CMPE 451 - MILESTONE 2

1.   Executive Summary

In the development process of our trading application EyeTrade, as we have demonstrated to our customer, we have completed all of the planned tasks of Milestone 1 on time. After that, we immediately progressed with planning which functionalities that our team should develop regarding second milestone and which functionalities should be improved according to the feedback that we have received from our customer. Throughout this milestone, we have implemented new features to meet our requirements as well as increase the user experience. Mainly, the new features that we have developed includes events, articles, portfolios, notifications, user following relations, profile page, trading equipment page. Also, we have added a main page feed and google map integration to our registration page to improve our user experience. The details for these features and developments in terms of backend, frontend and android teams can be found in the following sections.

1.1. Summary Subpart for Backend

- **Articles:** We developed a backend module for articles. The users are able to create, delete, update, and retrieve articles. Also they can list the articles or top articles of themselves or another user. Furthermore, they can give a rating to an article.

- **Comments:** We developed a backend module for comments. The users are able to post comments to an article or event. Also, they can retrieve the comments of a user or themselves.

- **Currencies:** We extended the currencies module. Now, the users are able to retrieve the currency rates of the last day, or last x days, or a day interval.

- **Events:** We developed a backend module for events. The users are able to get the events which are taken from an external api. Also, they can get the full details of an event and give a rating to an event.

- **Main Page Feed:** We developed a backend module for main page feeds. The users can retrieve the suggested users, articles, events, and portfolios in their main page.

- **Notifications:** We developed a backend module for notifications. When a user follows another user, a notification is created automatically. Users are able to retrieve their notifications and can mark or delete them if they want.

- **Portfolios:** We developed a backend module for portfolios. The users are able to create portfolios as much as they want and put the currencies which they are interested in to those portfolios. Also, a user is able to retrieve all of the currency pair rates that can be generated from a specific portfolio.

- **Transactions and Exchanges:** We developed a backend module for transactions and exchanges. The users are able to buy a currency and exchange between currencies.
- **User Account:** We developed account mechanism of users. Thanks to these accounts they can see their transactions and fund status. They can operate transactions and exchanges and tracks their footprints.
- **User Following:** We developed a backend module for user following. The users are able to follow each other. Also, the users can monitor their or another user's follower and following lists and counts. However, we should add unfollowing user feature.
- **User Profiles:** We developed a backend module for user profiles. The users are able to monitor their their information and update them if they want. Also, they can see the profiles of the other users in a limited manner if those profiles are public. Moreover, they can update their private/public status easily.

1.2. Summary Subpart for Android

- **Google Maps implementation:** We implemented Google Maps feature. Now users are able to set their location via Google Maps. This feature will be used to implement location based search in the future.
- **Events and Articles Page:** We began to use real data for events and articles. Writing an article and score them are also available now.
- **Profile Page:** We implemented profile page for users, showing their name, followers and followings.
- **Follow:** Wee implemented following feature. Users now can follow each other.
- **Update Profile:** We implemented update profile feature as well. Users can change their personal information.
- **Currency Charts:** We implemented "Currencies" page shows a parity chart between selected two parity. To chose the same currencies is not possible.

1.3. Summary Subpart for Frontend

- **Articles:** Article related operations are implemented on the web including creating, modifying, deleting and rating an article. Also, a user is able to sort articles of himself or other users based on the rate of the article. There will be improvements according to customer feedback on the precision of the rating system and a user will be able to see the author profile.

- **Currencies:** Users are able to view the daily and weekly progress of parity with a currency chart. More trading equipment including stocks, indices etc. will be added until next milestone.

- **Events:** Economic events page which is drafted in first milestone is improved and reformatted to a table view. Now, users are able to see live economic events with time and significance information.

- **Main Page Feed:** A home page feed is implemented which consists of information of important currencies, major economic events and suggested articles.

- **Notifications:** Notification functionality is implemented. Now, users are able to see a notification on the top right side of the web page when another user followed or unfollowed them.

