###### OBV 구하는 코드######

pip install pykrx

from pykrx import stock

import pandas as pd

import matplotlib.pyplot as plt

import matplotlib

from matplotlib import font\_manager, rc

import platform

import numpy as np

if platform.system() == 'Windows':

# 윈도우인 경우

font\_name = font\_manager.FontProperties(fname="c:/Windows/Fonts/malgun.ttf").get\_name()

rc('font', family=font\_name)

OBV = []

OBV.append(0)

for i in range(1, len(df.Close)):

if df.Close[i] > df.Close[i-1]:

OBV.append(OBV[-1] + df.Volume[i])

elif df.Close[i] < df.Close[i-1]:

OBV.append(OBV[-1] - df.Volume[i])

else:

OBV.append(OBV[-1])

df['OBV'] = OBV

df['OBV\_EMA'] = df['OBV'].ewm(com=20).mean()

df

#매수/매도 타이밍 신호 찾는 함수

#매수 신호: OBV > OBV\_EMA

#매도 신호: OBV < OBV\_EMA

def getOBV(signal, col1, col2, patient\_days):

sigPriceBuy = []

sigPriceSell = []

flag = -1 # A flag for the trend upward/downward

for i in range(0, len(signal)):

print(i)

print(flag)

if signal[col1][i] > signal[col2][i] and flag != 1:

tmp = signal['Close'][i:(i + patient\_days + 1)]

if len(tmp) == 1:

sigPriceBuy.append(signal['Close'][i])

sigPriceSell.append(nan)

flag = 1

else:

if (tmp.iloc[1:] > tmp.iloc[0]).all():

sigPriceBuy.append(signal['Close'][i])

sigPriceSell.append(nan)

flag = 1

else:

sigPriceBuy.append(nan)

sigPriceSell.append(nan)

elif signal[col1][i] < signal[col2][i] and flag != 0:

tmp = signal['Close'][i:(i + patient\_days + 1)]

if len(tmp) == 1:

sigPriceBuy.append(nan)

sigPriceSell.append(signal['Close'][i])

flag = 0

else:

if (tmp.iloc[1:] > tmp.iloc[0]).all():

sigPriceBuy.append(nan)

sigPriceSell.append(signal['Close'][i])

flag = 0

else:

sigPriceBuy.append(nan)

sigPriceSell.append(nan)

else:

sigPriceBuy.append(nan)

sigPriceSell.append(nan)

return (sigPriceBuy, sigPriceSell)

obv\_metric = getOBV(train\_x, 'obv', 'obv\_ema')

train\_x['Buy\_Signal\_Price'] = obv\_metric[0]

train\_x['Sell\_Signal\_Price'] = obv\_metric[1]

train\_x

#OBV와 OBV\_EMA 시각화

plt.figure(figsize=(12,8))

plt.plot(train\_x['obv'], label='obv', color='orange')

plt.plot(train\_x['obv\_ema'], label='obv\_ema', color='purple')

plt.xticks(rotation=45)

#매수/매도 신호 시각화

plt.figure(figsize=(12,8))

plt.scatter(train\_x.index, train\_x['Buy\_Signal\_Price'], color = 'green',

label = 'Buy Signal', marker = '^', alpha = 1)

plt.scatter(train\_x.index, train\_x['Sell\_Signal\_Price'], color = 'red',

label = 'Sell Signal', marker = 'v', alpha = 1)

plt.plot(train\_x['obv'], label = 'OBV', alpha = 0.35)

plt.plot(train\_x['obv\_ema'], label = 'OBV moving average', alpha = 0.35)

plt.xticks(rotation=45)

plt.title('The Stock Buy / Sell Signals')

plt.xlabel('Date', fontsize = 18)

plt.ylabel('Close Price USD ($)', fontsize=18)

plt.legend(loc='upper right')

plt.show()