

# CmpE 352 Spring 2019 Group 3 - Milestone 1

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## Executive Summary

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### Introduction

Apex Linguae is a platform which people can learn new languages and people can help others to learn new languages. Apex Language provides access to materials about grammar, reading, listening and writing on which language user wants to work on. Apex Linguae has materials and exercises in Turkish, English, Chinese and so on. Users can be an expert on some languages and they can help the other users about the language that they are an expert. Users can rate other users, in that way users can distinguish helpful ones from the others, so they can utilize their efficiency. This platform allows these two actions in one interface. In this platform people can improve their daily language skills with the other users via chat. Apex Linguae can be accessed from anywhere, anytime.

### Current Status

At the beginning of the semester, we started as a group of 11 people. Through the following weeks our number decreased and increased but finally we became 11 again. We arranged our meetings and started our journey as a team. Nearly none of us knew each other but as the weeks passed our communication got stronger and more effective. We became a team that works together. For every task given we kept on reviewing each other's work and making constructive criticism. From the first week to this day we developed our project requirements, created user personas, prepared mock-up scenarios and constructed our design diagrams to provide a clear picture of our project. Through the process, we requested and received feedbacks from our customer. Even though some were long, we purposefully rearranged our work accordingly. Considering all the work done, we know that we came a long way compared to the beginning of the semester. We worked hard to accomplish every given task successfully and we are planning to keep on doing so.

### Ahead of Us

From this point on, we are planning to increase the communication between us and focus on division of tasks and control of these tasks by other team members. We plan to organize the work and estimate the real time progress so that when we begin to implement this project we see where we are and where are we going to. We cannot wait to use our theoretical knowledge we got from this course in the next course and start to implement the project's platform, it's backend, web app and etc. We hope to create a product that everyone loves and uses.

## List and status of deliverables

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Name	Delivery Date	Delivered
Requeriments	Februay 25,2019	✓
User Stories & Mockups	March 4,2019	✓
Usercase Diagrams	March 11,2019	✓
Design Diagrams	March 18,2019	✓

## Evaluation of the status of deliverables and its impact on our project plan

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### Requirements

Requirements are the foundation basis for Apex Linguae. We held meetings to agree upon what the platform should be and shaped our findings with each revision. From then on, the requirements became the jumping board for our future work.

### Scenarios & Mock-ups

#### Scenarios

User scenarios are the example use case scenarios of Apex Linguae. The user scenarios are prepared for different kind of potential users and distinct kind of possible uses such as Web and smartphone. We prepared three user scenarios. We believe user scenarios are ready and finished.

## Mock-ups

We prepared three mock-ups for web and mobile mock-ups. We can use those mock-ups while designing and implementing actual platform. On those pages, The main goal is to visualize how the platform meets its requirements. To this visualization, our web mock-ups include Language Page, Course Type Page, Writing Page, Expert Selection Page, Profile Page, Reading The Essay Page, Evaluation Page, Feedback Page and Submit Page. To this visualization, our mobile mock-ups include Sign-up page, Language Page, Course Type Page, Exercise Page, and Stats Page.

## Diagrams

### Use Case Diagrams

A part of the team designed the use case diagrams and throughout the process we shared our opinions and criticism as the whole team. We received feedback and after preparing the second version and considering the new reviews from the teammates we brought the diagrams to their final state. We believe that we have diagrams that successfully specify the events of the system and their flows by gathering the system requirements and actors.

### Class Diagram

Since the design of the class diagram is hard to split into small tasks, we arranged a meeting for our team to work on the class diagram. Firstly, we think through the requirements and the use case diagrams to find the necessary parts of the class diagram. While we were designing the class diagram, we discussed the critical parts and remaining parts were designed in parallel by some of the team members. After the feedback related to the class diagram has arrived, we processed the feedback respecting other diagrams which are affected by the class diagram. Some of the team members also checked the final class diagram in order to eliminate potential problems which can be determined by the team.

### Sequence Diagrams

We designed sequence diagrams as a team and stayed well communicated during the process. Whenever a diagram is updated we kept in mind that it is controlled by another teammate and gets approval. After the feedback adjustments, we think that the final diagrams are satisfactory and thanks to that we have a detailed knowledge and visualization of how objects communicate with each other via functions and how our system works.

## A summary of work done by each team member

Team Member	Contributes
Burak İlkey Akgün	I wrote some requirements and improve them according feedback , participated creating class diagram with teammates, and also I documented two meeting notes.
Orkan Akısü	Created communication plan, have a customer meeting , wrote a scenario and made its mock-up, helped with the sequence diagrams
Samet Demir	I tried to follow the progress by creating issues and following them. I wrote a big part of the first version of the requirements. I followed the feedbacks for the requirements and processed some of the feedbacks. I took part in the design of the class diagram. I updated the class diagram according to the feedbacks. I reviewed the use case & sequence diagrams and helped the teammates improve the diagrams.
Muhammet Ekrem Gezgen	-
Yağmur Kahyaoğlu	Prepared two of the use case diagrams and four of the sequence diagrams. Also was a part of the subgroups that created the class diagram and revised all of the design diagrams according to the feedback. Took notes during the meetings and documented two of the meeting notes. Attended some of the customer meetings(P.S.).
Egemen Kaplan	-
Cihat Kapusuz	Created mock-up and scenario number 2 with Mert and edited according to the given feedback. Edited mockup number 1 and created scenario number 1 according to the general structure. Was part of the subgroup who created the class diagrams and sequence diagrams. Added some missing features (admin, report harrasment) to the requirements. Attended most of the customer meetings(P.S.).
Bartu Ören	-

Team Member	Contributes
Ahmet Mert Tahrان	Drafting a scenario, Preparing a mock-up, and fixing the requirements according to the feedbacks
Sabri Bayrakdar	I prepared use case diagram.
Hilal Demir	I did some of the sequence diagrams and updated all of them according to feedbacks

## Communication Plan

Audience	Purpose/Message	Delivery Method	Where	Delivery Frequency	Communicator
Every Member	Evaluation of Previous Work, General Discussion & Deciding What to Do Next	Face to Face	Boğaziçi Uni. BM Building	Every Wednesday @ 18.00 (GMT+3)	Group Communicator
Every Member	General Communication	Asynchronous Online	Whatsapp	As Needed	Any Member
Every Member	Keeping Track of Work	Asynchronous Online	GitHub Issues	As Needed	Any Member
Customer & Group Members	Clarification of Project Details	Asynchronous Online	Piazza	As Needed	Custormer or Any Member

### Customer

- Suzan Üsküdarlı
- Cihat Baktır

Group Communicator: **Orkan Akisü**

### Group Members

- Burak İlkay Akgün
- Orkan Akisü
- Samet Demir
- Muhammet Ekrem Gezgen
- Yağmur Kahyaoğlu
- Egemen Kaplan
- Cihat Kapusuz
- Bartu Ören
- Ahmet Mert Tahrان
- Hilal Demir

## Requirements

### Glossary

- Registered User:** a registered person whose purpose is to learn and/or to provide expert skill or knowledge in one or more languages
- Guest User:** a person who have not logged in or registered yet
- Admin:** a person whose purpose is to keep the platform intact
- The platform:** the product with its whole functionality
- Web Application:** a software which provides a user interface to browse the content on a Web Browser

- **Android Application:** a software which provides a user interface to browse the content on Android Mobile Operating System without using a Web Browser
- **API:** an Application Programming Interface
- **API Application:** a software which provides necessary data to the user interface applications

## Requirements

### 1. Functional Requirements

#### 1.1 User Requirements

##### 1.1.1 Registration and Login

###### 1.1.1.1 Registration

A guest user shall be able register with their e-mail, pick a unique username and password or continue as a guest user.

###### 1.1.1.2 Login

- **1.1.1.2.1** Registered users log in by entering their username/e-mail and password.

###### 1.1.1.3 Guest User

- **1.1.1.3.1** A guest user shall be able to access limited material, in order to get whole material, he/she must register first.

##### 1.1.2 Multi-Language Selection

A registered user shall be able to choose one or more languages in order to learn or provide expert skill or knowledge.

##### 1.1.3 Access to Materials and Exercises

###### 1.1.3.1 Registered User

- **1.1.3.1.1** A registered user shall be able to access the listening materials according to his/her level.
- **1.1.3.1.2** A registered user shall be able to access the exercises related to the listening materials.
- **1.1.3.1.3** A registered user shall be able to access the reading materials according to his/her level.
- **1.1.3.1.4** A registered user shall be able to access the exercises related to the reading materials.
- **1.1.3.1.5** A registered user shall be able to access the grammar topics according to his/her level
- **1.1.3.1.6** A registered user shall be able to access the exercises related to the grammar materials.
- **1.1.3.1.7** A registered user shall be able to access the vocabulary materials according to his/her level
- **1.1.3.1.8** A registered user shall be able to access the exercises related to the vocabulary materials.
- **1.1.3.1.9** A registered user shall be able to access the writing materials.
- **1.1.3.1.10** A registered user shall be able to access the exercises related to the writing materials.
- **1.1.3.1.11** A registered user shall be able to upload handwritten writing exercises.

###### 1.1.3.2 Guest User

- **1.1.3.2.1** A guest user shall be able to access to a directory of listening materials categorized by language level.
- **1.1.3.2.2** A guest user shall be able to access to a directory of reading materials categorized by language level.
- **1.1.3.2.3** A guest user shall be able to access to a directory of grammar materials categorized by language level.
- **1.1.3.2.4** A guest user shall be able to access to a directory of vocabulary materials categorized by language level.

##### 1.1.4 Customized Access to Materials and Exercises

- **1.1.4.1** A registered user shall be able reach the materials and exercises that are for their current level.
- **1.1.4.2** A registered user shall be able to reach materials and exercises of the lower levels.

##### 1.1.5 Consultancy for Writing Exercises

- **1.1.5.1** A registered user shall be able to choose a proficient user from the recommended list of proficient users in order to consult.
- **1.1.5.2** A registered user shall be able to send his/her writing exercises to other users who are proficient in order to get feedback.

## **1.1.6 User Profiles**

### **1.1.6.1 Username**

Username of a registered user shall be able to be seen from the profile of the user.

### **1.1.6.2 Progress in the languages**

Registered users shall be able to see the progress of themselves or other users in the languages in terms of the percentage of correct answers, and the current level.

### **1.1.6.3 Rating**

Registered user's rating in terms of average response time, appreciation by registered users shall be able to be seen by other users.

### **1.1.6.4 Avatar**

- **1.1.6.4.1** A registered user should have an avatar.
- **1.1.6.4.2** Registered users should be able to change their own avatars.

### **1.1.6.5 Bio**

Registered users should be able to add the information about their biography.

### **1.1.6.6 Guest User**

A guest user should have no profile.

## **1.1.7 Annotation**

Registered users shall be able to annotate texts and images within the system.

## **1.1.8 New Materials**

- **1.1.8.1** Registered users in the corresponding language shall be able to upload new learning materials and exercises.
- **1.1.8.2** Newly-added materials shall be evaluated by the proficient users of the corresponding language.
- **1.1.8.3** Materials which are approved by any proficient user or admin shall be integrated into the system.

## **1.1.9 Messaging**

- **1.1.9.1** Registered users shall be able to send a chat request to other users in the corresponding language that user want to learn.
- **1.1.9.2** Registered users shall be able to accept the chat request received from other registered users.
- **1.1.9.3** Registered users shall be able to send text messages to other registered users.
- **1.1.9.4** Registered users shall be able to receive text messages from other registered users.

## **1.1.10 Search**

- **1.1.10.1** All users shall be able to do a basic search by using keywords.
- **1.1.10.2** Registered users shall be able to do an advanced search to filter the content by topic, difficulty, scope, and tag.

## **1.1.11 Report Harrasment**

- **1.1.11.1** Registered users should be able to report disturbing behavioral acts.
- **1.1.11.2** All users should be able to report materials, if they contain racist insults or inappropriate contents.

## **1.1.12 Commenting**

Registered users should be able to send a comment which will be appended to the commented user's profile page, to any user.

## **1.2 System Requirements**

### **1.2.1 Level Determination**

#### **1.2.1.1 Level Determination for New Users**

The system shall provide a test to new users to determine their level of knowledge about language.

#### 1.2.1.2 Level Determination for Users

The system shall provide a test to registered users after completing a certain amount of exercises or any arbitrary time that is chosen by the user to determine their new level of knowledge about language.

#### 1.2.2 Automated Grading

- **1.2.2.1** The system shall automatically grade exercises except for writing exercises
- **1.2.2.2** The system shall highlight the correct answer if the provided one by the user is wrong.

#### 1.2.3 Proficient User Recommendation

The system shall recommend users who are proficient in the corresponding language to a user based on the level of the user.

#### 1.2.4 Progress Statistics

The system shall provide statistics about completed/uncompleted exercises, achievement.

#### 1.2.5 Expert Determination

The system shall provide a proficiency test to users that want to become an expert on any language.

#### 1.2.6 Semantic Searching

The system shall provide a semantic searching mechanism.

#### 1.2.7 Admin

- **1.2.7.1** The system shall have some admins who are responsible of reports.
- **1.2.7.2** An admin shall evaluate the report that come from the users.

## 2. Nonfunctional Requirements

### 2.1 Availability Requirements

The platform and the materials should be accessible at any time, from anywhere.

### 2.2 Portability Requirements

#### 2.2.1 Web application

- **2.2.1.1** The Web application shall support Google Chrome 48 and later.
- **2.2.1.2** The Web application should support Google Chrome 32 and later.
- **2.2.1.3** The Web application should support Mozilla Firefox 27 and later.
- **2.2.1.4** The Web application should support Opera 19 and later.
- **2.2.1.5** The Web application should support Microsoft Edge and later.
- **2.2.1.6** The Web application should support Apple Safari 8 and later.
- **2.2.1.7** The Web application shall support desktop devices.
- **2.2.1.8** The Web application should support mobile devices by responsive design.
- **2.2.1.9** The Web application should support tablet devices by responsive design.

#### 2.2.2 Android

- **2.2.2.1** The Android Application shall support Android 6: Marshmallow and later in order to support modern devices.
- **2.2.2.2** The Android Application should support Android 4.4: KitKat and later in order to support older devices.

#### 2.2.3 API

- **2.2.3.1** The API Application shall be deployable on a remote and manually configurable remote server.
- **2.2.3.2** The API Application should be deployed to Amazon EC2 or DigitalOcean remote server.

### 2.3 Performance Requirements

The system should respond to any request in 5 seconds at most.



## 2.4 Security Requirements

### 2.4.1 Encryption

The system should encrypt the traffic by using HTTPS.

### 2.4.2 Password

The system should force the users to pick at least six characters long password.

## 2.5 Privacy Requirements

The personal information, contact information, copyrighted contents, license issues and everything related to these paradigms shall be respected and considered.

## 2.6 Standards

- 2.6.1 W3C Web Annotation Data Model shall be used for Annotation.
- 2.6.2 The implementation of this system shall follow the standards introduced by the World Wide Web Consortium (W3C).

## Mock-ups

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### Scenario 1



### Persona

Esra Sarar has just graduated with a Foreign Language Education degree. Next semester, she's going abroad to Bologna to start her Masters program. Before she begins, she wants to both learn Italian and teach English. Esra uses both her phone and her computer. On her phone, she prefers vocabulary and reading exercises since it is more convenient most of the time. Esra prefers typing on her computer, so writing exercises and feedbacks are committed on her computer.

### User Stories

- As a user, she wants to learn Italian for making herself comfortable. In that way, she can feel good when her colleagues speak Italian, because she can understand what they are trying to say her. She wants to work on vocabulary because if she knows the words of Italian, she can understand most of the sentences without knowing the grammar. She wants to work on reading materials also. If she gets used to Italian readings, she can work on Italian articles to enlarge her horizon. Apex Language provides best experience, that is why she chooses Apex Language.

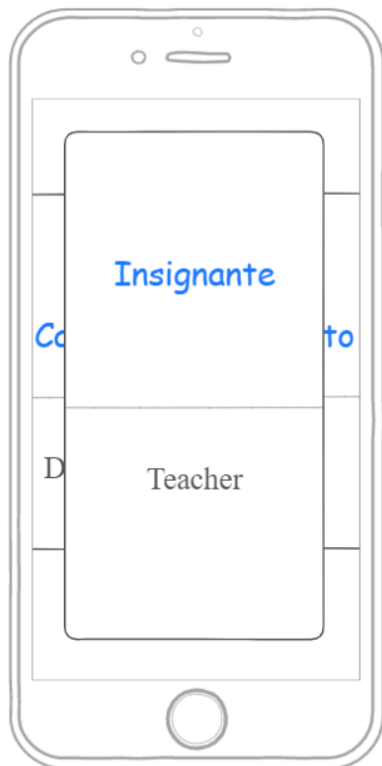
### Acceptance Criteria

- A registered user shall be able to choose one or more languages in order to learn or provide expert skill or knowledge.(1.1.2)
- A registered user shall be able to access the vocabulary materials according to his/her level. (1.1.3.1.7)
- A registered user shall be able to access the reading materials according to his/her level. (1.1.3.1.3)
- A registered user shall be able to access the exercises related to the reading materials.(1.1.3.1.4)
- The platform and the materials should be accessible at any time, from anywhere.(2.1)
- The Android Application shall support Android 6: Marshmallow and later in order to support modern devices.(2.2.2.1)

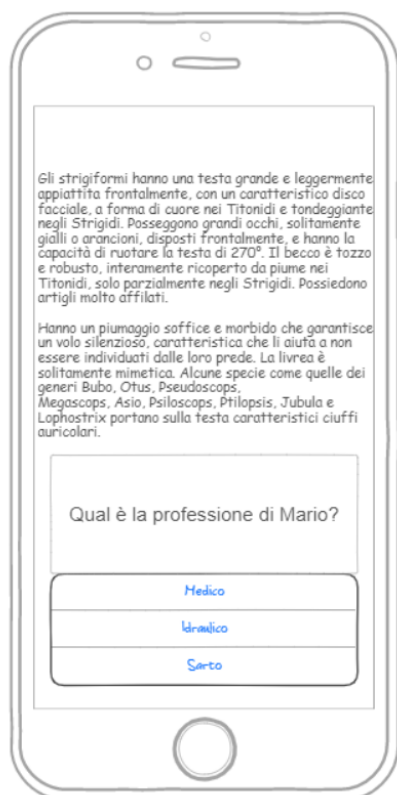
## Preconditions:

- User has registered
- User has chosen Italian to work on.

Esra wants to work on vocabulary because if she knows the words of Italian, she can understand most of the sentences without knowing the grammar. She wants to work on reading materials also. If she gets used to Italian readings, she can work on Italian articles to enlarge her horizon. Apex Language provides best experience, that is why she chooses Apex Language.



Esra practices with flashcards, in that way she can learn new words easily.



She reads readings and answers questions based on the reading



## Scenario 2



### Persona

Cihat is a 20 years old student who studies at Boğaziçi University. He likes to meet new people. He plays football, volleyball, tennis, exactly any kind of sport. He loves chess. He wants to get high grade on TOEFL exam, because he wants to go England for master's degree on computer engineering. Everything is fine, however he has some minor problems about his essays. He needs some corrections on his essays. He made a research about where he can make his essays graded. Then, he found our program. In our program he can send his essays and get feedback from the experts of that language. It sounds good for him. He send his first essay to one of our best experts.

### User Stories

- As a user, he makes some minor mistakes in his essays and he wants to get rid of them. These minor mistakes makes him feel uncomfortable, and might cause a failure on TOEFL exam. He prefers our program because we provide direct interaction between user and expert.

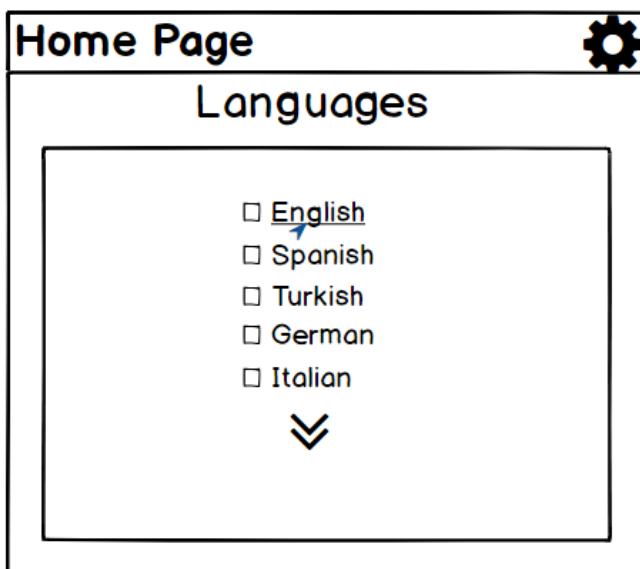
### Acceptance Criteria

- He wants to be able to choose a proficient user from the recommended list of proficient users in order to consult. (Requirements 1.1.5.1)
- He wants to be able to send his/her writing exercises to other users who are proficient in order to get feedback. (Requirements 1.1.5.2)
- He wants to be able to annotate texts and images within the system. (Requirements 1.1.7)


### Precondition

- User has registered

Cihat makes some minor mistakes in his essays and he wants to get rid of them. These minor mistakes makes him feel uncomfortable, and might cause a failure on TOEFL exam. He prefers our program because we provide direct interaction between user and expert.



