about stock data

Tuple fields

Usually, stock data should contain the following features: **data, symbol, open, high, low, volume**, (exchange). For most strategies, these information should be adequate.

the concept of frequency

When you open a trading software, you can see you have a lot frequency options, like 1y, 1m, 1d, 30m, 10m, 5m, etc. Now suppose we choose the frequency to be 10m. Then every 10 minutes, the trading software will update new data in the past 10 minutes. Suppose right now, it has been 10 minutes since the last update, then:
open price: price at the beginning of the past 10 minutes.

close price: price at the end of the past 10 minutes, **this is also our current price** (You can check out portfolio.py update_holdings_from_fill(), the fill_cost should be the current price since it's a market order, notice that the author used close price), **this will be very close to the open price of the next update in general**(But, if your frequency is 1d, they can be quite different in general, because even though there is no trading during the night, information cumulates during the night, people's prospect with the stock would change in next day morning. But in our case, the end of the last 10 minutes in just the beginning of next 10 minutes, they are continuous, so the price won't change a lot) .

high price: the highest price in the past 10 minutes

low price: the lowest price in the past 10 minutes

volume: the trading volume in the past 10 minutes

See frequency.png

The time difference between two heart beats is 10 minutes. So heartbeat i+1 at time ti+1 will collect information between ti and ti+1. It will give you the open price of heartbeat i+1, the close price of heartbeat i+1, suppose ti+1 is now, then this is also our current price …

We need data at different frequencies

For simplicity, we only collect data at one frequency for now. I suggest use 30m as the frequency.
In the future, we need collect data at several frequencies. To do this, simply add new features to RealTimeDataHandler, called latest_symbol_data_f1, latest_symbol_data_f2, etc(f stands for frequency). Why? Because trend is a very import concept in trading. If you are trading hourly,

you still need to follow the daily trend, monthly trend, and annually trend, which will be much easier to get if we also collect data at daily, monthly, annually frequency.