

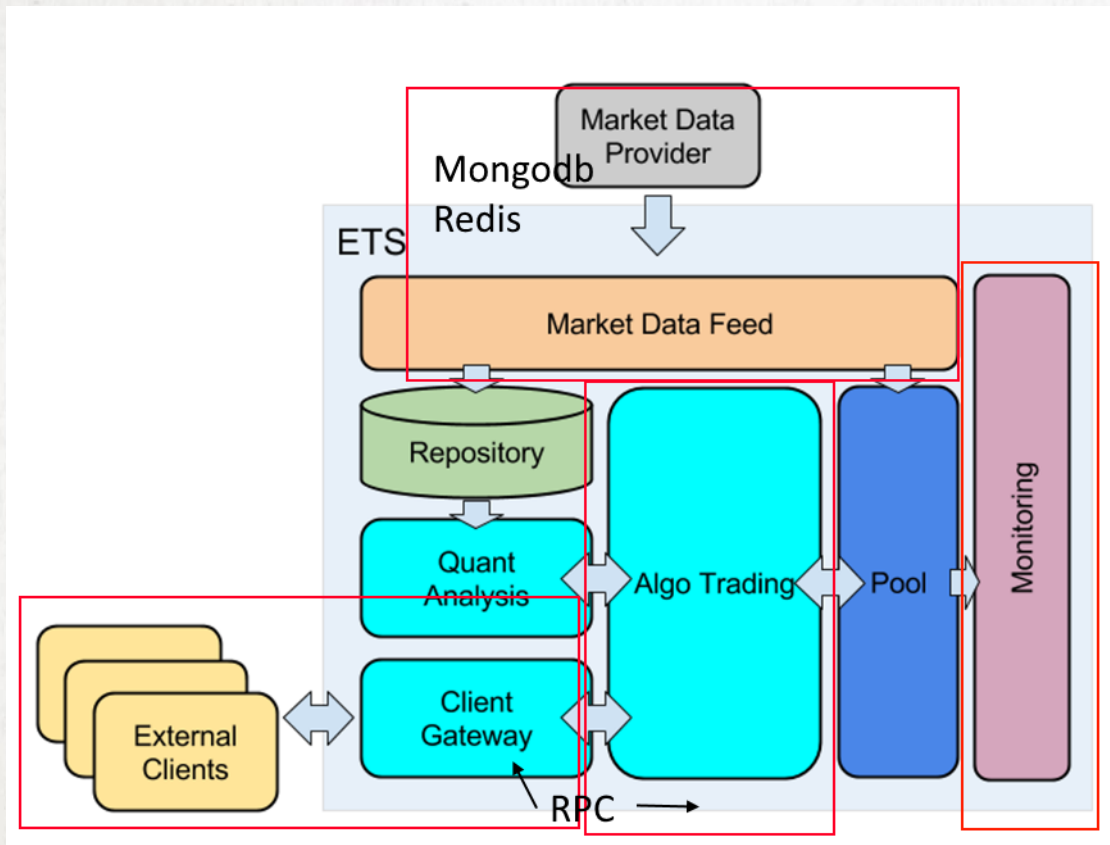
MID TERM REVIEW OF ALGO TRADING PROJECT

GUODONG SHEN

OVERVIEW

- Project design
 - What we have done
 - Todo
-

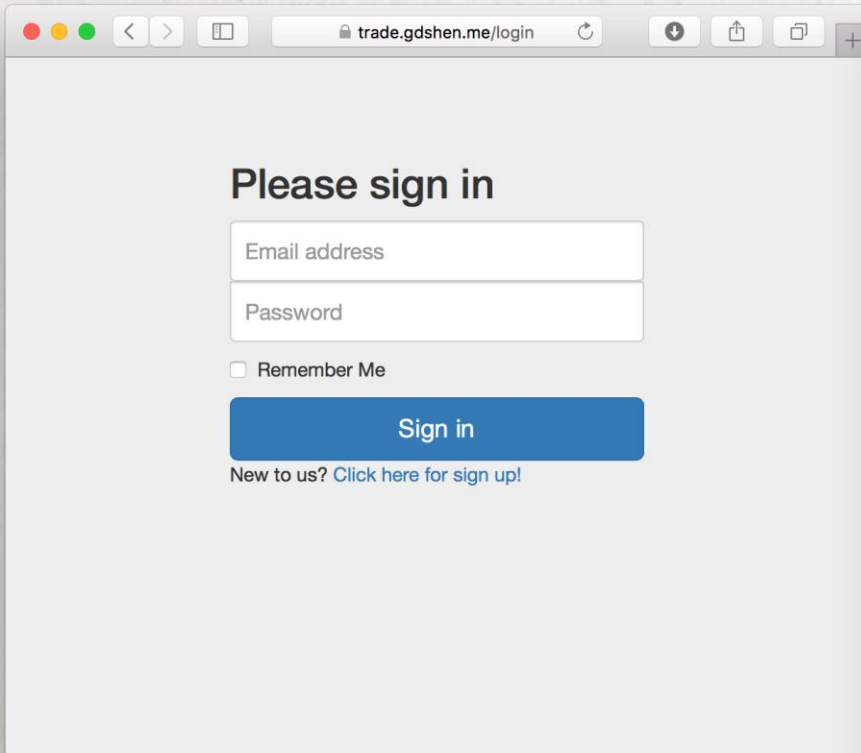
DESIGN



WHAT WE HAVE DONE

- Data feed and storage
 - Quant analysis (TWAP & VWAP)
 - User system (With a web UI)
 - Logging
-

USER SIGN IN & SIGN UP



trade.gdshen.me/login

Please sign in

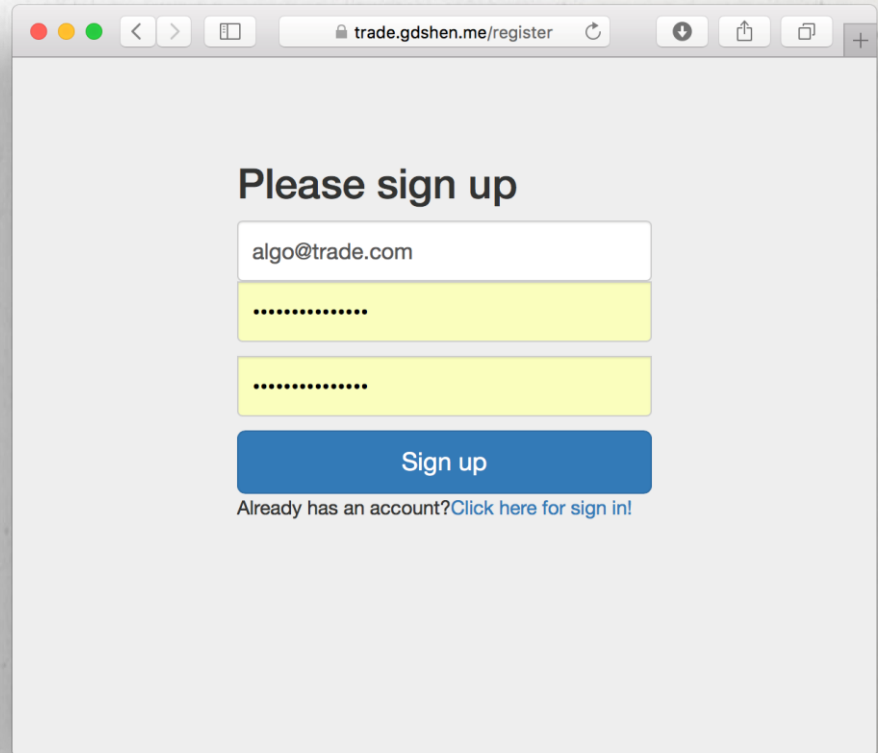
Email address

Password

☐ Remember Me

Sign in

New to us? [Click here for sign up!](#)



trade.gdshen.me/register

Please sign up

algo@trade.com

.....

.....

Sign up

Already has an account? [Click here for sign in!](#)

SECURITY CONCERN

- All connection using **https**
- **Bcrypt** hash algorithm for user password (more secure than MD5 and SHA1)

Safari is using an encrypted connection to trade.gdshen.me.

