CMPE352 - Milestone 1 Report

GROUP MEMBERS

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1 Executive Summary

The Trader Platform aims to build a social platform in which the users can follow market of stocks, indices, currencies, bonds, funds, and crytocurrencies and trade the equipments. The platform provides a functional interface with various type of interactions targetting to maximize the communication, since our main purpose is to present a useful platform for the benefits of the customers.

1.1 Summary of Project Status

In the beginning of the semester, the Group 6 has gone through a good orientation period and the members have adapted themselved into team work effectively. The group has adopted a mentality caring team organization, discipline and coordination at the core. The group members purely pay attention to the communication between members and the organization of tasks. Since the project should be managed in a cooperation, in accordance, the members aim to present a strong individual effort lacking errors as possible and creating a final product corresponding to the given task as if the product is served by a single person despite the fact that it's a group work. Our approach implies a strong insight into coordination which is at the core of the team work. The assignments of the corresponding tasks have been made according to the workload of the given task and the necessary qualifications, therefore the assignees may handle efficiently and the labor force could be utilized more effectively in this way. As of Milestone 1, the team has carried out necessary tasks with a well-organized structure. The project requirements has been elicitated according to the necessary enumeration rules as requested. The user scenarios and mockups have been built with an appropriate approach so as to produce a more detailed product as possible. However, the mockup 1 had some problems due to the misundertandings in the way the task should be carried out. The deadline of 2 weeks for the diagrams have seperated into 2 parts and the group members carried out the tasks in a way that it increases the communication and information flow as much as possible. As specified before, the group communication is one of our main priviledges. The group members utilizes GitHub, Whatsapp to provide the flow of information. The members discuss under the GitHub issues on the way the task should be carried out or inform each other about the checkpoints the members reached under the process of the task. Our approach enables the use of the GitHub be as efficient as it could be. The minus of the Group 6 is determined as the lack of team name. A well-defined team name would facilitate a better identity and we are already aware of this fact.

1.2 Changes Planned

The Group 6 members have decided to pick a team name and to create a suitable group logo in order to obtain a well-defined identity. The team will attempt to increase the use of Slack as communication channel. The members are aware of the fact that the more communication devices utilized, the more productive and the much better group organization may be provided.

2 List and Status of Deliverables

#	Deliverable	Due date	Status	Explanation
1	Repository Set Up	Feb 18, 2019	✓	ReadMe and Wiki pages are set up. Related files are clustered under the appropriate headers (i.e. Project, Meeting Notes, Assignments etc.).
2	Requirements	Feb 25, 2019	✓	Functional (user, system) and non-functional (accessibility, availability, annotations, performance, privacy and security) requirements are clarified and listed.
3	User Stories	Mar 4, 2019	✓	Three different stories are created for three different roles (Basic, trader and guest user).
4	Mock Ups & User Scenarios	Mar 4, 2019	✓	Scenarios and the corresponding mock-ups are designed based on the user stories.
5	Class Diagram	Mar 18, 2019	✓	Class diagram of the project is created.
6	Use Case Diagram	Mar 18, 2019	✓	Use Case diagram of the project is created.
7	Sequence Diagram	Mar 18, 2019	✓	Sequence diagrams for some scenarios (sign up, forgot password, create article etc.) of the project is created.

3 Evaluation of the Status of Deliverables

In general we believe that every deliverable has a huge impact in our planning and they affect not only the overall project but also each other as well. Almost every deliverable turned out as expected. Overall, through the first milestone in the project, group members worked quite harmoniously and that's why the deliverables are also coherent with each other.

3.1 Repository Setup

Firstly, instead of diving directly into the project, we have decided how and where our created contents and deliverables should be reserved. Wiki page is the main land for us, where all deliverables are reachable from this page. Afterwards, we have defined our favorite repositories besides our short self instructive text.

The repository is indeed helpful about tracking the project progresses. We can return back and look at what we have done and achieved by looking meeting notes. In addition to usefulness for the project members, it will be also very helpful for the new comer, who can track the project history and gain the idea of project.

3.2 Requirements

After many customer meetings and feedback, we were able to define our project requirements. It has now enough power to describe all functional and non-functional properties of project. However, in the implementation part, we may need to change some of them. To increase its expressibility, we have added glossary section, in which some useful words are defined.

Since all the things we have done are shaped by requirements, its role on our project is huge. It leads us to completion of the project. While we are developing the project, we always look at the requirements and then take action.

3.3 User Stories

In the beginning, in order to have a perspective about the subject we looked into the similar user stories and researched the usual impacts of user stories in project planning. Then a member was assigned for each type of user and after creating characters of their owns, each member wrote their characters' stories with both the impact of them in our project and their character analysis.

Thinking of different types of characters using our project, we believe, increased our project's possible flexibility and forced us to design the system compatible for every type of user.

3.4 Mock Ups & User Scenarios

After writing the user stories, every person who were responsible of user stories wrote an example scenario for their own characters. These scenarios were supposed to reflect every possible usage of the system for that specific type of user. Again, in order to have a perspective we, first, looked into the different scenarios and with the aim to include every possible situation in the system, wrote user scenarios. And for every corresponding user scenario a mock-up, a series of screen-shots of the system for each action that the user took, needed to be written. For this again a person was assigned for every type of user and we created the mock-ups by using the mockflow interface.

User scenarios and the mock-ups helped us to visualize and to more accurately design the whole system. It also helped us to understand what the actual requirements of the project are.

3.5 Class Diagram

Class diagram is a huge diagram consisting of every class of the project that is required and methods and variables of each class. And classes are connected with each other if necessary and if they have a relationship with each other (such as extending, inheriting). After a little bit of a research about the class diagrams we thought of the possible classes of our project and then assigned these possible classes into different group members. After the first version of the classes there have been lots of changes and walkthroughs. But after the final version was completed we started drawing the diagram by using draw.io interface. Class diagram was the first step to design the actual project in a programming manner and it was the necessary diagram to start with before continuing with sequence and use-case diagrams.

This diagram helped us to think of the project which was quite abstract until that time, as an actual program and helped us to imagine it as a real product.

3.6 Use Case Diagram

After creating the class diagram next step was to create the use-case diagram. This is a diagram which shows the interaction between a user and the system in overall. It shows all the possible actions every type of user can have and for every action which methods of which class that they need. After having the first perspective we walked through the class diagram and with coordination with it thought of the possible actions of a user. After designing the actions and finding the corresponding methods that are necessary for them, we started drawing the diagram by using lucidchart interface.

Overall, use-case diagram helps us to think of our system as a whole and by making every method a part of the actions it helped us to visualize the connections between the classes and the interaction between the system and the user thoroughly.

3.7 Sequence Diagram

Our sequence diagram is able to express our system workflow. It takes its power from class diagram where the methods are defined. It covers most of the classes methods and explains how they should be used. With sequence diagram, we can visualize how our system should work in code level. It is good to have since all user actions and their affects can be seen on the paper.

4 Summary of Work done

Group Member	Contribution
Baran Deniz Korkmaz	Created the wiki page. Updated personal photos in the wiki page. Reviewed and expanded the requirements page. Created and designed the class diagrams. Created Designed the use-case diagram. Wrote the executive summary for milestone report.
Barış Ege Sevgili	Created README file. Created a slack channel for preparing weekly meeting agenda. Wrote a web scenario about a basic user. Added the preconditions to basic user story. Created and designed the use-case diagram. Updated use-case diagram according to feedback. Reviewed and merged other peoples reports.
Burak İkan Yıldız	Created the wiki page. Created and edited the project requirements page. Edited the user requirements according to feedback. Created and designed the use-case diagram. Updated use-case diagram according to feedback. Updated the requirements according to the feedback. Wrote the communication plan & requirements and mock-ups for milestone report.
Burak Yüksel	Created the wiki page. Wrote a web scenario about a guest user. Created and Designed the class diagram. Added preconditions to guest user story. Updated the class diagram according to the feedback. Created the design part for milestone report.
Enes Turan Özcan	Created README file. Reviewed and expanded the requirements page. Created the web mock-ups according to the scenarios. Created and designed the sequence diagrams. Updated the mockups according to the feedback. Listed the status of deliverables for milestone report.
Eray Sezgin	Created a Slack channel for general communication about project. Created the web mock-ups according to the scenarios. Updated mockups according to the feedback. Reviewed and merged other peoples reports.
Fatih Mustafa Kurt	Created the tags. Created the template of the glossary page. Fix the glossary page according to the feedback. Created and designed the class diagram. Updated the class diagram according to the feedback. Wrote the evaluations of the deliverables for milestone report.
Furkan Nane	Created README file. Created communication plan page. Created questions-answers page for the customer questions. Created and designed the use-case diagram. Wrote the executive summary for milestone report.
Irmak Güzey	Created a template for meeting notes. Wrote an android scenario about a trader user. Created and designed the class diagram. Added preconditions to trader user story. Updated the class diagram according to the feedback. Wrote the evaluations of the deliverables for milestone report.
Sadullah Gültekin	Reviewed and expanded the requirements page. Created the web mock-ups according to the scenarios. Create and designed the sequence diagrams. Updated mockups according to the feedback. Wrote the summary of work done by each member of group for milestone report.
All Members	Updated git profile pictures. Created favourite repositories page.

5 Communication Plan

Communication Channel	Purpose	Frequency	Participants
Slack	Used for collecting ideas and creating agenda for meetings.	Open Channel	All team
Whatsapp	Used for fast and daily communication.	Open Channel	All team
Github	Main channel where the project develops, includes all documentation.	Open Channel	All team
CMPE Building	Face to face meetings will be here.	Once a week	All team

6 Requirements And Mockups

6.1 Glossary

- **Annotation:** A note by way of explanation or comment added to a text, diagram or image.
- **Basic User:** The user who has capabilities of guest user and is capable of accessing basic functionalities of the platform. Authentication is required.
- **Events:** The news about economics.
- **Guest:** The user who is able to view the price of a trading equipment and read user comments about trading equipment. No Authentication is required.
- **History:** Users' actions about articles, events, tradings/investments such as commenting, rating, selling stocks, following a user.
- **Portfolio:** Grouping of financial assets such as stocks, bonds, commodities, currencies and cash equivalents, as well as their fund counterparts, including mutual, exchange-traded and closed funds.
- **Prediction:** The predicted states about trading equipment in the future.
- **Profile**: A visual display of personal data associated with a specific user.
- **Significance Levels:** The importance of events.
- **Semantic Search:** Find semantically similar users and trading equipment based on the context information provided in the semantic tags.
- **Strong Password:** Consists of at least six characters (and the more characters, the stronger the password) that are a combination of letters, numbers and symbols.
- **Trading Equipment:** Trading equipment is defined as trade indices, stocks, ETFs, commodities, currencies, funds, bonds, and cryptocurrencies.
- **Traders Platform:** Traders platform lets people follow and trade indices, stocks, ETFs, commodities, currencies, funds, bonds, and cryptocurrencies.
- **Trader:** The user who has capabilities of basic user and is capable of trading/investing in any trading equipment. Authentication is required.
- **User:** A person who is capable of interacting with system via an interface.

6.2 Requirements

- 1. Functional Requirements
- 1.1. User Requirements
- 1.1.1. Guest
  - 1.1.1.1. Guests shall be able to only view the price of trading equipment.
  - 1.1.1.2. Guests shall be able to browse economical articles, trading equipment and read comments about them.
- 1.1.2. Login & Registration
  - 1.1.2.1. Users shall be able to create an account by providing his/her username, e-mail, password and location using Google Maps.
  - 1.1.2.2. Registered users shall be able to login to the application by providing his/her username or email and password.
  - 1.1.2.3. Users should be able to sign up via Google account.
  - 1.1.2.4. Already signed users should be able to sign in via Google account.
  - 1.1.2.5. User shall validate account via e-mail.
  - 1.1.2.6. The users who want to be trader user shall provide their IBAN number.
  - 1.1.2.7. Users shall be able to reset his/her password if he/she forget password by clicking "Forgot your password?" button.
- 1.1.3. User Follow System
  - 1.1.3.1. User shall be able to follow other users directly if the user's profile is public.
  - 1.1.3.2. User shall be able to send follow request to users that have private profile, and shall wait to request to be accepted.
  - 1.1.3.3. User shall be able to accept or reject the following requests.
  - 1.1.3.4. User shall be able to follow trading equipment.
  - 1.1.3.5. User shall be able to set alerts for certain levels of trading equipment
- 1.1.4. Portfolio System
  - 1.1.4.1. Users shall have at least one portfolio.
  - 1.1.4.2. Users shall be able to create/delete his/her portfolios.
  - 1.1.4.3. Users shall be able to change the name of his/her portfolios.
  - 1.1.4.4. Users shall be able to add/delete new trading equipment to his/her portfolio.
- 1.1.5. Trading Equipment System
  - 1.1.5.1. Users shall be able to read/rate other users' articles, comments about trading equipment.
  - 1.1.5.2. Users shall be able to write new articles and comments, to make a prediction about any trading equipment, and to view daily prediction rate of trading equipments.
  - 1.1.5.3. Users shall be able to edit/delete his/her articles comments.
  - 1.1.5.4. Trader users shall be able to trade trading equipment.
  - 1.1.5.5. Trader users shall be able to set stop/loss limits.
- 1.1.6. Profile Page
  - 1.1.6.1. Users shall be able to make their profile public or private.
  - 1.1.6.2. Users shall be able to see their own portfolios in their profile page.
  - 1.1.6.3. Users shall be able to edit their own bio in profile page.

  - 1.1.6.4. Users shall be able to reach their own followers and following list and their old articles/comments.
  - 1.1.6.5. Users shall be able to see their own prediction success rate.
  - 1.1.6.6. Users shall be able to see other users' prediction success rate in their profile.
  - 1.1.6.7. Users shall be able to see other users' followers, articles, following list if the profile is public or if he/she follows him/her.
  - 1.1.6.8. Users shall be able to only see other user's prediction rate if their profile is private and if he/she is not his/her friend.

- 1.1.7. My Investments Page
  - 1.1.7.1. Trading users shall have my investments page.
  - 1.1.7.2. Basic users shall not have my investments page.
  - 1.1.7.3. Trading users shall be able to invest on trading equipment in my investments page.
  - 1.1.7.4. Trading users shall be able to create a buy order for a trading equipment for a specified rate in my investments page.
  - 1.1.7.5. Trading users shall be able to set stop/loss limits on trading equipment in my investments page.

- 1.1.8. Profit/Loss Section
  - 1.1.8.1. Users shall have a profit/loss section which is private to each user.
  - 1.1.8.2. Users shall be able to see profit/loss in terms of currency chosen by user.
  - 1.1.8.3. Users shall be able to manually enter investments to see calculated profit/loss.

- 1.1.9. News Section
  - 1.1.9.1. Users shall be able to see news fetched from third party website.
  - 1.1.10.1. Users shall be able to be redirected to third party site when click the new he would like to read in detail.

- 1.2. System Requirements

- 1.2.1. Homepage
  - 1.2.1.1. System shall provide a homepage for each user according to user interests.
  - 1.2.1.2. System shall provide a homepage that enables registered users to see economic events, news and trading commodities that user is interested in.
  - 1.2.1.3. System shall provide a navigation bar in order to enable users to switch to their profile section, articles section, news section etc.

- 1.2.2. Events
  - 1.2.2.1 System shall provide an "Events" section in which there are economic events, articles, news that is fetched from a third-party source.
  - 1.2.2.2. System shall assign different significance levels for economic events.
  - 1.2.2.3. Events shall be updated daily.

- 1.2.3. Search
  - 1.2.3.1. System shall support searching for users and trading equipment.
  - 1.2.3.2. System shall support different type of searching criteria.
  - 1.2.3.3. System shall support semantic search based on the context of information.
  - 1.2.3.4. System shall support location-based search (be able to filter users based on city or district).
  - 1.2.3.5. System shall support filtering events depend on their significance.

- 1.2.4. Notification & Recommendation

  - 1.2.4.1. System shall notify users in accordance with their alerts
  - 1.2.4.2. System shall recommend articles, trading equipment, commodities for the users based on their history in the system.

- 1.2.5. Trading
  - 1.2.5.1. System shall provide a "Trading" section where Trader users can buy/sell commodities, trading equipment.
  - 1.2.5.2. System shall automatically detects when a trader make a transaction and update his/her portfolio.
  - 1.2.5.3. System shall highlight the commodities that are trend or the user may be interested in based on his/her history.

- 1.2.6. Money Transaction
  - 1.2.6.1. System shall provide a simple, seamless and secure way for money transaction for trader users.
  - 1.2.6.2. System should cooperate with 3rd party applications for money transaction and mobile payments.

- 2. Non-Functional Requirements

- 2.1. Accessibility and Availability
  - 2.1.1 The system shall have a native web and native mobile client.
  - 2.1.2 The system shall be deployable on a remote and manually configurable server.
  - 2.1.3 The website and the mobile application shall be available in English.
  - 2.1.4 The system shall support UTF-8(Unicode) charset.
  - 2.1.5 The web app shall provide support for Screen Reader applications.

- 2.2. Annotations
  - 2.2.1 System shall support W3C Web Annotation Data Model and follow W3C Web Annotation Protocol so that the contents can be annotated by users.
  - 2.2.2 System shall follow the standards introduced by the W3C.

- 2.3. Performance
  - 2.3.1 System shall respond to request in at most 5 seconds.
  - 2.3.2 System shall use queue system to reduce response time.
  - 2.3.3 System should cache the commonly used contents to reduce response time.
  - 2.3.4 Native Android app and web app should run smoothly and use low system resources.

- 2.4. Privacy
  - 2.4.1 The user shall be able to respond follow request before following is activated.
  - 2.4.2 The user shall be able to choose whether he/she wants his/her profile to be public or private.

- 2.5. Security
  - 2.5.1 Financial Transactions shall be reliable and secure.
  - 2.5.2 System shall be invulnerable against potential SQL injection, XSS attacks and DDOS attacks.
  - 2.5.3 System shall force users to use strong passwords, which must consist of at least six characters (and the more characters, the stronger the password) that are a combination of letters, numbers and symbols.
  - 2.5.4 System shall protect users' information by denying any unauthorized accesses.
  - 2.5.5 System shall store hashed version of user sign in password and don't store the password itself in anyhow.
  - 2.5.6 System shall backup all data to AWS Storage after each week.
  - 2.5.7 System shall encrypt every connection and data transfer by using latest version of TSL encryption.
  - 2.5.8 The deployment server must be secured from any possible attack types, such as open port issues.

