


```
import pandas as pd
bitcoin_price_1week_Test_Test = pd.read_csv("/content/bitcoin_price_1week_Test - Test.csv")
bitcoin_price_Training_Training = pd.read_csv("/content/bitcoin_price_Training - Training.csv")

import numpy as np
import matplotlib.pyplot as plt
import pandas as pd

bitcoin = pd.read_csv("/content/BTC-EUR.csv")
bitcoin.head()
```



	Date	Open	High	Low	Close	Adj Close	Volume
0	2020-11-26	15717.501953	15819.380859	13723.832031	14399.097656	14399.097656	5154675718
1	2020-11-27	14401.859375	14641.574219	13834.203125	14301.101563	14301.101563	3250564862
2	2020-11-28	14304.889648	14923.357422	14134.904297	14809.243164	14809.243164	2724984070
3	2020-11-29	14809.243164	15119.380859	14301.101563	14301.101563	14301.101563	3250564862

+ Code

+ Text

```
bitcoin['Close'].plot(figsize=(12,8))
plt.show()
```

Automatic saving failed. This file was updated remotely or in another tab. [Show diff](#)

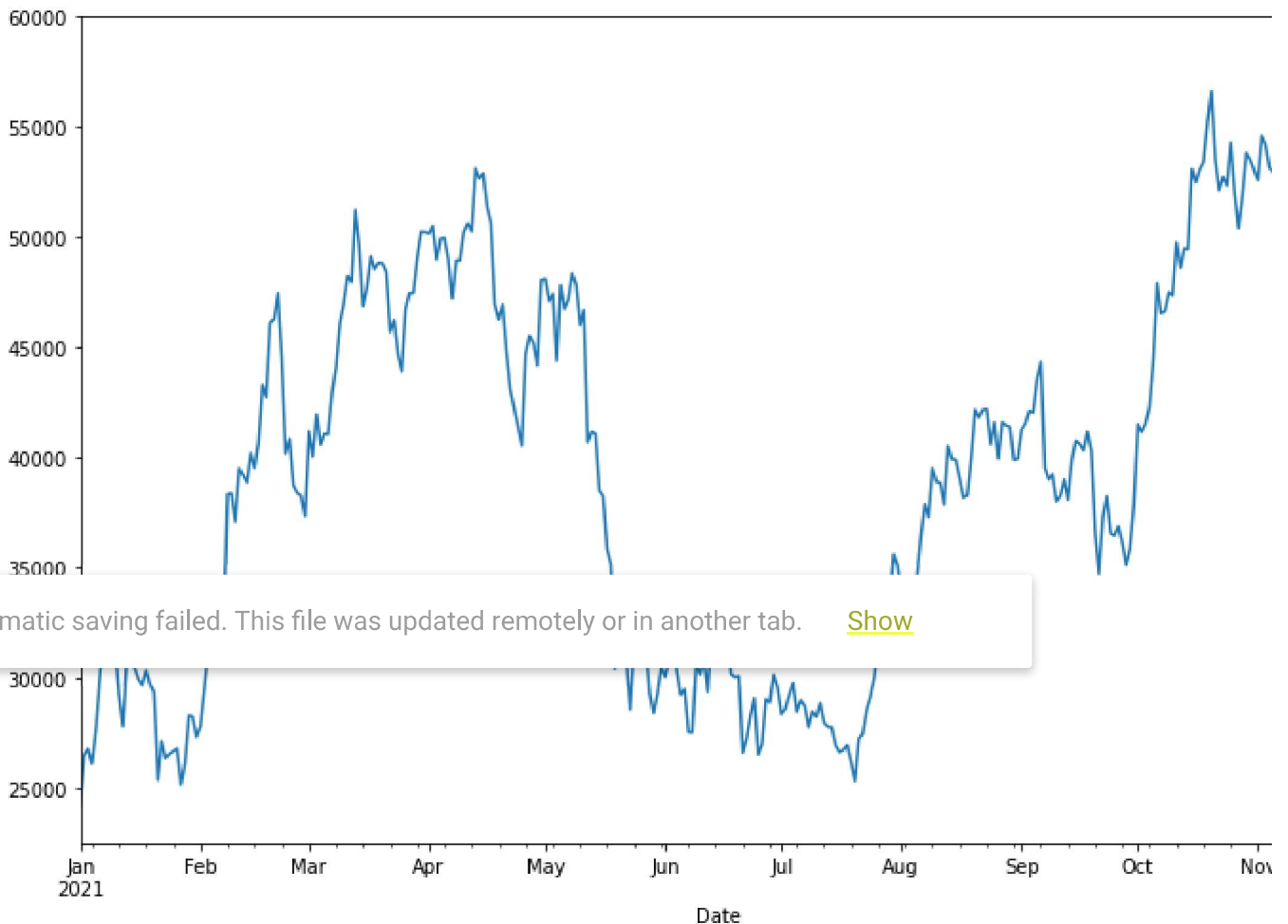
60000

bitcoin.index

```
DatetimeIndex(['2020-11-26', '2020-11-27', '2020-11-28', '2020-11-29',
               '2020-11-30', '2020-12-01', '2020-12-02', '2020-12-03',
               '2020-12-04', '2020-12-05',
               ...,
               '2021-11-17', '2021-11-18', '2021-11-19', '2021-11-20',
               '2021-11-21', '2021-11-22', '2021-11-23', '2021-11-24',
               '2021-11-25', '2021-11-26'],
              dtype='datetime64[ns]', name='Date', length=366, freq=None)
```

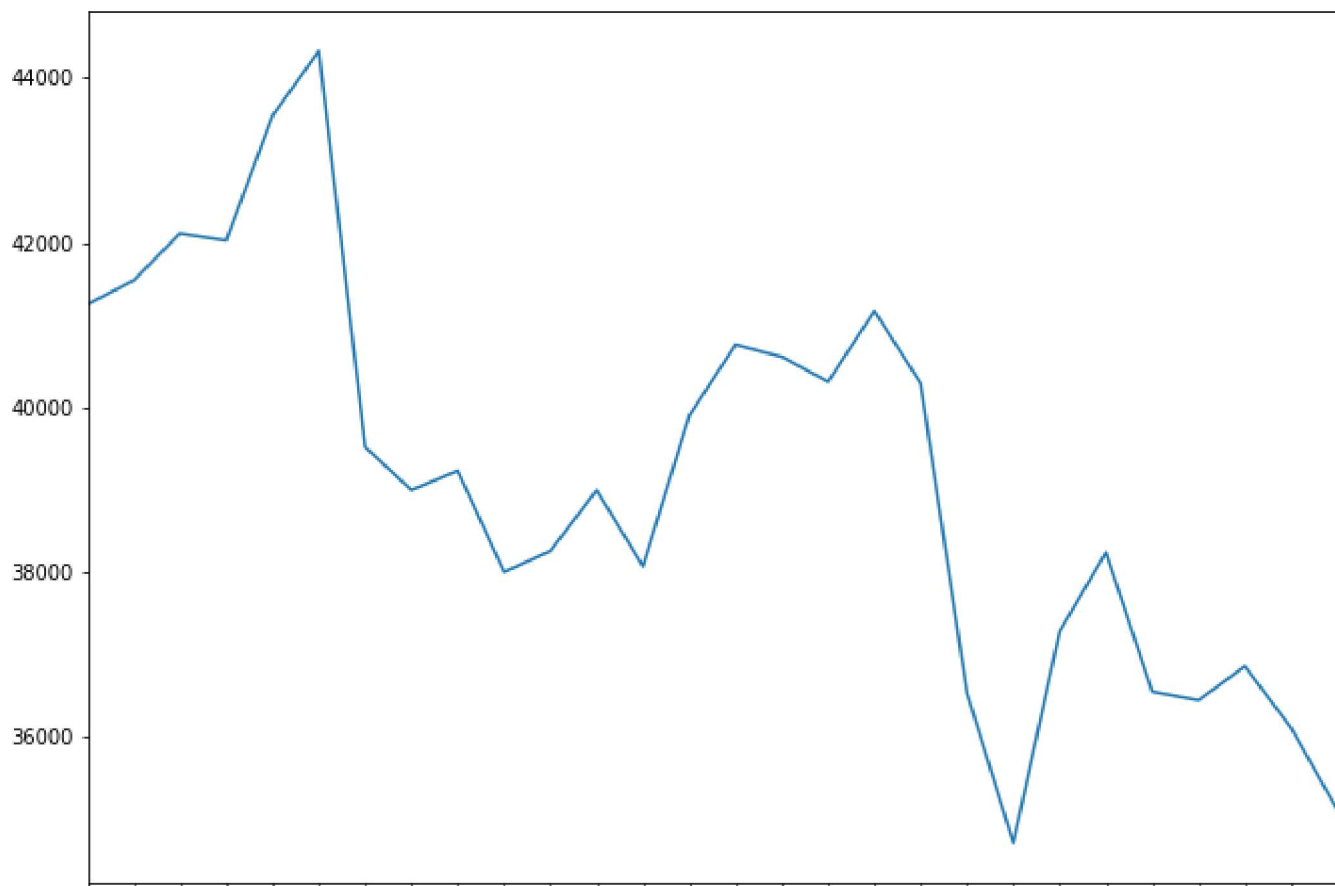
```
bitcoin['2021']['Close'].plot(figsize=(12,8))
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fbff96f1250>
```



```
bitcoin['2021/09']['Close'].plot(figsize=(12,8))
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fbff96183d0>
```



