

Team: Team-21

Members: 許軒 (r05922020), 鄭宇軒 (b01902101), 陳哲斌 (auditor)

Required Packages

We use Redis database to store all the data structures of our order book. The following commands show how we install Redis (in Ubuntu 16.04):

```
$ wget http://download.redis.io/releases/redis-4.0.2.tar.gz
$ tar -xf redis-4.0.2.tar.gz
$ cd redis-4.0.2/
$ make
$ sudo make install
$ sudo utils/install_server.sh
```

Required Libraries

Since we program in C, we need Hiredis, which is a minimalistic C client library for the Redis database, so that we can issue commands to the Redis server in our C program. After Redis is built successfully, we run the following commands to install Hiredis headers and shared libraries:

```
$ cd redis-4.0.2/deps/hiredis/
$ sudo make install
$ sudo ldconfig
```

Compilation and Execution

All the source code is in hw2_team21/book.c. We already provide a simple Makefile to build it:

```
$ make
```

The executable can be run in the following two ways:

```
$ ./book [COMMAND]

$ ./book
book> [COMMAND 1]
book> [COMMAND 2]
.
.
.
```

To show the usage of all commands, run:

```
$ ./book help
```

To test the correctness, we also provide two sample input files, bids.txt and asks.txt, which contain lots of bid orders and ask orders copied from Bitfinex. We then run the following commands to check the result:

```
$ ./book < bids.txt
$ ./book < asks.txt
$ ./book list | less
$ ./book ask 7902.4 7
$ ./book list | less
$ ./book match
$ ./book list | less
```

For more implementation details, please see the comments in book.c.

Contribution

許軒: Set up the above environment, implement the C program.

鄭宇軒: Survey C client libraries for Redis.

陳哲斌: Provide necessary financial knowledge.