Encryption with a digital certificate keeps information private as it's sent to or from the https website trade.gdshen.me.

Show Certificate OK

db.getCollection('user').find({})

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db.getCollection('user').find({})

user 0.003 sec.

	_id	email	password	active	is_admin
1	...	sgd@qq.com	\$2b\$12\$SZuBnp2IZUTOPENf8tBO5ucG1oblR57t/qlzPXNJ45FsHNSJ/K5gm	<input type="checkbox"/> true	<input type="checkbox"/> false
2	...	gdshen95@gmail.com	\$2b\$12\$.dKMD1DGtCpKkoSa7n6VPotXZoSWnP6DpLQC1FwNKOFX2esuzBSLW	<input type="checkbox"/> true	<input type="checkbox"/> false
3	...	jerrychen@gmail.com	\$2b\$12\$grAGNqtu3ttYEj99RUHeUuvC05EUXoAp1tv92VCXTdTF5iSwoSKa.	<input type="checkbox"/> true	<input type="checkbox"/> false
4	...	algo@trade.com	\$2b\$12\$gRZSI64Uy6EOxKLg/8s4O.df9PEuf8HaDWZmooTLhfcOm0oxlt10W	<input type="checkbox"/> true	<input type="checkbox"/> false

USER MAIN INTERFACE

trade.gdshen.me

Logged in!