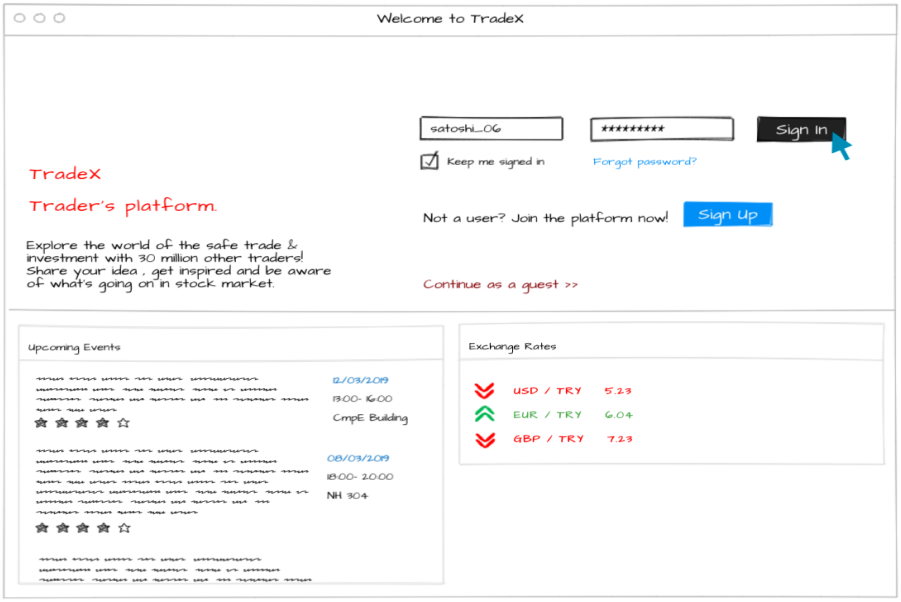
7 Mock-ups

User Story 1

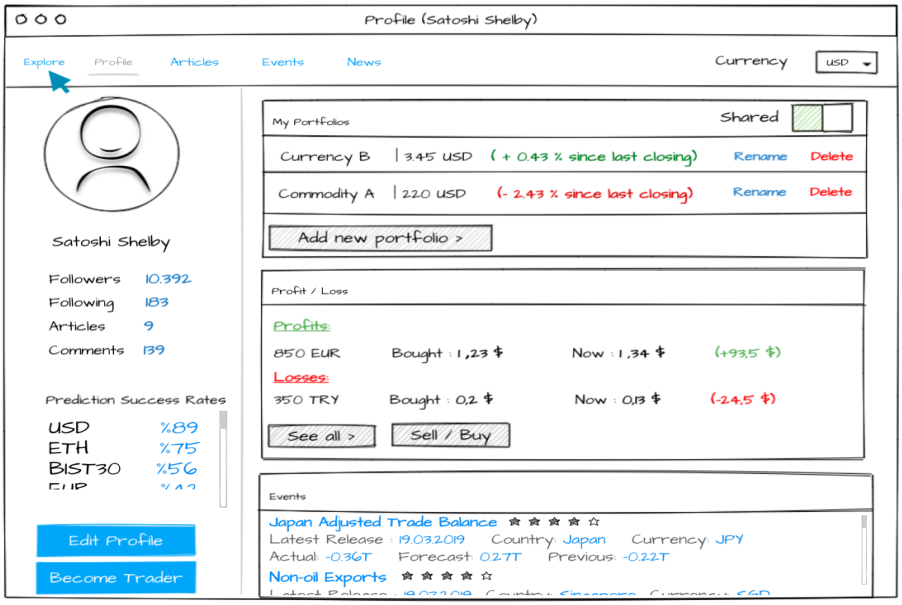
Basic user Satoshi Shelby celebrates his 10K+ followers with an advanced analysis article upon the last weeks favourite currency Etherium.

Flow

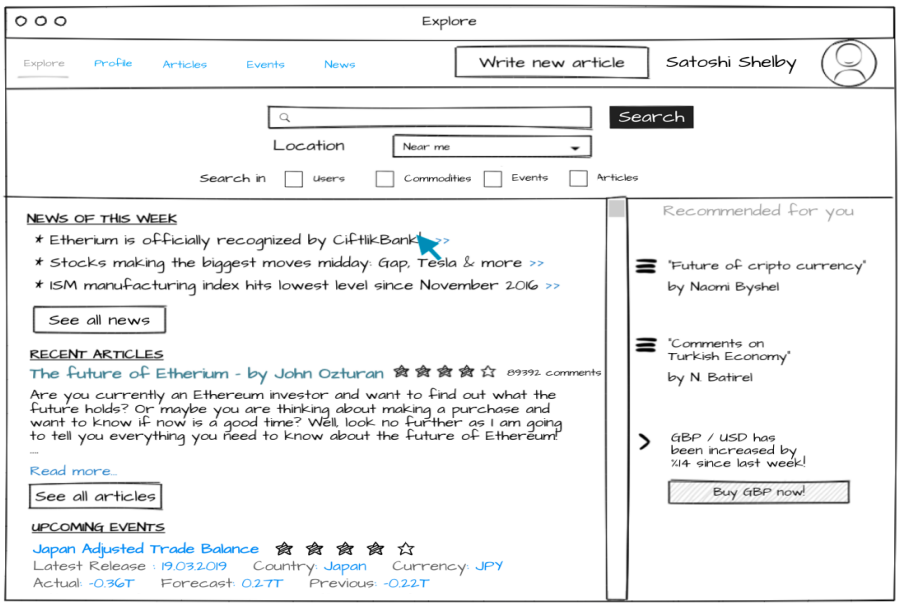
* Already signed in user logins the system.



* After he logs in, the system directs him to his profile page and he goes crazy about 10K+ followers.

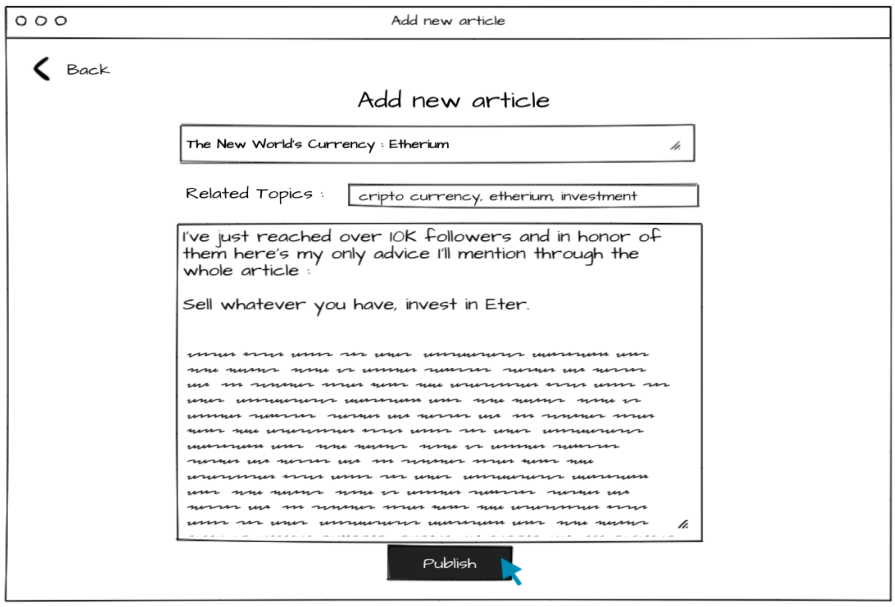


* He navigates to Explore page to see what happens in stock market.

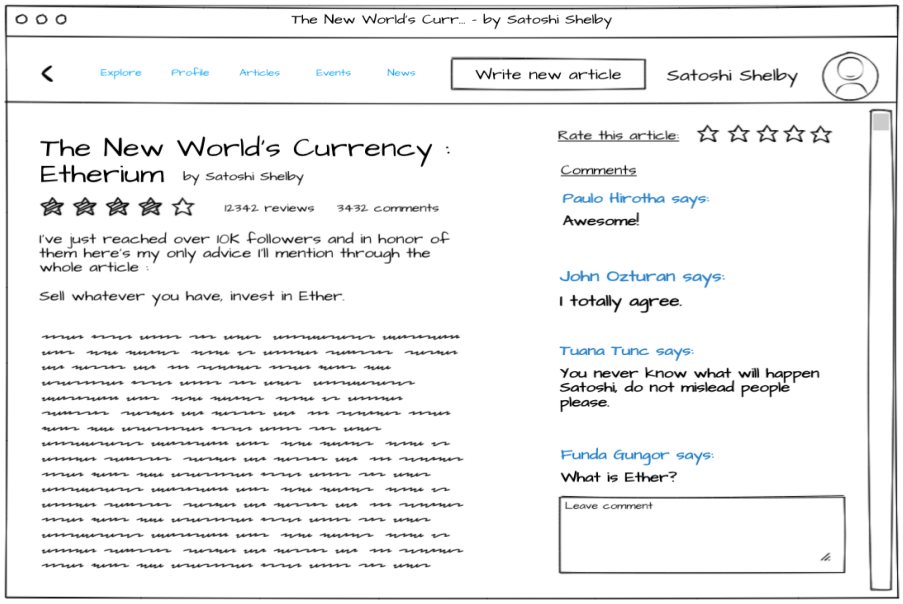


* The news about Etherium catches his fancy and he starts reading more about that.

* Then he decides to write an article about investing in Etherium as a gift to his 10K+ followers.



* After a short time he publishes his article, thousands of feedbacks are given.



