MINISTRY OF EDUCATION AND TRAINING

FPT UNIVERSITY

Capstone Project Document

MentoringMe - Tutor Finder Platform

SWP490_G1	
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Capstone Project code	MentoringMe

- Hanoi, April 2021 -

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Acknowledgement

MentoringMe Project is reaching its final stage. Looking back to the very beginning, it has been a long journey for each member of the project and the team as a whole. We started at the zero point when we decided to do MentoringMe. Fortunately, we have received tremendous support from many people during our journey. Therefore, we would like to let them know that we are very grateful.

First of all, we wish to offer our deepest gratitude to our team's supervisor. Mr. Pham Ngoc Duong, without him, we probably would not be able to be where we are today. Besides technological advice, he is also an excellent motivation for us not to give up and always yearn to achieve more for the project. Secondly, we would like to thank all of our teachers at FPT University. They have shown us great support this semester when we do our Capstone Project. Also, thanks to their lessons, we, the clueless students, can become the ones we want to be and do what we want to do. Moreover, we also want to show our gratitude to our friends and families, who always give us a helping hand during this challenging period.

Last but not least, we want to say thanks to the great source of knowledge, the internet, to the people we do not know but still share with us precious knowledge, which helps us a lot in this project. We are very thankful for that.

Because the project was carried out during the COVID-19 pandemic, we hope our friends, relatives, and teachers stay healthy. We look forward to seeing everyone when everything is back to normal as soon as possible.

MentoringMe Project, SWP490_G1

Hanoi, April 25th, 2021

Definition and Acronyms

Acronym	Definition
BR	Business Rule
ERD	Entity Relationship Diagram
GUI	Graphical User Interface
PM	Project Manager
SDD	Software Design Description
SPMP	Software Project Management Plan
SRS	Software Requirement Specification
UAT	User Acceptance Test
UC	Use Case
API	Application Program Interface

I. Project Introduction

1. Overview

1.1 Project Information

- Project name: MentoringMe - Mentor Finder Platform
- Project code: MFP
- Group name: SWP490-G1 (Labate)
- Software type: iOS Mobile App

1.2 Project Team

Full Name	Role	Email	Mobile
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Table 1.2. Team member's information

2. Product Background

Because of the popularity and necessity of online learning, a connection platform between mentors and students is needed, especially during the pandemic, it has become developed. Because students in pandemics have improved their skills in using smart devices for learning, accessing online learning applications is more convenient nowadays.

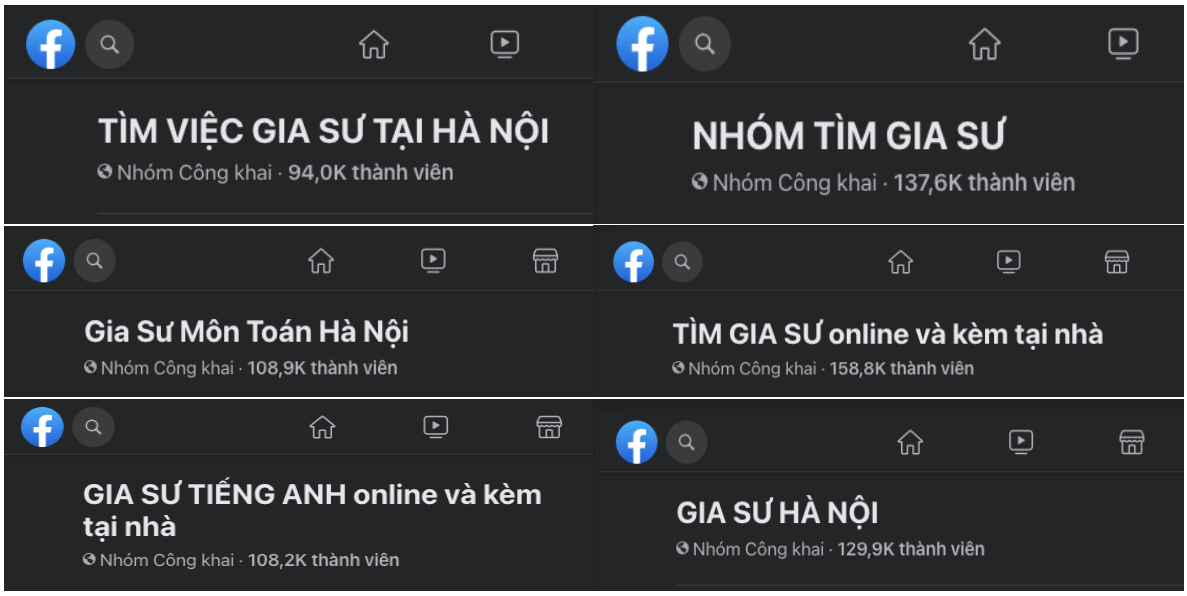


Figure 2.1. The demand for mentors is high. The tutoring groups on Facebook are very crowded.

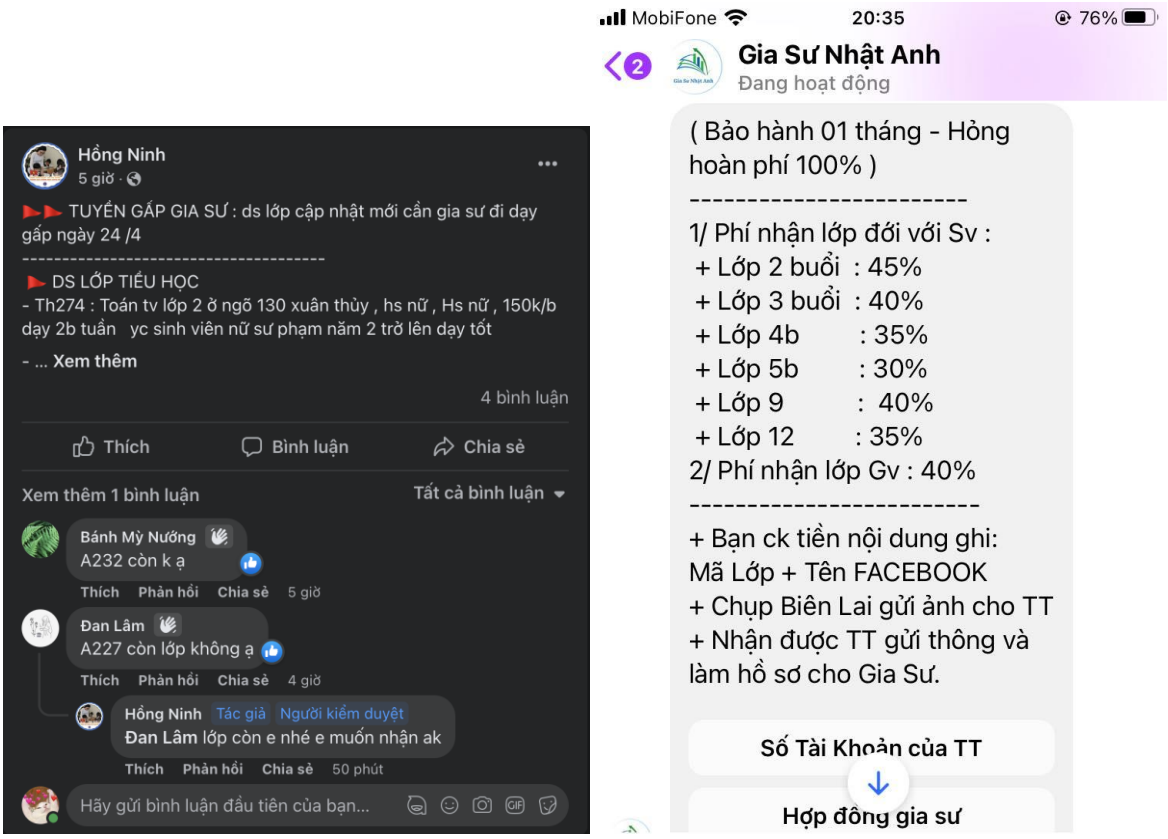


Figure 2.2. These tutoring groups all have to go through a brokerage center. The mentor loses about half of the mentoring fee.

Besides official classroom hours, questions about students' assignments need to be explained in detail online (one versus one) with a mentor quickly, conveniently, and in quality. Usually, students hire mentors who are familiar or brokered through the center. During the pandemic, it takes a long time to find a quality mentor. The quiz and document resource provided by only one hired mentor is also limited.

Figure 2.2. Although on the website, the EduBox app advertises the direct connection feature without a brokerage center, EduBox still has notice of collecting a mentoring fee.

This platform will better solve those problems by directly connecting mentors and students, supporting tests, and providing a large document resource for reference.

3. Existing Systems

3.1. Blacasa Gia sư

Figure 3.1.1 Blacasa Gia sư main screens on the iOS system

Blacasa (https://www.blacasa.vn/) is a platform with both an app and a website that allows mentors to find classes that are lacking mentors and allows students to find the most suitable mentor.

Advantages	Disadvantages
• Students can find classes. • Teachers can send offers with pricing. • Contact students after being accepted to teach. • Pay automatic connection fees. • Receive notifications about classes new on the system.	• Not being able to log in with Facebook. • Lack of some features for users to maintain regular use of the app such as class schedules, tests, document resources, etc. • Support Vietnamese only.

• Receive notifications about teaching offers. • Students can register their learning needs in 1 minute. • Students can receive information about teaching offers from mentors. • Students can search for suitable mentors and send invitations, contact mentors after choosing mentors, and pay tuition fees for mentors. • Students can evaluate the mentors they have studied, and suggest good mentors for the community.	• Mentors still must pay intermediary fees through the platform.

3.1.2. Toppy

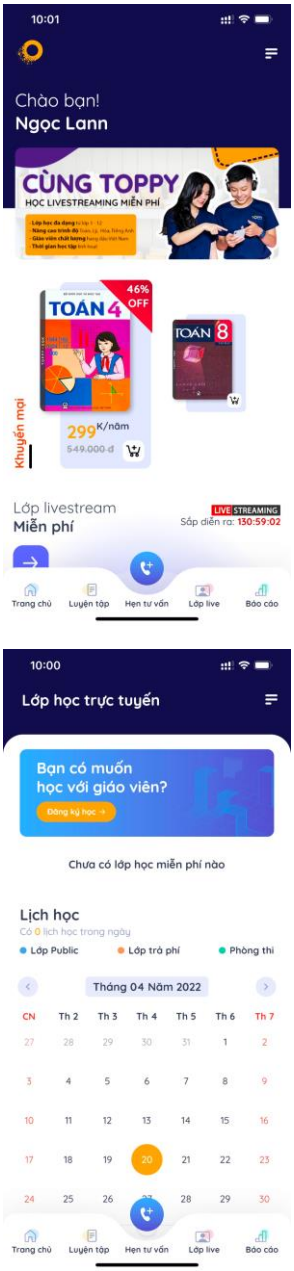


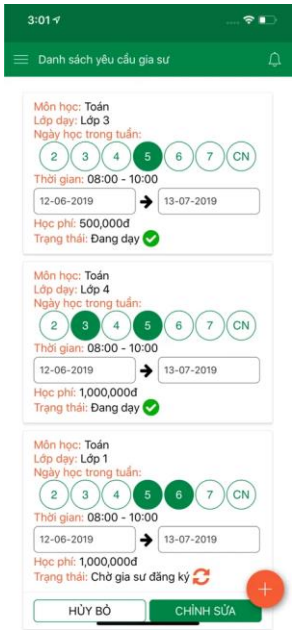
Figure 3.1.2 Toppy main screens on the iOS system

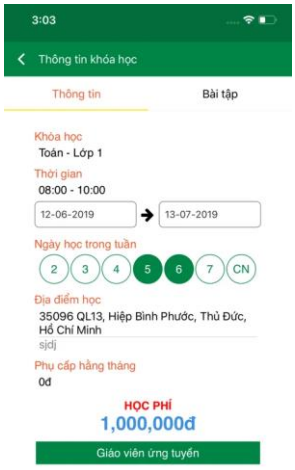
Toppy (https://toppy.vn/) is a platform with an application and a website to support online learning in Vietnam from grade 1 to grade 12 and prepare for IELTS, and TOEIC.

Advantages	Disadvantages
• Provides tens of thousands of videos, lectures, exercises, and exam questions with solutions. • Provides virtual exam rooms with real proctors.	• Does not support the registration of mentors. • Does not support subjects other than Maths, English, Physics, Chemistry.

• Provides personalized learning routes, online learning reminders, class schedules, assessments, smart lessons, and live-streaming classes. • Has different study payment packages: access to the document store and the package with mentors provided by Toppy, a free 14-day trial, and refund support if you do not achieve good results.	• Support Vietnamese only. • Does not support a direct connection between student and mentor.

3.1.3. EduBox Gia sư





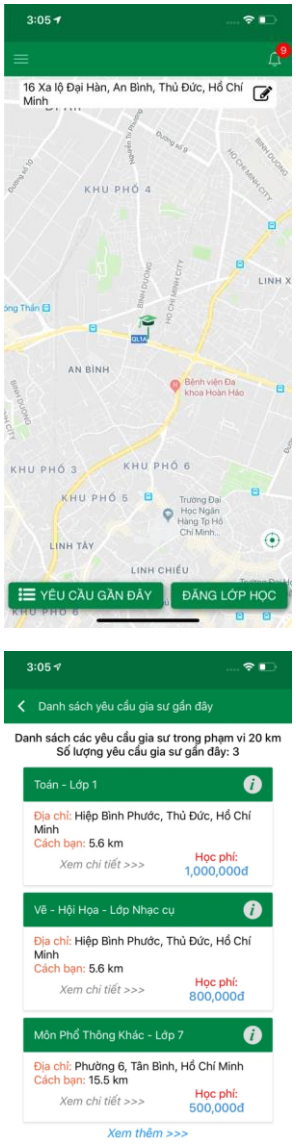


Figure 3.1.3 EduBox Gia sư main screens on the iOS system

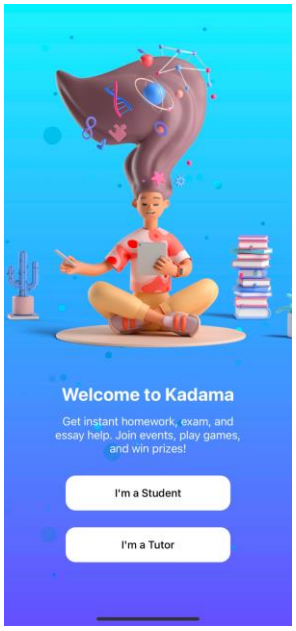
EduBox (http://edubox.vn/) help tutors, teachers, exam preparation centers, and students' parents connect with each other.

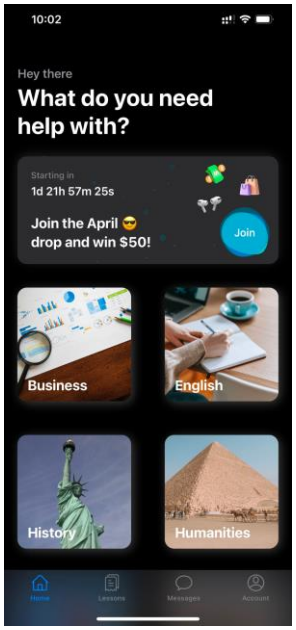
Advantages	Disadvantages
• Look up suitable requirements nearby and can actively apply. • Mentors can interact directly with students, give assignments and mock exercises, and easily send messages to the whole class.	• Does not support the registration of mentors. • Does not support a direct connection between student and mentor.

• Support mentorship request easily. • The function of price agreement based on the financial ability of parents will also help parents easily choose the right mentor for parents' budget. • View evaluation and quality of teachers' qualifications through the history of previous parents in an objective way. • A variety of subjects from general subjects to gifted subjects, music, and painting.	• Support Vietnamese only. • Mentors still must pay intermediary fees through the platform.

3.1.4. Kadama

The Kadama App (https://www.kadama.com/) makes it easy for students and parents to instantly connect with expert tutors for in-person and online lessons.





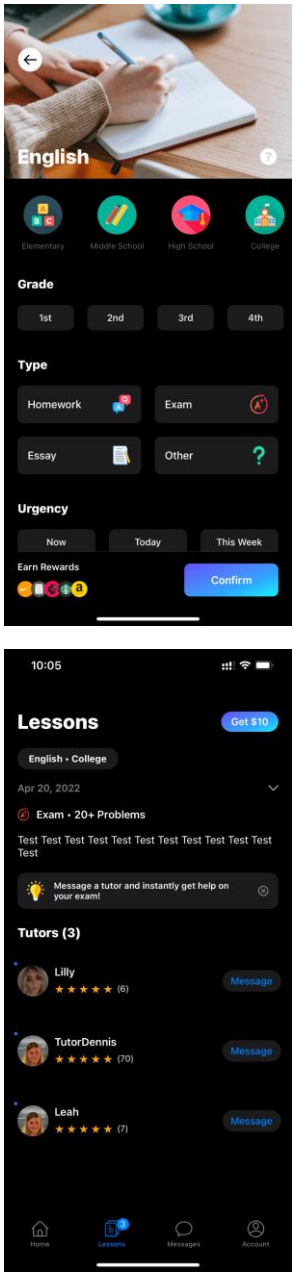
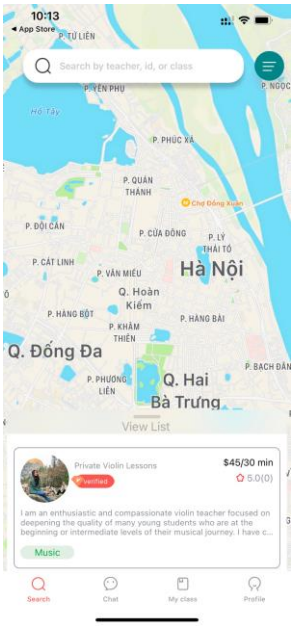


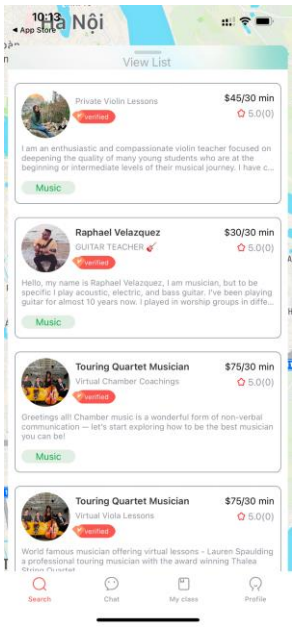
Figure 3.1.4 Kadama main screens on the iOS system

Advantages	Disadvantages
• Quickly connect with subject experts anytime, anywhere. If users have a last-minute assignment that is due, user can be instantly matched with an online tutor who would help the user do their homework. • Easy payment support. • Support sending direct messages. • Profiles and filters of tutors are precise and diverse in specialties.	• Lack of some features for users to maintain regular use of the app such as class schedules, tests, document resources, etc. • Not popular in Vietnam, does not support Vietnamese

3.1.5. Classever

Classever (https://www.classever.com/) is a platform and community that provides the environment for teachers and students to connect. Classever discovers the best teachers in your area and supports them with 100% of the proceeds.





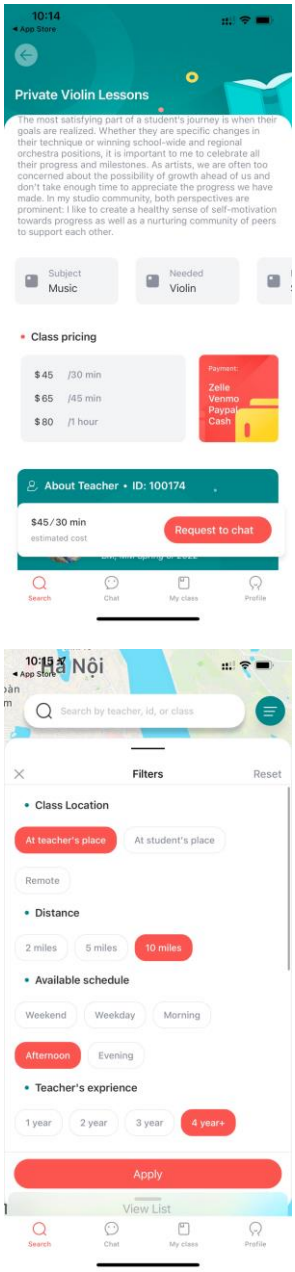


Figure 3.1.5 Classever main screens on the iOS system

Advantages	Disadvantages
• Build a classroom with $0 commission, $0 subscription fees, $0 registration fee, and $0 hidden fee. • Set tutor own tuition rate—no commission or credit card transaction fee, and tutor decide own payment method. • Verified phone and email and showed verified badges to the students. • Chat with students in no time. • Manage your students and classes in one place. • Map view to find tutor nearby.	• Lack of some features for users to maintain regular use of the app such as class schedules, tests, document resources, etc. • Not popular in Vietnam, does not support Vietnamese

4. Business Opportunity

Our platform provides a direct connection between students and mentors - one has needs, and one has services, with no middleman fees. The demand for mentors is always there and is even higher now because the current generation is much more active in learning.

During the pandemic, students improved their skills in using technology devices to learn, and accessing online learning applications is more convenient nowadays. So, finding online mentors will no longer be a barrier. We want to create a habit of looking for mentors by app first, before other search methods like asking familiar, through the center, etc. Not only that, mentors can provide relevant document resources, create test quizzes, etc., to attract learners.

5. Software Product Vision

The system in the future needs to have a mentor verification team for hired mentors, and we will try to provide the best quality and competition for every student in Viet Nam after 2 years.

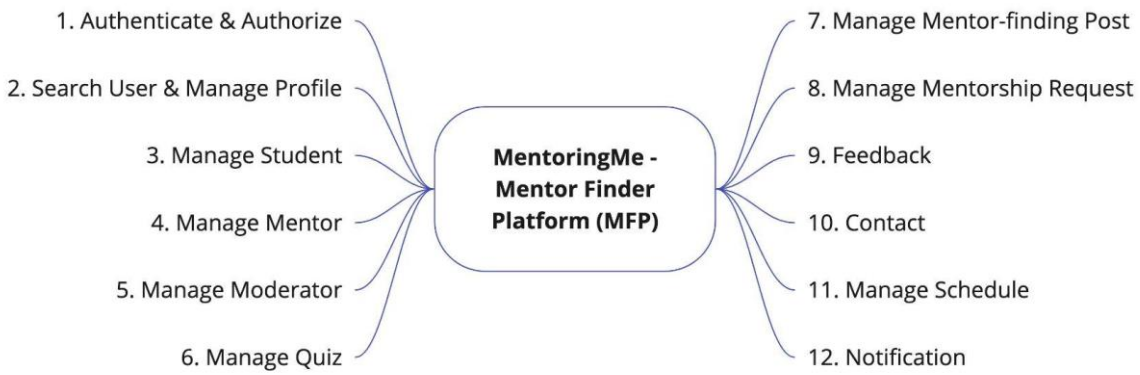
Our system will help each student connect directly with the quality mentor and practice lessons with quiz questions and document resources. The system will make it easier than ever to find/be a mentor at an affordable price. Students will consolidate and expand their knowledge beyond the official classroom while still staying safe at home during the pandemic.

6. Project Scope & Limitations

Scope: The system will only provide the mobile iOS version, support the Vietnamese language and focus on features to connect students and mentors.

Limitations: Because of the team capacity and time permitting, we have 3 limitations and 4 exclusions which are mentioned in section 7.2 below.

6.1 Major Features



ID	Feature & Description
FE-01	Authenticate & Authorize: Users must have an authentication account to access other features in the application. Different roles have access to other features. This feature supports users to register an account, log in/log out of an account, reset the password, and change the password.

FE-02	Search User & Manage Profile: This feature set includes user search and personal profile management. Search users feature based on keywords and filters with filtering and sorting criteria. Profile management includes viewing, updating the user's profile, and updating the user's avatar.
FE-03	Manage Student: This feature set includes viewing the student list, viewing the profile details of a particular student, and giving the student active/inactive action by the admin/moderator.
FE-04	Manage Mentor: This feature set also includes the same features as student management features. But it adds a view of the list of registered users as mentors and their profiles and decides to approve/reject the profile by admin/moderator. This feature set also includes actions to view top mentors, add a mentor to a favorites list or remove a mentor from a student's favorites list and view that favorites list.
FE-05	Manage Moderator: This feature set also includes the same features as student management features. But it does add adding moderators.
FE-06	Manage Quiz: This feature set includes features to view, create, edit, delete quizzes, take a quiz, save draft quizzes, view quiz history, and search quizzes. This feature set also includes adding a quiz to a favorites list or removing a quiz from a student's favorites list and viewing that favorites list.
FE-07	Manage Mentor-finding Post: This feature set includes creating a mentor-finding post by a student, actions to cancel and mark complete a post, and interactions and comments on that post.
FE-08	Manage Mentorship Request: This feature set includes booking/canceling a mentorship request by a student and accepting/rejecting that request by a mentor. Both roles can view a list of pending, approved, or rejected requests.
FE-09	Feedback: Students can give feedback, and the mentor can view a list of student feedback.
FE-10	Contact: Users can send direct messages to each other (chat) and view the list of conversations.
FE-11	Manage Schedule: When a mentor accepts a student’s mentorship request, an event is added to both the student and mentor schedules. Users can view the schedule of others and themself and view, or delete an event from their schedule.
FE-12	Notification: Users can view the list of notifications of other features and campaign notifications.

Table 6.1. List of major features.

6.2 Limitations & Exclusions

ID	Feature & Description
LI-01	The app does not support web and Android versions, but the system needs to expand the range of users.
LI-02	The app only supports the Vietnamese language.
LI-03	The app does not support mentors sending feedback about students.

Table 6.2.1 Limitations

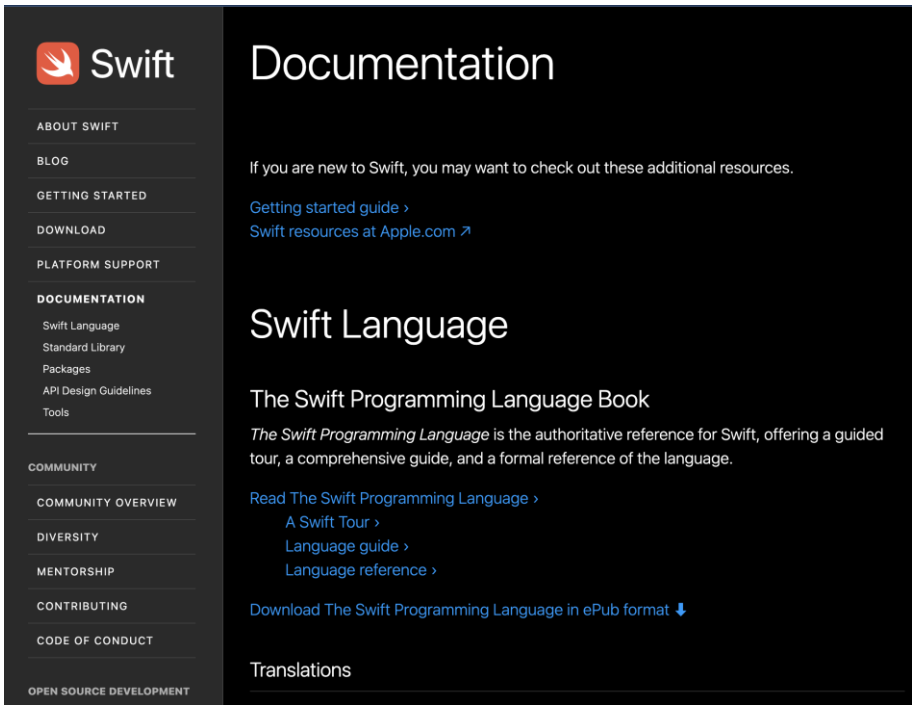
ID	Feature & Description
EX-01	The system needs income from the user's mentoring service or advertisement, but the app does not have a payment system.
EX-02	The system needs a verification tool to verify the mentor account and quizzes quality, but the app does not have it.
EX-03	The app does not have a documentation repository for users to reference.
EX-04	The app does not support the user to report other users who violate the system's terms and policies (harassment, spam, lousy teaching quality, etc.)

Table 6.2.2 Exclusions

7. Appendix - References

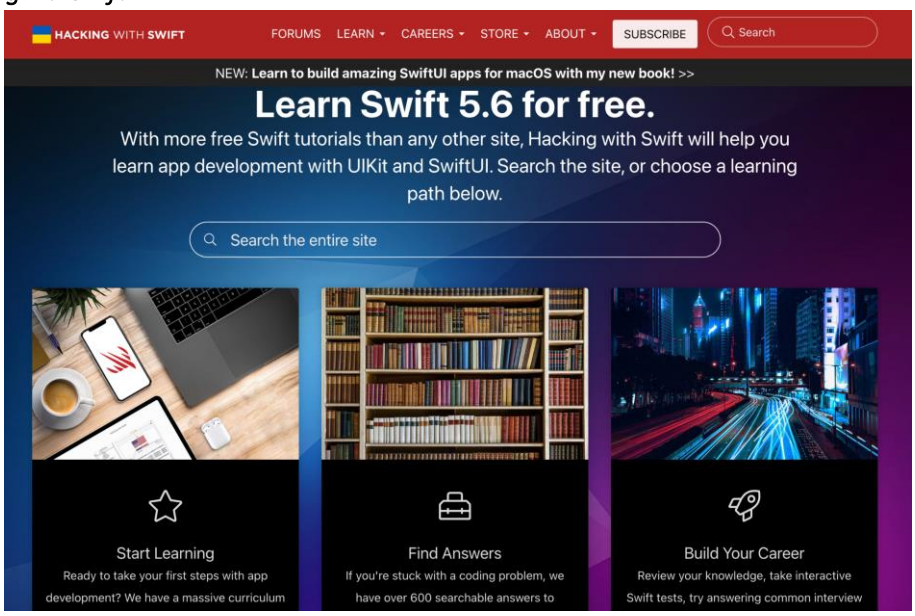
7.1. Front-end

7.1.1. Swift



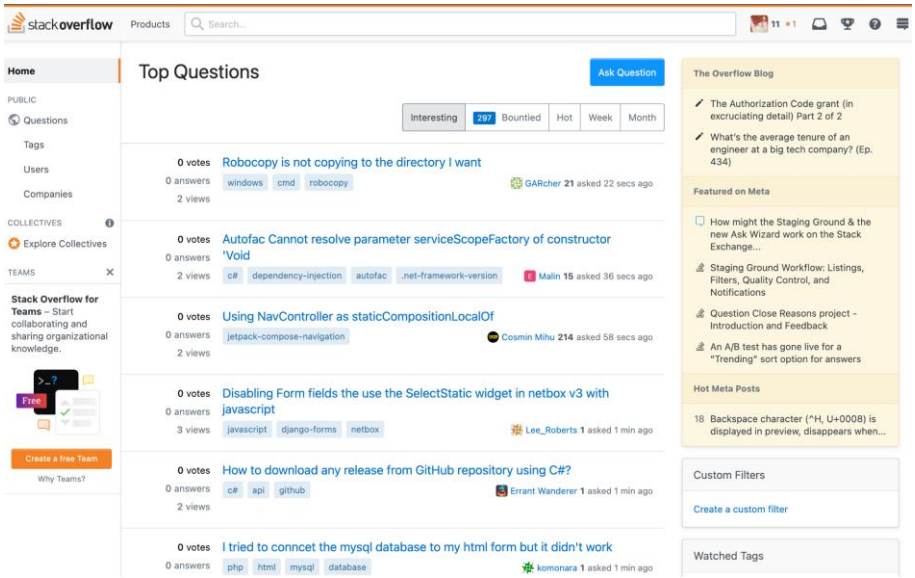
Swift (https://www.swift.org/documentation/) is a general-purpose programming language built using a modern approach to safety, performance, and software design patterns.

7.1.2. Hackingwithswift



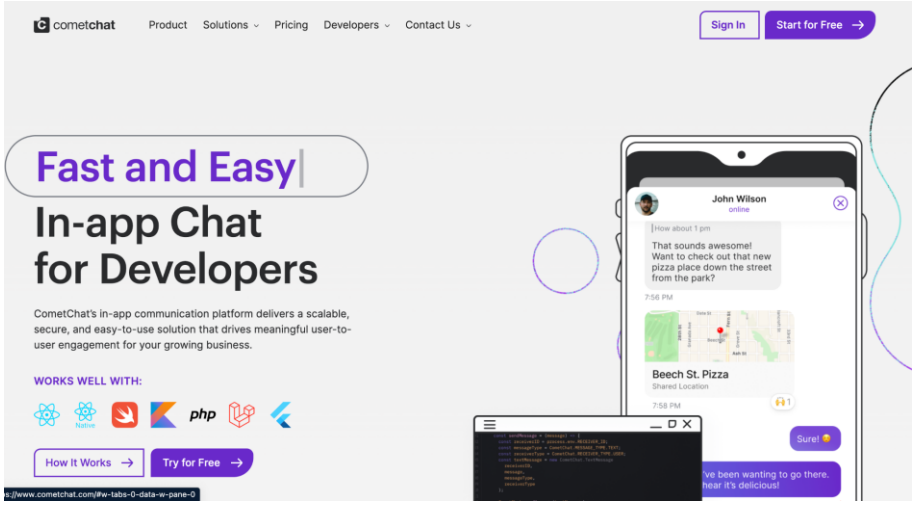
With more free Swift tutorials than any other site, Hacking with Swift (https://www.hackingwithswift.com/) will help people learn app development with UIKit and SwiftUI.

7.1.3. Stackoverflow



Stack Overflow (https://stackoverflow.com/) is a question and answer website for professional and enthusiast programmers. It features questions and answers on a wide range of topics in computer programming.

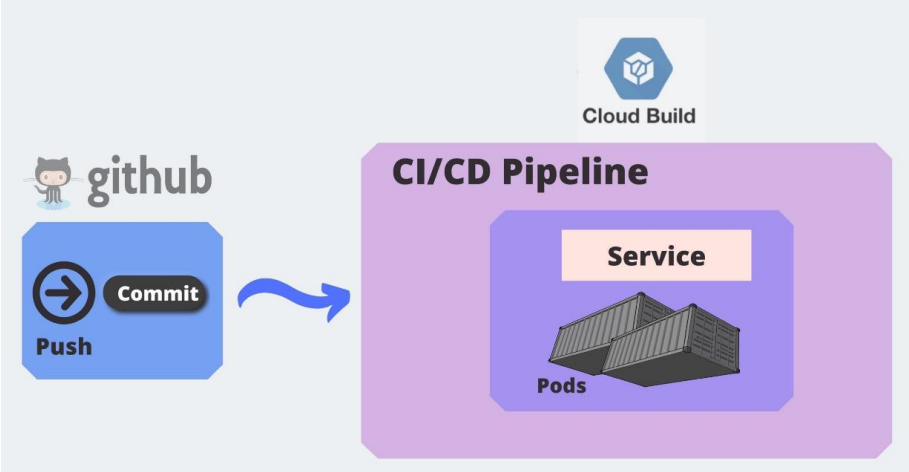
7.1.4. Cometchat



Cometchat (https://www.cometchat.com/) is a live chat platform that allows users to collaborate and connect with customers. Developed with API and Chat SDK, CometChat can be deployed on-premise and cloud.

7.2. Back-end

7.2.1. CI/CD Pipeline using Cloud Build with GitOps Technique



Learn how to set up a CI/CD pipeline for your frequent development code changes with Git Repository in Google Cloud.

https://medium.com/google-cloud/ci-cd-pipeline-using-cloud-build-with-gitops-technique-68b0e9d3b53

7.2.2. Spring

The Spring Framework is an application framework and inversion of the control container for the Java platform. The framework's core features can be used by any Java application, but there are extensions for building web applications on top of the Java EE platform.

Below are links to Spring that we refer to:

No.	Title	Link
1	Download Spring Boot E-Commerce Ultimate Course Free Tutorial - freetuts.download	https://dl.freetutsdownload.net/tutsID-27691/
2	Spring Boot OAuth2 Social Login with Google, Facebook, and Github - Part 3	https://www.callicoder.com/spring-boot-security-oauth2-social-login-part-3/
3	Spring Boot RESTful Application with Cloud SQL for MySQL	https://andriperera.medium.com/spring-boot-restful-application-with-cloud-sql-for-mysql-7bfad7b3824b
4	Role Based Access Control (RBAC) with	https://medium.com/geekculture/role-based-access-control-rbac-with-spring-

	Spring Boot and JWT	boot-and-jwt-bc20a8c51c15
5	Activate a New Account via Email Using Spring Security | Java Development Journal	https://www.javadevjournal.com/spring-security/activate-a-new-account-via-email-using-spring-security/
6	Spring Security Archives | Java Development Journal	https://www.javadevjournal.com/category/spring-security/
7	Spring Security Brute Force Protection | Java Development Journal	https://www.javadevjournal.com/spring-security/spring-security-brute-force-protection/
8	Spring security forgot password	https://www.youtube.com/watch?v=s_oJsd_n06k
9	Java Annotation Processor for Spring. It contains a set of annotations that makes working with Spring easier. It is inspired by Lombok	https://github.com/ukman/kolobok
10	File Upload and Download With Spring Boot + Firebase	https://medium.com/teamarimac/file-upload-and-download-with-spring-boot-firebase-af068bc62614
11	Spring Boot with Firebase Storage	https://medium.com/analytics-vidhya/spring-boot-with-firebase-storage-73f574af8c4
12	Send Push Notification With Firebase In Spring Boot API	https://writecodewithprince.com/send-push-notification-with-firebase-in-spring-boot-api/
13	Send firebase push notifications From Spring Boot	https://springhow.com/spring-boot-firebase-push-notification/
14	Spring Expression Language (SpEL) | Part III. Core Technologies	https://docs.spring.io/spring-framework/docs/3.0.x/reference/expressions.html#:~:text=The%20Spring%20Expression%20Language%20(SpEL,and%20basic%20string%20templating%20functionality.
15	Guide to Unit Testing Spring Boot REST APIs	https://stackabuse.com/guide-to-unit-

		testing-spring-boot-rest-apis/
16	Spring Boot REST API Unit Testing With JUnit	https://www.blazemeter.com/blog/spring-boot-rest-api-unit-testing-with-junit
17	Docker Basics and Easy Steps to Dockerize Spring Boot Application	https://medium.com/geekculture/docker-basics-and-easy-steps-to-dockerize-spring-boot-application-17608a65f657

7.2.3. Visual Paradigm

Visual Paradigm (https://www.visual-paradigm.com/) is a UML CASE Tool supporting UML 2, SysML and Business Process Modeling Notation from the Object Management Group. In addition to the modeling support, it provides report generation and code engineering capabilities including code generation.

We only refer to the Package Diagram section at this link: https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-package-diagram/

7.2.4. Authentication Resources

No.	Title	Link
1	Do we need to store OTP in database?	https://quick-adviser.com/do-we-need-to-store-otp-in-database/
2	How to create Google OAuth Credentials (Client ID and Secret)	https://www.youtube.com/watch?v=xH6hAW3EqLk
3	Auth0 Get Users by ID	https://auth0.com/docs/api/management/v2#!/Users/get_users_by_id

II. Project Management Plan

1. Overview

1.1 Scope & Estimation

#	WBS Item	Complexity	Est.Effort (Man-days)
1.	***Authenticate & Authorize***		**17.9**
1.1	Register Account	Medium	4.0
1.2	Login/Logout Account	Medium	8.5
1.3	Reset Password	Simple	2.5
1.4	Change Password	Simple	2.9
2.	***Search User & Manage Profile***		**24.7**
2.1	Search User	Medium	3.8
2.2.1	View Profile	Simple	9.5
2.2.2	Update Profile	Medium	8.7
2.2.3	Upload Avatar	Medium	2.7
3.	***Manage Student***		**8.5**
3.1.1	View Student List	Simple	3.5
3.1.2	View Student Profile	Simple	2.5
3.1.3	Active/Inactive Student	Simple	2.5
4.	***Manage Mentor***		**30.4**
4.1.1	View Mentor List	Simple	3.0
4.1.2	Active/Inactive Mentor	Simple	2.5
4.1.3	View Registered Mentor List	Simple	3.2
4.1.4	View Mentor Registration Profile	Simple	3.2
4.1.5	Approve/Reject Mentor	Simple	2.7
4.2	View Top Mentor List	Simple	3.6
4.3.1	View Favorite Mentor List	Simple	3.5
4.3.2	Add Favorite Mentor	Simple	2.8
4.3.3	Delete Favorite Mentor	Simple	2.8
4.4	View Mentor Profile	Simple	3.1
5.	***Manage Moderator***		**13.4**
5.1.1	View Moderator List	Simple	3.6
5.1.2	View Moderator Profile	Medium	3.1
5.1.3	Add Moderator	Medium	3.6
5.1.4	Active/Inactive Moderator	Simple	3.1

6.	***Manage Quiz***		**59.7**
6.1.1	View Favorite Quiz List	Simple	2.9
6.1.2	Add Favorite Quiz	Medium	3.6
6.1.3	Delete Favorite Quiz	Simple	2.8
6.2	Take Quiz	Complex	7.5
6.3	View Taken Quiz History	Medium	4.0
6.4	View Quiz Detail Result	Simple	3.0
6.5	View Quiz List	Simple	3.0
6.6	View Quiz Overview	Simple	2.5
6.7.1	View Quiz Detail	Medium	4.8
6.7.2	Create Quiz	Complex	6.5
6.7.3	Update Quiz	Medium	4.8
6.7.4	Delete Quiz	Simple	2.5
6.7.5	View Draft Quiz List	Simple	3.0
6.7.6	View Own Quiz List	Simple	3.0
6.7.7	Publish Draft Quiz	Medium	3.0
6.7.8	Search Quiz	Medium	2.8
7.	***Manage Mentor-finding Post***		**48.8**
7.1	Create Mentor-finding Post	Medium	4.1
7.2	View On-going Mentor-finding Post List	Simple	3.0
7.3	View Completed Mentor-finding Post List	Simple	3.0
7.4	View Cancelled Mentor-finding Post List	Simple	3.0
7.5	Cancel Mentor-finding Post	Simple	2.5
7.6	Mark Completed Mentor-finding Post	Simple	2.5
7.7	View Student’s Mentor-finding Post List	Medium	3.6
7.8	View Mentor-finding Post Detail	Simple	3.0
7.9	Search Mentor-finding Post	Medium	3.6
7.10	Like/Unlike Post	Medium	4.1
7.11	Add Comment	Medium	4.1
7.12	Delete Comment	Medium	4.1
7.13	View Liked User List	Medium	4.1
7.14	View Comment List	Medium	4.1
8.	***Manage Mentorship Request***		**25.7**
8.1	View Pending Mentorship Request	Simple	3.1
8.2	View Accepted Mentorship Request List	Simple	3.1
8.3	View Rejected Mentorship Request	Simple	2.6

8.4	View Detail Mentorship Request	Medium	4.1
8.5	Accept Mentorship Request	Medium	3.1
8.6	Reject Mentorship Request	Medium	3.1
8.7	Cancel Mentorship Request	Medium	2.5
8.8	Book Mentorship Request	Medium	4.1
9	***Feedback***		**5.7**
9.1	Feedback Mentor	Medium	3.1
9.2	View Feedback	Simple	2.6
10	***Contact***		**8.7**
10.1.1	View Conversation List	Simple	3.1
10.1.2	Chat	Complex	5.6
11	***Manage Schedule***		**8.1**
11.1	View Schedule	Complex	5.6
11.2	View Event Detail	Medium	2.5
12	***Notification***		**2.6**
11.1	View Notifcation List	Simple	2.6

Total Estimated Effort (man-days) ***254.2***

1.2 Project Objectives

1.2.1 Release quality commit

#	Testing Stage	Test Coverage	No. of Defects	% of Defect	Notes
1	Unit Test	100%	100	30%	Written and run by software developers to ensure that a section of an application (known as the "unit") meets its design and behaves as intended.
2	Integration Test	100%	100	30%	Individual software modules are combined and tested as a group.
3	System Test	100%	30	15%	Performed on the entire system, tests not only the design, but also the behavior and even the believed expectations of the customer.
4	Acceptance Test	100%	15	5%	Users of the system perform tests in line with what would occur in real-life scenarios.

1.2.2 Ensure implementation on schedule with allowable resources:

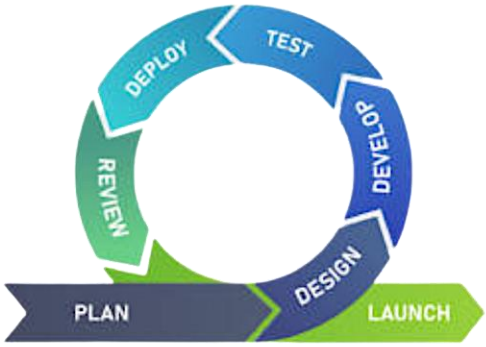
- Milestone Timeliness: 100%
- Allocated Effort: 260 man-days

1.3 Project Risks

#	Risk Description	Impact	Possibility	Response Plans
1	Requirement changes: The scope may change; some requirements may be added.	High	High	All members discuss carefully at the beginning of each iteration to define the scope and requirements. Ensure resource allocation is modified correctly to adapt to new requirements.
2	Illness or absence of team members , especially by Covid19: The number of members by personal schedule/working time in the company, decreases and not enough for work.	High	High	Members have to notify the team about the absence period, personal schedule, and the plan of how to keep up with the work process. Ensure that the absence of a member won't affect others and always have plans to deal with this problem. The PM reminds team members about task deadlines.
3	Conflict among team members: Team members disagree with others and refuse to work or work below their ability.	High	Low	Define clear tasks and unify the opinion before starting tasks. All members discuss resolving the conflict. Voting.
4	Team member distraction: Team members do not commit enough working time.	Medium	Medium	Choose members carefully. The PM reminds team members about the timeline.
5	Lack of skill & technology knowledge	High	Medium	Members have to learn new skills or technology to develop the app. Members can discuss to decide which feature needs to be out of scope.

2. Management Approach

2.1 Project Process



We use the Agile Model - a set of iterative and incremental development methods in which requirements and solutions are developed through collaborative collaboration between self-managing and inter-functional teams. It is developed in multiple small phases and through repeated cycles until the entire product development is completed. We choose this process model because this project's scope is big and the major requirements are defined clearly but expect to add more detail over time. It has these advantages:

- Enhance teamwork spirit and effective work exchange.
- Functions are built quickly and clearly, easy to manage.
- Easy to add, change requirements.
- Minimal rules, easy to understand documentation, easy to use.

2.2 Quality Management

2.2.1 Execute all process of testing:

Testing Method	Target
Unit Test	Isolate each part of the program and show that the individual parts are correct.
Integration Test	Conducted to evaluate the compliance of a system or component with specified functional requirements.
System Test	Conducted on a complete integrated system to evaluate the system's compliance with its specified requirements.
Acceptance Test	Confidence that the developed product meets both the functional and non-functional requirements.

2.2.2 Follow the process of defect prevention:

Defect Type	Note	Action
CRITICAL	Errors that result in complete failure, for example: unable to load software.	Must be fix immediately in the next building step.
MINOR	Defect that crashes the system and yet there are a few functionalities that remain operable.	Must be fixed in any building step but must include splits.
MAJOR	Cause malfunction but still keep the software up and running.	Must fix errors after split or next split.

TRIVIAL	Errors that don't relate to the data or working of the software but release to the look and feel of the program.	May or may not need fixing at all.

2.3 Training Plan

Training Area	Participants	When, Duration	Waiver Criteria
SourceTree, Git	All members	17/01, 20h30 - 22h	Mandatory
Swift	Lan	3rd - 7th week	Mandatory
CI/CD service by Google cloud	Thao, Tuan Anh	3rd - 5th week	Mandatory

3. Project Deliverables

#	Deliverable	Due Date	Notes
1	Report 1: Project Introduction	21/01/2022	
2	Report 2: Project Plan	21/01/2022	CP Topic Review & Group Division
3	Report 3: Software Requirement (SRS)	14/02/2022	Project Plan Review
4	Report 4: Software Design (SDD)	14/02/2022	Project & SRS Review, Project Review
5	Code Iteration 1 Plan & Demo	28/02/2022	
6	Code Iteration 2 Plan & Demo	14/03/2022	
7	Code Iteration 3 Plan & Demo	28/03/2022	
8	Report 5: Software Test Document (STD)	04/04/2022	System Test Plan & Guide, Final Package Product Demo
9	Report 6: Software User Guides	14/04/2022	Team Weekly Meeting: Project & Software Package Review, Practice for Presentation of Capstone Project
10	Report 7: Final Project Report	14/04/2022	Includes all the final project documents (completed Reports No. 1-6, both soft copy & hard copy), Software Product, and thesis presentation slide

4. Responsibility Assignments

D~Do; R~Review; S~Support; I~Informed

Responsibility	LanLN HE14 1730	ThaoDM HE14 1688	AnhDT HE14 1302	ThuyNH HE14 0997	ThuyNDT HE14 0753
Project Planning	D	I	I	R	S
Project Tracking	I	D	I	I	R
Prepare Project Introduction Document	D	I	I	R	S
Prepare SRS Document	D, R	D	S	D	S
Prepare SDD Document	S, R	D	D	I	D
Code Backend	I	D, R	D, R	I	S
Code Mobile Application	S	I	I	R	D, R
Prepare Test Document and Report	I	S	S, R	D	I
Prepare User Guides	D	S	S	R	S
Prepare Final Report (all document and presentation slide)	D	R	R	R	R

5. Project Communications

Communication Item	Who/ Target	Purpose	When Frequency	Type, Tool, Method(s)
Weekly Meeting with Supervisor	Team members and supervisor	Reports Submission	Every Thursday from 20h30 - 22h	Skype, Google Meet
Weekly Meeting	Team members	Reports Review	Every Wednesday from 20h30 - 22h	Google Meet
Daily Meeting	Team members	Task Review	Every day from 19h - 19h10	Google Meet
Additional Meeting	Team members	Solving Issues	Once to Thrice a Week	Google Meet

6. Configuration Management

6.1 Document Management

We manage project documents & changes/versions in GitHub, SourceTree, Notion & Google Drive

6.2 Source Code Management

We manage project source codes & their changes/versions in GitHub and SourceTree

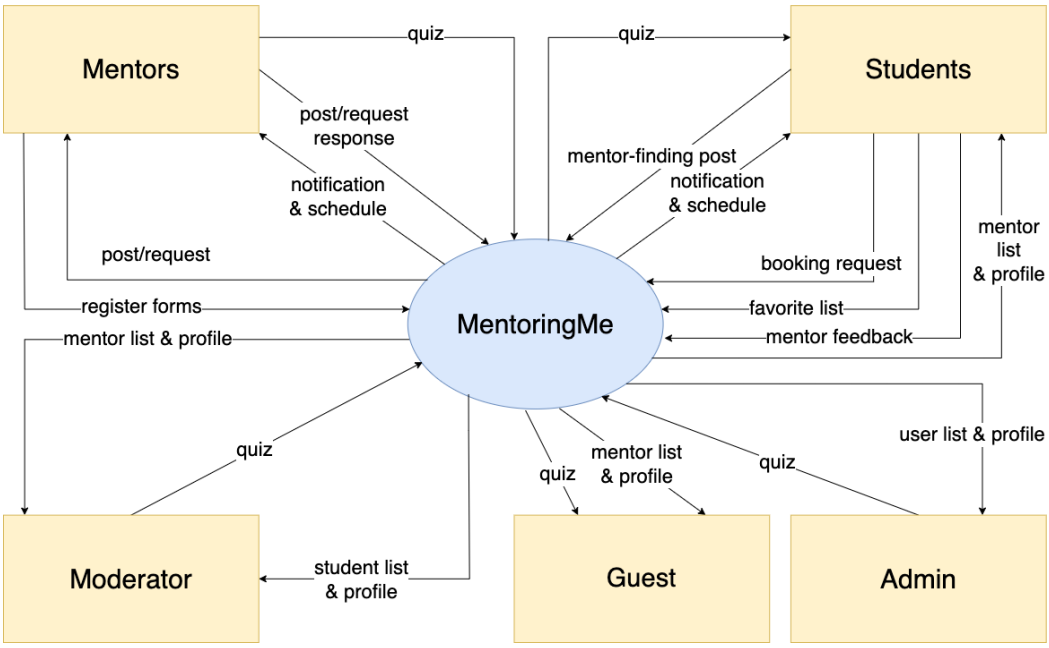
6.3 Tools & Infrastructures

Category	Tools / Infrastructure
Technology	Java/SpringBoot (Backend), Swift, iOS (App)
Database	MySQL, Firebase, Redis (In-memory caching)
IDEs/Editors	IntelliJ IDEA, DataGrip, Visual Studio Code, Redis Desktop Manager, Xcode
Deployment server	Google Cloud, TestFlight
Version Control	GitHub (Source Codes), Google Drive (Documents)
CI/CD	Docker, GitHub, GCP Registry, Google Cloud
Project management	ProjectLibre (Schedule), Jira (Tasks, Defects)
Testing Tools	Jmeter
Other Tools	Postman, Swagger, Figma
Documentation	Microsoft Office, Google Docs/Sheets/Slides
Diagramming	StarUML, DrawIO
Communication	Skype, Google Meet

III. Software Requirement Specification

1. Product Overview

MentoringMe is a new iOS app that connects mentors and students. The context diagram below illustrates the external entities and system interfaces for release 1.0. The system is expected to evolve over several releases, which were ultimately pushed to the Apple Store and made available to users.



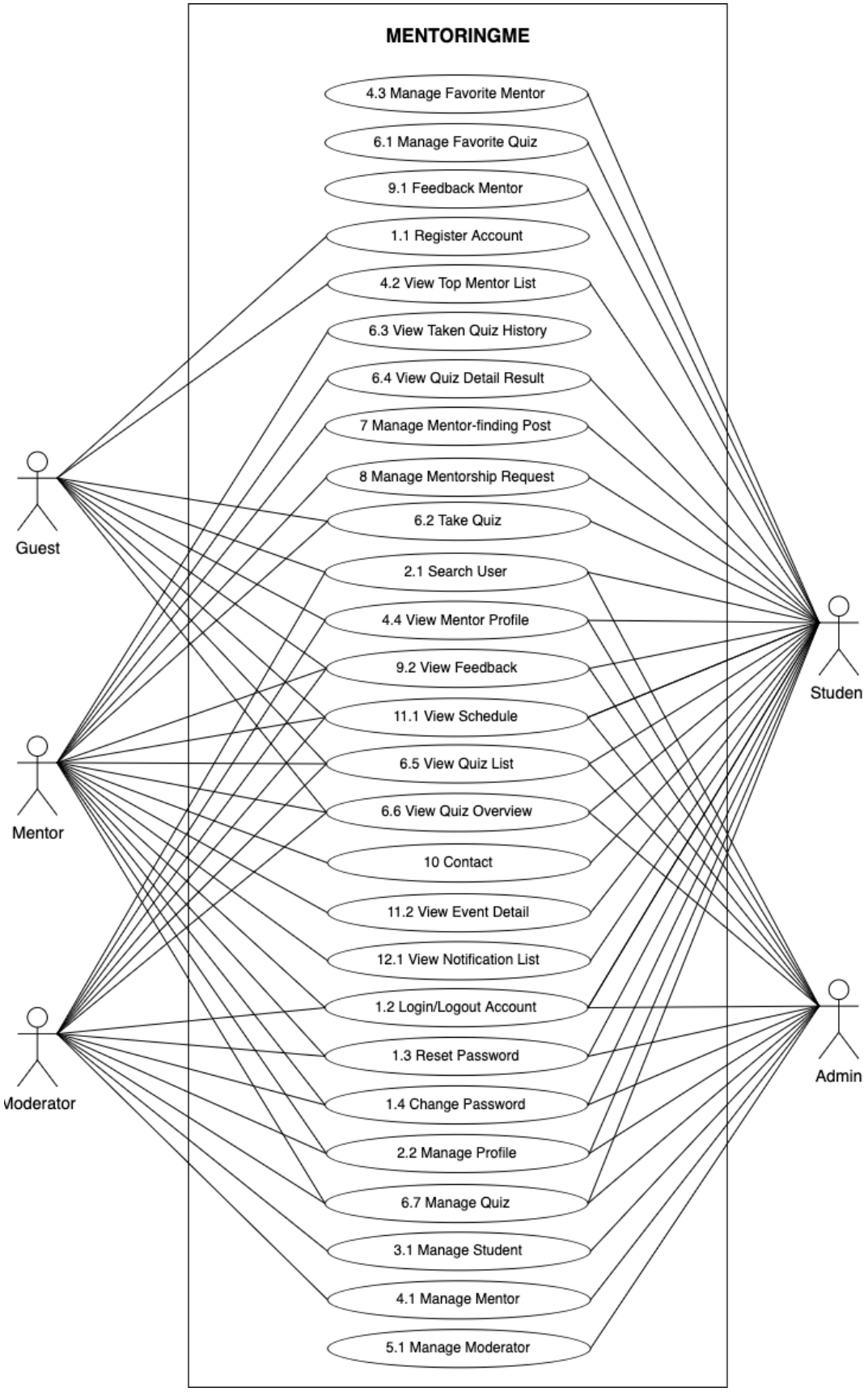
2. User Requirements

2.1 Actors

#	Actor	Description
1	Administrator	Admin is the person who can manage all moderators, students and mentors, accept/reject user requests, manage quizzes.
2	Moderator	Moderators are the person who can manage all mentors and students, accept/reject user requests, manage quizzes.
3	Mentor	Mentors are the person who can contact students, use schedule, view booking requests and mentor-finding posts, response to requests and posts, take quizzes, and manage their quizzes.
4	Student	Students are the person who can search for information about mentors, contact mentors, feedback mentors, use schedule, take quizzes.
5	Guest	Guests are the person who does not log in/register in the system. Guest can view list of mentors and mentor profile, take quizzes (but cannot view result), and register as a mentor/student.

2.2 Use Cases

Use Cases Diagram(s):



Use Cases Description:

2.2.1. Feature "Authenticate & Authorize"

2.2.1.1 Register Account

Use Case ID	UC-1.1.a		
Use Case Name	Register Account Form		
Create By:	ThaoDM	**Create Date:**	24/1/2022
Primary Actor:	Guest	**Secondary Actors:**	N/A
Description:	Register an account to use app's services by filling the information in register account form		
Trigger:	A user wants to create an account		
Preconditions:	- The device is connected to the internet.		
Post-Condition:	- The app moves to add more information form.		
Normal Flow:	1. The user clicks "Đăng ký ngay" (register now) on the login screen or clicks the "Tạo tài khoản" button (create account button) on the profile screen of the guest. 2. The user enters the required information in the register account form screen: full name, email, password, and re-enter the password in the text field below the matching label: "Họ và tên", "Địa chỉ email", "Mật khẩu", "Xác nhận mật khẩu". 3. The user chooses to register as a student or mentor by checking in the "Học sinh" (student) or "Gia sư" (mentor) radio button. 4. The user checks in "Tôi đồng ý với Điều khoản & Chính sách của MentoringMe" (I agree to Terms & Conditions of MentoringMe) checkbox. "Điều khoản" and "Chính sách" are hyperlink texts for the Terms screen and Conditions screen. The user can click on these hyperlink texts to move to the Terms/Conditions screen, read MentoringMe's Terms/Conditions, then back to the register account form screen by touching the cross-x icon. 5. The user clicks the "Đăng ký" button (confirm button). 6. The system checks valid the information which the user entered. 7. Show message MSG-07 (in part 5.3 Application Message List). 8. The app moves to add more information form.		

