Stox - Stock Market Simulator App

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SUMMARY

Our stock market simulator will provide novices to the market a safe introduction by allowing for simulated trading on real-time stock market data using fake currency. Users will also be able to participate in the cryptocurrency market, receive financial news about tickers they follow, and compete to reach the top of the leaderboard. As a stretch goal, we'd like to also add the ability for users to go back in time and learn about various economic events, and what can cause them, using past data at an accelerated pace.

STAKEHOLDER ANALYSIS

The stakeholders for our stock market simulator are students, educators, and people who are interested in the stock market. Our simulator will allow students to gain hands-on experience with the stock market. This will also teach them valuable skills and knowledge that they can use later. Using the simulator, students can use techniques that they learned in class without risking any real money. By having students use the stock market simulator, professors can better teach their students about the real-world application of the strategies they talk about in class. The leaderboard feature can also help professors with understanding who might need more help in understanding the material, as well as gamifying trading in order to appeal to younger users. Our simulator will also help people who are interested in the stock market try out different strategies and buy stocks that they normally would consider too risky. For example, if someone is interested in bitcoin but is scared of the volatility, they can buy it in our application and observe the potential earnings or losses.

TECHNOLOGIES

For our stock market simulation, the technologies we intend to use are HTML, CSS, Bootstrap, Angular, Node.JS, MongoDB, and Express. We are going to use Angular and Node.JS for the base of our application. CSS/Bootstrap will be used to style the web pages and make sure that the design is consistent throughout the pages. We will be using Javascript to pull information from JSON files to make our header using AJAX. We will be using Express to build our stock information API. We will be using MongoDB to store information on news articles, stocks, and our leaderboard.

FUNCTIONAL REQUIREMENTS

Stox has many functional requirements that define its behavior as an application. For example, the application must be able to fetch real-time stock and cryptocurrency data for users to simulate trading with. The user must also be able to view their virtual account balance, progress, and “favorite” stocks for quick access. Along with simulated trading, users must also have the ability to opt into making their progress public in order to compete with other Stox users. Top traders will be displayed on a leaderboard, creating a gamified experience that will be appealing to younger traders.

Additionally, the application must be able to fetch and display recent news articles relating to stocks. Since Stox aims to educate new traders and increase users’ familiarity with the financial trading world at large, these articles provide topical and relevant information that connects users to the real world even as they trade in a virtual bubble.

Furthermore, the end-user must be able to create a Stox account secured with an email and password. The application will then send a confirmation email to the account provided. Users must be able to acknowledge that all trading on the application is purely simulation upon starting.

NON-FUNCTIONAL REQUIREMENTS

Some major non-functional requirements of the Stox app include accessibility and usability. Since many of our users will likely be seeking to learn and educate themselves on the stock market, the application should be intuitive and simple to use. Throughout the development process, friends and students will be asked to explore the app's interface in order to test usability and collect user feedback.

