SQL PROJECT

AIR QUALITY INDEX ANALYSIS

Objective

- The Air Quality Monitoring System serves as an all-encompassing solution crafted to gather, store, and scrutinize air quality data derived from diverse monitoring stations situated across various states and cities. The primary objective of this initiative is to furnish valuable insights into the air quality across different regions. Such information proves instrumental for environmentalists, policymakers, and the public at large, empowering them to make well-informed decisions about health and environmental matters.

Table used

AIR QUALITY

	SerialNumber	State	City	StationName	CurrentAQIValue
1	1	Andhra Pradesh	Amaravati	Secretariat, Amaravati - APPCB	135
2	2	Andhra Pradesh	Anantapur	Gulzarpet, Anantapur - APPCB	62
3	3	Andhra Pradesh	Chittoor	Gangineni Cheruvu, Chittoor - APPCB	30
4	4	Andhra Pradesh	Eluru	Eluru - APPCB	95
5	5	Andhra Pradesh	Guntur	Collectorate, Guntur - APPCB	84
6	6	Andhra Pradesh	Kadapa	RTC Bus Stand, Kadapa - APPCB	102
7	7	Andhra Pradesh	Kakinada	LMD Colony, Kakinada - APPCB	54
8	8	Andhra Pradesh	Kurnool	Gandhi Nagar, Kurnool - APPCB	44
9	9	Andhra Pradesh	Nellore	ZP Office, Nellore - APPCB	72
10	10	Andhra Pradesh	Ongole	Ongole - APPCB	88
11	11	Andhra Pradesh	Rajamahendravaram	RTC Complex, Rajamahendravaram - APPCB	73
12	12	Andhra Pradesh	Srikakulam	New RTC Bus Stand, Srikakulam - APPCB	45
13	13	Andhra Pradesh	Tirupati	Tirupati - APPCB	107
14	14	Andhra Pradesh	Vijayawada	Income Tax Office, Vijayawada - APPCB	97
15	15	Andhra Pradesh	Visakhapatnam	GVM Corporation Office, Visakhapatnam - APPCB	106
16	16	Andhra Pradesh	Vizianagaram	Vizianagaram - APPCB	23
17	17	Andhra Pradesh	Yemmiganur	Yemmiganur - APPCB	83

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

```
select * from air_quality
where city = 'Mumbai'
```

	SerialNumber	State	City	StationName	CurrentAQIValue
1	108	Maharashtra	Mumbai	BKC, Mumbai - MPCB	151
2	291	Maharashtra	Mumbai	Bandra, Mumbai - MPCB	212
3	413	Maharashtra	Mumbai	Worli, Mumbai - MPCB	196

Find The average AQI value for each state.

```
SELECT state,
AVG(currentaqivalue) AS avg_aqi
FROM air_quality
GROUP BY state;
```

	state	avg_aqi
1	Andaman and Nicobar Islands	29.5
2	Andhra Pradesh	76.4705882352941
3	Arunachal Pradesh	64
4	Assam	94.5
5	Bihar	124
6	Chandigarh	68.6666666666667
7	Chhattisgarh	92
8	Dadra and Nagar Haveli	52
9	Dadra and Nagar Haveli and Daman and Diu	69
10	Daman and Diu	57
11	Delhi	290
12	Goa	41.6666666666667
13	Gujarat	122
14	Haryana	147.807692307692
15	Himachal Pradesh	56.2105263157895
16	Jammu and Kashmir	66.5
17	Jharkhand	97.6

Identify cities where AQI is above a certain threshold (e.g.,, AQI>200)

```
select city, currentaqivalue
from air_quality
where currentaqivalue>200;
```

	city	currentaqivalue
1	Delhi	318
2	Faridabad	204
3	Ghaziabad	315
4	Noida	239
5	Delhi	262
6	Ahmedabad	292
7	Surat	241
8	Faridabad	272
9	Gurugram	277
10	Kalyan	215
11	Mumbai	212
12	Thane	218
13	Ghaziabad	289
14	Greater Noida	264
15	Lucknow	203
16	Noida	264
17	Ghaziabad	213

count the number of records with insufficent data?

```
select count(*) as Insufficent_datacount
from air_quality
where currentaqivalue is null;
```

	Insufficent_datacount
1	0

Calculate the overall average AQIbfor the entire dataset.

```
select avg(currentaqivalue) as overall_avg_aqi
from air_quality;
```

	overall_avg_aqi
1	96.0520833333333

Retrieve records for states with more than five city.

```
select State, count(distinct City)
from  air_quality
group by State
Having count(distinct City) >5;
```

	State	(No column name)
1	Andhra Pradesh	17
2	Gujarat	12
3	Haryana	19
4	Himachal Pradesh	12
5	Karnataka	19
6	Kerala	9
7	Lakshadweep	10
8	Madhya Pradesh	8
9	Maharashtra	24
10	Odisha	9
11	Punjab	9
12	Rajasthan	11
13	Tamil Nadu	18
14	Telangana	10
15	Uttar Pradesh	14
16	West Bengal	7

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

```
select State, City, currentaqivalue
from air_quality
where currentaqivalue<50
order by currentaqivalue ;
```

	State	City	currentaqivalue
1	Kerala	Alappuzha	20
2	Mizoram	Aizawl	21
3	Andhra Pradesh	Vizianagaram	23
4	Andaman and Nicobar Islands	Port Blair	27
5	Meghalaya	Shillong	27
6	Lakshadweep	Andrott	27
7	Lakshadweep	Chetlat	27
8	Lakshadweep	Andrott	27
9	Lakshadweep	Chetlat	27
10	Lakshadweep	Andrott	27
11	Lakshadweep	Chetlat	27
12	Lakshadweep	Kavaratti	28
13	Lakshadweep	Kavaratti	28
14	Lakshadweep	Kavaratti	28
15	Odisha	Balasore	28
16	Lakshadweep	Agatti	29
17	Lakshadweep	Amini	29

- THANK YOU