AIR QUALITY ANALYSIS AND PREDICTION IN TAMILNADU

To analyse air quality of an given dataset of 2014 in Tamilnadu.

this part you will continue building your project.

To Perform:

Air quality analysis

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

Create visualizations using data visualization libraries (e.g., Matplotlib, Seaborn).

Matplotlib using scatter plot:

A scatter plot (aka scatter chart, scatter graph) uses dots to represent values for two different numeric variables. The position of each dot on the horizontal and vertical axis indicates values for an individual data point. Scatter plots are used to observe relationships between variables.

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```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
df=pd.read_csv("C:\\Users\\MUJAHID\\Downloads\\cpcb_dly_aq_tamil_nadu-2014.csv")
plt.figure(figsize=(10,6))
sns.scatterplot(data=df)
plt.xlabel("Avg air quality")
plt.ylabel("RSPM/PM 10 level")
plt.show()
```

Scatterplot:

Bar plot:

A bar plot represents an aggregate or statistical estimate for a numeric variable with the height of each rectangle and indicates the uncertainty around that estimate using an error bar. Bar plots include 0 in the axis range, and they are a good choice when 0 is a meaningful value for the variable to take.

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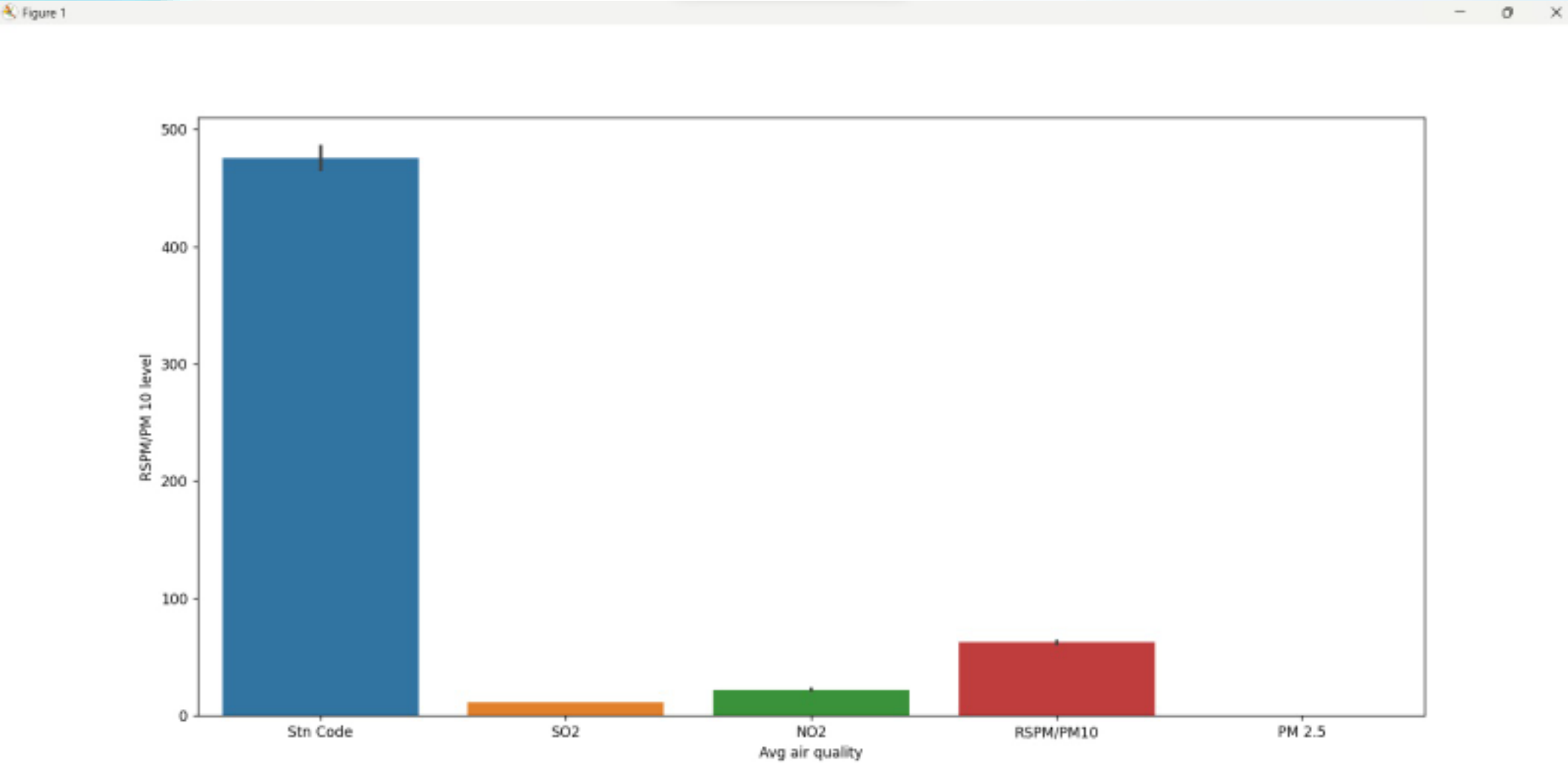
import seaborn as sns
df=pd.read_csv("C:\\Users\\MUJAHID\\Downloads\\cpcb_dly_aq_tamil_nadu-2014.csv")
plt.figure(figsize=(10,6))
sns.barplot(data=df)
plt.xlabel("Avg air quality")
plt.ylabel("RSPM/PM 10 level")
plt.show()
```