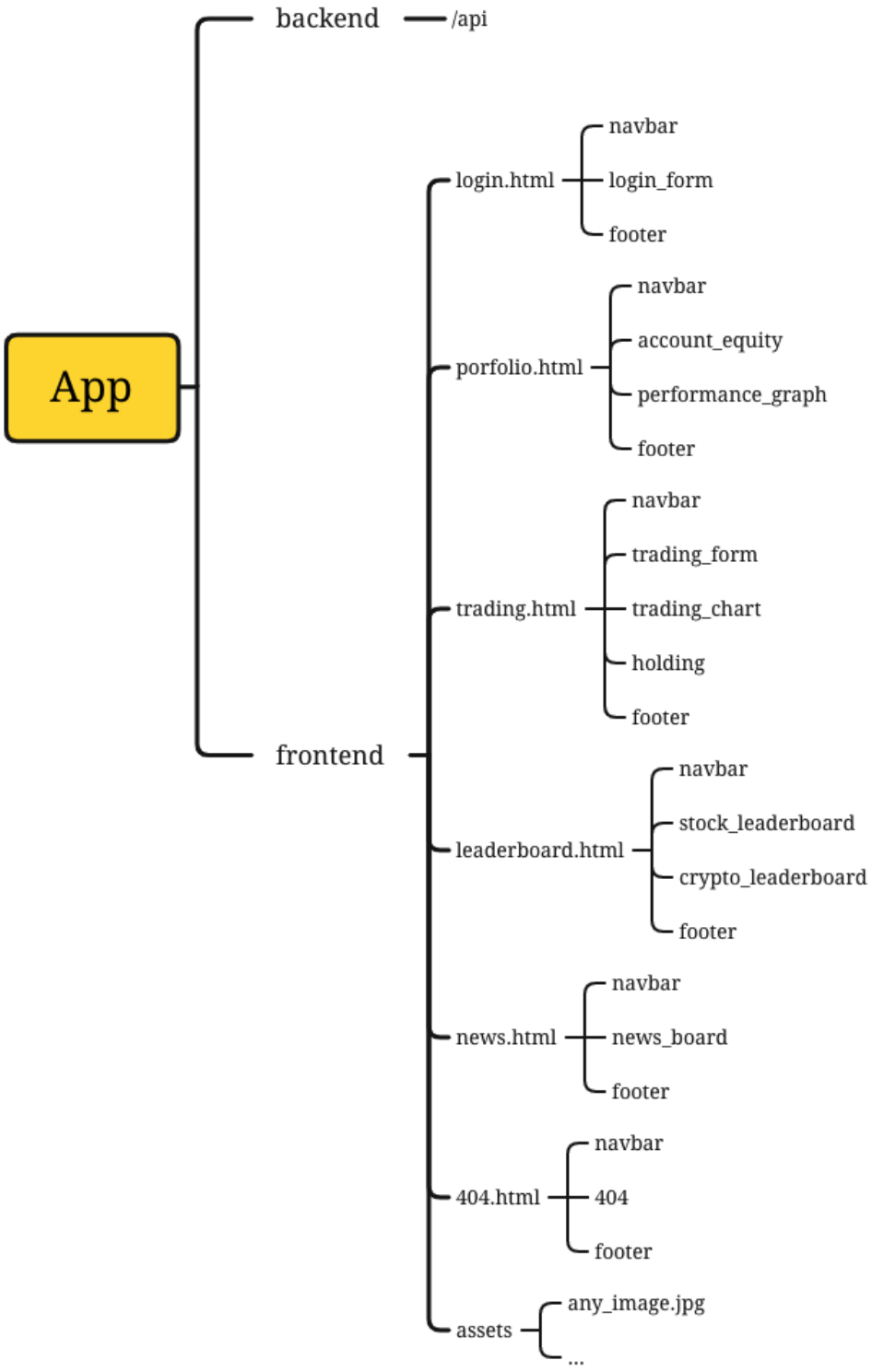
Another non-functional requirement is compatibility. Stox will be compatible with a variety of web browsers including Chrome, Safari, and Firefox. The application should also be responsive on both iOS and Android mobile devices in order to draw in a wider audience of users.

Lastly, security will mainly be implemented through the email confirmation step during the account creation process. This way, users will not be able to create multiple spam accounts or access account information that is not theirs.

PROJECT SCHEDULE

GOAL	DEADLINE
Design API spec	Feb. 7th
Frontend foundation	Feb. 7th
Mock API	Feb. 14th
Authentication & account system	Mar. 7th
Stock/crypto data fetching	Mar. 14th
Stock/crypto investment system	Mar. 28th
Leaderboard system	Apr. 4th
Stock news system	Apr. 11th
Past market data simulations	Apr. 25th