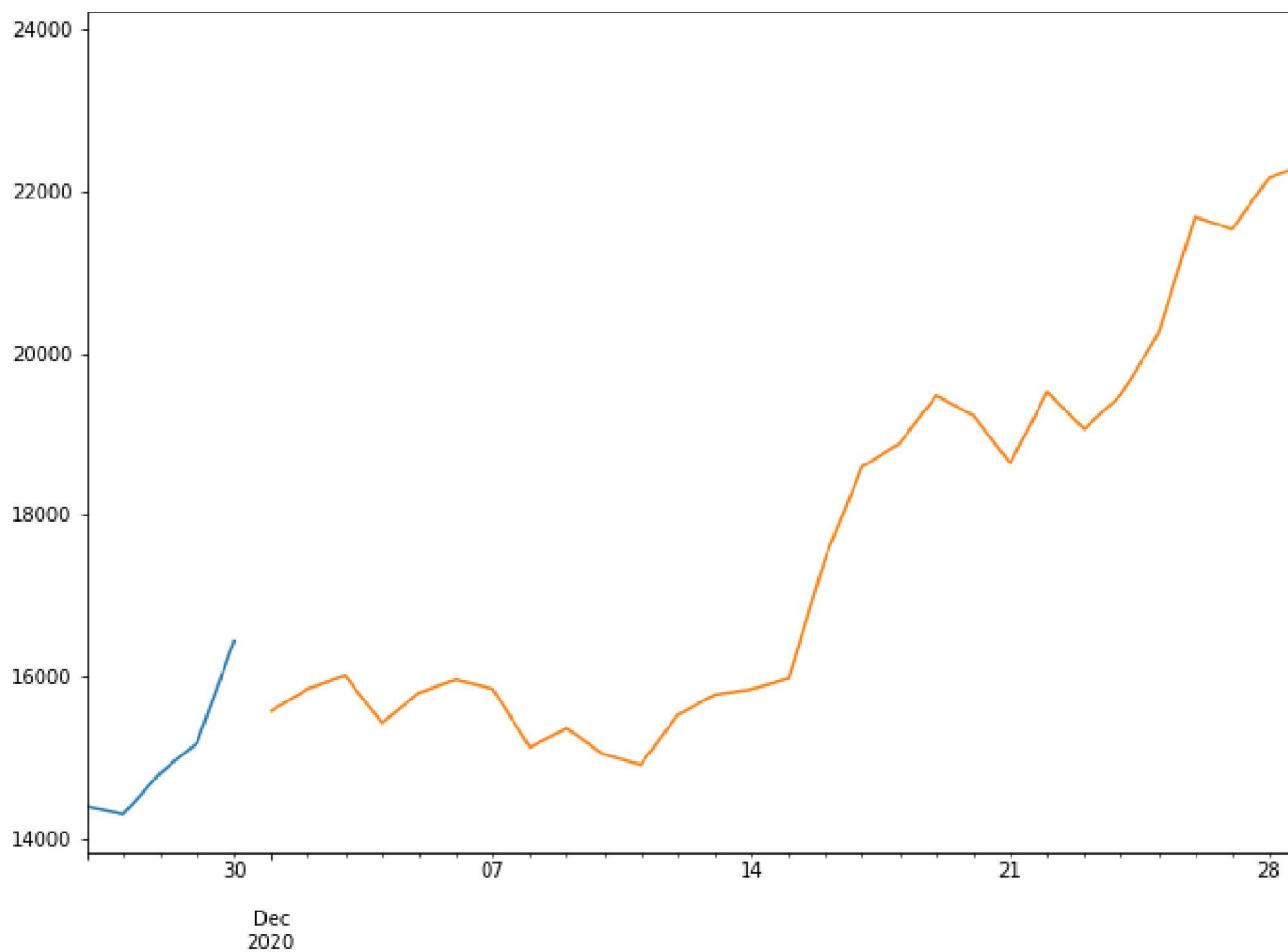
```
bitcoin['2021':'2019']['Close'].plot(figsize=(12,8))
```