- **Portfolios:** Users are now able to create a new portfolio, add a trading equipment to their portfolios and view their portfolios by using portfolio page. Currently currencies are added one by one and all parity combinations are added automatically to the portfolio. We will improve this and users will be able to add parity directly until next milestone.

- **User Following:** A user now can follow other users and related notifications are delivered for this operation.

- **User Profiles:** Users can view their profile page as well as other users' profile pages. In profile page, a user is able to view his articles, create a new article, see his portfolios and update profile information. Also, users may switch their accounts to public or private.

- **Logout:** Users may log out from their account by using logout button.

1.4. Changes Planned

- We will add profile page link of the author to articles.
- We will add more trading equipment to our application. Currently we use five currencies and ten possible parities.
- We will implement unfollowing user relation and related notification function according to customer feedback.
- We will update portfolio page such that users will add parities.
- We will add google location to our web application.
- We have endpoints for comments and transactions, related functionalities will be implemented on frontend and android.
- We will implement search functionality.

- We will implement annotation related requirements.

2. List and Status of Deliverables

Web:
- Homepage: Works fine.
- Login/Sign-up/Logout: Works fine except login/sign-up with Google option is not functional for now.
- Currency Page: Works fine.
- Events Page: Works fine.
- Currency Chart: Just available for USD-TRY for last 7 days.
- Profile Page: Works fine. It has some static prediction rate data.
- Portfolio Page: Works fine.
- Article Page: Works fine.
- Homepage: Works fine.
- Notifications: Works fine.

Mobile(Android):
- Homepage: Works fine.
- Login/Sign-up: Works fine.
- Currency Page: Works fine.
- Events Page: Works fine.
- Currency Chart: Works fine.
- Profile Page: Works fine.
- Profile Update: Works fine.
- Following Users: Works fine.
- Article Page: Works fine.
- Article Creation: Works fine.
- Rating Articles: Works fine.

Backend:
- Registration: Works fine.
- Authentication: Works fine.
- Login: Works fine.
- Privacy of Users: Works fine.
- Password Reset: Works fine.
- Currency Converter: Works fine.

- Currency Recorder: Works fine
- Currency Rates Between Specific Dates: Works fine
- Email confirmation: Implemented but confirmation links has some problems, can be fixed in a small amount of time.
- Events: Works fine.
- Comments on Events: Works fine.
- Profile: Works fine.
- Article: Works fine.
- Comments on Articles: Works fine.
- Rating Articles and Comments: Works fine.
- Following User: Works fine
- Following Currency: Works fine.
- Portfolio Creation: Works fine.
- Homepage: Works fine.
- Trading User Account: Works fine
- Trading on Currencies: Works fine.

3. Evaluation of the Status of Deliverables and Its Impact on Plan

From Milestone Report 1

- **Homepage**

We now have a basic home feed that shows suggested articles, events and users for users to get engaged more easily. Delivering curated content like this makes for a more personal and satisfying experience.

- **Login/Sign Up**

Users can now choose their locations on a map and this information is stored on the database and not shared with anyone except the user themself (privacy concerns). This data will be used to suggest users close to each other in the future.

- **Currency**

We have added more currencies and parities. Users can now view a plot of the parity they select in the last few days. We record the rates each day and we can access any rate data between two dates.

- **Events/Articles**

Events are now pulled from an RSS feed and displayed to the user. Users can now create articles and rate them out of 5. The ratings are displayed next to the articles. Some suggested events and articles are sent in the home feed to create a faster way for the user to digest the content. Users can also comment on events and articles but this feature is not implemented in the front end yet.

- **Email Confirmation**

Not confirming one's email does not limit access right now. No significant progress is made.

- **Password Reset**

No significant progress is made.