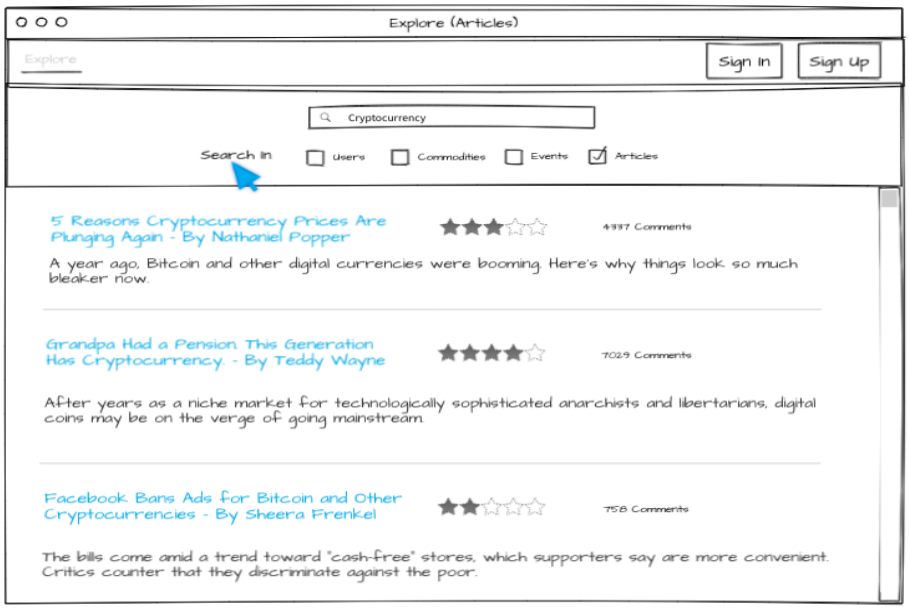
User Story 2

Guest user Huseyin Gozukara uses the system to get a general idea about the commodities on the market, and decides which one he will make an investment.

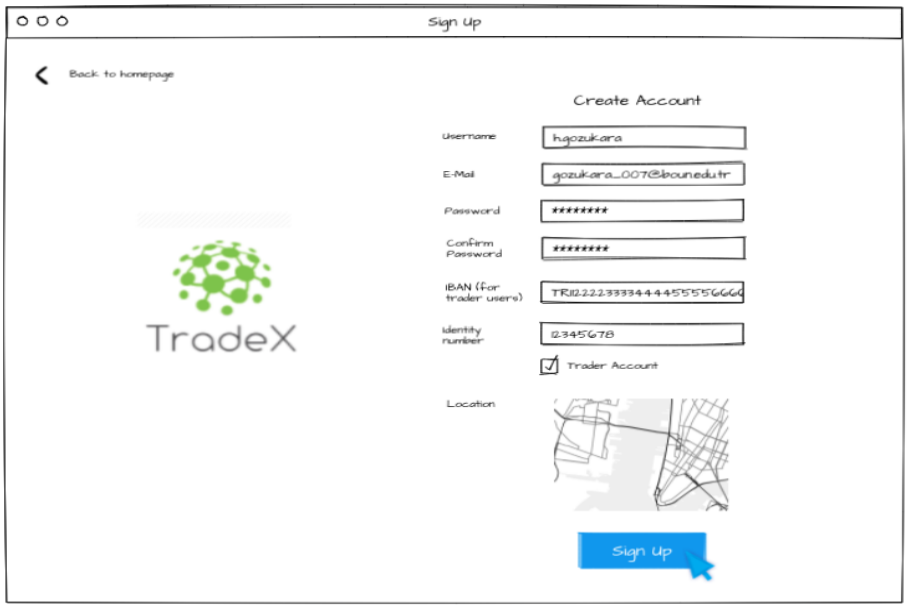
Flow

* Guest enters for the first time to the system. Then he searches for the currency and views the price of them.

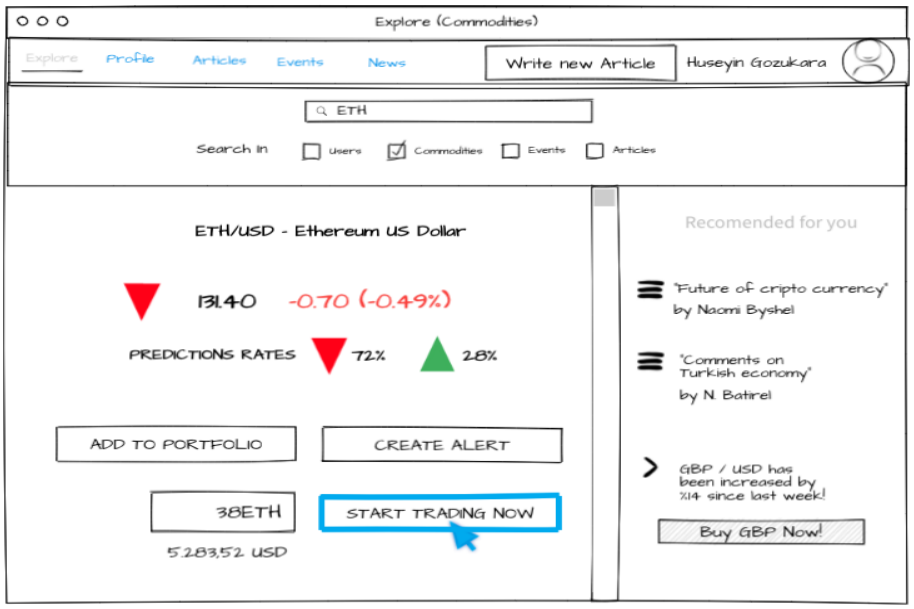
* Guest also browses some articles and reads the comment of those to get an idea about the things that he can invest



* Guest decides to sign up and enters his personal information in order to utilize his money and make a profit



* The user sees that %72 of the predictions about Ethereum's daily price are downward. Then creates a 38ETH buy order at rate 131 ETH/USD

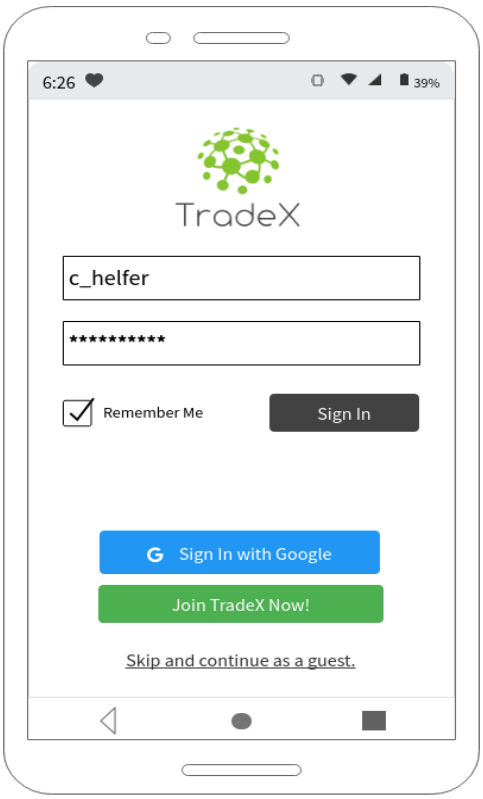


User Story 3

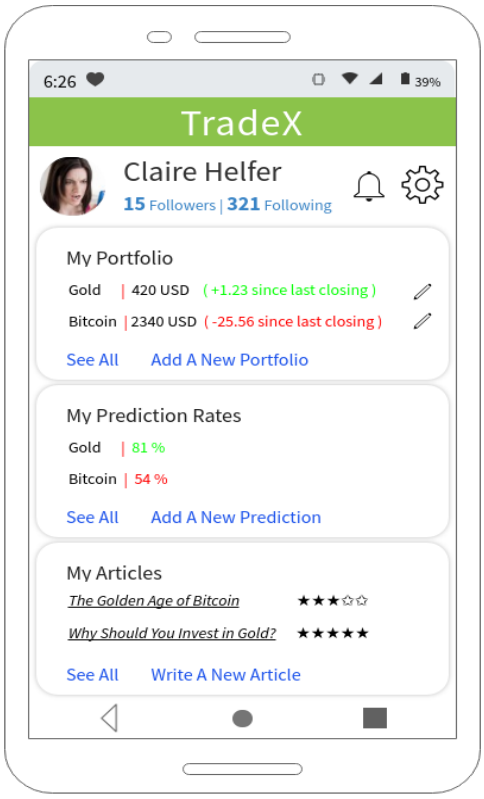
Trader User Claire Helfer does her regular visits to her neighbor's public profile page and ensures that her portfolio complies with his neighbors'.

Flow

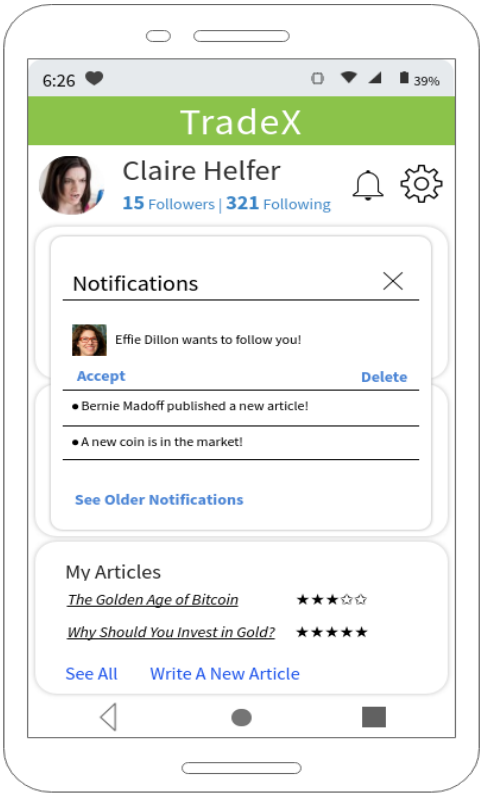
* She runs the app logs in entering her username and password.



