

StockMock

Product Backlog

StockMock - Team 20

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Problem Statement

While there exist countless online stocktrading simulators, such as Stockfuse, Stockwars, and Marketsim, there are none that teach the basics of stock market trading in an entertaining way. It is easy to find expert analyst predictions for any given stock on the market but very difficult to learn about the opinions of your peers and other investors who are in a similar position as you, having almost identical portfolio values. By gamifying the learning process and adding leaderboard rankings, the idea of working with stocks not only becomes more appealing but also a lot more fun. Additionally, learning about different companies before investing in them and educating oneself about the market can be a formidable task by itself. Rather than visiting each company website or a common platform to get updates on news, StockMock provides an in-app news functionality that allows users to simultaneously keep themselves on track with information at the tip of their fingers.

Background Information

There are several stock market apps that contain tutorials about stock trading, these apps are normally optimized for classrooms or very specific users for example MarketWatch. StockMock is targeted for a larger audience and we are adding new features to allow us to hit our broad target market of people who want to learn the stock market and interact with others also learning. StockMock is the best tool to safely learn the ins and outs of trading in an entertaining environment. Unfortunately StockMock currently lacks much needed user to user interaction and available real world information. We aim to add a forum to allow users to interact and learn from each other and allow real world news to be available to the user. We will also have additional functionalities such as a forum, leaderboard, and profiles to make StockMock more informative and immersive, along with updates to UI and to our bot.

Requirements

Functional

ID	Function Requirement	Hours
1	As a user, I would like to access news related to the stock market.	8
2	As a user, I would like to access news from multiple sources.	5
3	As a user, I would like to find news articles about certain companies.	5
4	As a user, I would like to find the latest news articles.	3
5	As a user, I would like to know the source of the news articles.	1
6	As a user, I would like to get all the news articles by a source of my choosing.	3
7	As a user, I would like to find news articles in various languages.	5
8	As a user, I would like to access all news articles from the past thirty days.	3
9	As a user, I would like to be able to access the actual source of the news article.	1
10	As a user, I would like to be able to view all forums.	
11	As a user, I would like to access and view a subtopic in an existing forum.	5
12	As a user, I would like to see the topic and the description for a post in the forum.	3
13	As a user, I would like to view the owner of a particular post.	1
14	As a user, I would like to be able to create a topic.	5
15	As a user, I would like to be able to respond to an existing post.	5
16	As a user, I would like to know the time when the post was created.	1
17	As a user, I would like to see the number of replies made to a post.	3
18	As a user, I would like to view all the members using the StockMock forum.	3
19	As a user, I would like to see the number of posts made on the forum.	3
20	As a user I would like to have my own username.	8
21	As a user I would like to be able to edit my username.	5

22	As a user I would like to be able to view my profile.	8
23	As a user I would like my username visible to other users.	1
24	As a user I would like to be able to edit my profile.	5
25	As a user I would like to be able to view another user's profile.	8
26	As a user I would like other users to not view my private information. (email).	1
27	As a user I would like to view a leaderboard of users.	8
28	As a user I would like to see the username of users with the most money.	5
29	As a user I would like to see the rank of the users in the leaderboard.	1
30	As a user I would like to see the amount of money the users have.	3
31	As a user I would like the leaderboard to be ordered numerically.	1
32	As a user I would like the leaderboard to be dynamic and change as the user accounts change.	3
33	As a user I would like to click on a username and be able to see their profile.	3
34	As a user, I would like to be able to view number users on StockMock	3
35	As a user, I would like to be able to view total number of shares owned on StockMock	3
36	As a user, I would like to be able to view top shares owned on StockMock	3
37	As a user, I would like to be able to see the number of unique companies traded on StockMock	3
38	As a user, I would like the bot to observe actions of users on the leaderboard and suggest stock that I could invest in, when I'm purchasing a trending stock	8
39	As a user, I would like the bot to provide suggestions for stocks I could invest in based off stocks I have already invested in, when I'm purchasing a trending stock	5
40	As a user, I would like the bot to become available whenever I go onto purchase stocks	3
41	As a user, I would like the bot to provide suggested stocks in the form of a list	3
42	As a user, I would like the list of suggested stocks, if any, to have a few suggestions so that the presented list is easier to understand and navigate.	3