New in Milestone Report 2
- **Profile**

Users can view their own and each other's profiles. They can follow other users and see who follows them. Articles written by a user can also be accessed from their profile. A user's profile will not be displayed if that user's profile is private, unless someone follows them and they accept the follow request (this last part is not implemented in the front end yet)

- **Portfolio**

We have implemented the portfolio feature for the web. Users can create new portfolios and add their desired parities in order to easily follow them without having to go through each of them every single time.

- **Notifications**

A list of notifications is generated as the user receives followers. Then the notifications are displayed to the user when they use the application. This lets the user receive feedback and see if their articles are generating enough buzz and gauge the interest of people in their articles.

4. Work Done by Each Member

Oğuzhan Kırlar	- Comment on articles (with Emir Gökdemir - Comment on events (with Emir Gökdemir) - Error Handling

Alican Şafak Özdek	• Logout functionality for web. • Currency Chart page for web. • Notifications for web. • Improved UI(header, navbar, dropdowns etc.) for the web. • Prepared user scenario for web with Kemal Duru and presented. • Code reviews and bug fixes for frontend. • Deployed frontend on AWS. • Wrote "List and Status of Deliverables" part for Milestone 2 report.
Anıl Can Kara	• Currencies Page on Android with parity plots • Articles page on Android • Article details on Android • Rating articles on Android • Creating articles on Android • API interface for articles on Android • New currency additions on Android
Merve İlik	• Display followers of a user on Android. • Display other users followed by a user on Android.
M.Emir Gökdemir	• Developed currency following mechanism with retrieval features, in backend. • Events are fetched from a RSS to the backend. • Displaying and storage of events is implemented in backend. • Point mechanism is created in backend. • Currency Rates between a time arrival property is implemented in backend. • Comment on articles is developed with Oğuzhan Kırlar. • Comment on events is developed with Oğuzhan Kırlar. • Error handling is implemented • Trading user fund account and its functionalities is implemented in backend side.

	● Buy, Sell and exchange between currencies property is implemented in backend side. ● Backend applications were deployed from time to time for supporting Kutay.
Alihan Çelikcan	● Location picker on Android ● Home feed on Android ● Update profile on Android ● Look and feel of the Android application (mainly new icons) ● Allow viewing other users' profiles on Android ● Follow other users' profiles ● API interface for home feed and other profiles ● Evaluation of the Status of Deliverables for Milestone Report 2
Seyfi Kutay Kılıç	● Developed the user following mechanism with follower and following retrieval features, in backend. ● Extended the models and mappers related with users, in backend. ● Implemented the user profile status update feature, in backend. ● Developed the notification system, in backend. ● Updated the article feature by changing the service logic and some endpoints, in backend. ● Fixed the bugs in the features related with profile update, in backend. ● Updated the portfolio feature by changing the relations and implementing a currency pair-rate retrieval feature, in backend. ● Implemented the main page feed feature, in backend. ● Deployed the backend application to AWS, once a week on average.
Kemal Duru	● Implementation of Events page by updating previous one to tabular format and using related endpoints on frontend.

	● Implementation of main page feed including currency information, economic events and suggested articles on frontend. ● Implementation of portfolio related functionalities including creating portfolio, adding trading equipment to a portfolio and viewing users' portfolios on frontend. ● Reviewed codes and pull requests of frontend team. ● Preparation of user scenario for web with Safak. ● Wrote "Executive Summary" and "Project Management" parts for Milestone report.
M. Hakan Kurtoğlu	● Update profile feature in backend ● Article entity and related feature in backend ● Portfolio entity and related feature in backend
Esra Yılmaz	● Fixing login and registers pages, in frontend ● Implementing a page for displaying all 'Articles', in frontend ● Implementing a page for displaying a specific Article and evaluation of the articles and significance level of the rating, in frontend ● Implementing a form page to create an Article, in frontend ● Implementing a Profile Page of basic and trader users, in frontend ● Implementing a Settings Page for a user to update her/his profile, in frontend ● Implementing a functionality for displaying articles to see top articles according to their significance level, in frontend ● Implementing a functionality so that profile pages can be private or public, in frontend ● Preparing the Milestone1 and converting to PDF format ● Implementing a validation for forms ● Designing the side bar of web