Welcome algo@trade.com

Security

Security

Shares

Shares

Operations

☒ buy

☐ sell

Methods

☒ twap

☐ vwap

Do operation

Welcome algo@trade.com

Security

600000

Shares

10000

Operations

☒ buy

☐ sell

Methods

☐ twap

☒ vwap

Do operation

FEEDBACK OF TWAP

Shares

Operations

Methods

Do operation

Shares

☒ buy
☐ sell

☒ twap
☐ vwap

Security	Action	Volume	Time
600000	buy	1000.0	2016-11-09 09:30:00
600000	buy	1000.0	2016-11-09 09:54:00
600000	buy	1000.0	2016-11-09 10:18:00
600000	buy	1000.0	2016-11-09 10:42:00
600000	buy	1000.0	2016-11-09 11:06:00
600000	buy	1000.0	2016-11-09 13:00:00
600000	buy	1000.0	2016-11-09 13:24:00
600000	buy	1000.0	2016-11-09 13:48:00
600000	buy	1000.0	2016-11-09 14:12:00
600000	buy	1000.0	2016-11-09 14:36:00

FEEDBACK OF VWAP

Shares

Shares

Operations

☒ buy
☐ sell

Methods

☐ twap
☒ vwap

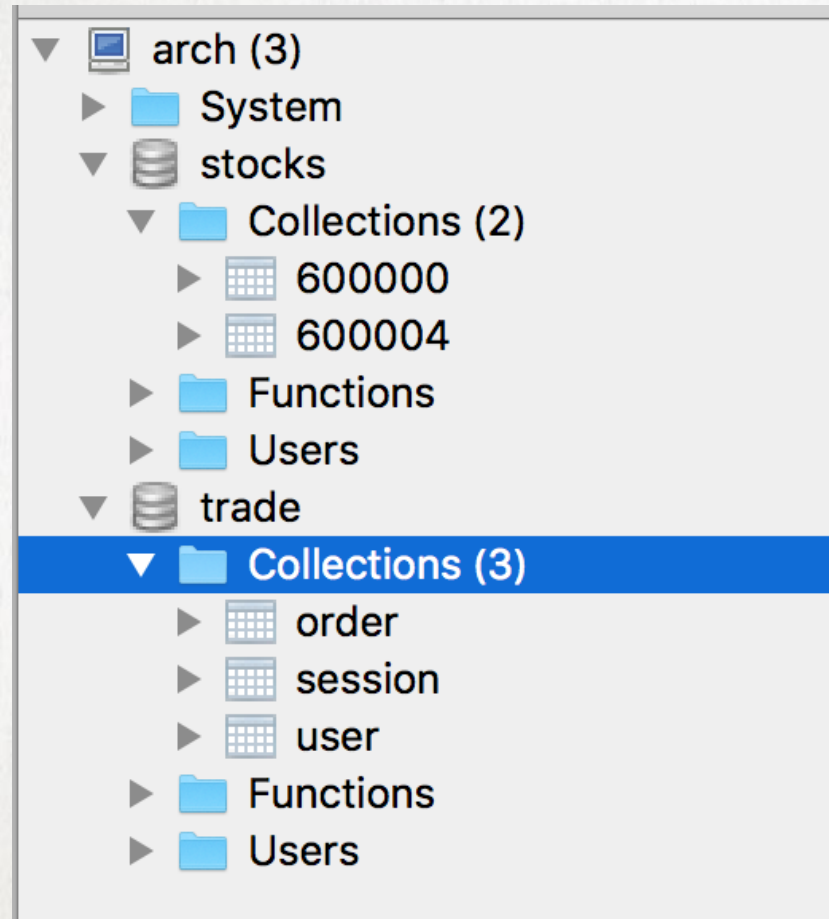
Do operation

Results

Server will execute your order according to the follow table.