43	As a user, I would expect the UI of the bot to have same layout regardless of on which page it's presented on	1
44	As a user, I would expect the UI of the bot to have helpful titles with each list that indicate how the list was generated	1
45	As a user, I would like a tutorial that shows how to search stocks, buy and sell stocks, and check my purchase history.	3
46	As a user, there should be a tutorial showing me how to transfer funds from a real stock app, how taxes with stocks work, and basic terminology from the stock market.	3
47	As a user, I would like a tutorial that shows how to search user profiles, check stock news, and use the Stock Mock forum.	8
48	As a user, I would like an updated Menu bar with the new pages and with categorized drop downs that display relevant pages.	3
49	As a user, I would like a navigation bar in the glossary page that allows me to skip to the alphabetic letter of my choice.	5
50	As a user, I would like the fluctuations in the price of my shares to be dynamically updated in the database.	3
51	As a user, I would like my total amount of money to be dynamically updated based on the fluctuation of the values of my stock shares at the end of each business day.	8
52	I would like to be able to see the thumbnail of the article	3
53	As a user, I would like to see the total invested into each company in my portfolio on my home page.	5
54	As a user, I would like to see my Portfolio Value displayed on my home page	3

Non-Functional

- Our application will be cross browser compatible.
- Our application will safely store user information.
- Our application will be fully explained with tutorials.
- Our application will be written well to allow fast response times.
- Our application will work in browsers of various device size.
- Our application will have an intuitive and well designed user interface.
- Our application will have error message pop-ups that will help the users.
- Our application will be coded well so that it can be modified easily in the future and is also testable.

Usability

The user interface should be ameliorated throughout StockMock wherever there is a need for it. The user interface should allow the user to view statistics on stocks. Additionally, it should be capable to navigating within the StockMock forum. It should be able to create a bridge between the core functionality StockMock application and the Forum. When a user goes on to purchase stocks, it's crucial to the new StockMock experience that the stock purchasing workflow of the application is catered towards assisting users with making their investments. Considering that StockMock is a web-based application, it needs cater to countless devices, and so we need to ensure that the user interface is presented correctly on every screen.

Performance

Google released some research indicating that a user will leave a web page if it takes longer than 3 seconds to load. Based on this and person experience we would like to at the least keep our landing page on under a 3 second loading time. By having a fast loading time at the beginning, slower times for pages farther into using our website will be more acceptable since the user has already invested the time in using our website. Some pages, like stock search, have proven to be slower in the past due to issues with the API, which is out of our control. But by prioritizing the landing page to have the fastest landing time, we will improve the user's experience.

Scalability

With Firebase as our database, Google has developed a suite of products around it to ensure that scalability comes with the ease of simply purchasing a different plan. Starting with their free version, we would have enough memory and power to support the number of students in CS 407 which is more than enough to test and present our website. This also applies to our news API where scalability is supported on a free, startup, and business level purchase plan. With the free plan on our news api, we can already make 1,000 requests per day which will again allow us to continue with testing and presenting our project.

Security

StockMock's Backend functionality will be implemented on Firebase. Considering that StockMock portrays a users interests through their investments, we need to ensure that the users data is kept securely. Firebase is hosted on SSL which allows it provide a secure connection between the host and the server. This ensures that StockMock transfers data to and from the server securely. Additionally, StockMock applies the most effective security rules that Firebase offers, where reading and writing to the database is only allowed if a user is authenticated. Additionally, StockMock should also ensure that when user data is being queried, a user can only query data for the user that is logged in. StockMock's JSON will be structured and accessed in such a manner to ensure that users do not have access to other users data.