

AIR QUALITY ASSESSMENT-TAMILNADU

TEAM MEMBER

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Phase-4 (DEVELOPMENT-part2)

INTRODUCTION:

In this part we will continue building our project. We will Perform the air quality analysis and create visualizations, Calculate average SO₂, NO₂, and RSPM/PM₁₀ levels across different monitoring stations, cities, or areas, Identify pollution trends and areas with high pollution levels, Create visualizations using data visualization libraries.

PREPROCESSING OF DATA:

```
In [56]: dist=(data2['city'])
          distset=set(dist)
          dd=list(distset)
          dict0fwords = {dd[i] :i for i in range(0,len(dd))}
          data2['city']=data2['city'].map(dict0fwords)
```

```
In [57]: dist=(data2['AQI'])
          distset=set(dist)
          dd=list(distset)
          dict0fwords = {dd[i] :i for i in range(0,len(dd))}
          data2['AQI']=data2['AQI'].map(dict0fwords)
```

```
In [58]: data2["AQI"]=data2["AQI"].fillna(data2["AQI"].mean())
```

```
In [59]: data2
```

In [59]: data2

Out[59]:

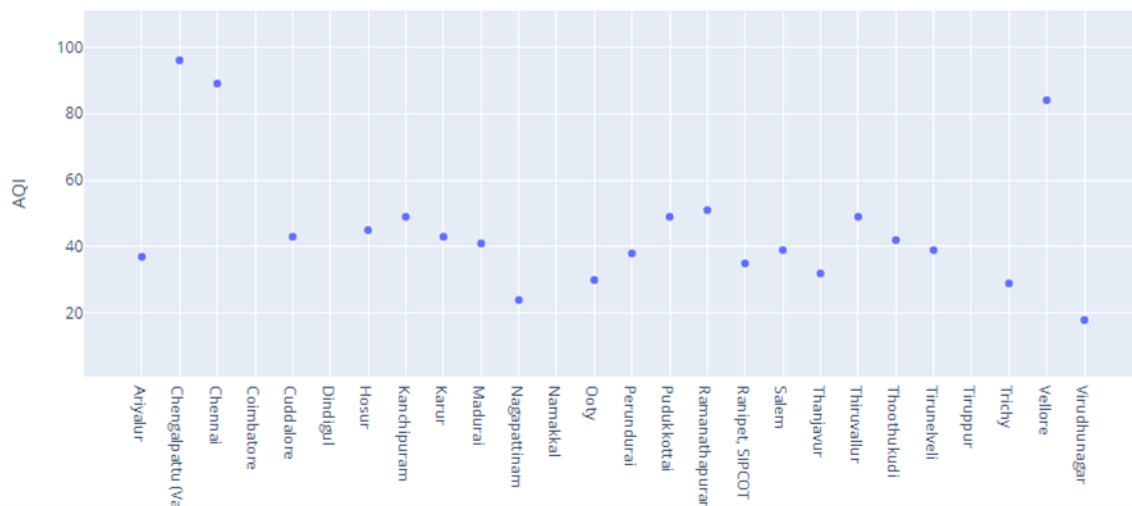
	S.No	city	Unnamed: 2	S02	N02	co	PM2.5	PMIO	AQI Index	AQI	Prominent
0	NaN	22	NaN	NaN	NaN	NaN	NaN	NaN	NaN	26	Pollutant
1	1.0	0	NaN	11.0	14	0.4	16	37	Good	8	PMIO
2	2.0	23	NaN	13.0	18	0.8	20	96	Satisfactory	23	PMIO
3	3.0	22	Kodungaiyur	3.0	16	0.7	17	68	Satisfactory	20	pM10
4	4.0	22	Koyambedu	4.0	13	0.4	28	67	Satisfactory	17	pMIO
5	5.0	14	perungudi	3.0	23	0.5	17	89	Satisfactory	22	PMIO
6	6.0	22	Royapuram	3.0	24	0.6	19	72	Satisfactory	18	PMIO
7	7.0	22	Kuruchi-SIDCO	6.0	12	0.3	21	38	Good	9	PMIO
8	NaN	25	NaN	NaN	NaN	NaN	NaN	NaN	NaN	24	NaN
9	8.0	22	PSG Collage	4.0	9	0.2	10	33	Good	6	PMI O
10	9.0	22	Semmandalam	6.0	12	0.3	20	29	Good	3	PMIO