Security	Action	Volume	Time
600000	buy	1186	2016-11-09 09:30:00
600000	buy	1057	2016-11-09 09:54:00
600000	buy	1053	2016-11-09 10:18:00
600000	buy	1568	2016-11-09 10:42:00
600000	buy	997	2016-11-09 11:06:00
600000	buy	917	2016-11-09 13:00:00
600000	buy	1365	2016-11-09 13:24:00
600000	buy	644	2016-11-09 13:48:00
600000	buy	544	2016-11-09 14:12:00
600000	buy	665	2016-11-09 14:36:00

DIVE INTO DATABASE



DIVE INTO DATABASE

▼ arch (3)

▶ System

▼ stocks

▶ Collections (2)

▶ 600000

▶ 600004

▶ Functions

▶ Users

▼ trade

▼ Collections (3)

▶ order

▶ session

▶ user

▶ Functions

▶ Users

db.getCollection('user').find({})db.getCollection('600000').find({})

arch192.168.1.150:27017stocks

db.getCollection('600000').find({})

6000000.004 sec.050

	_id	price	type	time	change	amount	volume
1	ObjectId(...)	18.15	卖盘	2015-11-09 15:00:05.000Z	-0.02	12777	7
2	ObjectId(...)	18.17	买盘	2015-11-09 15:00:00.000Z	--	514283	283
3	ObjectId(...)	18.17	卖盘	2015-11-09 14:59:55.000Z	-0.01	1233815	679
4	ObjectId(...)	18.18	买盘	2015-11-09 14:59:50.000Z	0.01	914235	502
5	ObjectId(...)	18.17	卖盘	2015-11-09 14:59:45.000Z	--	2872895	1581
6	ObjectId(...)	18.17	卖盘	2015-11-09 14:59:35.000Z	-0.01	664876	365
7	ObjectId(...)	18.18	买盘	2015-11-09 14:59:30.000Z	--	2652534	1459
8	ObjectId(...)	18.18	买盘	2015-11-09 14:59:20.000Z	0.02	196344	108
9	ObjectId(...)	18.16	买盘	2015-11-09 14:59:15.000Z	0.01	2598768	1431
10	ObjectId(...)	18.15	卖盘	2015-11-09 14:59:05.000Z	-0.04	2428324	1337
11	ObjectId(...)	18.19	买盘	2015-11-09 14:59:00.000Z	0.03	538424	296
12	ObjectId(...)	18.16	卖盘	2015-11-09 14:58:55.000Z	-0.04	806304	444
13	ObjectId(...)	18.2	买盘	2015-11-09 14:58:50.000Z	--	154627	84

DIVE INTO DATABASE

▼ arch (3)

- ▶ System
- ▼ stocks
 - ▼ Collections (2)
 - ▶ 600000
 - ▶ 600004
 - ▶ Functions (0)
 - ▶ Users
- ▼ trade
 - ▼ Collections (3)
 - ▶ order
 - ▶ session
 - ▶ user

db.getCollection('user').find({})db.getCollection('600000').find({})db.getCollection('order').find({})

arch 192.168.1.150:27017 trade

db.getCollection('order').find({})

order 0.004 sec. 250 5

	_id	user_id	stock	volume	action	time
1	ObjectId(...)	582027d762d3a41db06a4c2f	600000	100	0	2016-11-08 09:30:00.000Z
2	ObjectId(...)	582027d762d3a41db06a4c2f	600000	100	0	2016-11-08 09:54:00.000Z
3	ObjectId(...)	582027d762d3a41db06a4c2f	600000	100	0	2016-11-08 10:18:00.000Z

▼ arch (3)

- ▶ System
- ▼ stocks
 - ▼ Collections (2)
 - ▶ 600000
 - ▶ 600004
 - ▶ Functions (0)
 - ▶ Users
- ▼ trade
 - ▼ Collections (3)
 - ▶ order
 - ▶ session
 - ▶ user

db.getCollection('user').find({})db.getCollection('600000').find({})db.getCollection('order').find({})

arch 192.168.1.150:27017 trade

db.getCollection('order').find({})

order 0.004 sec. 250 50

	_id	user_id	stock	volume	action	time
11	ObjectId(...)	582027d762d3a41db06a4c2f	600000	11861	0	2016-11-08 09:30:00.000Z
12	ObjectId(...)	582027d762d3a41db06a4c2f	600000	10576	0	2016-11-08 09:54:00.000Z
13	ObjectId(...)	582027d762d3a41db06a4c2f	600000	10538	0	2016-11-08 10:18:00.000Z
14	ObjectId(...)	582027d762d3a41db06a4c2f	600000	15680	0	2016-11-08 10:42:00.000Z
15	ObjectId(...)	582027d762d3a41db06a4c2f	600000	9970	0	2016-11-08 11:06:00.000Z
16	ObjectId(...)	582027d762d3a41db06a4c2f	600000	9175	0	2016-11-08 13:00:00.000Z
17	ObjectId(...)	582027d762d3a41db06a4c2f	600000	13656	0	2016-11-08 13:24:00.000Z
18	ObjectId(...)	582027d762d3a41db06a4c2f	600000	6441	0	2016-11-08 13:48:00.000Z
19	ObjectId(...)	582027d762d3a41db06a4c2f	600000	5442	0	2016-11-08 14:12:00.000Z

