The Money Maker 3000

ECS506U Software Engineering Group Project

Problem/Domain Analysis Report

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A well written introduction

1. Introduction:

The money maker 3000 is an investment recommending system which is targeted to all amateur/intermediate investors. This system provides so called signals[1] to the users as to when companies are over or undervalued, hence hinting the user when a there is a good opportunity to invest in the business, or when it is good to sell the shares in the business. The problem being solved is to educate early investors, who may not have enough experience with the markets to make more rational decisions as to when to enter and leave the market. We feel that the markets can be too intimidating for certain people, who should and could invest wisely, provided they have the right tools at their disposal.

In a survey conducted in 2018, 23% of millennials (aged 18 to 37) said they would rather keep their money in cash, rather than invest in the stock market for the next 10 years or more[2]. Many people who would like to invest in the stock market are restricted due to lack of knowledge of how the stock market works. Alongside the lack of knowledge, impatience, fear of failure discourage people to start investing in stocks[3]. We would aim to act as a mentor alongside the user to help them through a difficult introduction to the world of the stock exchange. This way they could feel more encouraged to start mastering the skills needed to be a successful stock broker of themselves.

Unfortunately in the world of the internet, there are many individuals and websites that are scams and not providing with reliable trade signals[4]. People may also be put off by the threat of scammers online, therefore we would need to market our software in a way that would seem appealing to the customers. Hence why the software would not just represent the program but also the brand as well.

Currently, there are a few alternatives; however, they tend to be very complex and not targeted towards new investors. They are also prohibitively expensive[5]. Our software is an alternative system which would be user friendly and be cheaper to use, in the way that users would deposit a desired amount of funds onto the platform and then buy/sell shares, the user would only be charged based on their performance. The user would be provided signals, which would have an explanation behind them, a confidence rating (rating on how good the investment is) and the expected pay-out time. Each user would have an account to which they could see their past investments and their performance. This would allow them to make direct conclusion of their trading history, which would allow them to widen their knowledge for the next time they are investing.

We believe our application is a good solution to get beginner investors to gain the knowledge and experience for investing in the stock market for a much cheaper price. We think that people are willing to pay a small price, in contrast to websites charging hundreds of dollars. We find it very important that people understand the basics of the stock markets, hence why we would provide an interactive glossary tool. The Money Maker 3000 is the software every stock shark should have.

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[1] ~~(Chen, 2018)~~
[2] ~~(Bankrate, 2018)~~
[3] ~~(Scolardi, 2016)~~
[4] ~~(Petrauskas, 2017)~~
[5] ~~(Bowers, 2016)~~

You can't put a citation in the footnote, either have the citation ot the footnote I recommend using IEEE style for citations "[5]", MS Word includes the format

2. Customers and users:

Admin: An administration user is needed so that the flawless running of other users' interactions are ensured. The admin will need to monitor if the system is running as expected and decide if the software needs maintenance or no. Even though our software would be highly automated with the data fed into, the admin would still play a significant role in the system to spot any data that is not supposed to be there.
An admin would be expected to:

- Be very familiar with the 'under the bonnet' components of the software
- Be very flexible, in case the system needs urgent maintenance the admin should be available to do so.
- Have a clear understanding of how signals work

Subuser(s) of an admin may include:

- **Developers:** They would be responsible to carry out any major changes to the software. Even though the admin may have a similar role, the developers would not be responsible for the day to day running of the software. The developers would be responsible to implement new functions in the software, perhaps new algorithms that calculate the signals, new user interfaces, etc.

  A typical developer for our software should:
  - Have a good knowledge of desktop application programming, preferably Java, Python.
  - Have a reasonable knowledge of data gathering from third party via programming.

Why is strategist an admin?

- **Strategist:** They would be responsible for deciding what strategies and metrics would be used to generate signals. For example, they may change the required profit margin for a company to be a signalled from 15% to 20%. As such, they will contact the developer who will actually implement the changes. They have a responsibility to ensure that the signals are as high quality as possible.
  A typical strategist for our software should:
  - Be skilled at valuing companies and performing a fundamental analysis.
  - Be skilled at evaluating how long it will take an investment to become profitable.