VISUALIZATION WITH IMPORTS:

In [62]: import plotly.express as px

```
#plotting the bubble chart
fig=px.scatter(data, x="city" , y="AQI")

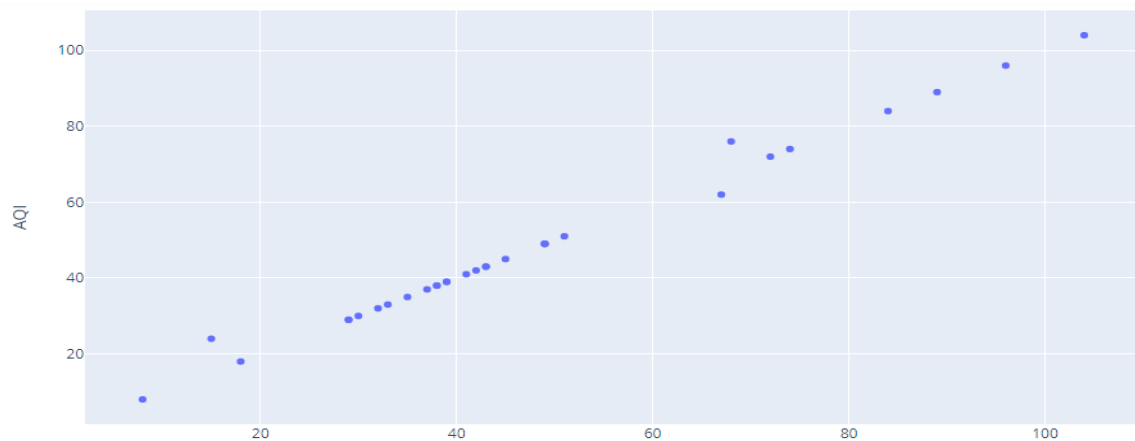
#showing the plot
fig.show()
```



```
In [66]: import plotly.express as px

#plotting the bubble chart
fig2=px.scatter(data, x="PMIO",y="AQI")

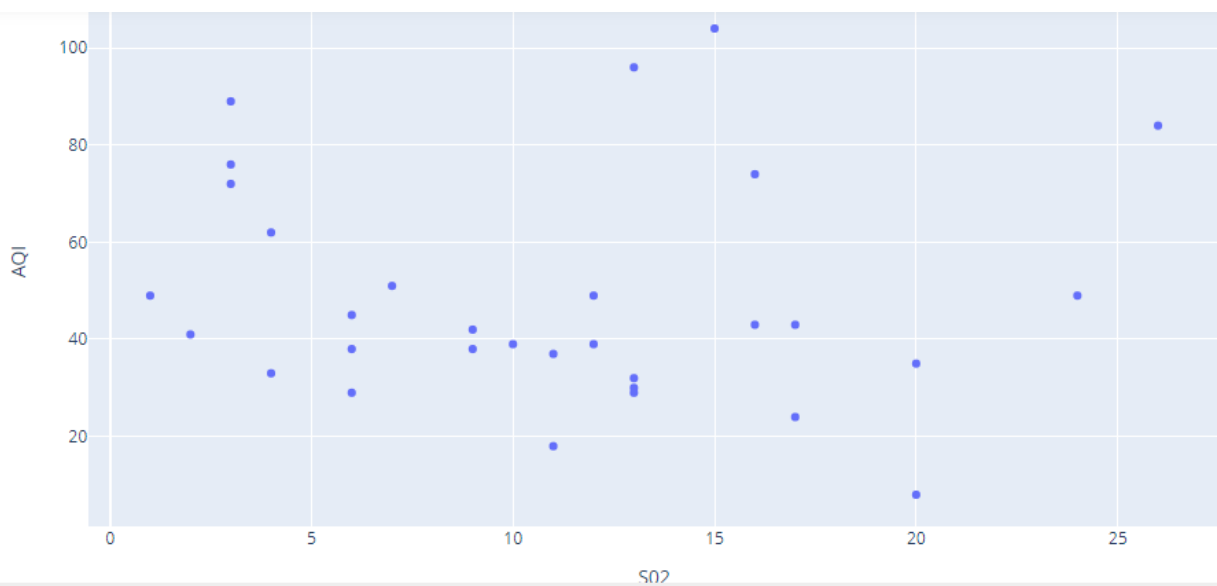
#showing the plot