Automatic saving failed. This file was updated remotely or in another tab.
[diff](#)

[Show](#)

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fbff935f510>
```

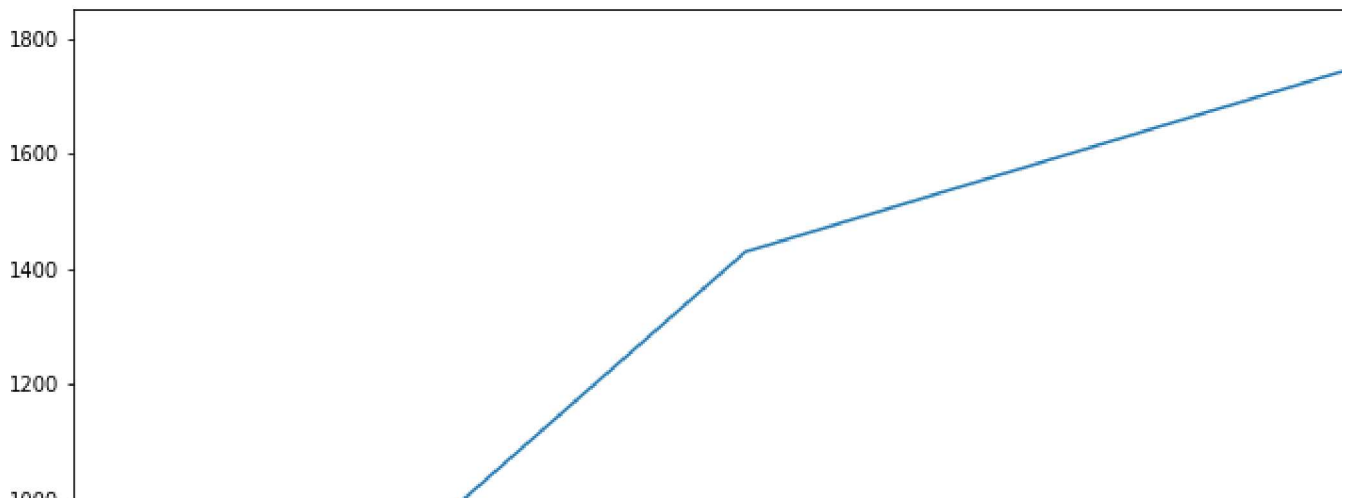
```
bitcoin.loc['2017':'2020']['Close'].resample('M').plot(figsize=(12,8))  
