Typical_Price

September 29, 2021

1 Typical Price

https://en.wikipedia.org/wiki/Typical_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
     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
2018-08-02   62404000
2018-08-03   33447400
2018-08-06   25425400
2018-08-07   25587400
```

[3]:
```
df['Typical_Price'] = (df['High'] + df['Low'] + df['Adj Close'])/3
df.head()
```

[3]:
```
                   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   Typical_Price
Date
2018-08-01   67935700      199.182918
2018-08-02   62404000      204.336823
2018-08-03   33447400      206.363815
2018-08-06   25425400      207.418421
2018-08-07   25587400      206.754878
```
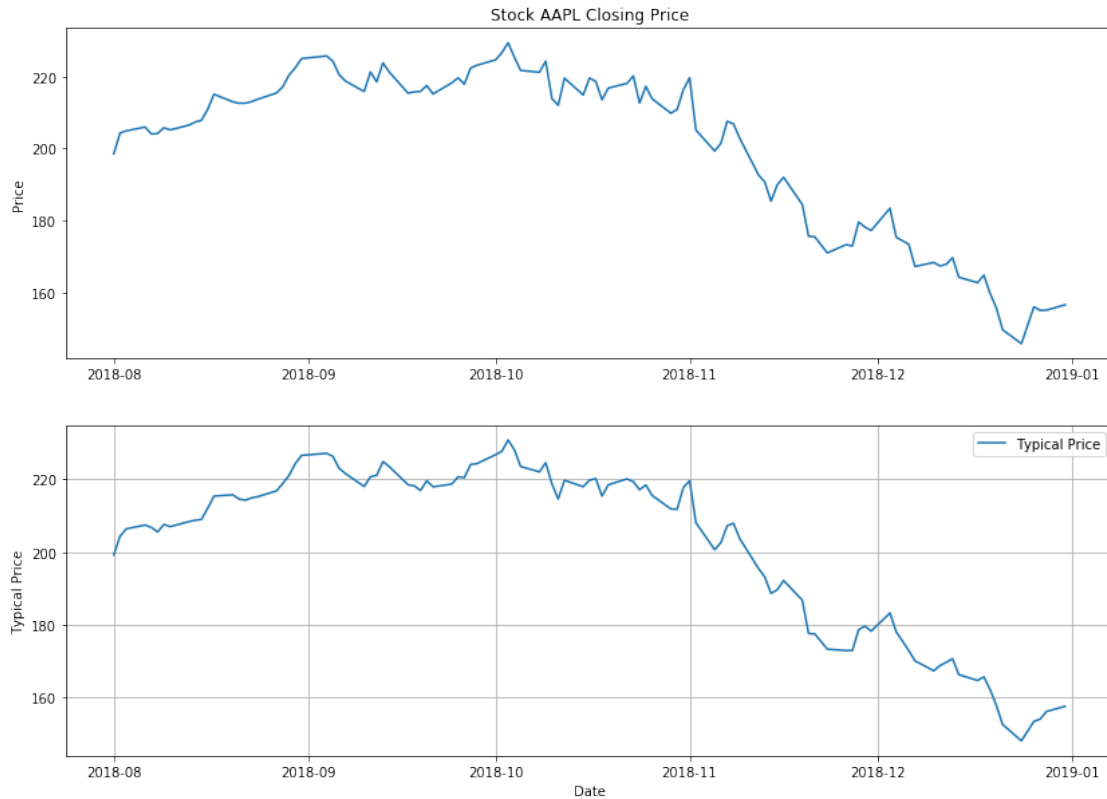
[4]:
```
fig = plt.figure(figsize=(14,10))
ax1 = plt.subplot(2, 1, 1)
ax1.plot(df['Adj Close'])
ax1.set_title('Stock '+ symbol +' Closing Price')
ax1.set_ylabel('Price')

ax2 = plt.subplot(2, 1, 2)
ax2.plot(df['Typical_Price'], label='Typical Price')
ax2.grid()
ax2.set_ylabel('Typical Price')
ax2.legend(loc='best')
ax2.set_xlabel('Date')
```

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

1.1 Candlestick with Typical Price

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

     dfc = df.copy()
     dfc['VolumePositive'] = dfc['Open'] < dfc['Adj Close']
     #dfc = dfc.dropna()
     dfc = dfc.reset_index()
     dfc['Date'] = mdates.date2num(dfc['Date'].astype(dt.date))
     dfc.head()
```

```
[5]:        Date        Open        High         Low       Close    Adj Close  \
     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  Typical_Price  VolumePositive
     0  67935700     199.182918           False
```

3

```
1   62404000        204.336823              True
2   33447400        206.363815              False
3   25425400        207.418421              False
4   25587400        206.754878              False
```

[6]:
```python
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.
 ↪0)
ax1.plot(df['Typical_Price'], label='Typical Price')
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(loc='best')

ax2 = plt.subplot(2, 1, 2)
ax2.plot(df['Typical_Price'], label='Typical Price')
ax2.grid()
ax2.set_ylabel('Typical Price')
ax2.legend(loc='best')
ax2.set_xlabel('Date')
```

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

Stock AAPL Closing Price