

Code Assessment Program

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Intro

The code is written in Python 3.6. Its goal is to build a settlement system for cryptocurrency trading. The program is connected to GDAX public API (<https://docs.gdax.com/>). The code can be run in command window, and exit by pressing Ctrl-C. The program will not stop until user quit.

The program retrieves live trading data every 10 seconds and pulls 100 trades at a time. Every ten seconds, the program will repeat the following steps: 1. Retrieve data; 2. Assign counter-parties randomly by uniform distribution. 3. Calculate the VWAP settlement value and the settlement obligations; 4. Update the balances of all parties.

Notes

The rate limit of GDAX API is 3 requests per second. The program sends 1 request every ten seconds, so will not exceed the limit.

The python packages used in the code include: numpy, pandas, datetime, time, and requests, which are all built-in packages and do not require additional installment in order to run the code.

A few assumptions used in the program (default values in parenthesis): initial balance of each party (\$10000), execution interval (10 seconds), number of parties (10).

Comments

There were a few more things I want to implement but did not have more time, such as writing test functions using Pytest, using logs to keep track of info (settlements, balances) and bugs (instead of print functions), using arg inputs (e.g. execution interval, crypto IDs, initial balances, etc). I thought about splitting the functions in main.py file into separate py files, but kept them together to avoid technical inconvenience.

Overall, it is a great experience spending two days doing research and building something work. It was really fun and I rehearsed some of my skills while working on the project. There are a couple things I spend more amount of time: 1. Figure out the API options. I tried 3, 4 different APIs. Some of them have faster data access or more user friendly documentation, but charge a fee after hitting daily limit; 2. Understand Settlement section. Initially I was not clear about that part and Erik helped me understand the task.