5.   Requirements

GLOSSARY

- **All Users:** It can be a basic user or a trading user.
- **Annotation:** A term referring to documentation and comments that may be found on code logic.
- **Basic Users:** A person who is registered and able to access the basic functionalities of the platform.
- **Economic Event:** Events having an impact on trading equipment. (e.g., Meetings of the Central Bank of the Republic of Turkey or a speech by the president of the Federal Reserve Bank of New York.)
- **My Investments:** The section in which users are able to invest on any trading equipment, make a buy order for a specified rate, and set stop/loss limits.
- **Prediction Success Rate:** The success rate of the predictions made by users on trading equipment's values which can be seen in the user profile.
- **Portfolio:** A grouping of financial assets such as stocks, bonds, commodities, currencies etc.
- **Profile:** The page which contains user information such as personal information, prediction success rate and portfolios.
- **Profit/Loss:** Amount whether the user lose or gain in any trading equipment.
- **Profit/Loss Section:** The section provided by the system for all users to view profit/loss value of their investments.
- **Recommendation System:** It recommends articles or trading equipments to the users based on their histories.
- **Semantic Search:** It tries to find semantically similar users and trading equipments based on the context information provided in the semantic tags.
- **Traders Platform:** Lets people follow and trade indices, stocks, ETFs, commodities, currencies, funds, bonds, and cryptocurrencies.
- **Trading Equipment:** Indices, stocks, ETFs, commodities, currencies, funds, bonds, cryptocurrencies etc.
- **Trading Users (Registered Users):** A person who is registered and, in addition to basic user, is able to invest in any trading equipment.

1.FUNCTIONAL REQUIREMENTS

1.1. User Requirements

1.1.1. User Types

1.1.1.1. All Users (except guests)

- 1.1.1.1.1. All users shall have a "Profit/Loss" and an "Events" section.
- 1.1.1.1.2. All users shall have at least one Portfolio.
- 1.1.1.1.3. All users shall be able to follow other users.
- 1.1.1.1.4. All users shall be able to share ideas as an article.
- 1.1.1.1.5. All users shall be able to comment about trading equipments and articles.
- 1.1.1.1.6. All users shall be able to follow the values related to any trading equipment that is available.
- 1.1.1.1.7. The followers of a user and the followed users by that user shall be seen on the profile of that user.
- 1.1.1.1.8. A private user profile shall be seen only by its followers.

1.1.1.2. Only Trading Users

- 1.1.1.2.1. Trading users shall have a "My Investments" section.
- 1.1.1.2.2. Trading users shall be able to invest on any trading equipment, make a buy order for a specified rate, and set stop-loss limits.
- 1.1.1.2.3. Trading users shall have different success rates for each trading equipment on which they made prediction.

1.1.1.3. Guests

- 1.1.1.3.1. Guests shall be able to view the price of a trading equipment and view the economic events, but shall not be able to follow them.
- 1.1.1.3.2. Guests shall be able to read user comments about trading equipment and articles.

1.1.2. Authentication

1.1.2.1. Sign Up

- 1.1.2.1.1. Basic users shall provide their name, surname, email address, and location (by specifying it on Google Maps).

- 1.1.2.1.2. Trading users shall provide their name, surname, email address, location (by specifying it on Google Maps), IBAN and TR Identity Number.
- 1.1.2.1.3. Users should be able to use Google account to retrieve necessary information for signing up.
- 1.1.2.1.4. All users shall choose a password.(see 2.1.2)

1.1.2.2. Sign In

- 1.1.2.2.1. All users shall be able to sign in by providing their email and password.
- 1.1.2.2.2. All users should be able to use Google account to retrieve necessary information for signing in.

