RSI Calculation

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# Python version
import sys
print('Python: {}'.format(sys.version))

import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import datetime
import os

def rsi(series, period):
    delta = series.diff().dropna()
    u = delta * 0
    d = u.copy()
    u[delta > 0] = delta[delta > 0]
    d[delta < 0] = -delta[delta < 0]
    u[u.index[period-1]] = np.mean( u[:period] ) #first value is sum of avg gains
    u = u.drop(u.index[: (period-1)])
    d[d.index[period-1]] = np.mean( d[:period] ) #first value is sum of avg losses
    d = d.drop(d.index[: (period-1)])

    rs = u.ewm(com=period-1, adjust=False).mean() / d.ewm(com=period-1, adjust=False).mean()
    # rs = u.ewm(com=period-1).mean()

    # rs = pd.ewma(u, com=period-1, adjust=False) / \
    # pd.ewma(d, com=period-1, adjust=False)
    return 100 - 100 / (1 + rs)

if __name__ == "__main__":
    os.makedirs('./result/', exist_ok=True)
    ref_time = datetime.datetime.now().strftime('%Y%m%d_%H%M%S')

    path_data = '../Data/'

    df = pd.read_csv(path_data+'train.csv')
    df['Date'] = pd.to_datetime(df['Date'])
    df = df.set_index('Date')
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# df = df.sort_values('Date')
df_36 = df.resample('36Min').agg({'Open': 'first',
                                'High': 'max',
                                'Low': 'min',
                                'Close': 'last',
                                'Volume': 'sum'})

df_36.index += datetime.timedelta(minutes=35)
df_360 = df.resample('360Min').agg({'Open': 'first',
                                   'High': 'max',
                                   'Low': 'min',
                                   'Close': 'last',
                                   'Volume': 'sum'})

df_360.index += datetime.timedelta(minutes=359)

df_36_rsi = pd.DataFrame(rsi(df_36['Close'],14)).rename({'Close': 'RSI 36'},axis=1)
df_360_rsi = pd.DataFrame(rsi(df_360['Close'],14)).rename({'Close': 'RSI 360'},axis=1)
df_1 = df.copy()
for k in range(6):
    df_1 = pd.merge(df_1,df_36_rsi.shift(periods=-k).rename({'RSI 36': 'RSI 36 T-'+str(k)}),axis=1),h
    df_1 = pd.merge(df_1,df_360_rsi.shift(periods=k).rename({'RSI 360': 'RSI 360 T-'+str(k)}),axis=1)
df_1 = df_1.fillna(method='ffill')

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