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```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from statsmodels.tsa.arima_model import ARMA
from statsmodels.tsa.ar_model import AR


df = pd.read_csv("stock_data.csv",parse_dates=True,index_col="Date")
# displaying the first five rows of dataset
df.head()
```

Date	Unnamed: 0	Open	High	Low	Close	Volume	Name
2006-01-03	NaN	39.69	41.22	38.79	40.91	24232729	AABA
2006-01-04	NaN	41.22	41.90	40.77	40.97	20553479	AABA
2006-01-05	NaN	40.93	41.73	40.85	41.53	12829610	AABA
2006-01-06	NaN	42.88	43.57	42.80	43.21	29422828	AABA
2006-01-09	NaN	43.10	43.66	42.82	43.42	16268338	AABA

```
df.drop(columns='Unnamed: 0')
```

Date	Open	High	Low	Close	Volume	Name
2006-01-03	39.69	41.22	38.79	40.91	24232729	AABA
2006-01-04	41.22	41.90	40.77	40.97	20553479	AABA
2006-01-05	40.93	41.73	40.85	41.53	12829610	AABA
2006-01-06	42.88	43.57	42.80	43.21	29422828	AABA
2006-01-09	43.10	43.66	42.82	43.42	16268338	AABA
...	...	...	...	...	...	...
2017-12-22	71.42	71.87	71.22	71.58	10979165	AABA
2017-12-26	70.94	71.39	69.63	69.86	8542802	AABA
2017-12-27	69.77	70.49	69.69	70.06	6345124	AABA
2017-12-28	70.12	70.32	69.51	69.82	7556877	AABA
2017-12-29	69.79	70.13	69.43	69.85	6613070	AABA

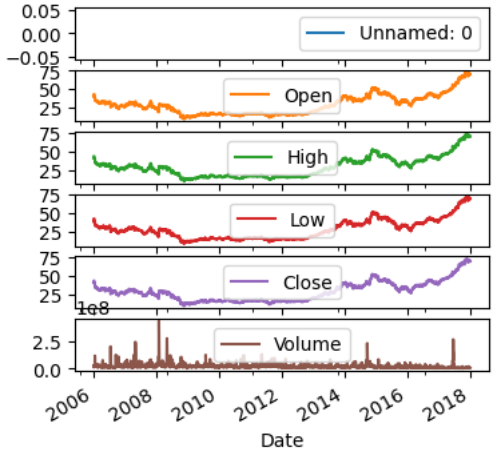
3019 rows × 6 columns

