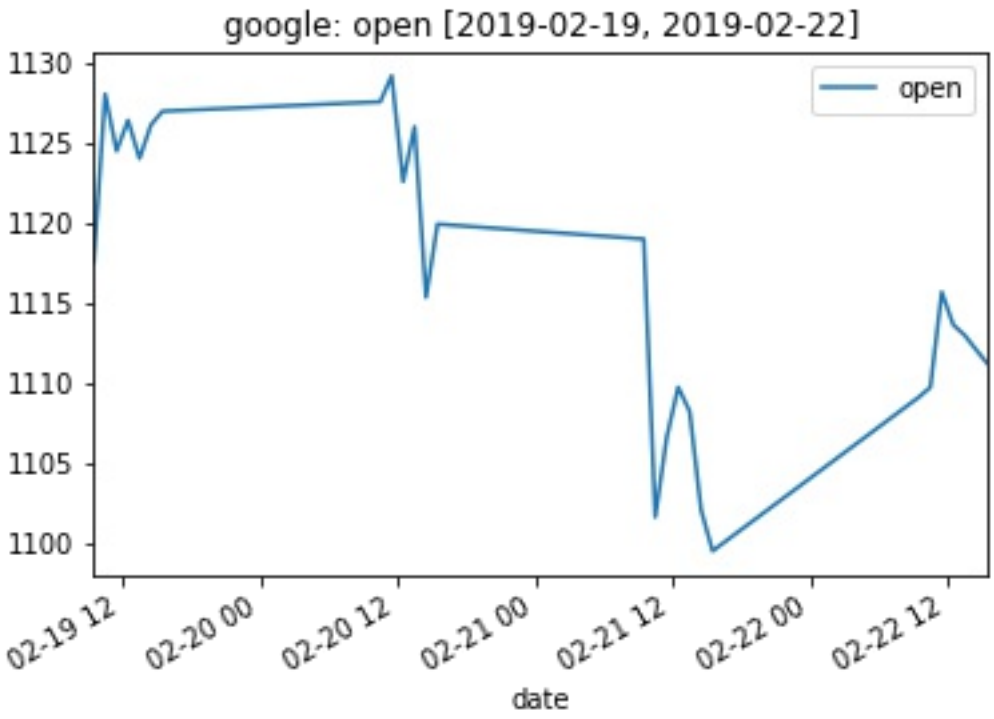
HISA (HackIllinois Stock Analysis)

```
import hisa
import os


os.environ['ALPHA_VANTAGE_API_KEY'] = 'REUDU2I6LTXIN065'

google = hisa.Share('GOOGL', 'google', interval='intraday', minute_interval='60min'
print(google.data.head())
# google.generate_twitter_sentiment('google_tweets.json', start='02/19/2019')
google.plot(column='open')
tweets = pd.read_csv('./hisa/learn/data/google.csv')
stock = pd.read_csv('./hisa/learn/data/hourly_stocks.csv')
f, axarr = plt.subplots(2, sharex=True, figsize=(10,10))
axarr[0].plot(pd.to_datetime(tweets['date']),tweets[['neg','pos']])
axarr[0].set_title('Google Sentiment and Stock price')
axarr[1].plot(pd.to_datetime(stock['date']),stock['google_open'])
# plt.show()
```

```
                     open       high       low      close    volume
date
2019-02-19 09:30:00  1117.530  1128.3000  1116.890  1127.9800  215010.0
2019-02-19 10:30:00  1128.010  1128.0100  1124.540  1124.5400  102533.0
2019-02-19 11:30:00  1124.469  1127.8600  1124.469  1126.5400   98369.0
2019-02-19 12:30:00  1126.380  1126.3800  1123.325  1124.5050   73454.0
2019-02-19 13:30:00  1124.000  1125.9766  1122.700  1125.9766   66033.0
```




```
[<matplotlib.lines.Line2D at 0x7ff88b10ce80>]
```


```
from hisa.learn.models import LinearModel
import matplotlib.pyplot as plt
import pandas as pd

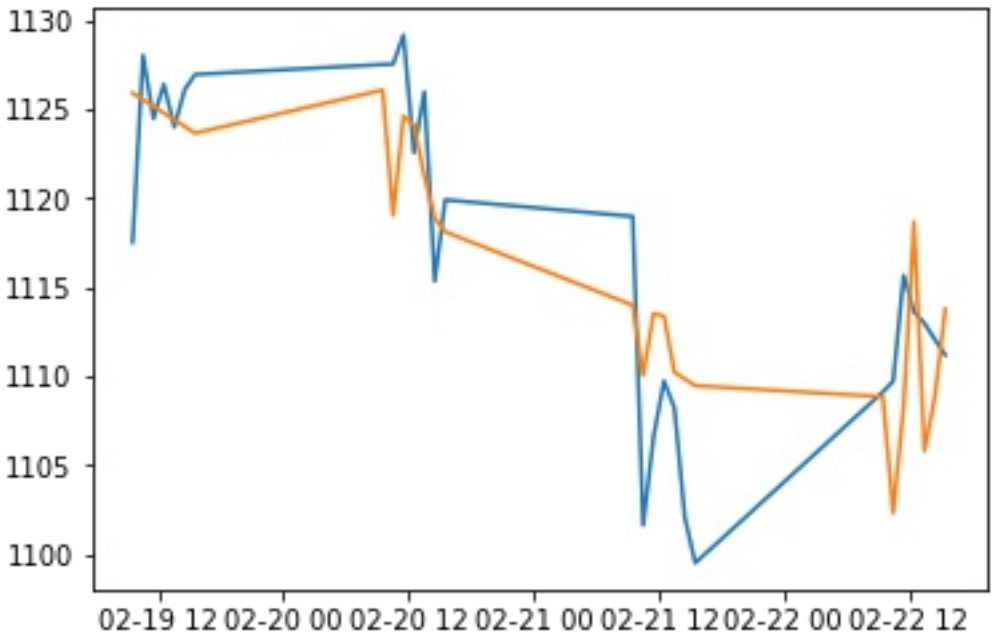
lin_model = LinearModel('./hisa/learn/data/google_feat_vec.csv', './hisa/learn/data
lin_model.train()

df = pd.read_csv('./hisa/learn/data/hourly_stocks.csv')
dates = pd.to_datetime(df['date'])

plt.plot(dates, df['google_open'].values)
plt.plot(dates, lin_model.predict())

print(lin_model.mape())
```

```
4.3418613059702125
```




```
from hisa.learn.models import RidgeModel
import matplotlib.pyplot as plt
import pandas as pd

ridge_model = RidgeModel('./hisa/learn/data/google_feat_vec.csv', './hisa/learn/dat
ridge_model.train()

df = pd.read_csv('./hisa/learn/data/hourly_stocks.csv')
dates = pd.to_datetime(df['date'])

plt.plot(dates, df['google_open'].values)
plt.plot(dates, ridge_model.predict())

print(ridge_model.mape())
```