Alternative Flow:	1.a If the user opens the app for the first time, there are 3 onboarding screens with the app's icon, introduction text field, and "Tiếp tục" button (next button). ➔ The user clicks the "Tiếp tục" button to move to the next onboarding screen. ➔ The user clicks the "Tiếp tục" button on the last onboarding screen to move the login screen.
Exceptions	6.1. Email is duplicated: The app displays message MSG-02 (in part 5.3 Application Message List) 6.2. Missing required information: Deactivate the "Đăng ký" button (register button) 6.3. The confirm password does not match: The app displays message MSG-05 (in part 5.3 Application Message List) 6.4. Email is not valid: The app displays message MSG-23 (in part 5.3 Application Message List) 6.5. Name is not valid: The app displays message MSG-24 (in part 5.3 Application Message List) 6.6. Password is not valid: The app displays message MSG-15 (in part 5.3 Application Message List) 6.7. Agreement checkbox to Terms & Conditions of MentoringMe is not checked: The app deactivates the "Đăng ký" button
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-01, BR-02, BR-03, BR-04, BR-05, BR-06, BR-09 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.1.1.a Register Account Form

Use Case ID	UC-1.1.b		
Use Case Name	Add More Information Form		
Create By:	LanLN	**Create Date:**	5/3/2022
Primary Actor:	Guest	**Secondary Actors:**	N/A
Description:	Add more information to register an account to use app's services		
Trigger:	A user wants to create an account		
Preconditions:	- The user completed filling in register account form.		
Post-Condition:	- The user is registered in the system - The user can use the account to log in to the system		
Normal Flow:	1. The user fills required information in the add more information form screen: school/workplace (enter), gender (choose from the list: male, female, other), year of birth (choose from the list of years), current address (choose from the list: province/city list, district list, ward list), the average fee (when user choose to mentor role in the previous form only, enter), expertise (when user choose to mentor role in the previous form only, choose from the list of expertises), bio (enter) in the text field below the matching label: "Trường học/Nơi làm việc", "Giới tính", "Năm sinh", "Địa chỉ chỗ ở hiện nay", "Học phí trung bình / 1 buổi (VNĐ)", "Chuyên môn", "Giới thiệu". 2. The user chooses to teach online or/and teach offline by checking in the "Dạy online" (teach online) or "Dạy offline" (teach offline) checkbox (when the user chooses mentor role in the previous form only). 3. The user clicks the "Cập nhật" button (update button). 4. The system checks valid the information which the user entered. 5. System sends the request to the registered mentor list (when the user chooses the mentor role in the previous form only). 6. The system returns message MSG-04 (in part 5.3 Application Message List, when the user chooses student role in the previous form only) or message MSG-35 (in part 5.3 Application Message List, when the user chooses mentor role in the previous form only).		
Alternative Flow:	1.a The user clicks the cross-x icon ➔ Go to the Home screen.		

Exceptions	4.1. Missing required information: Button “Cập nhật” is deactivated.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-08, BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.1.1.b Add More Information Form

2.2.1.2 Login/Logout Account

Use Case ID	UC-1.2.a		
Use Case Name	Login Account		
Create By:	ThaoDM	**Create Date:**	24/1/2022
Primary Actor:	Student, Mentor, Moderator, Admin	**Secondary Actors:**	N/A
Description:	The user wants to login app to use service		
Trigger:	The user wants to log in to MentoringMe app		
Preconditions:	- The user account is active - The user registered account		
Post-Condition:	- The user login successfully - The app displays the homepage		
Normal Flow:	1. The user clicks the “Đăng nhập ngay” button (login button) in the profile screen of the guest or clicks “Đăng nhập” (login) in forgot password screen of the guest.		

	2. The user enters in login information: email and password. 3. Press “Đăng nhập” button (login button) 4. The system checks the input information which the user entered. 5. The app displays homepage.
Alternative Flow:	N/A
Exceptions	3.1. Invalid information: The app displays the error message MSG-13 (in part 5.3 Application Message List) 3.2. The account is inactive: The app displays message MSG-16 (in part 5.3 Application Message List)
Priority:	High
Frequency of Use:	High
Business Rules:	BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.1.2.a Login Account

Use Case ID	UC-1.2.b		
Use Case Name	Logout Account		
Create By:	LanLN	**Create Date:**	22/2/2022
Primary Actor:	Student, Mentor, Moderator, Admin	**Secondary Actors:**	N/A
Description:	The user wants to logout app		
Trigger:	The user wants to log out of MentoringMe app		

Preconditions:	- The user account is active - The user logged in account
Post-Condition:	- The user log out successfully - The app displays the login page
Normal Flow:	1. The user clicks the profile icon (filled avatar circle) in the top-left corner. 2. The user clicks the setting icon in the top-right corner. 3. The user clicks the "Đăng xuất" button. 4. The app display message MSG-38 (in part 5.3 Application Message List) 5. The app displays the login screen.
Alternative Flow:	N/A
Exceptions	N/A
Priority:	High
Frequency of Use:	High
Business Rules:	BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.1.2.b Logout Account

2.2.1.3 Reset Password

Use Case ID	UC-1.3		
Use Case Name	Reset Password		
Create By:	ThaoDM	**Create Date:**	24/1/2022
Primary Actor:	Student, Mentor	**Secondary Actors:**	N/A

Description:	Reset user password
Trigger:	Guest forget password and want to reset it
Preconditions:	- The user is registered in the system - The user account is active
Post-Condition:	- The user can log in with the new password
Normal Flow:	1. The user clicks “Quên mật khẩu?” (forgot password). 2. The user enters an email. 3. The user clicks the “Tiếp tục” button (continue button). 4. The system checks the email that the user entered. 6. The user receives OTP (one-time-password) from inputted email. 7. The app moves to enter the OTP screen. 8. The user enters OTP. 9. The user clicks the “Xác nhận” button (confirm button). 10. The system checks the input OTP that which user entered. 11. The app moves to reset the password screen. 12. The user enters the new password and confirms the new password, then click the “Xác nhận” button (confirm button). 13. The system checks valid the password that the user entered. 14. The app displays the message MSG-17 (in part 5.3 Application Message List). 15. When the user clicks OK, the dialog is closed and the app returns to the login screen.
Alternative Flow:	6.a The user clicks “Gửi lại” (Resend) to request the system resend OTP because they have not received OTP or they waited too long to receive OTP. ➔ Go to Verify OTP screen
Exceptions	4.1. The account is inactive: The app displays message MSG-16 (in part 5.3 Application Message List) 4.2. Email is invalid

	The app displays message MSG-06 (in part 5.3 Application Message List) 10.1. OTP is incorrect: The app displays the error message MSG-14 (in part 5.3 Application Message List) 13.1. The new password is invalid: The app displays the error message MSG-15 (in part 5.3 Application Message List) 13.2. The confirm password does not match: The app displays message MSG-05 (in part 5.3 Application Message List) 13.3. Old password is incorrect: The app displays the error message MSG-18 (in part 5.3 Application Message List)
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-04, BR-10, BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.2.3. Reset Password

2.2.1.4 Change password

Use Case ID	UC-1.4		
Use Case Name	Change Password		
Create By:	ThaoDM	**Create Date:**	24/1/2022
Primary Actor:	Student, Mentor, Moderator, Admin	**Secondary Actors:**	N/A
Description:	Change the user password		
Trigger:	User want to change current password to new password		

Preconditions:	- The user is registered in the system
Post-Condition:	- The user can log in with the new password
Normal Flow:	1. The user clicks the profile icon (filled avatar circle) in the top-left corner. 2. The user clicks the setting icon in the top-right corner. 3. The user clicks “Đổi mật khẩu” (change password). 4. The user enters the current password, and new password, and re-enters the new password. 5. The user clicks the “Xác nhận” button (confirm button). 6. The system checks valid passwords which users entered. 7. The app displays the message MSG-17 (in part 5.3 Application Message List).
Alternative Flow:	N/A
Exceptions	6.1. The new password is invalid: The app displays the error message MSG-15 (in part 5.3 Application Message List) 6.2. The password is incorrect The app displays the error message MSG-18 (in part 5.3 Application Message List) 6.3. The confirm password does not match: The app displays message MSG-05 (in part 5.3 Application Message List)
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-04, BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.2.4. Change Password

2.2.2. Feature "Search User & Manage Profile"

2.2.2.1 Search User

Use Case ID	UC-2.1		
Use Case Name	Search User		
Create By:	LanLN	**Create Date:**	19/2/2022
Primary Actor:	Guest, Student, Admin, Moderator	**Secondary Actors:**	N/A
Description:	Guest, student, admin, moderator search mentor; Admin, moderator search student; Admin search moderator.		
Trigger:	Guest, student, admin, moderator want to search mentor; Admin, moderator want to search student; Admin want to search moderator.		
Preconditions:	- Admin, Moderator, Student is logged in the system		
Post-Condition:	- The app displays the list of filtered mentors		
Normal Flow:	1.1. Search mentor: Guest, student clicks home icon; admin, moderator click mentor icon in the tab bar. 1.2. Search student: admin, moderator click the student icon in the tab bar. 1.3. Search moderator: admin clicks the moderator icon in the tab bar. 2. The app displays the list of users searched (mentors/students/moderators). 3. Guest, student, admin, moderator click on to search bar. 4. Guest, student, admin, moderator enter the information: name, email, phone, or school/workplace (when search mentor only). 5. Guest, student, admin, moderator choose filter criteria (when filter mentor only): location - city/province to the district only, average fee, gender, rating, teaching platform. 6. Guest, student, admin, and moderator click the search icon on the keyboard. 7. The app displays the list of filter mentors.		
Alternative Flow:	N/A		

Exceptions	2.1. The list of mentors is empty: Display the text “Hiện chưa có gia sư nào” on the screen. 2.2. The list of students is empty: Display text “Hiện chưa có học sinh nào” on the screen. 2.3. The list of moderators is empty: Display text “Hiện chưa có điều hành viên nào” on the screen.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-14, BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.2.1 Search User

2.2.2.2 Manage Profile

- This use case specification is used for all mentors, students, moderators, and administrators.

2.2.2.2.1 View Profile

Use Case ID	UC-2.2.1		
Use Case Name	View Profile		
Create By:	ThaoDM	**Create Date:**	17/2/2022
Primary Actor:	Student, Mentor, Moderator, Admin	**Secondary Actors:**	N/A
Description:	View user’s own profile		
Trigger:	User want to view user’s own profile		
Preconditions:	- User account is active - User logged in the system		

Post-Condition:	- The app display profile of user
Normal Flow:	1. The user clicks the profile icon (filled avatar circle) in the top-left corner. 2. The app display user's own profile.
Alternative Flow:	N/A
Exceptions	N/A
Priority	High
Frequency of Use:	High
Business Rules:	BR-06, BR-11
Other Information:	N/A
Assumptions:	N/A

Table 2.2.2.2.1 View Profile

2.2.2.2.2 Update Profile

Use Case ID	UC-2.2.2		
Use Case Name	Update Profile		
Create By:	ThaoDM	**Create Date:**	17/2/2022
Primary Actor:	Student, Mentor, Moderator, Admin	**Secondary Actors:**	N/A
Description:	Edit profile user		
Trigger:	User want to update profile		
Preconditions:	- User account is active - Student logged in the system		
Post-Condition:	- The profile of the user is updated		
Normal Flow:	1. The user clicks the profile icon (filled avatar circle) in the top-left corner.		

	2. The user clicks on each information detail to update current information by entering new information: full name (enter), bio (enter), phone (enter), school/workplace (enter), gender (choose from the list: male, female, other), year of birth (choose from the list of years), current address (choose from the list: province/city list, district list, ward list), the average fee (when the user is mentor only, enter), expertise (when the user is mentor only, choose from the list of expertises) in the text field below the matching label: “Họ và tên *”, “Giới thiệu”, “Số điện thoại”, “Trường học/Nơi làm việc *”, “Giới tính”, “Năm sinh *”, “Địa chỉ chỗ ở hiện nay”, “Khoảng học phí mong muốn (đ)”, “Chuyên môn *”. Moderator and admin can update full name and phone only. 3. The user chooses to teach online or/and teach offline by checking in the “Dạy online” (teach online) or “Dạy offline” (teach offline) checkbox (when the user is a mentor only). 4. The user clicks the “Cập nhật” button (update button). 5. The system checks valid the information which the user entered. 6. The system updates new information which the user entered. 7. The app displays message MSG-04 (in part 5.3 Application Message List)
Alternative Flow:	N/A
Exceptions	5.1. Missing required information: Button "Cập nhật" is deactivated. 5.5. Name/Email/Phone is not valid: The app displays message MSG-06 (in part 5.3 Application Message List)
Priority	High
Frequency of Use:	High
Business Rules:	BR-02, BR-05, BR-08, BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.2.2.2 Update Profile

2.2.2.2.3 Upload Avatar

Use Case ID	UC-2.2.3

Use Case Name	Upload Avatar		
Create By:	ThaoDM	**Create Date:**	17/2/2022
Primary Actor:	Student, Mentor, Moderator, Admin	**Secondary Actors:**	N/A
Description:	View/update picture profile user		
Trigger:	User want to view/update profile		
Preconditions:	- User account is active - User logged in the system		
Post-Condition:	- The profile picture of the user is updated		
Normal Flow:	1. The user clicks the profile icon (filled avatar circle) in the top-left corner. 2. The user clicks on the camera icon near the current avatar. 3. The user uploads a new avatar. 4. The user clicks confirm icon. 5. The system checks valid the file that the user uploaded. 6. The system updates the new avatar.		
Alternative Flow:	N/A		
Exceptions	5.1. The picture size is greater than 5MB: The app display message MSG-19 (in part 5.3 Application Message List) 5.2. The picture type is not valid: The app display message MSG-03 (in part 5.3 Application Message List)		
Priority	Medium		
Frequency of Use:	Medium		
Business Rules:	BR-11, BR-06 (in part 5.1 Business Rules)		
Other Information:	N/A		

Assumptions:	N/A

Table 2.2.2.2.3 Upload Avatar

2.2.3. Feature "Manage Student"

2.2.3.1 Manage Student

- This use case specification is used for moderators and administrators.

2.2.3.1.1 View List Student

Use Case ID	UC-3.1.1		
Use Case Name	View Student List		
Create By:	ThaoDM	**Create Date:**	19/2/2022
Primary Actor:	Admin, Moderator	**Secondary Actors:**	N/A
Description:	Admin, Moderator view student profile		
Trigger:	Admin, Moderator want to view student profile		
Preconditions:	- Admin, Moderator is logged in the system - The device is connected to the internet.		
Post-Condition:	- The app display student profile		
Normal Flow:	1. Admin, Moderator click the student icon in the tab bar. 2. The app displays the list of students.		
Alternative Flow:	N/A		
Exceptions	2.1. The list of students is empty: Display text "Hiện chưa có học sinh nào" on the screen.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-12, BR-06 (in part 5.1 Business Rules)		
Other Information:	N/A		

Assumptions:	N/A

Table 2.2.3.1.1 View List Student

2.2.3.1.2 View Student Profile

Use Case ID	UC-3.1.2		
Use Case Name	View Student Profile		
Create By:	ThaoDM	**Create Date:**	19/2/2022
Primary Actor:	Admin, Moderator	**Secondary Actors:**	N/A
Description:	Admin, Moderator view student profile		
Trigger:	Admin, Moderator want to view student profile		
Preconditions:	- Admin is logged in the system		
Post-Condition:	- The app display student profile		
Normal Flow:	1. Admin, Moderator click the student icon in the tab bar. 2. The app displays the list of students. 3. Admin, Moderator click any student. 4. The app displays student profiles.		
Alternative Flow:	N/A		
Exceptions	2.1. The list of students is empty: Display text "Hiện chưa có học sinh nào" on the screen.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-12, BR-06 (in part 5.1 Business Rules)		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.3.1.2 View Student Profile

2.2.3.1.3 Active/Inactive Student

Use Case ID	UC-3.1.3		
Use Case Name	Active/Inactive Student		
Create By:	ThaoDM	**Create Date:**	19/2/2022
Primary Actor:	Admin, Moderator	**Secondary Actors:**	N/A
Description:	Admin active/inactive profile		
Trigger:	Admin, moderator want to view student profile		
Preconditions:	- Admin, Moderator is logged in the system		
Post-Condition:	- The app display student profile		
Normal Flow:	1. Admin, Moderator click the student icon in the tab bar. 2. The app displays the list of students. 3. Admin, Moderator click kebab menu in any student. 4. Admin, Moderator click “Kích hoạt tài khoản người dùng”/”Khoá tài khoản người dùng” (active/inactive) button. 5. The app display message MSG-37/MSG-36 (in part 5.3 Application Message List, MSG depends on the state of the student account: active/inactive). 6. Admin, Moderator click “OK” in confirm popup. 7. The system has active/inactive student accounts.		
Alternative Flow:	3. Admin, Moderator click to any student. ➔ The app display a student profile. 6. Admin, Moderator click “Hủy” (cancel) in confirm popup. ➔ Dialog is closed.		
Exceptions	2.1. The list of students is empty: Display text "Hiện chưa có học sinh nào" on the screen.		

Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-12, BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.3.1.3 Active/Inactive Student

2.2.4. Feature "Manage Mentor"

2.2.4.1. Manage Mentor

- This use case specification is used for moderators and administrators.

2.2.4.1.1 View Mentor List

Use Case ID	UC-4.1.1		
Use Case Name	View Mentor List		
Create By:	LanLN	**Create Date:**	20/2/2022
Primary Actor:	Admin, Moderator	**Secondary Actors:**	N/A
Description:	Admin, Moderator view mentor list		
Trigger:	Admin, Moderator want to view mentor list		
Preconditions:	- Admin, Moderator is logged in the system		
Post-Condition:	- The app display list of mentors		
Normal Flow:	1. Admin, Moderator click the mentor icon in the tab bar. 2. The app displays the list of mentors.		
Alternative Flow:	N/A		
Exceptions	2.1. The list of mentors is empty: Display the text "Hiện chưa có gia sư nào" on the screen.		

Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.4.1.1 View Mentor List

2.2.4.1.2 Active/Inactive Mentor

Use Case ID	UC-4.1.2		
Use Case Name	Active/Inactive Mentor		
Create By:	ThaoDM	**Create Date:**	19/2/2022
Primary Actor:	Admin, Moderator	**Secondary Actors:**	N/A
Description:	Admin, Moderator active/inactive mentor		
Trigger:	Admin, Moderator want to active/inactive mentor		
Preconditions:	- Admin, Moderator is logged in the system		
Post-Condition:	- The mentor is inactive/active		
Normal Flow:	1. Admin, Moderator click mentor icon in tab bar 2. The app displays the list of mentors 3. Admin, Moderator click to active/inactive 4. The app display message MSG-37/MSG-36 (in part 5.3 Application Message List, MSG depends on the state of the mentor account: active/inactive). 5. Admin, Moderator click “ok” in confirm popup		
Alternative Flow:	3.a Admin, Moderator click to any mentor 4.a The app displays mentor profile		

	5.a Admin, Moderator click to active/inactive
Exceptions	2.1. The list of mentors is empty: Display the text "Hiện chưa có gia sư nào" on the screen.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.4.1.2 Active/Inactive Mentor

2.2.4.1.3 View Registered Mentor List

Use Case ID	UC-4.1.3		
Use Case Name	View Registered Mentor List		
Create By:	ThaoDM	**Create Date:**	19/2/2022
Primary Actor:	Admin, Moderator	**Secondary Actors:**	N/A
Description:	Admin, moderator view mentor request list		
Trigger:	Admin, moderator want to view mentor request list		
Preconditions:	- Admin, Moderator is logged in the system		
Post-Condition:	- The app display list of mentor request		
Normal Flow:	1. Admin, Moderator click mentor icon in tab bar 2. The app displays the list of mentors 3. Admin, Moderator click to “mentor request” 4. The app displays the list of mentor requests		
Alternative Flow:	N/A		

Exceptions	4.1. The list of requests is empty: Display text "Hiện chưa có đơn đăng ký gia sư nào" on the screen.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.4.1.3 View Registered Mentor List

2.2.4.1.4 View Mentor Registration Profile

Use Case ID	UC-4.1.4		
Use Case Name	View Mentor Registration Profile		
Create By:	ThaoDM	**Create Date:**	19/2/2022
Primary Actor:	Admin, Moderator	**Secondary Actors:**	N/A
Description:	Admin, Moderator view mentor request detail		
Trigger:	Admin, Moderator want to view mentor request detail		
Preconditions:	- Admin, Moderator is logged in the system		
Post-Condition:	- The app display mentor request detail		
Normal Flow:	1. Admin, Moderator click mentor icon in tab bar 2. The app displays the list of mentors 3. Admin, Moderator click to “mentor request” 4. The app displays the list of mentor requests 5. Admin, Moderator click to any mentor request 6. The app displays mentor request detail (expertise, location, school, average fee)		

Alternative Flow:	N/A
Exceptions	4.1. The list of requests is empty: Display text "Hiện chưa có đơn đăng ký gia sư nào" on the screen.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.4.1.4 View Mentor Registration Profile

2.2.4.1.5 Approve/Reject Mentor

Use Case ID	UC-4.1.5		
Use Case Name	Approve/Reject Mentor		
Create By:	ThaoDM	**Create Date:**	19/2/2022
Primary Actor:	Admin, Moderator	**Secondary Actors:**	N/A
Description:	Admin, moderator approve/reject mentor request		
Trigger:	Admin, Moderator want to accept/reject mentor request		
Preconditions:	- Admin, Moderator is logged in the system		
Post-Condition:	- The mentor request is approved/rejected		
Normal Flow:	1. Admin, Moderator click mentor icon in tab bar 2. The app displays the list of mentors 3. Admin, Moderator click to “mentor request” 4. The app displays the list of mentor requests		

	5. Admin, Moderator click to any mentor request 6. The app displays mentor request detail 7. Admin, Moderator click accept/reject button 8. 4. The app display message MSG-08/MSG-09 (in part 5.3 Application Message List, MSG depends on the state of the mentor account: active/inactive). 9. Admin, Moderator click “ok” in confirm popup
Alternative Flow:	N/A
Exceptions	4.1. The list of requests is empty: Display text "Hiện chưa có đơn đăng ký gia sư nào" on the screen.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-22, BR-26, BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.4.1.5 Approve/Reject Mentor

2.2.4.2 View Top Mentor List

Use Case ID	UC-4.2		
Use Case Name	View Top Mentor List		
Create By:	LanLN	**Create Date:**	20/2/2022
Primary Actor:	Student, Guest	**Secondary Actors:**	N/A
Description:	Student, Guest view top mentor list		
Trigger:	Student, Guest wants to view top mentor list		
Preconditions:	- Student is logged in the system		

Post-Condition:	- The app display list of top mentors
Normal Flow:	1. Student, Guest clicks “Những giảng viên hot nhất” option in Home screen. 2. The app displays the list of top mentors that have the most rating.
Alternative Flow:	1. Click the icon "Back" ➔ The app go back to the Home screen.
Exceptions	2.1. The list of mentors is empty: The screen display "Hiện chưa có gia sư nào”
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.4.2 View Top Mentor List

2.2.4.3 Manage Favorite Mentor

2.2.4.3.1 View Favorite Mentor List

Use Case ID	UC-4.3.1		
Use Case Name	View Favorite Mentor List		
Create By:	LanLN	**Create Date:**	21/2/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student view favorite mentor list		
Trigger:	Student wants to view favorite mentor list		
Preconditions:	- User account is active - Student logged in the system		
Post-Condition:	- The app display list of favorite mentors		

Normal Flow:	1. The student clicks the profile icon (filled avatar circle) in the top-left corner. 2. User clicks “Danh sách yêu thích” (favorite list) 3. User clicks filter and chooses “Gia sư yêu thích” (favorite mentor) 4. The app displays the list of favorite mentors
Alternative Flow:	1. Click the icon "Back" ➔ The app go back to the User Profile screen.
Exceptions	4.1. The list of mentors is empty: The screen display "Hiện chưa có gia sư yêu thích nào"
Priority	Medium
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.4.3.1 View Favorite Mentor List

2.2.4.3.2 Add Favorite Mentor

Use Case ID	UC-4.3.2		
Use Case Name	Add Favorite Mentor		
Create By:	LanLN	**Create Date:**	21/2/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student add a mentor to favorite mentor list		
Trigger:	Student wants to add a mentor to favorite mentor list		
Preconditions:	- Student is logged in the system - The selected mentor has not been in the student's favorite list yet.		

Post-Condition:	- The system adds a mentor to the user's favorite mentor list
Normal Flow:	1. The student clicks the home icon in tab bar 2. The app displays the list of mentors 3. Student clicks to any mentor 4. The app displays the mentor profile 5. The user clicks the heart icon 6. The system adds a mentor to the user's favorite mentor list
Alternative Flow:	N/A
Exceptions	2.1. The list of mentors is empty: The screen display "Hiện chưa có gia sư nào"
Priority:	Medium
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.4.3.2 Add Favorite Mentor

2.2.4.3.3 Delete Favorite Mentor

Use Case ID	UC-4.3.3		
Use Case Name	Delete Favorite Mentor		
Create By:	LanLN	**Create Date:**	21/2/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student view favorite mentor list		
Trigger:	Student wants to view favorite mentor list		

Preconditions:	- User account is active - Student logged in the system - The selected mentor has been in the student's favorite list.
Post-Condition:	- The system removes the mentor from the user's favorite mentor list
Normal Flow:	1. The student clicks the profile icon (filled avatar circle) in the top-left corner. 2. User clicks "favorite list" 3. User clicks filter and chooses "Gia sư yêu thích" 4. The app displays the list of favorite mentors 5. The user clicks the heart icon in the same row as the mentor, which needs to remove from the favorites list 6. The system removes the mentor from the user's favorite mentor list
Alternative Flow:	N/A
Exceptions	4.1. The list of mentors is empty: The screen display "Hiện chưa có gia sư nào"
Priority	Medium
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.4.3.3 Delete Favorite Mentor

2.2.4.4 View Mentor Profile

Use Case ID	UC-4.4		
Use Case Name	View Mentor Profile		
Create By:	ThaoDM	**Create Date:**	19/2/2022

Primary Actor:	Student, Admin, Moderator	**Secondary Actors:**	N/A
Description:	Student, Admin, Moderator view mentor profiler		
Trigger:	Student, Admin, Moderator want to view mentor profiler		
Preconditions:	- Student, Admin, Moderator is logged in the system		
Post-Condition:	- The app displays mentor profile		
Normal Flow:	1. Admin, Moderator click the mentor icon in the tab bar. The student clicks the home icon. 2. The app displays the list of mentors 3. Student, Admin, Moderator click to any mentor 4. The app display the mentor profile		
Alternative Flow:	N/A		
Exceptions	2.1. The list of mentors is empty: The screen display "Hiện chưa có gia sư nào"		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.4.4 View Mentor Profile

2.2.5. Feature "Manage Moderator"

2.2.5.1 Manage Moderator

- This use case specification is used for only administrators.

2.2.5.1.1 View Moderator List

Use Case ID	UC-5.1.1

Use Case Name	View Moderator List		
Create By:	ThaoDM	**Create Date:**	19/2/2022
Primary Actor:	Admin	**Secondary Actors:**	N/A
Description:	Admin view moderator information		
Trigger:	Admin want view moderator list		
Preconditions:	- Admin is logged in the system		
Post-Condition:	- The app display moderator list		
Normal Flow:	1. Admin click moderator icon in tab bar 2. The app displays the list of moderators		
Alternative Flow:	N/A		
Exceptions	2.1. The list of moderators is empty: The screen display "Hiện chưa có điều hành viên nào"		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-28, BR-06 (in part 5.1 Business Rules)		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.5.1.1 View Moderator List

2.2.5.1.2 View Moderator Profile

Use Case ID	UC-5.1.2		
Use Case Name	View Moderator Profile		
Create By:	ThaoDM	**Create Date:**	19/2/2022

Primary Actor:	Admin	**Secondary Actors:**	N/A
Description:	Admin view moderator information		
Trigger:	Admin want view moderator information		
Preconditions:	- Admin is logged in the system		
Post-Condition:	- The app display moderator information		
Normal Flow:	1. Admin click moderator icon in tab bar 2. The app displays the list of moderators 3. Admin clicks to a moderator 4. The app display moderator information		
Alternative Flow:	N/A		
Exceptions	2.1. The list of moderators is empty: The screen display "Hiện chưa có điều hành viên nào"		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-28, BR-06 (in part 5.1 Business Rules)		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.5.1.2 View Moderator Profile

2.2.5.1.3 Add Moderator

Use Case ID	UC-5.1.3		
Use Case Name	Add Moderator		
Create By:	ThaoDM	**Create Date:**	19/2/2022
Primary Actor:	Admin	**Secondary Actors:**	N/A

Description:	Admin add new moderator
Trigger:	Admin want to add new moderator
Preconditions:	- Admin is logged in the system
Post-Condition:	- The app display message MSG-22 (in part 5.3 Application Message List)
Normal Flow:	1. Admin click moderator icon in tab bar 2. The app displays the list of moderators 3. Admin click “add” icon 4. Admin enters the information 5. Admin click adds 6. The app reloads the list of moderators
Alternative Flow:	N/A
Exceptions	N/A
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR–28, BR-01, BR-02, BR-03, BR-04, BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.5.1.3 Add Moderator

2.2.5.1.4 Active/Inactive Moderator

Use Case ID	UC-5.1.4		
Use Case Name	Active/Inactive Moderator		
Create By:	LanLN	**Create Date:**	19/2/2022
Primary Actor:	Admin	**Secondary Actors:**	N/A

Description:	Admin active or inactive a moderator
Trigger:	Admin want to active or inactive a moderator
Preconditions:	- Admin is logged in the system
Post-Condition:	- The moderator which admin chosen is active/inactive
Normal Flow:	1. Admin clicks the moderator icon in tab bar 2. The app displays the list of moderators 3. Admin clicks to active/inactive 4. The app display message MSG-37/MSG-36 (in part 5.3 Application Message List, MSG depends on the state of the mentor account: active/inactive). 5. Admin click “ok” in confirm popup
Alternative Flow:	3.a Admin click to any moderator 4.a The app display moderator profile 5.a Admin click to active/inactive
Exceptions	2.1. The list of moderators is empty: The screen display "Hiện chưa có điều hành viên nào"
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-28, BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

Table 2.2.5.1.4 Delete Moderator

2.2.6. Feature “Manage Quiz”

2.2.6.1 Manage Favorite Quiz

2.2.6.1.1 View Favorite Quiz List

Use Case ID	UC-6.1.1

Use Case Name	View Favorite Quiz List		
Create By:	LanLN	**Create Date:**	21/2/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student view favorite quiz list		
Trigger:	Student wants to view favorite quiz list		
Preconditions:	- User account is active - Student logged in the system		
Post-Condition:	- The app display list of favorite quizzes		
Normal Flow:	1. The student clicks the profile icon (filled avatar circle) in the top-left corner. 2. User clicks "Danh sách yêu thích" 3. The user chooses "Quiz yêu thích" 4. The app displays the list of favorite quizzes		
Alternative Flow:	N/A		
Exceptions	4.1. The list of quizzes is empty: The screen display "Chưa có quiz yêu thích nào"		
Priority	Medium		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.6.1.1 View Favorite Quiz List

2.2.6.1.2 Add Favorite Quiz

Use Case ID	UC-6.1.2		
Use Case Name	Add Favorite Quiz		
Create By:	LanLN	**Create Date:**	21/2/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student add a quiz to favorite quiz list		
Trigger:	Student wants to add a quiz to favorite quiz list		
Preconditions:	- Student is logged in the system		
Post-Condition:	- The chosen quiz is added to user's favorite quiz list		
Normal Flow:	1. The student clicks the quiz icon in tab bar 2. The app displays the list of quizzes 3. The student clicks on any quiz 4. The app displays the quiz overview 5. The student clicks the heart icon 6. The system adds the quiz to the user's favorite quiz list		
Alternative Flow:	N/A		
Exceptions	2.1. The list of quizzes is empty: The screen display "Chưa có quiz yêu thích nào"		
Priority:	Medium		
Frequency of Use:	Medium		
Business Rules:	NBR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.6.1.2 Add Favorite Quiz

2.2.6.1.3 Delete Favorite Quiz

Use Case ID	UC-10.6		
Use Case Name	Delete Favorite Quiz		
Create By:	LanLN	**Create Date:**	21/2/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student view favorite quiz list		
Trigger:	Student wants to view favorite quiz list		
Preconditions:	- User account is active - Student logged in the system		
Post-Condition:	- The app display list of favorite quizzes		
Normal Flow:	1. The student clicks the profile icon (filled avatar circle) in the top-left corner. 2. User clicks “favorite list” 3. User clicks filter and chooses “Quiz yêu thích” 4. The app displays the list of favorite quizzes 5. The user clicks the heart icon in the same row as the quiz, which needs to remove from the favorites list 6. The system removes the quiz from the user’s favorite quiz list		
Alternative Flow:	N/A		
Exceptions	4.1. The list of quizzes is empty: The screen display "Chưa có quiz yêu thích nào"		
Priority	Medium		
Frequency of Use:	Medium		
Business Rules:	BR-06		

Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.1.3 Delete Favorite Quiz

2.2.6.2 Take Quiz

Use Case ID	UC-6.2		
Use Case Name	Take Quiz		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	Mentor, Guest
Description:	User do the quiz		
Trigger:	User do the quiz that created by the mentor or admin/moderator.		
Preconditions:	- User is guest/student/mentor. - There is at least one quiz created.		
Post-Condition:	- User can play a quiz and see the result. - With role students, users can see detailed answers to each question.		
Normal Flow:	1. On the "Home" screen, click the icon "Quiz" 2. Choose a quiz from "Thư viện Quiz" 3. Click the button "Làm quiz" 4. Go to "On taking quiz" to do quiz 4.1. The time run decreased from max to 00:00:00 4.2. The order number of questions increases or decreases depending on the action of pressing the button "Câu trước"/"Câu tiếp" 4.3. If the user is on the first question, hide the button "Câu trước" 4.4. If the user is on the last question, hide the button "Câu sau" and show the button "Submit" 5. When clicking the icon "Status Answer", the screen shows up the list of questions with the corresponding status of answered or not. 6. Click the button "Nộp bài"		

	7. The quiz ended, save the user's answer and calculate the result.
Alternative Flow:	N/A
Exceptions	4.1. Click the cross-x icon when taking the quiz: Show dialog message MSG-28 (in part 5.3 Application Message List) A. Choose option "Có": go back to the "Quiz Overview"/"Quiz Detail" screen. B. Choose option "Không": dialog is closed and stays on the "On taking Quiz" screen. 4.2. When times up, the quiz end automatically, saves the user's answer and calculates the result.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.2 Take Quiz

2.2.6.3 View Taken Quiz History

Use Case ID	UC-6.3		
Use Case Name	View Taken Quiz History		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	Mentor
Description:	View list of taken quiz in the past		
Trigger:	User want to view the history of all quiz that he/she did.		
Preconditions:	- Student/mentor is logged into the system.		
Post-Condition:	- Show the history of all quizzes that the user did.		