SITE MAP


App
backend
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frontend
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login_form
footer
porfolio.html
navbar
account_equity
performance_graph
footer
trading.html
navbar
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trading_chart
holding
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leaderboard.html
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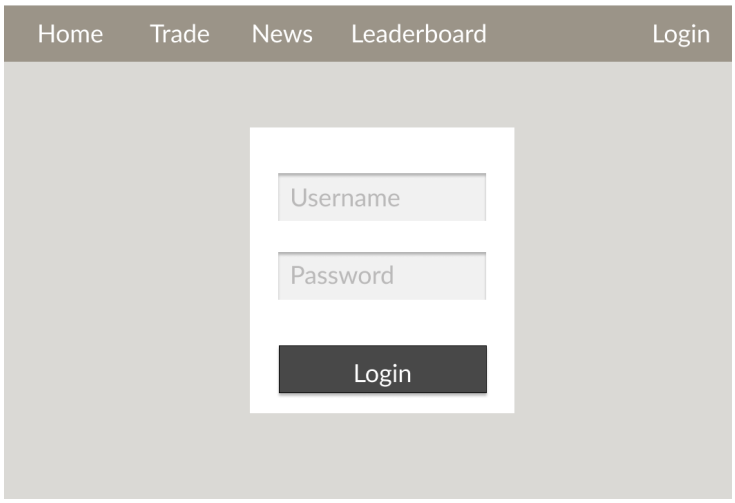
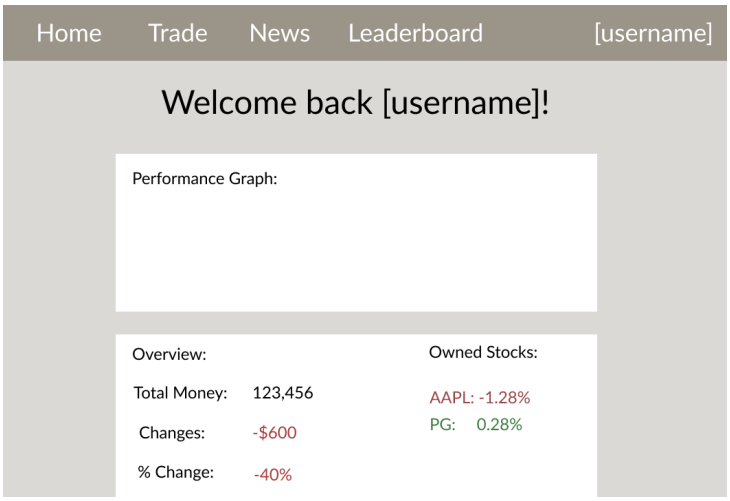
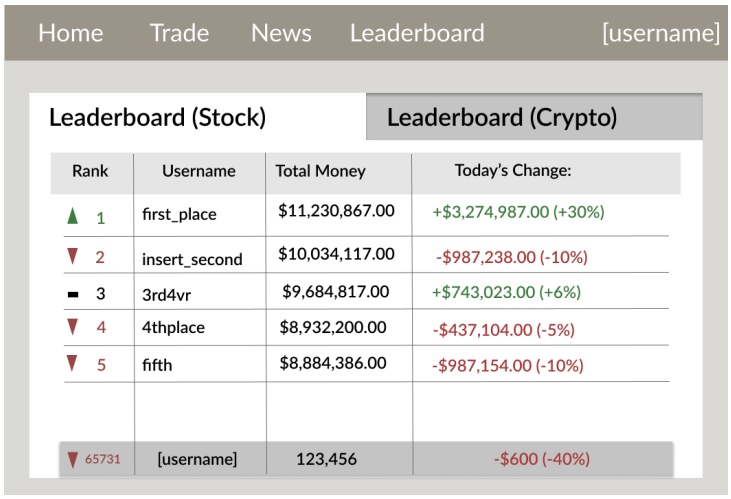
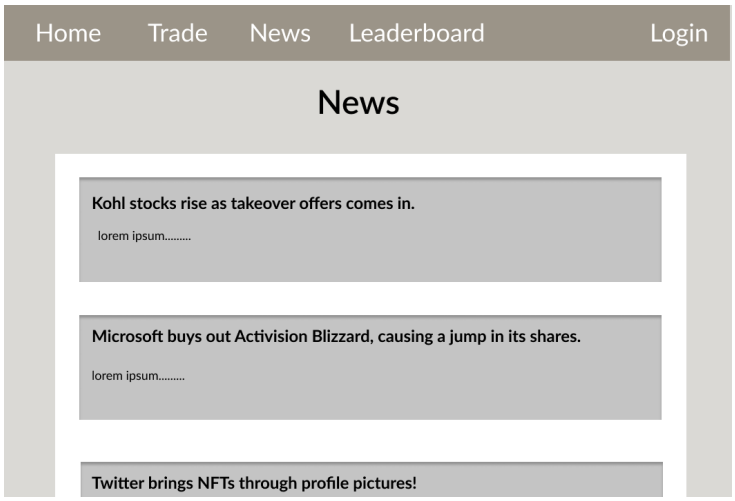
WIREFRAMES


Home
Trade
News
Leaderboard
Login
Username
Password
Login


Home
Trade
News
Leaderboard
[username]
Welcome back [username]!
Performance Graph:
Overview:
Total Money: 123,456
Changes: -$600
% Change: -40%
Owned Stocks:
AAPL: -1.28%
PG: 0.28%