1.1.3. Profile

- 1.1.3.1. Profile can be either public or private to other users.
- 1.1.3.2. In order to see the contents in a private user profile, user should be followed.
- 1.1.3.3. Basic users and trading users' prediction success rate shall be visible on their profile page.

1.1.4. Portfolio

- 1.1.4.1. Basic users and trading users shall be able to rename their portfolio.
- 1.1.4.2. Basic users and trading users shall be able to add any trading equipment to their portfolio.
- 1.1.4.3. Basic users and trading users shall be able to share their portfolio in their profile page and follow other users' shared portfolios.

1.1.5. Profit/Loss Section

- 1.1.5.1. Profit/Loss section shall be private to user.
- 1.1.5.2. All users shall be able to use the Profit/Loss Section by providing the type and the amount of their investment, the exact time when that investment made by the user and the currency which they eventually want to see the profit/loss value in terms of.
- 1.1.5.3. Trading users shall also be able to use the Profit/Loss Section using the investments that they made in the Traders Platform.

1.2. System Requirements

1.2.1. Notifications

- 1.2.1.1. The system shall notify users in accordance with alerts.

1.2.2. Predictions

- 1.2.2.1. Each trading equipment shall be available for the prediction.

1.2.3. Searching

- 1.2.3.1. The application shall support location-based search.
- 1.2.3.2. The application shall allow semantic search.
- 1.2.3.3. Searching process shall consider all the information available in user profiles and trading equipment.

1.2.4. Trading Equipment

- 1.2.4.1. The trading equipment shall be available on the site in the form of trade indices, stocks, ETFs, commodities, currencies, funds, bonds, and cryptocurrencies. (e.g., Trade Indices: S&P 500 Futures, S&P 500 and Nasdaq 100. Stocks: Deutsche Bank AG, Apple, Turkish Airlines. ETFs: SPDR S&P 500, iShares Russell 2000, United States Oil. Commodities: Gold, Silver, Brent Oil. Currencies: EUR/USD, TRY/EUR, TRY/USD. Funds: Vanguard 500 Index Admiral, PrivatFonds: Kontrolliert, Fidelity Contrafund. Bonds: U.S. 10Y, U.S. 5Y, U.S. 2Y. Cryptocurrencies: BTC/USD, ETH/USD, XRP/USD.)
- 1.2.4.2. Each trading equipment shall include the information of the previous close, percentage change with the previous close, amount change with the previous close, day's range, and moving averages.

1.2.5. Recommendation System

- 1.2.5.1. The system shall be able to recommend people and trading equipments to follow.
- 1.2.5.2. The system shall be able to recommend articles to read.

1.2.6. Economic Events

- 1.2.6.1. Economic events shall have different significance levels.
- 1.2.6.2. Each economic event shall have a numeric result which shows the actual value, the forecast value and the previous value of the related trading equipment.
- 1.2.6.3. Basic users and trading users shall be able to filter economic events by considering their significance level and country base.

- 1.2.6.4. Basic users and trading users shall be able to search economic events.

2.NON-FUNCTIONAL REQUIREMENTS

2.1. Security and Privacy

- 2.1.1. Emails for registration shall be valid and unique for each user.
- 2.1.2. Passwords shall be at least 8 characters long and contain at least one uppercase letter, one lower case letter and a digit.
- 2.1.3. All passwords shall be encrypted using PBKDF2 and stored in the database.
- 2.1.4. Data of the users shall be protected according to Law on the Protection of Personal Data.

2.2. Performance

- 2.2.1. Response time for any request shall be 5 seconds at most.

2.3. Availability

- 2.3.1. The application shall have web and mobile (Android) versions.
- 2.3.2. The system shall be compatible with the latest main versions of Google Chrome and Android.
- 2.3.3. The language of the system shall be English but it shall also support Turkish characters.

2.4. Annotations

- 2.5.1. The application shall support W3C Web Annotation Data Model and follow W3C Web Annotation Protocol.

