Assignment

You are required to create a simple trading system which accepts and matches orders. It should have following modules implemented in a OOP manner.

1. Market Data Engine
    I. This module should mock market data for symbols 'AAPL', 'TSLA' and 'GOOG'.
    II. Each symbol's market data should be within a prespecified band. This band should be configurable.
    III. Each market data should have 3 values. Best Bid, Best Offer and Last trade price.

2. Order Placement Engine
    I. Users must be able to place orders via this module.
    II. User should be able to provide the symbol name, order type (limit or market), order qty and the price if limit order.
    III. All orders should be written to a db including the timestamp.

3. Matching Engine
    I. This module is responsible for matching orders of users.
    II. Orders should be matched on a price – time priority basis. You can find enough articles in internet on how this simple matching algorithm works if you need any further information.
    III. All trades should be written to a db including the timestamp.

Rules

- You have two full days to implement a solution.
- No front-end is needed.
- It is sufficient to have a simple CLI interface to place orders.
- You can make any reasonable assumption if required but please state them explicitly.
- You have to solve the problem in any OO or functional language. External libraries are allowed as long as it solves the problem.
- Please use Git for version control.
- Please do not make your solution or problem statement publicly available.

Evaluation

The test will be evaluated based on following 3 criteria.

1. Functionality – whether the system implements what is required
2. Performance/speed
3. Structure of the code (including comments explaining how your code works).

Dateline: 23 Feb 2020, Sunday, 2359HRS.

Presentation

There are many Robo Advisors today in the market. Please refer to https://360f.com/the-future-of-automation-in-investment-services-2/ on our analysis in 2018.

Please review the trading strategies adopted by each of the different Robo Advisors today in the Singapore market, and provide a comparison of which Robo Advisor has the best strategy, and why. Further, please suggest a trading strategy that 360F can develop that differentiates us in the market, and which can be hyper personalized based on individual needs and their risk profile.

Your presentation should not be more than 15 minutes, and should be targeted at senior management who are looking for Robo Advisory services to be provided by a vendor for their existing portfolios.

Dateline: 25 Feb 2020, Tuesday, 1100HRS.