EXPERIMENT 8

Create an ARIMA model for time series forecasting

DATE : 17/04/25

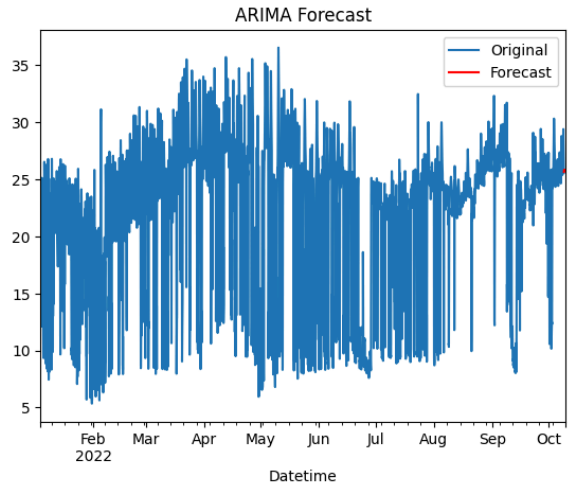
AIM :

To write a python program to implement ARIMA model for time series forecasting using the given dataset.

PROGRAM :

```
import pandas as pd
from statsmodels.tsa.arima.model import ARIMA
import matplotlib.pyplot as plt

df = pd.read_csv("/mnt/data/MLTempDataset.csv")
df['Datetime'] = pd.to_datetime(df['Datetime'])
df.set_index('Datetime', inplace=True)

ts = df['DAYTON_MW']

model = ARIMA(ts, order=(5, 1, 0))
model_fit = model.fit()

forecast = model_fit.forecast(steps=24)

ts.plot(label='Original')
forecast.index = pd.date_range(start=ts.index[-1], periods=25, freq='H')[1:]
forecast.plot(label='Forecast', color='red')
plt.title("ARIMA Forecast")
plt.legend()
plt.show()
```

OUTPUT :



RESULT :

Thus the ARIMA model is created successfully.