DTL Trading Support Engineer Mini-project

FIX Client

Problem Statement

Develop a FIX client (https://en.wikipedia.org/wiki/Financial_Information_eXchange) that can send random orders to a FIX server and calculate certain statistics related to the order flow. Detailed requirements as follows:

1. FIX version: 4.2
2. Language: Python 3 (please specify the exact version that you use)
3. You need to provide sufficient instruction on how to run your application.
4. You are allowed to use an external open source library.
5. Need to handle basic FIX flows: Logon, Seq Number handling
6. Sequence number will be reset when logon for simplicity
7. Need to be able to send below message to server:
    - New Order (35=D): Limit Order or Market Order. You can put a random price for Limit Order.
    - Order Cancel Request (35=F)
    - Do not send another other request
8. Need to be able to handle below message from server:
    - Reject (35=3)
    - Execution Report (35=8)
    - Order Cancel Reject (35=9)
9. Your application needs to send 1000 random orders for MSFT, AAPL, and BAC. One side can be BUY, SELL, or SHORT. It could be a limit or a market order. You don't need to send 1000 orders at once but please try to send them within a 5 minutes period from when the application starts. And, need to randomly cancel them within 5 minutes from when you send the order.
10. You need to calculate below stats:
    - Total trading volume, in USD
    - PNL generated from this trading
    - VWAP of the fills for each instruments

The server will send back enough information for you to maintain order state, and to calculate above stats.

You can use our test session at

Host: fix.dytechlab.com

Port: 5100

SenderCompID: OPS_CANDIDATE_2_6982

TargetCompID: DTL

Sequence Number Reset Time: 00:00 SGT

How to submit

Send us a .tar.gz or .zip file that contains the source code, configuration and documentation on the design and how to run the code. You may send it to the same email thread where you received the project instructions.

If you have any questions please email careers@dytechlab.com for clarification. Thanks.