User: The main user, the customer who intends to invest money in the signals provided. Investors will make up majority of our users since basically the software is aimed at amateur/intermediate investors with varying backgrounds. They can range from people who are trying to make investing their main income, to people who just want to give investing by signals a try just for a new experience. The users will be the individuals who will make the final decision to invest in a business or they may be brokers who are investing on the behalf of other people. Even though the trade-signals are calculated by the software from either the data entered by the admin or automatically collected from sources online, the user invests in whichever signal he/she wants, if any.

Subuser(s) of a user may include:

- **Broker:** A broker could be responsible for investing on behalf of someone else. In contrast to other users a broker would be well known for his background and knowledge, since a broker is making money on daily basis from this kind of things. Essentially the broker could be using the exact same set up as a normal investor user.

- **Investor**: The main user who will be waiting for our buy-signals to assist them with their investments. Since our investors can be from almost any background, we do not have any knowledge of who they are or what they do. However that does not really concern us, since they would be just our users.
  An investor can:
  - Come from any background
  - Have any knowledge of investing
  - Have any sort of a budget

Man you can't expect someone to just sit and verify every signal geerated by 1000s of stocks!Use AI or some way of automation **Signal Verifier:** The signal verifier is responsible for approving the signals generated. This is a very important job, since external factors could affect the reliability of a signal in real time. For example a good buy-signal has been generated for Apple, but in the very last minute when investors are notified of this good signal, Apple announces that their sales will fall in next quarter, and Apple stocks drop. At this point the buy-signal may be affected and therefore would need to be recalled. Therefore someone would need to watch out for these to make sure investors are not given a false alarm. The signal verifier would have the privileges to edit, delete, suspend signals.
A signal verifier:

- Must have a good knowledge of computers
- Must have a clear and up to date understanding of current affairs
- Must be responsive

3. The environment:

Don't use too much we are developping, we are ...ing and etc. The application will be developed as a desktopp application for the following reasons

~~We are developing a desktop application for a few reasons as will be discussed~~. There are many investment applications available for users. Most of these applications are available for mobile devices or through access of a web browser, with some even being available as a desktop application. These applications; however, are quite complicated and not very suitable for new investors due to their interfaces being quite cluttered, making new users discouraged to use them. Examples of some existing applications are:

- Forex.com
- FxPro.com
- Trading212

These applications are available on various platforms however they all have the same problem of being too complex for new investors.

However, we are choosing to develop a desktop application as it means that there would be no running expenses which would apply if the app would be hosted on a web server. Also, web applications can suffer from latency issues depending on the number of users trying to access the website at the same time. Therefore, having a desktop application would get rid of this issue, as each investor would access the app individually regardless of number of users.

Good justifications

Having an investment application for beginners on a mobile means that the screen is quite small and having all of the information displayed on a small display can be confusing for new investors, since all details are minimized in order to fit on the screen. Therefore, the user would have a much more pleasant experience with the platform being a desktop application.

Our proposed system would be a desktop application as it means that every user would be able to access the app, since the app would be programmed in Java, it means that it would work on the big operating systems being: Windows, MacOS and Linux.

In order to process payments, we would implement a PayPal connection. The reason for this is that new users will feel more secure in transferring their funds to the new platform, as they would not need to give their credit card details directly. In addition to this, it means that the platform would not be saving any private details of the users, meaning that the risk of the details being breached is eliminated.

Well written procedures, I really liked the groupping

4. Tasks and procedures currently performed:

The Money Maker 3000 software is predominantly going to be used by only the admins and the investor users. There are other minor actors which may only interact with the software when needed i.e. the developers. All of the users will be able to perform different tasks within the software.

