Let me introduce myself

I am Yevhenii "eimrine" Bulba, 31, Ukrainian.

I am writing this on English not because i know it better than Russian/Ukrainian but because i can touchtype in English only.

I had a lot of time, so I created a large document detailing the reasons why I should be invested in.

Glossary

1200 hours – amount of workdays, 80% of which is divided in this document.

CX - Currency Exchange, the place which gives an ability to buy and sell some currencies.

MSI - My Special Idea, the MVP-understanding of tradebot which is going to be implemented by me not looking at other people's requirements.

MathStat - the Mathematical Statistics & Probability Theory discipline.

Pomodoro - 25 minutes of time. 1 pomodoro a day is 10 hours a month.

The Green Lamp project – codename of the 6 months of learning agreement.

On the Green Lamp project

So you have decided to sponsor some talented student who:

Satisfies your understanding of the best candidate.

Is going to self-learn for a full-time, but the set of topics is limited to CS only.

Will code something under the MIT license as a primary goal of time spending.

Will make public reports in order to interest the public in repeating similar experiments.

As a reward, you propose:

250 pounds (11k UAH) * 6 months.

30-45 minutes a week for any questions related to CS plus some email discussions.

Additional constraints:

Do not try to combine the Green Lamp project with another full-time job.

Do not disappear from availability without prior warning.

What Am I Fond Of

C and Lisp programming languages.
Please let me not use other languages too often. I have learned C in university; what about Lisp I am persuaded this is the coolest language possible and my dream is to become Lisp programmer. If i will win, i want to develop mostly C and Lisp code.

Bitcoin/Blockchain.
I use it 10 years and have an experience of trading cryptos on cxs. I do not think I have much success from it but i have some experience which can not be gathered in other ways. I have a dream of implementing a lot of things related to cryptocurrency world, but a lack of skill stops me. The tradebot is going to be a first step on my way.

Stoic philosophy.
My dream is to do some great things using programming as an environment of good wisdom. I am not sure if creating tradebots may be considered as a no-evil thing, but creating some FOSS is always a wise decision.

My Proposal

I have defined most of time spending I will do during the full-time learning.
Let me set the other 20% (240 hours) of the time to be undefined in this document.

I have some useful project to pitch.
This is a trade bot. It was not considered to be a free software before your announcement, but I will gladly do it so because I don’t believe making it public can do any harm to my profits. A technical description is contained in this document.

I love writing.
And this 19-page document proofs that, but I have been never thought about systematical blogging. I have something to say in the domain of IT and I have few partly-done articles (will be disclosed later), but I don’t have time to polish my thoughts in usual life. The Green Lamp gives me that extra time.

I can live on that amount of money with no extra job searches.
I promise it will be a great time full of sports, music, learning, endless publishing some original works and of course coding. And searching for profit as donkey’s carrot.

Why The Tradebot?

This work utilizes a wide area of Computer Science domain:

- Theoretical part requires a little bit of research in MathStat which is a Theory of Information domain, and definitely allowed in the Green Lamp terms.

- Practical part requires coding, using the code, and trying to prove the result is reasonable seems very correlating to the idea of the Green Lamp project.

A decent implementation of tradebot is desired by anyone, but most of anybody else desired by me. I have spent at least a month working exclusevely in this direction and I have at least a few semi-working scripts for solving each of listed obstacle.
The biggest stoppers I have are: MQ, some database, WebSockets protocol, Calculus, and some time. All problems/issues/obstacles are perfectly solvable and most of theory part of work is finished. I have made a big bet on developing myself in such a way to be able to develop this software.

My Expectations:

Theoretical goals

Practical goals

Graphomania goals

1) Theoretical plans:

Grok the MathStat skill, especially using the book I have started to solve and also observe as much sourches about the Normal Distribution function as possible. I have downloaded maybe 100 books on this topic but I have not found anything significantly better than the book I have in paper. I expect to invest 150 hours (1 hour/day) for this one book for getting proficient in the area I step.

Master Calculus to the extent which is needed for progressing in MathStat. Source of learning - to hire a mathematician offline which is easy in Kyiv and just do everything he recommends. The book I mentioned require students to solve some tasks and most of them includes integral sum.

2) CS practical goals

I am going to re-read the K&R book and the required Beej's guides – 50 hours.

My assumption is that C is the fastest language, therefore the best one for system programming. So, I want to make the system part of tradebot on this language. I know the mentioned sources are in the set of what is needed for writing some fast network program working on Unix-like environment.

I need to cover the tradebot topics which I am not acknowledged about - SQL, Websockets, ZeroMQ.

As a least-priority goal I am going to solve some tasks from “Structure and Interpretation of Computer Programs”. I expect to invest 50 hours (20min/day) on solving tasks from any Lisp books including this one but no limiting to it.

3) Blogging/graphomania goals

* What is the most desirable goal for me from the Green Lamp Project is to persuade some more relatively rich persons in mentorship. This experiment seems like a little good deed which may be a big thing if this set of rules becomes

popular, like the Cold Water Bucket challenge but more useful for society. I want to make everything just perfect and show such a result that no one can say that this money was wasted. I can reach this state with such amount of writing to make everybody acknowledged about what am I doing, but not let my code goals to be failed. I hope Github's history of commits will say more than words, but for the words I am going to use my Twitter account which is old but empty.

