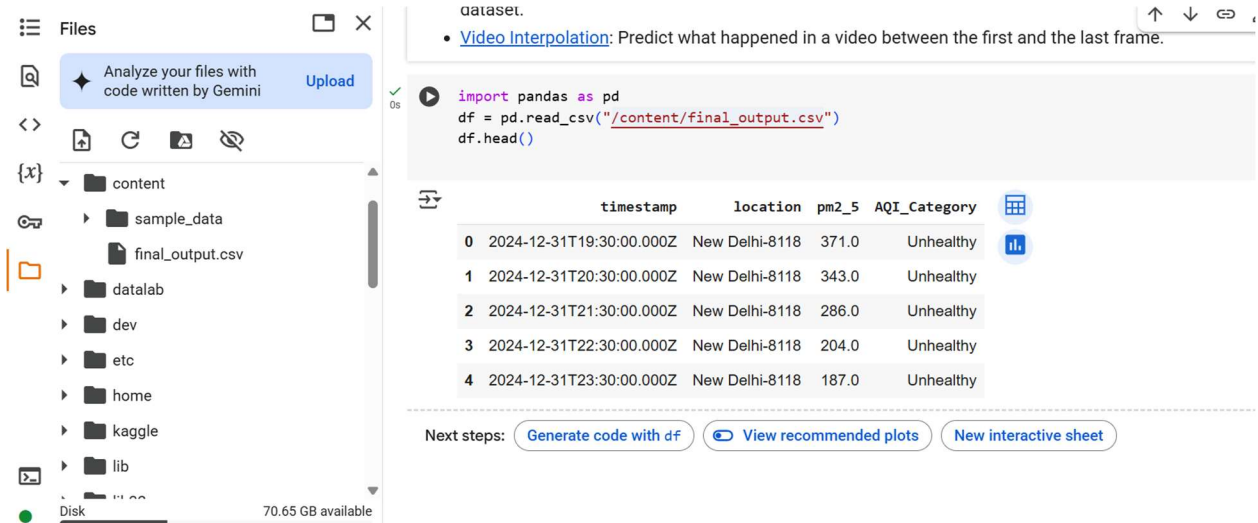


```
import pandas as pd
```

```
df = pd.read_csv("/content/final_output.csv")
```

```
df.head()
```



The screenshot shows a Jupyter Notebook interface. On the left is a file explorer with a tree view containing folders like 'content', 'sample\_data', 'datalab', 'dev', 'etc', 'home', 'kaggle', and 'lib'. The 'content' folder is expanded, showing 'final\_output.csv'. A blue button 'Analyze your files with code written by Gemini' with an 'Upload' link is at the top. The main area contains a code cell with the following Python code:

```
import pandas as pd
df = pd.read_csv("/content/final_output.csv")
df.head()
```

Below the code cell is a table preview of the data:

	timestamp	location	pm2_5	AQI_Category
0	2024-12-31T19:30:00.000Z	New Delhi-8118	371.0	Unhealthy
1	2024-12-31T20:30:00.000Z	New Delhi-8118	343.0	Unhealthy
2	2024-12-31T21:30:00.000Z	New Delhi-8118	286.0	Unhealthy
3	2024-12-31T22:30:00.000Z	New Delhi-8118	204.0	Unhealthy
4	2024-12-31T23:30:00.000Z	New Delhi-8118	187.0	Unhealthy