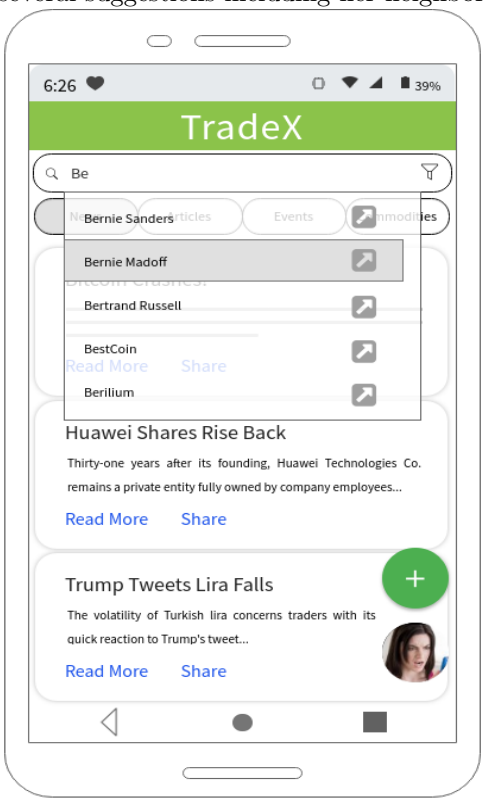
* She opens her profile to review her portfolio and profits/losses from the last investment she made; buying American Dollars and Bitcoin.



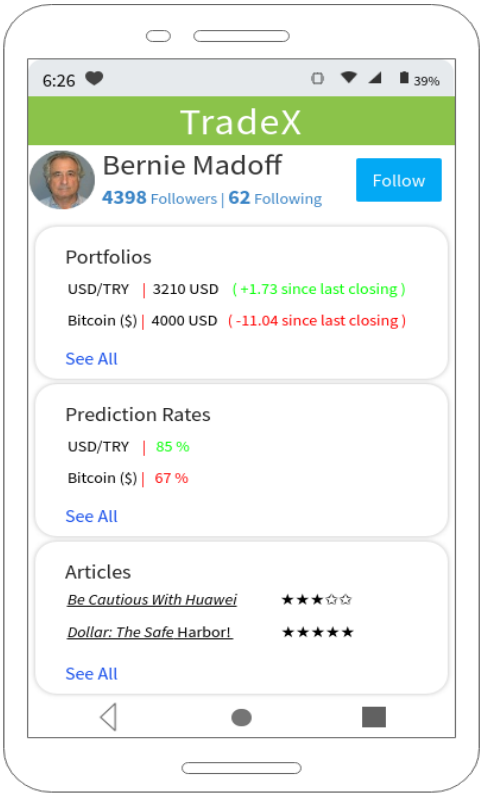
* She sees a new follow request from Effie Dillon, someone she doesn't know. And she declines the request.



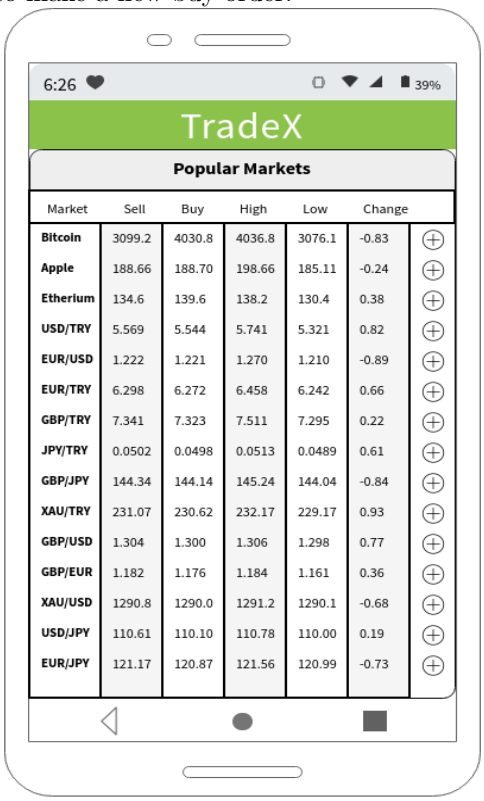
* After logging in she sees the explore page where she can make a search. She wants to search for her neighbor Bernie Madoff. As she types "be" she receives several suggestions including her neighbor.



* She taps on his name and goes to his profile which is public. She sees that he has a success rate of %85 for American Dollar in his Profit/Loss page.

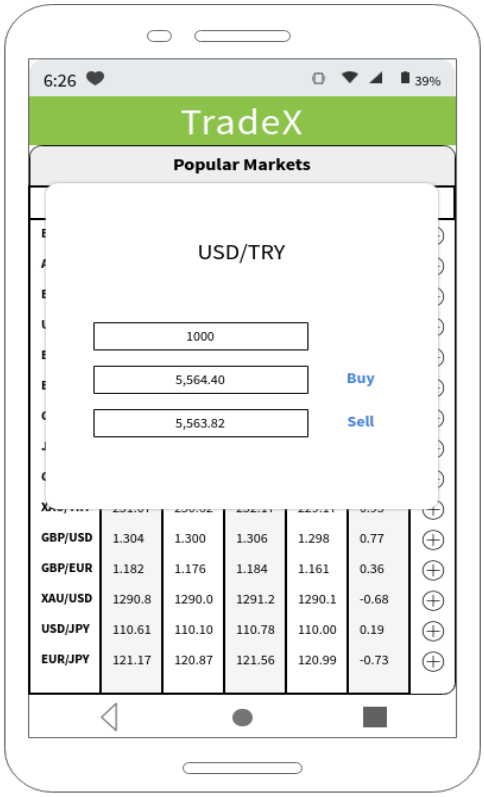


* Then she goes to the Investments page. She intends to make a new buy order.



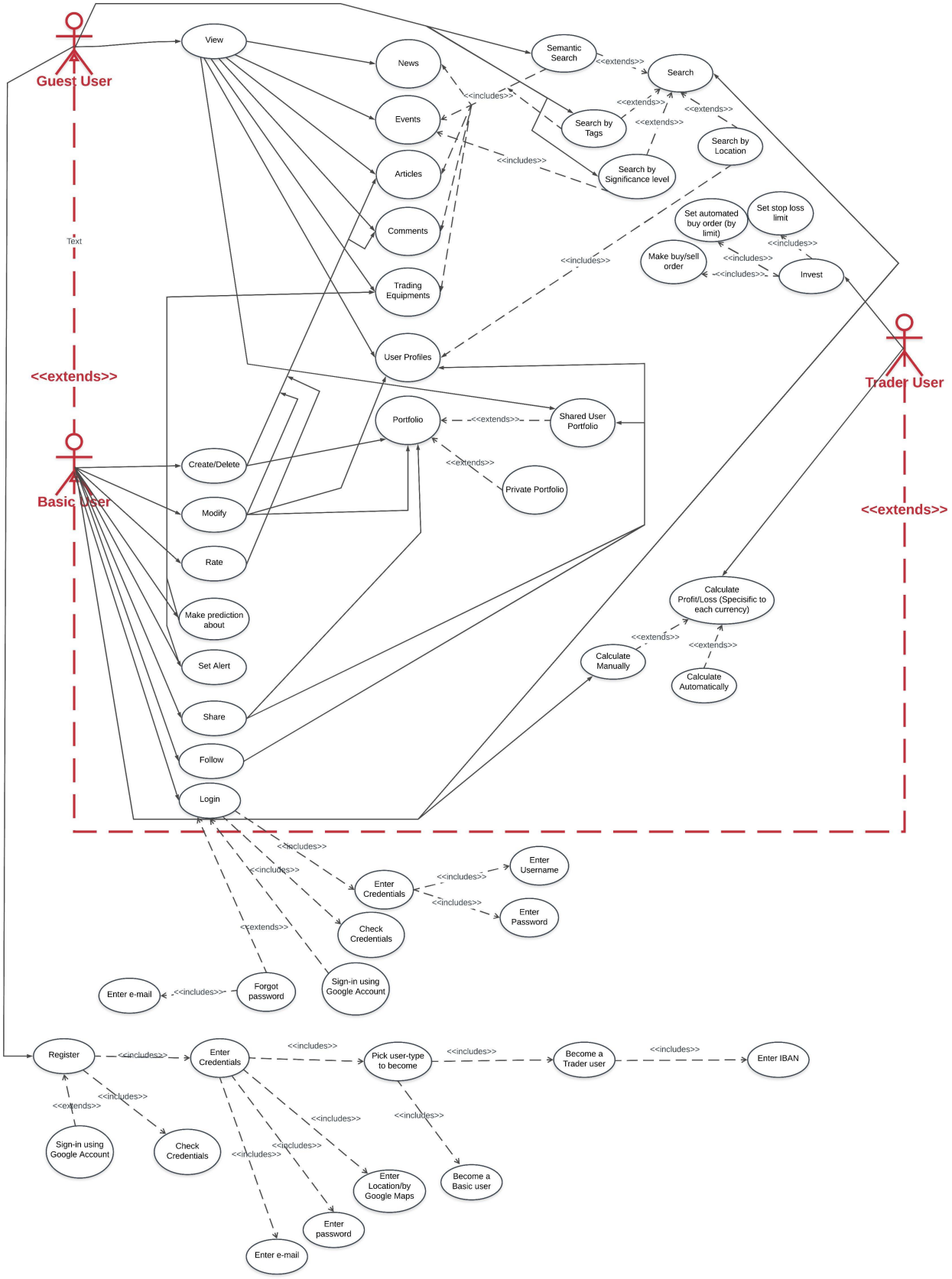
Market	Sell	Buy	High	Low	Change
Bitcoin	3099.2	4030.8	4036.8	3076.1	-0.83
Apple	188.66	188.70	198.66	185.11	-0.24
Etherium	134.6	139.6	138.2	130.4	0.38
USD/TRY	5.569	5.544	5.741	5.321	0.82
EUR/USD	1.222	1.221	1.270	1.210	-0.89
EUR/TRY	6.298	6.272	6.458	6.242	0.66
GBP/TRY	7.341	7.323	7.511	7.295	0.22
JPY/TRY	0.0502	0.0498	0.0513	0.0489	0.61
GBP/JPY	144.34	144.14	145.24	144.04	-0.84
XAU/TRY	231.07	230.62	232.17	229.17	0.93
GBP/USD	1.304	1.300	1.306	1.298	0.77
GBP/EUR	1.182	1.176	1.184	1.161	0.36
XAU/USD	1290.8	1290.0	1291.2	1290.1	-0.68
USD/JPY	110.61	110.10	110.78	110.00	0.19
EUR/JPY	121.17	120.87	121.56	120.99	-0.73

* And she makes a buy order for a 1000 dollars.