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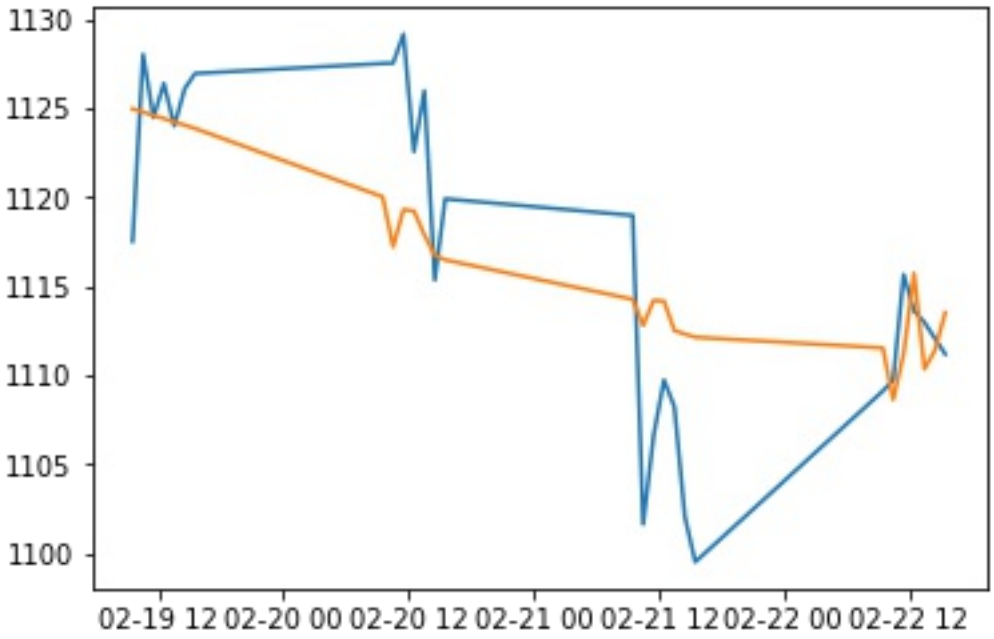
4.736718937278015
```