Investors:

Budget Selecting: This feature will be used by the investors to decide what signals to send to them. In the investment world the price of shares of a company may vary dramatically, therefore whilst some investment opportunities may be good, they may be unaffordable This is why the investor will be able to select their allocated budget for investing so only the best most suitable signals are delivered to the client.

Trade Reasoning: Currently if an investment opportunity occurs the users may have to do their own research and identify why a specific trade was selecting. Our software will do this automatically for them and with each signal we will attach an automated message with the reasoning of why the selected trade is a good investment opportunity

Investing Glossary: Rookie investors may be put off investing if they find the words complicated. This is why instead of having to look what each trade related word means our software will have an integrated investing glossary which will provide all the required definitions for them. The encyclopedia will include other trade specific information which can be extremely useful to all users no matter the experience level.

Logging in/Registering: Every user will be allowed to register a new account and login to into the system. Each account will have a status of either subscribed or not subscribed. Once subscribed they gain access to the signals features otherwise they only have access to other features such as the glossary.

Subscribing/Unsubscribing: Every user account can provide their details so sign up to a direct payment subscription plan via Paypal. Unsubscribing to the service can also be done via Paypal.

Admin:

Disabling Signals: The admin of the software will be able to filter out specific signals that the software sends. Sometimes technical analysis is not sufficient therefore the admin of the software will have access the signal filter where he can block specific signals.

Editing the glossary: Adding/Removing or changing the contents of the encyclopedia and the glossary will be the task of the administrator. They will have full access to the editing tools which they can use to constantly improve the content.

Removing Users: Admins will have the ability of removing any user account which may be in breach of the rules or for any other reason such as not paying the subscription fee for the service.

Developers:

The developers of the software will not contribute to the day to day running of it. Only when required or bugs are identified they may be called in to update/fix the identified areas.

Very badly written, doesn't really compare any existing application
I would rate 2-2.5

5. Competing software:

There are no widespread available options for average retail investors. Most of the competing software takes the form of personal projects on Github. There are certain sites that work similarly to stock screeners but they simply show a list of potentially good companies to invest in. The reason for this is that sophisticated software is typically used for investment banks and hedge funds and tend to be closely protected in order to maintain a competitive advantage.

give some examples

which systems?

The advantages of most of these systems are that they are fairly reliable and perform their programmed functions very well. Furthermore, they have access to a huge volume of data that is from one single source. The data is pulled from the internet and is therefore very up to date. Certain systems are easy to use and have a simple, basic GUI whilst other are much harder to operate.

Which certain systems?

The least intuitive systems seem to be the ones that are text based, where the information about a company must be entered manually by a user. Another disadvantage is that none of the systems seem to be consistently profitable and even when they are, they underperform the benchmark by a significant margin. Some beat the market for long periods of time and then suddenly fail and lose a large amount of money.

In terms of the software that is available, the types of strategies used are very varying. Some tend to make predictions based off of data available about a stock's movement in the last few weeks, days or even minutes, whilst others look at the fundamentals of a company. The

fundamental trading systems rely on publicly available data related to company earnings, debt and assets.

There are just claims and no citations without real insight

There are some very profitable systems that incorporate advanced techniques such as statistical arbitrage and machine learning. Such systems typically perform very well for the amount of risk they take and may even outperform the market. However, the disadvantages of such systems is that they are typically very expensive to set up and require a lot of maintenance and so are only really used by big banks and hedge funds.

