PROJECT TITLE: PREDICTION OF AIR QUALITY USING BY MACHINE LEARNING

PROGRAM:

```python
import pandas as pd

import matplotlib.pyplot as plt

import seaborn as sns


# Load and merge date and time manually

df = pd.read_excel("C:/AirQualityUCI.xlsx")

df['Date_Time'] = pd.to_datetime(df['Date'].astype(str) + ' ' + df['Time'].astype(str))

df.drop(columns=['Date', 'Time'], inplace=True)


# Clean invalid values

df.replace(-200, pd.NA, inplace=True)

df = df.dropna().copy()


# Set datetime index

df.set_index('Date_Time', inplace=True)


# Plot CO(GT)

plt.figure(figsize=(12, 6))

plt.plot(df.index, df['CO(GT)'], label='CO (GT)', color='blue')

plt.title('CO Concentration Over Time')

plt.xlabel('Date')
```

```python
plt.ylabel('CO (mg/m^3)')

plt.legend()

plt.tight_layout()

plt.show()


# Correlation heatmap

plt.figure(figsize=(14, 10))

corr = df.corr(numeric_only=True)

sns.heatmap(corr, annot=True, fmt=".2f", cmap='coolwarm')

plt.title('Correlation Heatmap')

plt.tight_layout()

plt.show()
```

OUTPUT: