Crypto Trading API

Introduction

In Blox we believe Bitcoin is a disruptive technology in the finance domain which brings to the people more freedom when doing payments or making investments. You're in charge of your own money, transactions are extremely fast (even outside of 'business hours'), and you can send bitcoin to anyone in the world (without any difference in transaction costs). Bitcoin (and blockchain) is the revolution in the finance world only comparable with the role of the Internet in world global communications.

But it is not only bitcoins, there are many other crypto currencies in the market. You can also use these cryptocurrencies as an investment. That's what many people do at the moment. The value of bitcoin has grown tremendously over the last ten years. If you get it right, you can get a huge return with trading in crypto currencies.

Assignment

As a crypto trading company, most of our operations are related to trading cryptocurrencies. The fluctuations in the crypto currency market price is one of the most important reasons a customer takes into consideration when to buy or sell. The customer goal is to accumulate coins for their future appreciation or earn profit on price fluctuations. Therefore, the information on market prices is an important part of the information stream we provide to our customers.

We would like you to build an API that allows fictitious customers to buy and sell coins, providing also the necessary information they need to make a decision when to buy or sell the coins. This API should also consider the fact that the company also wants to make a profit from it (for example as a commission per transaction).

The company holds an inventory of crypto currencies and a certain liquidity of them (number of coins in the wallets owned by the company) and an internal order book which compares buy and sell operations. Coins are delivered to the customer from the inventory and if the liquidity is not enough, the coins are acquired via an external exchange. However, if the liquidity of the inventory is too high, the system should sell part of the coins.

Restrictions & Notes

- We will positively value:
  - Usage of the Spring Framework (including Spring Security for authentication).
  - The application is fully or partially dockerize.
  - Usage of HTTP Server Push.
  - Correct usage of Asynchronous Programming and Event Sourcing design patterns.
- Writing tests (especially integration ones) are welcomed.
- We use PostgreSQL in Blox, but you are welcome to use another storage layer.

- Even if we value the completeness of the assessment, we understand this will be done in limited time. This means not being able to complete the whole assessment will not have any negative feedback from our side.
- In case something is unclear, please feel free to forge your own assumptions.
- For simplicity, you can assume the API only operates with bitcoins.

Goal

The goal of this assessment is to get a sense about your development and communication style and the way you present your ideas. Be creative and have fun. You want to show some technical tricks, neat design patterns? Go for it. After reviewing your work on solving this challenge, we will invite you to an open discussion with part of the development team and look together at the final result.