fig2.show()
```



```
In [68]: import plotly.express as px

#plotting the bubble chart
fig3=px.scatter(data, x="SO2",y="AQI")

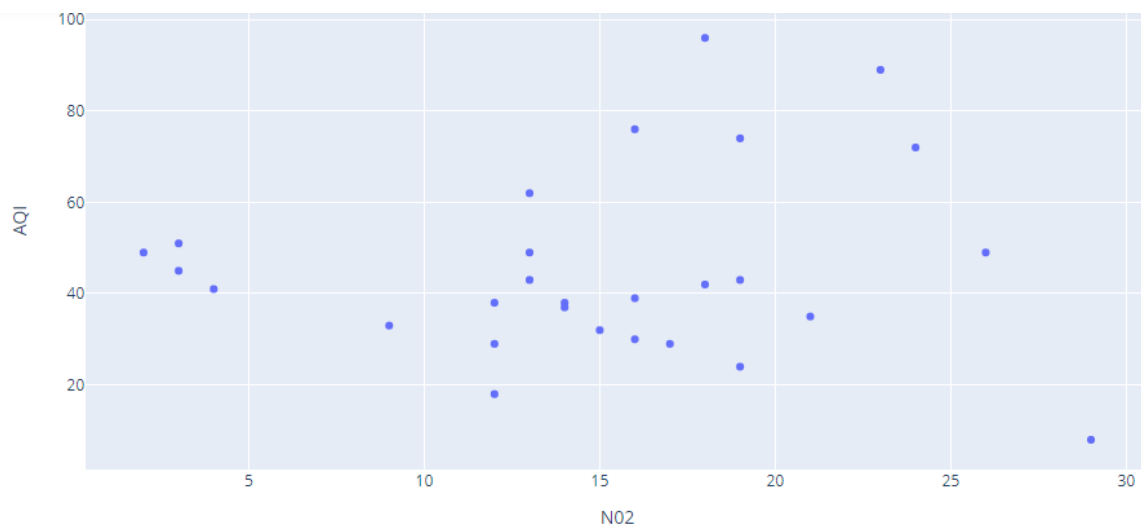
#showing the plot
fig3.show()
```



```
In [69]: import plotly.express as px

#plotting the bubble chart
fig4=px.scatter(data, x="N02",y="AQI")

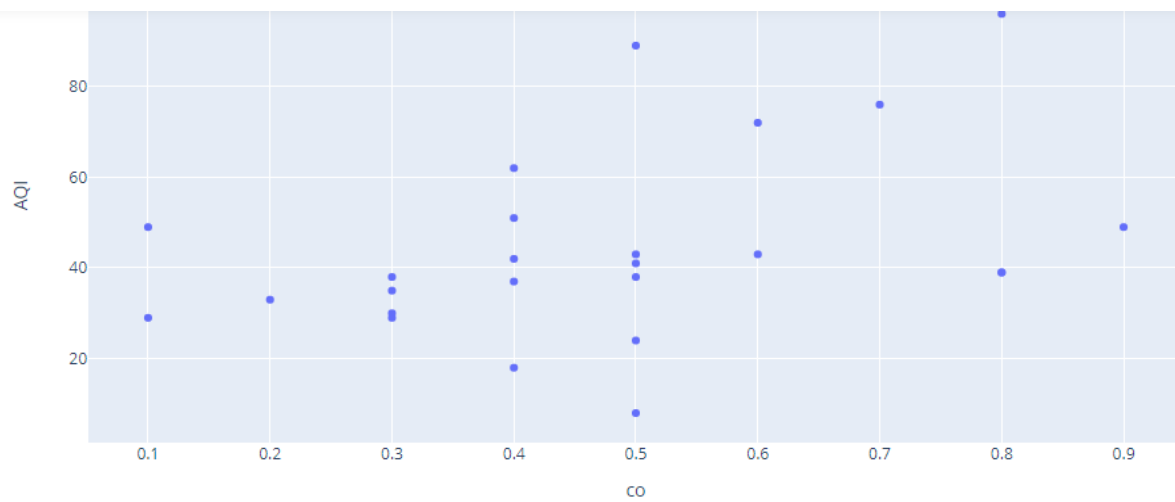
#showing the plot
fig4.show()
```