plt.show()
```



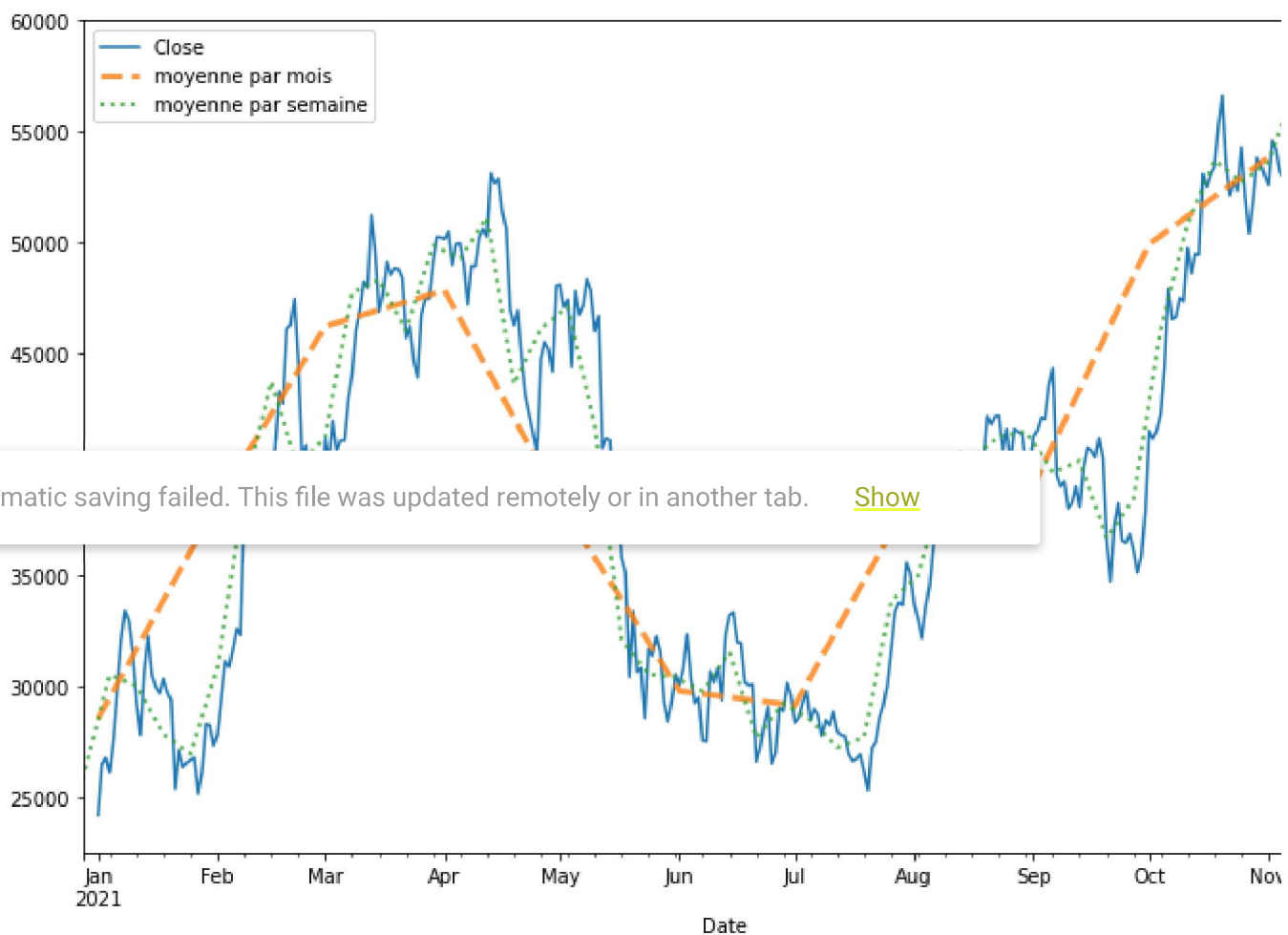
```
bitcoin.loc['2017':'2020']['Close'].resample('M').std().plot(figsize=(12,8))
```

Automatic saving failed. This file was updated remotely or in another tab.
[diff](#)

[Show](#)



