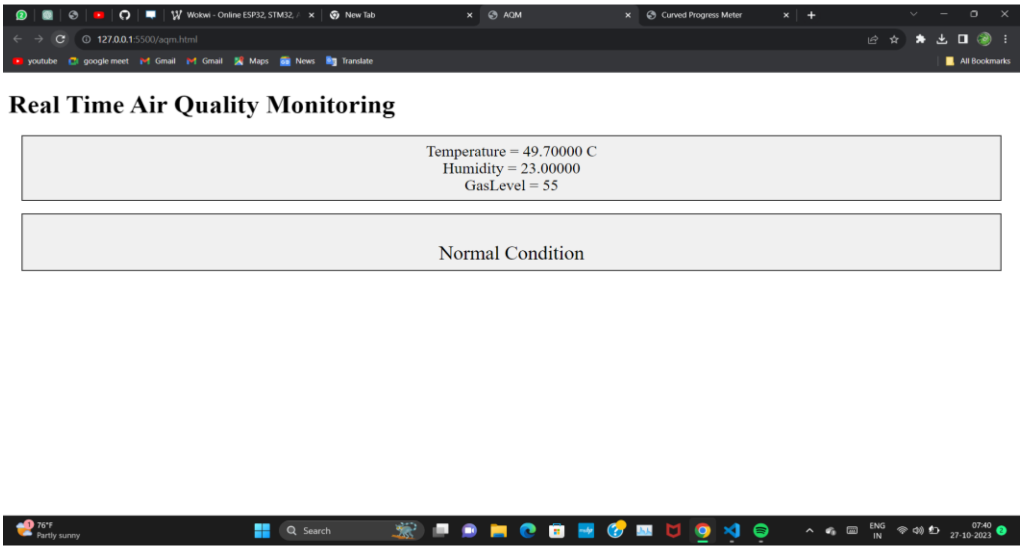
SAMPLE OUTPUT:



Real Time Air Quality Monitoring

Temperature = 42.00000 C
Humidity = 55.00000
GasLevel = 8

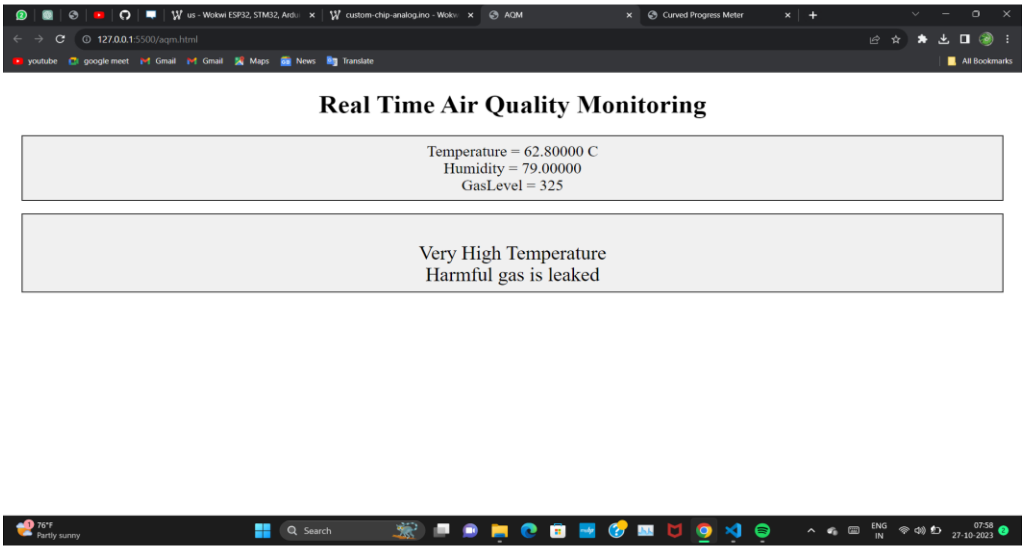
Very Low Temperature
Harmful gas is leaked



Real Time Air Quality Monitoring

Temperature = 49.70000 C
Humidity = 23.00000
GasLevel = 55

Normal Condition



Real Time Air Quality Monitoring

Temperature = 62.80000 C
Humidity = 79.00000
GasLevel = 325

Very High Temperature
Harmful gas is leaked