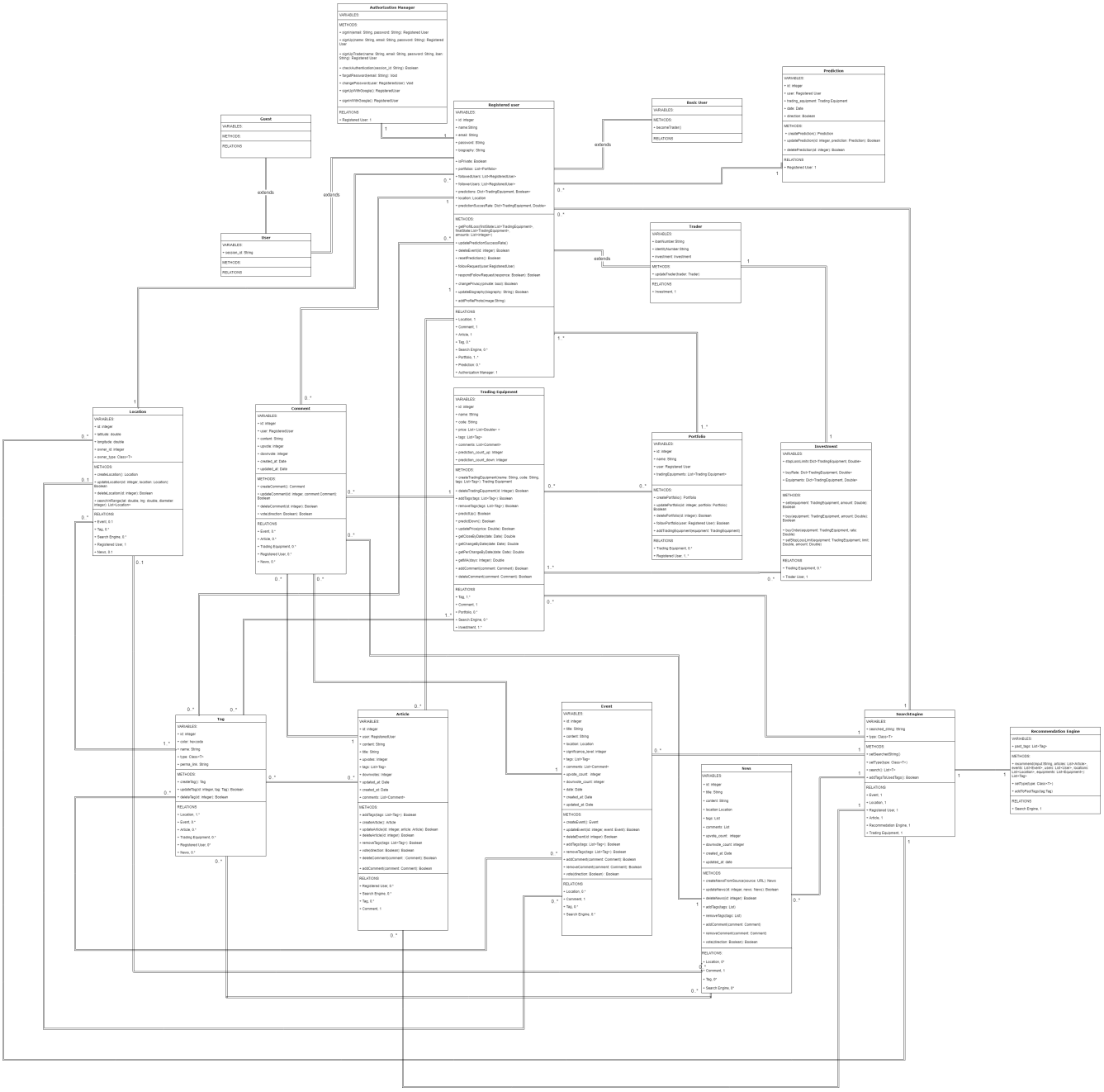


8 Design

8.1 Use Case Diagram

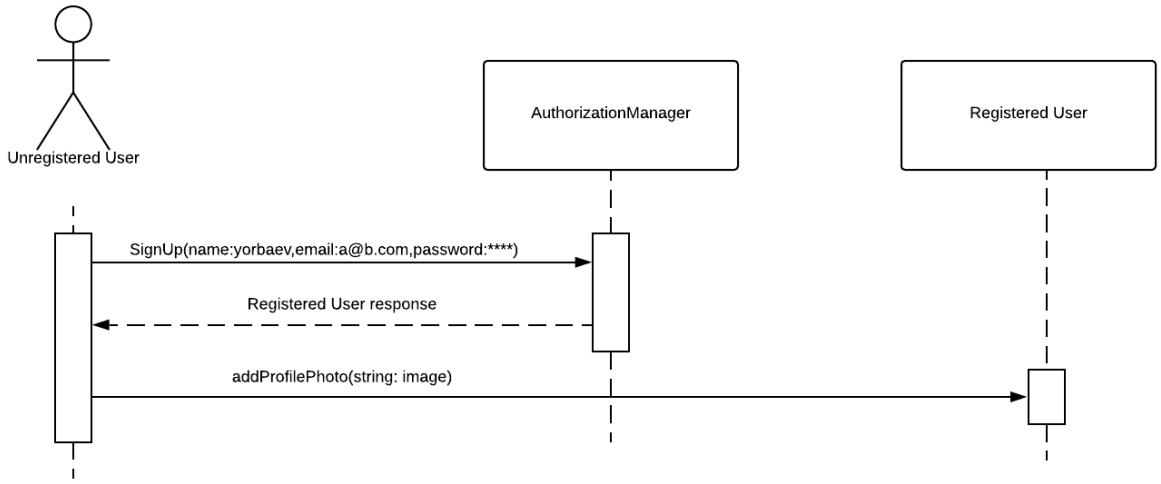


8.2 Class Diagram

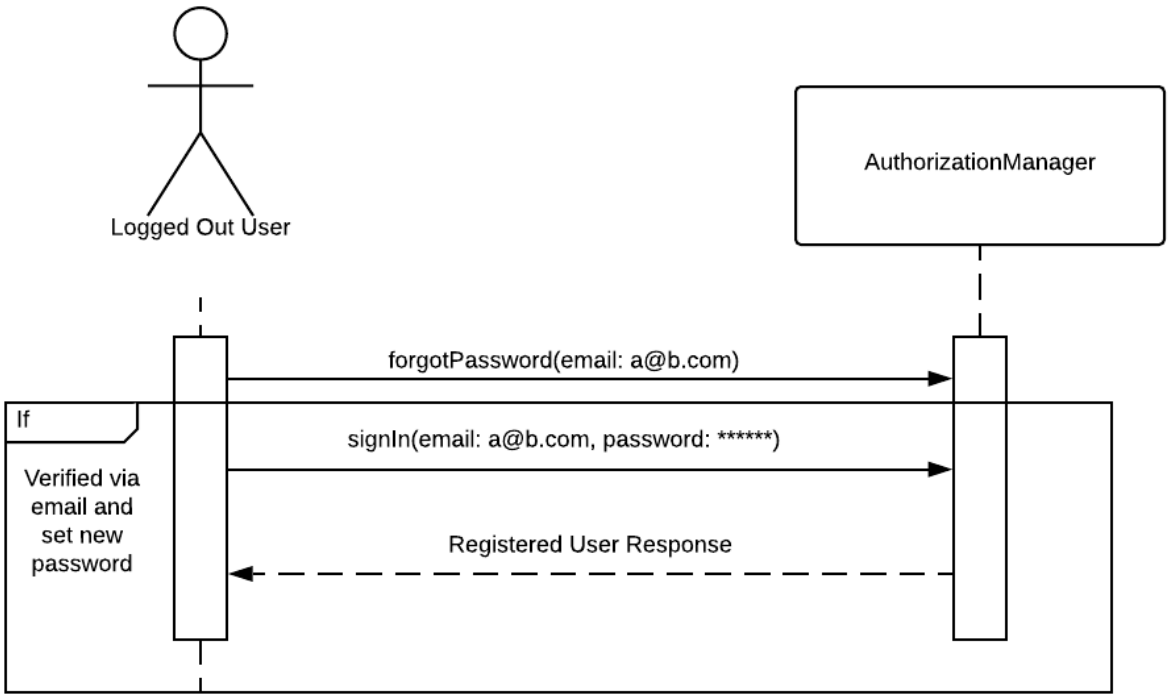


8.3 Sequence Diagrams

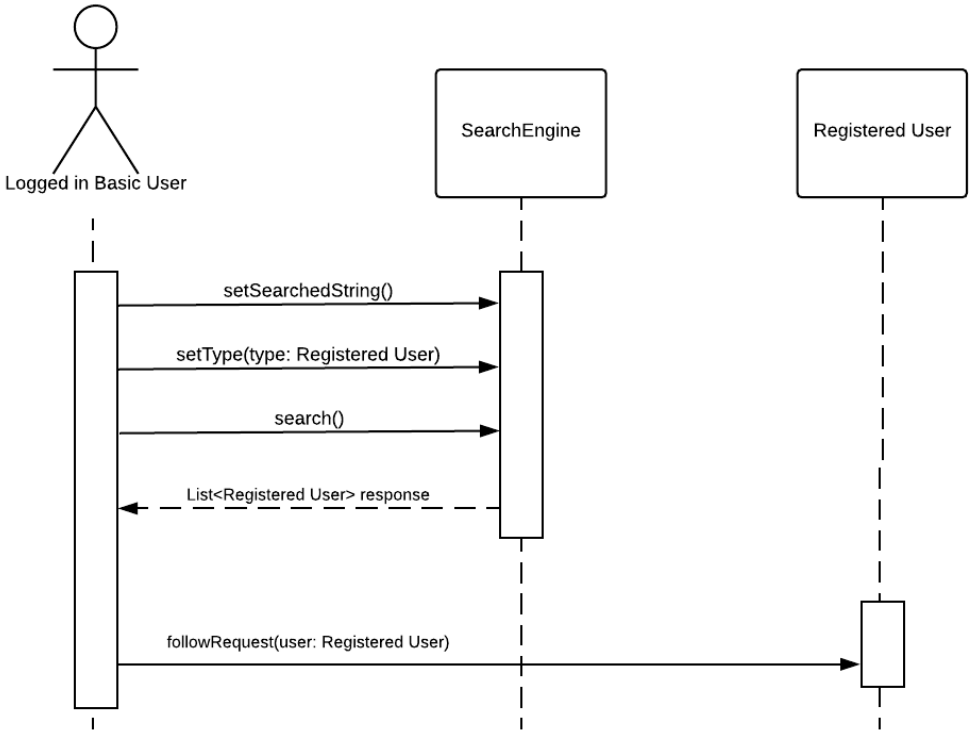
8.3.1 Sign Up / Start Customizing Profile



