Air Quality Monitoring

Real-Time Data: The platform provides access to real-time air quality data, enabling users to monitor air quality conditions in their region or city at any given moment.

IoT Device Integration: Our platform is built to receive and display data sent by IoT (Internet of Things) devices strategically placed in various locations. These devices continuously monitor air quality metrics and send this information to the platform for immediate dissemination.

User-Friendly Interface: We prioritize user experience, with an intuitive and visually appealing design. Users can easily navigate the platform, access specific air quality metrics, and make data-driven decisions.

City Selection: Users can select a city or location of interest to view detailed air quality information. The platform supports multiple cities, making it valuable for users across different regions.

Air Quality Index (AQI): The platform provides an Air Quality Index that simplifies air quality data into a single, easy-to-understand metric. Users can quickly assess air quality conditions and understand potential health impacts.

Purified Air Percentage: In addition to displaying pollutant concentrations, the platform calculates the percentage of purified air components, providing insights into the overall air quality.

Data Sharing: The platform encourages data sharing, allowing users to share air quality information with their communities and on social media platforms. This fosters collective awareness and action.

Our Air Quality Data-Sharing Platform is a valuable resource for individuals, communities, researchers, and policymakers. It empowers users to make informed choices regarding outdoor activities, health precautions, and environmental advocacy. By integrating real-time data from IoT devices, our platform contributes to a healthier and more sustainable future by enabling data-driven solutions and raising public awareness about air quality issues.

```
<!DOCTYPE html>
<html>
<head>
    <title>Air Quality Data Platform</title>
</head>
<style>
    body {
        font-family: Arial, sans-serif;
        text-align: center;
    }

    h1 {
        color: #333;
    }

    #data-container {
        background-color: #f0f0f0;
        padding: 20px;
        border-radius: 5px;
        margin: 20px auto;
        width: 80%;
        text-align: left;
    }
</style>
<body>
    <h1>Air Quality Data Platform</h1>

    <h2>Random City Air Quality</h2>
    <p>Randomly Selected City: <span id="randomCity">Loading...</span></p>


    <p>Purified Air Percentage: <span id="purifiedAirPercentage">Calculating...</span></p>

    <div id="data-container">
        <!-- Air quality data will be displayed here -->
    </div>

    <script>
        // Function to display air quality data
        function displayData(cityData) {
            const dataContainer = document.getElementById("data-container");
            dataContainer.innerHTML = ""; // Clear previous data
```

```
            const airQualityData = cityData.list[0].components;

            for (const key in airQualityData) {
                if (airQualityData.hasOwnProperty(key)) {
                    const itemDiv = document.createElement("div");
                    itemDiv.innerHTML = `<strong>${key}:</strong> ${airQualityData[key]}<br><hr>`;
                    dataContainer.appendChild(itemDiv);
                }
            }
        }

        function getRandomCity() {
            const citiesInIndia = [
                "Mumbai",
                "Delhi",
                "Bangalore",
                // Add more cities here...
            ];

            const randomIndex = Math.floor(Math.random() * citiesInIndia.length);
            return citiesInIndia[randomIndex];
        }

        function calculatePurifiedAirPercentage(data) {
            if (data && data.list && data.list[0] && data.list[0].components) {
                const components = data.list[0].components;
                const totalComponents =
                    components.no2 + components.co + components.o3 + components.pm2_5 +
components.pm10 + components.so2;

                if (totalComponents === 0) {
                    return "N/A";
                }

                const purifiedAirComponents = components.no2 + components.co + components.o3;
                const purifiedAirPercentage = (purifiedAirComponents / totalComponents) * 100;
                return purifiedAirPercentage.toFixed(2);
            }

            return "N/A";
        }

        function updateAirQuality(city) {
            const apiKey = "1641591a62e1612d54edeb93832542d5";
```

```
        const airQualityUrl =
"http://api.openweathermap.org/data/2.5/air_pollution?lat={lat}&lon={lon}&appid=" + apiKey;

        const apiUrl =
`http://api.openweathermap.org/geo/1.0/direct?q=${city},IN&limit=1&appid=${apiKey}`;

        fetch(apiUrl)
            .then(response => response.json())
            .then(data => {
                const lat = data[0].lat;
                const lon = data[0].lon;

                const airQualityApiUrl = airQualityUrl.replace("{lat}", lat).replace("{lon}", lon);

                fetch(airQualityApiUrl)
                    .then(response => response.json())
                    .then(data => {
                        displayData(data);

                        document.getElementById("randomCity").textContent = city;

                        const purifiedAirPercentage = calculatePurifiedAirPercentage(data);
                        document.getElementById("purifiedAirPercentage").textContent =
purifiedAirPercentage + "%";
                    })
                    .catch(error => {
                        console.error("Error fetching air quality data: " + error);
                    });
            })
            .catch(error => {
                console.error("Error fetching city information: " + error);
            });
      }

      // Get a random city and update air quality
      const randomCity = getRandomCity();
      updateAirQuality(randomCity);
   </script>
</body>
</html>
```

Air Quality Data Platform

Random City Air Quality

Randomly Selected City: Bangalore

Purified Air Percentage: 81.40%

co: 687.6

no: 1.93

no2: 13.2

o3: 174.52

so2: 16.93

pm2_5: 87.88

pm10: 95.19

nh3: 0.56