Moving_Maximum

September 29, 2021

1 Moving Maximum Price

```
[1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt

import warnings
warnings.filterwarnings("ignore")

# fix_yahoo_finance is used to fetch data
import fix_yahoo_finance as yf
yf.pdr_override()
[2]: # input
```

```
[2]: # input
symbol = 'AAPL'
start = '2018-08-01'
end = '2019-01-01'

# Read data
df = yf.download(symbol,start,end)

# View Columns
df.head()
```

```
[********* 100%********** 1 of 1 downloaded
```

```
[2]:
                      Open
                                 High
                                              Low
                                                        Close
                                                               Adj Close \
    Date
    2018-08-01 199.130005
                           201.759995 197.309998
                                                  201.500000 198.478760
    2018-08-02 200.580002
                           208.380005
                                       200.350006
                                                  207.389999
                                                              204.280457
    2018-08-03 207.029999
                           208.740005
                                       205.479996
                                                  207.990005
                                                              204.871445
    2018-08-06 208.000000
                           209.250000
                                       207.070007
                                                  209.070007
                                                              205.935257
    2018-08-07 209.320007
                           209.500000 206.759995
                                                  207.110001 204.004639
```

Volume

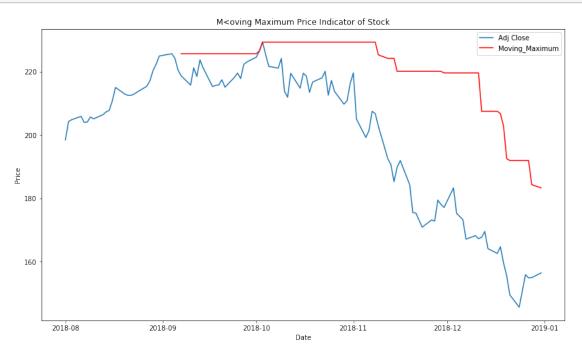
Date

2018-08-01 67935700

```
2018-08-02624040002018-08-03334474002018-08-06254254002018-08-0725587400
```

```
[3]: n = 14
    df['Maximum_Price'] = df['Adj Close'].rolling(n).max()
    df['Moving_Maximum'] = df['Maximum_Price'].rolling(n).max()
```

```
[4]: plt.figure(figsize=(14,8))
  plt.plot(df['Adj Close'])
  plt.plot(df['Moving_Maximum'], color='red')
  plt.title('Moving Maximum Price Indicator of Stock')
  plt.legend()
  plt.xlabel('Date')
  plt.ylabel('Price')
  plt.show()
```



1.1 Candlestick with Maximum Price

```
[5]: from matplotlib import dates as mdates
import datetime as dt

dfc = df.copy()
dfc['VolumePositive'] = dfc['Open'] < dfc['Adj Close']</pre>
```

```
#dfc = dfc.dropna()
    dfc = dfc.reset_index()
    dfc['Date'] = pd.to_datetime(dfc['Date'])
    dfc['Date'] = dfc['Date'].apply(mdates.date2num)
    dfc.head()
[5]:
           Date
                                                Low
                                                          Close
                                                                 Adj Close \
                       Open
                                   High
    0 736907.0 199.130005 201.759995 197.309998 201.500000
                                                                198.478760
    1 736908.0 200.580002 208.380005 200.350006
                                                     207.389999
                                                                 204.280457
    2 736909.0 207.029999 208.740005 205.479996 207.990005
                                                                 204.871445
    3 736912.0 208.000000 209.250000 207.070007
                                                     209.070007
                                                                 205.935257
    4 736913.0 209.320007 209.500000 206.759995 207.110001
                                                                204.004639
         Volume Maximum_Price Moving_Maximum VolumePositive
    0 67935700
                           NaN
                                           NaN
                                                         False
    1 62404000
                           NaN
                                           NaN
                                                          True
    2 33447400
                           NaN
                                           NaN
                                                         False
    3 25425400
                           NaN
                                           NaN
                                                         False
    4 25587400
                           NaN
                                           NaN
                                                         False
[6]: from mpl_finance import candlestick_ohlc
    fig = plt.figure(figsize=(14,10))
    ax1 = plt.subplot(2, 1, 1)
    candlestick ohlc(ax1,dfc.values, width=0.5, colorup='g', colordown='r', alpha=1.
    ax1.plot(df['Moving_Maximum'], color='orange')
    ax1.xaxis date()
    ax1.xaxis.set_major_formatter(mdates.DateFormatter('%d-\%m-\%Y'))
    ax1.grid(True, which='both')
    ax1.minorticks on()
    ax1v = ax1.twinx()
    colors = dfc.VolumePositive.map({True: 'g', False: 'r'})
    ax1v.bar(dfc.Date, dfc['Volume'], color=colors, alpha=0.4)
    ax1v.axes.yaxis.set_ticklabels([])
    ax1v.set_ylim(0, 3*df.Volume.max())
    ax1.set_title('Stock '+ symbol +' Closing Price')
    ax1.set_ylabel('Price')
    ax1.legend()
    ax2 = plt.subplot(2, 1, 2)
    df['VolumePositive'] = df['Open'] < df['Adj Close']</pre>
    ax2.bar(df.index, df['Volume'], color=df.VolumePositive.map({True: 'g', False:
     ax2.grid()
    ax2.set_ylabel('Volume')
    ax2.set_xlabel('Date')
```

[6]: Text(0.5,0,'Date')