Chooses which language he/she wants to work on.

English


What do you want to do?

☒ Writing
☐ Grammar
☐ Vocabulary
☐ Reading
☐ Listening

Chooses which course type he/she wants to work on.

English

Writing
Grammar
Vocabulary
Reading
Listening

☒ Euthanasia
☐ Eutrophication
☐ Eutectic

Personal Comment:

I am preparing for TOEFL exam...

Euthanasia





In this day and time, people face many several diseases. Some kind of diseases can't be cured in our day. Such as Aids still has not any cures. With the widening the number of diseases, the opportunities that can be done has been changed, too. One of those opportunities is Euthanasia. Euthanasia is a process which is used when there is nothing to do for saving the patient. It is like killing the patient in his sleep. It could be considered as painless death. There are 2 groups of people. These 2 groups can be defined, the people who think euthanasia is needed, the people who think it's a murder.

The first group's idea is about ending pain. When people in coma or something like that also doctors have nothing to wake him up and cure whatever happened to him...


Choose Expert

Writes an essay for his/her preparation about TOEFL exam.

Expert Overview

			
★★★★★	★★★★★	★★★★★	★★★★★
NAME	Tracy Irving	Kyle Irving	Teresa Vacaro
JOB TITLE	Head Instructor	Teacher	Chief
BACKGROUND	I have a Masters degree in education and I am a certified English language teacher.	I have a Bachelor degree from University College London as well as TEFL (Teaching English as a Foreign Language).	I have a Bachelor's Degree in English and has been teaching English as a foreign language since 2008.
GOALS	Achieve a Band Score 6 or Higher Pass all sections of the IELTS Exam Schedule an actual IELTS Exam Confidently answer IELTS Reading Successfully overcome IELTS Listening tricks and traps Write IELTS essays with excellence	Achieve a band score of 7 and above by using and understanding a wide range of English vocabulary Boost your IELTS Writing band score by writing essays using a wide range of vocabulary Speak more naturally in the IELTS Speaking Test Improve your reading and listening skills for the IELTS Listening and IELTS Reading Tests	Use advanced vocabulary and synonyms Improve your grammar and pronunciation Give opinions and connect your ideas Deal with difficult questions Improve your speaking confidence Develop your answers and manage your time Answer any question, even if you don't know what to say!
	<a href="#">Details</a>	<a href="#">Details</a>	<a href="#">Details</a>

Chooses an expert from the expert pool to send his/her essay.




### Key Characteristics


I am an IELTS and TOEFL specialist who has developed courses for international exams for 10 years. I have lived and taught in multiple countries including China, Brazil, The Ivory Coast, Kazakhstan and Georgia. This experience provides me with a true insight into the needs and view points of all of my international students


NAME **Tracy Irving**

TITLE **Head Instructor of \*\*\***


BACKGROUND


 28 years old

 Instructor

 5/5

TECH PREFERENCES

 Computer

 Mobile

Goals

Achieve a Band Score 6 or Higher

Pass all sections of the IELTS Exam

Schedule an actual IELTS Exam

Confidently answer IELTS Reading

Successfully overcome IELTS Listening tricks and traps

Write IELTS essays with excellence


Send Writing

Gains detailed information about the expert before sending his/her essay.

Expert Review

**Read Text**

Write Answer



Cihat Kapusuz  
21 years old  
He is student at BOUN

**Euthanasia**

In this day and time, people face many several diseases. Some kind of diseases can't be cured in our day. Such as Aids still has not any cures. With the widening the number of diseases, the opportunities that can be done has been changed, too. One of those opportunities is Euthanasia. Euthanasia is a process which is used when there is nothing to do for saving the patient. It is like killing the patient in his sleep. It could be considered as painless death. There are 2 groups of people. These 2 groups can be defined, the people who think euthanasia is needed, the people who think it's a murder.

The first group's idea is about ending pain. When people in coma or something like that also doctors have nothing to wake him up and cure whatever happened to him...


Send

Expert reads the essay then gives the feedback.

Review Answer


**Read**

Ask



Tracy Irving  
28 years old  
Spanish, English expert

This essay has some minor mistakes, i marked them and wrote some corrections next to your mistakes. The topic was covered well. This essay might get 75-90 over 120. If you want to get more points, you should take my advices into account carefully. If there is still some questionmarks in your head after my feedback, you can ask...



Feedback

Send

Reads the given feedback from the expert.

## Scenario 3

### Persona

Mert is a freshman student in Bogazici University who studies Computer Engineering. He had French lessons in his primary school, but giving a break to learning French in high school, he forgot most of it. However, he is interested in French culture and France -where he would like to work in the future- so he wants to pick up where he is left. His primary hobby is reading books and he spends considerable amount of time doing so. Being interested in French culture, he wants to take it to the next level and read French Classics in their original language. Even though he could understand the sentence structures, he is having trouble with vocabulary. Therefore he started to use our Language Learning Platform to get a better knowledge of French words.

### User Stories

- Mert likes reading books and also would like to read them in French. Even though he could understand the grammar, he is having issues with vocabulary. Therefore in his spare time, like when he is in Metrobus, he practices vocabulary to be able to read books.

### Acceptance Criteria

- 1.1.3.1.7 - A registered user shall be able to access the vocabulary materials according to his/her level
- 1.1.3.1.8 - A registered user shall be able to access the exercises related to the vocabulary materials.
- 1.2.4 - The system shall provide statistics about completed/uncompleted exercises, achievement.
- 2.1 - The platform and the materials should be accessible at any time, from anywhere.

### Preconditions

- Mert already has a registered account.
- He took a level determination test and placed in his appropriate level.

Mert Kara is a freshman student and studying Computer Engineering. He has a decent English, but he wants to learn French since he wants to work in France in the future. He uses his smartphone to learn French while he uses Metrobus everyday to go to his school. He is mostly interested in vocabulary for the time being.

1. Mert logs in to his account using his credentials.



2. Mert chooses to learn French.



3. Mert selects vocabulary exercises to work on.

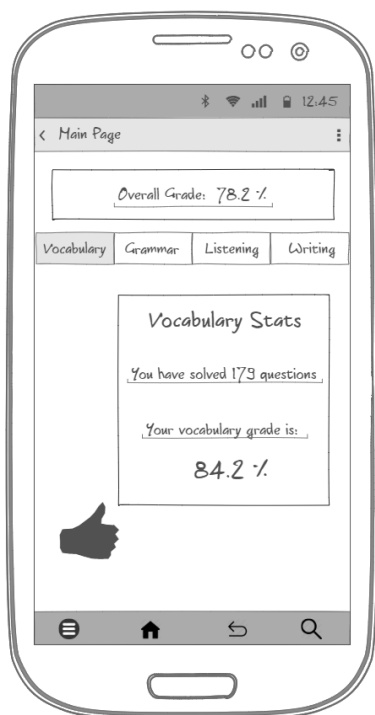


4. As Mert marks questions, he sees that his answer is wrong. Later he finds out that vine is the only beverage in the choices.



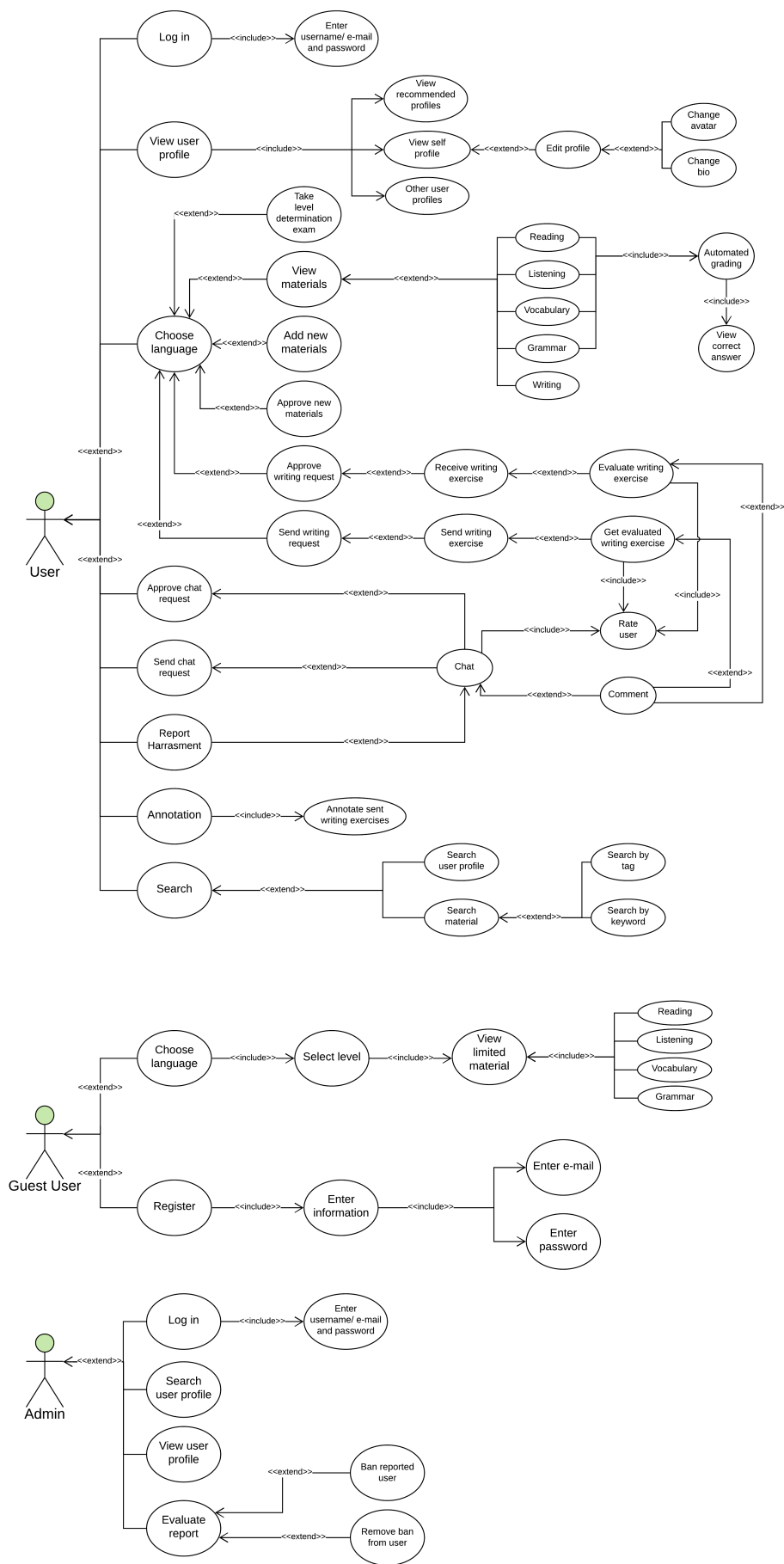
5. Mert finishes the exercise and decides to view his stats.

6. He can see both his overall grade and individual grades for various exercises.



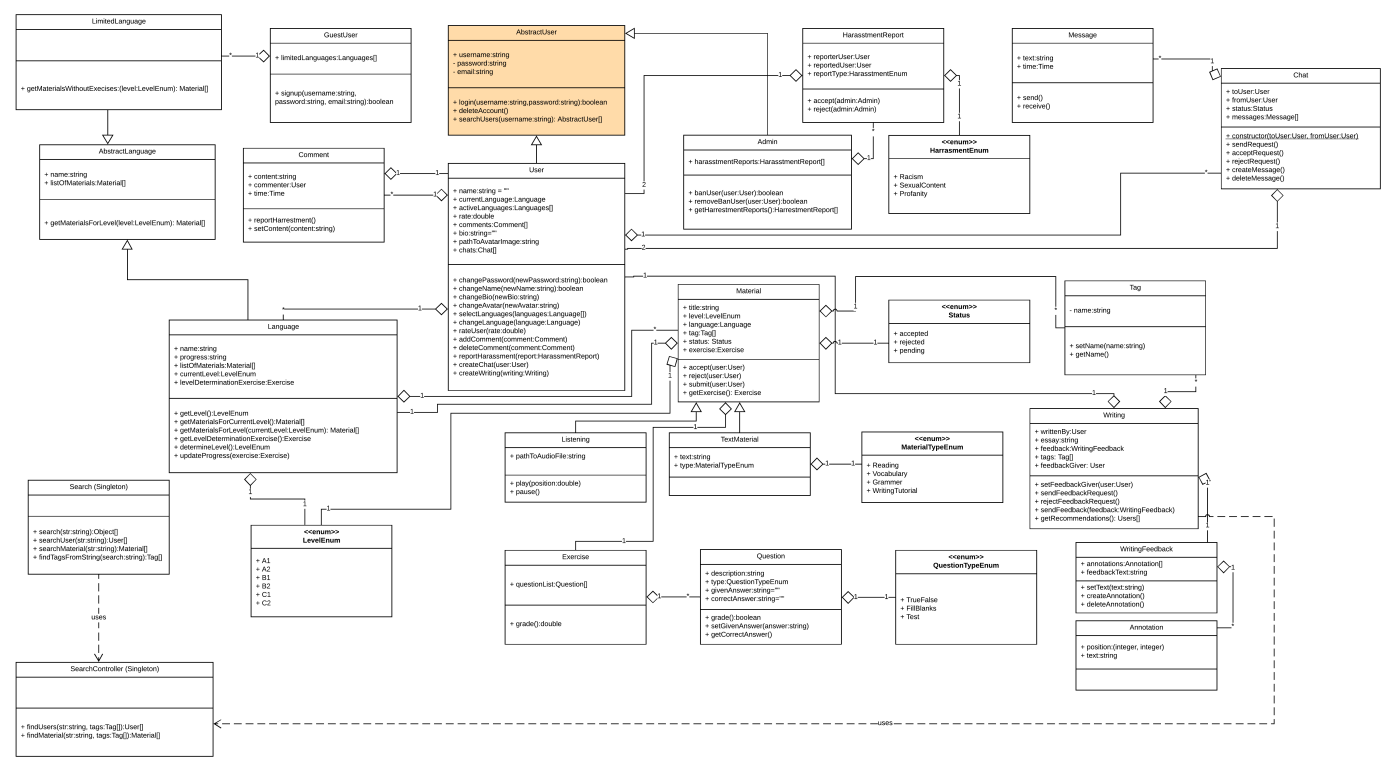
Design Diagrams

Use Case Diagram



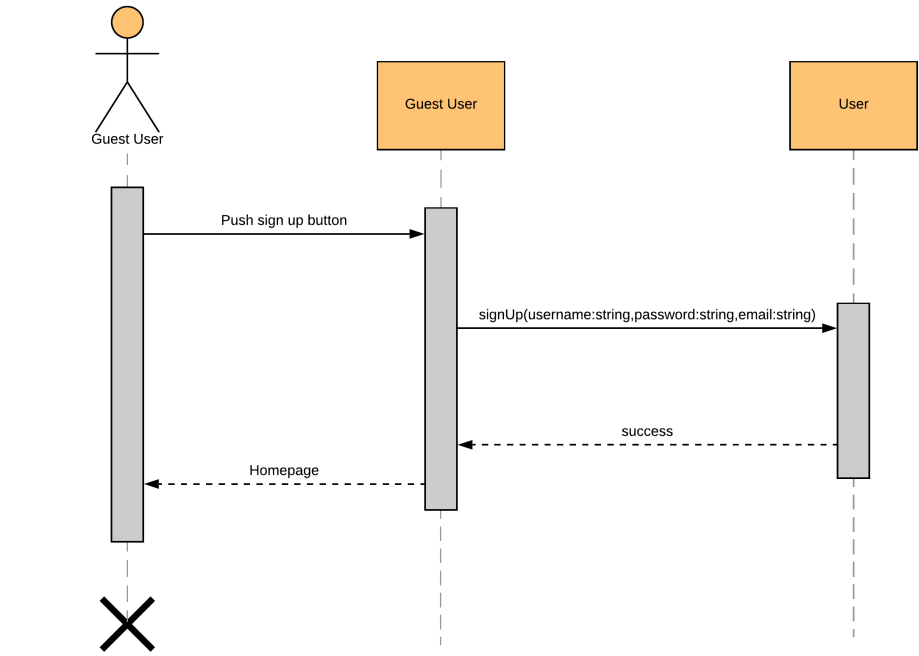


Class Diagram

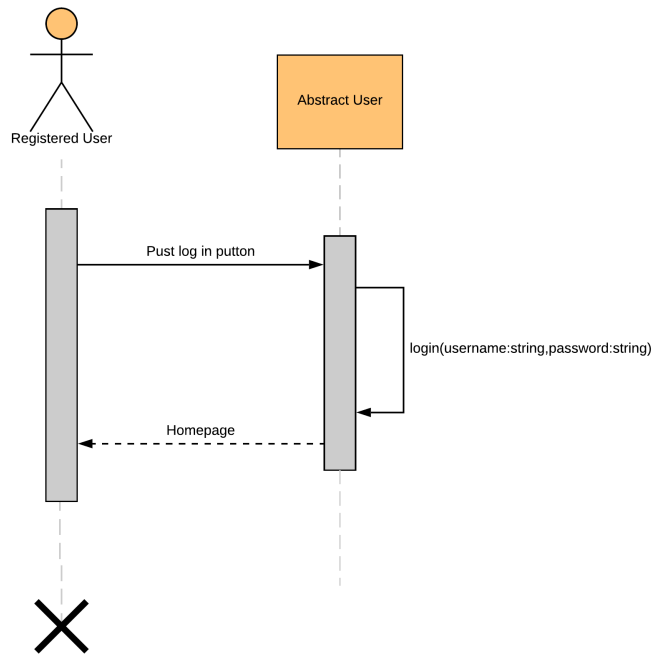


Sequence Diagrams

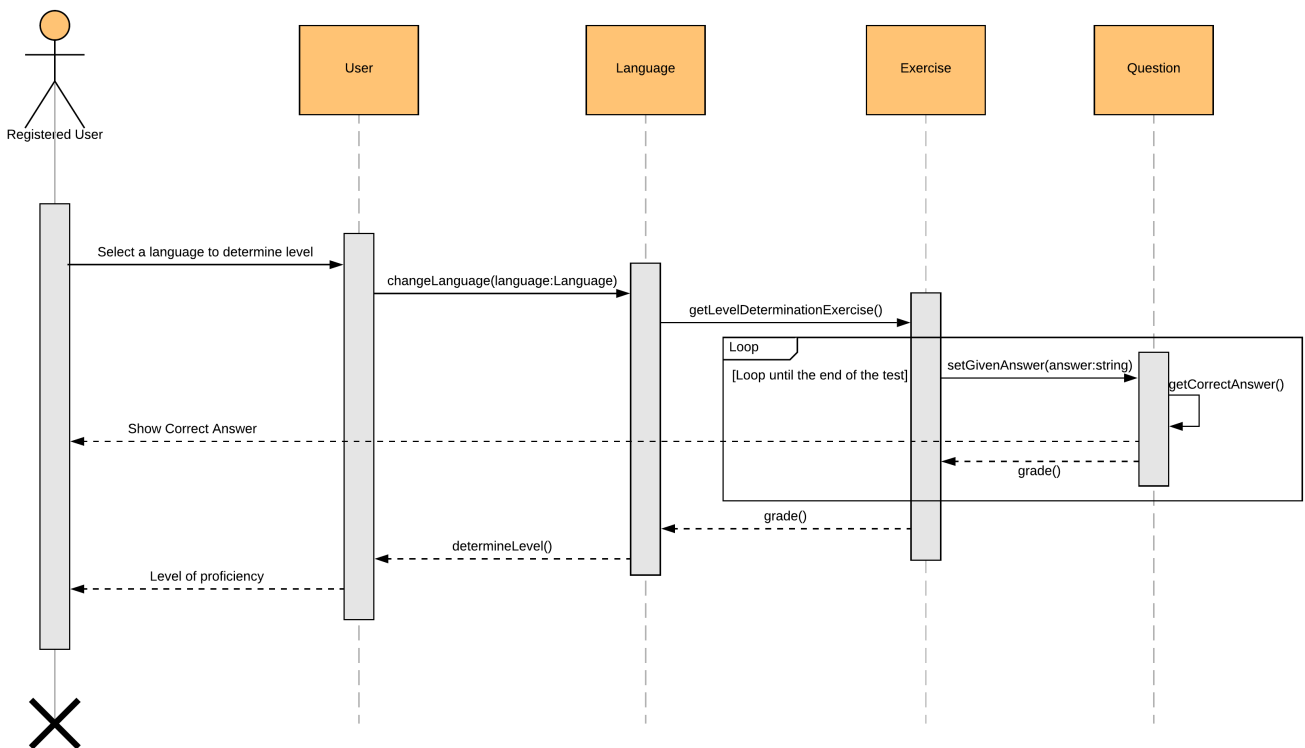
Sign Up



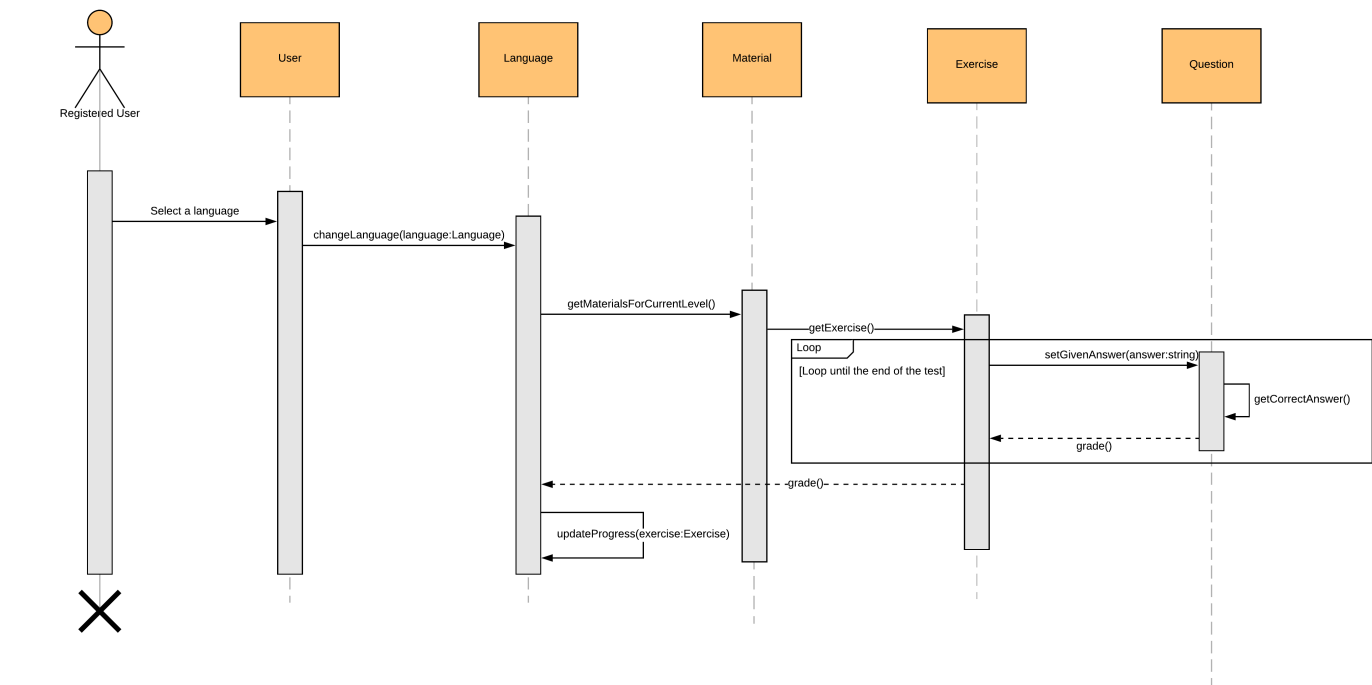
## Login



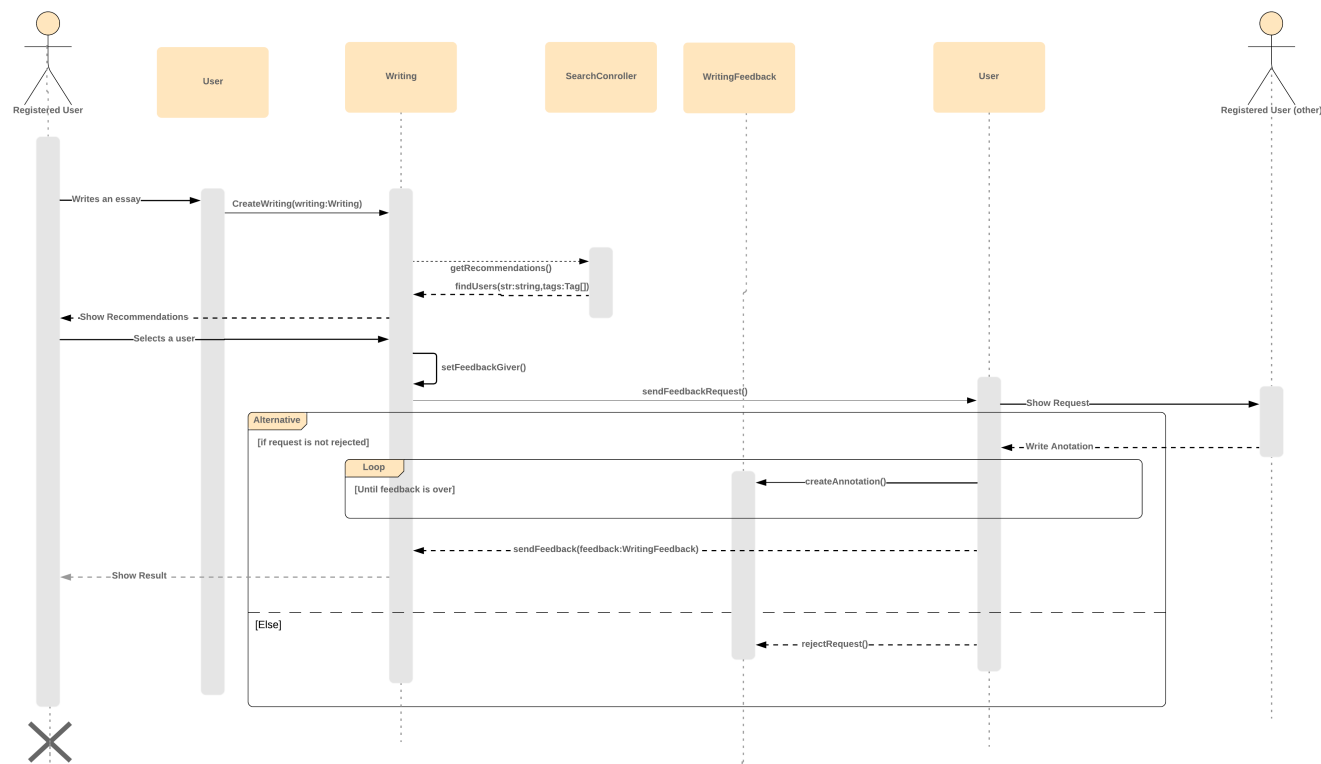
## Level Determination



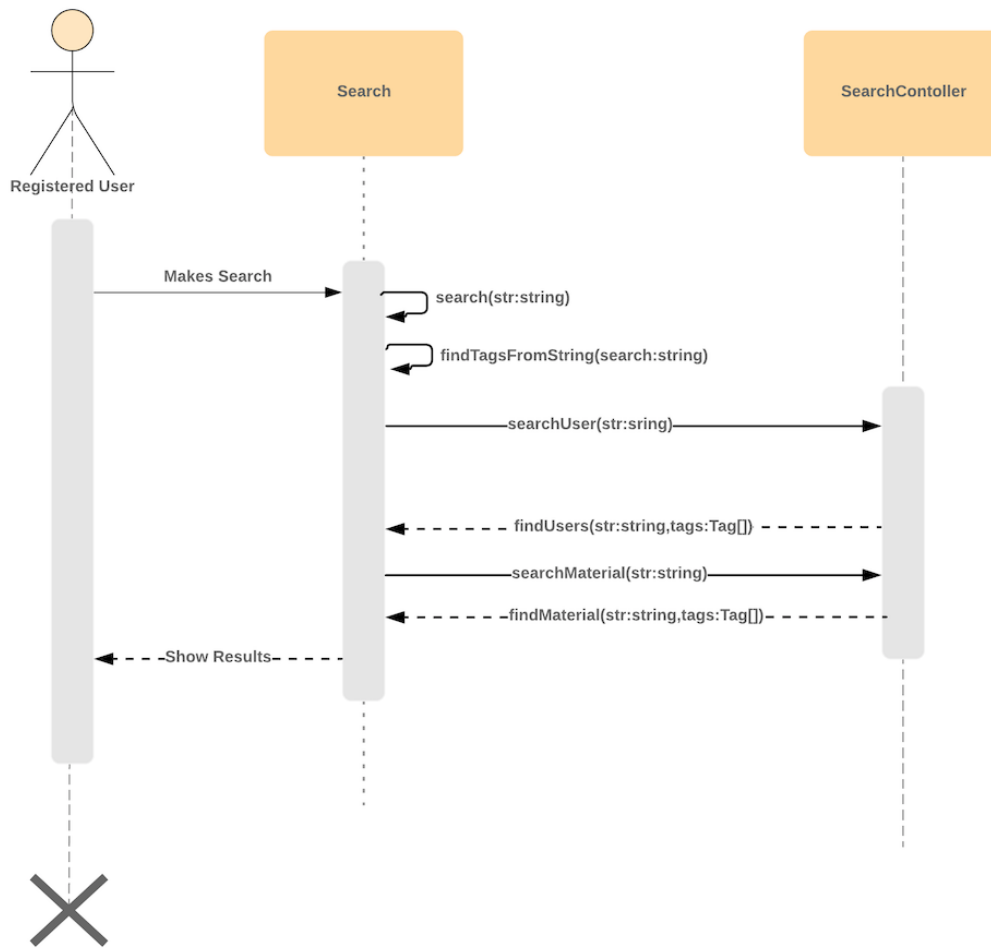
Use Language Materials



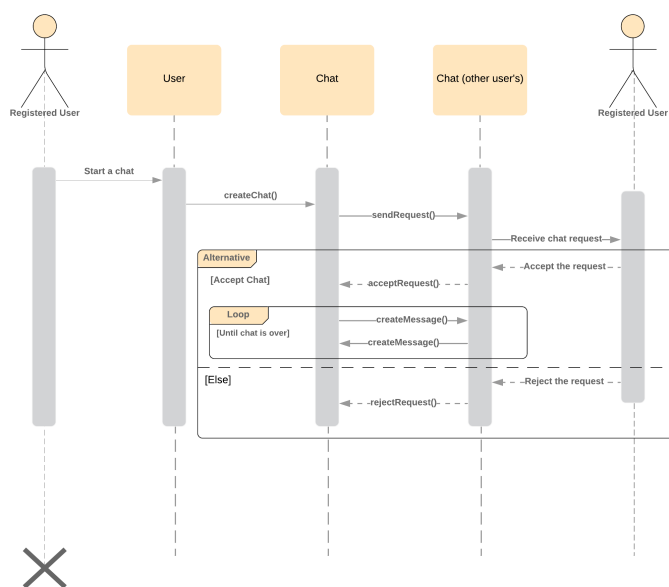
Writing and Annotation



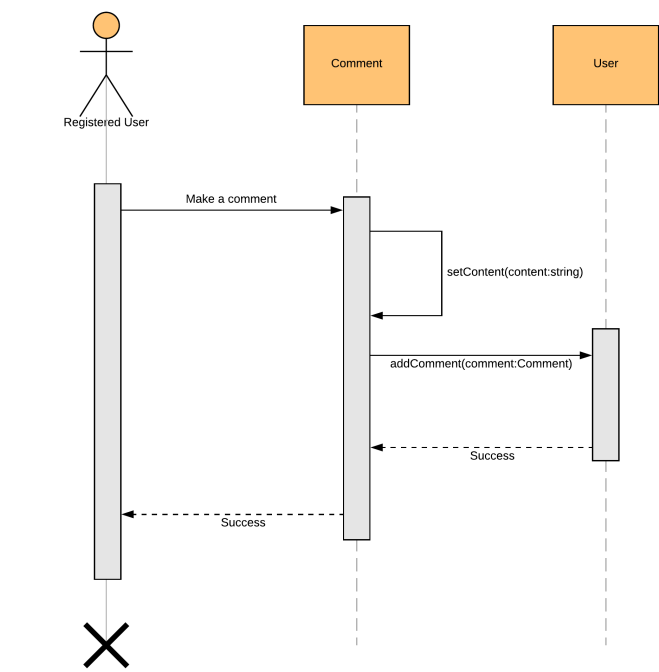
## Search



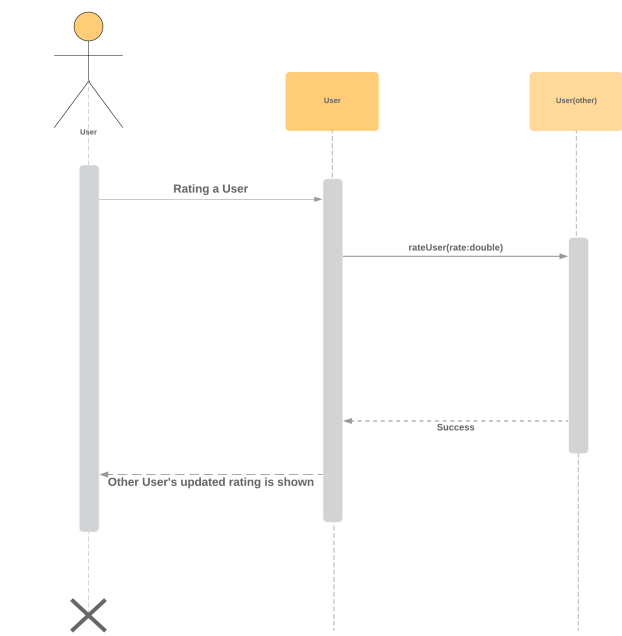
## Chat



Comment



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