DIVE INTO DATABASE

192.168.1.150	
>>	Type filter and press ENTER
600000	{ "b1_p": "16.410", "pre_close": "16.400", "a5_v": "1335", "b1_v": "166", "volume": "9442398", "b3_p": "16.390", "amount": "154876382.000", "b5_p": {"b1_p": "16.410", "pre_close": "16.400", "a5_v": "1335", "b1_v": "188", "volume": "9459518", "b3_p": "16.390", "amount": "155157421.000", "b5_p": {"b1_p": "16.420", "pre_close": "16.400", "a5_v": "2330", "b1_v": "10", "volume": "9693518", "b3_p": "16.400", "amount": "159000906.000", "b5_p": {"b1_p": "16.410", "pre_close": "16.400", "a5_v": "2330", "b1_v": "2001", "volume": "9728218", "b3_p": "16.390", "amount": "159570539.000", "b5_p" {"b1_p": "16.410", "pre_close": "16.400", "a5_v": "1335", "b1_v": "2096", "volume": "9768318", "b3_p": "16.390", "amount": "160228676.000", "b5_p" {"b1_p": "16.420", "pre_close": "16.400", "a5_v": "2330", "b1_v": "21", "volume": "9802823", "b3_p": "16.400", "amount": "160795020.000", "b5_p": {"b1_p": "16.420", "pre_close": "16.400", "a5_v": "2330", "b1_v": "14", "volume": "9837723", "b3_p": "16.400", "amount": "161367964.000", "b5_p": {"b1_p": "16.410", "pre_close": "16.400", "a5_v": "1370", "b1_v": "1651", "volume": "9876023", "b3_p": "16.390", "amount": "161996641.000", "b5_p": {"b1_p": "16.410", "pre_close": "16.400", "a5_v": "2330", "b1_v": "1678", "volume": "10062123", "b3_p": "16.390", "amount": "165054419.000", "b5_p {"b1_p": "16.420", "pre_close": "16.400", "a5_v": "2330", "b1_v": "138", "volume": "10094323", "b3_p": "16.400", "amount": "165582966.000", "b5_p {"b1_p": "16.410", "pre_close": "16.400", "a5_v": "1381", "b1_v": "1632", "volume": "10130433", "b3_p": "16.390", "amount": "166175825.000", "b5_p" {"b1_p": "16.410", "pre_close": "16.400", "a5_v": "1390", "b1_v": "836", "volume": "10217933", "b3_p": "16.390", "amount": "167612169.000", "b5_p": {"b1_p": "16.410", "pre_close": "16.400", "a5_v": "1439", "b1_v": "36", "volume": "10352033", "b3_p": "16.390", "amount": "169813265.000", "b5_p": {"b1_p": "16.400", "pre_close": "16.400", "a5_v": "1595", "b1_v": "3430", "volume": "10390633", "b3_p": "16.380", "amount": "170446519.000", "b5_ {"b1_p": "16.400", "pre_close": "16.400", "a5_v": "2440", "b1_v": "3274", "volume": "10571033", "b3_p": "16.380", "amount": "173408288.000", "b5_ {"b1_p": "16.420", "pre_close": "16.400", "a5_v": "2440", "b1_v": "46", "volume": "10601433", "b3_p": "16.400", "amount": "173906965.000", "b5_p"

TODO FOR ADVANCED REQUIREMENT

- Performance optimization for vwap
 - Machine learning methods for price prediction(doin)
 - Native client
 - Customized algo trading strategy
 - Order matching system
-

OPEN SOURCE LIBRARY

- Arrow
 - Mongoddb
 - Pymongo
 - Mongoengine
 - Flask
 - Flask-login
 - Flask-bcrypt
 - Flask-debugtoolbar
 - Flask-mongoengine
 - Flask-wtf
 - Wtforms
 - Redis
 - Redis-py
 - Tushare
 - Bootstrap
 - Numpy
 - Pandas
 - Zerorpc
-

Thanks