FBA | QUANTITATIVE FINANCE RESEARCH GROUP

Financial AI

Homework 2

Due at 06:00 pm (Korea Standard Time) on Saturday, August 20.

Submit one file: written solutions with executable Python code

Problem 1. Udacity, Intermediate Python

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

Problem 2. Download the daily adjusted closing price for TSLA in stock_data.csv from July 5, 2022, through July 11, 2022. Make stock exchange and agent who trades TSLA using the module of python.

(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'.

```
!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