Enhancement

1. Retrieve Data from MongoDB

```
In [6]: import pymongo

        client = pymongo.MongoClient()
```

```
In [7]: import pandas as pds

        db = client.get_database("stock")
        collection = db.get_collection("stock")
        data = list(collection.find())
        df = pds.DataFrame.from_records(data)
        df.drop('_id', axis=1, inplace=True)
        print(df.head())
        print(df.info())
```

```
             Datetime         SPY        SBUX        AAPL  MSFT
0 2020-11-18 14:30:00  360.760010   98.510002  118.910004   NaN
1 2020-11-18 14:31:00  360.679993   98.565498  118.684998   NaN
2 2020-11-18 14:32:00  360.730011   98.669998  118.620003   NaN
3 2020-11-18 14:33:00  360.660004   98.705002  118.377701   NaN
4 2020-11-18 14:34:00  360.695007   98.644997  118.499901   NaN
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1950 entries, 0 to 1949
Data columns (total 5 columns):
 #   Column    Non-Null Count  Dtype
---  ------    --------------  -----
 0   Datetime  1950 non-null   datetime64[ns]
 1   SPY       1950 non-null   float64
 2   SBUX      1950 non-null   float64
 3   AAPL      1949 non-null   float64
 4   MSFT      1 non-null      float64
dtypes: datetime64[ns](1), float64(4)
memory usage: 76.3 KB
None
```
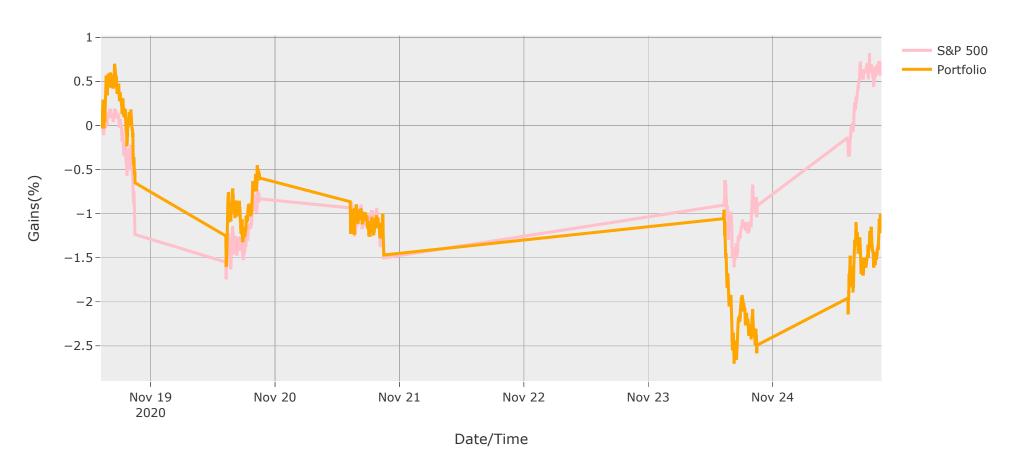
2 Porftolio Performance against S&P 500

Here is a performance analysis of our user's chosen portfolio. The user can input the number of Starbux stocks and Apple stocks they want to perchase and the plot will exhibit their gains(or loss) in percentage. The computation method is

((stock price at the moment-stock price at the beginning)/stock price at the beginning-1)-100

For example, when the y for our portfolio is 1.2, it means that if we invest 100 USD with our portfolio, we will make 1.2 USD at that datetime.

```
In [50]: import plotly.graph_objects as go
         import plotly.offline as pyo
         pyo.init_notebook_mode()

         def portfolio_plot(sbux, aapl):
             x = df['Datetime']
             SPY = df['SPY']
             base=df['SPY'][0]
             SPY=(SPY/base-1)*100

             PTF=df['SBUX']*sbux+df['AAPL']*aapl
             base=df['SBUX'][0]*sbux+df['AAPL'][0]*aapl
             PTF=(PTF/base-1)*100

             str1='Apple and '
             str2='Starbux) against S&P 500 in 7 Days'
             ttle='Gains of Our Portfolio( %s %s %s %s' % (aapl, str1, sbux, str2)
             fig = go.Figure()
             fig.add_trace(go.Scatter(x=x, y=SPY,
                             mode='lines',
                             name='S&P 500',line=dict(color='pink', width=3)))
             fig.add_trace(go.Scatter(x=x, y=PTF,
                             mode='lines',
                             name='Portfolio',line=dict(color='orange', width=3)))

             fig.update_layout(template='ggplot2', title=ttle, yaxis_title='Gains(%)',
                              xaxis_title='Date/Time')
             return fig

         portfolio_plot(5,2)
```


Gains of Our Portfolio(2 Apple and 5 Starbux) against S&P 500 in 7 Days