

CMPE 352-Milestone I Report

Group 8

Doğuukan Türksoy

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1. Executive Summary

1.1 Introduction

We are a group of Boğaziçi students who are taking the CMPE 352 course in the Spring 2022 semester. Our project is developing an Art Community Platform where users can share their artworks, organize exhibitions and discuss thoughts about art items. And, this report represents the first milestone of our project and extracts everything we have done so far.

1.2 Elevator Pitch and Project Description

Although it is hard to identify a phenomenon as an art piece, Art can be portrayed as a wide diverse range of human activity. But for sure, the resulting product or the performance involves creative, imaginative talent. The unstoppable urge to tell a story, to express one's emotions or to explain a conceptual idea through art have also never stopped in the pandemic conditions, but evolved. Definitions of what constitutes art have gained new definitions and dimensions.

With the pandemic, the Art world has expanded to the virtual world. With the virtual museums, exhibitions and cultural events, people could get the chance to take part in such events independent of their locations and logistic conditions. Besides the logistic independence of artists and its audience, this virtual world offers other dimensions to art pieces itself, as well. Non-fungible tokens, NFTs, would be a relevant example for this argument.

Of course, inevitably, this new dimension creates new needs and opportunities different from the traditional approaches. And, this project aims to suffice these needs and provide new opportunities.

We are building an application which will be available both on Web and Android. After signing up and logging in, users can share their art items, comment on art items and have discussions, read someone else's comments on art works, organize online exhibitions both collaboratively and individually or they can simply share the information about their physical exhibitions and keep their audience updated via sending notifications of such events. Our platform also offers protection of copyrights on demand. Users can sell and buy copyrighted art pieces via the medium that our platform provides. So, by giving the functionalities of an art gallery, our platform provides direct interactions between artists and art collectors. Users can also customize their profile pages, by sharing, deleting, tagging their artitems, exhibitions and artist statements.

On the other hand, art followers can like, bookmark, comment on art items or reply to comments and attend online exhibitions or marking themselves as attending an offline exhibition. They can search, follow/unfollow artists, create tags and see relevant art items. Our platform tracks users' activity history, and by making excellent customized recommendations to their homepage, users can be updated about the trending art movements. Without logging in, users can view public artist pages, art items and comments. Finally, artists who are well known in the art community can request verifying their profile.

1.3 Where are we? What has been done so far?

From the beginning of the semester, we have extensively worked and studied the fundamentals of software engineering. We have learned a lot about how a software project is being held and processed. We observed critical parts of project management, task sharing, teamwork, effort tracking and communications in the team and we are hoping to excel at those skills by the end of the course. Over the past 7 weeks, in each week, we held on average 2 meetings and kept our team always updated. As a whole team, we have tried to contribute to each task collectively and reviewed the tasks done. And, we are glad to see the accomplishments we have done so far and challenges we have gone through.

Requirements: We have extracted the requirements from both project description and customer meetings. While eliciting the requirements, we gathered our question marks and asked them on our customer meetings. Besides always trying to suffice our customer's needs, we have also tried to come with new ideas that may help our customer. That is why, we revisited requirement elicitation after each phase of the project.

Mock-ups and Scenarios: We created 3 user personas of our platform. According to their scenarios and behaviors, we have designed mock-ups of our application. There, we held simulations of typical usages of the platform. Then, we revisited the requirements elicitation.

UML Diagrams: For the sake of visualization of how our project will be working, we have created use case, class and sequence diagrams. These diagrams helped us to have a bit of idea of how the implementation is going to be and also showing the significant functionalities and features of the project. With the help of the feedback of our TA's, we have redesigned, changed our diagrams. We, again, revisited the requirements elicitation.

Milestone Report: We have created our project plan and responsibility assignment matrix not only for the milestone report but also future works and tasks of the project. In this phase, we had the view of what we have done so far and what our deliverables are, solid outcomes. We also had the chance to plan the outlines of the future work.

1.4 Moving forward - What is next?

Thanks to our project plan and RAM, we can now see what is waiting for us in the future. For the future, we will continue on working and studying the fundamentals of

software engineering. We need to do extensive research and make efforts on design issues of implementation before starting to implement the project. We will start implementing an API to learn how application services work. After that, hopefully, we will complete CMPE 352 successfully. While taking the CMPE 451, we will be implementing the backend, frontend and android version of the project. Hopefully, we will be deploying our project at the end of this course.

2. List and Status of Deliverables

Deliverable	Status	Update Frequency	Description
Github Issues	In Progress	After each meeting & as new tasks are assigned	A bug or progress tracking system built into the GitHub service.
Github Wiki	In Progress	Daily	Documentation of our project and work.
Meeting Notes	In Progress	Weekly (generally two times per week)	Agenda, discussion and action items of our meetings
Requirements	Completed Delivered on	As improvement needed	Features, functions, and tasks that need to be completed for our project to be deemed successful.

	15/04/22		
User Scenario & Mockups	Completed Delivered on 15/04/22	As improvement needed	Stories and visual materials designed to show what a user can do and how they do it.
Design Diagrams	Completed Delivered on 15/04/22	As improvement needed	Diagrams designed to provide insights into the internal mechanism of the project.
Communication Plan	Completed Delivered on 15/04/22	As we change our communication plans	Information on when and where we should hold our meetings
Project Plan	Completed Delivered on 15/04/22	As our plans change - improvement needed	Project plan: Identification of tasks, estimations and task allocation
RAM	Completed Delivered on 15/04/22	As our plans change - improvement needed	Responsibility Assignment Matrix (allocation of past and future assignments to team members)
Milestone I Report	Completed Delivered on 15/04/22	-	Milestone group deliverable that contains all other deliverables as well (you are reading it right now)

3. Evaluation of The Status and Deliverables

3.1 Github Issues

After each meeting, everyone is responsible for creating the related issue in accordance with the action items of our discussion. Issues are used to communicate the progress of the tasks and inform each other in an organized way. Upon completion of a task, the owner of the issue is responsible for commenting on the current status of the task and label the issue as *Review needed* for the reviewer to make the necessary checks. We have also used a task *list* feature for tasks that requires everyone's individual contribution.

3.2 Meeting Notes

After each meeting, we have prepared meeting notes including the agenda of the week, important points from the discussion and action items. We tracked the list of participating team members. Keeping the meeting notes helped us to catch up with the progress and discussions.

3.2 Github Wiki

Used our Wiki very frequently in order to reflect and document our progress. Updated our wiki page as needed and added necessary comments (issue numbers etc.) to the revision descriptions.

3.3 Requirements

Our requirements elicitation procedure consisted of two main parts. At the first phase, requirements are elicited according to the Project Description and our discussion as a team. Then we improved the requirements and glossary as we held our customer meetings. In addition to modifications made on existing requirements, we have added new articles to elaborate our requirements, concise and clear. At the second phase, we validated and revised the requirements with the assistance of user stories, and designed diagrams. We believe, requirements elicitation is the most fundamental part of our work and we strived as a team to prepare our requirements in the most concrete way and not to leave any loose ends.

3.4 User Scenario and Mock-ups

Three user scenarios (art follower, artist and collaboration) and corresponding mockups are created. In the first user scenario, we demonstrated a couple of basic functionalities that can be formed by a registered user including following a user and making a search. In the second scenario, we showed the bidding system. In the fourth scenario, we displayed a chat and exhibition system. Along the way, we tried to indicate some other requirements as well such as a recommendation system. We have splitted the user stories to 3 subgroups, each with 3 members. Our remaining team members have prepared the drafts for visual material such as layout of the webpage on desktop and mobile. Then each team filled the content of these layouts, and created persona, scenario and acceptance criteria. User scenarios and mockups are revised as we further develop our requirements, and acceptance criteria are updated as article references in the requirements page changed. Overall, we got positive feedback from our customers during the meetings as to our user stories and detailed mock-ups.

3.5 Design Diagrams

For the design diagrams, first we did some individual research and gathered information as to the UML diagram structure. Rather than splitting the groups into use-case, sequence and class diagrams separately, we made each of our team members contribute to each diagram. First we created use case diagram and then class diagrams collaboratively. Then we designed sequence diagrams by considering the classes and actions we have demonstrated in previous diagrams. We made some modifications and changes on the use case and class diagram as needed while developing the sequence diagrams.

3.6 Communication Plan

Prepared a communication plan that is suitable for each team member. We hold two weekly meetings, one of which serves as a general meeting in which we discuss the current assignment and allocate tasks; the other serves as a task review meeting. In need, we modified our meeting dates and held additional meetings.

3.7 Project Plan

Project plan includes the tasks, expected amount of time each task will take, and team members assigned for that specific task. Project plan covers our future plans as well, however it is open to change as we progress.

3.8 RAM

Similar to the project plan, RAM includes tasks and team members assigned for that task. In contrast to our project plan, it doesn't include the starting and ending dates of each task.

3.9 Milestone I Report

We have prepared our first milestone report including all the deliverables listed above. We have classified team members for each task as *Lead*, *Contributor*, *Reviewer* and *None*.

4. Evaluation of Tools and Processes

Github: Github is a platform where we can communicate through issues, assign tasks, document our weekly meetings and show what we have produced as a team. It is simply the main platform on which we work and mature our project. It also helps us stay organized and up to date.

Discord: Discord is the platform on which we hold our weekly meetings. We have voice and text channels separated by topic, allowing us to communicate in a very organized, clear and practical way. We also use this platform for sharing files, distributing tasks and working out ideas that come to us during the week.

Whatsapp: We use Whatsapp as it allows practical, fast and easy communication. It is usually used to decide meeting time and to discuss urgent matters.

Trello & Monday: At the beginning of the semester, we thought of using an application specifically for project management, in addition to other communication tools we had already decided to use. We gave up on this idea because free versions of these applications offered limited access and we felt the communication tools we used were sufficient.

Uizard: Uizard is the tool that we used for creating mock-up scenarios. Although it was not very practical and did not offer much variety for the scenarios we wanted to design, we were able to achieve a good result with it. Besides, it was a big plus for us that it allowed collaborative work.

Lucidchart: We used Lucidchart to design UML diagrams. As a team, we were quite satisfied with Lucidchart because it lends itself to collaborative work and we could find everything we needed for the diagrams we wanted to design.

ProjectLibre: ProjectLibre was used for project planning. It was not very comfortable to use as it did not allow many of the shortcuts and collaborative work. Therefore, project planning unfortunately took much more time than we had expected. Also, it has a pretty useless date system and we spent considerable time trying to get the date exactly in the format we wanted. Although we did not like it in general, we were able to get a remarkable result as a team.

Note: Don't forget to include the work you will have done for Milestone 1

Karahan Saritaş

Task Type	Task Description
Project Planning	Attended the weekly meetings (including customer meetings in PS). Links to meeting notes: #1, #2, #3, #4, #5, #6, #7, #8, #9, #10, #11.
Documentation	Created the homepage of the wiki. Issue: #1
Communication	Created our Discord channel and I am responsible for maintenance of it.
Documentation	Created my personal wiki page . Issue: #3
Research	Research about Git & Github. Contributed to Research on Git . Related issue: #18
Research/Documentation	Research about markdown, wiki documentation. Created Markdown Guide that includes commonly used Markdown features. Issue: #11
Research/Documentation	Researched and added favorite Github repository . Issue: #4
PS	Attended the problem sessions.
Documentation	Documented meeting notes #2 and #6 on wiki.
Documentation	Created timesheets and updated weekly.
Research/Documentation	Created draft for User Requirements and developed it with Serdar and Metehan. Related issue: #21.
Research/Documentation	Research about Art Community Platforms . Related issue: #23
Research	Research about mock-ups, UML's and Milestone in the repositories of previous years.
Design/Documentation	Created and developed Collaborator Scenario&Mockup third scenario and visual material with Sinem. Related issue: #40
Software Design	Contributed to use-case diagram, class diagram and sequence diagram. Documented my contributions in the comments. Created Commenting on an Art Item sequence diagram. Reviewed other sequence diagrams. Related issue: #49, #50, #47
Requirements Elicitation	Critically reviewed and contributed to the entire requirements. Documented all of my addition/modifications under the related issues. Documented Related issue: #53, #54, #57, #62, #68, #69, #76. Related parent issue: #56
Requirements	Along the reviews, modified and expanded the Glossary . Related issue: #35
Review	Review the diagrams multiple times, along with other team members.
Review/Documentation	Review and update the acceptance criteria of the first scenario Art-Follower User . Related issue: #55
Project Planning/Milestone1	Planned Milestone1 report in meetings along with other team members. Related issue: #73
Milestone	Created Project planning with Sinem, Furkan and Elif. Related issue: #80
Milestone	Prepared the list and evaluation of deliverables. Related issue: #74

Doğukan Türksoy

Task Type	Task Description
Project Planning	Attended the weekly meetings. Meeting #1 , Meeting #2 , Meeting #3 , Meeting #4 , Meeting #5 , Meeting #6 , Meeting #7 , Meeting #9 , Meeting #10 , Meeting #11 .
Documentation	Created my personal wiki page .

Task Type	Task Description
Research	Research about git & github.
Research/Documentation	Researched and added favorite repository .
PS	Attended the problem sessions.
Documentation	Documented Meeting notes #12
Documentation	Created timesheets and updated weekly
Research/Documentation	Developed System Requirements with Hebun and Sinem. Related issue .
Research/Documentation	Research about Art Community Platforms
Research	Research about mock-ups, UML's and Milestone in the repositories of previous years
Design/Documentation	Created and developed Art Follower Scenario&Mockup first scenario with Serdar and Hebun
Software Design	Contributed to Class Diagram. Related issue
Software Design	Created the Sequence Diagram for Editing a Comment. Related issue
PS	Attended Customer Meeting #1
Review	Review the diagrams multiple times, along with other team members.
Project Planning/Milestone1	Planned Milestone1 report in meetings along with other team members.
Milestone1	Created RAM with Sinem , Serdar and Hebun

| Review| Review of all the requirements. Related [issue](#) |

Sinem Koçoğlu

Task Type	Task Description
Project Planning	Attended the weekly meetings. Meeting#1 , Meeting #2 , Meeting #3 , Meeting #4 , Meeting #5 , Meeting #6 , Meeting #7 , Meeting #8 , Meeting #10 , Meeting #11 .
Documentation	Created my personal wiki page .
Research	Research about git & github.
Research	Research about markdown, wiki documentation.
Research/Documentation	Researched and added favorite repository .
PS	Attended the problem sessions.
Documentation	Documented Meeting notes #3 on wiki.Related issue
Documentation	Created timesheets and updated weekly
Research/Documentation	Created draft for System Requirements and develop it with Hebun and Doğukan. Related issue .
Research/Documentation	Research about Art Community Platforms
Research	Research about mock-ups, UML's and Milestone in the repositories of previous years
Design/Documentation	Created and developed Collaborator Scenario&Mockup third scenario and visual material with Karahan. Related issue
Software Design	Contributed to Class Diagram. Related issue

Task Type	Task Description
Software Design	Created the Sequence Diagram for Holding an Exhibition. Related issue
PS	Attended Customer Meeting #1
Software Design	Review Use Case Diagram to add missing requirements. Related issue
Review	Review the diagrams multiple times, along with other team members.
Documentation	Contributed to user, system and nonfunctional requirements. Related issues #53 , #76 , #68 , #33 , #66
Review/Documentation	Review and update the acceptance criteria of the third scenarioCollaborator. Related issue
Project Planning/Milestone1	Planned Milestone1 report in meetings along with other team members.
Milestone1	Created Project planning with Karahan, Furkan and Elif
Review	Review of all the requirements. Related issue

Elif Bayraktar

Task Type	Task Description
Research/Learning	Researched and learned how to use git & github.
Research/Learning	Researched and learned how to use markdown, organize wiki pages.
Documentation	Created and organized my personal wiki page .
Research/Documentation	Researched and wrote about favorite repositories .
Documentation	Added some useful resources and explanations about git&github to Research on Git page .
Research	Made lots of research at different points, examined previous years' CMPE352/CMPE451 repositories. About mock-ups, UML's, Milestone etc.
Project Planning	Attended all of the weekly meetings. Actively participated in the discussions Meeting#1 , Meeting #2 , Meeting #3 , Meeting #4 , Meeting #5 , Meeting #6 , Meeting #7 , Meeting #8 , Meeting #9 , Meeting #10 , Meeting #11 .
Learning	Attended all of the problem sessions.
Documentation	Kept time throughout the semester and filled the weekly timetable
Research/Documentation	Researched various websites and wrote about 3 of my favorites to the Research about Art Page
Documentation	Took notes during Meeting#4 and Meeting#10 , created/organized their wiki pages. Here are the related issue4 and issue10 that I created.
Research/Design	Created part of non-functional requirements . Here's the related issue that I created.
Design/Documentation	After customer meetings' changes rewrote System-Bidding System Requirements. Here's the related issue that I created.
Design/Documentation	Made several contributions to the glossary . Here's the issue that I created.
Design/Documentation	Designed the pages for Add Art Item and Successful Addition, created/added the persona, preconditions and the acceptance criteria for scenario 2 . Here's the related issue that I created.
Research/Learning	Studied the slides and some other online resources about UML.
Software Design	Designed the main components of the UMLs in week5's meetings, along with other team members.

Task Type	Task Description
Software Design	Made contributions to the Use-case diagram. Especially to exhibition and bidding system. Here's the related issue
Software Design	Made contributions to the Class diagram. Especially to Notification, NotificationTypes, ArtItem, ItemBids and Bid classes. Here's the related issue that I created.
Software Design	Designed the bid for an item sequence diagram. Here's the related issue .
Software Design	Went over the diagrams multiple times, along with other team members.
Enhancement	Created issue templates . Here's the related issue that I created.
Documentation/Milestone	Created the issue for Work done part of Milestone1 report. Designed a basic template and wrote my part.
Design/Documentation	Updated Scenario2 preconditions and acceptance criteria. Here's the related issue
Project Planning/Milestone1	Planned Milestone1 report in meetings along with other team members.
Project Planning/Milestone1	Created Project planning with Sinem, Furkan and Karahan. Here's the related issue
Design/Documentation	Reviewed the entire requirements made several changes. Here's the related issue
Milestone 1	Wrote my work summary for milestone 1.

Sena Mumcu

Task Type	Task Description
Project Planning	Attended weekly meetings #1 , #2 , #3 , #4 , #5 , #7 , #8 , #9 , #11 , #12 .
Documentation	Created my personal wiki page . See related issue here .
Documentation	Created a template for meeting notes and added notes of meeting 1 and meeting 8 . See related issue here .
Customization	Created new issue labels and customized them.
Documentation	Created a Wiki page for group members' research on Git and added some explanation about git and GitHub. See related issue here .
Wiki & README	Added group photo to README and Wiki page. See related issue here .
Wiki	Created a research page for research on different art community platforms. See related issue here .
Research	Did a research on different art community platforms and wrote about my favorite to Research on Art Community Platforms . See related issue here .
Requirements	Added non-functional requirements. See related issue here .
Scenarios & Mockups	Created and designed UI templates for three scenarios using wizard.io . See related issue here .
Software Design	Reviewed the use case diagram and added new actions especially the actions for moderator and copyright system. See related issue here .
Software Design	Created the class diagram and new classes and relations as discussed. See related issues here , here , here and here .
Requirements Elicitation	Added user requirements for copyright infringement as discussed during the meetings and added the terms "Ticket" and "Moderator" to the glossary. See related issue here .

Task Type	Task Description
Requirements Elicitation	Updated the system requirements for search functionality by adding the requirements 1.2.2.3, 1.2.2.4, 1.2.2.5. Added the term "Title" to the glossary. See related issue here .
Project Planning	Created the <i>Signing In</i> sequence diagram. See related comment here .
Scenarios & Mockups	Updated acceptance criteria for the second scenario . See related issue here .
Requirements Elicitation	Reviewed Furkan's changes in nonfunctional requirements. See related issue here .
Milestone 1	Created RAM for milestone 1 with Dogukan, Serdar and Hebun.
Milestone 1	Wrote my work summary for milestone 1.

Serhat Hebun Şimşek

Task Type	Task Description
Research	Researched about git & github.
Research	Researched about wiki documentations.
Documentation	Created my wiki page .
Project Planning	Attended to the weekly following meetings: Meeting#1 , Meeting#2 , Meeting#3 , Meeting#4 , Meeting#5 , Meeting#7 , Meeting#8 , Meeting#9 , Meeting#10 , Meeting#11 .
Research/Documentation	Researched repositories and wrote about favorite repositories .
PS	Attended PS sessions.
Documentation	Created my timesheet and updated it weekly.
Research	Researched about art community platforms and wrote about my favorite one here .
Research	Researched about requirements and glossaries also at many points looked back on previous years CMPE352 repositories.
Documentation	Contributed to glossary on more than one occasion. (see related issue)
Research/Documentation	Developed the System Requirements with Sinem and Doğukan. (see related issue)
Design	Designed first mockup with Dogukan. (see related issue)
Documentation	Kept notes during Meeting#7 and added it to the wiki. (see related issue)
Software Design	Reviewed and made slight changes on the use case diagram during a meeting. (see related issue)
Software Design	Reviewed all of the class diagram and contributed to the class diagram. (see related issue)
Software Design	Created the sending a copyright ticket sequence diagram. (see related issue)
Project Planning/Milestone 1	Planned Milestone1 report in meetings along with other team members.
Project Planning/Milestone 1	Created RAM with Sena ,Doğukan and Serdar (see related issue)
Project Planning/Milestone 1	Wrote my work summary for milestone 1.

Task Type	Task Description
Documentation	Created my personal wiki page.
Research	Researched about git & github
Research	Researched for interesting github repositories and added my favorite one.
Customization	Created new issue labels. Related issue.
Research	Researched about art community platforms.
Requirements	Added non-functional requirements. Related issue.
Documentation	Took meeting notes of Meeting #3 and Meeting #9
Project Planning	Attended weekly meetings. Meeting #1, Meeting #3, Meeting #4, Meeting #5, Meeting #6, Meeting #7, Meeting #8, Meeting #9, Meeting #10, Meeting #11.
PS	Attended PS sessions regularly.
Documentation	Updated my timesheet regularly.
Review	Reviewed review needed issues as much as possible.
Design & Scenarios	Designed Scenario 2's website UI for the mock up meeting. Wrote actings for it and added UI frames to the wiki page. Related issue.
Requirements	Added terms to the glossary. Related issue.
Research	Researched about mock-up scenarios, UML diagrams and project planning from both previous years and the web.
Software Design	Reviewed the use case diagram many times and actively involved in the design of bidding and moderation part. Related issue.
Software Design	Reviewed the class diagram many times and actively involved in the design of user, level system, recommendation engine, search engine, bidding system and notification classes. Related issue.
Software Design	Created the Following a User sequence diagram. Related issue.
Design/Documentation	Updated Scenario 2 with Sena and Elif as remarkable changes had been made to the requirements. Related issue.
Requirements	Reviewed and made contributions to following and notification system. Related issue.
Requirements	Created capacity non-functional requirement in line with what we talked about at the meeting. Related issue.
Project Planning/Milestone1	Evaluated tools and processes we used for the deliverables. Related issue.
Project Planning/Milestone1	Planned Milestone1 report in meetings along with other team members.
Project Planning/Milestone1	Created Project Planning with Karahan, Elif and Sinem. Related issue.

Serdar Akol

Task Type	Task Description
Project Planning	Attended the weekly meetings (including customer meetings in PS). Links to meeting notes: #1, #2, #3, #4, #5, #6, #7, #8, #9, #10, #11, #12

Task Type	Task Description
Customizing wiki page	Customized the sidebar menu of the wiki. Created the timesheet pages issue #6 . Also other related issues: #27, #10 #42
Documentation	Created my personal wiki page . Issue: #3. Creating elevator pitch page of the project issue #28
Research/Documentation	Research about Git & Github. Benchmarking project management tools "Trello" and "Monday" issue #7 #12 Researching art community platforms issue #19
Research/Documentation	Researched and added favorite Github repository . Issue: #4
PS	Attended most of the problem sessions, especially with the customer meetings ones.
Documentation	Documented meeting notes #5 and #11 on wiki.
Documentation	Created timesheets and updated weekly.
Research/Documentation	Created draft for User Requirements and developed it with Karahan and Metehan. Related issue: #21.
Research	Research on mock-ups and scenarios, requirements, UML diagrams and Milestone reports in the repositories of previous years.
Design/Documentation	Created, developed Art collector Scenario&Mockup first scenario with Doğukan and Hebun. I was more involved in creating the scenario and reviewing and giving feedback on the mockups. Related issue: #45
Software Design	Contributed to use-case diagram, class diagram and sequence diagram. We created and reviewed collectively in meetings, also individually. Documented my contributions in the comments. Created Sharing an Art Item sequence diagram. All Related issues and comments: #49, #47, #50
Requirements Elicitation	Critically reviewed and contributed to the entire requirements. Documented all of my addition/modifications under the related issues. Documented Related issues and comments: #71, #58 #69, #76, #54
Requirements	Besides the requirements, I have also reviewed and add some definitions to the glossary, in terms of consistency.
Review	Review the diagrams multiple times, along with other team members.
Review/Documentation	Review and update the acceptance criteria of the first scenario Art-Follower User . Related issue: #55
Milestone	Planned Milestone1 report in meetings with team members. Related issue: #73
RAM/Milestone	Created Responsibility assignment matrix with Sena, Hebun and Doğukan. Related issue: #72
Milestone	Writing the executive summary: #77
Milestone	Designing project status diagram: #78
Milestone	Reviewing Milestone report. Related issues: #74

Mustafa Cihan

Task Type	Task Description
Project Planning	Attended the weekly meetings. Links to meeting notes: #2, #3, #4, #7, #8, #11, #12
PS and Meetings	Attended most of the problem sessions and meetings.
Documentation	Created personal wiki page . Issue: #3.
Research/Documentation	Research about Git and Github. Researched and added favorite Github repository . Issue: #4 issue #19

Task Type	Task Description
Research/Documentation	Created draft for User Requirements and developed it with Karahan and Metehan. Related issue:#21.
Documentation	Created timesheets and updated it.
Research	Researched on mock-ups and scenarios, non-functional requirements, user case diagrams, class diagrams, sequence diagrams and Milestone reports in the repositories of previous classes.
Requirements	Specified non-functional requirements and made research about them. Issue#26
Requirements	Accessibility requirements are added. Issue#37
Requirements	Improved the glossary with definitions. Issue#35
Requirements	Reviewed the requirements.
Software Design	Contributed to use-case diagram, class diagram and sequence diagram. Documented my contributions in comment section of related issues #49#50#47
Software Design	Created Resetting Password diagram in sequence diagrams.
Software Design	Reviewed the UML Diagrams with other members of the team multiple times.
Milestone	Summarized my work. Related Issue
Milestone	Finalized the milestone report. Reviewed and combined deliverables. Issue#73

Metehan Dündar

Task Type	Task Description
Project Planning	Attended the weekly meetings.
Documentation	Created personal wiki page
Documentation	Created favorite github repository
Research	Researched about github.
Problem Sessions	Even not attended, watched later.
Documentation	Created weekly timesheets
Design	Collaboratively designed for scenarios, and reviewed others.
Software Design	Reviewed the use-case, class and sequence diagram.
Software Design	Created sequence diagram for private messaging.
Requirements and theirs elicitation	Reviewed the contributions of my teammates.
Glossary	Reviewed the contributions of my teammates.

6. Requirements

6.1 Software Requirement Specification

Glossary

- **User:** A person who opens and uses the application or website. A user can be registered or unregistered.
- **Unregistered User/Guest User:** A user who opens and uses the application or website without signing in. It can also be referred to as a *level 0* user.
- **Registered User:** A registered user is the user of the application or website who has previously registered. It can also be referred to as a *level 1* user. Registered User extends the Guest User, meaning that a registered user can perform all the functionalities provided for a guest user.
- **Active User:** An active user is a registered user who can additionally sell an art item, receive an offer for an art item, create a custom tag, submit a ticket to a moderator regarding a copyright issue and demand copyright for an art item. It can also be referred to as a *level 2* user. Active User extends the Registered User, meaning that an active user can perform all the functionalities provided for a registered user.
- **Moderator:** A user that has access to most of the functionalities of the platform, who also controls other users' actions. Moderator extends the Active User, meaning that technically a moderator can perform all the functionalities provided for an active user. Moderator and admin can be used interchangeably for the project although we stucked to the term, moderator.
- **Copyright:** A type of intellectual property that protects the work of the creator, and gives its owner the permission to copy and distribute the work.
- **Copyright ticket:** A copyright infringement ticket, which can be created and received by users of the platform.
- **Art Item:** A visual piece of art belonging to a specific user, possibly having copyright.
- **Semantic search:** Data searching technique in a which a search query aims to not only find keywords, but to determine the intent and contextual meaning of the words a person is using for search.
- **Semantic tag:** A string which can be used to identify an art item, exhibition or search for semantically related art items.
- **Tag:** A string which can be used to identify an art item.
- **Type:** A string that defines the category of the art item.
- **Title:** A distinguishing and descriptive name of an art item.
- **Description:** An entry, statement that gives details about the art item, written by the owner of the work.
- **Exhibition:** A special event containing a collection of art items belonging to either a single or multiple users. An exhibition can be hold either online or offline.

An offline exhibition takes place in a physical location specified by the organizer of the exhibition, whereas an online exhibition takes place on the online platform.

- **Discussion:** Collection of comments and replies under an art item.
- **Interaction:** A quality of users, measured by the number of comments/shares on the platform.
- **Level:** Each user belongs to a specific level group, levels are based on the user's *interaction* with the platform.
- **Popularity:** A quality of users, measured by the number of followers, owned copyrighted items, and partaken art exhibitions.
- **Verified:** A specification granted to selected users based on the *popularity* criteria in the platform.
- **User Interface:** User Interface (UI) is the space where interactions between users and the system occur.
- **Comment:** A written remark expressing an opinion or reaction under an art item.
- **Reply:** A written remark expressing an opinion or reaction as a response to a comment. A reply can be considered as a comment whose parent is a comment rather than an art item.
- **Homepage:** Introductory page for a user when he logs in to the system. It includes artworks of followed users, most popular artworks of the week, exhibitions and personalized recommendations based on the activity history.
- **Profile page:** A page that gives information about the user. Profile page contains all the art items shared by the user.
- **Activity History:** A list containing all activity that a registered user made including posted art items, liked art items, comments, tag history, search history and location history. This list is the basis of personalized recommendations for a registered user.
- **Attendee:** A user who attends an online/offline exhibition.
- **Participant:** An abstract type of registered user, participating in an exhibition. Participants of an exhibition can either be a collaborator or an exhibition organizer.
- **Collaborator:** A user who works jointly with other collaborators in an exhibition.
- **Exhibition Organizer:** A user who organizes/publishes an online/offline exhibition. Exhibition organizer can change settings of the exhibition, invite other users as collaborators, and approve added art items . An exhibition organizer can hold the exhibition solo or collaboratively with other users, who will be called as *collaborators*.
- **Bid:** Class attached to an art item, specifying the attempt made to purchase the item by a registered user, provided that the item is for sale. Includes duration and amount.
- **Seller :** An active user that has made one of their art items open for sale.
- **Bidder :** A registered user that has made a bid on an art item that is for sale.
- **For sale:** A status of an art item, achieved on request of the active user owning that item, meaning that the item is accepting bids.
- **Username:** A string that allows registered users to log in their accounts. It will be publicly visible to other users and shall be unique.

- **Password:** A string that allows registered users to log in their accounts. It is essential for security and uniqueness of accounts.
- **Annotation:** A Web Resource. Typically, an Annotation has a single Body, which is a comment or other descriptive resource, and a single Target that the Body is somehow “about”. The Annotation likely also has additional descriptive properties.
- **Notification:** A message that notifies a registered user when another registered user sent a message to the user, followed the user, commented on an art item of the user, liked an art item of the user, an art item of the user is sold or an art item removal is requested to the user. In accordance with the recommendation algorithm, the system may also send notifications to users.
- **Transaction:** Exchange of art item(s) and money based on trust between two active users.
- **Ticket:** A request sent to a moderator for help with a problem with copyright or transaction issues by an active user.
- **Message:** A piece of information that a registered user sends to another registered user through chatting system. When a message is sent, message receiver gets a notification.
- **Chat:** User-to-user messaging interface that also keeps track of conversation history.
- **Follower:** A registered user following another registered user. A follower can see the latest art items posted by users she follows on her homepage and also gains access to the profile of users who use their profile privately.
- **Inappropriate Content:** Hate speech, predatory behavior, graphic violence, malicious attacks, and content that promotes harmful or dangerous behavior.
- **Geotagging:** Geotagging is the process of appending geographic coordinates to media based on the location of a mobile device. Geotags can be applied to photos, videos, websites, text messages, and QR codes, and could also include time stamps or other contextual information.
- **Bookmark:** Bookmarking is recording the address (URL) of a webpage to enable quick access in the future. Bookmarking an art item, exhibition or comment is storing the URLs of related entities for later reference.

Requirements

1. Functional Requirements

1.1. User Requirements

1.1.1. Registration/Login

- 1.1.1.1. Users shall be able to sign up for the application using their e-mail, username and password. E-mail and username shall be unique for each account.
 - 1.1.1.1.1. Users who are registered by providing their credentials listed above, shall confirm their accounts by clicking on the link provided in the confirmation email sent to their e-mail accounts.

- 1.1.1.2. Users should be able to register with their Google accounts.
- 1.1.1.3. Users should be able to login with their Google accounts, provided that they have registered to the application using their Google accounts. (1.1.1.2)
- 1.1.1.4. Users shall be able to log in to the application using their credentials, (username or e-mail), and password.
- 1.1.1.5. Users shall be able to safely log out.
- 1.1.1.6. Registered users shall be able to reset their passwords when logged in from profile settings.
- 1.1.1.7. Registered users shall be able to reset their password without being logged in to the application. In such cases, users shall receive a confirmation code to the e-mail accounts they provided in the registration.
- 1.1.1.8. Users shall be able to safely delete their accounts. Deletion of an account leads to the removal of art items, comments and likes belonging to the deleted user from the platform.

1.1.2. Guest Users

- 1.1.2.1. Guest users shall be able to view the publicly visible art items on the platform.
- 1.1.2.2. Guest users shall be able to zoom in to an art item to examine it more closely.
- 1.1.2.3. Guest users shall be able to read the comments.
- 1.1.2.4. Guest users shall be able to view other users' profiles.
- 1.1.2.5. Guest users shall be able to get most popular art items and online/offline exhibitions of the week to the homepage.
- 1.1.2.6. Guest users shall be able to use search engine of the platform. (refer to 1.2.2. for details)

1.1.3. Profile Management

- 1.1.3.1. Registered users shall have a profile page with some functionalities provided below.
- 1.1.3.2. Registered users shall be able to add short descriptions about themselves to their profile page.
- 1.1.3.3. Registered users shall be able to upload/change their profile picture.
- 1.1.3.4. Registered users shall be able to provide name, surname, age and location.
- 1.1.3.5. Registered users shall be able to change visibility of a specific art item posted by them. If the visibility of the art item is set to private, then only the followers of the user shall be able to view it.
- 1.1.3.6. Registered users shall be able to mute or enable notifications.
- 1.1.3.7. Active users shall be able to create new tags for the art items.
- 1.1.3.8. Registered Users shall be able to see their level based on their *interaction* in the application. *Interaction* shall be measured according to the number of comments and shares they did on the platform.
- 1.1.3.9. Registered Users shall be able to see their *popularity* in the application. *Popularity* metrics are listed in (1.2.5.1).
- 1.1.3.10. Active users shall be able to apply for a account verification.

1.1.4. User Interaction

- 1.1.4.1. Registered users shall be able to follow other users. When a user follows other users, follower users shall be able to see the activities of the user followed, such as, art items, exhibitions etc.
- 1.1.4.2. Registered users shall be able to unfollow the users they have followed before.
- 1.1.4.3. Registered users shall be able to upload and share art items.
 - 1.1.4.3.1. Registered users shall be able to specify the type of the art item they upload.
 - 1.1.4.3.2. Registered users shall be able to specify the visibility settings of the art item they upload. Art items can be visible to the public or to the followers of the user.
 - 1.1.4.3.3. Registered users shall be able to add a title to the art item they upload.
 - 1.1.4.3.4. Registered users shall be able to add tag(s) to the art item they upload.
 - 1.1.4.3.5. Registered users shall be able to add a description to the art item they upload.
- 1.1.4.4. Registered users shall be able to like an art item.
- 1.1.4.5. Registered users shall be able to make comments on art items.
- 1.1.4.6. Registered users shall be able to like a comment.
- 1.1.4.7. Registered users shall be able to reply to a comment. Reply is also considered as a comment.
- 1.1.4.8. Registered users shall be able to edit their comments. Same functionality applies for replies.
- 1.1.4.9. Registered users shall be able to attend an online exhibition as an attendee.
- 1.1.4.10. Registered users shall be able to mark themselves as attendee to an offline exhibition by giving their location.
- 1.1.4.10. Registered users shall be able to chat with other users. They shall be able to send and receive private messages.
- 1.1.4.11. Registered users shall be able to bid on art items put for sale. (refer to 1.2.4.)

1.1.5. Copyright Infringement

- 1.1.5.1. Active users shall be able to demand copyright for an art item they created.
- 1.1.5.2. Active users shall be able to submit a copyright ticket to a moderator regarding a copyright issue.
- 1.1.5.3. A moderator shall be able to receive a copyright ticket from another user.
- 1.1.5.4. A moderator shall be able to ban a user that was mentioned in the copyright ticket and that didn't remove the art item related to the copyright ticket.
- 1.1.5.5. A moderator shall be able to send an item removal request notation to the user that was mentioned in the copyright ticket.

- 1.1.5.6. Registered users shall be able to write reports to a moderator about inappropriate content.

1.1.6. Exhibitions

- 1.1.6.1. Registered Users shall be able to organize online or physical exhibitions.
- 1.1.6.2. Exhibition organizers shall be able to add other users as collaborator or exhibition organizer to the exhibition.
- 1.1.6.3. Registered users shall be able to attend an exhibition as an attendee. This type of involvement only grants viewing rights, no ability to make any changes.
- 1.1.6.4. Participants shall be able to add art items to the online exhibition either by adding an existing art item from their gallery or uploading a new art item.
- 1.1.6.5. Exhibition organizers shall be able to send notifications to their followers about the exhibition (refer to 1.2.1.).
- 1.1.6.6. Attendees of a physical exhibition shall be able to share their geographical location using geotagging on the platform.
- 1.1.6.7. Exhibition organizers shall be able to set the start and end date of the exhibition.
- 1.1.6.8. Exhibition organizers shall be able to tag the exhibition with the existing tags created by active users.
- 1.1.6.9. Exhibition organizers shall be able to set title and description for the exhibition.
- 1.1.6.10 Each added art item must be approved by an organizer in order to be visible (properly included) in the exhibition.
- 1.1.6.11 Exhibition organizers shall be able to approve/reject art items added to the exhibition by participants.

1.1.7. Annotations

- 1.1.7.1. Registered users shall be able to bookmark art items, online/offline exhibitions and comments.
- 1.1.7.2. Registered users shall be able to annotate the text content with semantic tags, text or image. Text may be a URL that serves as a hyperlink.
 - 1.1.7.2.1. Registered users shall be able to annotate content in the comments/replies.
 - 1.1.7.2.2 Registered users shall be able to annotate content in the descriptions of the art items.
 - 1.1.7.2.3 Registered users shall be able to annotate content in the titles of the art items.
 - 1.1.7.2.4. Registered users shall be able to annotate content in the descriptions of the online/offline exhibitions.
 - 1.1.7.2.5. Registered users shall be able to annotate content in the titles of the online/offline exhibitions.

1.2. System Requirements

1.2.1. Notification

- 1.2.1.1. Exhibition organizers shall be able to notify their followers via this platform about online/offline exhibitions they open.
- 1.2.1.2. Users added by an exhibition organizer as a collaborator on the exhibition shall be notified with an invitation.
- 1.2.1.3. Users holding an exhibition shall be notified when the collaborators add a new art item to the exhibition.
- 1.2.1.4. Seller shall be notified about offers they receive for the art items.
- 1.2.1.5. Bidder shall be notified when the seller accepts the given offer.
- 1.2.1.6. Bidder shall be notified when the seller declines the given offer.
- 1.2.1.7. Users making an offer on an art item shall be notified when the art item receives a new offer.
- 1.2.1.8. Moderator shall be notified when a ticket about a problem or copyright is submitted by an active user.
- 1.2.1.9. Users shall be notified when an error is occurred during an action.
- 1.2.1.10. Users shall be notified when they receive a follow request.
- 1.2.1.11. Users shall be notified when their follow request is accepted.
- 1.2.1.12. Users shall not be notified when their follow request is rejected.
- 1.2.1.13. Users shall be notified when removal of one of their art items is requested due to copyright claims.

1.2.2. Search

- 1.2.2.1. The system shall allow semantic search which provides/recommends any semantically related context based on the provided semantic tags.
- 1.2.2.2. Text used in titles and the body of the descriptions shall be searchable semantically.
- 1.2.2.3. The system shall support searching for users by their username.
- 1.2.2.4. The system shall support searching for art items by their type.
- 1.2.2.5. The system shall support searching for art items by their title.
- 1.2.2.6. The system shall support searching for art items by their tags.

1.2.3. Recommendation System

- 1.2.3.1. The platform shall track registered users' activities and store the activity history.
- 1.2.3.2. *Activity history* shall consist of following activities of the registered user: art items to which he made a comment or under which he replied to a comment, art items he liked, art items under which he liked comments, users he follows, exhibitions he attended.
- 1.2.3.3. *Activity history* should include art items viewed by the user.
- 1.2.3.4. The platform shall track the locations shared by the user using geotagging. (1.1.6.6.)
- 1.2.3.5. The platform shall recommend physical exhibitions according to the users' interests based on their activity and geotag history.
- 1.2.3.6. The platform shall recommend online exhibitions according to the users' interests based on their activity.

- 1.2.3.7. The platform shall recommend different art items based on the activity history of the registered user. Recommended art items shall be displayed on the homepage of the registered user.
- 1.2.3.8. The platform shall recommend different users based on the activity history of the registered user. Recommended users shall be displayed on the homepage of the registered user.

1.2.4. Bidding System

- 1.2.4.1. The platform shall offer a bidding system to sell and buy art items via this platform, (for users meeting the criteria specified below).
- 1.2.4.2. The system shall provide the active(level 2) users the option to open their (unsold) items for sale; by specifying minimum price and deadline.
- 1.2.4.3. The system shall automatically close item to sale, when the deadline specified by the seller (active user) is reached.
- 1.2.4.4. The system shall provide active users the opportunity to open item for sale, in the item addition stage.
- 1.2.4.5. Active users shall be able to receive offers for their art items that are open for sale.
- 1.2.4.6. Provided that the notifications are on, the owner shall receive a notification whenever they receive an offer for one of their art items.
- 1.2.4.7. Provided that their notifications are on, registered users that have bid on a specific item, shall receive notifications, whenever that item receives an offer.
- 1.2.4.8. The system shall provide the active user with the opportunity to either accept or decline an offer for their art item, within the duration specified by the bidder.
- 1.2.4.9. In the case that an offer is accepted for an art item, the item's status shall be changed to sold by the system.
- 1.2.4.10. Registered users shall have the option to bid (make an offer) on an art items, via specifying duration and amount, provided that the item is open for sale and that the amount matches or exceeds the minimum price set by the seller.
- 1.2.4.11. The system shall automatically expire the bid, when the duration specified by the bidder is reached.
- 1.2.4.12. Provided that the notifications are on, a bidder shall receive a notification whenever one of their bids are rejected or accepted.
- 1.2.4.13. In case of a conflict, the system shall provide both parties of the sale (seller and the bidder), with the ability to submit a ticket to a moderator specifying the problem.
- 1.2.4.14. A moderator shall be able to receive tickets about sale conflicts.
- 1.2.4.15. The system should keep records of all the bids on an item.
- 1.2.4.16. The system should provide the seller with the ability to view a list of previous bids, with sorting options including date and price.
- 1.2.4.17. The system shall provide sellers (active user), with the ability to change the deadline and the minimum price for an art item that is for sale.
- 1.2.4.18. The system should provide the seller and the buyer, a medium of communication via private messages (1.1.4.9).

- 1.2.4.19. The transaction should take place out of the system as specified in the glossary and with the help of communication channels provided by the system (1.2.4.18.).

1.2.5. Verification

- 1.2.5.1. *Popularity* shall be measured according to the number of followers they have, number of copyrighted items, number of partaken art exhibitions and number of comments on their art item.
- 1.2.5.2. Active users shall be able to apply for an account verification.
- 1.2.5.3. Moderators shall be responsible for account verification requests. They shall accept the requests if the *popularity* criteria is satisfied, otherwise they shall reject.

1.2.6. Location

- 1.2.6.1. The system shall be able to track users' locations.
- 1.2.6.2. The system should be able to keep and process users' location history.

1.2.7. Annotation

- 1.2.7.1. The system shall provide an annotation system with text or images for users.
- 1.2.7.2. Annotations must comply with the W3C Web Annotation Data Model and follow W3C standards.
- 1.2.7.3. Semantic tags in the annotations shall be used for semantic search by the system.

1.2.8. Level System

- 1.2.8.1. System shall provide a level-based system to users according to their *interaction* with the community.
- 1.2.8.2. System shall measure the interaction of a user based on the *number of art items* shared by the user and *number of comments* made by him.
- 1.2.8.3. Users shall obtain extra abilities according to their level (available actions are listed below, please refer to the related requirements articles for details)
 - 1.2.8.3.1. Level 0, guest user, shall search and view comments, art items, and user profiles.
 - 1.2.8.3.2. Level 1, registered user, shall comment, post an art item, follow, like, send a private message, delete his/her art item, attend exhibition, hold exhibition, mark geographic location in exhibition, get recommendations based on activity, buy art item, demand verification and edit profile in addition to actions of guest user.
 - 1.2.8.3.3. Level 2, active user, shall add new custom tags, get copyright for art items, sell art items and submit a ticket to the system regarding a copyright issue in addition to actions of registered user.

2. Non-Functional Requirements

2.1. Portability

- 2.1.1. The system is mainly a web application with necessary API implementations.
- 2.1.2. The system shall also have a native Android application that supports the same functionalities.

2.2. Performance

- 2.2.1. The system shall respond to requests within 2 seconds.
- 2.2.2. The system should support up to 5000 requests per second.

2.3. Accessibility

- 2.3.1. The system shall be accessible on Android Platforms and web platforms.
- 2.3.2. The system shall be compatible with popular Android Platforms and popular web platforms.
- 2.3.3. The systems UI shall be accessible by any user regardless of any disability.
 - 2.3.3.1. The interface of the system should have clear layouts with distinct buttons, menus, and calls to action.
 - 2.3.3.2. The interface should take maximum advantage of the available accessibility features such as leverage color, contrast, and visual hierarchy.
 - 2.3.3.3. The interface should resize itself automatically according to the screen size of users' devices.
 - 2.3.3.4. The interface should support accessibility options for colorblind users such as filters for different types of colorblindness.

2.4. Availability

- 2.4.1. The project shall be available in English.
- 2.4.2. The project shall support Chrome, Safari, Firefox browsers.
- 2.4.3. The mobile application shall be available for Android KitKat and later (99.4%).
- 2.4.4. The system shall have 99% of uptime.
- 2.4.5. In the case of an unexpected error, the system should recover in under 1 hour.

2.5. Privacy

- 2.5.1. The project shall follow the rules defined by GDPR/KVKK.
- 2.5.2. The system shall secure the private data of users, such as their contact information, according to the law of the protection of personal data.
- 2.5.3. The copyright of artwork published should be protected.

2.6. Security

- 2.6.1. User passwords shall be at least 8 characters long and include both letters and numbers.
- 2.6.2. User passwords shall be stored in a database using SHA-256 hashing function.
- 2.6.3. The system shall run frequent and regular backups.
- 2.6.4. The system should be secure against malicious attacks.

- 2.6.5. The website shall be able to work with up to date softwares.

2.7. Annotations

- 2.7.1. Annotations shall comply with the [W3C Web Annotation Data Model](#) and follow [W3C standards](#).

2.8. Capacity

- 2.8.1. Each photo uploaded by a registered user, for an art item shall not exceed 10 MB in size.
- 2.8.2. At most 12 photos can be uploaded per art item.

1.2 Scenarios and Mockups

Scenario 1 - Art Follower User

The User and Their Persona

Zeynep, age 37, is a cafe owner in Cihangir, Istanbul. She studied art history at Mimar Sinan University. She likes to follow, read and have discussions about artworks, art movements and new exhibitions. Besides, Zeynep also likes collecting artworks and presenting her collection on the walls of her house and cafe. While ago, she has moved to a rooftop loft in Cihangir close to her cafe. She is thinking about to have a big print of an artwork.

Preconditions

- Zeynep has already signed in to the platform.
- Zeynep is already following the tags and artists she is interested in.

Goals

- Zeynep wants to surf on our platform, search some tags and see discussions about artworks.
- Zeynep wants to send a bid for the artworks that she is interested in to have on the wall of her loft.

Actions

1. Zeynep logs in to the platform on the mobile application by entering her email address and password.
2. Zeynep surfs on the explore page of the platform.

3. Zeynep clicks on the search, types “cactus” and clicks on the search icon.
4. On the search result, Zeynep selects the “#cactus” tag and surfs on the search result page of the tag.
5. Zeynep clicks on one of the results, on the selected artwork page, Zeynep sees the comments and discussions about the art item.
6. Zeynep clicks the name of one of the comments and goes to the user’s profile. Here, she sees the artwork of the user and follows the user.
7. Zeynep clicks one of the art work and goes to the page of the art work.
8. Zeynep clicks on the “send a bid” button and on the new page she types an offer.
9. Zeynep sends the offer and sees the pop-up window saying “Your offer has taken”.
10. Zeynep closes the pop-up window and sees, “send an offer” button has turned into “offer sent” button.
11. Now, she is dreaming about to have the art work on the wall of her loft.

Acceptance Criteria

- 1.1.1.4. Users shall be able to log in to the application using their credentials, (username or e-mail), and password.
- 1.1.4.1. Registered users shall be able to follow other users. When a user follows other users, follower users shall be able to see the activities of the user followed, such as, art items, exhibitions etc.
- 1.2.2.1. The system shall allow semantic search which provides/recommends any semantically related context based on the provided semantic tags.
- 1.2.2.2. Text used in titles and the body of the descriptions shall be searchable semantically.
- 1.2.3.1. The platform shall track registered users’ activities and store the activity history.
- 1.2.3.6. The platform shall recommend different art items based on the activity history of the registered user. Recommended art items shall be displayed on the homepage of the registered user.
- 1.2.4.1. The platform shall offer a bidding system to sell and buy art items via this platform, (for users meeting the criteria specified below).
- 1.2.4.10. Registered users shall have the option to bid (make an offer) on an art items, via specifying duration and amount, provided that the item is open for sale and that the amount matches or exceeds the minimum price set by the seller.

Mockup

1. Zeynep logs in to the platform on the mobile application by entering her email address and password.
2. Zeynep surfs on the explore page of the platform.
3. Zeynep clicks on the search bar, types “cactus” and clicks on the search icon.

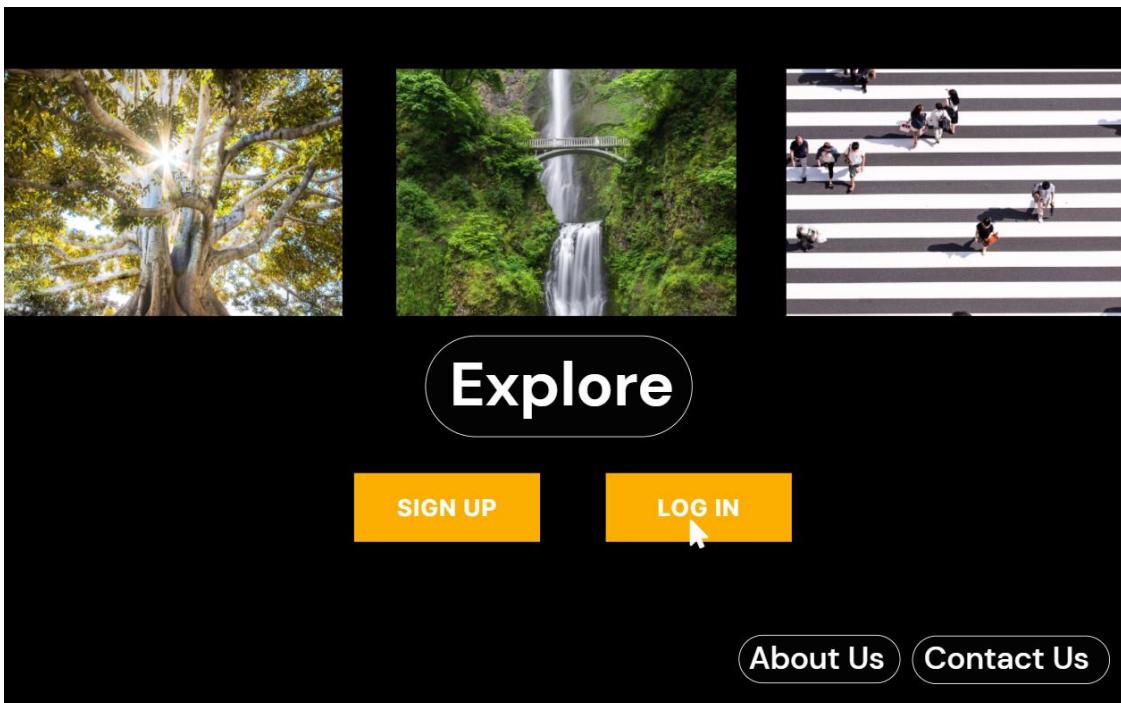
4. On the search result, Zeynep selects the “#cactus” tag and surfs on the search result page of the tag.
5. Zeynep clicks on one of the results, on the selected artwork page, Zeynep sees the comments and discussions about the art item.
6. Zeynep clicks the name of one of the comments and goes to the user's profile. Here, she sees the artwork of the user. Zeynep follows the user.

7. Zeynep clicks one of the art work and goes to the page of the art work.
8. Zeynep clicks on the “send a bid” button and on the new page she types an offer.
9. Zeynep sends the offer and sees the pop-up window saying “Your offer has taken”.
10. Zeynep closes the pop-up window and sees, “send an offer” button has turned into “offer sent” button.
11. Now, she is dreaming about to have the art work on the wall of her loft.

Verified User/Artist Scenario

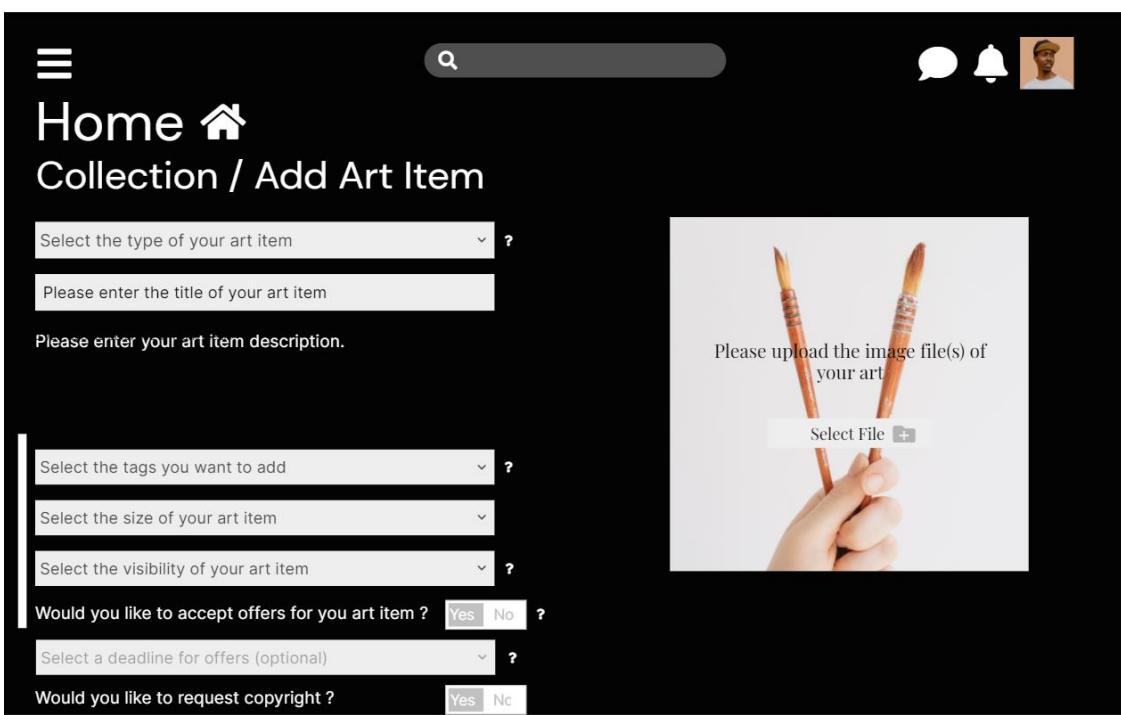
Persona

- Charles Perenyi is an ex art forger turned original artist.
- He is known for producing indistinguishable reproductions of artwork by artists like van Gogh.
- Although he had managed to make quite a fortune by selling his replicas in his day, he insists it was the thrill of conning people that he enjoyed the most.
- But his greed got the best of him and he got caught selling his latest van Gogh.
- Nowadays, he claims to create original work exclusively, which he displays and sells through our app.
- Having to close his atelier/showroom to public due to pandemic, he says he found refuge in our app.
- With the help of the controversy surrounding him, he reaches masses through our app, which he never thought possible before. ## Story Being a verified account holder and a constant user of the app, he logs into his account and adds his newest work with detailed information. Then he receives an offer for one of his previous paintings, which he accepts. ## Preconditions
- Perenyi already has an account.
- He is an active user.
- He has his notifications on. ## Actions
 1. Charles, who wants to leave his past behind and produce original works of art, opens the site he is already a verified member of and is once again enchanted by the beauty of the site's interface.



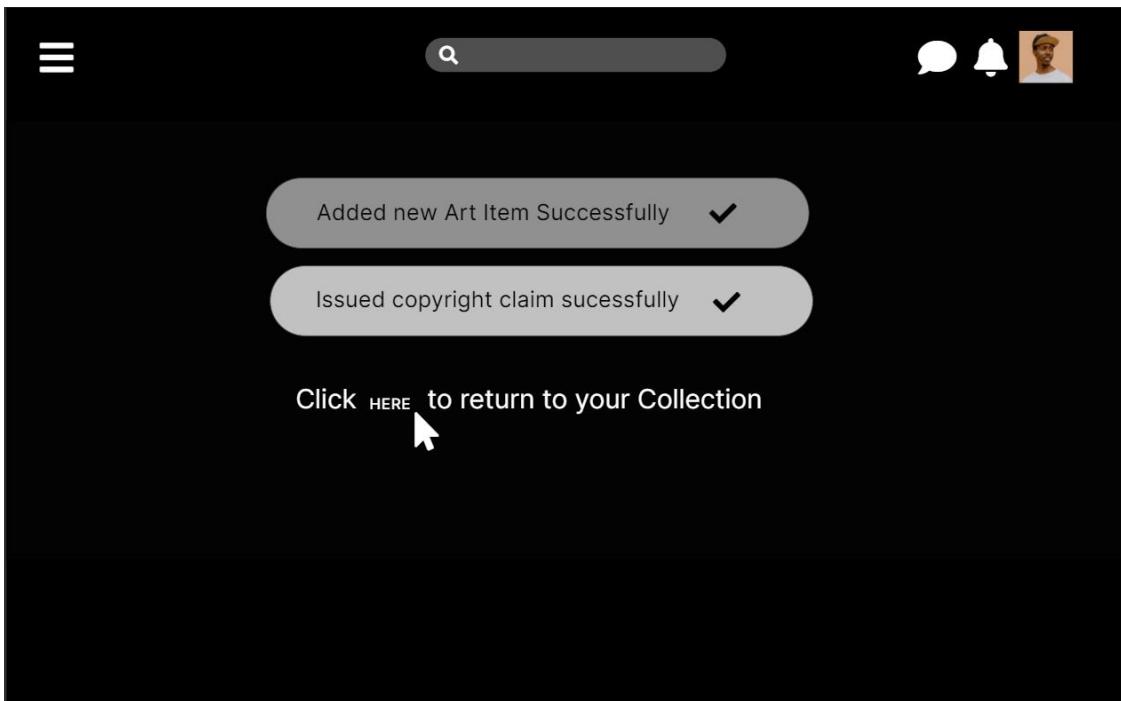
1

2. After logging into the system, he immediately gets to work introducing his latest work of art to his followers. He enters “Add Art Item” page and starts describing his beautiful artwork. He enters the title, adds tags to make it easier for people to find his work and fills the fields for the marketing part. Finally, after describing his work with his own words, he uploads the item to the system.



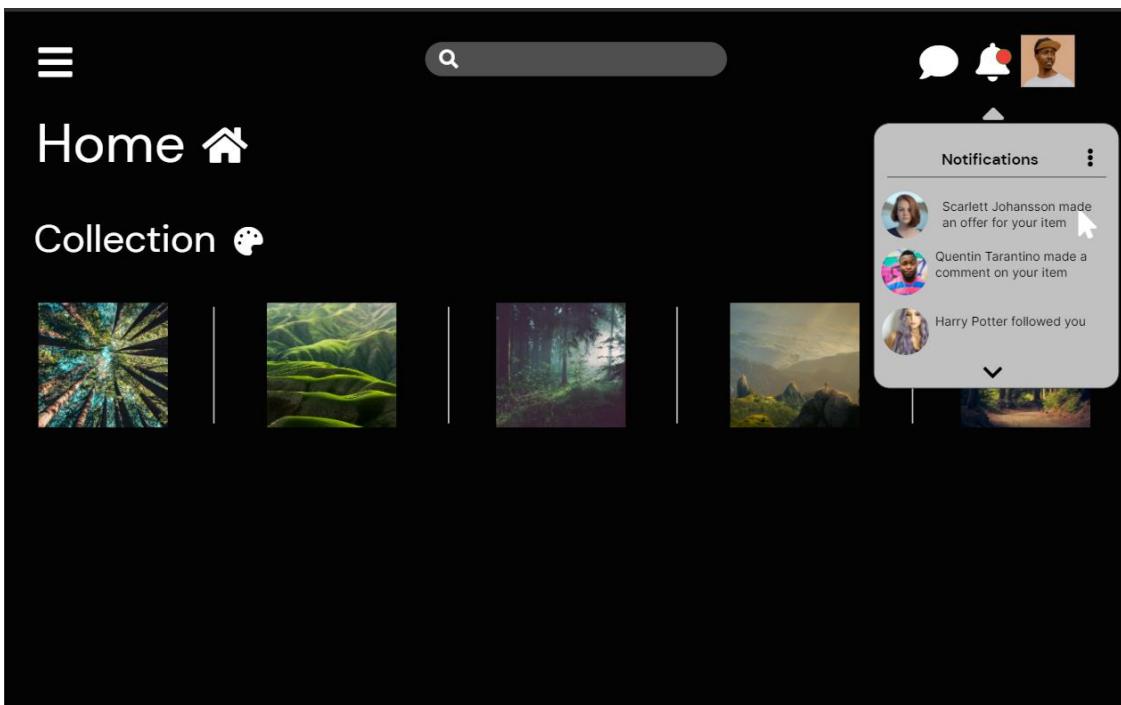
2

3. Since our beloved artist Charles requested copyright, his work is scanned in the system for copyright issues. Then, it is accepted and successfully added to the artist's collection.

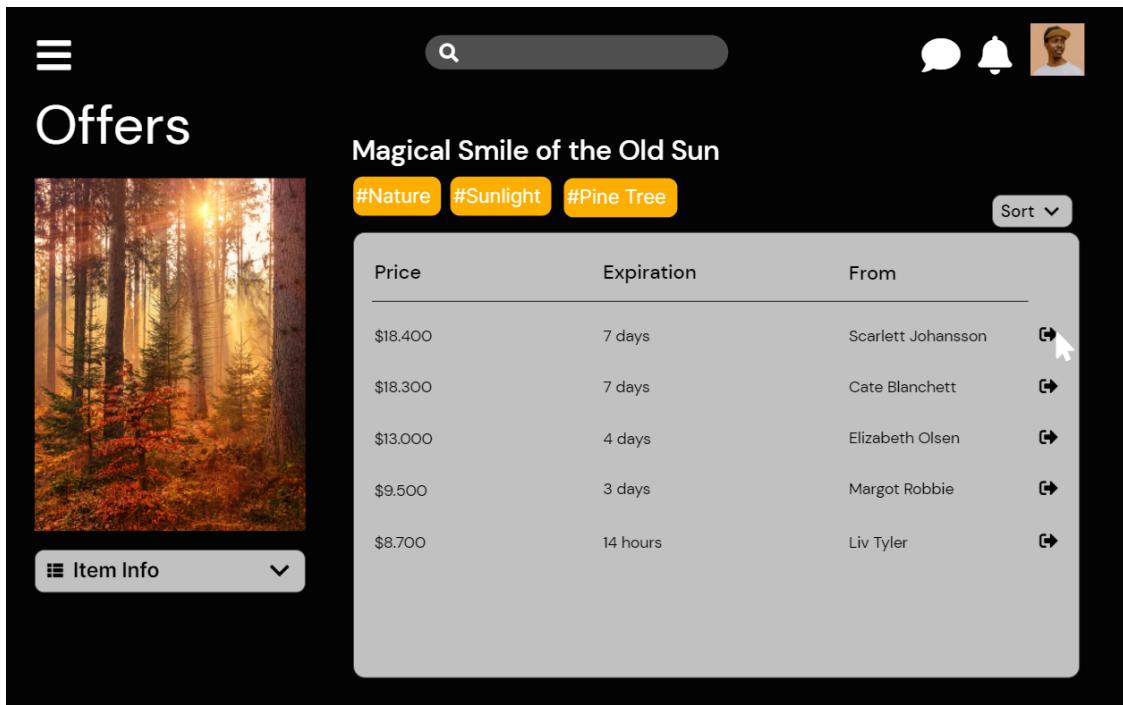


extra

4. Charles, who has been scrolling from collection to collection on the site for a while, is startled by a notification that comes out of nowhere. Scarlett Johansson made an offer to his item! He immediately clicks on the notification.

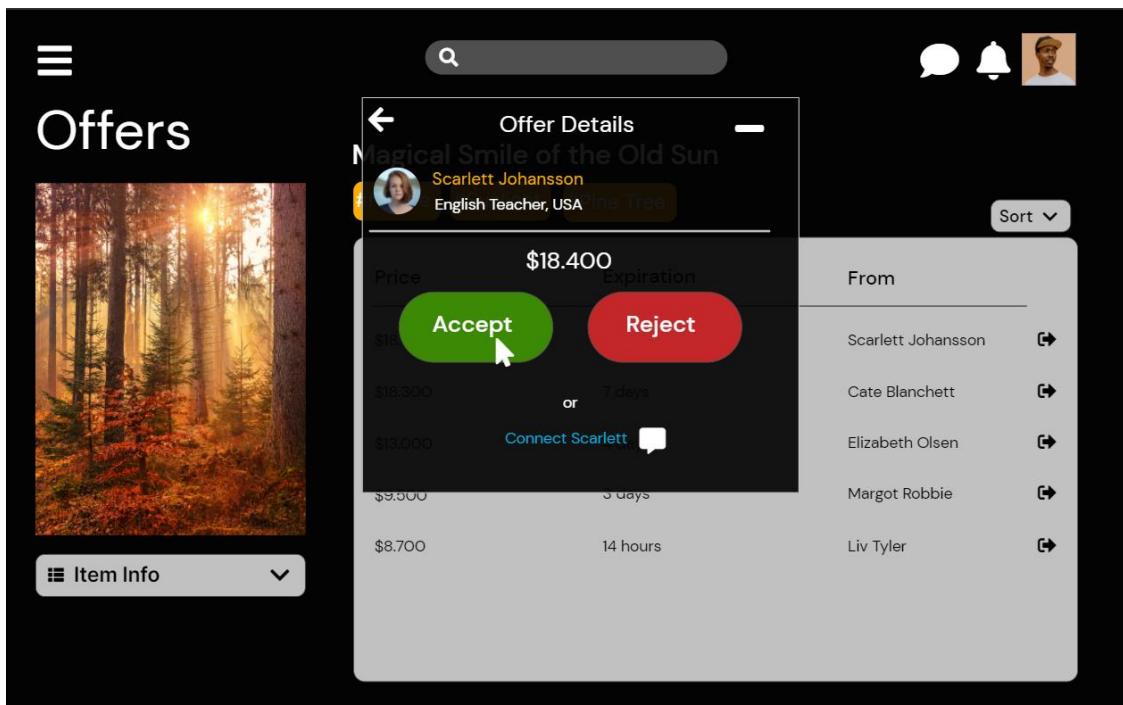


5. Charles' unique work, Magical Smile of the Old Sun, was well liked by the people, and he could clearly see that on its offers page. Moreover, Miss Scarlett has just made an offer that he can't refuse, so he clicked on it to see the details of the offer.



4

6. After considering the details of the offer for a while, Charles succumbed to his love of English teachers and immediately accepted the offer.



5

Acceptance Criteria

- He manages to log into his account. (**Requirement 1.1.1.4**)
- User manages to add a new art item with his specific requirements such as being for sale. (**Requirement 1.2.4.4, Requirement 1.2.4.2, Requirement 1.2.4.1, Requirement 1.1.3.7**)
- He makes a copyright request during item addition. (**Requirement 1.1.5.1**)
- He gets notification for the received offer. (**Requirement 1.2.4.6, Requirement 1.2.4.5, Requirement 1.1.3.6, Requirement 1.2.1.4**)
- He manages to accept the offer. (**Requirement 1.2.4.8, Requirement 1.2.4.9, Requirement 1.2.4.12**)
- Users having bid on that painting receive a notification, to have a chance to raise the current offer. (**Requirement 1.2.4.7, Requirement 1.2.1.7, Requirement 1.1.3.6**)

Requirements Mentioned Above

- * 1.1.1.4. Users shall be able to log in to the application using their credentials, (username or e-mail), and password.
- * 1.2.4.1. The platform shall offer a bidding system to sell and buy art items via this platform, (for users meeting the criteria specified below).
- * 1.2.4.2. The system shall provide the active(level 2) users the option to open their (unsold) items for sale; by specifying minimum price and deadline.
- * 1.2.4.4. The system shall provide active users the opportunity to open item for sale, in the item addition stage.
- * 1.2.4.5. Active users shall be able to receive offers for their art items that are open for sale.
- * 1.2.4.6. Provided that the notifications are on, the owner shall receive a notification whenever they receive an offer for one of their art items.
- * 1.2.4.7. Provided that their notifications are on, registered users that have bid on a specific item, should receive notifications, whenever that item receives an offer.
- * 1.2.4.8. The system shall provide the active user with the opportunity to either accept or decline an offer for their art item, within the duration specified by the bidder.
- * 1.2.4.9. In the case that an offer is accepted for an art item, the item's status shall be changed to sold by the system.
- * 1.2.4.12. Provided that the notifications are on, a bidder shall receive a notification whenever one of their bids are rejected or accepted.
- * 1.1.3.6. Registered users shall be able to mute or enable notifications.
- * 1.1.3.7. Active users shall be able to create new tags for the art items.
- * 1.1.5.1. Active users shall be able to demand copyright for an art item they created.
- * 1.2.1.4. Seller shall be notified about offers they receive for the art items.
- * 1.2.1.7. Users making an offer on an art item shall be notified when the art item receives a new offer.

Collaboration Scenario



Persona

- Ivan Aivazovsky
- Russian [Romantic](#) painter
- Mostly works on seascapes, called as [marine art](#).
- Loves to hang out in art community platforms and share his artworks.
- Apparently has some obsession with seas.

Story

Ivan Aivazovsky is planning to hold an online art gallery with [Lev Lagorio](#), who is known primarily for his seascapes and maritime scenes. He wants to let his followers know that they are going to hold an exhibition. He aims to increase the popularity of his artwork by the help of our art community platform.

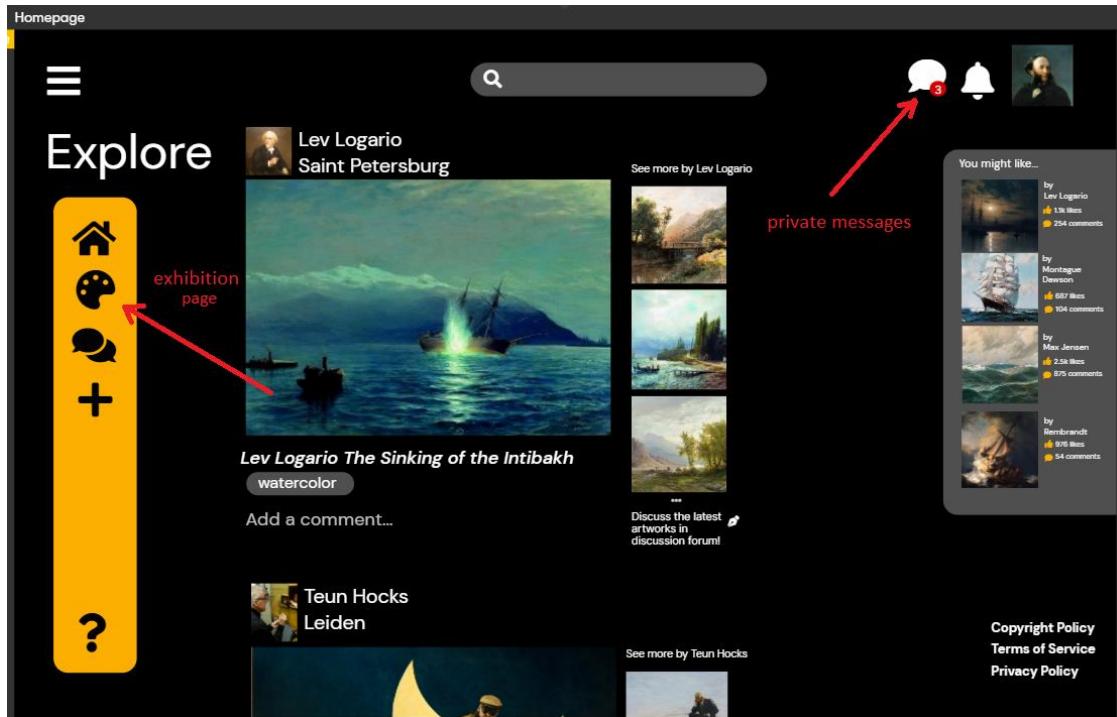
Preconditions

- Ivan Aivazovsky has already registered to the platform.
- Currently he is logged in to the system.

Actions

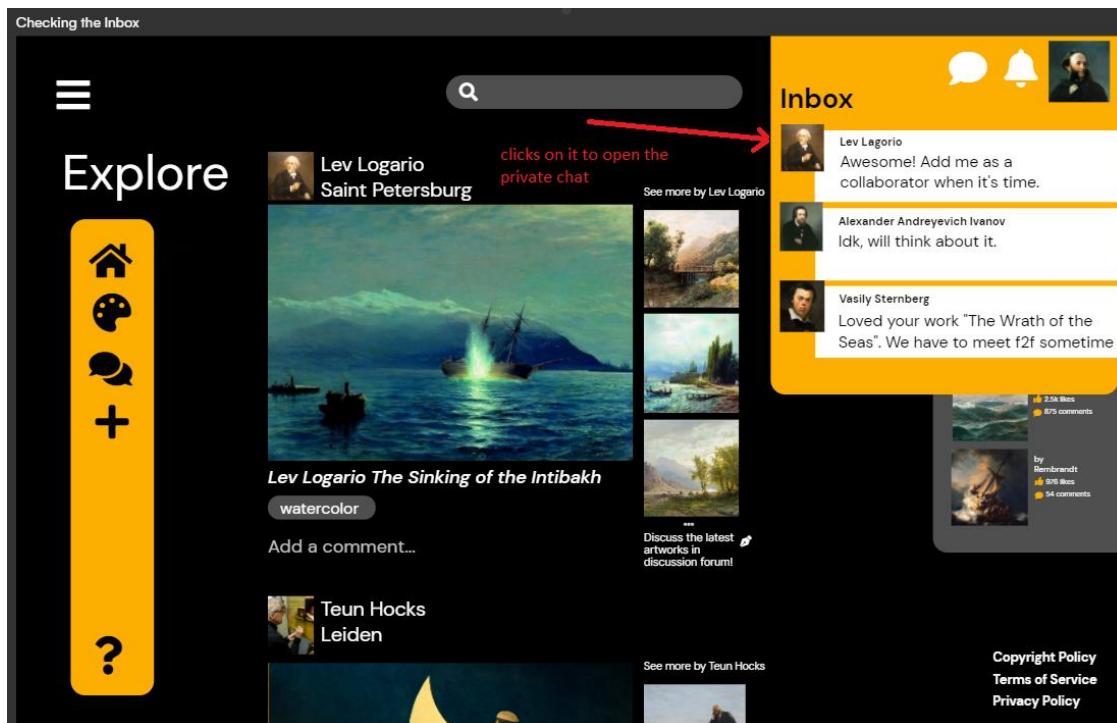
1. Ivan Aivazovsky has logged in to his account. Right now he is at the homepage, viewing the latest artworks dropped on his timeline. At the right of the screen, he can see the suggested artworks based on his activity. On the top-right corner, it says he has

three unread messages in his inbox. It can be also seen that platform recommends artworks based on Ivan's latest activity.



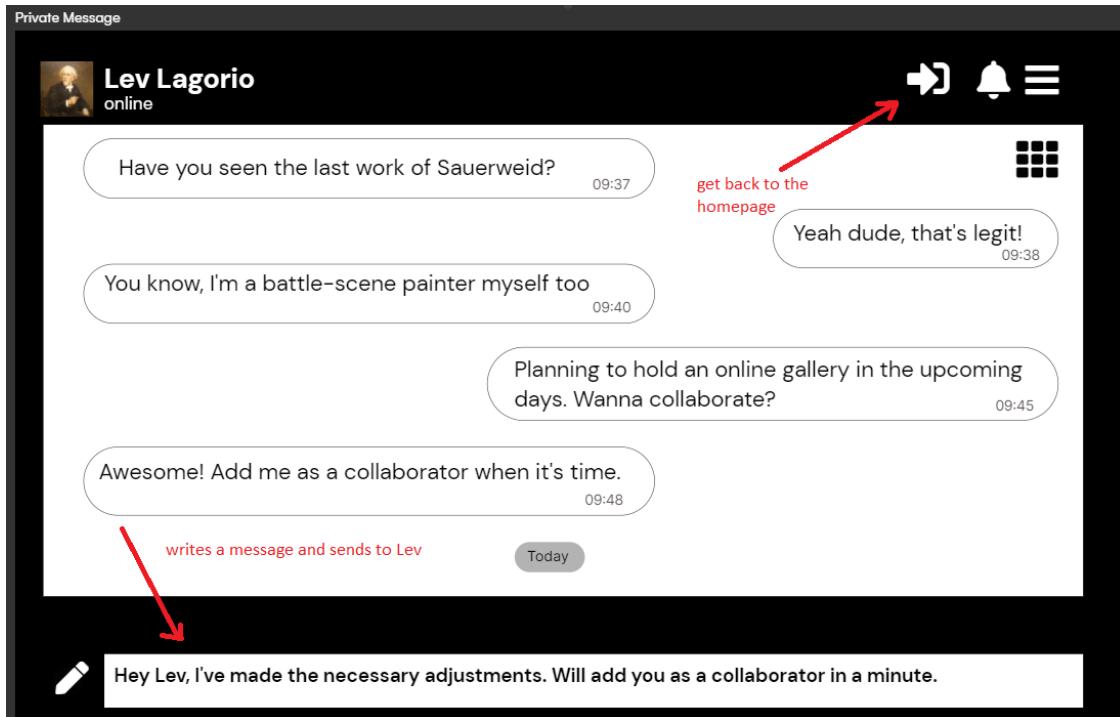
pg1

2. By clicking on the dialog box, he opens a pop-up that shows the unread messages. He moves forward to open the private chat with Lev Lagorio. To do so, he clicks on the message.



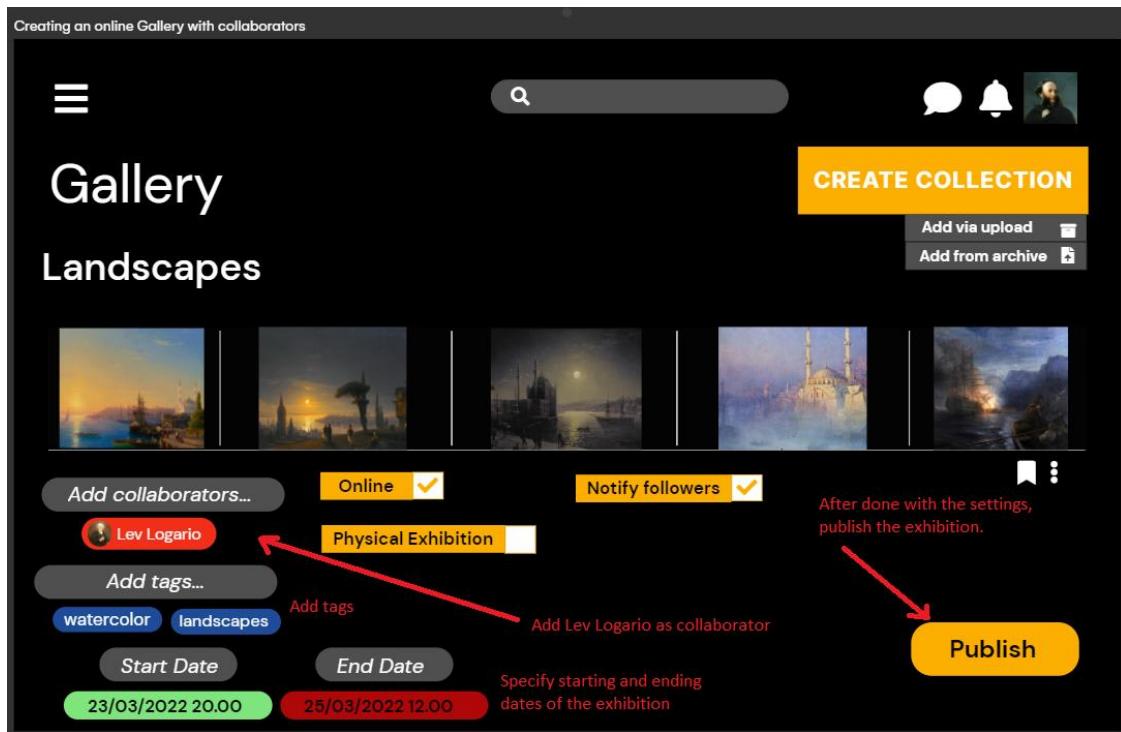
pg2

3. He writes to Lev to let him know that he is going to open the online gallery and add him as a collaborator. He sends the message and then leaves the chat.



pg3

4. After letting him know, he navigates to the Gallery section. He creates a collection and publishes exhibition by adding Lev Logario as a collaborator. He sets starting date, ending date and notification preferences for his followers. He adds tags and gives a title to his gallery as "Landscapes". He writes a description about the exhibition. He could have chosen the physical exhibition option, however he wants to open an online exhibition.



pg4

Acceptance Criteria

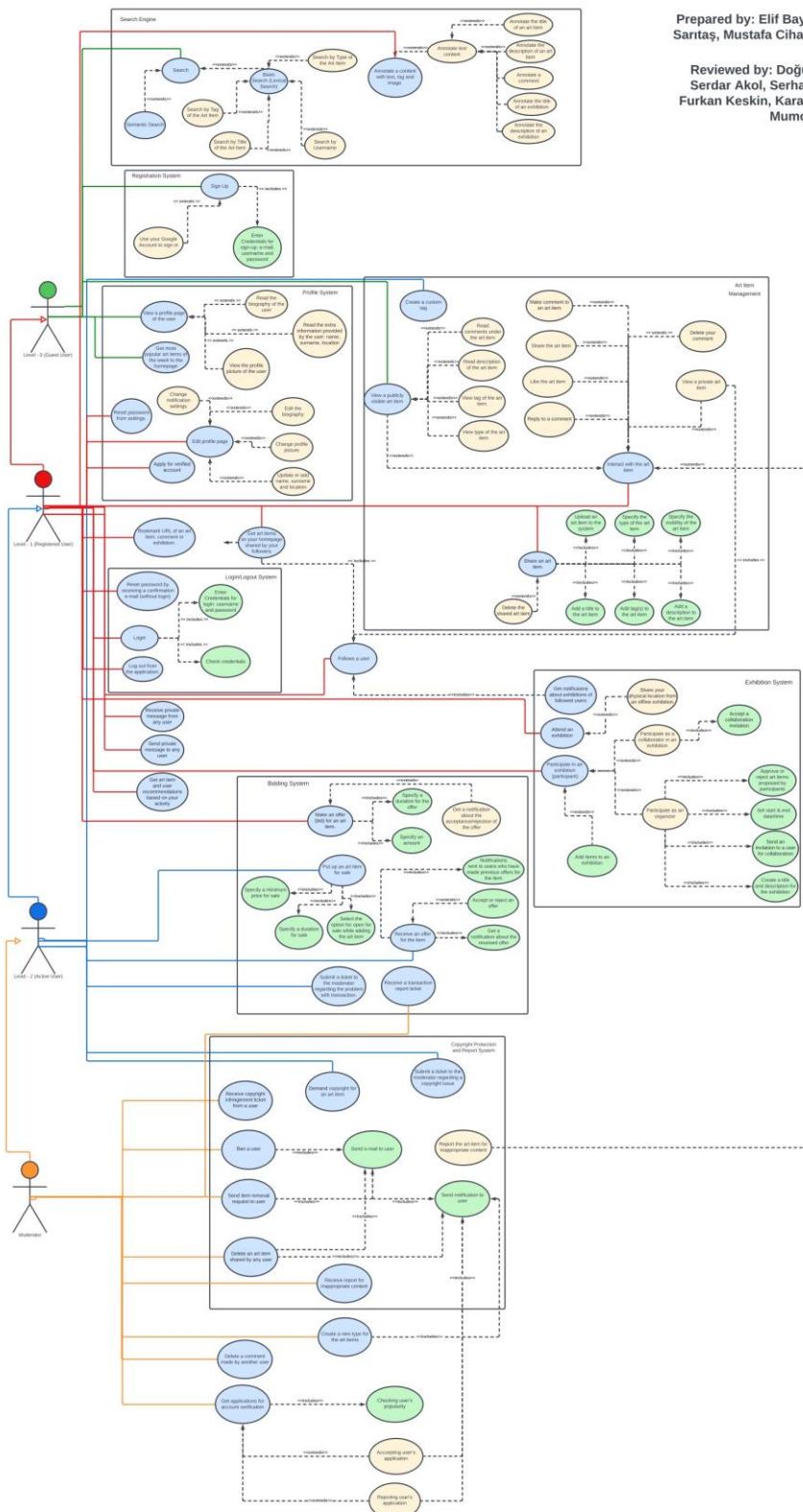
- Users should be able to login with their Google accounts, provided that they have registered to the application using their Google accounts. **(1.1.1.3)**
- Users shall be able to log in to the application using their credentials, (username or password), and password. **(1.1.1.4)**
- Registered users shall be able to chat with other users. They shall be able to send and receive private messages. **(1.1.4.9.)**
- Registered Users shall be able to organize online or physical exhibitions. **(1.1.6.1.)**
- Exhibition organizers shall be able to add other users as collaborator to the exhibition. **(1.1.6.2.)**
- Registered Users shall be able to participate in an exhibition as a collaborator. **(1.1.6.3.)**
- Exhibition organizer and collaborators shall be able to add art items to the online exhibition either by adding an existing art item from their gallery or uploading a new art item. **(1.1.6.4.)**
- Exhibition organizers shall be able to set title and description for the exhibition. **(1.1.6.9.)**
- Exhibition organizers shall be able to set the start and end date of the exhibition. **(1.1.6.7.)**
- Exhibition organizers shall be able to tag the exhibition with the existing tags created by active users. **(1.1.6.8.)**
- Exhibition organizer shall be able to send a notification to his followers about the exhibition. **(1.1.6.5.)**
- Exhibition organizers shall be able to notify their followers via this platform about online/offline exhibitions they open. **(1.2.1.1)**

- The system shall be accessible on Android Platforms and web platforms. **(2.3.1)**
- The interface of the system should have clear layouts with distinct buttons, menus, and calls to action. **(2.3.3.1)**

7. UML Diagrams

7.1 Use Case Diagram

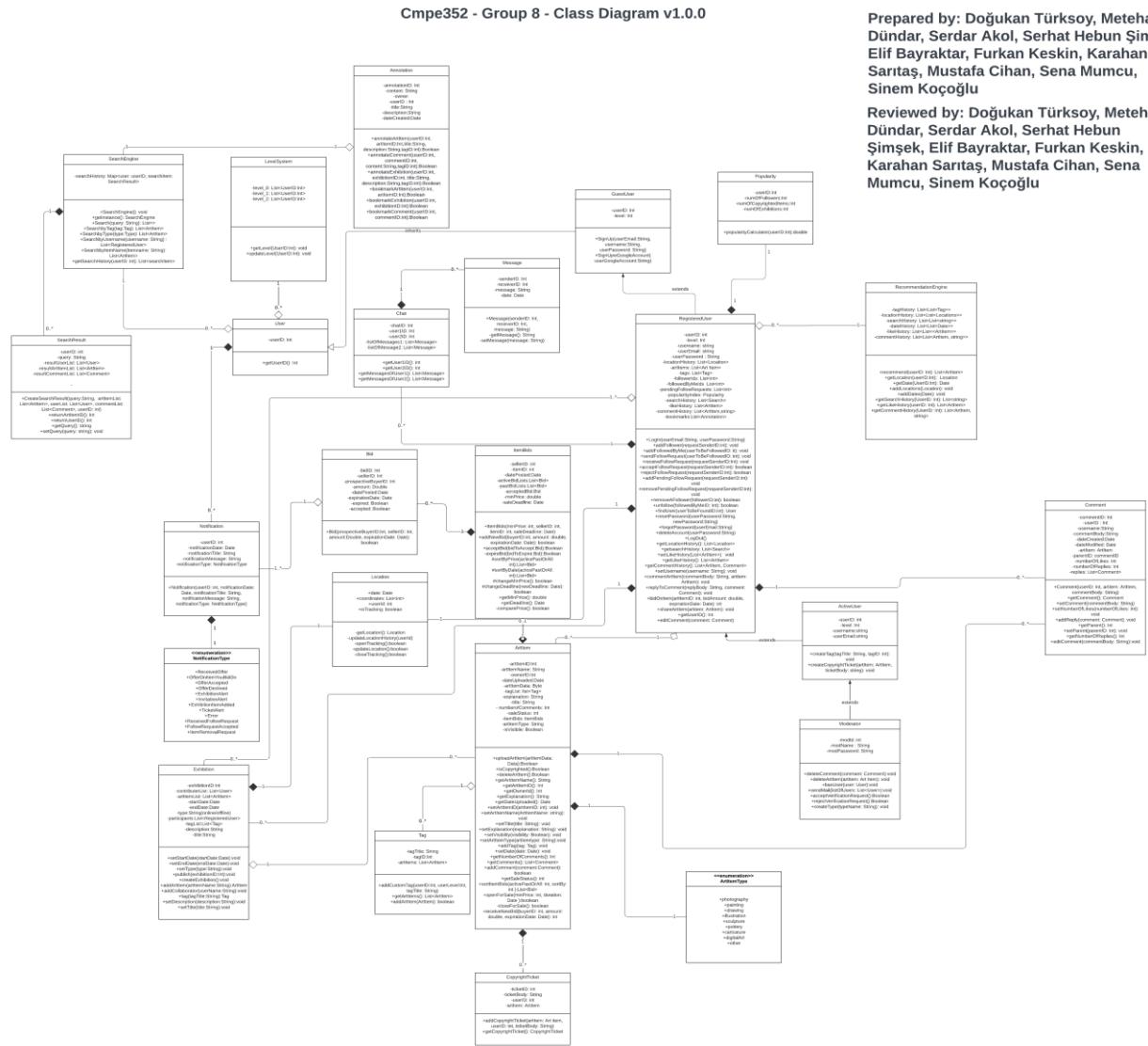
Cmpe352 - Group 8 - Use Case Diagram v1.0.0



Prepared by: Elif Bayraktar, Furkan Keskin, Karahan Saritaş, Mustafa Cihan, Sena Mumcu, Sinem Koçoğlu

Reviewed by: Doğukan Türksoy, Metehan Dündar, Serdar Akol, Serhat Hebun Şimşek, Elif Bayraktar, Furkan Keskin, Karahan Saritaş, Mustafa Cihan, Sena Mumcu, Sinem Koçoğlu

7.2 Class Diagram

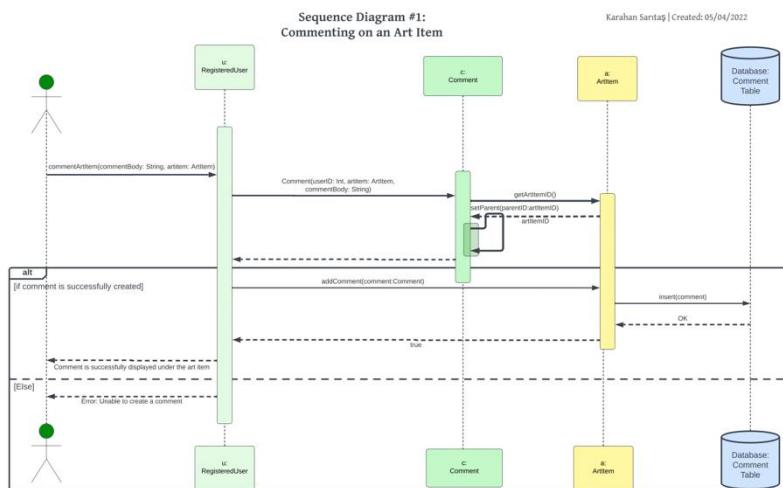


7.3 Sequence Diagram

CmpE352 - Group 8 - Sequence Diagrams v.1.0.0

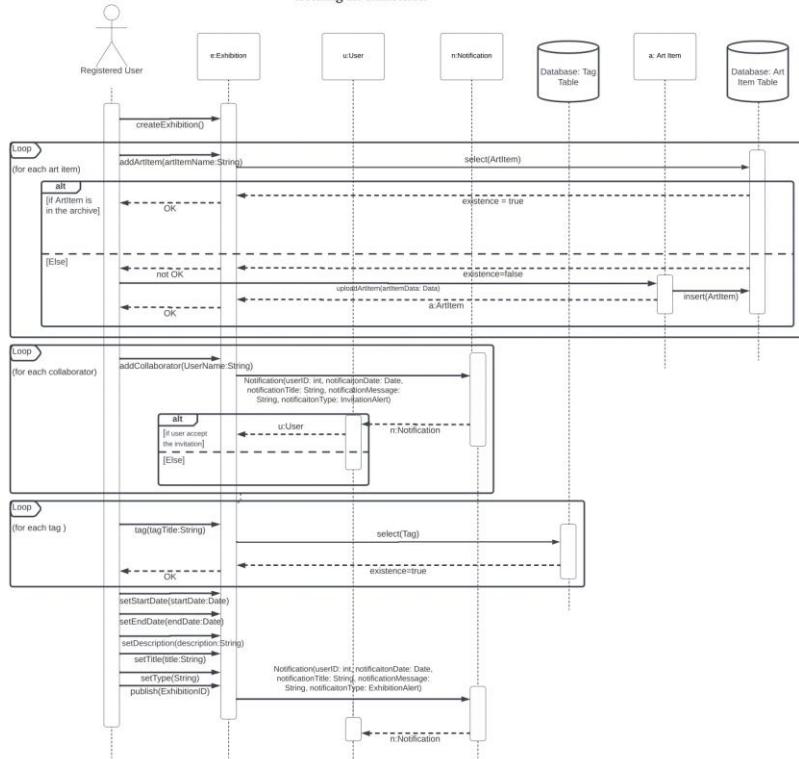
Prepared by: Doğukan Türksoy, Metehan Dündar, Serdar Akol,
Serhat Hebun Şimşek, Elif Bayraktar, Furkan Keskin, Karahan
Sarıtaş, Mustafa Cihan, Sena Mumcu, Sinem Koçoğlu

Reviewed by: Doğukan Türksoy, Metehan Dündar, Serdar Akol,
Serhat Hebun Şimşek, Elif Bayraktar, Furkan Keskin, Karahan
Sarıtaş, Mustafa Cihan, Sena Mumcu, Sinem Koçoğlu



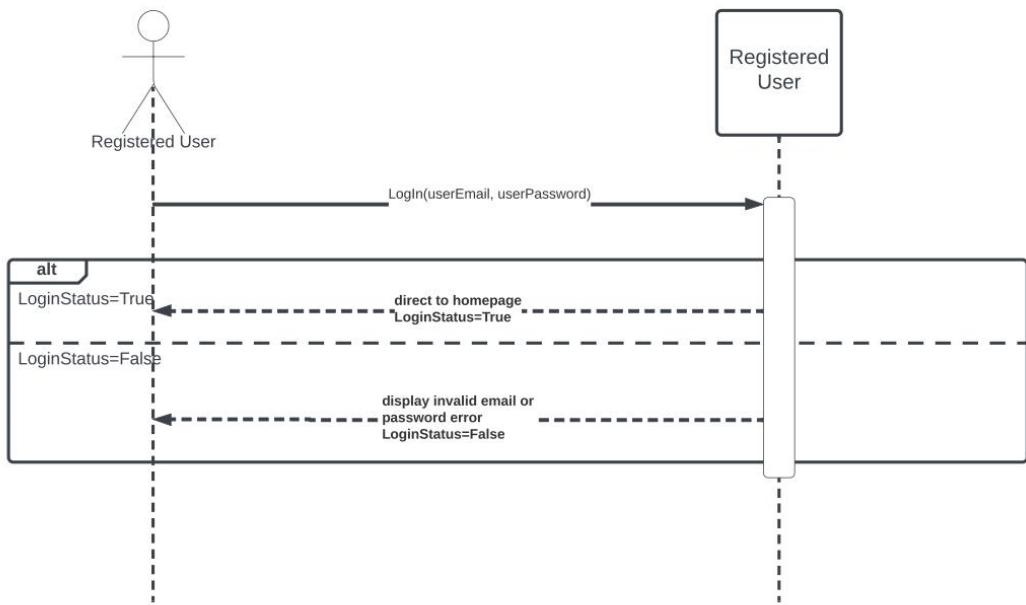
**Sequence Diagram #2:
Holding an exhibition**

Sinem Koçoglu | Created: 06/04/2022



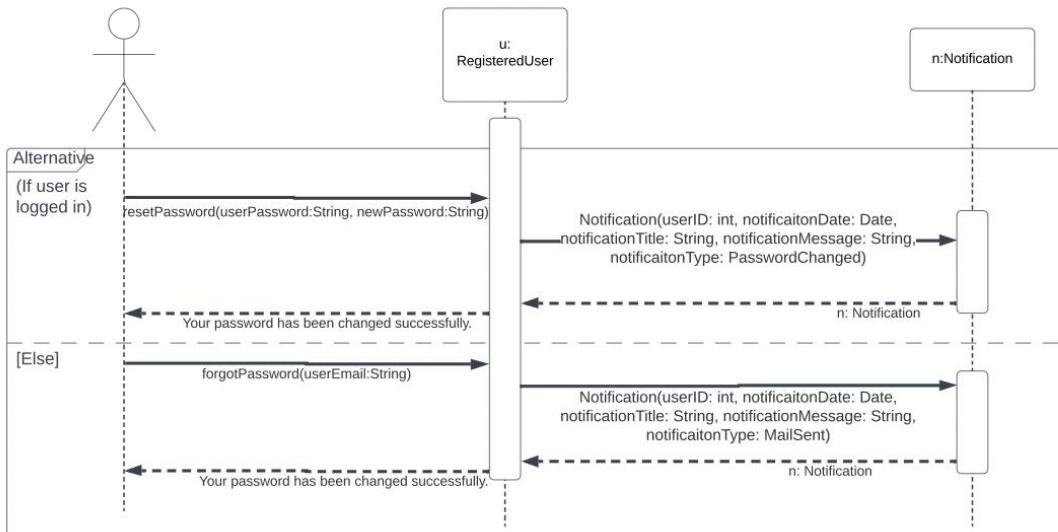
**Sequence
Diagram #3:
Signing In**

Sena Mumcu / Created 10.04.2022



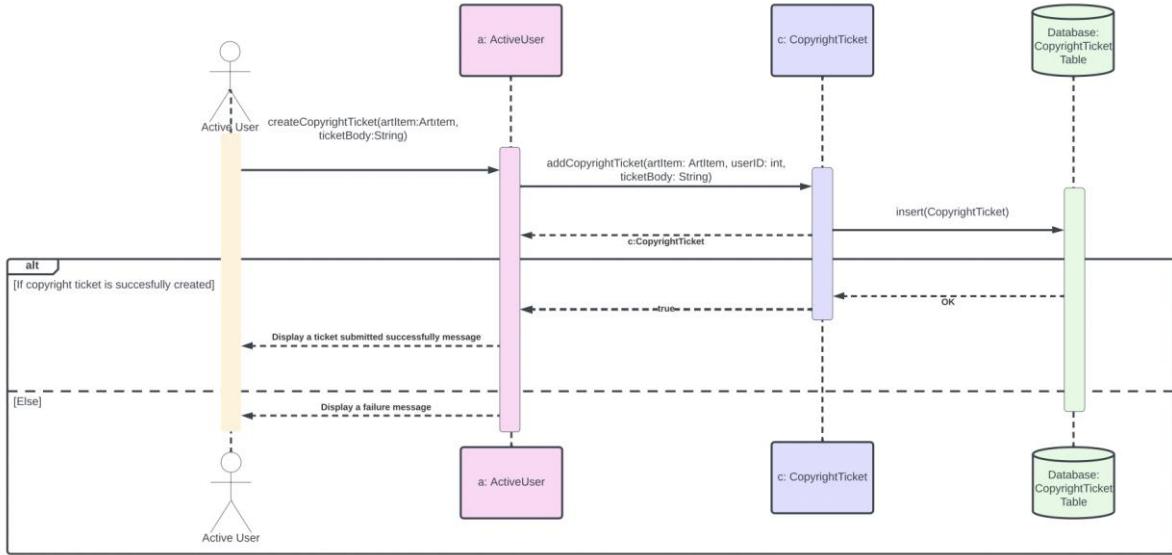
**Sequence Diagram #4:
Resetting Password**

Mustafa Cihan
10.04.2022



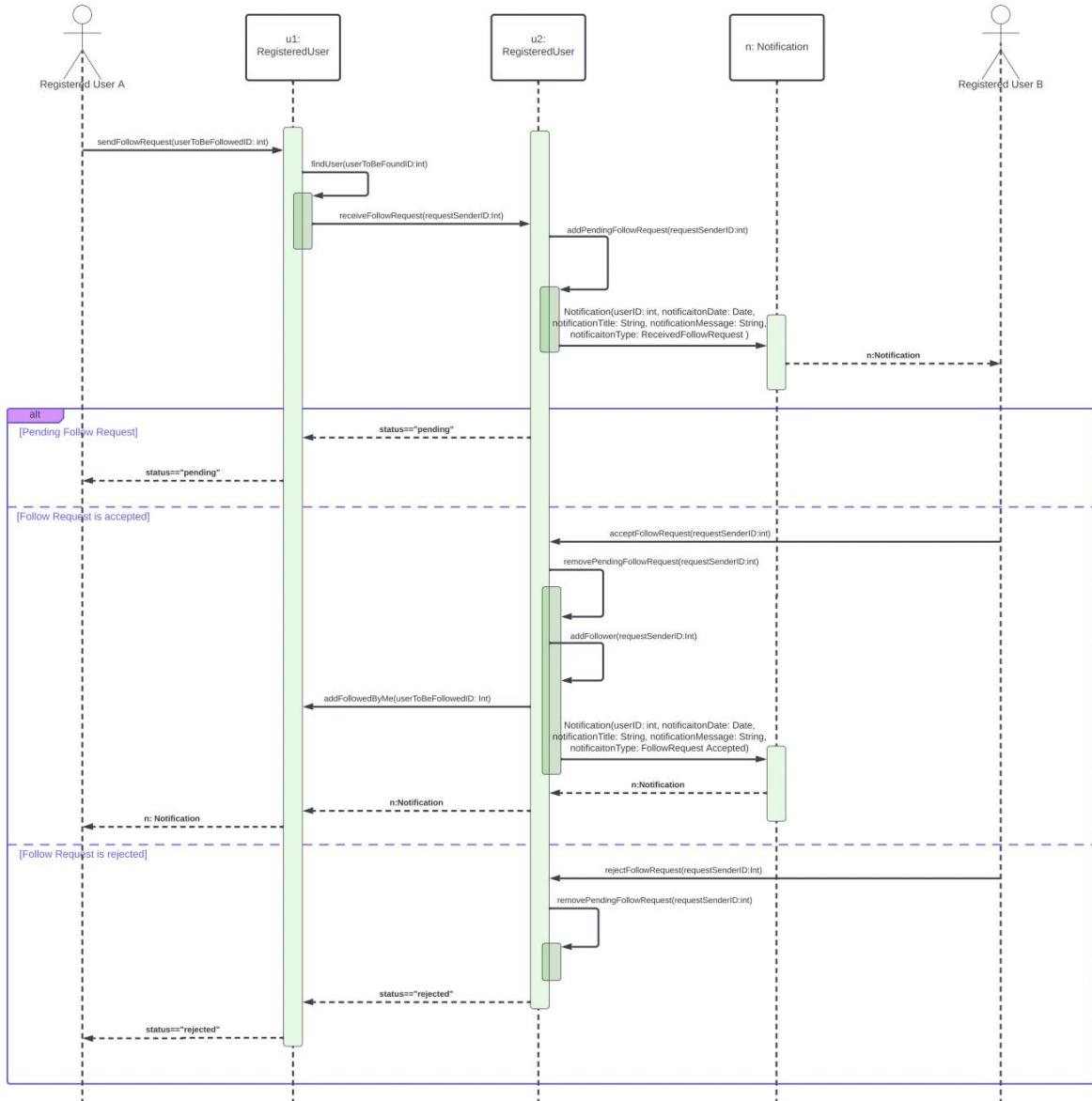
**Sequence Diagram #5:
Creating A Copyright
Ticket**

Serhat Hebun şimşek
11.04.2022



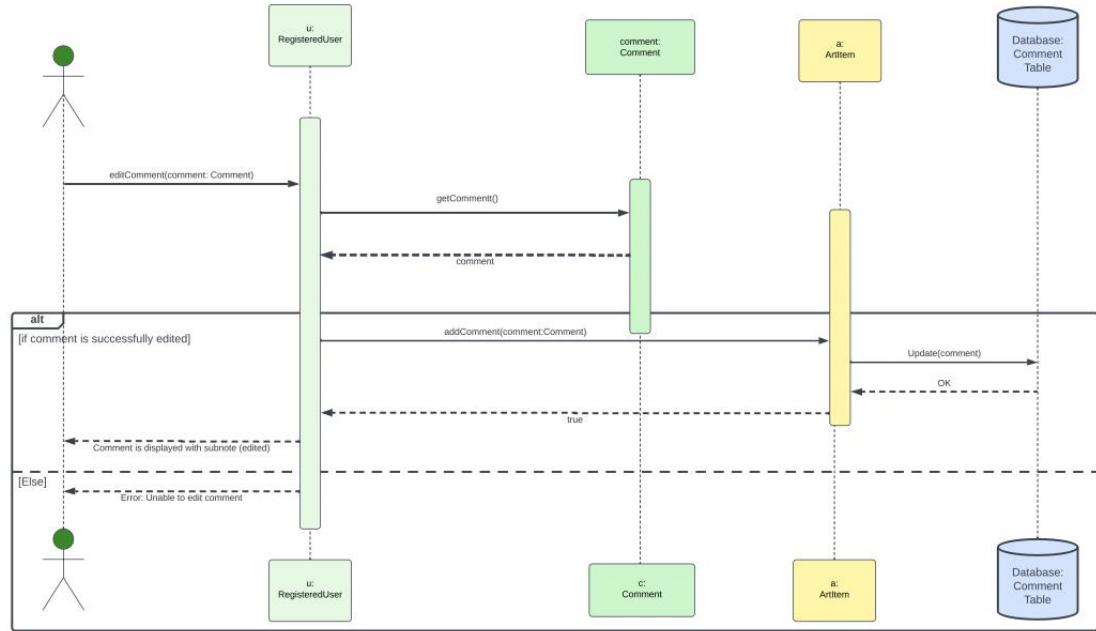
Sequence Diagram #6:
Following a user

Furkan Keskin



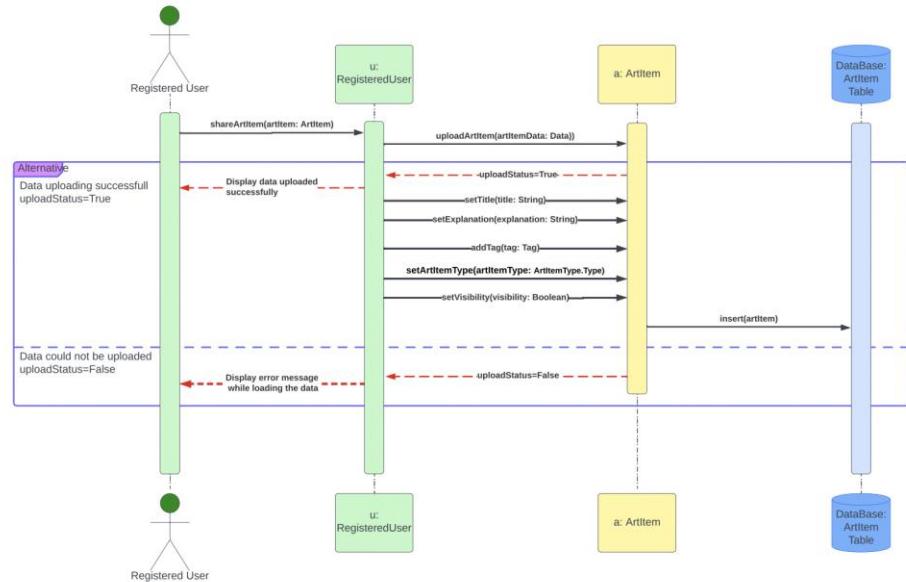
Sequence Diagram #7
Edit a Comment

Doğukan Türksoy



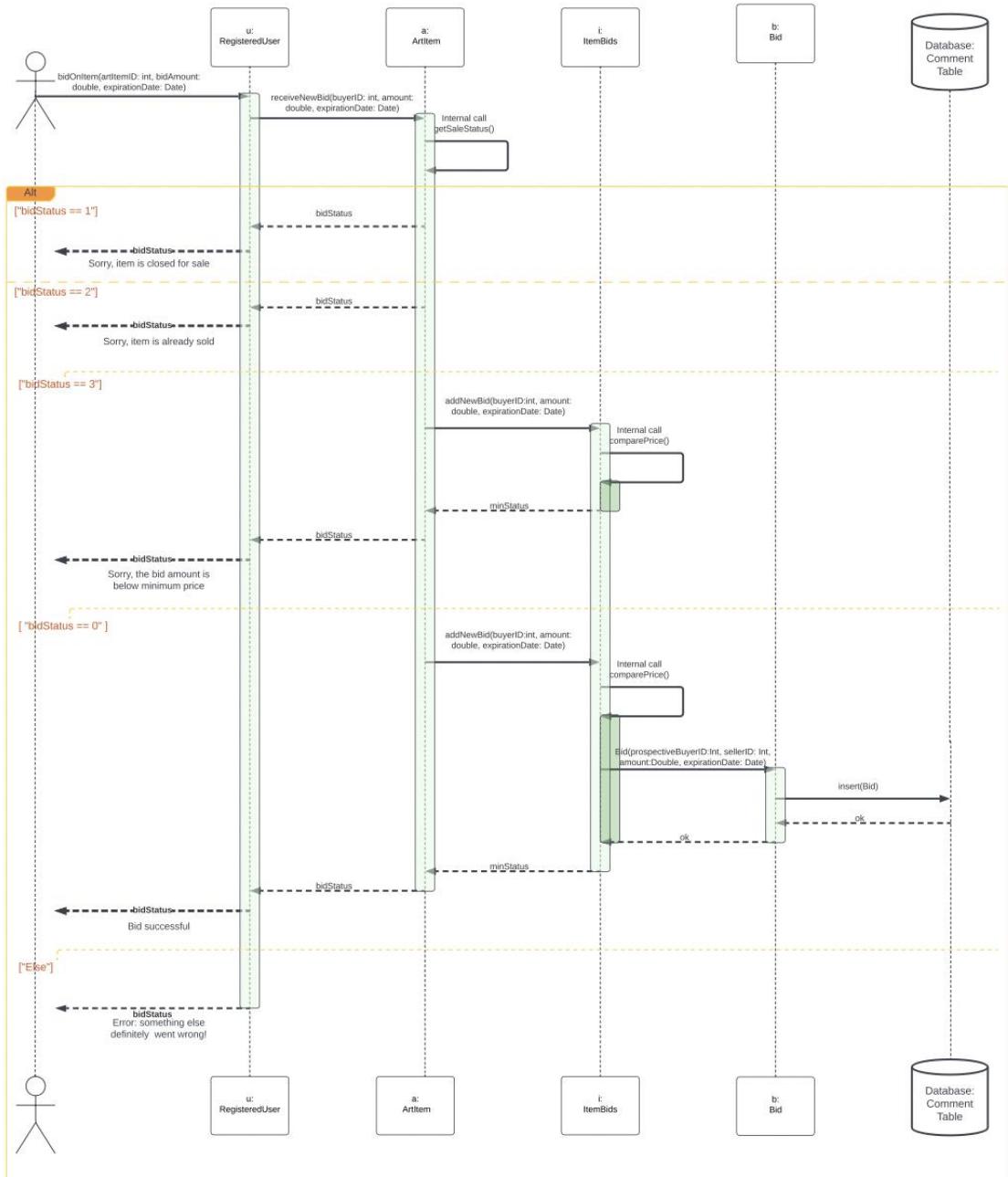
Sequence Diagram #8
Sharing an Art Item

Serdar Akol



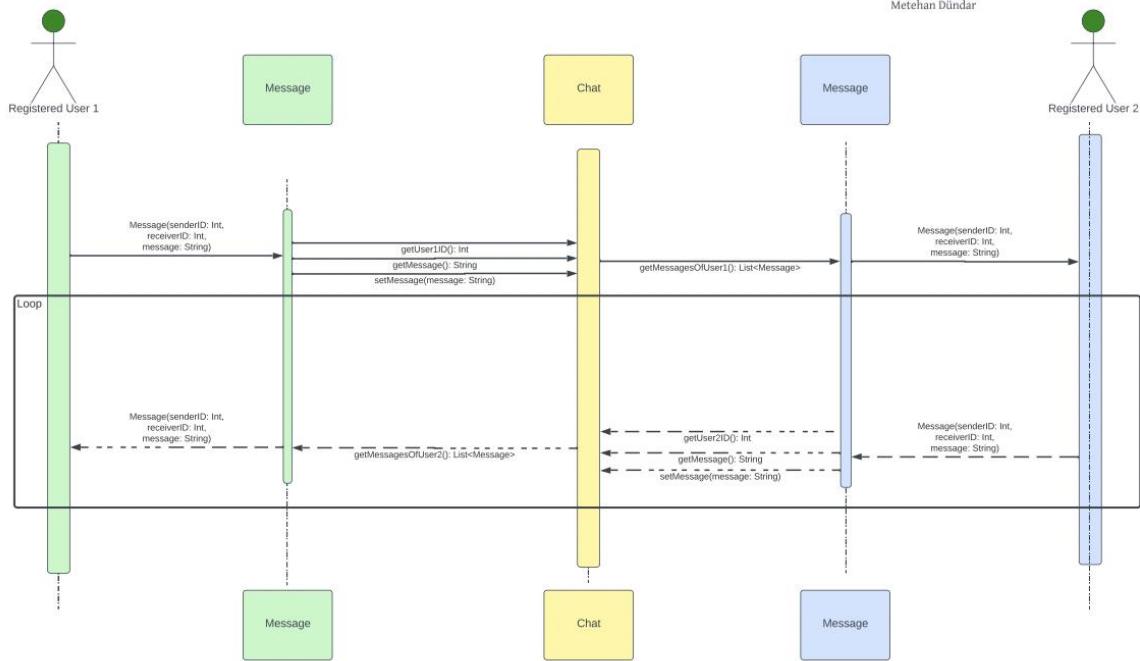
Sequence Diagram #9
Bidding on an Art Item

Elif Bayraktar | Created: 06/04/2022
| Redesigned&Finished: 11/04/2022



Sequence Diagram #10:
Sending a private message

Metehan Dündar



8.Project Plan, RAM and Communication Plan

8.1 Communication Plan

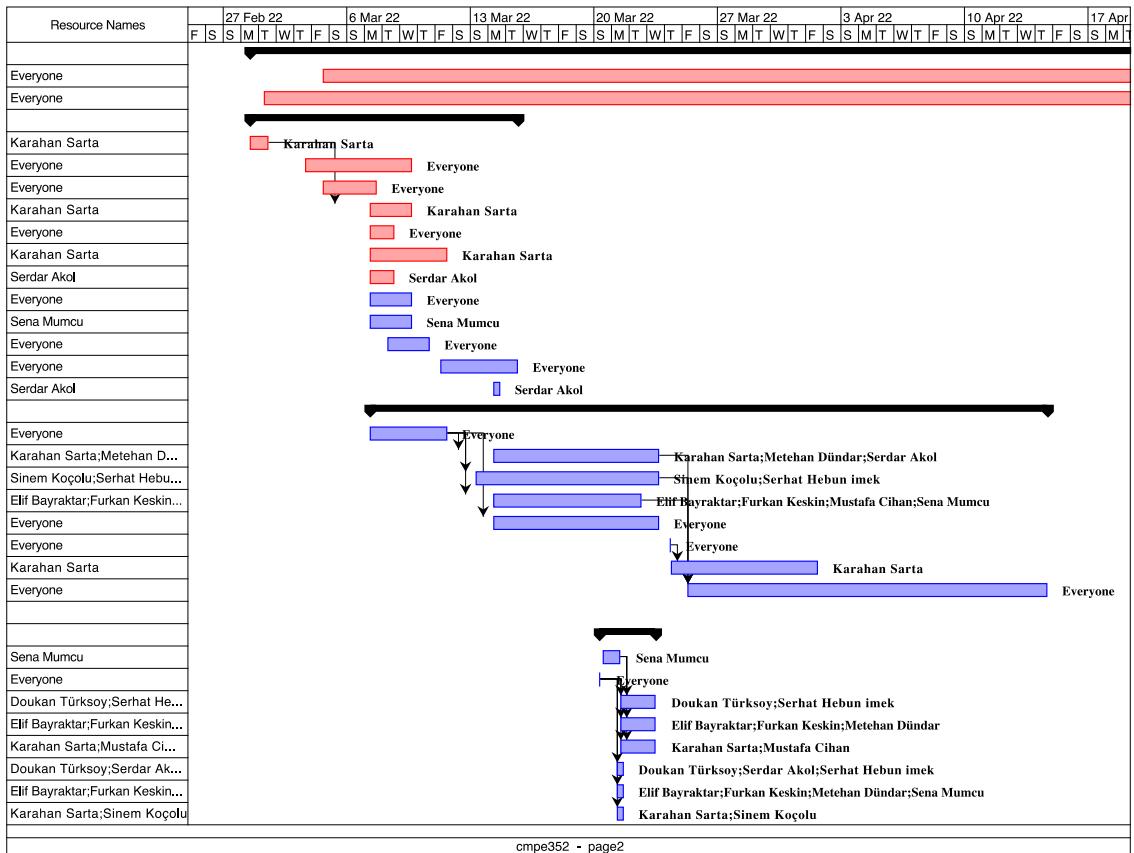
Where	Purpose	When	Participants
Discord	Weekly meetings, distribution of tasks, making plans for the week	Every Wednesday at 20:00	All members
Discord	Task review meetings, short stand-up meeting, quick check-in within the team and evaluation of the week	Every Sunday at 19:00	All members
Github	Progress tracking with issues and wiki	Always	All members
Whatsapp	General & immediate communication	Always	All members
Slack	General communication	Always	All members

.2 RAM (Respo nsibilit y Assign ment Matrix)

		Name	Duration	Start	Finish	Predecessors
1		CmpE 352 - Group 8 Work	423.5 days?	2/28/22 12:00 PM	4/27/23 5:00 PM	
2		Attending problem sessions	299.125 days	3/4/22 4:00 PM	4/27/23 5:00 PM	
3		Taking meeting notes and adding to wiki	303 days?	3/1/22 8:00 AM	4/27/23 5:00 PM	
4		Project Repository	15.5 days?	2/28/22 12:00 PM	3/15/22 5:00 PM	
5		Creating Discord channel for communication	1.125 days	2/28/22 12:00 PM	3/1/22 2:00 PM	
6		Customization Group 8 Wiki homepage	4.125 days	3/3/22 4:00 PM	3/9/22 5:00 PM	
7		Creating personal wiki pages	1.125 days	3/4/22 4:00 PM	3/7/22 5:00 PM	
8		Creating a communication plan	3 days	3/5/22 8:00 AM	3/9/22 5:00 PM	5
9		Creating personal timesheets	2 days?	3/5/22 8:00 AM	3/8/22 5:00 PM	
10		Creating Markdown Guide	5 days	3/5/22 8:00 AM	3/11/22 5:00 PM	
11		Research on project management tools	2 days	3/5/22 8:00 AM	3/8/22 5:00 PM	
12		Research&Study on Git	3 days	3/7/22 8:00 AM	3/9/22 5:00 PM	
13		Customizing issues	3 days	3/7/22 8:00 AM	3/9/22 5:00 PM	
14		Research on Favourite Github Repositories	3 days	3/8/22 8:00 AM	3/10/22 5:00 PM	
15		Research on Art Community Platforms	3 days	3/11/22 8:00 AM	3/15/22 5:00 PM	
16		Writing elevator pitch page	1 day	3/13/22 8:00 AM	3/14/22 5:00 PM	
17		Requirements	39 days?	3/7/22 8:00 AM	4/14/22 5:00 PM	
18		Searching and comparing similar projects in te..	5 days	3/7/22 8:00 AM	3/11/22 5:00 PM	
19		Adding user requirements	12 days	3/12/22 8:00 AM	3/23/22 5:00 PM	18
20		Adding system requirements	11 days	3/12/22 5:00 PM	3/23/22 5:00 PM	18
21		Adding non-functional requirements	10 days	3/12/22 5:00 PM	3/22/22 5:00 PM	18
22		Creating glossary	8 days?	3/13/22 5:00 PM	3/23/22 5:00 PM	18
23		Attending Customer Meetings	0.125 days	3/23/22 5:00 PM	3/24/22 9:00 AM	
24		Maintaneance of Q&A page	6.875 days	3/24/22 9:00 AM	4/1/22 5:00 PM	23
25		Reviewing requirements and glossary	15 days	3/25/22 8:00 AM	4/14/22 5:00 PM	19;20;21
26		Scenarios&Mockups	3.5 days	3/20/22 8:00 AM	3/23/22 1:00 PM	
27		Designing Mockup Templates	1 day	3/20/22 12:00 PM	3/21/22 1:00 PM	
28		Designing Scenario Steps	0.25 days	3/20/22 8:00 AM	3/20/22 10:00 AM	
29		Designing Mockups for Scenario #1	2 days	3/21/22 1:00 PM	3/23/22 1:00 PM	27;28
30		Designing Mockups for Scenario #2	2 days	3/21/22 1:00 PM	3/23/22 1:00 PM	27;28
31		Designing Mockups for Scenario #3	2 days	3/21/22 1:00 PM	3/23/22 1:00 PM	27;28
32		Creating Scenario #1: Art Follower	1 day	3/21/22 8:00 AM	3/21/22 5:00 PM	28
33		Creating Scenario #2: Artist	1 day	3/21/22 8:00 AM	3/21/22 5:00 PM	28
34		Creating Scenario #3: Collaboration	1 day	3/21/22 8:00 AM	3/21/22 5:00 PM	28

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8.3 Project Plan



7 May 23		14 May 23		21 May 23	
S	S	M	S	M	S
T	T	W	T	W	T
F	F	S	F	S	F
S	S	M	S	M	S
cmpe352 - page9					

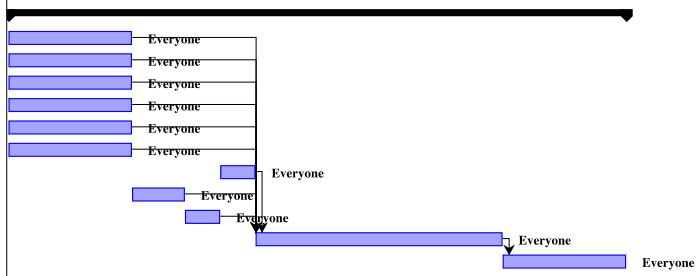
		Name	Duration	Start	Finish	Predecessors
35		Diagrams	18 days	3/28/22 8:00 AM	4/14/22 5:00 PM	
36		Research on Design Diagrams	4 days	3/28/22 8:00 AM	3/31/22 5:00 PM	
37		Creating Class Diagram	5 days	4/1/22 11:00 PM	4/6/22 5:00 PM	36
38		Creating Sequence Diagrams	4 days	4/5/22 11:00 PM	4/9/22 5:00 PM	36
39		Creating Use Case Diagram	5 days	4/1/22 11:00 PM	4/6/22 5:00 PM	36
40		Reviewing Class Diagram	8 days	4/7/22 8:00 AM	4/14/22 5:00 PM	37
41		Reviewing Use Case Diagram	8 days	4/7/22 8:00 AM	4/14/22 5:00 PM	39
42		Reviewing Sequence Diagrams	4 days	4/10/22 8:00 AM	4/13/22 5:00 PM	38
43		Milestone 1	10 days	4/6/22 8:00 AM	4/15/22 5:00 PM	
44		Creating RAM	6 days	4/6/22 8:00 AM	4/11/22 5:00 PM	
45		Creating Project Plan	2 days	4/12/22 11:00 PM	4/14/22 5:00 PM	44
46		Writing project description and status	6 days	4/6/22 11:00 PM	4/12/22 5:00 PM	
47		Writing deliverable status and evaluation	6 days	4/6/22 11:00 PM	4/12/22 5:00 PM	
48		Writing evaluation of tools and processes	6 days	4/6/22 11:00 PM	4/12/22 5:00 PM	
49		Writing a summary of work done	6 days	4/6/22 11:00 PM	4/12/22 5:00 PM	
50		Collecting all items in submission pdf	0.5 days	4/15/22 8:00 AM	4/15/22 1:00 PM	48;45;46;4...
51		Reviewing requirements for Milestone1	0.5 days	4/15/22 1:00 PM	4/15/22 5:00 PM	50
52		Research before pre-implementation	35 days?	4/19/22 1:00 PM	5/24/22 1:00 PM	
53		Research on programming languages	7 days?	4/19/22 1:00 PM	4/26/22 1:00 PM	
54		Research on API's	7 days?	4/19/22 1:00 PM	4/26/22 1:00 PM	
55		Research on Testing and Debugging	7 days?	4/19/22 1:00 PM	4/26/22 1:00 PM	
56		Research on UI tools	7 days?	4/19/22 1:00 PM	4/26/22 1:00 PM	
57		Research on Databases and servers	7 days?	4/19/22 1:00 PM	4/26/22 1:00 PM	
58		Research on Cloud Service Providers	7 days?	4/19/22 1:00 PM	4/26/22 1:00 PM	
59		Deciding the subgroups	2 days?	5/1/22 1:00 PM	5/3/22 1:00 PM	
60		Research on Cmpe451 subjects	3 days?	4/26/22 1:00 PM	4/29/22 1:00 PM	
61		Research on clean coding	2 days?	4/29/22 1:00 PM	5/1/22 1:00 PM	
62		Creating API's	14 days?	5/3/22 1:00 PM	5/17/22 1:00 PM	53;54;55;5...
63		Milestone 2	7 days?	5/17/22 1:00 PM	5/24/22 1:00 PM	62
64		Pre-Implementation	14 days?	10/4/22 1:00 PM	10/18/22 1:00 PM	
65		Revise requirements, diagrams and project plan	7 days?	10/4/22 1:00 PM	10/11/22 1:00 PM	

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22	24 Apr 22	1 May 22	8 May 22	15 May 22	22 May 22	29 May 22	5 Jun 22	12 Jun 22	19 Jun 22
W	T	F	S	S	M	T	W	T	F

ia Mumcu;Serdar Akol;Serhat Hebun imek
tar;Furkan Keskin;Karahan Sarta;Sinem Koçolu

Cihan



	28 Aug 22	4 Sep 22	11 Sep 22	18 Sep 22	25 Sep 22	2 Oct 22	9 Oct 22	16 Oct 22	23 Oct 22
T	F	S	S	M	T	W	T	F	S
F	S	S	M	T	W	T	F	S	S
S	S	S	S	M	T	W	T	F	S
M	S	S	S	S	M	T	W	T	F
T	S	S	S	S	S	M	T	W	T
W	S	S	S	S	S	W	T	F	S
T	S	S	S	S	S	T	W	T	F
F	S	S	S	S	S	F	S	S	S
S	S	S	S	S	S	S	M	T	W

	30 Oct 22	6 Nov 22	13 Nov 22	20 Nov 22	27 Nov 22	4 Dec 22	11 Dec 22	18 Dec 22	25 Dec 22
F	S	S	M	T	W	T	F	S	S
S	S	M	T	W	T	F	S	M	T
M	T	W	T	F	S	S	M	T	W
T	W	T	F	S	S	M	T	W	T
W	F	S	S	M	T	W	T	F	S
T	S	S	M	T	W	T	F	S	S
F	S	S	M	T	W	T	F	S	S
S	S	M	T	W	T	F	S	M	T
S	S	M	T	W	T	F	S	M	T

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7 May 23		14 May 23		21 May 23	
S	S	S	S	S	S
M	M	M	M	M	M
T	T	T	T	T	T
W	W	W	W	W	W
F					

		Name	Duration	Start	Finish	Predecessors
66		Designing initial backend skeleton	7 days?	10/11/22 1:00 PM	10/18/22 1:00 PM	65
67		Designing initial frontend skeleton	7 days?	10/11/22 1:00 PM	10/18/22 1:00 PM	65
68		Designing initial android skeleton	7 days?	10/11/22 1:00 PM	10/18/22 1:00 PM	65
69		Setting up the server	7 days?	10/11/22 1:00 PM	10/18/22 1:00 PM	
70		Deciding the coding conventions and system	7 days?	10/11/22 1:00 PM	10/18/22 1:00 PM	
71		Implementation	70.75 days?	10/18/22 1:00 PM	12/28/22 10:00 AM	
72		Implementation of Sign-up and login	8.75 days?	10/19/22 1:00 PM	10/27/22 10:00 AM	64
73		Implementation of User Page	8.75 days?	10/19/22 1:00 PM	10/27/22 10:00 AM	64
74		Implementation of Search Engine	8.75 days?	10/25/22 10:00 AM	11/2/22 5:00 PM	64
75		Implementation of Recommendation Engine	8.75 days?	10/25/22 10:00 AM	11/2/22 5:00 PM	64
76		Cmpe 451 Milestone1	9 days?	11/3/22 8:00 AM	11/11/22 5:00 PM	72,73,74,75
77		Implementation of Geotagging and Location H...	8.75 days?	11/11/22 10:00 AM	11/19/22 5:00 PM	
78		Implementation of Level System	8.75 days?	11/11/22 10:00 AM	11/19/22 5:00 PM	
79		Implementation of Bidding System	8.75 days?	11/11/22 10:00 AM	11/19/22 5:00 PM	
80		Implementation of Art Item Pages	8.75 days?	11/11/22 10:00 AM	11/19/22 5:00 PM	
81		Cmpe451 Milestone2	9 days?	11/21/22 8:00 AM	11/29/22 5:00 PM	77,78,79,80
82		Implementation of Annotations	8.75 days?	11/29/22 10:00 AM	12/7/22 5:00 PM	
83		Implementation of Exhibition System	8.75 days?	11/29/22 10:00 AM	12/7/22 5:00 PM	
84		Implementation and modelling of user interact...	8.75 days?	11/29/22 10:00 AM	12/7/22 5:00 PM	
85		Implementation of notification system	8.75 days?	11/29/22 10:00 AM	12/7/22 5:00 PM	
86		System Testing	9 days?	12/8/22 8:00 AM	12/16/22 5:00 PM	72,73,74,7...
87		CMPE 451 Milestone3	112.5 days?	12/17/22 8:00 AM	12/28/22 10:00 AM	82,83,84,8...

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A Gantt chart illustrating a sequence of tasks, all labeled "Everyone". The tasks are represented by blue horizontal bars. The chart spans from October 30, 2022, to December 25, 2022. The tasks are arranged in two main vertical columns. The first column contains tasks starting on Oct 30, Nov 6, Nov 13, Nov 20, and Nov 27. The second column contains tasks starting on Nov 13, Nov 20, Nov 27, Dec 4, and Dec 11. Each task bar has an arrow pointing to its end date.

Date	Task
Oct 30, 2022	Everyone
Nov 6, 2022	Everyone
Nov 13, 2022	Everyone
Nov 20, 2022	Everyone
Nov 27, 2022	Everyone
Dec 4, 2022	Everyone
Dec 11, 2022	Everyone

	1 Jan 23	8 Jan 23	15 Jan 23	22 Jan 23	29 Jan 23	5 Feb 23	12 Feb 23	19 Feb 23	26 Feb 23
F	S	S	M	T	W	T	F	S	S
S	S	M	T	W	T	F	S	S	M
M	M	T	W	T	F	S	S	M	T
T	T	F	S	S	M	T	W	T	F
W	W	S	S	S	T	W	T	F	S
T	S	S	S	S	T	W	T	F	S
F	S	S	S	S	T	W	T	F	S
S	S	S	S	S	T	W	T	F	S

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