2.5. Database

- 2.5.1. System shall store user information, trade equipments, follower relations, portfolios, user history and user preferences in the database.
- 2.5.2. Information in the database shall be able to be updated.
- 2.5.3. Database structure shall be as efficient as possible, avoiding unnecessary tables and duplicate columns.

6.   API Documentations

You can reach our API documentation by using the link below:

http://100.26.202.213:8080/swagger-ui.html#/

7.   Project Plan

TASKS	DURATION	STARTING DATE	COMPLETION DATE	ASSIGNEE
Taking AWS account for server	6 day	04.10.19	09.10.19	Kemal
Create API for backend	4 day	04.10.19	07.10.19	Kutay,Oğuzhan,Hakan,Emir
Send some requests from Mobile to API	4 day	04.10.19	07.10.19	Merve, Anıl,Alihan
Display Response of API and adjust for frontend	5 day	04.10.19	08.10.19	Esra, Şafak, Kemal
Creation of the Spring Aplication	1 day	09.10.19	10.10.19	Kutay
Creation and deployment of a PostgreSQL database	2 day	09.10.19	10.10.19	Kutay
Development of authentication feature of the backend application	2 day	09.10.19	11.10.19	Kutay,Oğuzhan,Hakan,Emir
Development of registration feature on the backend	4 day	09.10.19	12.10.19	Emir
Development of login/logout features on the backend	4 day	09.10.19	12.10.19	Oğuzhan
Development of registration verification(via email) feature on the backe	4 day	09.10.19	12.10.19	Hakan
Integration of swagger to API	5 day	09.10.19	14.10.19	Emir
Deployment of the backend to AWS	5 day	09.10.19	14.10.19	Şafak
Development of login page on the frontend	5 day	09.10.19	13.10.19	Şafak
Development of home page on the frontend	5 day	09.10.19	13.10.19	Şafak, Esra, Kemal
Development of registration page on the frontend	5 day	09.10.19	13.10.19	Şafak
Development of email check feature on the frontend	5 day	09.10.19	14.10.19	Şafak,Kemal,Esra
Development of login page on android	5 day	09.10.19	13.10.19	Anıl,Merve,Alihan
Development of registration page on Android	5 day	09.10.19	13.10.19	Anıl,Merve,Alihan
Development of home page on Android	5 day	09.10.19	13.10.19	Anıl,Merve,Alihan
Research on Docker containers	2 day	09.10.19	11.10.19	Oğuzhan
Deployment of example API on AWS	2 day	14.10.19	14.10.19	Şafak
A new authentication mechanism will be developed	2 day	15.10.19	16.10.19	Emir,Kutay
Development of frontend for currency change function	4 day	16.10.19	20.10.19	Şafak
Api requests will be added on login and register page	4 day	16.10.19	20.10.19	Şafak
A mock page for events will be implemented	4 day	16.10.19	20.10.19	Kemal
Non-functional parts in CoreUI template will be deleted	4 day	16.10.19	20.10.19	Şafak
A mock profile page will be implemented	4 day	16.10.19	20.10.19	Kemal
Implementation of currency converter on Android	5 day	16.10.19	20.10.19	Anıl,Merve,Alihan
Enriching the homepage content	5 day	16.10.19	20.10.19	Merve
Implementation of an api requests sender for an external currency api	3 day	16.10.19	18.10.19	Kutay
Currency converting end point will be created	1 day	19.10.19	20.10.19	Emir
Navigation Drawer will be implemented	2 day	19.10.19	20.10.19	Alihan
