FBA | QUANTITATIVE FINANCE RESEARCH GROUP

Financial AI

Homework 2

Due at 06:00 pm (Korea Standard Time) on Saturday, February 18.

Problem 1. Udacity, Intermediate Python

(a) Submit Chapter 3 - Lesson 7. Project.ipynb

Problem 2. Closing price for “A005930” in stock_data.csv from July 5, 2022, through July 11, 2022. Make stock exchange and agent who trades “A005930” using the module of python. Use the class ‘QDP’ to get the closing price.

(a) Make an ‘agent’ class with the ‘name’, ‘credit’, ‘holdings’, and ‘stock_data’ as object variables in ‘Agent.py’.

(b) Make a ‘trading’ method that if the price rises for two consecutive days, then buy as much as one can and if the price goes down after bought it, then sell all. No action is taken in other cases. Both ‘credit’ and ‘holdings’ should change. If the agent receives daily stock prices, then save it to ‘stock_data’.

(c) Make an ‘Exchange.py’ file with the ‘stock_data’ and ‘log_data’ as object variables. The ‘FBA_agent’ object is generated and sends the daily stock prices to the agent through a repeat statement when run the ‘Exchange.py’ file added ′stock_data.csv’ by config.

(d) When the agent sells or buys stocks, it automatically records them in the format of dataframes in ‘log_data’, and when the simulation ends, it stores the recorded dataframes as ‘log_data.csv’.

(e) Additional. Use the QDP freely and share your experiences! You can download the historical daily OHLCV of Korean stock market. But please be aware not to sending too many queries… Especially loops are avoided. Most importantly, DO NOT LEAK DATABASE INFORMATION TO OUTSIDE.

```
!python -u Exchange.py -d stock_data.csv
```

```
The exchange opens.
FBA_agent is entered.
FBA_agent buys 1.0 $752.29 TSLA at 2022-07-08.
FBA_agent sells 1.0 $703.03 TSLA at 2022-07-11.
The exchange closes.
```

Result of Problem2

In this case, A005930 not TSLA.

P.S.

- Please report any errors while using the QDP database. It will help us to fix and develop a better system. We appreciate your contribution on QDP project. Thanks a lot!