Normal Flow:	1. On "Home" screen, click option "Lịch sử làm quiz" 2. Go to "Quiz Taken History" screen 3. Each quiz taken is displayed with this information: - Created time + date - Quiz name - Score - Total questions - Total correct answers - Total incorrect answers
Alternative Flow:	N/A
Exceptions	2.1. The list of taken quizzes if empty: Screen display text "Bạn chưa làm quiz nào"
Priority:	Medium
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.3 View Taken Quiz History

2.2.6.4 View Quiz Detail Result

Use Case ID	UC-6.4		
Use Case Name	View Quiz Detail Result		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	Guest, Mentor
Description:	View quiz result: score, which answers true/false.		
Trigger:	After completing the quiz, show the results.		
Preconditions:	- User complete the quiz.		

Post-Condition:	- Show quiz result. - With role student/mentor: show option "Kết quả chi tiết" to see in detail which answers is true/false.
Normal Flow:	1. On the "On taking quiz" screen, click the button "Nộp bài" or times up. 2. Go to the "Overview Quiz Result" screen, show the information: - Quiz name - Score - Total questions - Total correct answers - Total incorrect answers 3. "Student/Mentor only" Drag option "Kết quả chi tiết" from bottom to top and screen display each question with corresponding answers (tick on user's answer)
Alternative Flow:	N/A
Exceptions	3.1. Click the button "Trở về trang chủ" Go to the "Home" screen
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.4 View Quiz Detail Result

2.2.6.5 View Quiz List

Use Case ID	UC-6.5		
Use Case Name	View Quiz List		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student, Mentor, Admin/Mod	**Secondary Actors:**	Guest

Description:	View quiz list
Trigger:	User wants to view quiz list
Preconditions:	N/A
Post-Condition:	- The app display list of quizzes
Normal Flow:	1. On the "Home" screen, click the icon "Quiz" 2. Choose "Thư viện Quiz" 3. Show all quizzes that exist on the system.
Alternative Flow:	A - My quiz (With mentor/admin/moderator role): 1. On the "Home" screen, click the icon "Quiz" 2. Choose "Quiz của tôi" 3. Show all quiz that created by users. B - My draft quiz (With mentor/admin/moderator role): 1. On the "Home" screen, click the icon "Quiz" 2. Choose "Quiz nháp" 3. Show all draft quizzes created by the user. C- Mentor quiz (With all roles): 1. Go to the profile of a mentor 2. Choose tab "Quiz"
Exceptions	3.1. The list of quizzes is empty: Screen display text "Hiện chưa có quiz nào"
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.5 View Quiz List

2.2.6.6 View Quiz Overview

Use Case ID	UC-6.6		
Use Case Name	View Quiz Overview		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student, Mentor, Admin/Mod	**Secondary Actors:**	Guest
Description:	View quiz title, number of questions, time		
Trigger:	User want to view quiz overview		
Preconditions:	- There is at least one quiz created.		
Post-Condition:	- The app display quiz overview with these information: + Quiz name + Creator + Total questions + Category + Total time - Moreover, screen display action button with each case: + Mentor/Admin/Mod with his/her publish quiz: "Bộ câu hỏi", "Xóa quiz" + Mentor/Admin/Mod with his/her draft quiz: "Bộ câu hỏi", "Xóa quiz", "Đăng quiz" + Any role with other user's quiz: "Bộ câu hỏi"		
Normal Flow:	1. On the "Quiz list" screen, click on any quiz. 2. The app displays the quiz overview		
Alternative Flow:	A- On the "My Quiz List" or "My Draft Quiz List" screen, click on any quiz. B- On a profile of any mentor, click the tab "Quiz", then click to any quiz.		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		

Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.6 View Quiz Overview

2.2.6.7 Manage Quiz

2.2.6.7.1. View Quiz Detail

Use Case ID	UC-6.7.1		
Use Case Name	View Quiz Detail		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student, Mentor, Admin/Mod	**Secondary Actors:**	Guest
Description:	View quiz detail (all questions & answers)		
Trigger:	User want to view detail of all question of the quiz		
Preconditions:	- There is at least one quiz created.		
Post-Condition:	- The app display detail of all question of the selected quiz.		
Normal Flow:	1. On the “Quiz list" screen, click on any quiz. 2. The app displays the quiz overview. 3. Click the “Bộ câu hỏi” button (question list button) 4. The app redirects to the “Quiz Detail” screen.		
Alternative Flow:	N/A		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		

Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.7.1 View Quiz Detail

2.2.6.7.2. Create Quiz

Use Case ID	UC-6.7.2		
Use Case Name	Create Quiz		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Admin/Moderator
Description:	Create a new quiz by adding questions one by one, upload a draft quiz.		
Trigger:	The user wants to create a new quiz.		
Preconditions:	- User is logged into the system with mentor or admin/mod role		
Post-Condition:	- New quiz is created		
Normal Flow:	1. On the "Home" screen, click the icon "Quiz" on the tab bar. 2. Choose "Quiz của tôi" 3. Click the cross icon 4. Go to the "Add New Quiz" screen. 5. Fill in all required information: quiz name, category, total time, and input type. 6. Click button "Tiếp tục" 7. Go to the "Edit Question" screen. 8. Click the button "Thêm câu hỏi" and go to "Add New Question" screen 9. Fill-in questions and answers. 10. Click the button "Thêm", and go back to the "Edit Questions" screen (a new question is added). 9. Click the button "Xong"		

Alternative Flow:	7.1. At any moment, if the total question is zero, then the button "Xong" is deactivated. 7.2. When clicking on the bin icon, the question in the same row of the selected "Bin" icon is removed from the list. 8.1. The list of answers allows the user to enter a maximum of 5 answers. If the user entered 5 answers, the button "Thêm đáp án" will be hidden. 8.2. If the user turns on the option "Nhiều đáp án", the list answer allows the user to choose unlimited correct answers. 8.3. If the user turns off the option "Nhiều đáp án", the list answer allows the user to choose just one correct answer. 8.4. When clicking on the bin icon, the answer on the same row will be deleted. 8.5. When clicking on the close icon, go back to the "Edit Questions" screen and do not add a new question. 10.1. If click the cross-x icon on the top left of the screen, show dialog message MSG-29 (in part 5.3 Application Message List) a- Click option "Ok": the quiz is created and saved in the draft list, then go to the "Home" screen. b- Click option "Không": close dialog and the current quiz will be deleted.
Exceptions	9.1. Do not input the question, click the button "Thêm": Show dialog message MSG-30 (in part 5.3 Application Message List) 9.2. Do not input the answer, click the button "Thêm": Show dialog message MSG-31 (in part 5.3 Application Message List) 9.3. Do not choose any correct answer, click the button "Thêm": Show dialog message MSG-32 (in part 5.3 Application Message List)
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.7.2 Create Quiz

2.2.6.7.3. Update Quiz

Use Case ID	UC-6.7.3		
Use Case Name	Update Quiz		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Admin/Moderator
Description:	Edit the quiz: question, answer, quiz overview (title, time)		
Trigger:	User want to update an existing quiz.		
Preconditions:	- User is logged into the system with mentor or admin/mod role - There is at least one quiz created.		
Post-Condition:	- Existing quiz is updated.		
Normal Flow:	A. Update Quiz Overview 1. On the "Home" screen, click the icon "Quiz" on the tab bar. 2. Choose “Quiz của tôi” (my quiz) or “Quiz nháp” (draft quiz) on the top tab bar. 3. Choose any quiz. 4. Click the icon "Update" and go to the "Update Quiz Overview" screen with existing information in the textbox: quiz name, category, total time, and input type. 5. Fill in updated information. 6. Click “Cập nhật” (update) button B. Update Question(s): 7. On the "Home" screen, click the icon "Quiz" on the tab bar. 8. Choose "Quiz của tôi" or "Quiz nháp" 9. Click the button "Bộ câu hỏi" and go to the "Edit Question" screen with the existing question list. 10. Click any question to edit, or click the button "Thêm" to add a new question. 11. Click the button "Thêm", and go back to the "Edit Questions" screen (the list of questions is updated).		

	12. Click button "Xong"
Alternative Flow:	9.1. At any moment, if the total question is zero, then the button "Xong" is deactivated. 9.2. When clicking on the bin icon, the question in the same row of the selected "Bin" icon is removed from the list. 10.1. The list of answers allows the user to enter a maximum of 5 answers. If the user entered 5 answers, the button "Thêm đáp án" will be hidden. 10.2. If the user turns on the option "Nhiều đáp án", the list answer allows the user to choose unlimited correct answers. 10.3. If the user turns off the option "Nhiều đáp án", the list answer allows the user to choose just one correct answer. 10.4. When clicking on the bin icon, the answer on the same row will be deleted. 10.5. When clicking on the close icon, go back to the "Edit Questions" screen and do not add a new question. 11.1. If click the cross-x icon on the top left of the screen, show dialog message MSG-29 (in part 5.3 Application Message List) a- Click option "Ok": the quiz is created and saved in the draft list, then go to the "Home" screen. b- Click option "Không": close dialog and the current quiz will be deleted.
Exceptions	9.1. Do not input the question, click the button "Thêm": Show dialog message MSG-30 (in part 5.3 Application Message List) 9.2. Do not input the answer, click the button "Thêm": Show dialog message MSG-31 (in part 5.3 Application Message List) 9.3. Do not choose any correct answer, click the button "Thêm": Show dialog message MSG-32 (in part 5.3 Application Message List)
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A

Assumptions:	N/A

Table 2.2.6.7.3 Update Quiz

2.2.6.7.4. Delete Quiz

Use Case ID	UC-6.7.4		
Use Case Name	Delete Quiz		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Admin/Moderator
Description:	Delete quiz		
Trigger:	User wants to delete existing quiz.		
Preconditions:	- User is logged into the system with mentor or admin/mod role - There is at least one quiz created.		
Post-Condition:	- Selected quiz is deleted.		
Normal Flow:	1. On the "Home" screen, click the icon "Quiz" on the tab bar. 2. Choose "Quiz của tôi" or "Quiz nháp" 3. Choose any quiz. 4. Click the button "Xóa quiz" 5. Show dialog message MSG-20 (in part 5.3 Application Message List) a- Click option "Đúng": the quiz is deleted, then go back to the "Quiz List" screen. b- Click option "Không": dialog is closed.		
Alternative Flow:	N/A		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		

Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.7.4 Delete Quiz

2.2.6.7.5. View Draft Quiz List

Use Case ID	UC-6.7.5		
Use Case Name	View Draft Quiz List		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Admin/Moderator
Description:	View list of draft quiz that user-created		
Trigger:	User wants to view draft quiz list		
Preconditions:	- User is logged into the system with mentor or admin/mod role		
Post-Condition:	- The app display list of draft quizzes		
Normal Flow:	1. On the "Home" screen, click the icon "Quiz" 2. Choose "Quiz nháp" 3. Show all quizzes that were created by users and have not to been published yet.		
Alternative Flow:	N/A		
Exceptions	3.1. The list of quizzes is empty: Screen display text "Hiện chưa có quiz nào"		
Priority:	Medium		
Frequency of Use:	Medium		
Business Rules:	BR-06		

Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.7.5 View Draft Quiz List

2.2.6.7.6. View Own Quiz List

Use Case ID	UC-6.7.6		
Use Case Name	View Own Quiz List		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Admin/Moderator
Description:	View list of published quizzes that user-created		
Trigger:	User wants to view own quiz list		
Preconditions:	- User is logged into the system with mentor or admin/mod role		
Post-Condition:	- The app display list of own quizzes		
Normal Flow:	1. On the "Home" screen, click the icon "Quiz" 2. Choose "Quiz của tôi" 3. Show all quizzes that were created by users and published.		
Alternative Flow:	1. On "My Profile", click on the tab "Quiz"		
Exceptions	3.1. The list of quizzes is empty: Screen display text "Hiện chưa có quiz nào"		
Priority:	Medium		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		

Assumptions:	N/A

Table 2.2.6.7.5 View Own Quiz List

2.2.6.7.7. Publish Draft Quiz

Use Case ID	UC-6.7.7		
Use Case Name	Publish Draft Quiz		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Admin/Mod
Description:	Publish a draft quiz		
Trigger:	User wants to change a draft quiz to publish.		
Preconditions:	- The user is logged into the system with a mentor or admin/mod role. - There is at least one draft quiz.		
Post-Condition:	- The selected quiz is published.		
Normal Flow:	1. On the "Home" screen, click the icon "Quiz" 2. Choose "Quiz nháp" 3. Choose any quiz 4. Click the button "Đăng quiz" 5. Show dialog message MSG-11 (in part 5.3 Application Message List) 6. Close the dialog, go back to the screen of the list draft quiz		
Alternative Flow:	N/A		
Exceptions	4.1. Total question of the quiz is zero: Show dialog message MSG-12 (in part 5.3 Application Message List)		
Priority:	Medium		
Frequency of Use:	Medium		
Business Rules:	BR-06		

Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.7.7 Publish Draft Quiz

2.2.6.7.8. Search Quiz

Use Case ID	UC-6.7.8		
Use Case Name	Search Quiz		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student, Mentor, Admin/Mod	**Secondary Actors:**	Guest
Description:	Search quiz		
Trigger:	User wants to search quiz list		
Preconditions:	N/A		
Post-Condition:	- The app display list of quizzes via filter		
Normal Flow:	1. On the "Home" screen, click the icon "Quiz" 2. Choose "Thư viện Quiz" 3. Show all quizzes that exist on the system. 4. On the “Tìm quiz” (search quiz) search bar, enter keyword(s). 5. Screen display all quizzes that have a name/topic containing the keyword(s). 6. Click the filter icon and choose any filter. 7. Click “Áp dụng” (apply) button. 8. Screen display all quizzes that have a name/topic containing the keyword(s), and match with selected filter criteria.		
Alternative Flow:	N/A		
Exceptions	3.1. The list of quizzes is empty: The screen displays the text "Hiện chưa có quiz nào"		

	5.1. The list of quizzes is empty: Screen display text "Không tìm thấy quiz nào phù hợp" 8.1. The list of quizzes is empty: Screen display text "Không tìm thấy quiz nào phù hợp"
Priority:	Medium
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.6.7.8 Search Quiz

2.2.7. Feature "Manage Mentor-finding Post"

2.2.7.1. Create Mentor-finding Post

Use Case ID	UC-7.1		
Use Case Name	Create Mentor-finding Post		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student create a mentor-finding post		
Trigger:	Students want to post a mentor-finding request to a public place for every mentor can see.		
Preconditions:	- The student is logged in to the system.		
Post-Condition:	- New mentor-finding post is created.		
Normal Flow:	1. Click "Yêu cầu tìm gia sư" (mentor-finding post) in the "My Profile" screen 2. The app redirects to the "On-going Mentor-finding Post List" screen. 3. On the "On-going Mentor-finding Post List" screen, click the cross icon in		

	the bottom-right corner to go to the “Create Mentor-finding Post” screen. 4. Choose the expertise category in “Chủ đề” 5. Fill in “Chi tiết” (detail description) 6. Fill in “Học phí trung muốn / 1 buổi (VNĐ)” (wish fee per slot) 7. Click button “Đăng” (post) 8. Show dialog message MSG-34 (in part 5.3 Application Message List) 9. Click OK to close dialog 10. Back to the “My Profile” screen.
Alternative Flow:	1. On the “On-going Mentor-finding Post List” screen, click the cross icon in the bottom-right corner to go to the “Create Mentor-finding Post” screen. 2. Choose the expertise category in “Chủ đề” 3. Fill in “Chi tiết” (detail description) 4. Fill in “Học phí mong muốn / 1 buổi (VNĐ)” (wish fee per slot) 5. Click button “Đăng” (post) 6. Show dialog message MSG-34 (in part 5.3 Application Message List) 7. Click OK to close dialog 8. Back to the “On-going Mentor-finding Post List” screen.
Exceptions	NF/AF-5/3. Users do not fill in the full required information: Button "Đăng" is deactivated.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.7.1 Create Mentor-finding Post

2.2.7.2 View On-going Mentor-finding Post List

Use Case ID	UC-7.2

Use Case Name	View On-going Request List		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student view on-going mentor-finding post list		
Trigger:	Student wants to see all his/her on-going mentor-finding post list.		
Preconditions:	- The student is logged in to the system.		
Post-Condition:	- Show all ongoing mentor-finding posts created by the user and ordered by created time.		
Normal Flow:	1. On "My Profile" screen, click button "Xem tất cả" on tab "Yêu cầu tìm gia su". 2. Choose "Đang tìm". 3. Go to the "On-going Mentor-finding Post List" screen.		
Alternative Flow:	N/A		
Exceptions	NF-3. The list is empty: Display text "Chưa có bài đăng nào" on the screen.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.7.2 View On-going Mentor-finding Post List

2.2.7.3 View Completed Mentor-finding Post List

Use Case ID	UC-7.3

Use Case Name	View Completed Mentor-finding Post List		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student view completed mentor-finding post list		
Trigger:	Student wants to see all his/her completed mentor-finding post list.		
Preconditions:	- The student is logged in to the system.		
Post-Condition:	- Show all completed mentor-finding posts created by the user and ordered by created time.		
Normal Flow:	1. On "My Profile" screen, click button "Xem tất cả" on tab "Yêu cầu tìm gia su". 2. Choose "Đã tìm được". 3. Go to the "Completed Mentor-finding Post List" screen.		
Alternative Flow:	N/A		
Exceptions	NF-3. The list is empty: Display text "Chưa có bài đăng nào" on the screen.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.7.3 View Completed Mentor-finding Post List

2.2.7.4 View Cancelled Mentor-finding Post List

Use Case ID	UC-7.4

Use Case Name	View Cancelled Mentor-finding Post List		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student view cancelled mentor-finding post list		
Trigger:	Student wants to see all his/her canceled mentor-finding post list.		
Preconditions:	- The student is logged in to the system.		
Post-Condition:	- Show all canceled mentor-finding posts created by the user and ordered by created time.		
Normal Flow:	1. On "My Profile" screen, click button "Xem tất cả" on tab "Yêu cầu tìm gia su". 2. Choose "Đã hủy". 3. Go to the "Cancelled Mentor-finding Post List" screen.		
Alternative Flow:	N/A		
Exceptions	NF-3. The list is empty: Display text "Chưa có bài đăng nào" on the screen.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.7.4 View Cancelled Mentor-finding Post List

2.2.7.5 Cancel Mentor-finding Post

Use Case ID	UC-7.5

Use Case Name	Cancel Mentor-finding Post		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student cancel mentor-finding post		
Trigger:	Student wants to cancel his/her mentor-finding post		
Preconditions:	- Student is logged in the system. - Student-created at least one post.		
Post-Condition:	- Selected post is canceled.		
Normal Flow:	1. On "My Profile" screen, click button "Xem tất cả" on tab "Yêu cầu tìm gia su". 2. Choose "Đang tìm". 3. Choose a tab of any post. 4. Click button "Hủy yêu cầu" 5. Show dialog message MSG-39 (in part 5.3 Application Message List) 6. Go to the "Cancelled Mentor-finding Post List" screen.		
Alternative Flow:	1. On "My Profile" screen, click button "Xem tất cả" on tab "Yêu cầu tìm gia su". 2. Choose "Đang tìm". 3. On the "On-going Mentor-finding Post List" screen, click the button "Hủy yêu cầu" on the tab row of any post. 4. Show dialog message MSG-39 (in part 5.3 Application Message List) 5. Go to the "Cancelled Mentor-finding Post List" screen.		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		

Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.7.5 Cancel Mentor-finding Post

2.2.7.6 Mark Completed Mentor-finding Post

Use Case ID	UC-7.6		
Use Case Name	Mark Completed Mentor-finding Post		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student mark mentor-finding post completed		
Trigger:	Student found a suitable mentor and want to mark his/her mentor-finding post completed.		
Preconditions:	- The student is logged in to the system. - Student-created at least one post.		
Post-Condition:	- Selected post is marked completed.		
Normal Flow:	1. On "My Profile" screen, click button "Xem tất cả" on tab "Yêu cầu tìm gia su". 2. Choose "Đang tìm". 3. Choose a tab of any post. 4. Click button "Đã tìm thấy gia sư phù hợp" 5. Show dialog message MSG-41 (in part 5.3 Application Message List) 6. Go to the "Completed Mentor-finding Post List" screen.		
Alternative Flow:	1. On "My Profile" screen, click button "Xem tất cả" on tab "Yêu cầu tìm gia su". 2. Choose "Đang tìm".		

	3. On the "On-going Mentor-finding Post List" screen, click the button "Đã tìm thấy gia sư phù hợp" on the tab row of any post. 4. Show dialog message MSG-41 (in part 5.3 Application Message List) 5. Go to the "Completed Mentor-finding Post List" screen.
Exceptions	N/A
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.7.6 Mark Completed Mentor-finding Post

2.2.7.7 View Student's Mentor-finding Post List

Use Case ID	UC-7.7		
Use Case Name	View Student's Mentor-finding Post List		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Admin/Moderator
Description:	Mentor/Admin/Mod view all student's mentor-finding post list, order by descending time		
Trigger:	User want to see student's mentor-finding post list.		
Preconditions:	- Mentor/Admin/Moderator is logged in the system.		
Post-Condition:	- Show all student's mentor-finding posts ordered by descending created time.		
Normal Flow:	1. On "Student Profile" screen, click on tab "Yêu cầu tìm gia su". 2. Go to the "Student's Mentor-finding Post List" screen (show all posts		

	created by selected student)
Alternative Flow:	*With mentor role: 1. On "Home" screen, click option "Yêu cầu tìm gia sư mới nhất". 2. Go to the "Student's Mentor-finding Post List" screen (show all post created by any student)
Exceptions	NF-3. The list is empty: Display text "Hiện chưa có yêu cầu tìm gia sư nào" on the screen.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.7.7 View Student's Mentor-finding Post List

2.2.7.8 View Mentor-finding Post Detail

Use Case ID	UC-7.8		
Use Case Name	View Mentor-finding Post Detail		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student/Mentor	**Secondary Actors:**	Admin/Moderator
Description:	User view detail mentor-finding post		
Trigger:	User want to see a detailed mentor-finding post.		
Preconditions:	- The user is logged into the system. - There is at least one mentor-finding post created.		
Post-Condition:	- Detailed information of post is displayed.		

	- With mentor role: + show button "Liên hệ ngay" for a mentor to contact a student that created the post. - With student role: + show button "Hủy yêu cầu" and "Đã tìm thấy gia sư phù hợp" for the student to cancel/mark completed post. + If the status of the post is completed, hide all action buttons, show the text "Đã tìm thấy gia sư qua bài đăng này" + If the status of the post is canceled, hide all action buttons, show text "Bài đăng đã bị hủy" - With admin/moderator role: + no action button.
Normal Flow:	1. Go to the On-going Mentor-finding Post List screen (with student role) Or Student's Mentor-finding Post List screen (with other roles). 2. Click on a tab row of any post. 3. Go to the Mentor-finding Post Detail screen.
Alternative Flow:	N/A
Exceptions	3.1. The information of "Học phí mong muốn" is empty Hide the area to display expected-fee information.
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.7.8 Mark Completed Mentor-finding Post

2.2.7.9 Search Mentor-finding Post

Use Case ID	UC-7.9		
Use Case Name	Search Mentor-finding Post		
Create By:	ThuyNH	**Create Date:**	15/3/2022

Primary Actor:	Mentor	**Secondary Actors:**	N/A
Description:	Mentor search mentor-finding post		
Trigger:	There are too many posts and mentor want to search an identified mentor-finding post.		
Preconditions:	- Mentor is logged into the system. - There is at least one mentor-finding post created.		
Post-Condition:	- Show all filtered mentor-finding posts ordered by descending created time.		
Normal Flow:	1. On the Home screen, enter keyword(s) to the search bar “Tìm yêu cầu gia sư” (find the mentor-finding post). 2. Go to the Search Result Of Mentor-finding Post screen to display all posts that have detail or creator name matched with inputted keyword(s). 3. Click the filter icon. 4. Choose expected criteria. 5. Show all mapped results on the screen.		
Alternative Flow:	N/A		
Exceptions	2/5. The founding list is empty Display text "Không tìm thấy kết quả phù hợp" on the screen.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.7.9 Search Mentor-finding Post

2.2.7.10 Like/Unlike Post

Use Case ID	UC-7.10

Use Case Name	Like/Unlike Post		
Create By:	LanLN	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Student
Description:	User like/unlike post		
Trigger:	User like/unlike a post.		
Preconditions:	- Mentor is logged into the system. - There is at least one mentor-finding post created.		
Post-Condition:	- The post is liked/unliked		
Normal Flow:	1. The user goes to a mentor-finding post detail. 2. The user clicks the “Quan tâm”(like)/”Đã quan tâm” (unlike) button depending on the state of the button.		
Alternative Flow:	N/A		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.7.10 Like/Unlike Post

2.2.7.11 Add Comment

Use Case ID	UC-7.10
Use Case Name	Add Comment

Create By:	LanLN	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Student
Description:	User comment to a post		
Trigger:	User comment to a post.		
Preconditions:	- Mentor is logged into the system. - There is at least one mentor-finding post created.		
Post-Condition:	- The app shows new comment on the comment list.		
Normal Flow:	1. The user goes to a mentor-finding post detail. 2. The user clicks the "Thêm bình luận" (add a comment) text field to fill in a new comment. 3. The user clicks "Gửi" (send). 4. The app shows new comment on the comment list.		
Alternative Flow:	N/A		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.7.11 Add Comment

2.2.7.12 Delete Comment

Use Case ID	UC-7.12
Use Case Name	Delete Comment

Create By:	LanLN	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Student
Description:	The user deletes an existed comment that created by himself/herself.		
Trigger:	The user deletes an existed comment that was created by himself/herself.		
Preconditions:	- Mentor is logged into the system. - There is at least one mentor-finding post created.		
Post-Condition:	- The comment is deleted by the user.		
Normal Flow:	1. The user goes to a mentor-finding post detail. 2. The user clicks "Xóa" (delete) near the comment which needs to be deleted. 3. The user clicks "Gửi" (send). 4. The app shows confirm dialog. 5. The user clicks "Đồng ý" (agree). 6. The app shows comments on the comment list which removed the comment that the user deleted.		
Alternative Flow:	N/A		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.7.12 Delete Comment

2.2.7.13 View Liked User List

Use Case ID	UC-7.13		
Use Case Name	View Liked User List		
Create By:	LanLN	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Student
Description:	User views all user that liked the post		
Trigger:	User views all user that liked the post		
Preconditions:	- Mentor is logged into the system. - There is at least one mentor-finding post created.		
Post-Condition:	User view all users that liked the post		
Normal Flow:	1. The user goes to a mentor-finding post detail. 2. The user clicks the "đã quan tâm bài đăng này" (liked this post) line under the like icon. 3. The app shows liked user list.		
Alternative Flow:	N/A		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.7.13 View Liked User List

