

Performed with original
data set

NOVEMBER 26

India Air Quality index Analysis -Real Time Air Pollution Level



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Project Overview



The Air Quality Monitoring System is a comprehensive solution designed to collect, store, and analyze air quality data from various monitoring stations across different states and cities.

The system aims to provide valuable insights into the air quality of different regions, aiding environmentalists, policymakers, and the general public in making informed decisions regarding health and environmental concerns.



TABLE USED



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1) Retrieve all records for a specific city (e.g., Mumbai) ?

```
● ● ●  
SELECT * FROM AirQuality  
WHERE City = "Mumbai";
```





OUTPUT:

Query #1 Execution time: 1ms

SerialNumber	State	City	StationName	CurrentAQIValue
108	Maharashtra	Mumbai	BKC, Mumbai - MPCB	151
291	Maharashtra	Mumbai	Bandra, Mumbai - MPCB	212
413	Maharashtra	Mumbai	Worli, Mumbai - MPCB	196



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2) Find the average AQI value for each state?



```
SELECT State,ROUND(AVG(CurrentAQIValue),2) AS Avg_AQI  
FROM AirQuality  
GROUP BY State;
```





OUTPUT:

Query #2 Execution time: 1ms

State	Avg_AQI
Andhra Pradesh	76.47
Arunachal Pradesh	64
Assam	94.5
Bihar	124
Chandigarh	68.67
Chhattisgarh	92
Dadra and Nagar Haveli	52
Daman and Diu	57
Delhi	290
Goa	41.67
Gujarat	122



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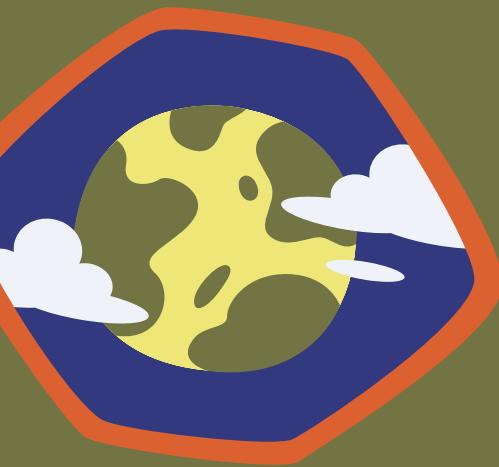


3) Identify cities where AQI is above a certain threshold (e.g., $\text{AQI} > 200$)?



```
SELECT city , CurrentAQIValue  
FROM AirQuality  
WHERE CurrentAQIValue >200  
ORDER BY CurrentAQIValue DESC;
```





OUTPUT:

Query #3 Execution time: 1ms

City	CurrentAQIValue
Delhi	318
Ghaziabad	315
Ahmedabad	292
Ghaziabad	289
Gurugram	277
Faridabad	272
Noida	264
Noida	264
Greater Noida	264
Delhi	262
Surat	241
Noida	239

DB Fiddle - Crafted with ❤ by Status200 in the United Kingdom



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4) Count the number of records with insufficient data ?



```
SELECT COUNT(*) AS Insufficient_Data_Count  
FROM AirQuality  
WHERE CurrentAQIValue = 'Insufficient data available in last 24 hours.';
```





OUTPUT:

Query #4	Execution time: 0ms
Insufficient_Data_Count	
0	



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5) Find the highest AQI value along with the corresponding city and state?

```
SELECT City, State, CurrentAQIValue  
FROM AirQuality  
ORDER BY CurrentAQIValue DESC  
LIMIT 1;
```



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OUTPUT:

Query #5 Execution time: 1ms

City	State	CurrentAQIValue
Delhi	Delhi	318



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6) Calculate the overall average AQI for the entire dataset?



```
SELECT ROUND(AVG(CurrentAQIValue),2) AS Overall_average_AQI  
FROM AirQuality;
```





OUTPUT:

Query #6	Execution time: 0ms
Overall_average_AQI	
96.05	



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7) Retrieve records for states with more than five city ?

```
SELECT State, COUNT(DISTINCT City) AS NO_OF_CITIES  
FROM AirQuality  
GROUP BY State  
HAVING NO_OF_CITIES > 5 ;
```





OUTPUT:

Query #7 Execution time: 1ms

State	NO_OF_CITIES
Andhra Pradesh	17
Gujarat	12
Haryana	19
Himachal Pradesh	12
Karnataka	19
Kerala	9
Lakshadweep	10
Madhya Pradesh	8
Maharashtra	24
Odisha	9
Punjab	9



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8) Find the cities in a specific state with AQI less than 50 ?



```
SELECT city,CurrentAQIValue  
FROM AirQuality  
WHERE CurrentAQIValue < 50  
ORDER BY CurrentAQIValue ASC ;
```





OUTPUT:

Query #8 Execution time: 1ms

City	CurrentAQIValue
Alappuzha	20
Aizawl	21
Vizianagaram	23
Port Blair	27
Chetlat	27
Shillong	27
Chetlat	27
Andrott	27
Andrott	27
Chetlat	27
Andrott	27



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9) Categorize AQI values into different pollution levels ?

```
SELECT
    City,
    CurrentAQIValue,
CASE
    WHEN CurrentAQIValue <= 50 THEN 'Good'
    WHEN CurrentAQIValue <= 100 THEN 'Moderate'
    WHEN CurrentAQIValue <= 150 THEN 'Unhealthy for Sensitive Groups'
    WHEN CurrentAQIValue <= 200 THEN 'Unhealthy'
    WHEN CurrentAQIValue <= 300 THEN 'Very Unhealthy'
    ELSE 'Hazardous'
END AS Pollution_Level
FROM
    AirQuality
WHERE
    CurrentAQIValue IS NOT NULL;
```





OUTPUT:

Query #9 Execution time: 17ms

City	CurrentAQIValue	Pollution_Level
Amaravati	135	Unhealthy for Sensitive Groups
Anantapur	62	Moderate
Chittoor	30	Good
Eluru	95	Moderate
Guntur	84	Moderate
Kadapa	102	Unhealthy for Sensitive Groups
Kakinada	54	Moderate
Kurnool	44	Good
Nellore	72	Moderate
Ongole	88	Moderate
Rajamahendravaram	73	Moderate



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10) find cities with the Lowest AQI values in each state and rank top 1 ?

```
WITH Lowest_AQI AS
(
    SELECT DISTINCT City,
        CurrentAQIValue,
        State,
        RANK() OVER(PARTITION BY State ORDER BY CurrentAQIValue ASC) AS Lowest_AQI_Rank
    FROM AirQuality
)

SELECT City,
        State,
        CurrentAQIValue,
        Lowest_AQI_Rank
    FROM Lowest_AQI
    LIMIT 1;
```





OUTPUT:

Query #10 Execution time: 1ms

City	State	CurrentAQIValue	Lowest_AQI_Rank
Port Blair	Andaman and Nicobar Islands	27	1



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OUR PLANET IS
ON FIRE

SAVE THE TURTLES
NO TO PLASTICS!

Thank You

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