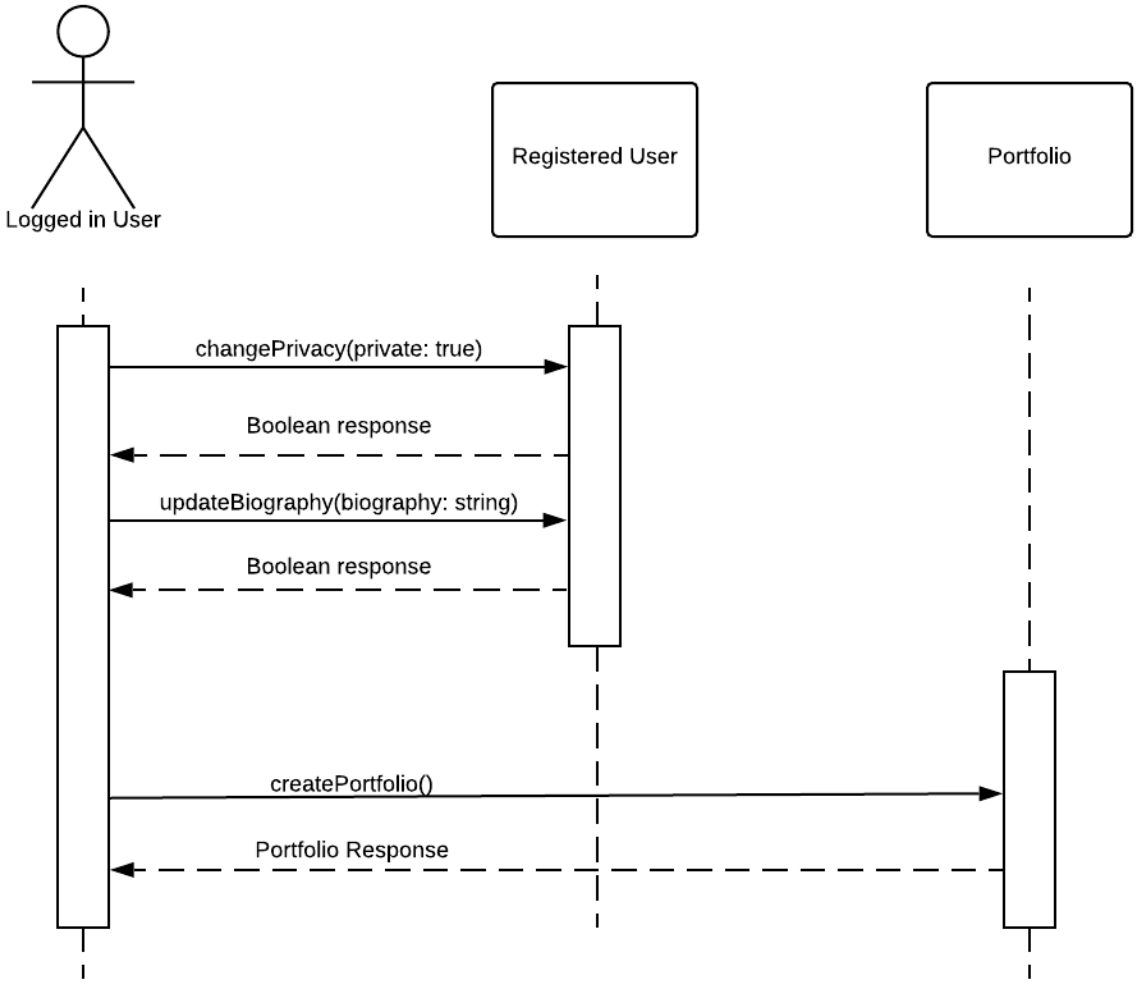
8.3.2 Forgot / Reset Password



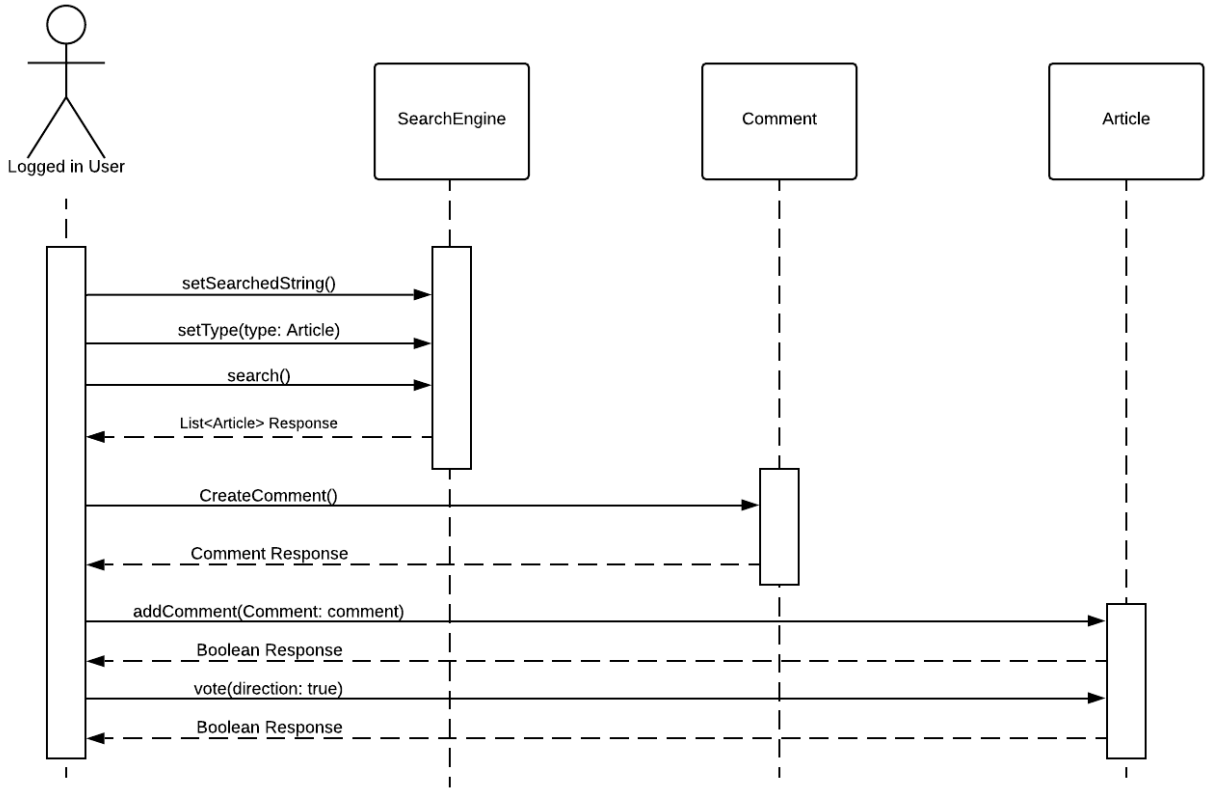
8.3.3 Follow User



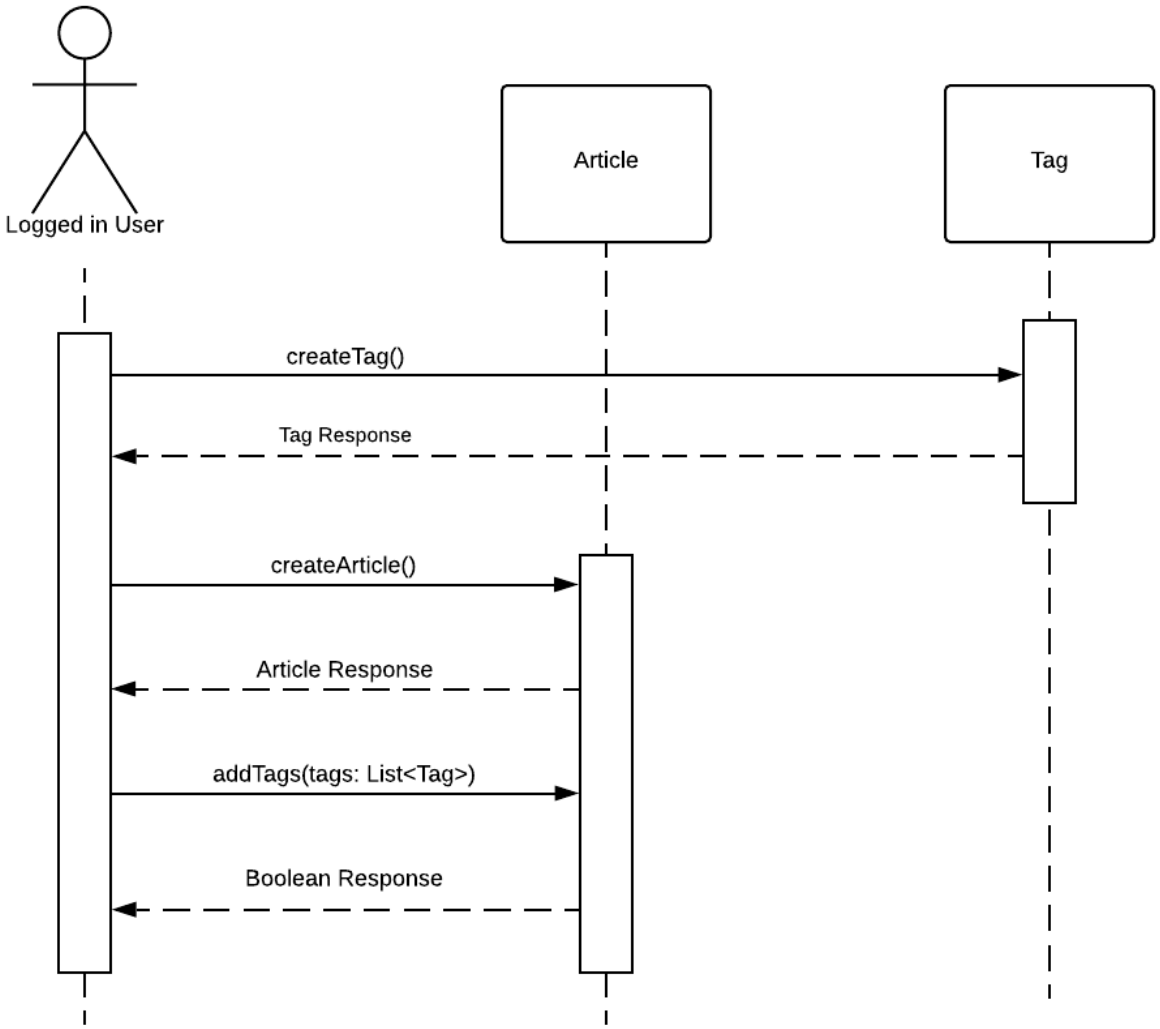
8.3.4 Edit Profile / Create Portfolio