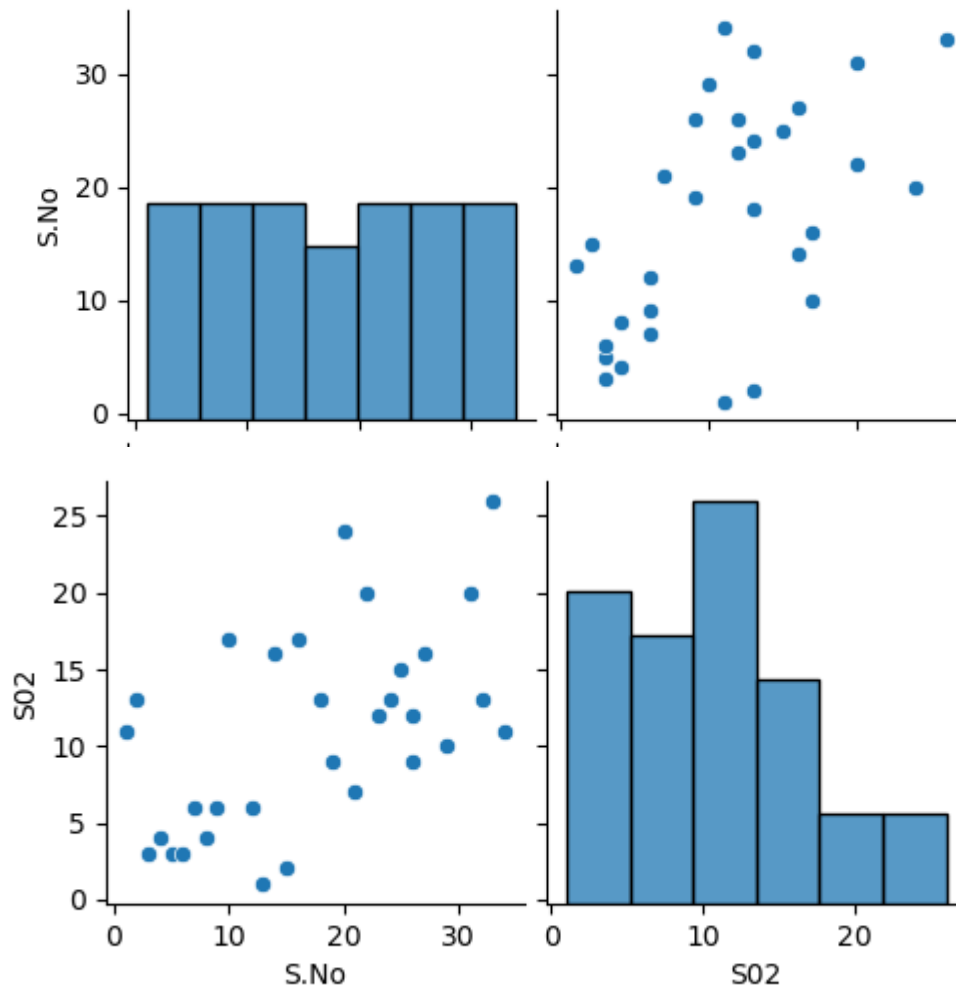
```
In [71]: import plotly.express as px

#plotting the bubble chart
fig5=px.scatter(data, x="co",y="AQI")

#showing the plot
fig5.show()
```



```
In [73]: sns.pairplot(data)
```



CONCLUSION:

In this part, we have Calculated average SO₂, NO₂, and RSPM/PM₁₀ levels across different monitoring stations, cities, or areas, Identified pollution trends and areas with high pollution levels using visualizations.