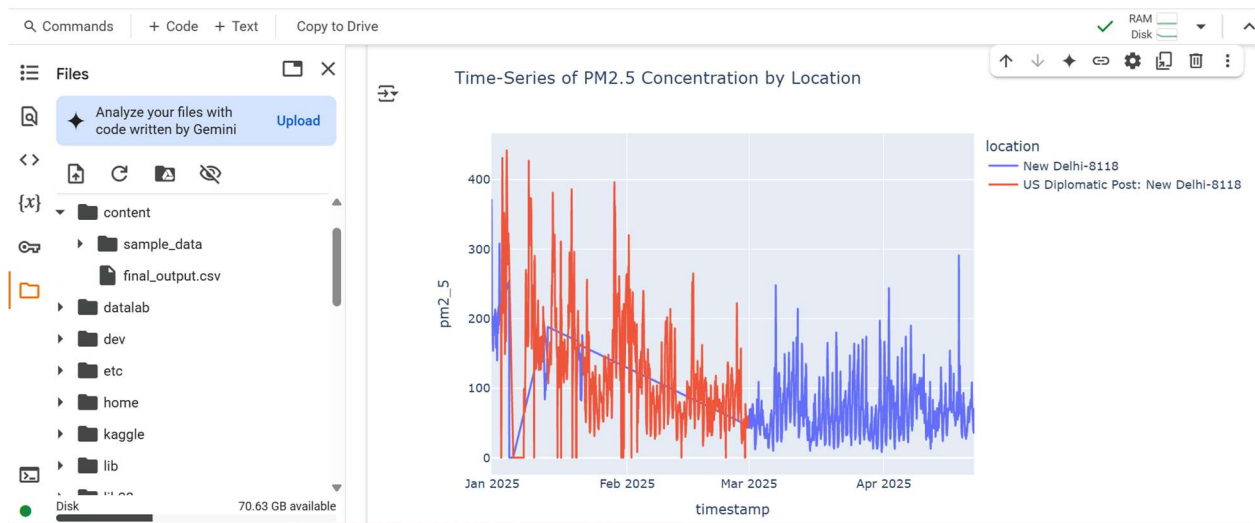
At the bottom, there are three buttons: 'Generate code with df', 'View recommended plots', and 'New interactive sheet'.

```
import plotly.express as px
```

```
fig = px.line(df, x='timestamp', y='pm2_5', color='location',  
              title='Time-Series of PM2.5 Concentration by Location')
```