* Publish up to one article a month.
I have several half-baked ideas, and finishing at least most of them seems like a great deal for all parties, including readers. Here are them:
About text (everything from papirus to handwriting and text editors, except of gliphs); **about Dvorak/Programming Dvorak** (the most efficient keyboard layer by my opinion, all proof points and all pitfuls); **about Bitcoin** (safe receiving funds while being out of computer devices, for example while being in jail); **ELI5 the Computer Science** (just going to publish my student's compendium, I have worked hard for making this topic easy for him); **about Artificial Intelligence and why Eliezer Yudkowsky is wrong** (but this is going to be just another story about Bitcoin).

Description of Tradebot:

Abstract

MathStat Basis

On Trading

1) Abstract.

The core idea of the tradebot is a conjunction of several ideas.

Intelligence part is to react on volatility by predicting the probabilities of set of all possible next-second events. Ability to predict the probability is supported by big database with a history of significant events, providing data which are easy to observe using gnuplot or similar software. Some of MathStat parameters allows to analyze some kind of anomalies and react enough good to be profitable.

MQ part allows to send and cancel orders as usual in some basic queue, but allowing ability to have the higher-priority tasks which freeze the basic stream.

Network part is dealing with different CXs each of which has its own API, taxes, minimal orders and how many times per second any operation can be made.

Strategy part is to have a set of hardcoded values as an MVP-approach with aim to develop a declarative language for defining the strategy as advanced approach.

2) The MathStat Basis

We suppose a function called gradient of probability. It defines probability as a Vector Probability<deltaPrices, supposedPrice>, instead of integer/float. The first dimention (deltaPrices number) is a module of difference between current price of the market currentPrice and supposed price for which a probability is calculating. The second dimention (supposedPrice number) is a price for which probability is calculating.

Calculatios of probability heavy relies on the history of market and especially on the history of deals. The data from some trusted data storage are supposed to have a Normal distribution. The sense of the tradebot is to notice something that lays out of 68%/95%/99% probabilities which means sigma=1; sigma=2; sigma=3.

Another supposition is that the probability of volatility in this or that direction is equally and the tradebot’s balance must be as close to 50/50 for the sake of getting math easy. For this goal amount of orders is set to be always minimum, it gives tradebot more entropy to work with.

3) The trading basics

Trading activity of tradebot is understood in having equal amount of funds on buy and sell part but all of that funds are being orders and none are free balance. Types of trading should be limited by market orders because of more predictiveness of the instrument. The data between the tradebot and the cx means two main operations:

1. Check balance as often as possible for fast detecting that something has happened.
2. Set new order or cancel some old one and set the new one (moveOrder).

On My Partcicipation:

Every single workday I am going to spend the time to:

- 4 hours/50%: creative work, such as coding, testing, installing software which is needed for MSI, solving tasks from books with tasks. All the work has to be reproducible. Coding has to be no less 1 pomodoro a day.
- 2 hours/25%: writing daily/weekly/whatever reports to my mentor, writing 1-3 reports to Habr for the sake of propagating the idea of Green Lamp-style education deals. Also writing articles about some topics I want to disclosure on Habr or my blog, also writing a documentation to the software I produce.
- 2 hours/25%: reading technical books without tasks or blogs: STEM, Liberal Arts, Computer Science, some related papers from the Hacker News website.

A working week without 5 pomodoros of coding for public domain should be considered as a bad progress. Reading is not provable, writing w/o code is empty.

Spending Policy

The most resource-demanding part of Green Lamp project is living at winter. I have ability to live in a flat near the city and all I need to pay is communal payments. Including the fact I am practicing growing most of plant food I need, I expect to have a great life with ability to snowboard in winter Kyiv (previously known as Kiev) up to every day. So, most of the money will be spend for eating good food and heating the flat at winter, and I still have an ability to buy a book or hire a Math teacher. The flat is a home office with an ability for me to close the door from others. Also there are some electricity backup options to make sure I can keep my work doing despite of some electricity shortages which are expected.

I am not going to spend the money to any war-related goals and I am not required for Army during the following 6 months, so I guarantee the experiment will not be interrupted by military reasons.

Roadmap

At first I need to configure MQ of any type. It can be ZeroMQ or my implementation of the Linked List. I have started developing the Linked List on my repository a long time ago: github.com/eimrine/zhekaMQ . Seems like the most important part of MQ is just a Doubly-Linked List as the simplest collection which supports asynchronous push and pop operations. I am going to implement an MQ of network operations but firstly need to get acknowledged about some established ways of doing this.

Then I need to choose a database. I prefer some SQL solutions such as SQLite. I don't have much experience with databases so I probably need some help with SQL.

Next point is to solve mathematical part of MSI-tradebot and implement it in code. The solution is some hired mathematician who helps me understand MathStat.

Last crucial point is to add support of cx's API to the tradebot propram, using http/websocket protocol depending on each cx.

Contact Me

Best way to contact me is to write a letter to eimrine@gmail.com .

Probably every time you see this nickname somewhere it is safe to assume this is my account.

Examples:

1)https://habr.com/ru/users/eimrine/
2)https://news.ycombinator.com/user?id=eimrine
3)https://github.com/eimrine/

I do not use Telegram because I do not like social networks, also if it is possible I would prefer to have video meetings using any FOSS utility.

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