Deployment of the frontend AWS	2 day	20.10.19	21.10.19	Şafak
CORS issue for web frontend	1 day	20.10.19	21.10.19	Kutay,Oğuzhan,Hakan,Emir
MILESTONE 1	1 day	22.10.19	22.10.19	All Group Members
Milestone Report	5 day	22.10.19	27.10.19	All Group Members
Error handling on backend	4 day	29.10.19	02.11.19	Emir
Development of following trading equipment mechanism on the backe	4 day	29.10.19	02.11.19	Emir
Development of following users feature on the backend	4 day	29.10.19	02.11.19	Kutay
Development of lfollower and followie users retrieval feature on the ba	3 day	30.10.19	02.11.19	Kutay
Implementation of profile page on android	2 day	02.11.19	04.11.19	Anıl
Extend the models and mappers related with users	2 day	07.11.19	08.11.19	Kutay
Development of follower and following count retrieval feature on back	2 day	07.11.19	08.11.19	Kutay
Implementation of update user profile status feature in backend	2 day	07.11.19	08.10.19	Kutay
Implement articles feature	5 day	09.11.19	14.11.19	Hakan
Implement portfolio feature	5 day	09.11.19	14.11.19	Hakan
Development of notification system on backend	3 day	14.11.19	17.11.19	Kutay
Notifications on android	10 day	15.11.19	25.11.19	Alihan
Portfolio on android	10 day	15.11.19	25.11.19	Alihan,Merve,Anıl
Currency page on android	10 day	15.11.19	25.11.19	Anıl
Improving android design	10 day	15.11.19	25.11.19	Anıl
Upgrading currency page on frontend	10 day	15.11.19	25.11.19	Şafak
Notifications on frontend	10 day	15.11.19	25.11.19	Şafak
Deployment of new version of frontend	10 day	15.11.19	25.11.19	Şafak
Development of events page on frontend	10 day	15.11.19	25.11.19	Kemal, Esra
Development of homepage on frontend	10 day	15.11.19	25.11.19	Kemal
Update profile end points returns 500	1 day	20.11.19	20.11.19	Oğuzhan,Emir,Kutay,Hakan
Currency converter endpoint returns 500	1 day	20.11.19	20.11.19	Oğuzhan,Emir,Kutay,Hakan
Implementation of comments	2 day	20.11.19	22.11.19	Emir, Oğuzhan
Articles on android	1 day	23.11.19	24.11.19	Anıl
Portfolio related functionalities on frontend	2 day	24.11.19	25.11.19	Kemal, Esra
Get events in backend	2 day	24.11.19	25.11.19	Emir
Point mechanism of events	2 day	24.11.19	25.11.19	Emir
Currency rates between time arrival and last days	2 day	24.11.19	25.11.19	Emir
Comment mechanism	2 day	24.11.19	25.11.19	Oğuzhan
Account implementation	2 day	24.11.19	25.11.19	Emir
Fix the bugs in the profile update feature	2 day	24.11.19	25.11.19	Kutay
Update of features related with articles	2 day	24.11.19	25.11.19	Kutay
Update of portfolio and currency following features	2 day	24.11.19	25.11.19	Kutay
Implementation of main page feed feature	2 day	24.11.19	25.11.19	Kutay
Fix the bugs related with follower and following counts	2 day	24.11.19	25.11.19	Kutay
MILESTONE 2	1 day	26.11.19	26.11.19	All Group Members
Milestone report	5 day	27.11.19	01.12.19	All Group Members
Making location Feature	7 day	03.12.19	10.12.19	
Search Feature	7 day	03.12.19	10.12.19	
Alert Feature	7 day	10.12.19	17.12.19	
Investment Feature	7 day	10.12.19	17.12.19	
Last Meeting and Preparing Project Report	1 day	17.12.19	17.12.19	All Group Members