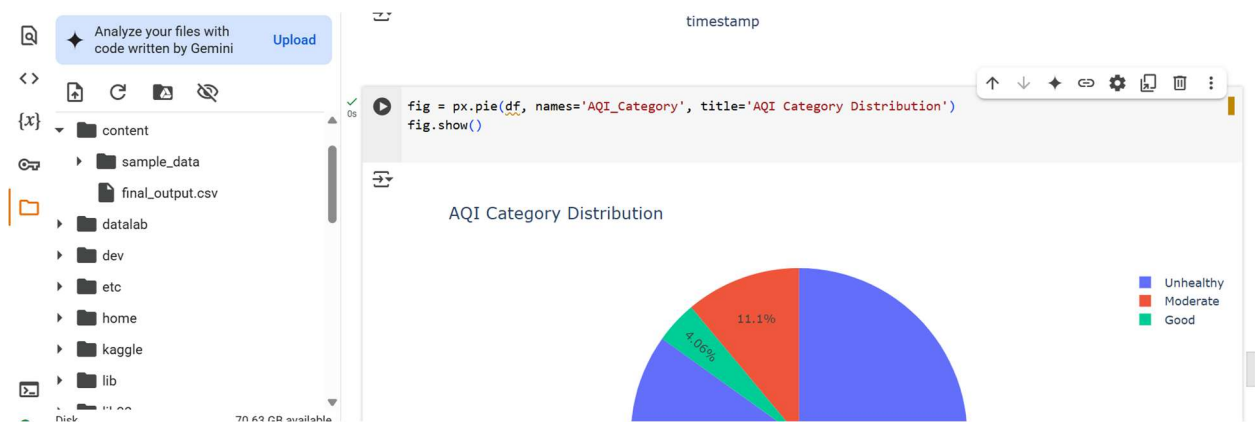
```
fig.show()
```

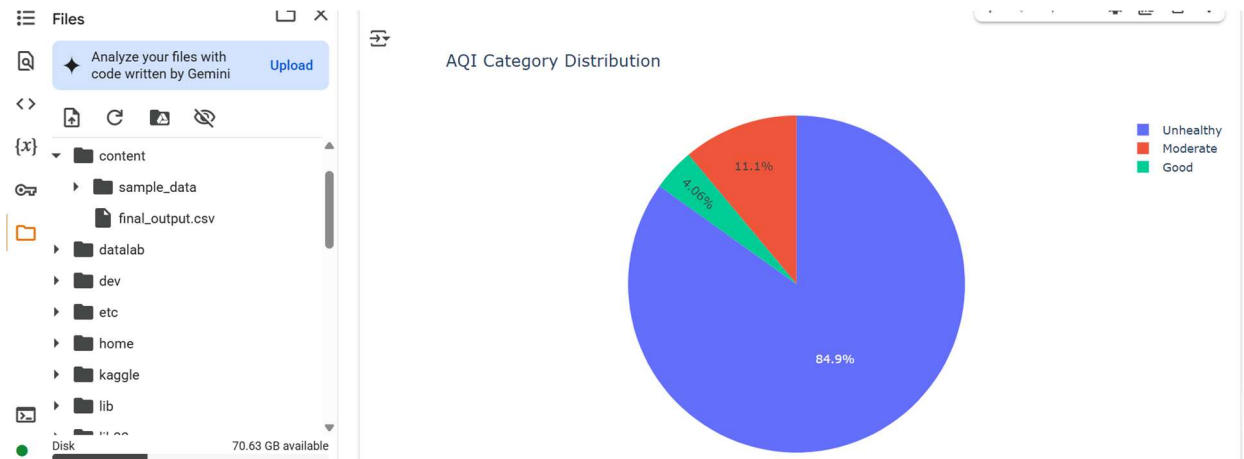




```
fig = px.pie(df, names='AQI_Category', title='AQI Category Distribution')
```

```
fig.show()
```

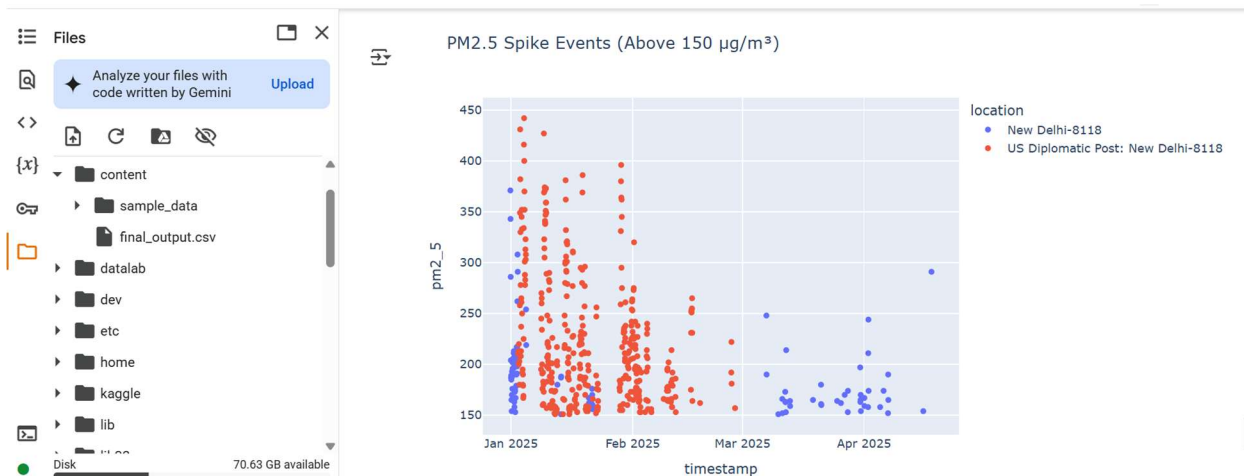




```
spikes = df[df['pm2_5'] > 150]
```

```
fig = px.scatter(spikes, x='timestamp', y='pm2_5', color='location',  
                title='PM2.5 Spike Events (Above 150  $\mu\text{g}/\text{m}^3$ )')
```

```
fig.show()
```



```
import seaborn as sns
```

```
import matplotlib.pyplot as plt
```

```
sns.heatmap(df[['pm2_5']].corr(), annot=True, cmap='coolwarm')
```

```
plt.title('Correlation Heatmap (PM2.5 only)')
```

```
plt.show()
```