```
df['Volume'].plot()
```

```
<Axes: xlabel='Date'>
```

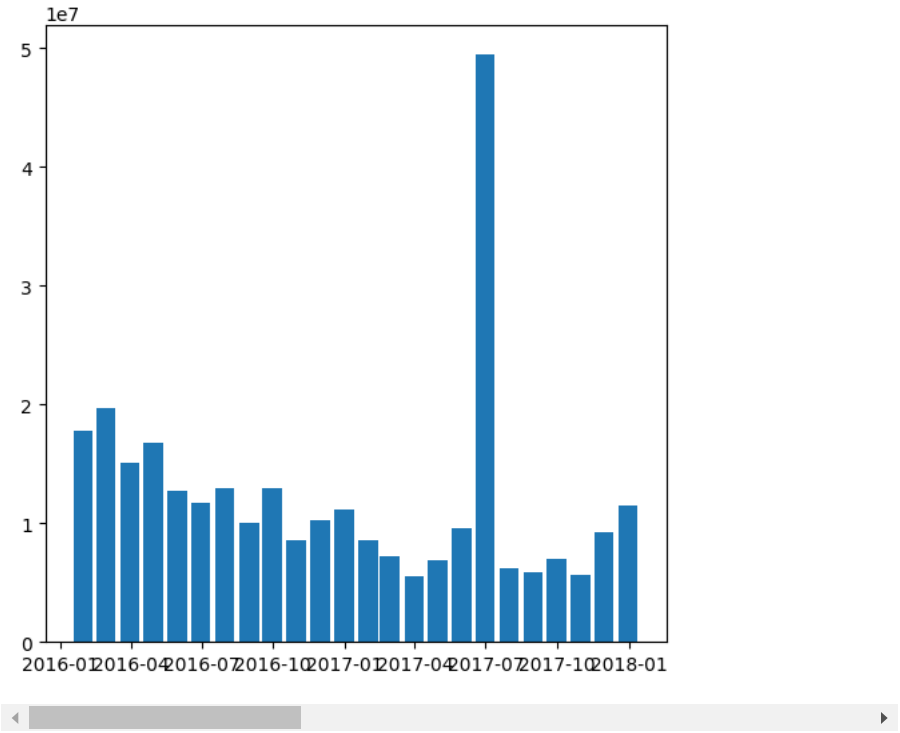

```
df.plot(subplots=True, figsize=(4, 4))
```

```
array([<Axes: xlabel='Date'>, <Axes: xlabel='Date'>,
       <Axes: xlabel='Date'>, <Axes: xlabel='Date'>,
       <Axes: xlabel='Date'>, <Axes: xlabel='Date'>], dtype=object)
```



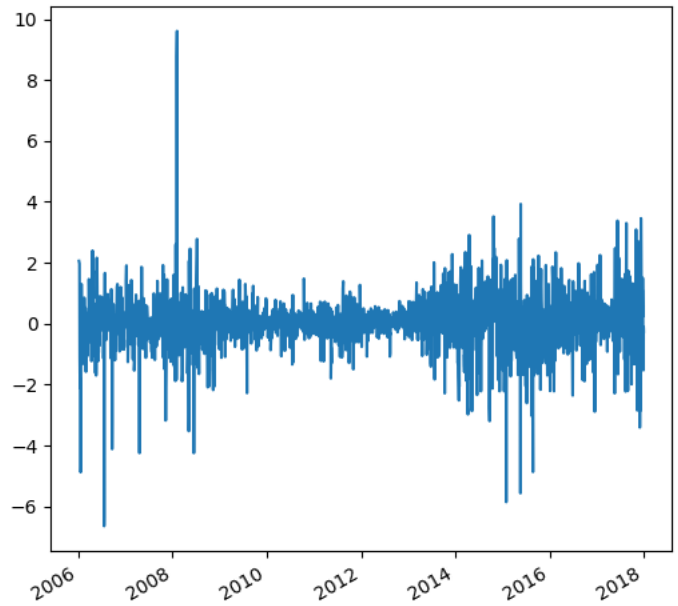

```
df_month = df.resample("M").mean()
# using subplot
fig, ax = plt.subplots(figsize=(6, 6))
# plotting bar graph
ax.bar(df_month['2016':].index,
df_month.loc['2016':, "Volume"],
width=25, align='center')
```

```
<ipython-input-7-e57206050d14>:1: FutureWarning: The default value of numeric_only in D
  df_month = df.resample("M").mean()
<BarContainer object of 24 artists>
```



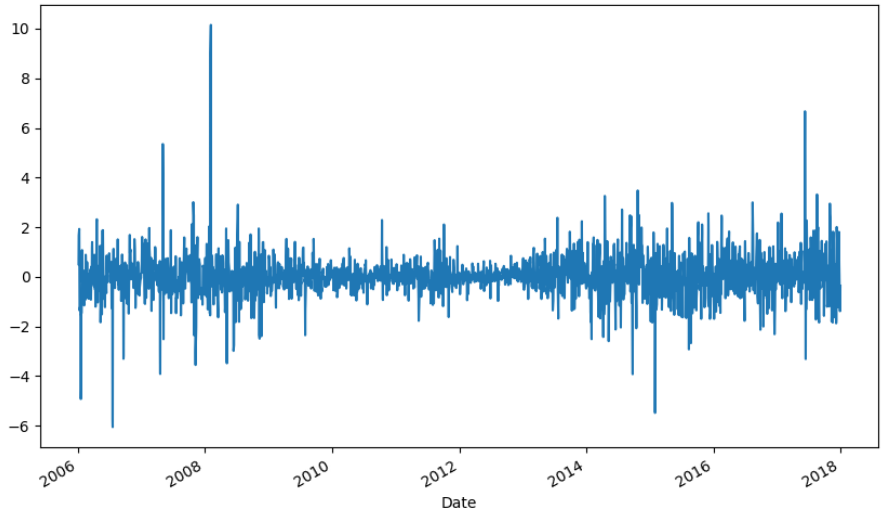

```
df.Low.diff(2).plot(figsize=(6, 6))
```

```
<Axes: xlabel='Date'>
```



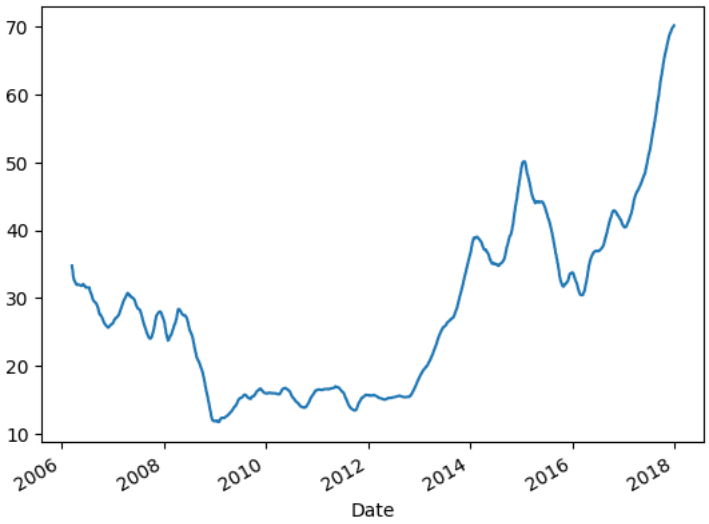

```
df.High.diff(2).plot(figsize=(10, 6))
```

```
<Axes: xlabel='Date'>
```




```
window_size = 50
rolling_mean = df['Open'].rolling\
(window_size).mean()
rolling_mean.plot()
```

```
<Axes: xlabel='Date'>
```



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