```
plt.figure(figsize=(12,8))
bitcoin.loc['2021','Close'].plot()
bitcoin.loc['2021','Close'].resample('M').mean().plot(label='moyenne par mois',lw=3,ls='--',a
bitcoin.loc['2021','Close'].resample('W').mean().plot(label='moyenne par semaine',lw=2,ls=':')
plt.legend()
plt.show()
```



Automatic saving failed. This file was updated remotely or in another tab.

[Show](#)

[diff](#)

```
bitcoin.loc['2021','Close'].resample('M').agg(['mean','std','min','max'])
```

	mean	std	min	max
Date				
2021-01-31	28520.449093	2431.903818	24165.556641	33372.281250
2021-02-28	38276.251535	5186.992019	27790.582031	47456.125000
2021-03-31	46229.773816	3232.833949	40032.695313	51235.535156
2021-04-30	47844.802474	3433.311004	40534.261719	53123.628906
2021-05-31	38265.718120	7499.739404	28391.164063	48345.464844
2021-06-30	29777.552604	1862.500498	26502.841797	33325.593750
2021-07-31	29120.031187	2624.301727	25299.851563	35590.078125
2021-08-31	38844.360005	2867.584668	32145.031250	42187.304688
2021-09-30	39015.527474	2468.601620	34712.968750	44329.070313
2021-10-31	49933.363029	4310.185091	41152.062500	56634.062500
2021-11-30	53838.237680	2396.557431	50071.628906	58305.039063

```
m = bitcoin.loc['2021', 'Close'].resample('M').agg(['mean', 'std', 'min', 'max'])
```

