EXPERIMENT - 6

AIM: To implement program to apply moving average smoothing for data preparation and time series forecasting.

PROCEDURE AND CODE:

Steps 1: Importing the necessary packages.

```
# Data
import json import numpy as np
import pandas as pd
from sklearn.preprocessing import LabelEncoder
from sklearn.preprocessing import StandardScaler
# Visual
import matplotlib.pyplot as plt
import seaborn as sns
import warnings
warnings.filterwarnings("ignore")
```

Step 2: Initializing windows values.

```
sma_20=df['High'].rolling(window=20).mean() sma_20
sma_50=df['High'].rolling(window=50).mean() sma_50
```

	High
0	NaN
1	NaN
2	NaN
3	NaN
4	NaN
...	...
243	101.73822
244	101.97782
245	102.27212
246	102.55092
247	102.83712

Step 3: Checking their values using pandas.

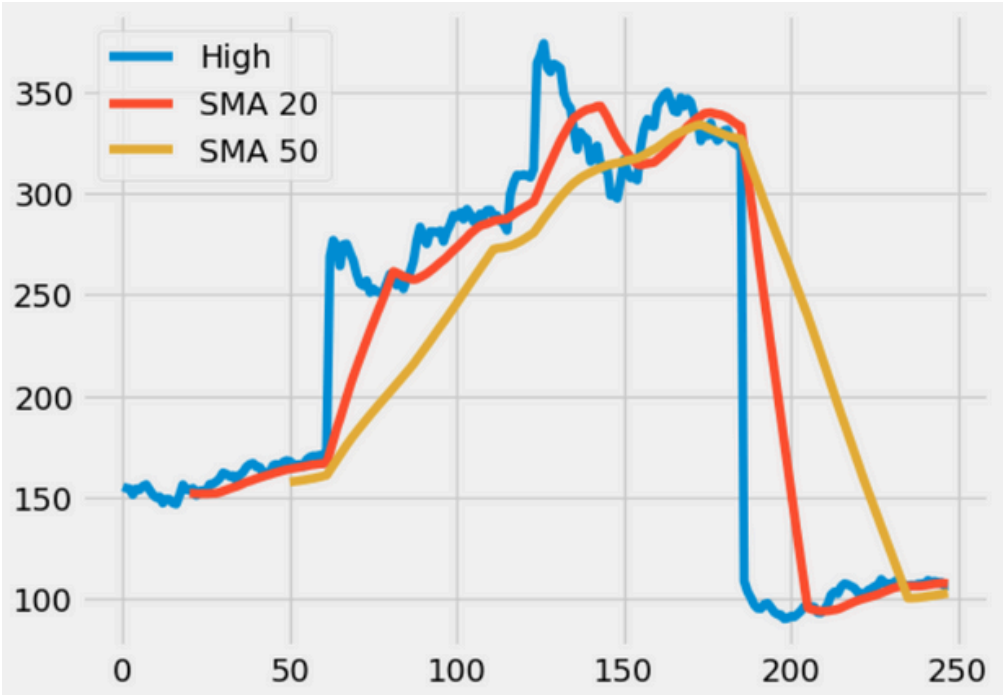
```
priceSma_df = pd.DataFrame({
        'High' : df['High'],
        'SMA 20' : sma_20,
        'SMA 50' : sma_50 })
priceSma_df
```

	High	SMA 20	SMA 50
0	155.229996	NaN	NaN
1	154.580002	NaN	NaN
2	154.330002	NaN	NaN
3	151.339996	NaN	NaN
4	154.259995	NaN	NaN
...	...	...	...
243	108.680000	107.43775	101.73822
244	107.730003	107.57675	101.97782
245	108.129997	107.67825	102.27212
246	106.300003	107.66625	102.55092
247	106.440002	107.50675	102.83712

Step 4: Plotting graph for visual representation.

priceSma_df.plot()

plt.show()



Result: The program to apply moving average smoothing for data preparation and time series forecasting is successfully done.