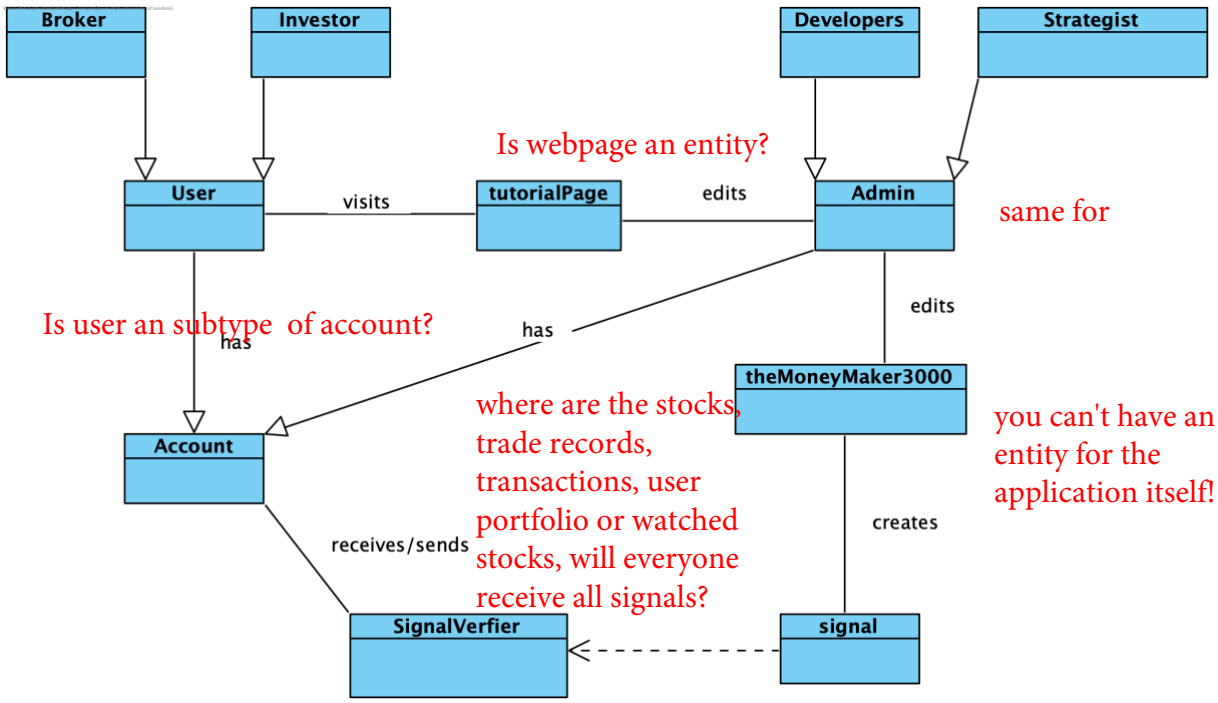
An example of competing software that is closely guarded but uses similar technology would be the Online Trading Academy but it is only available to an exclusive group of "mastermind students". Another example would be fxleaders.com, which have sell and buy signals for currency pair. However, the downside to systems that use technical analysis (looking at chart patterns), is that they sometimes completely fail to generate any profits whatsoever.

How do you know this? Did you use this system

In terms of what can be gleaned from competing software, it is essential that a GUI is used but an easy mistake to make would be to output too much data about a company when making selections. Another requirement would be to ensure that up to date data is used from one source, otherwise getting different values from multiple sources would cause any functions that compute the stock's value to give a potentially unreliable recommendation. Ensuring good design practices would also make maintaining and expanding the code base much easier.

6. Domain Model:

Very bad!



References:

Scolardi, P., 2016. *Huffington Post.* [Online]
Available at: https://www.huffingtonpost.com/paul-scolardi/heres-why-most-people-don_b_7753344.html
[Date accessed: 20 January 2019].
Chen, J., 2018. *Trade Signal.* [Online]
Available at: https://www.investopedia.com/terms/t/trade-signal.asp
[Date accessed: 20 January 2019].
Bankrate, 2018. *Millennials prefer cash over stocks — and it could cost them millions.* [Online]
Available at: https://www.bankrate.com/investing/financial-security-july-2018/
[Date accessed: 20 January 2019].
Bowers, J., 2016. *Best Forex Signal Providers.* [Online]
Available at: https://www.toptenreviews.com/money/articles/best-forex-signals/
[Date accessed: 20 January 2019].
Petrauskas, R., 2017. *How To Know If a Forex Trading Signal Is a Scam.* [Online]
Available at: https://www.ea-coder.com/forex-scam-trading-signals/
[Date accessed: 20 January 2019].