```
from hisa.learn.models import MLPModel
import matplotlib.pyplot as plt
import pandas as pd

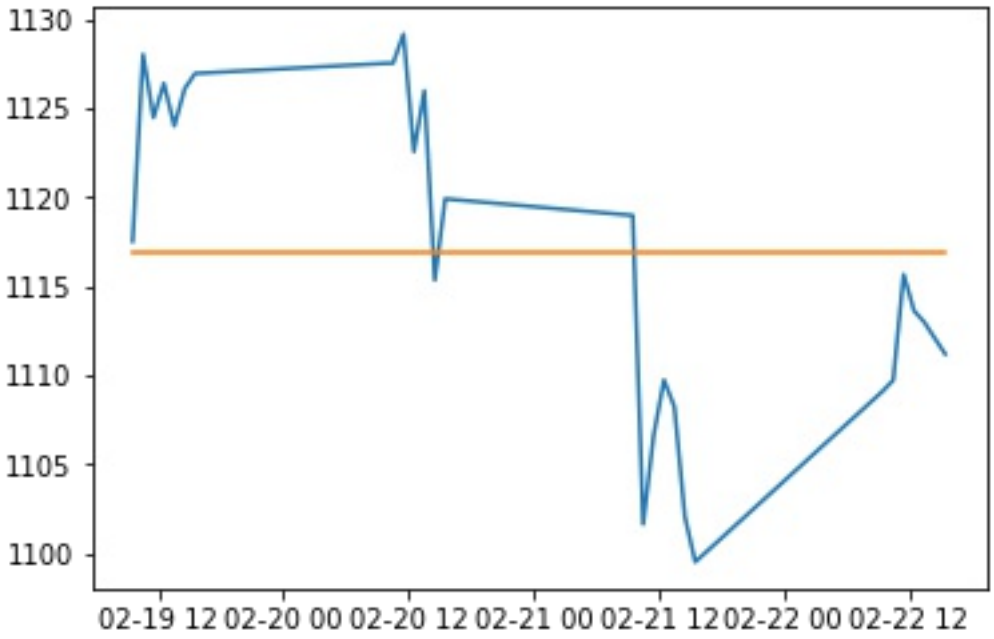
mlp_model = MLPModel('./hisa/learn/data/google_feat_vec.csv', './hisa/learn/data/ho
mlp_model.train()

df = pd.read_csv('./hisa/learn/data/hourly_stocks.csv')
dates = pd.to_datetime(df['date'])

plt.plot(dates, df['google_open'].values)
plt.plot(dates, mlp_model.predict())

print(mlp_model.mape())
```

```
7.761485714285714
```


1130
1125
1120
1115
1110
1105
1100
02-19 12
02-20 00
02-20 12
02-21 00
02-21 12
02-22 00
02-22 12