Bar plot for given dataset:



Line plot for given dataset:

Line Plot is one of the easiest and most basic graphical analysis techniques that play an important role in data analysis when working on machine learning or data science projects. They are used to express a relationship between two variables. The article focuses on plotting a line chart in Python using Matplotlib.

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```
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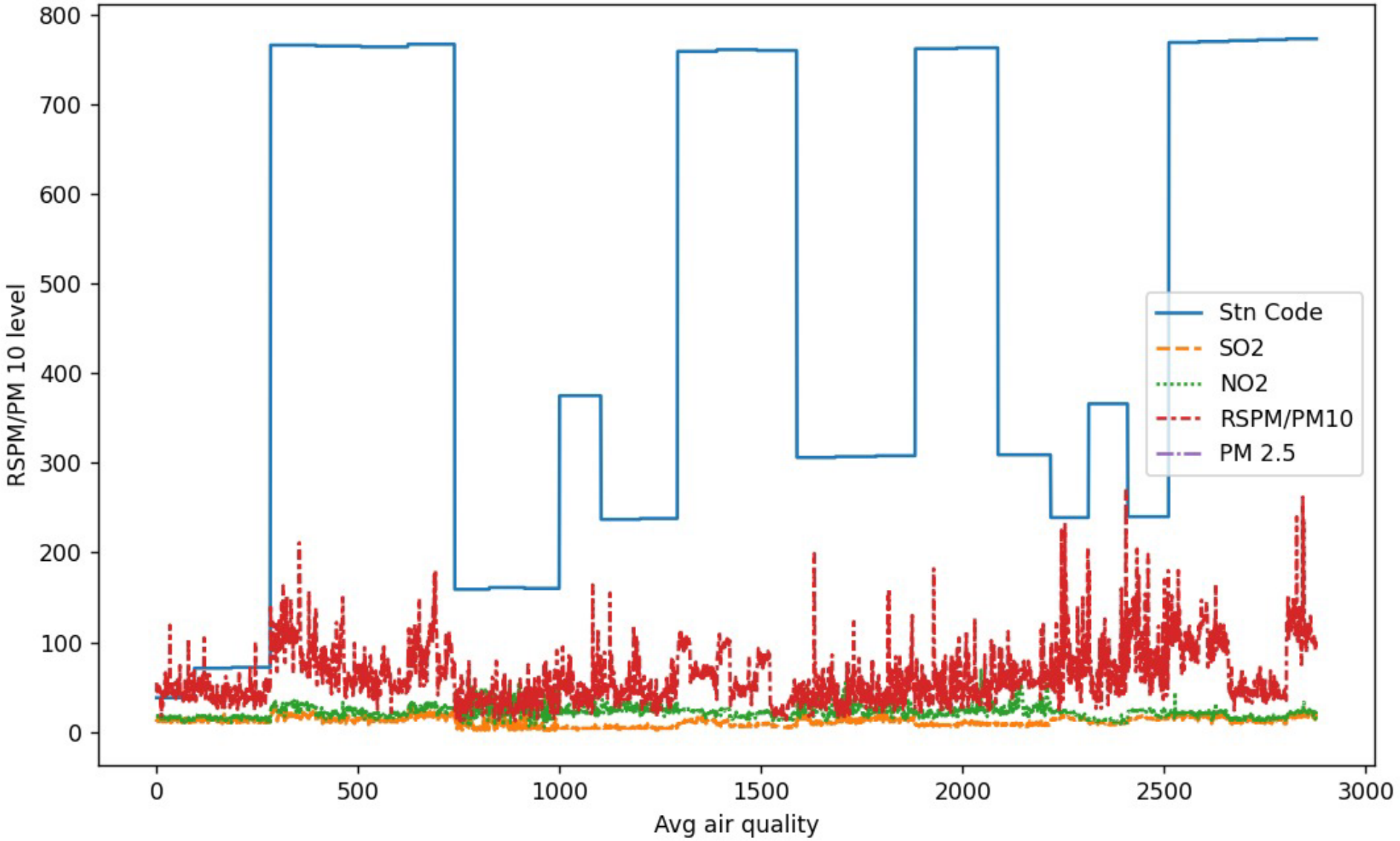
import seaborn as sns
df=pd.read_csv("C:\\Users\\MUJAHID\\Downloads\\cpcb_dly_aq_tamil_nadu-2014.csv")
plt.figure(figsize=(10,6))
sns.lineplot(data=df)
plt.xlabel("Avg air quality")
plt.ylabel("RSPM/PM 10 level")
plt.show()
```

Line plot for an given dataset:



Histogram using given dataset:

A histogram is a graph that shows the frequency of numerical data using rectangles. The height of a rectangle (the vertical axis) represents the distribution frequency of a variable (the amount, or how often that variable appears).

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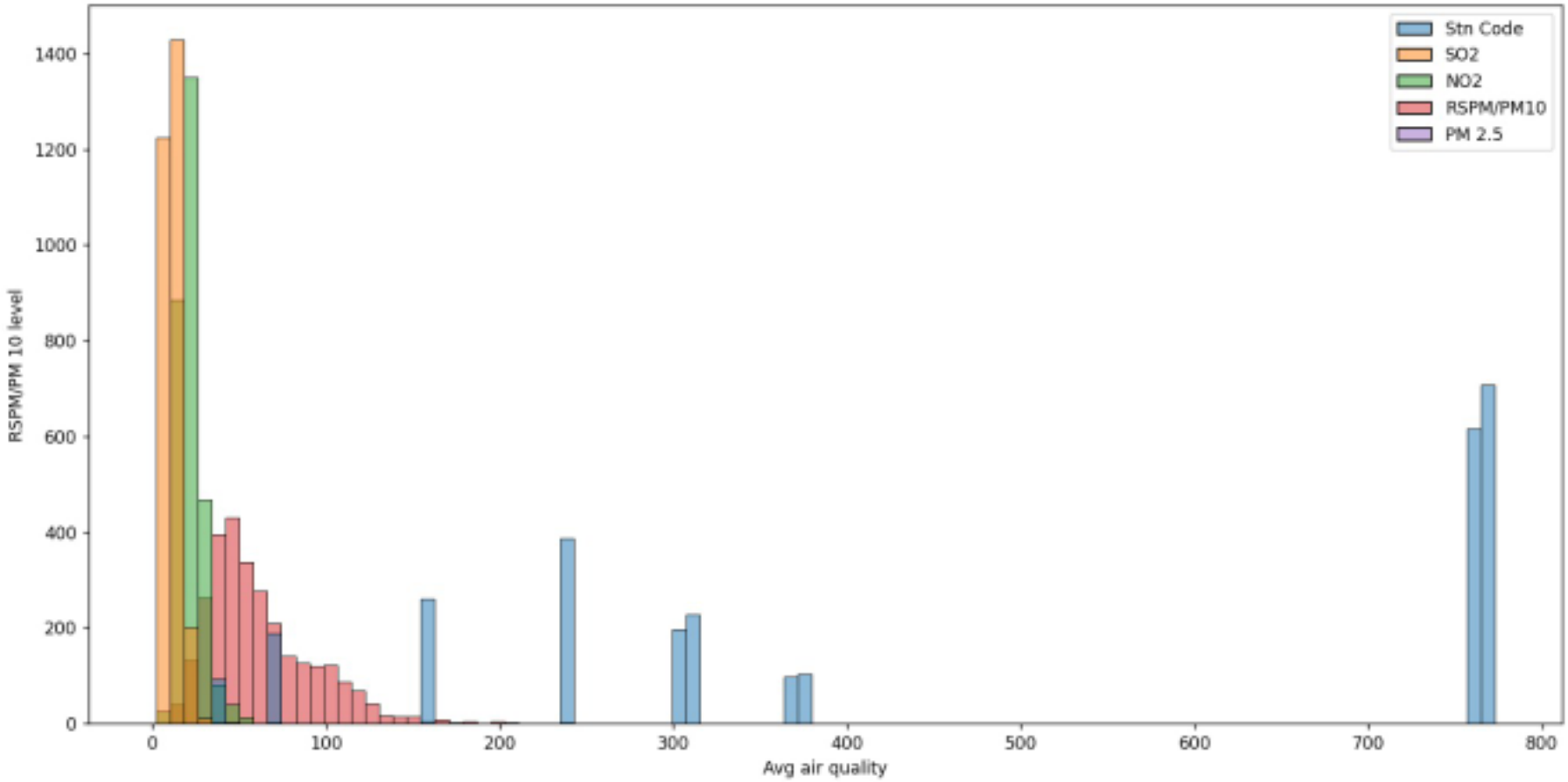
```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
df=pd.read_csv("C:\\Users\\MUJAHID\\Downloads\\cpcb_dly_aq_tamil_nadu-2014.csv")
plt.figure(figsize=(10,6))
sns.histplot(data=df)
plt.xlabel("Avg air quality")
plt.ylabel("RSPM/PM 10 level")
plt.show()
```

Histogram plotting for given dataset:



The given dataset for analyse the air quality in tamilnadu and by using the dataset matplotlib plotting of bar graph, scatter plot, line plot, histogram plotting for air quality analysis.

Thank You