which-stock

September 29, 2021

[1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
sns.set()
```

[2]:
```
directory = '../dataset/'
ori_name = ['AMD.csv', 'FB.csv', 'FSV.csv', 'INFY.csv', 'KNX.csv',
            'MONDY.csv', 'MTDR.csv', 'SINA.csv', 'TMUS.csv', 'TSLA.csv', 'TWTR.
 ↪csv']
stocks = [directory + s for s in ori_name]
stocks
```

[2]:
```
['../dataset/AMD.csv',
 '../dataset/FB.csv',
 '../dataset/FSV.csv',
 '../dataset/INFY.csv',
 '../dataset/KNX.csv',
 '../dataset/MONDY.csv',
 '../dataset/MTDR.csv',
 '../dataset/SINA.csv',
 '../dataset/TMUS.csv',
 '../dataset/TSLA.csv',
 '../dataset/TWTR.csv']
```

[3]:
```
dfs = [pd.read_csv(s)[['Date', 'Close']] for s in stocks]
```

[4]:
```
from functools import reduce
data = reduce(lambda left,right: pd.merge(left,right,on='Date'), dfs).iloc[:, 1:
 ↪]
data.head()
```

[4]:

	Close_x	Close_y	Close_x	Close_y	Close_x	Close_y	Close_x	\
0	16.270000	207.320007	78.820000	9.710	37.910000	56.889999	31.809999	
1	16.580000	207.229996	78.250000	9.800	36.360001	56.639999	31.670000	
2	16.870001	209.990005	77.940002	9.950	36.279999	57.730000	32.020000	
3	16.850000	209.360001	77.940002	9.840	37.500000	57.810001	31.740000	

```
4  16.709999  208.089996  78.055000    9.855  37.990002  52.380001  32.330002
```

```
     Close_y    Close_x     Close_y      Close
0  84.070000  61.680000  318.869995  44.490002
1  83.949997  61.630001  310.100006  44.259998
2  84.870003  61.209999  322.690002  44.709999
3  83.989998  60.520000  323.850006  43.340000
4  82.940002  59.410000  320.230011  43.439999
```

[5]:
```
returns = data.pct_change()
mean_daily_returns = returns.mean()
volatilities = returns.std()
```

[6]:
```
mean_daily_returns * 252
```

[6]:
```
Close_x    0.995185
Close_y   -0.247949
Close_x    0.119677
Close_y    0.190845
Close_x   -0.175416
Close_y   -0.170502
Close_x   -0.626256
Close_y   -0.450914
Close_x    0.252493
Close_y   -0.069273
Close     -0.273753
dtype: float64
```

[7]:
```
volatilities * 252
```

[7]:
```
Close_x    12.196632
Close_y     6.637175
Close_x     3.677834
Close_y     3.572859
Close_x     7.104904
Close_y     7.909165
Close_x     8.121732
Close_y     6.948244
Close_x     3.863498
Close_y    10.213733
Close       8.873234
dtype: float64
```

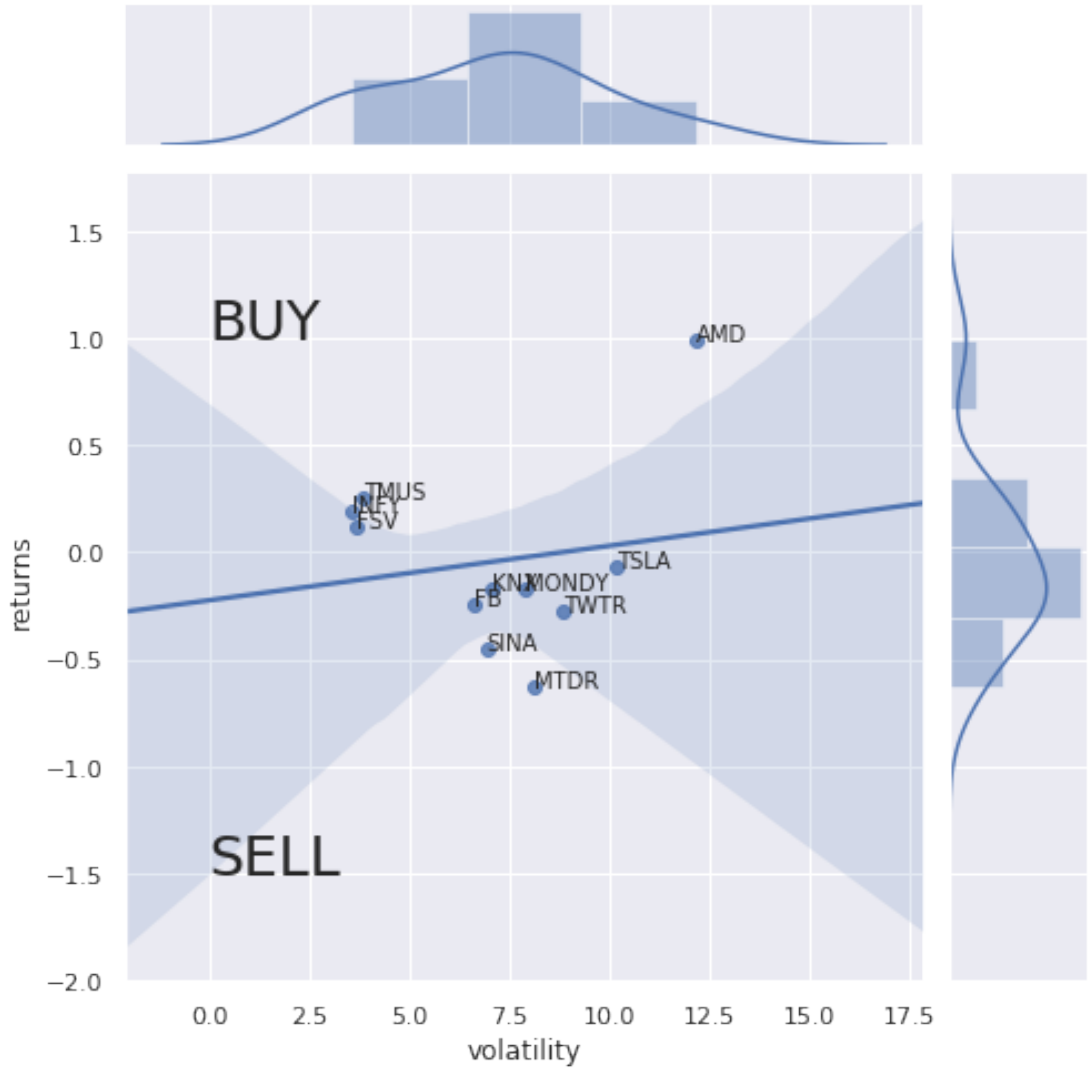
[8]:
```
combine = pd.DataFrame({'returns': mean_daily_returns * 252,
                        'volatility': volatilities * 252})
```

[9]:
```
g = sns.jointplot("volatility", "returns", data=combine, kind="reg",height=7)

for i in range(combine.shape[0]):
    plt.annotate(ori_name[i].replace('.csv',''), (combine.iloc[i, 1], combine.
 ↪iloc[i, 0]))

plt.text(0, -1.5, 'SELL', fontsize=25)
plt.text(0, 1.0, 'BUY', fontsize=25)

plt.show()
```



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