Algo-trading market Client HLD

The program simulate Algo-Trading market.

We have added a system based on automated trading algorithm (AMA).

We have improved our trading algorithm: Selects a stock randomly,

Makes a call to the DB, and find the average of the transactions for the commodity in the last half hour, makes a purchase deal at price (avg+15), and a sell deal at price (avg-15).

And also added a possibility that the user will add commands and create a personal algorithm (UserAMA).

We have used open source: IText, LiveCharts.

By using the SQL, We added visual graphs for each stock showing the prices of the transactions made in it last minute.

In addition, any action sent to the server is recorded in a history file and you can easily access the previous actions. In addition, you can now access the history in a PDF file- more easily and in a more user friendly way.

There is also a log file that records the proper operation as well as the errors.

We've added more NUnit tests to increase our level of preparedness for possible malfunctions.

We have ease the usage of the software by using a GUI that enhances the user experience.

Now, the user can perform many operations without an effort.

For example,

\*There is a table detailing the history of previous actions.

\*Viewing and canceling previous requests at the touch of a button.

\*New trade request involves only the insertion of data in the relevant fields.

Our system successfully and elegantly bridges between the client side and the server side using the following requests.

### Sell request

A sell request is a request that when posted to the server shows the will of a user to sell some amount of a commodity for a certain price. Posting sell requests automatically reduces the amount of available commodity the user has.

A sell request contains a commodity id, amount and ask price. If the user has enough resources to make the sell, the market replies with a sell ID.

### Buy request

A buy request is a request that when posted to the server shows the will of a user to buy some amount of a commodity for a certain price. Posting buy requests automatically reduces the amount of available funds the user has.

A buy request contains a commodity id, amount and bid price. If the user has enough resources to make the sell, the market replies with a buy ID.

### Cancel request

A cancel request contains an ID of the sell/buy request to cancel and refunds any commodities or funds invested in that request.

### Query sell/buy request

This request returns information about the buy/sell request with the given id.

The query request contains an ID of the sell/buy and returns the current information about the sell/buy (request information, units remaining).

### Query user request

The query request is empty (besides authentication) and returns sell/buy IDs, and for each commodity, how many the user owns (zero if the user doesn’t own it)

### Query market request

This request returns information about the market state of a certain commodity.

The query contains a commodity ID and returns the best ask price and best bid price for that commodity in the market.

### Query all market request

This request returns information about the market state of a all commodities.

### Query user requests request

This request returns a list of all of the active requests a user has in the server.

Details about:

Terminology, Trading framework and Actors can be found here:

<https://goo.gl/xUwXR2>