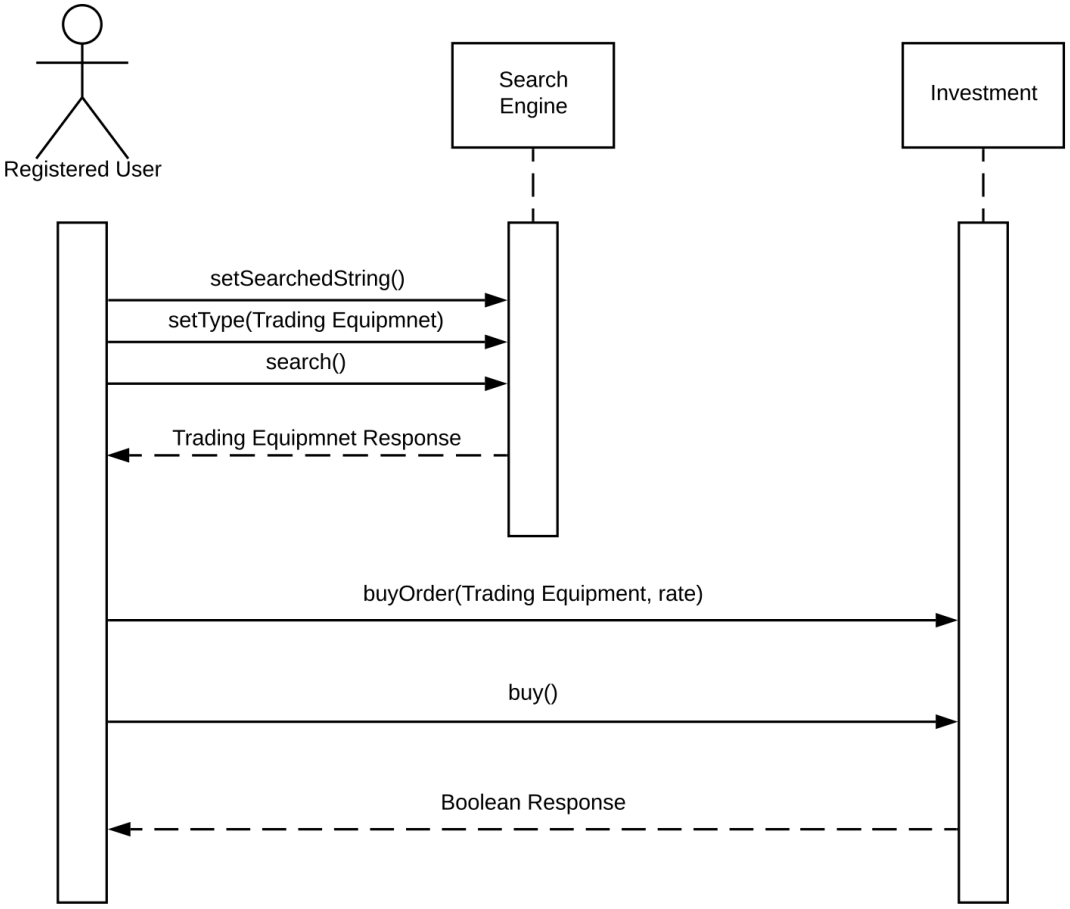
8.3.5 Comment on Article



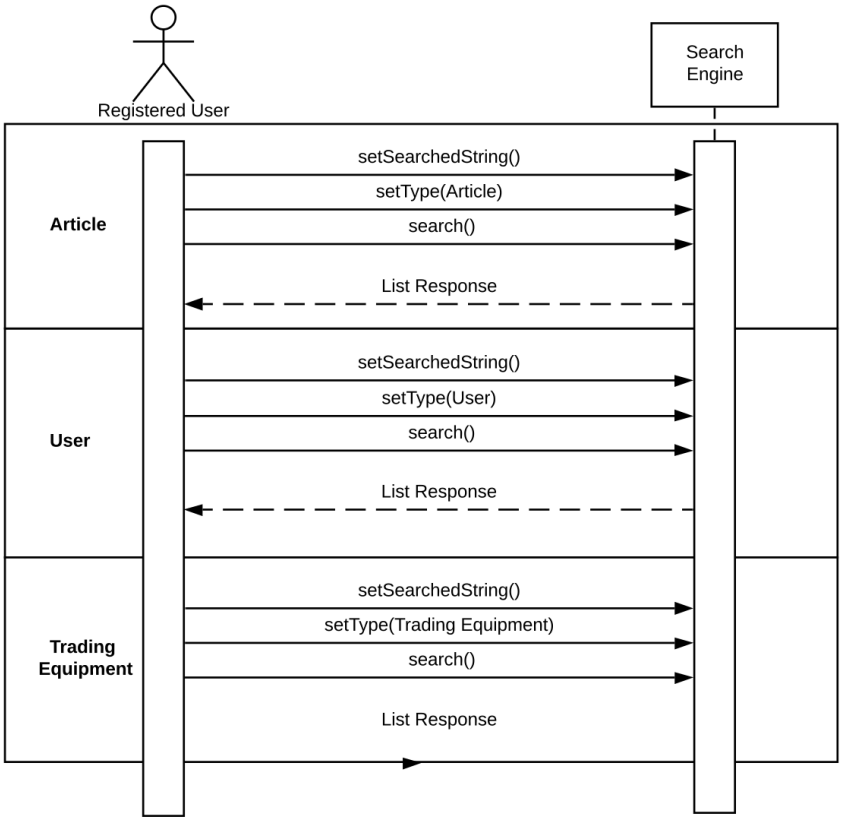
8.3.6 Create Article



8.3.7 Make Investment



8.3.8 Search with filter



8.3.9 Portfolio creation&editing