Home
Trade
News
Leaderboard
[username]
Leaderboard (Stock)
Leaderboard (Crypto)
Rank
Username
Total Money
Today's Change:
1 first_place $11,230,867.00 +$3,274,987.00 (+30%)
2 insert_second $10,034,117.00 -$987,238.00 (-10%)
3 3rd4vr $9,684,817.00 +$743,023.00 (+6%)
4 4thplace $8,932,200.00 -$437,104.00 (-5%)
5 fifth $8,884,386.00 -$987,154.00 (-10%)
65731 [username] 123,456 -$600 (-40%)


Home
Trade
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Leaderboard
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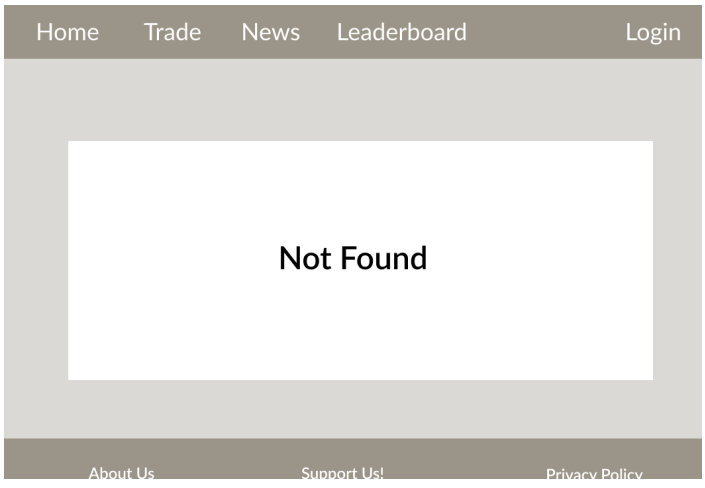
News
Kohl stocks rise as takeover offers comes in.
lorem ipsum.....
Microsoft buys out Activision Blizzard, causing a jump in its shares.
lorem ipsum.....
Twitter brings NFTs through profile pictures!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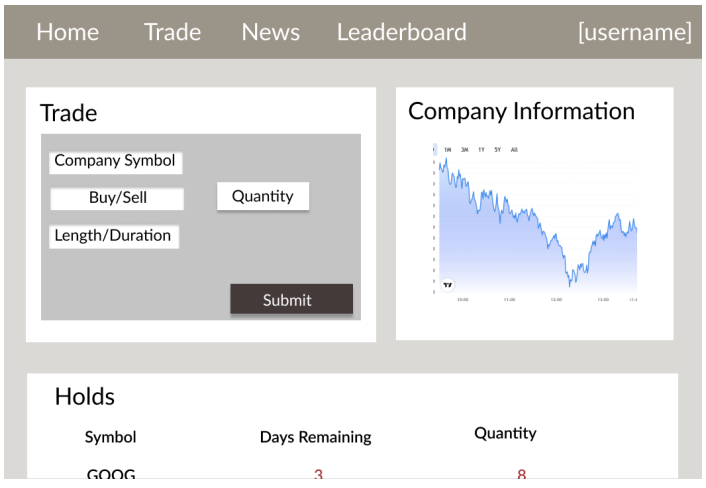

Home
Trade
News
Leaderboard
[username]
Trade
Company Symbol
Buy/Sell
Quantity
Length/Duration
Submit
Company Information
Holds
Symbol
Days Remaining
Quantity
GOOG
3
8

Username

Password

Login

Welcome back [username]!

Performance Graph:

Overview:

Total: 123,456

Changes: -$600

% Change: -40%

Owned Stocks:

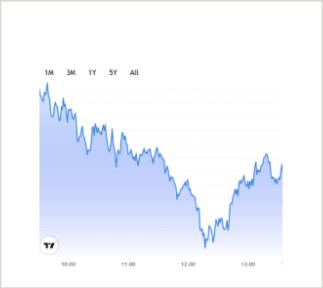
Company Symbol

Buy/Sell

Quantity

Length/Duration

Submit



Stock

Crypto

1	first_place	+$3,274,987.00 (+30%)
2	insert_second	-$987,238.00 (-10%)
3	3rd4vr	+$743,023.00 (+6%)
4	4thplace	-$437,104.00 (-5%)
5	fifth	-$987,154.00 (-10%)
65731	[username]	-$600 (-40%)

News

Kohl stocks rise as takeover offers comes in.

Microsoft buys out Activision Blizzard, causing a jump in its shares.

Twitter brings NFTs through profile pictures!

Netflix shares goes down as companies pull out series from the app.

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