```
plt.figure(figsize=(12,8))
m['mean']['2021'].plot(label='moyenne par mois')
```

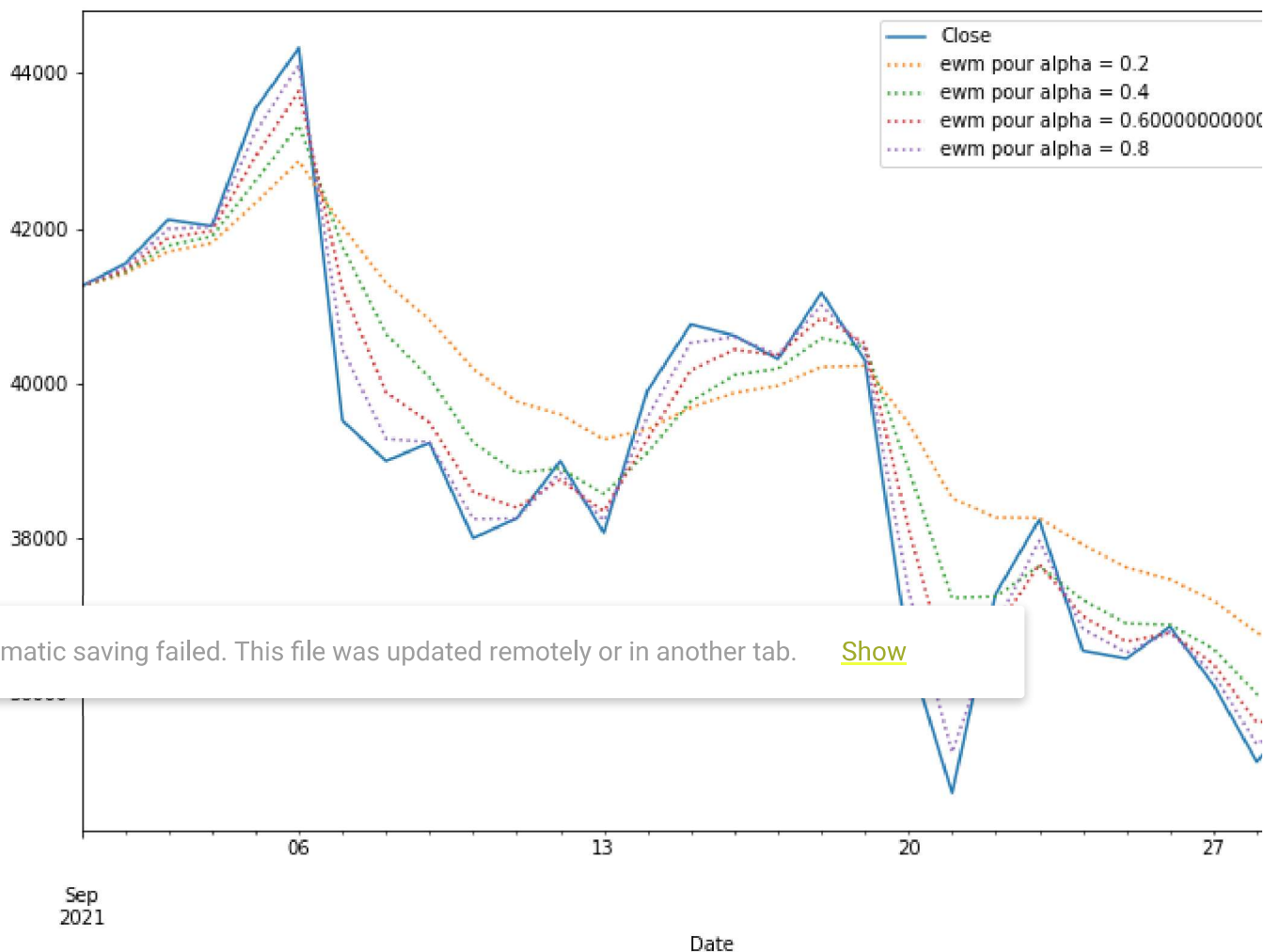
```
plt.fill_between(m.index, m['min']['2021'], m['max']['2021'], alpha=0.2, label='max-min par mois')
plt.legend()
plt.show()
```

Automatic saving failed. This file was updated remotely or in another tab. [Show diff](#)



```
# Exponential weighed function : ewf
plt.figure(figsize=(12,8))
bitcoin['2021/09']['Close'].plot()

for i in np.arange(0.2,1,0.2):
    bitcoin['2021/09']['Close'].ewm(alpha=i).mean().plot(label=f"ewm pour alpha = {i}",ls = '
plt.legend()
plt.show()
```