8. Presented User Scenarios

Mobile: Louis Collignon is a French student who is doing his exchange semester in Germany. Since he is interested in the economy, he decides to download eyeTrade. He does not want to be a trader, so he registers as a basic user. He can immediately see his location on the map while he is registering which makes the registration process very smooth for him. After registration and login, he lands on the homepage of the app where he can see top articles, top events and some suggested users for him. After reading an article, he realizes that he mistyped his name during registration, so he updated his profile information by going to the profile update page. After fixing his name, he follows one of the most popular users and then checks if he got a follow back. Unfortunately, he doesn't have any followers. Finally, he goes to currencies page to see the currency trends over the past 7 days. He finds a parity which changes drastically, so he goes to currency converter to figure out how much to invest on CNY.

Web: Sarah Smith is an economy professor at UCL. After her great vacation in Turkey during last summer, she wants to write an article about Turkey and he opens the website of eyeTrade. Immediately after login, she sees a notification on top right saying that someone has followed her. Then, she goes to her profile and creates an article. In addition, she checks some other articles from her home feed and reads one of them. Since she likes it, she rates it with 5 stars. Finally, since she always wants to keep an eye on Turkish Lira, she creates a portfolio named Turkish Lira and adds TRY to it so that she can immediately see what's going on with Turkish Lira when she opens the website.

9. Branches and Pull Requests

We have put the code for frontend, backend and mobile in different folders. For each of these, responsible teams have their own branches. Sometimes for swift bug fixes or to meet deadlines special branches may be created. However, in general features are developed in separate branches and those are merged after peer review. For instance, backend features are developed in different branches and merged into backend branch. Again, after peer review branches are merged into master.

10.   Evaluation of Tools

Github: We used Github to locate our code base. It was helpful for reviewing our codes and commits. Also, it helped us to manage our project by using issue system.

Git: We used Git as the version control system. It is a really useful tool to manage the different branches of the different teammates.

AWS: We used AWS as the deployment environment; used EC2 to deploy backend and frontend applications and PostgreSQL RDS for the database server. It was a proper choice because of the free credits of AWS Educate accounts.

Java: We used Java as the programming language of the backend application. It was a good choice because of it's powerful and mature libraries as well as it's nice object oriented structure.

Spring Boot: We used Spring Boot as the backend framework. It is a very useful tool to develop maintainable and scalable server-side applications with it's proper architecture and powerful annotations.

Intelij: We used Intelij as the IDE for the backend development. It is a user-friendly IDE for Java applications because of its auto-complete, auto-import, auto-refactoring, and git integration features.

Swagger: We used Swagger to document our API. It is a tool which is super easy to integrate to the api. Also, it is very user friendly to be used by the client-side application developers.

Kotlin: We used Kotlin as the programming language for the Android development. We had two options for Android development: Java and Kotlin. We choose Kotlin because it is more concise, safer, and bug-free; also it has a better support for functional programming features.

Retrofit: We used Retrofit to send http requests from our Android application. With Retrofit, it is very easy to send requests to the API's as well as parsing JSON responses.

Android Studio: We used Android Studio as the IDE for Android development. Android Studio is a very beneficial tool with it's Android Emulator and it's plugins.

Vue.js: We used Vue as the frontend library. It offers Virtual DOM, component base ui development opportunity, and a variety of JavaScript libraries which are very powerful for frontend development.

Visual Studio Code: We used Visual Studio Code as the IDE for frontend development. It is one of the best choices with its auto-complete, auto-fixing features as well as powershell integration.

11.   Managing Project

Project management is an essential factor for a software team to be successful in the long term. As a group of ten people with different backgrounds and experiences with some additional members, we manage the development process during this milestone smoothly. In terms of communication, weekly meetings were essential to determine the general strategy for each week and additional meetings of all sub teams were important for the division of tasks which are planned in the general meeting into sub tasks for each team. We also used the github environment in an efficient way in terms of tracking the issues, communication between various teams by the help of these issues and creating branches for each completed development and making pull requests for them. This is a useful way to commit changes in a medium and large scaled projects. Another important thing which makes easy to progress as a team was the interactive communication between the backend team and frontend/android teams.

All in all, we believe that during this milestone we have worked efficiently to implement some of the major functionalities of our application in terms of backend, frontend and mobile. However, as a team we will work even harder and coordinate even more to complete all the requirements and to present a full functional and complete product to our customer.