```
ethereum = pd.read_csv("/content/BTC-EUR.csv",index_col='Date',parse_dates=True)
ethereum.head()
```


	Open	High	Low	Close	Adj Close	Vol
Date						
2020-11-26	15717.501953	15819.380859	13723.832031	14399.097656	14399.097656	51546757
2020-11-27	14401.859375	14641.574219	13834.203125	14301.101563	14301.101563	32505648
2020-11-28	14304.889648	14923.357422	14134.904297	14809.243164	14809.243164	27249840
2020-11-29	14811.098633	15285.899414	14676.928711	15184.596680	15184.596680	26007813

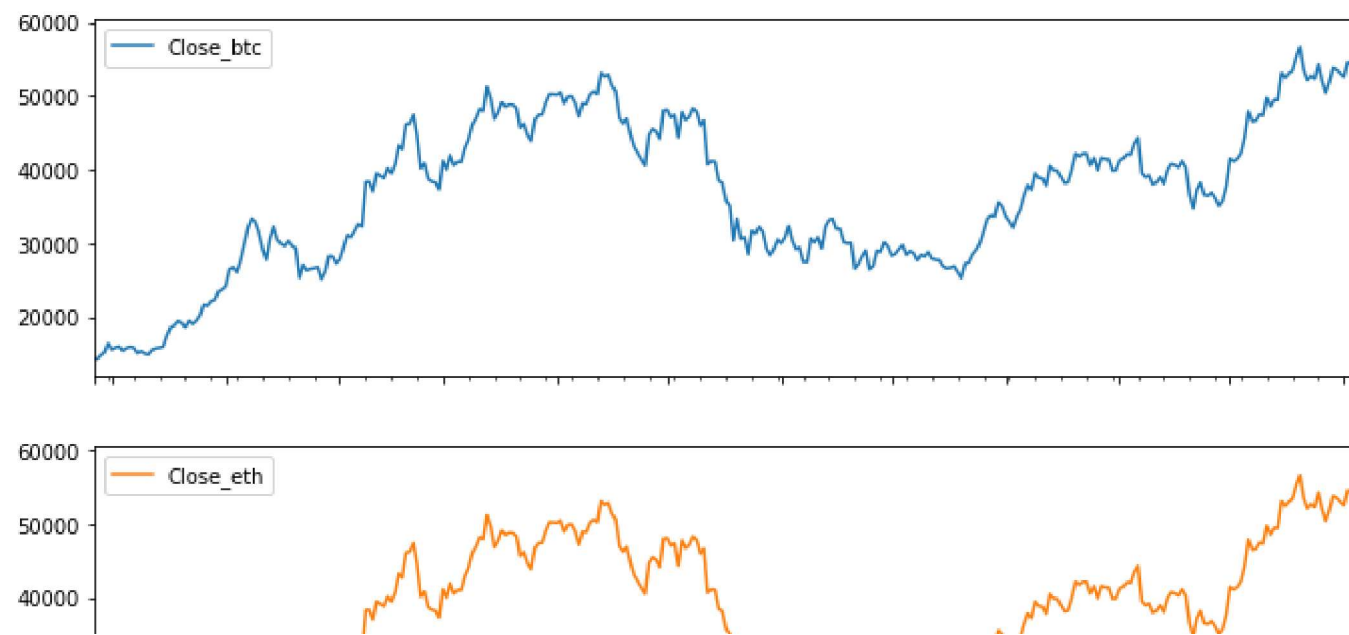
```
pd.merge(bitcoin,ethereum,on='Date',how = 'inner',suffixes = ('_btc','_eth'))
```

	Open_btc	High_btc	Low_btc	Close_btc	Adj Close_btc	Volume_btc
Date						
2020-11-26	15717.501953	15819.380859	13723.832031	14399.097656	14399.097656	51546757189
2020-11-27	14401.859375	14641.574219	13834.203125	14301.101563	14301.101563	32505648625
2020-11-28	14304.889648	14923.357422	14134.904297	14809.243164	14809.243164	27249840706
2020-11-29	14811.098633	15285.899414	14676.928711	15184.596680	15184.596680	26007813836
2020-11-30	15185.297852	16459.787109	15185.297852	16440.384766	16440.384766	39981718474
...
2021-11-22	52066.105469	52559.125000	49562.796875	50071.628906	50071.628906	31166066807
2021-11-23	44444.444444	44444.444444	44444.444444	44444.444444	44444.444444	33331102310

Automatic saving failed. This file was updated remotely or in another tab. [Show diff](#)

```
btc_eth = pd.merge(bitcoin,ethereum,on='Date',how = 'inner',suffixes = ('_btc','_eth'))

btc_eth[['Close_btc','Close_eth']].plot(subplots=True,figsize=(12,8))
plt.show()
```



```
btc_eth[['Close_btc', 'Close_eth']].corr()
```

	Close_btc	Close_eth
Close_btc	1.0	1.0
Close_eth	1.0	1.0

Automatic saving failed. This file was updated remotely or in another tab. [Show diff](#)