2.2.7.14 View Comment List

Use Case ID	UC-7.14		
Use Case Name	View Comment List		
Create By:	LanLN	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	Student
Description:	User see all user that liked the post		
Trigger:	User see all user that liked the post		
Preconditions:	- Mentor is logged into the system. - There is at least one mentor-finding post created.		
Post-Condition:	User views all comments of the post		
Normal Flow:	1. The user goes to a mentor-finding post detail. 2. The app shows liked user list.		
Alternative Flow:	N/A		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.7.14 View Comment List

2.2.8. Feature "Manage Mentorship Request"

2.2.8.1 View Pending Mentorship Request List

Use Case ID	UC-8.1

Use Case Name	View Pending Mentorship Request List		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student/Mentor	**Secondary Actors:**	N/A
Description:	Student/Mentor views all mentorship request corresponding to his/her		
Trigger:	- Student wants to see all his/her created mentorship request that in pending status. - Mentor want to see all mentorship request that related to him/her and in pending status.		
Preconditions:	- The user is logged in to the system.		
Post-Condition:	- Show all mentorship requests corresponding to the user and in pending status.		
Normal Flow:	1. On the "Home" screen, click the icon "Yêu cầu" on the tab bar. 2. Choose option "Đang duyệt" 3. Go to the "Pending Mentorship Request List" screen.		
Alternative Flow:	N/A		
Exceptions	NF-3. The list is empty: Display text "Không có yêu cầu nào" on the screen.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.8.1 View Pending Mentorship Request List

2.2.8.2 View Accepted Mentorship Request List

Use Case ID	UC-8.2		
Use Case Name	View Accepted Mentorship Request List		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student/Mentor	**Secondary Actors:**	N/A
Description:	Student/Mentor views all accepted mentorship request corresponding to his/her.		
Trigger:	- Student wants to see all his/her created mentorship request in accepted status. - Mentor want to see all mentorship request that is related to him/her and in accepted status.		
Preconditions:	- The user is logged in to the system.		
Post-Condition:	- Show all mentorship requests corresponding to the user and in accepted status.		
Normal Flow:	1. On the "Home" screen, click the icon "Yêu cầu" on the tab bar. 2. Choose option "Đã đồng ý" 3. Go to the "Accepted Mentorship Request List" screen.		
Alternative Flow:	N/A		
Exceptions	NF-3. The list is empty: Display text "Không có yêu cầu nào" on the screen.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		

Assumptions:	N/A

Table 2.2.8.2 View Accepted Mentorship Request List

2.2.8.3 View Rejected Mentorship Request List

Use Case ID	UC-8.3		
Use Case Name	View Rejected Mentorship Request List		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student/Mentor	**Secondary Actors:**	N/A
Description:	Student/Mentor views all rejected mentorship request corresponding to his/her.		
Trigger:	- Students want to see all his/her created mentorship requests that are in rejected status. - Mentor wants to see all mentorship requests that are related to him/her and in rejected status.		
Preconditions:	- The user is logged in to the system.		
Post-Condition:	- Show all mentorship requests corresponding to the user and in rejected status.		
Normal Flow:	1. On the "Home" screen, click the icon "Yêu cầu" on the tab bar. 2. Choose option "Đã từ chối" 3. Go to the "Rejected Mentorship Request List" screen.		
Alternative Flow:	N/A		
Exceptions	NF-3. The list is empty: Display text "Không có yêu cầu nào" on the screen.		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		

Other Information:	N/A
Assumptions:	N/A

Table 2.2.8.3 View Rejected Mentorship Request List

2.2.8.4 View Detail Mentorship Request

Use Case ID	UC-8.4		
Use Case Name	View Detail Mentorship Request		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student/Mentor	**Secondary Actors:**	N/A
Description:	Student/Mentor views detail mentorship request corresponding to his/her		
Trigger:	- Student/Mentor want to see detail information of mentorship request corresponding to his/her. - User can see the detail of requests that display on the following list: + Pending Mentorship Request + Accepted Mentorship Request + Rejected Mentorship Request		
Preconditions:	- User is logged in to the system.		
Post-Condition:	- Show detailed information about a selected mentorship request. - On requests that are in pending status: + With mentor role: show buttons "Đồng ý dạy" and "Từ chối dạy" for the mentor to accept or reject the request. + With student role: show button "Hủy yêu cầu" for students to cancel the request.		
Normal Flow:	1. On the list that is defined in the trigger, click into a tab row of any request. 2. Go to the "Detail Mentorship Request" screen.		
Alternative Flow:	N/A		
Exceptions	N/A		

Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.8.4 View Detail Mentorship Request

2.2.8.5 Accept Mentorship Request

Use Case ID	UC-8.5		
Use Case Name	Accept Mentorship Request		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	N/A
Description:	Mentor accept mentorship request		
Trigger:	- Mentor accept to teach the student.		
Preconditions:	- Mentor is logged in the system.		
Post-Condition:	- The selected mentorship request is changed to accepted status. - Calendar of the corresponding student and mentor is updated.		
Normal Flow:	1. On the Detail Mentorship Request screen, click the “Đồng ý dạy” (accept) button		
Alternative Flow:	N/A		
Exceptions	1.1. The request is deleted while the mentor is looking at the details: Display dialog message MSG-26 (in part 5.3 Application Message List)		
Priority:	High		

Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.8.5 Accept Mentorship Request

2.2.8.6 Reject Mentorship Booking

Use Case ID	UC-8.6		
Use Case Name	Reject Mentorship Request		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Mentor	**Secondary Actors:**	N/A
Description:	Mentor reject mentorship request		
Trigger:	- Mentor reject to teach the student.		
Preconditions:	- Mentor is logged in the system.		
Post-Condition:	- The selected mentorship request is changed to rejected status.		
Normal Flow:	1. On the "Detail Mentorship Request" screen, click the button "Từ chối dạy"		
Alternative Flow:	N/A		
Exceptions	1.1. The request is deleted while the mentor is looking at the details: Display dialog message MSG-26 (in part 5.3 Application Message List)		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		

Other Information:	N/A
Assumptions:	N/A

Table 2.2.8.6 Reject Mentorship Request

2.2.8.7 Cancel Mentorship Request

Use Case ID	UC-8.7		
Use Case Name	Cancel Mentorship Request		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student cancel mentorship request		
Trigger:	Student want to cancel his/her mentorship request		
Preconditions:	- Student is logged in the system. - Student created at least one mentorship request.		
Post-Condition:	- Selected mentorship request is canceled.		
Normal Flow:	1. On the "Detail Mentorship Request" screen, click the button "Hủy yêu cầu" 2. Show dialog message MSG-39 (in part 5.3 Application Message List)		
Alternative Flow:	N/A		
Exceptions	1.1. The request is approved or rejected while the student is looking at the details: Display dialog message MSG-42 (in part 5.3 Application Message List)		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		

Other Information:	N/A
Assumptions:	N/A

Table 2.2.8.7 Cancel Mentorship Request

2.2.8.8 Book Mentorship Request

Use Case ID	UC-8.8		
Use Case Name	Book Mentorship Request		
Create By:	ThuyNH	**Create Date:**	15/3/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student create a mentorship request		
Trigger:	Students finding a mentor and want to book a mentorship request to the identified mentor.		
Preconditions:	- The student is logged in to the system.		
Post-Condition:	- New mentorship request is created.		
Normal Flow:	1. On the screen of the mentor list, click on a tab row of any mentor to view the profile. 2. Click the “Đề nghị gia sư” (book mentorship request) button 3. Fill in all required information 5. Click the “Gửi” (send) button 6. Show dialog message MSG-27 (in part 5.3 Application Message List)		
Alternative Flow:	3.1. Click on the button "Chọn ngày" Go to the "Choose weekday" screen. 3.2. Click the button "Thêm ca học" Insert a new row of slot information. 3.3. Click into the textbox "Chọn chủ đề" Go to the "Choose category" screen.		

Exceptions	5.1. When do not fill in "Chủ đề" or "Detail" or "Thời gian học", show dialog "Bạn chưa điền đủ các thông tin bắt buộc!" 5.2. When do not fill in "Ca học", show dialog "Thông tin ca học chưa hoàn tất" 5.3. When choose invalid start date, show dialog "Bạn phải chọn ngày trong tương lai!" 5.4. When choose an invalid end date, show dialog "Ngày kết thúc phải sau ngày bắt đầu"
Priority:	High
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	N/A
Assumptions:	N/A

Table 2.2.8.8 Book Mentorship Request

2.2.9. Feature "Feedback"

2.2.9.1 Feedback Mentor

Use Case ID	UC-9.1		
Use Case Name	Feedback Mentor		
Create By:	ThaoDM	**Create Date:**	13/2/2022
Primary Actor:	Student	**Secondary Actors:**	N/A
Description:	Student feedback mentor		
Trigger:	Student wants to feedback mentor		
Preconditions:	- Students are logged in.		
Post-Condition:	- The app display message MSG-10 (in part 5.3 Application Message List)		
Normal Flow:	1. Students find mentors in mentor list.		

	2. Students click on a mentor to access the mentor's profile screen. 3. Student clicks "Đánh giá" (feedback). 4. The screen redirects to the feedback list screen. 5. Student clicks "Thêm đánh giá / nhận xét" (add rating/feedback) at the bottom of the screen. 6. The screen redirects to the feedback screen. 7. Student clicks the star icon and enters feedback. 8. The student clicks "Đăng" (post). 5. The app display message MSG-10 (in part 5.3 Application Message List).
Alternative Flow:	2.a Student clicks on the name to access the mentor's profile
Exceptions	N/A
Priority:	Medium
Frequency of Use:	Medium
Business Rules:	BR-06
Other Information:	The homepage screen will be displayed after the user's logout app
Assumptions:	N/A

Table 2.2.9.1 Feedback Mentor

2.2.9.2 View Feedback

Use Case ID	UC-9.2		
Use Case Name	View Feedback		
Create By:	ThaoDM	**Create Date:**	13/2/2022
Primary Actor:	Mentor	**Secondary Actors:**	Student
Description:	Mentor view their feedback from student Student view feedback from a mentor		

Trigger:	Mentor want to view their feedback Student want to view a mentor's feedback
Preconditions:	- User Account is active - Users are logged in. - The device is connected to the internet.
Post-Condition:	The app displays their feedback
Normal Flow:	1. Student access to mentor's profile or mentor access my profile 2. User click "Đánh giá" (feedback) in profile 3. The app display mentor's feedback
Alternative Flow:	1.a Student clicks the "Chat" icon on the homepage 1.b Student clicks to any conversation. 1.c Student clicks to kebab menu 2.a Student click "Xem đánh giá" (view feedback)
Exceptions	3.1. There is not any feedback: The screen display "Hiện chưa có đánh giá nào"
Priority:	Medium
Frequency of Use:	Medium
Business Rules:	N/A
Other Information:	N/A
Assumptions:	N/A

Table 2.2.9.2 View Feedback

2.2.10. Feature "Contact"

2.2.10.1 Contact

- This use case specification is for students and mentors

2.2.10.1.1 View Conversation List

Use Case ID	UC-10.1.1

Use Case Name	View Conversation List		
Create By:	ThaoDM	**Create Date:**	19/2/2022
Primary Actor:	Mentor, Student	**Secondary Actors:**	N/A
Description:	User see the conversation list		
Trigger:	User want to see the conversation list		
Preconditions:	- Account is active - User is logged in the system		
Post-Condition:	- The app display list of mentor request		
Normal Flow:	1. User click “chat” icon on homepage 2. The app displays the list of conversations		
Alternative Flow:	N/A		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.10.1.1 View Conversation List

2.2.10.1.2 Chat

Use Case ID	UC-10.1.2		
Use Case Name	Chat		
Create By:	ThaoDM	**Create Date:**	19/2/2022

Primary Actor:	Mentor, Student	**Secondary Actors:**	N/A
Description:	User chat with other		
Trigger:	User want to chat with other		
Preconditions:	- Account is active - User is logged in the system		
Post-Condition:	- The app display chat windows		
Normal Flow:	1. User searches other's profiles 2. User clicks to profile 3. User clicks to "chat" icon 4. The app displays chat windows		
Alternative Flow:	1. User click "chat" icon on homepage 2. The app displays the list of conversations 3. User clicks one conversation of the conversation list		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	Medium		
Business Rules:	BR-06		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.10.1.2 Chat

2.2.11. Feature "Manage Schedule"

2.2.11.1 View Schedule

Use Case ID	UC-11.1
Use Case Name	View Schedule

Create By:	LanLN	**Create Date:**	12/2/2022
Primary Actor:	Mentor, Student	**Secondary Actors:**	
Description:	User view schedule		
Trigger:	User want to view schedule		
Preconditions:	- User Account is active - User logged in the system		
Post-Condition:	- The app displays the schedule		
Normal Flow:	1. User access my profile screen or access any other's profile screen 2. User click "Lịch trình" (schedule) 3. The app displays a schedule screen.		
Alternative Flow:	N/A		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	High		
Business Rules:	BR-06 (in part 5.1 Business Rules)		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.11.1 View Schedule

2.2.11.2 View Event Detail

Use Case ID	UC-11.2		
Use Case Name	View Event Detail		
Create By:	LanLN	**Create Date:**	12/2/2022

Primary Actor:	Mentor, Student	**Secondary Actors:**	
Description:	User view detail event in the schedule		
Trigger:	User want to view detail event in the schedule		
Preconditions:	- User Account is active - User logged in the system		
Post-Condition:	- The app displays the detail of an event		
Normal Flow:	1. Users access their own schedules. 2. User click on any event. 3. The app displays detailed events: title, date, time, repeat, participant.		
Alternative Flow:	N/A		
Exceptions	N/A		
Priority:	High		
Frequency of Use:	High		
Business Rules:	BR-06 (in part 5.1 Business Rules)		
Other Information:	N/A		
Assumptions:	N/A		

Table 2.2.11.2 View Event Detail

2.2.12. Feature "Notification"

2.2.12.1 View Notification List

Use Case ID	UC-12.1		
Use Case Name	View Notification List		
Create By:	ThaoDM	**Create Date:**	12/2/2022
Primary Actor:	Mentor, Student	**Secondary Actors:**	

Description:	User see notification
Trigger:	User want to see notification
Preconditions:	- User Account is active - User logged in the system
Post-Condition:	- The app displays the notifications
Normal Flow:	1. Users click the notification icon in the top-right corner. 2. The app display notifications 3. If the user clicks on any notification, it changes from unread to read status.
Alternative Flow:	3.a User clicks "Đánh dấu tất cả đã đọc" (mark all read) to mark all notifications read.
Exceptions	N/A
Priority:	High
Frequency of Use:	High
Business Rules:	BR-06 (in part 5.1 Business Rules)
Other Information:	N/A
Assumptions:	N/A

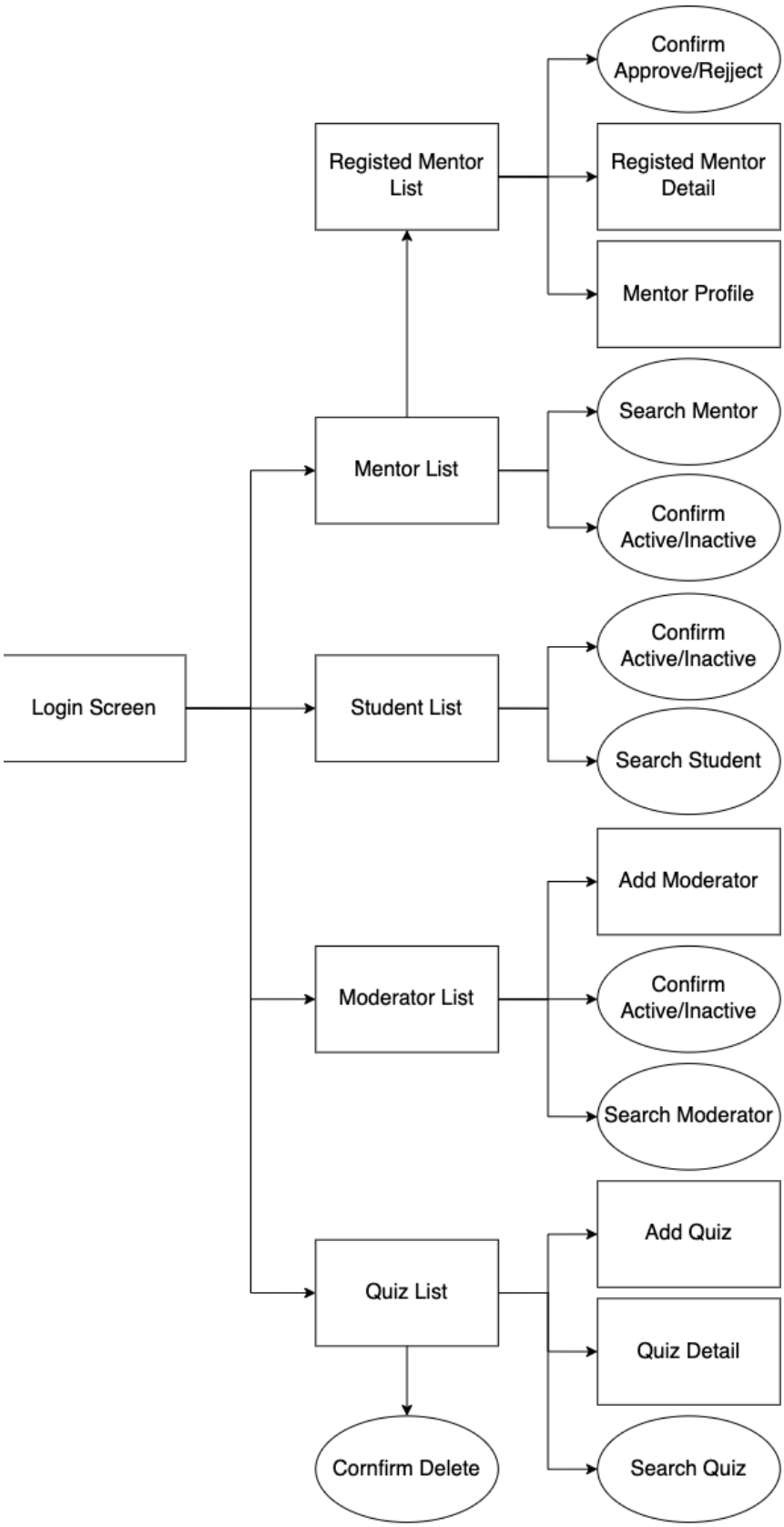
Table 2.2.12.1 View Notification List

3. Functional Requirements

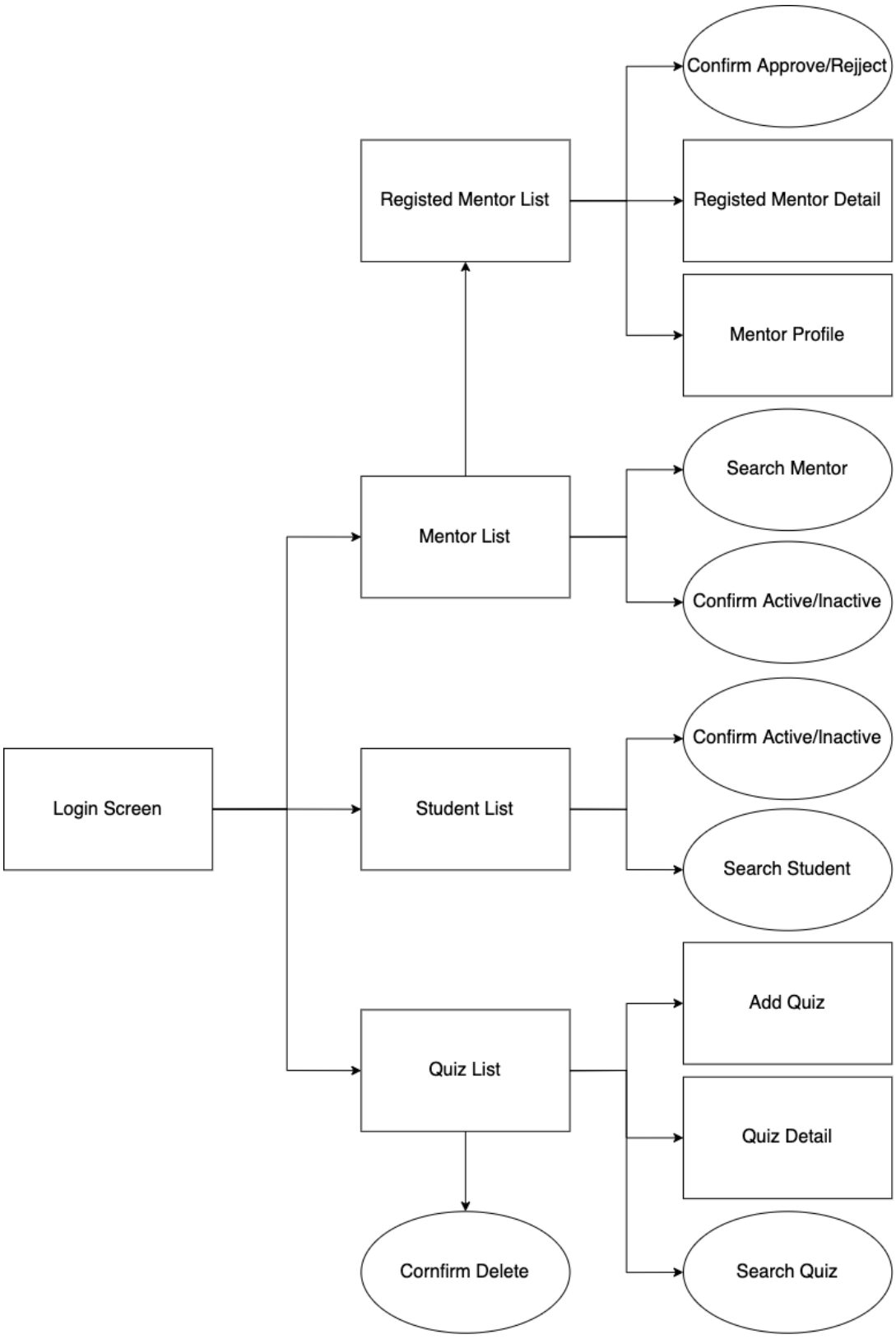
3.1 System Functional Overview

3.1.1 Screens Flow

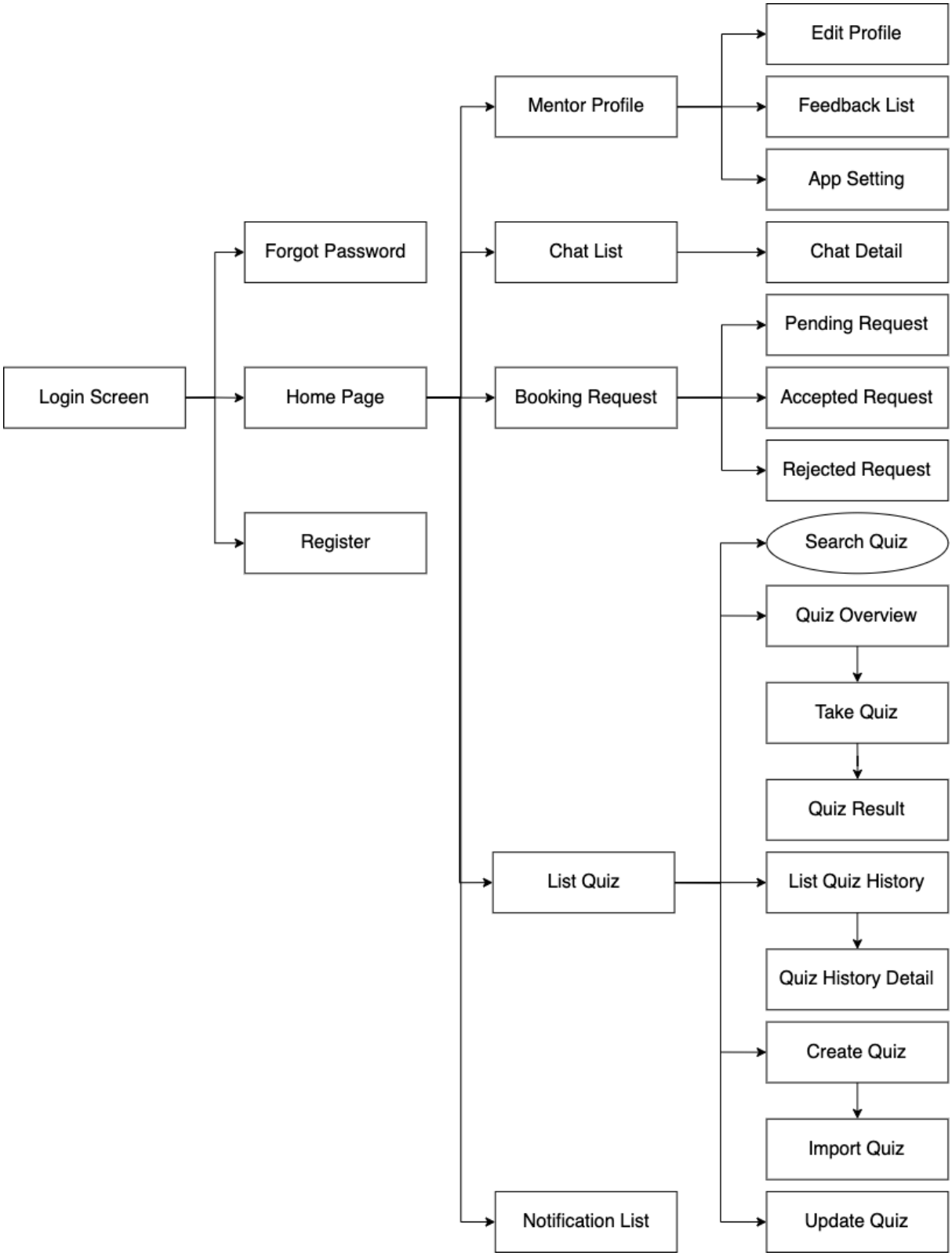
3.1.1.1 Administrator



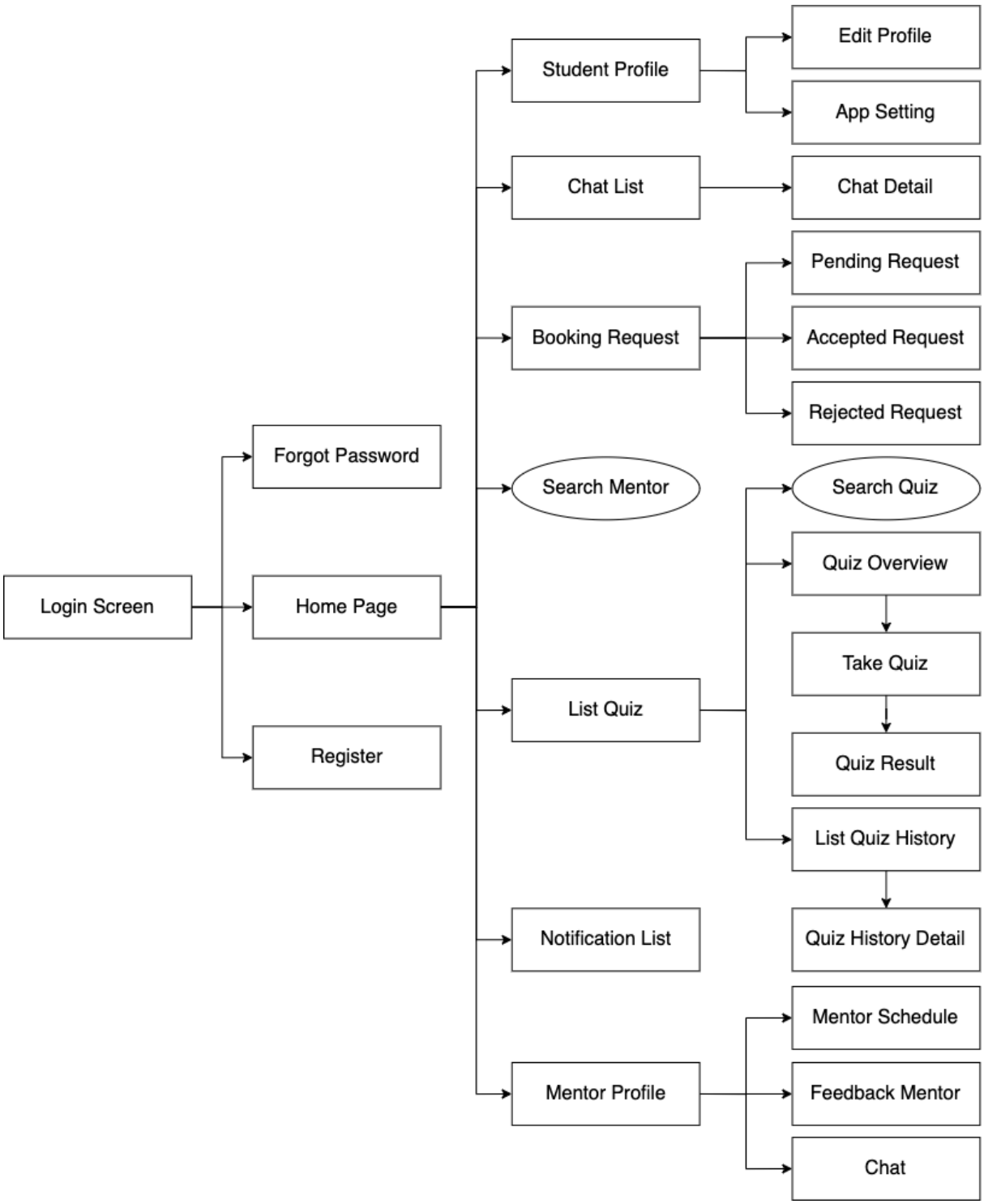
3.1.1.2 Moderator



3.1.1.3 Mentor


Login Screen
Forgot Password
Home Page
Register
Mentor Profile
Chat List
Booking Request
List Quiz
Notification List
Edit Profile
Feedback List
App Setting
Chat Detail
Pending Request
Accepted Request
Rejected Request
Search Quiz
Quiz Overview
Take Quiz
Quiz Result
List Quiz History
Quiz History Detail
Create Quiz
Import Quiz
Update Quiz

3.1.1.4 Student



3.1.2 Screen Descriptions

3.1.2.1 Mentor

#	Feature	Screen	Description
1	Authenticate & Authorize	Login Account	Login into the system by mail and password
2		Register Account Form	Fill out the necessary information to complete registration form
3		Add More Information Form	Fill out additional information to complete registration form
4		Choose Province/City - District - Ward	Choose province/city - district - ward from the list.
5		Choose expertise/category	Choose expertise/category from the list.
6		Forgot password	Input email to proceed reset password
7		Enter OTP	Enter OTP (6 digits) that is sent to the given email
8		Reset password	Input new password
9		Change password	Change current password to new password
10	User Profile	View my profile	View detail information of mentor
11		Edit profile	Edit personal information
13	Manage Mentor	Search mentor	Search for a mentor based on name/ subject category/…
14	Contact	Chat	Chat between a mentor and a student to discuss about knowledge, classes, schedule, …
15		Chat List	View the list of all current people the user is having conversation with
16	Manage Mentorship Request	View latest mentorship request list	Mentor views the list of all mentorship requests from the system students corresponding his expertises
17		View all booking mentorship request list	Show the list of all current booking mentorship requests from students
18		View detail booking mentorship request	View the detail booking mentorship request
19	Feedback	View feedback	View feedbacks left by students

20		Report mentor	Report a mentor who was considered inappropriate on the system
21	Manage Schedule	View my schedule	View detail schedule about available time/unavailable time of the week (with whom). The user can delete an event by clicking the event with the delete option.
22		View other's schedule	View the schedule of another person about available/unavailable time.
23	Manage Quiz	View quiz list	View list of quizzes of all users
24		View my quiz list	View my list of quizzes
25		View quiz overview	View overview information of the quiz: name, total questions, duration, author
26		View quiz detail	View all questions and correct answers of the quiz
27		Edit quiz overview	Update overview information of the quiz
28		Take quiz	Take the quiz
29		Edit quiz	Update questions in the quiz
30		Create quiz manually	Create each question of the quiz manually: add question title, add choices
31		Import quiz from Google Drive	Pick an excel file containing quiz in the correct format, to import it to the quiz library
32		View quiz taking history	View list of quizzes that the user has taken, including quiz name, quiz author, date taken, result
33		Show quiz detail result	Show detail quiz result with the correct answer of each question
34		View draft quiz list	View the list of draft quizzes
35	Notification	View notification list	View notification list. Types of notification: New chat message, successful booking, event cancel request, campaign notification.

3.1.2.2 Student

#	Feature	Screen	Description
1	Authenticate & Authorize	Login	Login into the system by mail and password
2		Common Register	Fill out the necessary information to complete registration form
3		Forgot password	Input email to proceed reset password

4		Input OTP	Input OTP (6 digits) that is sent to the given email
5		Reset password	Input new password
6		Change password	Change current password
7	User Profile	View my profile	View detail information of the admin
8		View student profile	View detail information of the student
9		View mentor profile	View detail information of the mentor
10		View moderator profile	View detail information of the moderator
11		Edit profile	Edit personal information
12	Manage Mentor	Search mentor	Search for a mentor based on name/ subject category/…
13		View top mentor list	View the current top 10 mentors of the system, based on rating.
14		Become Mentor	Registration form to become a mentor
15	Contact	Chat	Chat between a mentor and a student to discuss knowledge, classes, schedule, …
16		Chat List	View the list of all current people the user is having conversations with
17	Manage Mentorship Request	Create mentorship request	Make a post to indicate that the student currently needs mentorship of a particular subject
18		View on-going mentorship request list	Show the list of all on-going mentorship request. Students can make the request completed in each detail request.
19		View completed mentorship request list	Show the list of completed mentorship requests, which means the student has found the right mentor
20		View detail booking mentorship request	View the detail booking mentorship request
21		View all student's mentorship request list	List all current booking mentorship requests by a student

22		Book mentorship	Book mentorship, containing Description and Subject Category & to whom.
23	Feedback	View feedback	View feedback list of a mentor
24		Feedback	Give feedback to a mentor
25		Report mentor	Report a mentor who was considered inappropriate on the system
26	Manage Schedule	View my schedule	View detailed schedule about available time/unavailable time of the week (with whom). The user can delete an event by clicking the event with the delete option.
27		View other's schedule	View the schedule of another person about available/unavailable time.
28	Manage Quiz	View quiz list	View list of quizzes of all users
29		View quiz overview	View overview information of the quiz: name, total questions, duration, author
30		View quiz detail	View all questions and correct answers of the quiz
31		Take quiz	Take the quiz
32		View quiz taking history	View list of quizzes that the user has taken, including quiz name, quiz author, taken date, result
33		Show quiz detail result	Show detail quiz result with the correct answer of each question
34	Notification	View notification list	View notification list. Types of notification: New chat message, successful booking, event cancel request, campaign notification.

3.1.2.3 Admin

#	Feature	Screen	Description
1	Authenticate & Authorize	Login	Login into the system by mail and password
2		Choose a role to register	Choose the role to continue register a new account: Mentor / Student
3		Common Register	Fill out necessary information to complete registration form
4		Forgot password	Input email to proceed reset password
5		Input OTP	Input OTP (6 digits) that is sent to the given email
6		Reset password	Input new password

7		Change password	Change current password
8	User Profile	View my profile	View detail information of the student
9		View student profile	View detail information of the mentor
10		Edit profile	Edit personal information
11		Upload avatar	Change profile picture
12		View favourite list	View list of favourite quizzes
13	Manage Mentor	Search mentor	Search for a mentor based on name/ subject category/…
14		View mentor list	View the list of all mentors of the system
15		View become mentor request list	View the list of all become mentor requests
16		View mentor request detail	View the detail information of the becoming mentor request
17		View reported mentor list	View the list of mentors that were reported by both mentors and students
18		View detail mentor report	View the detailed mentor report
19	Manage Student	View student list	View the list of all students, containing
20		Search student	Search for a student based on: name, address, age…
21	Manage Moderator	View moderator list	View the list of all moderators
22		Search moderator	Search for a moderator based on name,...
23		Add new moderator	Add a new moderator for the system
24	Feedback	View feedback	View feedback list of a mentor
25	Manage Schedule	View user schedule	View detail schedule about available time/unavailable time of the week (with whom).
26	Manage Quiz	View quiz list	View list of quizzes of all users
27		View my quiz list	View list of my quizzes

28		View quiz overview	View overview information of the quiz: name, total questions, duration, author
29		View quiz detail	View all questions and correct answers of the quiz
30		Take quiz	Take the quiz
31		View quiz taking history	View list of quizzes that the user has taken, including: quiz name, quiz author, date taken, result
32		Show quiz detail result	Show detail quiz result with the correct answer of each question

3.1.2.4 Moderator

#	Feature	Screen	Description
1	Authenticate & Authorize	Login	Login into the system by mail and password
2		Choose role to register	Choose the role to continue register a new account: Mentor / Student
3		Common Register	Fill out necessary information to complete registration form
4		Forgot password	Input email to proceed reset password
5		Input OTP	Input OTP (6 digits) that is sent to the given email
6		Reset password	Input new password
7		Change password	Change current password
8	User Profile	View my profile	View detail information of the student
9		View student profile	View detail information of the mentor
10		Edit profile	Edit personal information
11		Upload avatar	Change profile picture
12		View favourite list	View list of favourite quizzes
13	Manage Mentor	Search mentor	Search for a mentor based on name/ subject category/…
14		View mentor list	View the list of all mentors of the system
15		View become mentor request list	View the list of all become mentor requests

16		View mentor request detail	View the detail information of the becoming mentor request
17		View reported mentor list	View the list of mentors that were reported by both mentors and students
18		View detail mentor report	View the detail mentor report
19	Manage Student	View student list	View the list of all students, containing
20		Search student	Search for a student based on: name, address, age…
21	Feedback	View feedback	View feedback list of a mentor
22	Manage Schedule	View user schedule	View detail schedule about available time/unavailable time of the week (with whom).
23	Manage Quiz	View quiz list	View list of quizzes of all users
24		View my quiz list	View list of my quizzes
25		View quiz overview	View overview information of the quiz: name, total questions, duration, author
26		View quiz detail	View all questions and correct answers of the quiz
27		Take quiz	Take the quiz
28		View quiz taking history	View list of quizzes that the user has taken, including quiz name, quiz author, date taken, result
29		Show quiz detail result	Show detail quiz result with the correct answer of each question

3.1.2.5 Guest

#	Feature	Screen	Description
1	Manage Mentor	Search mentor	Search for a mentor based on name/ subject category/…
2		View top mentor list	View the current top 10 mentors of the system, based on rating.
3	Feedback	View feedback	View feedback list of a mentor
4	Manage Schedule	View mentor's schedule	View detail schedule about available time/unavailable time of the week (with whom). The user can delete an event by clicking the event with the delete option.
5	Manage Quiz	View quiz list	View list of quizzes of all users

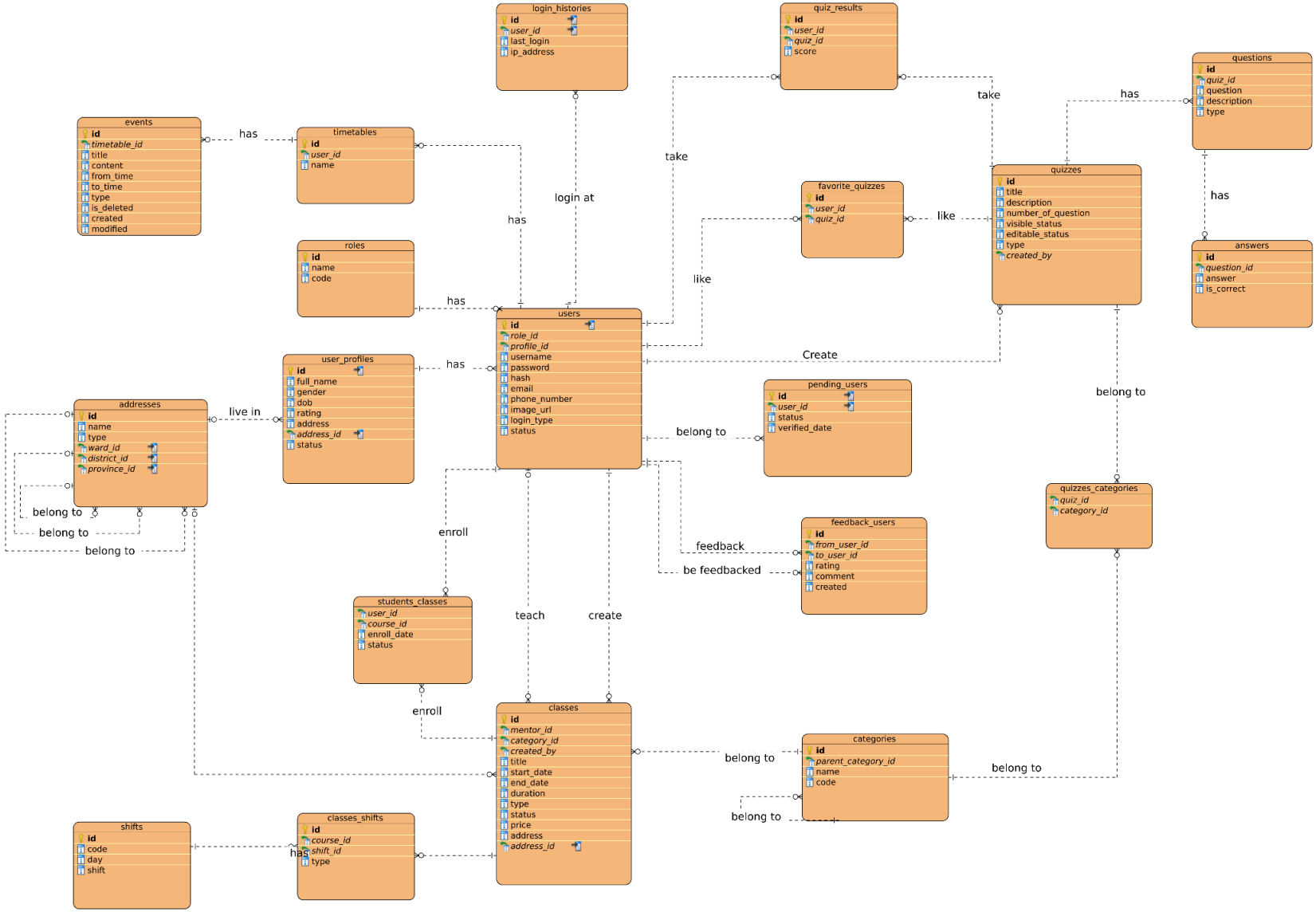
6		View quiz overview	View overview information of the quiz: name, total questions, duration, author
7		View quiz detail	View all questions and correct answers of the quiz
8		Take quiz	Take the quiz

3.1.3 Screen Authorization

#	Screen	Mentor	Student	Admin	Moderator	Guest
1	Register Account	x	x		x	x
2	Login Account	x	x	x	x	x
3	Forgot Password	x	x	x	x	
4	Reset Password	x	x	x	x	
5	Enter Otp	x	x	x	x	
6	Change Password	x	x	x	x	
7	View Profile	x	x	x	x	x
8	Update Profile	x	x	x	x	
9	Change Avatar	x	x	x	x	
10	View Student List			x	x	
11	View Student Profile			x	x	
12	View Mentor List		x	x	x	x
13	View Mentor Profile		x	x	x	x
14	View Favourite List		x			
15	Search Mentor		x	x	x	x
16	Chat	x	x			
17	Conversation List	x	x			
18	View Latest Mentorship Request List	x				
19	View All Booking Mentorship Request List	x				
20	View Detail Booking Mentorship Request	x	x			
21	Create Mentorship Request		x			
22	View On-Going Mentorship Request List		x			
23	View Completed Mentorship Request List		x			
24	View Detail Booking Mentorship Request		x			

25	View All Student's Mentorship Request List		x			
26	Book Mentorship		x			
27	View Feedback	x	x	x	x	x
28	View My Schedule	x	x			
29	View Other’s Schedule	x	x	x	x	x
30	View Quiz List	x	x	x	x	x
31	View My Quiz List	x		x	x	
32	View Quiz Overview	x	x	x	x	x
33	View Quiz Detail	x	x	x	x	x
34	Edit Quiz Overview	x		x	x	
35	Take Quiz	x	x			x
36	Edit Quiz	x		x	x	
37	Create Quiz	x		x	x	
38	View Quiz Taking History	x	x			
39	Show Quiz Detail Result	x	x			
40	View Draft Quiz List	x		x	x	
41	View Notification List	x	x			
42	View Top Mentor List		x			x
43	View Become Mentor Request List			x	x	
44	View Mentor Request Detail			x	x	
45	Search Student			x	x	
46	View Moderator List			x		
47	Search Moderator			x		
48	Add New Moderator			x		

3.1.4 Entity Relationship Diagram



Entities Description

#	Entity	Description
1	User	User informations
2	User Profile	Detail user informations
3	Role	User role
4	Address	Address with many levels (province/city, district, ward)
5	Timetable	Schedule of user
6	Event	Event of schedule
7	Login History	Login history
8	Quiz	Quiz
9	Question	Question of quiz
10	Answer	Answer of question
11	Pending User	User need confirming
12	Feedback user	User rating history
13	Category	Category/Subject/Expertise
14	Class	Class with mentor and student
15	Shift	Shift of class

3.2 Authenticate & Authorize

3.2.1 Login Account

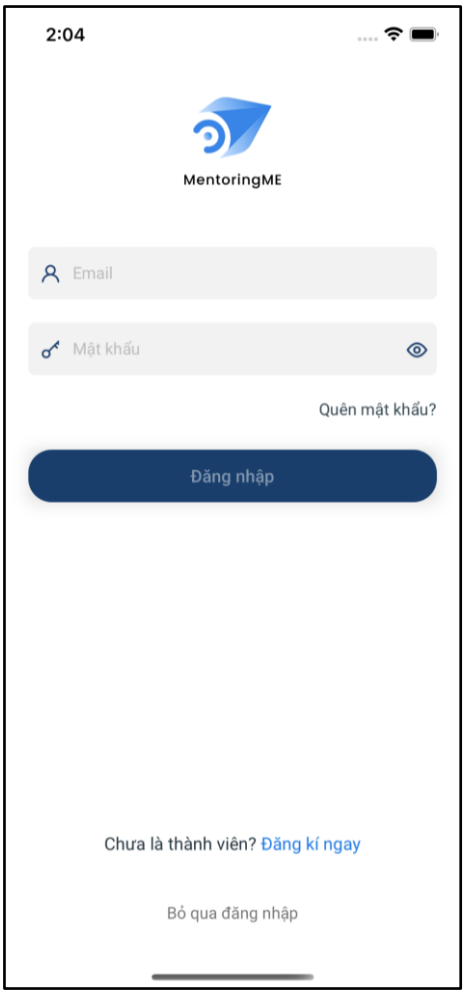
Function Trigger:

- Navigation Path: Login Screen (The first screen)
- Frequency of Use: High

Function Description:

- Actors: All
- Purpose: User login into the system
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: User logins successfully
- Abnormal case: Some inputs do not pass validation

3.2.2 Register Account

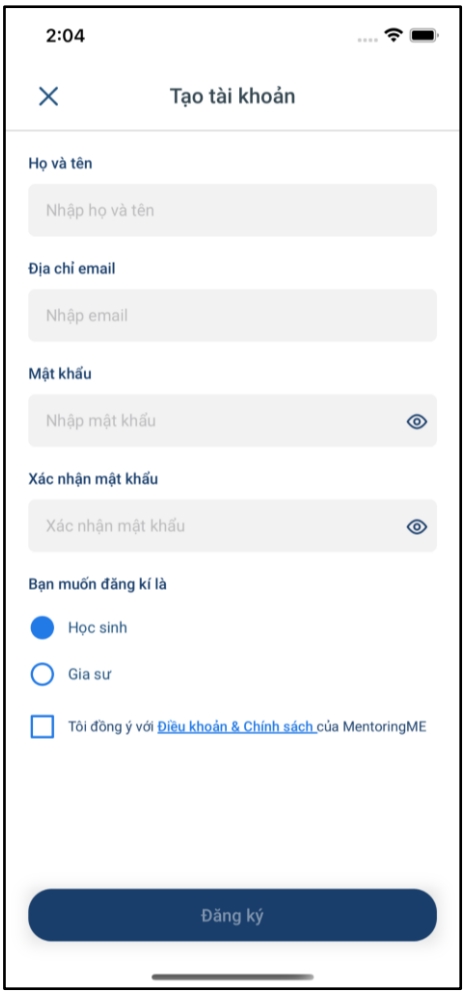
Function Trigger:

- Navigation Path: Login Screen ➔ Common Register
- Frequency of Use: Medium

Function Description:

- Actors: All except Guest
- Purpose: User register a new account in the system
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: User can go to the next screen
- Abnormal case: Some inputs do not pass validation

3.2.4 Forgot Password

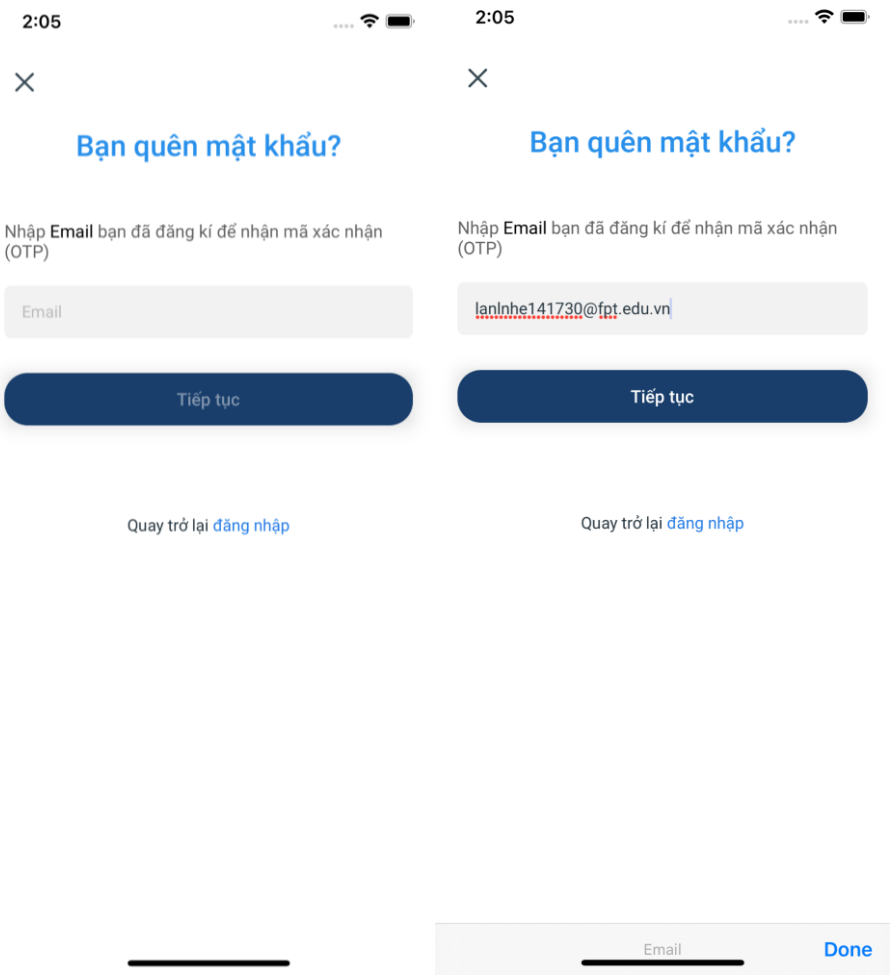
Function Trigger:

- Navigation Path: Login ➔ Forgot password
- Frequency of Use: Medium

Function Description:

- Actors: All except Guest
- Purpose: The first step to help user to reset password to be able to login into the system
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: User can go to the next screen
- Abnormal case: Wrong data input format (email)

3.2.5 Enter OTP

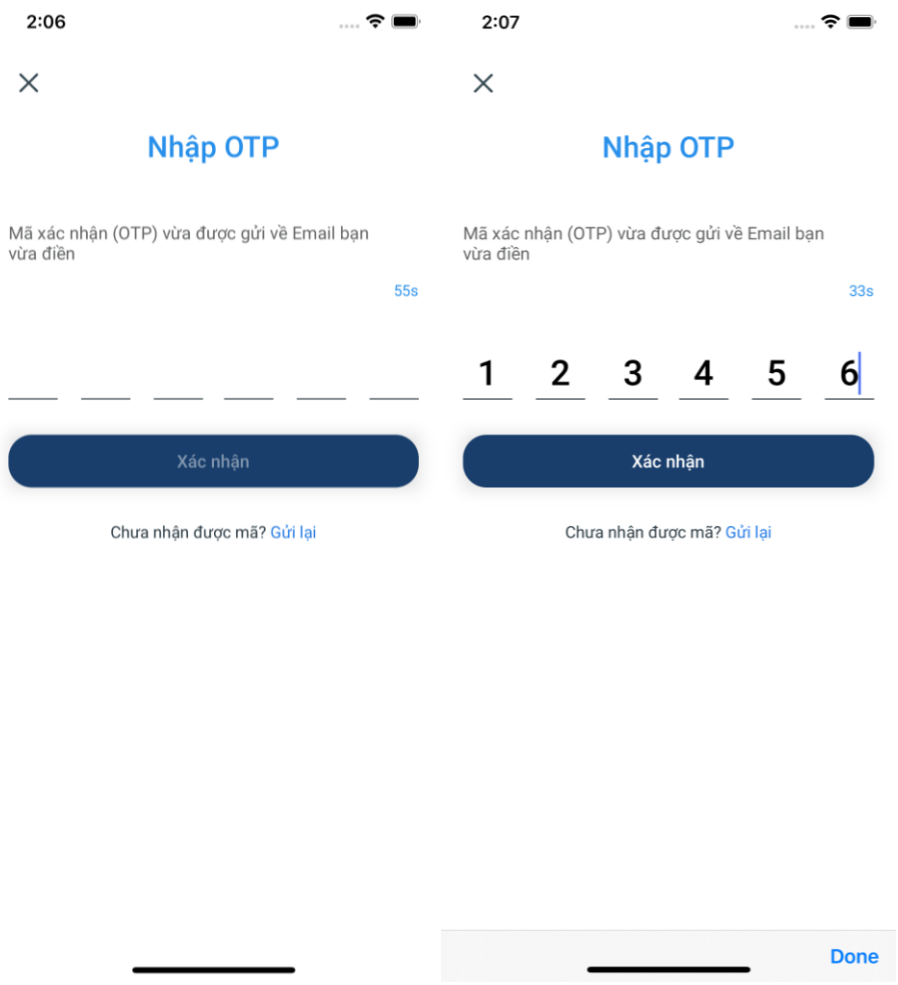
Function Trigger:

- Navigation Path: Forgot password ➔ Input OTP
- Frequency of Use: Medium

Function Description:

- Actors: All except Guest
- Purpose: User inputs OTP to continue reset password
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: User can go to the next screen
- Abnormal case: User input the wrong OTP / Timer expires

3.2.6 Reset Password

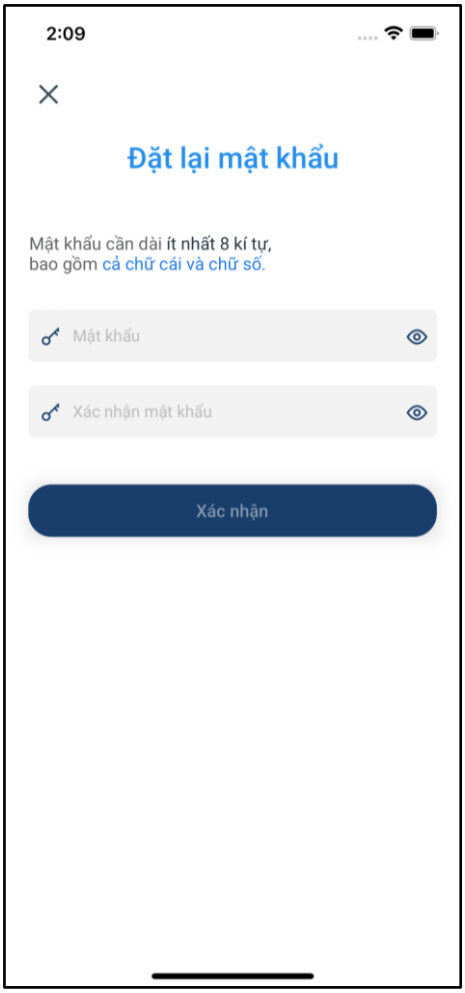
Function Trigger:

- Navigation Path: Input OTP ➔ Reset password
- Frequency of Use: Medium

Function Description:

- Actors: All except Guest
- Purpose: User resets the password
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: User resets his password successfully
- Abnormal case: Two passwords do not match / Inputs do not pass password rule

3.2.7 Change Password

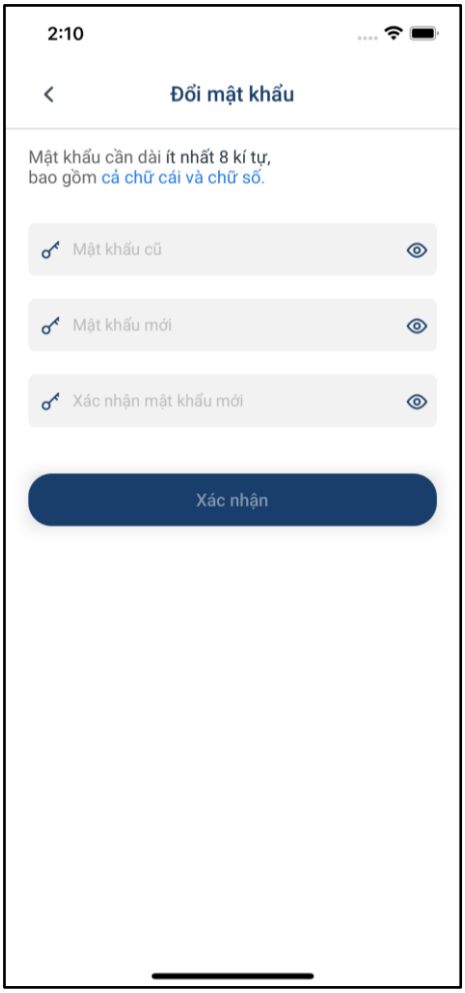
Function Trigger:

- Navigation Path: Settings ➔ Change password
- Frequency of Use: Medium

Function Description:

- Actors: All except Guest
- Purpose: User changes the password
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: User changes his password successfully
- Abnormal case: The old password is wrong / Two new passwords do not match / Inputs do not pass password rule

3.3 Moderator Management

3.3.1 View moderator list

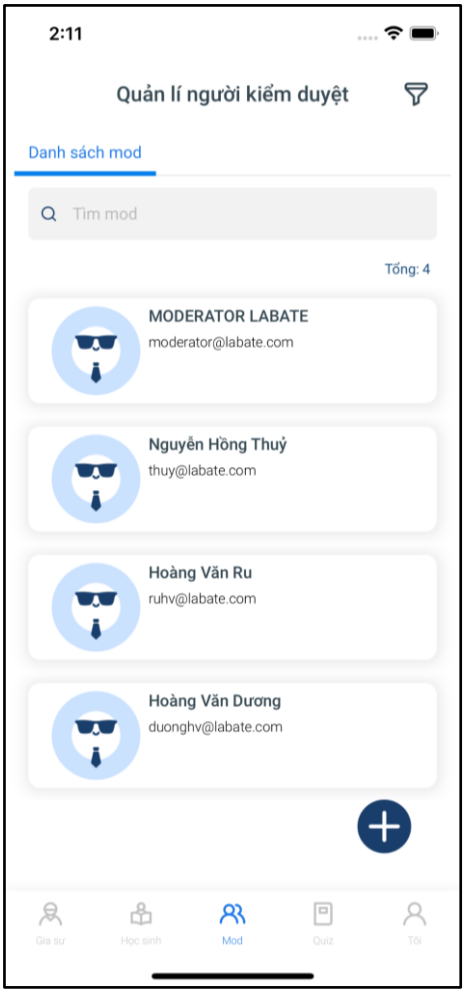
Function Trigger:

- Navigation Path: Home ➔ Moderator Tabitem
- Frequency of Use: Medium

Function Description:

- Actors: Admin
- Purpose: User views the list of all moderators of the system
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: Moderator list returned
- Abnormal case: N/A

3.3.2 Add new moderator

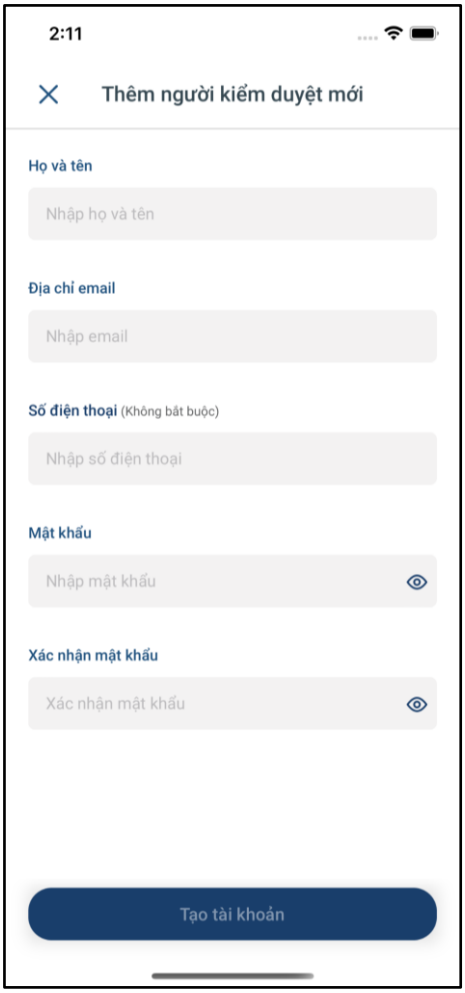
Function Trigger:

- Navigation Path: Home ➔ Moderator Tabitem ➔ Add new icon
- Frequency of Use: Medium

Function Description:

- Actors: Admin
- Purpose: Admin adds a new moderator for the system
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: A new moderator is added successfully
- Abnormal case: Wrong email format

3.4 User profile

3.4.1 View mentor profile

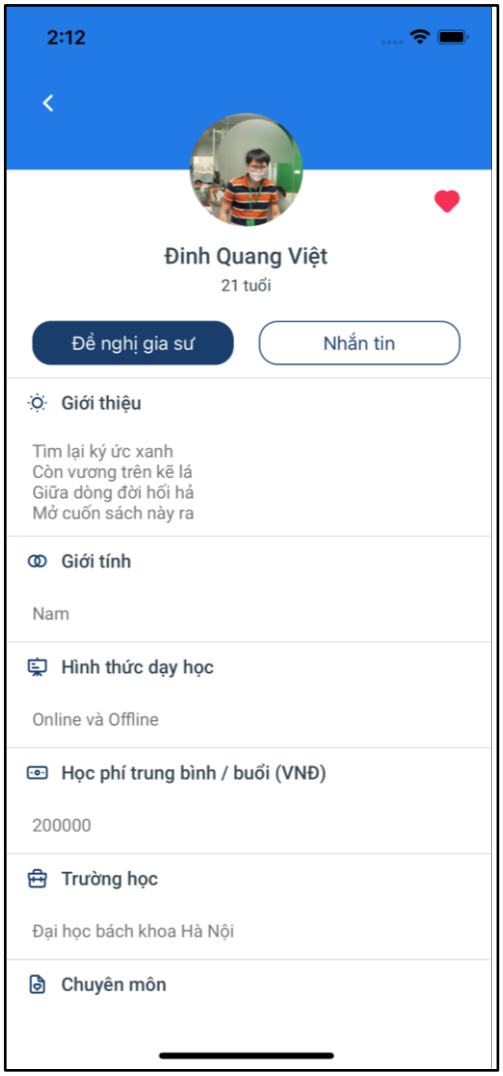
Function Trigger:

- Navigation Path: Home ➔ Profile Tab Item
- Frequency of Use: High

Function Description:

- Actors: All
- Purpose: User views mentor current information on the system, including: avatar, about, expertise,...
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: Mentor information is returned
- Abnormal case: N/A

3.4.2 View student profile

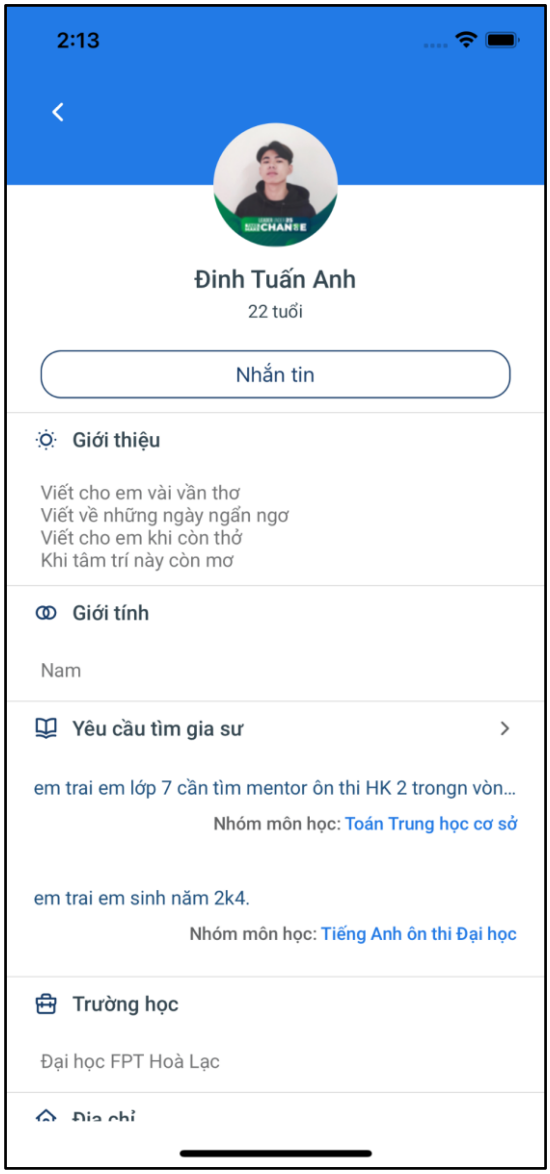
Function Trigger:

- Navigation Path: Home ➔ Profile Tab Item
- Frequency of Use: High

Function Description:

- Actors: All except Guest
- Purpose: User views mentor current information on the system, including: avatar, about, mentorship request,....
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: Student information is returned
- Abnormal case: N/A

3.4.3 View admin/moderator profile

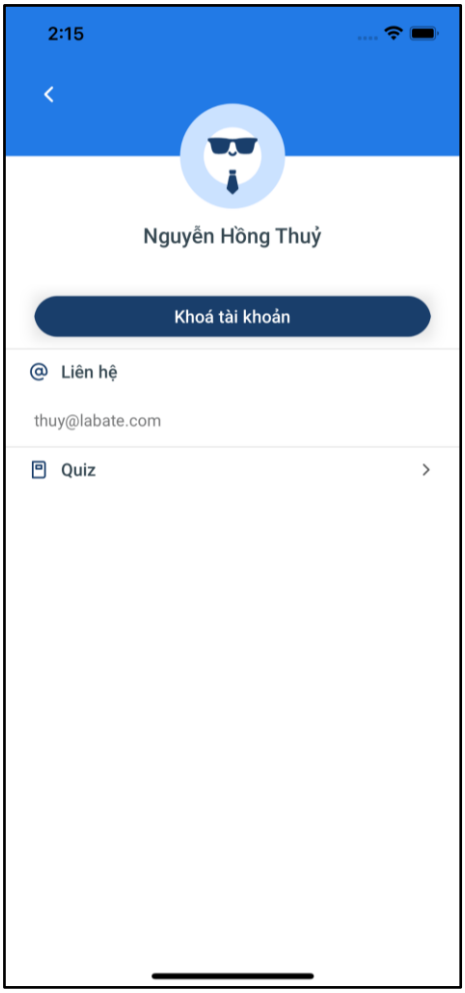
Function Trigger:

- Navigation Path: Home ➔ Profile Tab Item
- Frequency of Use: Medium

Function Description:

- Actors: Admin, Moderator
- Purpose: Moderator/Admin views the profile information including name, email, my quiz
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: Student information is returned
- Abnormal case: N/A

3.4.4 Edit profile

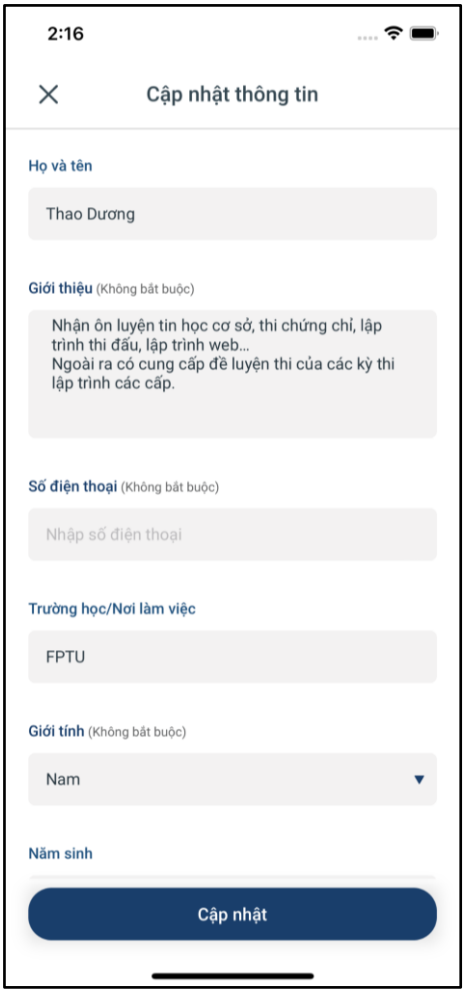
Function Trigger:

- Navigation Path: View my profile ➔ Edit button
- Frequency of Use: High

Function Description:

- Actors: All except Guest
- Purpose: User wants to edit/update his/her information
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: User updates his information successfully
- Abnormal case: Inputs exceed length limit

3.4.5 View favourite list

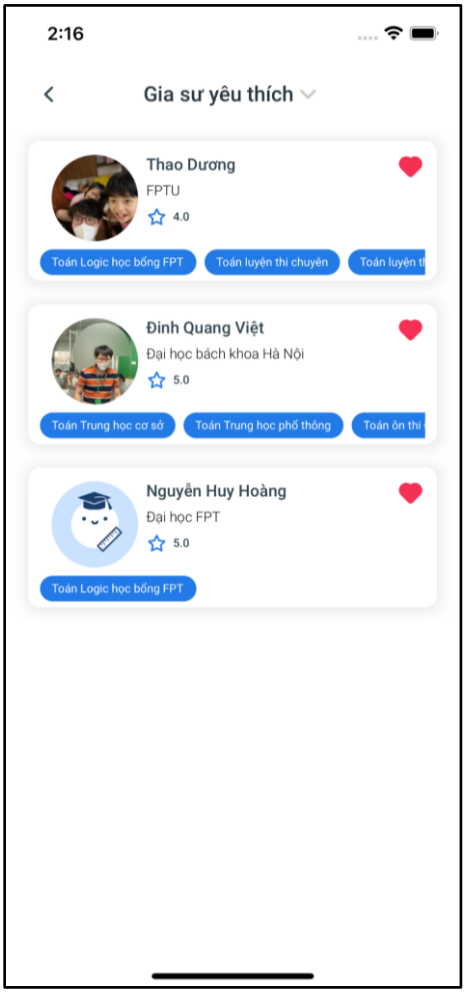
Function Trigger:

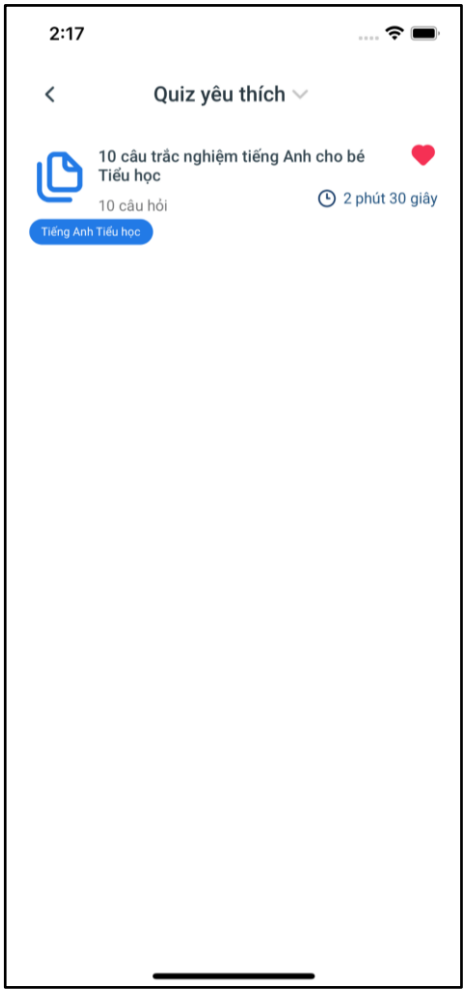
- Navigation Path: Profile ➔ View favourite list
- Frequency of Use: High

Function Description:

- Actors: Mentor, Student
- Purpose: View the list of liked mentors/ quizzes of a mentor/student
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:





Function details:

- Normal case: The list of quizzes / mentors is returned
- Abnormal case: N/A

3.5 Manage Mentor

3.5.1 Search mentor

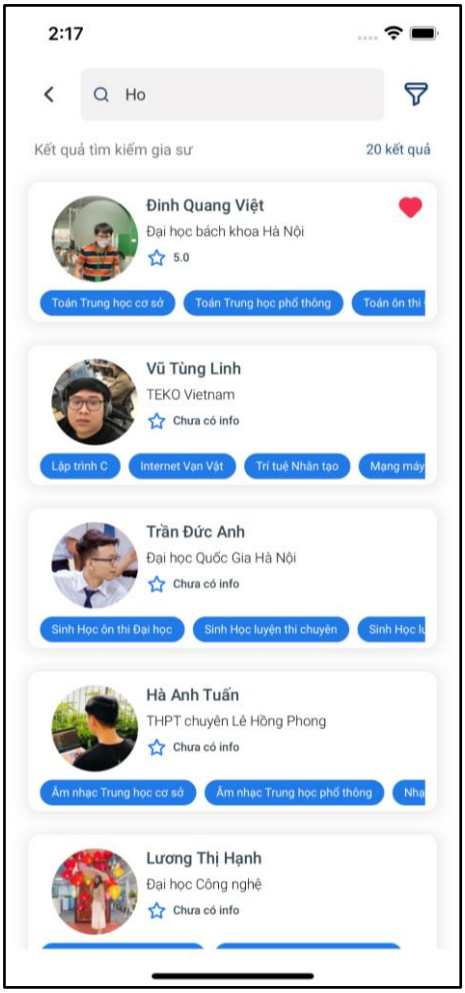
Function Trigger:

- Navigation Path: Home ➔ Search Mentor search field
- Frequency of Use: High

Function Description:

- Actors: All
- Purpose: Search for a mentor
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: Found mentors returned
- Abnormal case: N/A

3.5.2 View mentor list

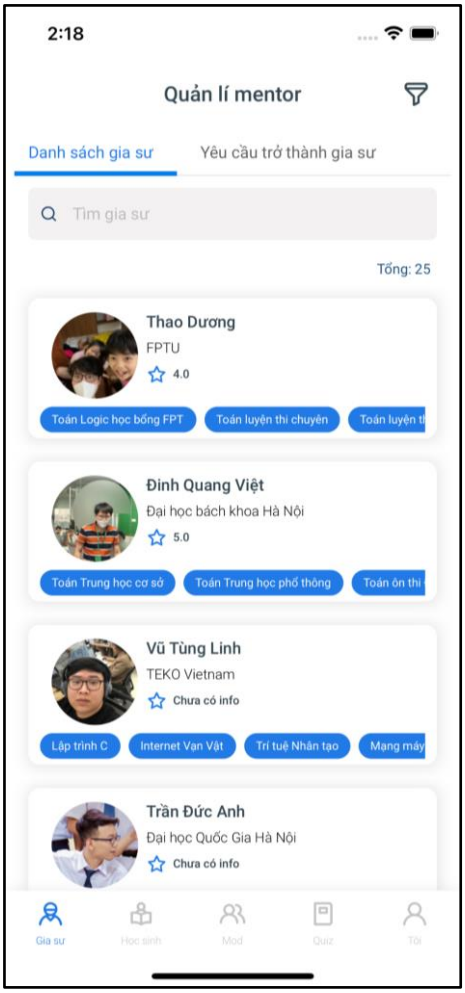
Function Trigger:

- Navigation Path: Login ➔ View mentor list
- Frequency of Use: Medium

Function Description:

- Actors: Admin, Moderator
- Purpose: View the list of all mentors of the system
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: Mentor list is returned
- Abnormal case: N/A

3.5.3 View become mentor request list

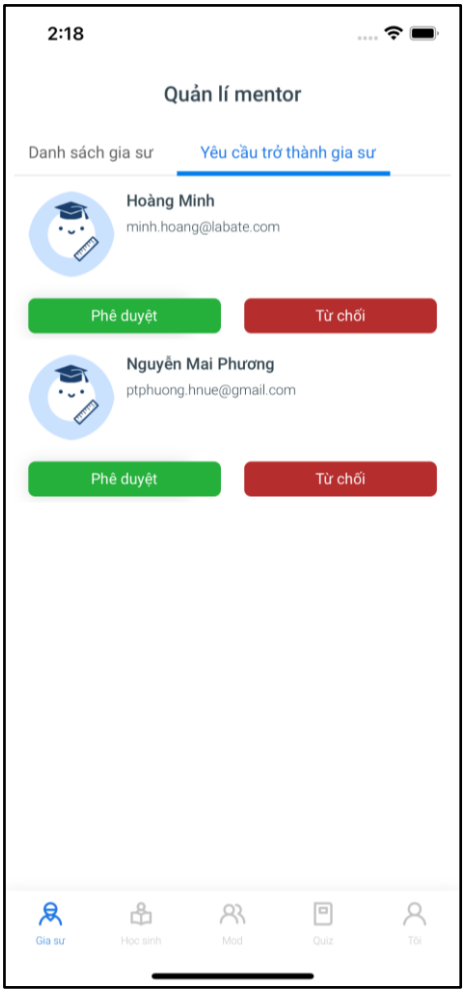
Function Trigger:

- Navigation Path: Login ➔ View become mentor request list
- Frequency of Use: Medium

Function Description:

- Actors: Admin, Moderator
- Purpose: View the list of all become mentor requests
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: Become mentor request list returned
- Abnormal case: N/A

3.5.4 View top mentor list

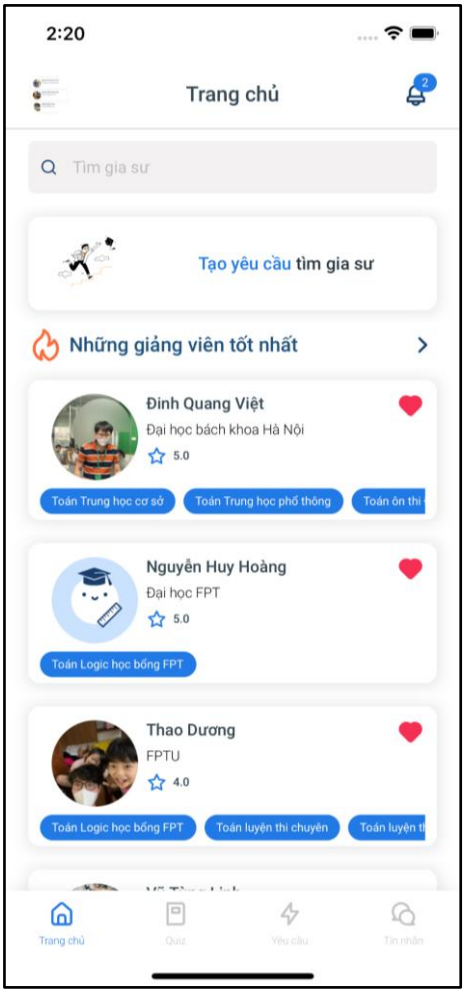
Function Trigger:

- Navigation Path: Login ➔ Home
- Frequency of Use: Medium

Function Description:

- Actors: Student, Guest
- Purpose: View the top 10 mentors of the system
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: User can see the list of top 10 mentors
- Abnormal case: N/A

3.6 Manage Student

3.6.1 View student list

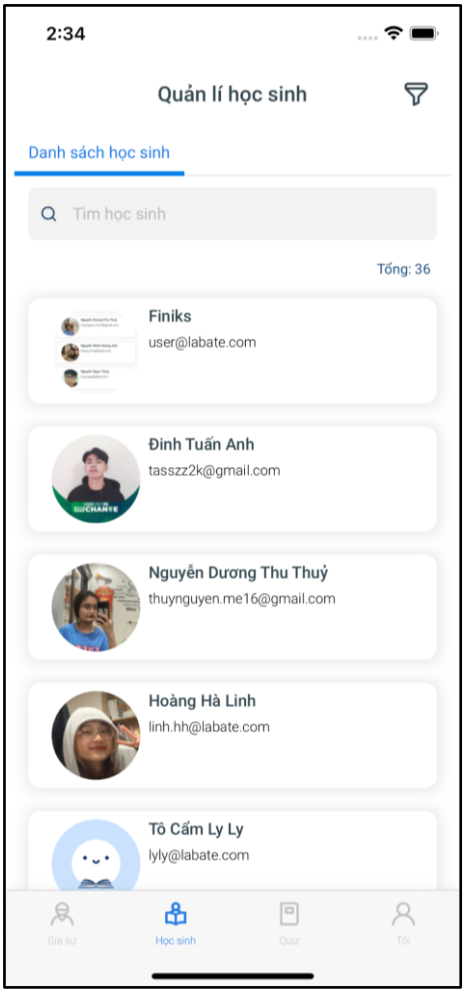
Function Trigger:

- Navigation Path: Login ➔ Student management TabItem

Function Description:

- Actors: Admin, Moderator
- Purpose: View the list of all students of the system, search for a student
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: Found mentors returned
- Abnormal case: N/A

3.7 Contact

3.7.1 Conversation List

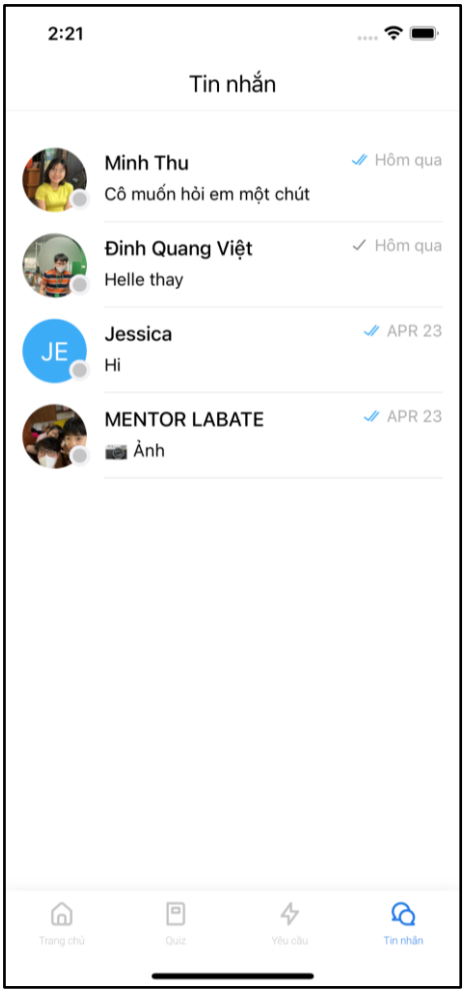
Function Trigger:

- Navigation Path: Home ➔ Chat icon

Function Description:

- Actors: Mentor, Student
- Purpose: View the list of all current conversations
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The list of all chats returned
- Abnormal case: N/A

3.7.2 Chat detail

Function Trigger:

- Navigation Path: Chat list ➔ Chat detail

Function Description:

- Actors: Mentor, Student
- Purpose: View the detail conversation between a mentor and a student, send new message, send booking questions
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:

Function details:

- Normal case: User sees the current chat and sends new message successfully
- Abnormal case: N/A

3.8 Manage Mentorship Request

3.8.1 Create mentorship request

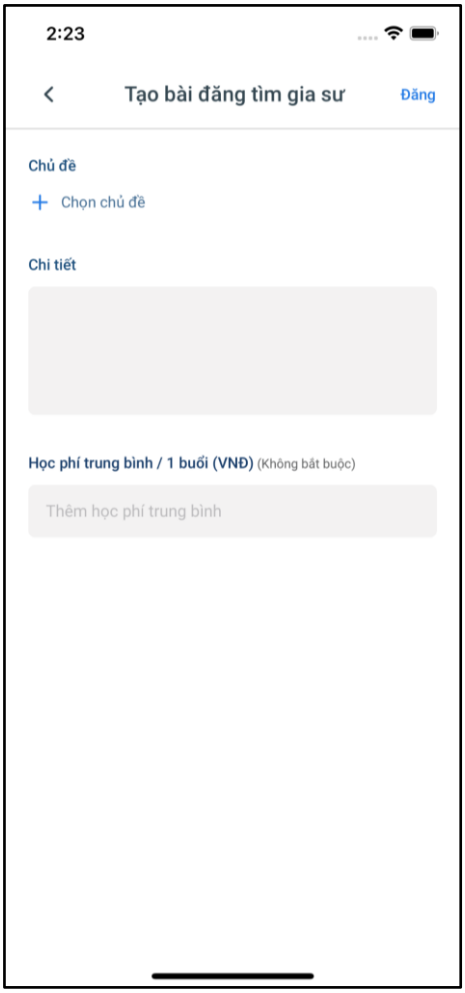
Function Trigger:

- Navigation Path: Profile ➔ Create Request Icon

Function Description:

- Actors: Student
- Purpose: Student creates a new mentorship request
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The request is added successfully and added to the on-going request list
- Abnormal case: N/A

3.8.2 View on-going mentorship request list

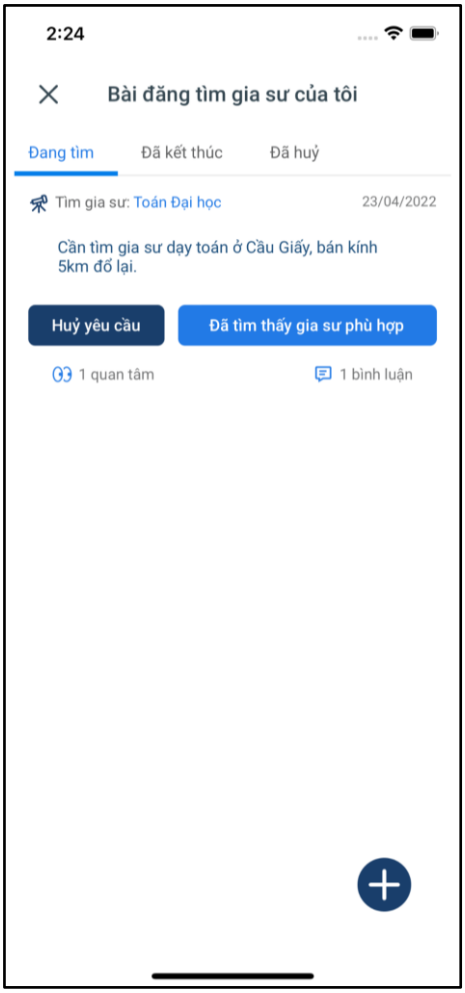
Function Trigger:

- Navigation Path: Profile ➔ Mentorship Request ➔ On-going tab

Function Description:

- Actors: All except Guest
- Purpose: View the list of all on-going mentorship request of a student
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The on-going mentorship request list returned
- Abnormal case: N/A

3.8.3 View completed mentorship request list

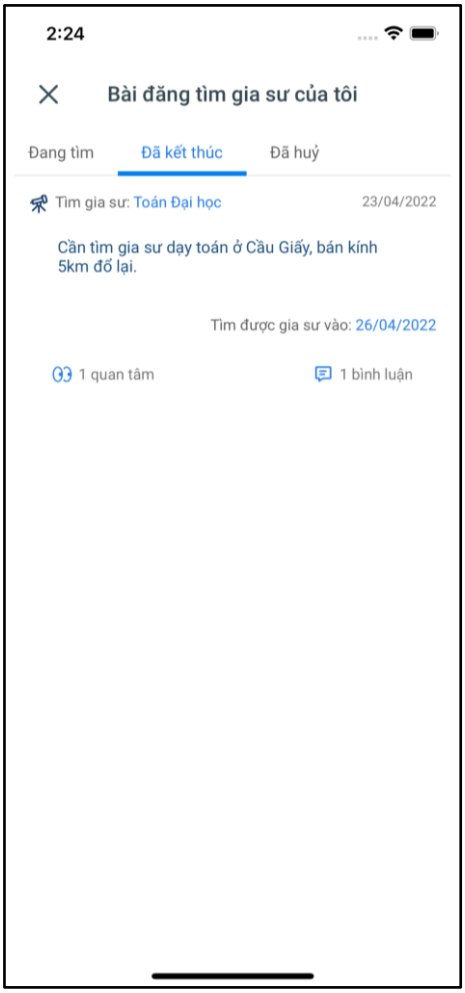
Function Trigger:

- Navigation Path: Profile ➔ Mentorship Request ➔ completed tab

Function Description:

- Actors: All except Guest
- Purpose: View the list of all completed mentorship request of a student
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The completed mentorship request list returned
- Abnormal case: N/A

3.8.4 View detail booking mentorship request

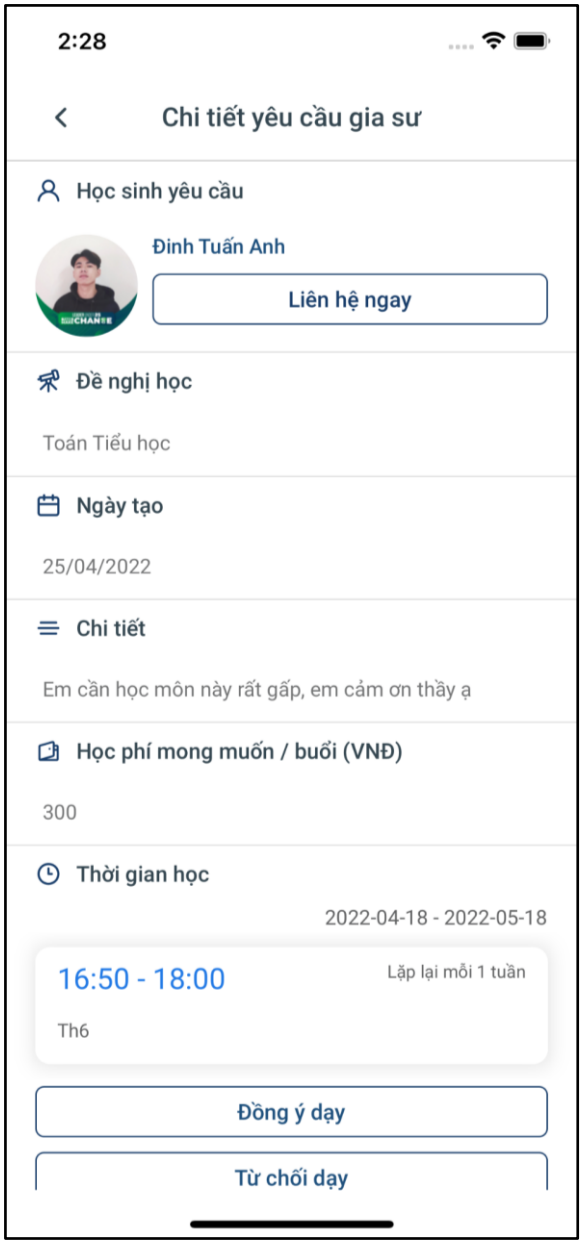
Function Trigger:

- Navigation Path: View all booking mentorship request list/ View all student's booking mentorship request list➔ Click one

Function Description:

- Actors: Student, Mentor
- Purpose: View the detailed booking mentorship request. Then, if the user is a mentor, can decide to approve/reject the request
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The detailed information of the request is returned; Mentor can approve/reject the request
- Abnormal case: N/A

3.8.5 View latest mentorship request list

Function Trigger:

- Navigation Path: Home ➔ Request TabItem

Function Description:

- Actors: Student
- Purpose: View the list of all current booking mentorship requests to mentors
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:

Function details:

- Normal case: The list of all booking mentor requests is returned
- Abnormal case: N/A

3.8.6 View all student's booking mentorship request list

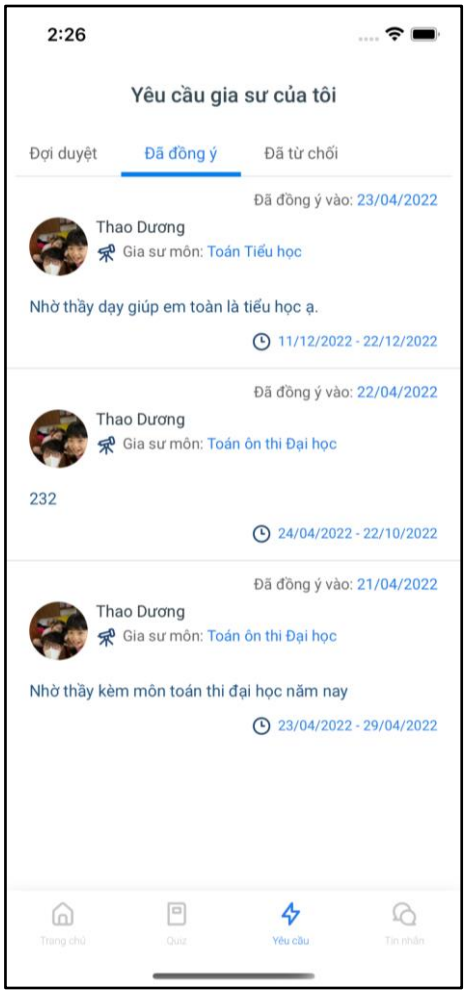
Function Trigger:

- Navigation Path: Home ➔ Request TabItem

Function Description:

- Actors: Student
- Purpose: View the list of all current booking mentorship requests to mentors
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The list of all booking mentor requests is returned
- Abnormal case: N/A

3.8.7 View all booking mentorship request list

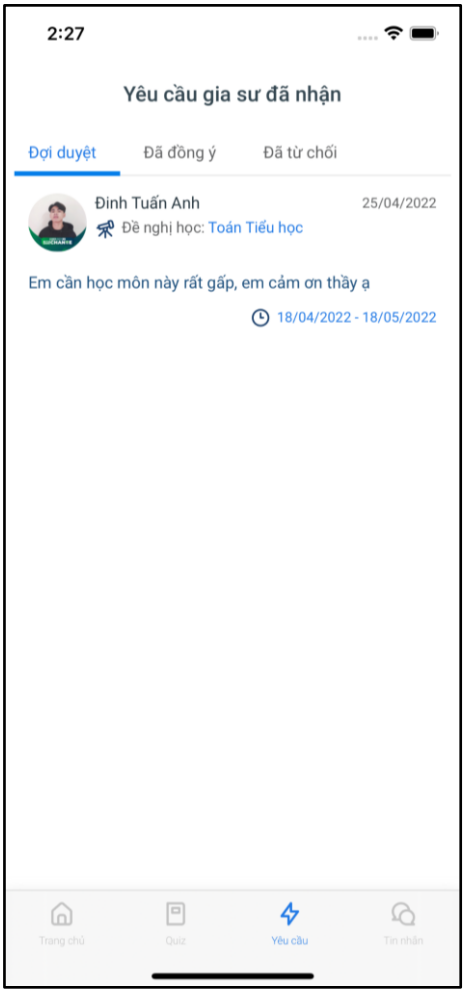
Function Trigger:

- Navigation Path: Home ➔ Request TabItem

Function Description:

- Actors: Mentor
- Purpose: Mentors view the list of all requests that they receive from students
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The request list is returned successfully
- Abnormal case: N/A

3.8.8 Book mentorship

Function Trigger:

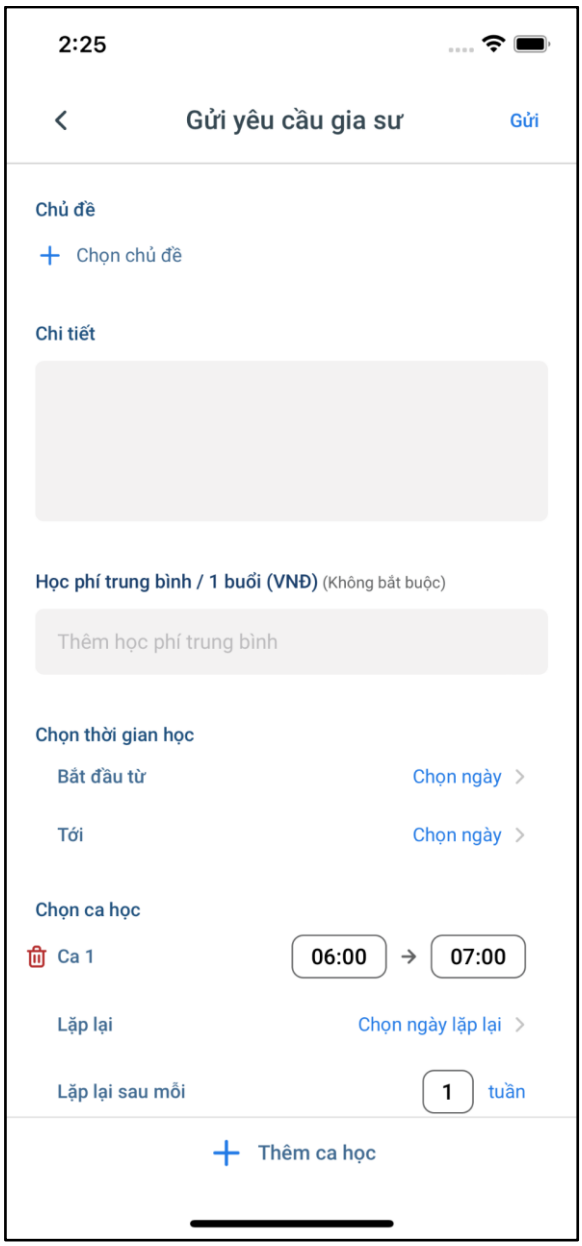
- Navigation Path: Mentor Profile ➔ Send request button

Function Description:

- Actors: Student

- Purpose: Student sends booking mentorship request to a mentor
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The request is sent to the mentor successfully
- Abnormal case: N/A

3.9 Feedback

3.9.1 View feedback list

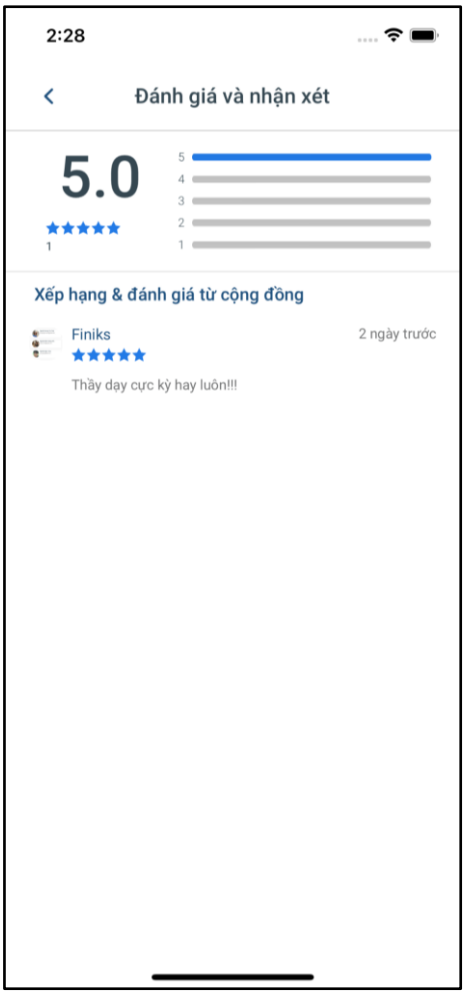
Function Trigger:

- Navigation Path: Mentor profile ➔ View feedback list

Function Description:

- Actors: All
- Purpose: View the feedback list that a mentor receives and the total point
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The feedback list and total point returned
- Abnormal case: N/A

3.9.2 Feedback

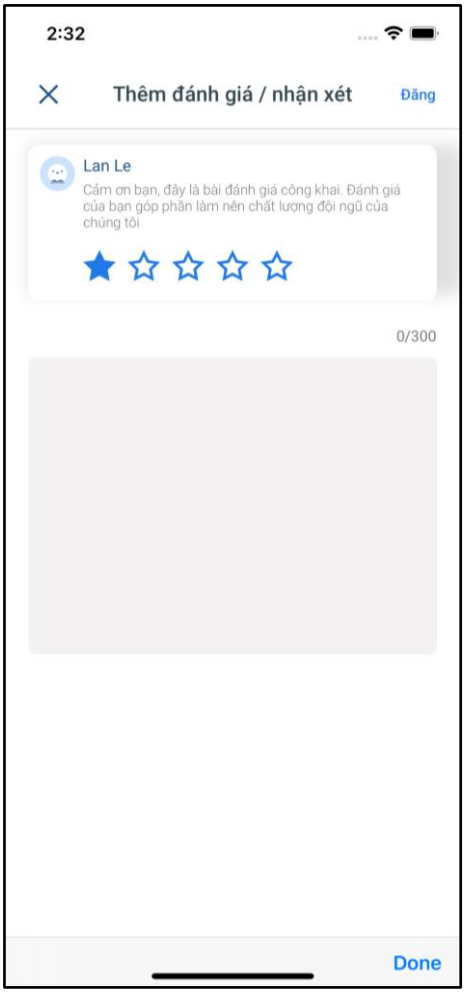
Function Trigger:

- Navigation Path: Mentor profile ➔ View feedback list ➔ Add feedback button

Function Description:

- Actors: Student
- Purpose: Student leaves feedback for the mentor
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The feedback is sent successfully
- Abnormal case: N/A

3.10 Manage Schedule

3.10.1 View detail schedule

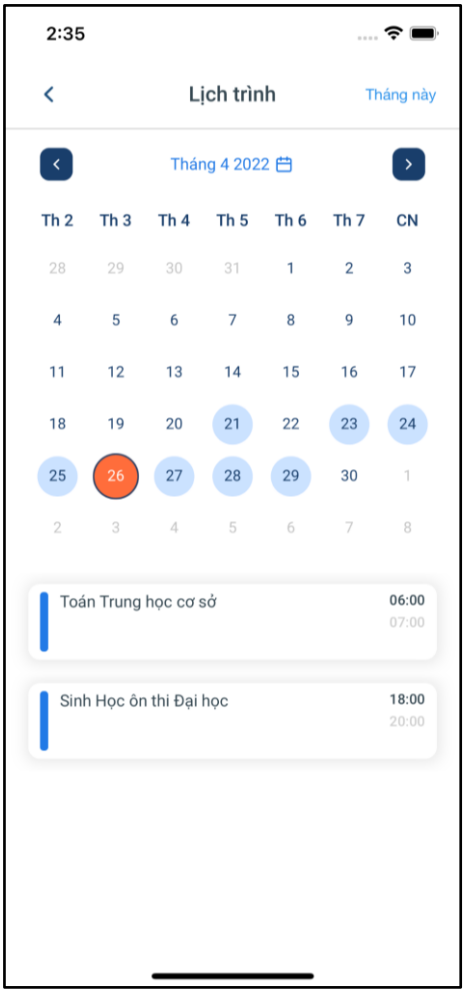
Function Trigger:

- Navigation Path: Profile ➔ View detail schedule

Function Description:

- Actors: All
- Purpose: View my detailed schedule / other person's detailed schedule
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The schedule information is returned and filled correctly in the calendar UI.
- Abnormal case: N/A

3.11 Manage Quiz

3.11.1 View quiz list

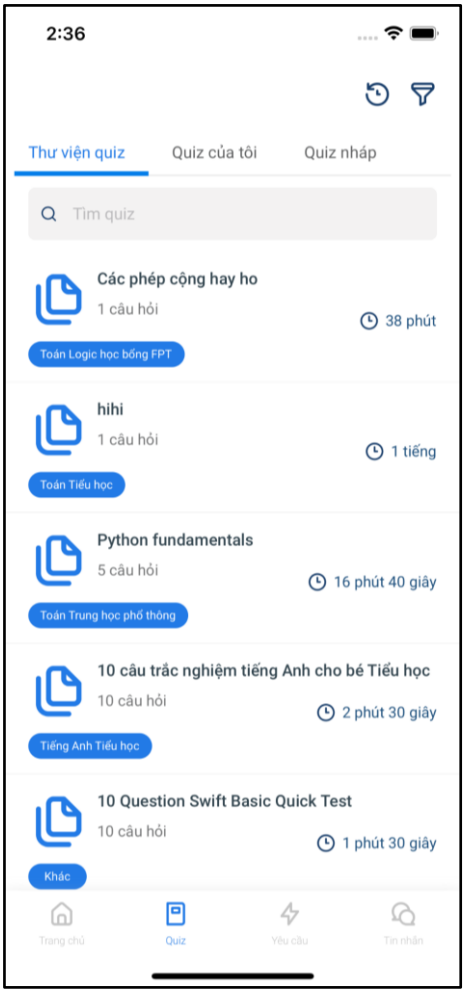
Function Trigger:

- Navigation Path: Login ➔ Quiz TabItem

Function Description:

- Actors: All
- Purpose: View the quiz library of the system, users can search for a quiz, view quiz taking history (on role), add new quiz (on role),...
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The quiz list returned
- Abnormal case: N/A

3.11.2 View quiz overview

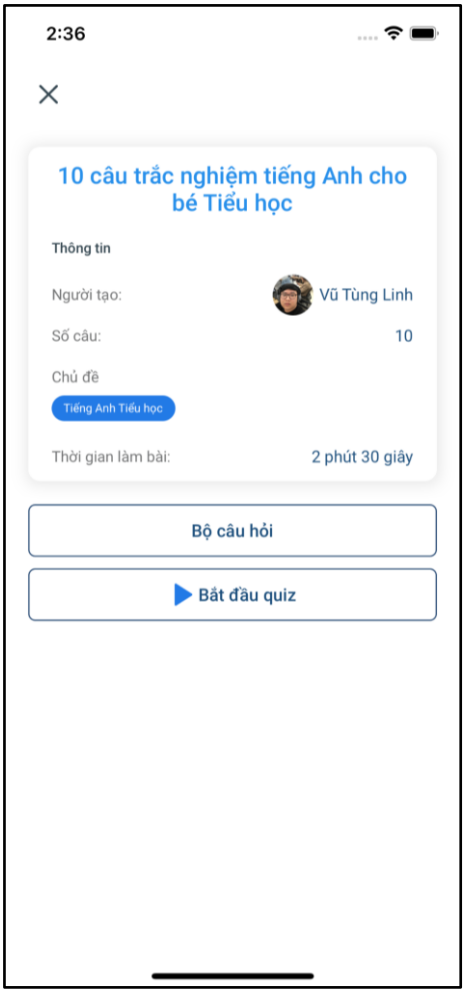
Function Trigger:

- Navigation Path: View quiz list ➔click on a quiz

Function Description:

- Actors: All
- Purpose: View the overview information of a quiz
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The quiz overview returned
- Abnormal case: N/A

3.11.3 View quiz detail

Function Trigger:

- Navigation Path: Quiz overview ➔ View quiz detail

Function Description:

- Actors: All
- Purpose: View the questions in the quiz
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:

Function details:

- Normal case: All questions of the quiz returned
- Abnormal case: N/A

3.11.4 Take quiz

Function Trigger:

- Navigation Path: View quiz overview ➔ Take quiz

Function Description:

- Actors: All
- Purpose: Users take the quiz
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:

Function details:

- Normal case: User gives answer to the current question successfully and goes to the next question
- Abnormal case: Timer expires

3.11.5 View quiz taking history

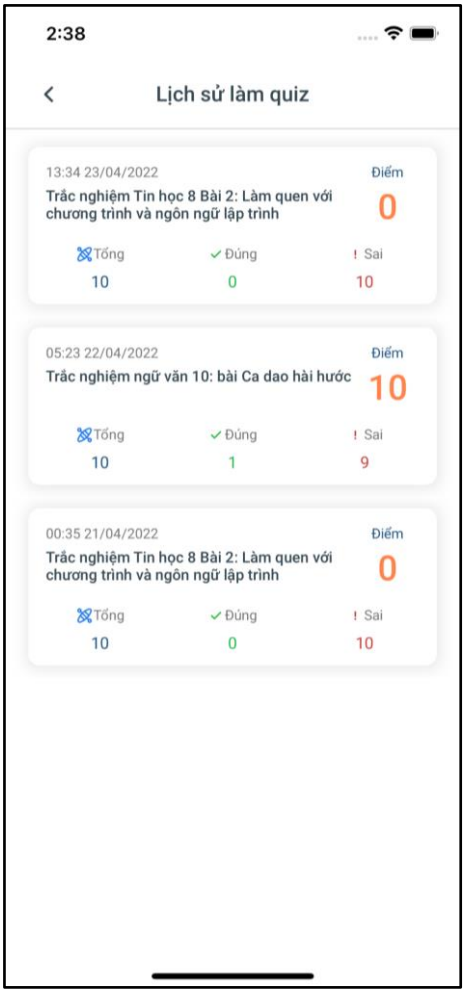
Function Trigger:

- Navigation Path: View quiz list ➔ View quiz taking history

Function Description:

- Actors: All except Guest
- Purpose: Users see all the results of their previous quizzes
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The quiz taking history list returned
- Abnormal case: N/A

3.11.6 Show quiz detail result

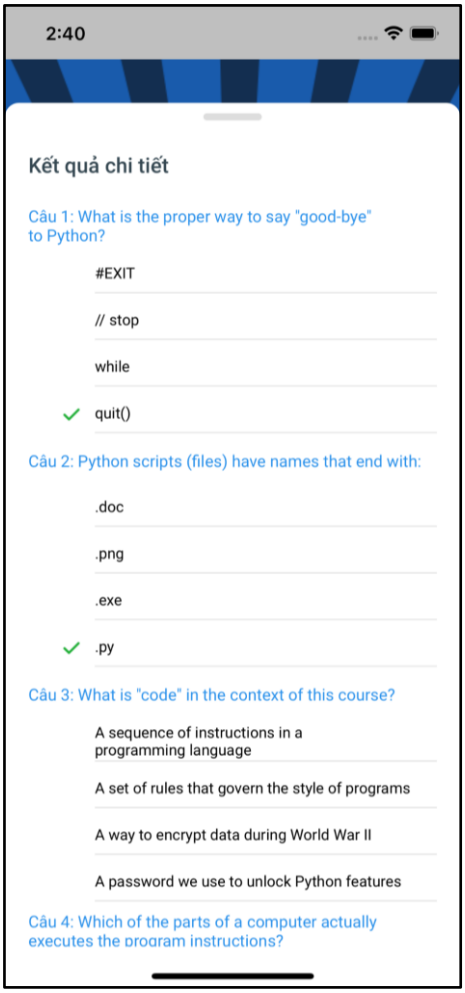
Function Trigger:

- Navigation Path: View quiz list ➔ View quiz taking history

Function Description:

- Actors: All except Guest
- Purpose: Users see all the results of their previous quizzes
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The quiz taking history list returned
- Abnormal case: N/A

3.11.7 View my quiz list

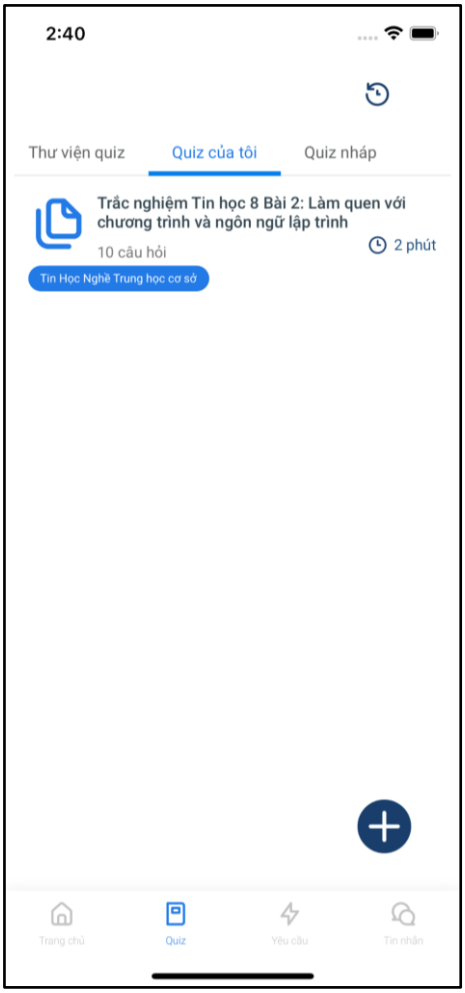
Function Trigger:

- Navigation Path: Profile ➔ My Quiz list

Function Description:

- Actors: Mentor, Moderator, Admin
- Purpose: View the list of my quizzes
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: My quiz list is returned
- Abnormal case: N/A

3.11.8 Edit quiz

Function Trigger:

- Navigation Path: View quiz detail ➔ Edit quiz

Function Description:

- Actors: Mentor, Moderator, Admin
- Purpose: Edit the quiz: add new quiz, update correct answer, remove a question from quiz,...
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:

Function details:

- Normal case: The quiz is updated successfully
- Abnormal case: N/A

3.11.9 Edit quiz overview

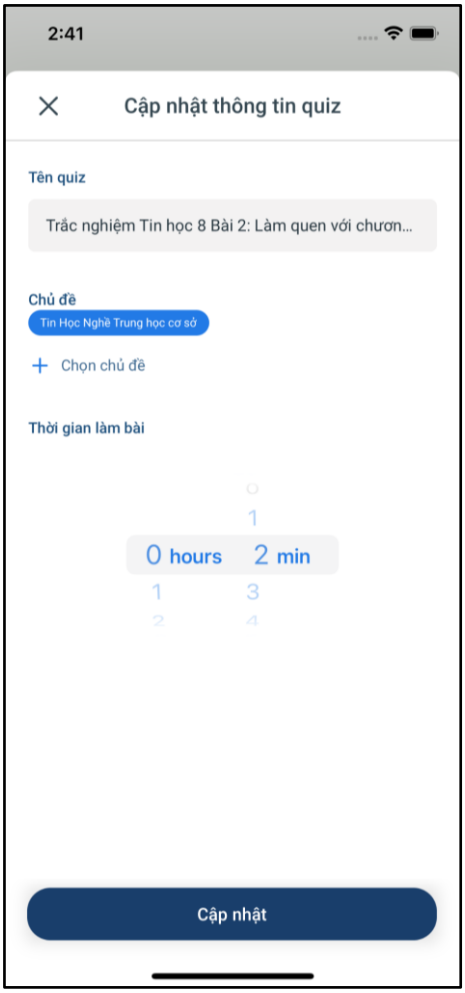
Function Trigger:

- Navigation Path: View quiz detail ➔ Edit quiz overview

Function Description:

- Actors: Mentor, Moderator, Admin
- Purpose: Update the quiz overview information: quiz title, duration of each question,
- Data processing: Data wrapped as a request through a secure connection

Screen Layout:



Function details:

- Normal case: The quiz overview is updated successfully
- Abnormal case: N/A

4. Non-Functional Requirements

4.1 External Interfaces

4.1.1 User Interface

- All pages of the Query-able Data Repository (QDR) UI should employ an organizational method that separates the major sections of the application for easy access. The user should be able to determine the sections of the QDR UI currently being viewed using visual cues, such as bold fonts, arrows, and highlighting.
- The application's major sections should include the following pages: Help, Introduction, Contact Information.
- The user must be presented with a login page when accessing any page, expect a landing or front page, as an anonymous user.
- Use micro animation to hide less important content.
- All pages should have a bottom navigation bar.
- Administrative tasks must have a UI. The UI for administrative tasks must include the ability to manage users, manage permissions, manage data templates, manage group assignments, and manage query templates.
- Running queries must have a UI. The UI for running queries may include the ability to query the database using query templates defined by the administrator.
- All pages should use a consistent visual theme. Pop-ups displaying notifications, error messages, or warnings should use the same theme and template as the rest of the application.
- The application support Vietnamese only.
- All password text fields should have a hide/show password icon to hide/show password which user entered.

4.1.2 Hardware Interface

- All server-side components must execute on server-class computers.
- All client-side components must execute on workstation-class and personal-class computers.

4.1.3 Software Interface

- The software interface should follow the Model-View-Controller (MVC) model for rendering and modeling data objects.
- The interface must be able to connect to a database to store XML schema defined using XSD and data streams.
- Source and destination formats for data must include XML and may also include: Extensible Stylesheet Language Transformation (XSLT), JavaScript Object Notation (JSON), Comma Separated Value (CSV), and American Standard Code for Information Interchange (ASCII).

4.2 Quality Attributes

4.2.1 Performance Requirements

- UI change time when user ticks on buttons/checkbox/switch or writes on textbox does not exceed 0.5s.
- Waiting time to submit 1 quiz and receive result report does not exceed 5s.
- Waiting time to post or update a new quiz does not exceed 3s.
- Waiting time to receive a response of any filter does not exceed 3s.
- An empty state (and especially an error state) should not be the end of the world, instead it will tell the user exactly what action is required so that the content can appear and the application will work properly.

4.2.2 Reliability Requirements

- The software system should undergo feature testing, load testing, and regression testing prior to release and/or deployment.

4.2.3 Security Requirements

- Ensure security level on the Internet: use https protocol; code compliance when POST/GET.
- A user MUST authenticate to the device using a passcode containing a minimum of 8 characters and alphanumeric.
- Account will be locked after a maximum of 6 failed login entry attempts.
- Access to enterprise resources MUST be restricted, based on the user access rights.

5. Requirement Appendix

5.1 Business Rules

ID	Business Rule Definition
BR-01	Email is a unique and valid format.
BR-02	Phone number is not empty, unique, and has ten digits.
BR-03	Password must have at least eight characters and be alphanumeric.
BR-04	The new password must match the confirmed password.
BR-05	Name is not empty and is less than 51 characters.
BR-06	The app can only be active when it has connected to the internet and server.
BR-07	The list of mentors is sorted by rating in default
BR-08	School/Workplace, year of birth is not empty. Expertise is not empty when registering as a mentor.
BR-09	The user must agree to the Terms & Conditions of the app to register an account
BR-10	OTP is valid for 5 minutes.
BR-11	The maximum size of the picture is 5MB
BR-12	The student list is sorted by created date in default
BR-13	Inactive account cannot log in the system
BR-14	Admin/student/moderator can search mentor by name, subject, email, phone, location (province to the district only), average fee, rating
BR-15	When the user signs out, the access token is deleted
BR-16	Admin/Mod cannot take quiz
BR-17	Guests cannot see quiz history.
BR-18	Every user has one of the following roles: student, mentor, moderator, or an administrator.
BR-19	The administrator has the highest privilege and cannot be changed by others.
BR-20	The admin can remove or update any moderator.
BR-21	The moderator cannot be changed by other moderators.
BR-22	Any mentor request has three states: ‘PENDING’, ‘ACCEPTED’, ‘REJECTED’.

BR-23	Any moderator can active or inactive user.
BR-24	An inactive user Cannot log in to the system.
BR-25	The list of latest booking mentorship requests is matched with the mentor's skill
BR-26	Student can send only one mentor request at one time
BR-27	If the booking is successful, the booking will be automatically added to the mentor and the student's schedule.
BR-28	The moderator list is sorted by created date in default
BR-29	Delete in the system is logic delete
BR-30	The list of booking mentorship requests is sorted desc by created date in default

5.2 Common Requirements

5.2.1. Apple App Store

- iTunes Connect Account access
- Company/Entity Name
- App Store app listing name: Choose a simple, memorable name that is easy to spell and hints at what the app does. Be distinctive. Avoid names that use generic terms or are too similar to existing app names. An app name can be up to 30 characters long.
- Search keywords: Choose keywords based on words that the audience will use to find a similar app. Be specific when describing the app's features and functionality to help the search algorithm surface app in relevant searches. Consider the trade-off between ranking well for less common terms versus ranking lower for popular terms. Popular, functional terms, such as "jobs" or "social", may drive a lot of traffic, but are highly competitive in the rankings. Less common terms drive lower traffic but are less competitive.

Keywords are limited to 100 characters total, with terms separated by commas and no spaces. (Note that can use spaces to separate words within keyword phrases. For example property, houses, real estate.) Maximize the number of words that fit in this character limit by avoiding the following:

- Plurals of words that you've already included in singular form
- Names of categories or the word "app"
- Duplicate words
- Special characters — such as # or @ — unless they're part of brand identity. Special characters don't carry extra weight when users search for apps.

Improper use of keywords is a common reason for App Store rejections. Do not use the following in keywords:

- Unauthorized use of trademarked terms, celebrity names, and other protected words and phrases
- Terms that are not relevant to the app
- Competing app names
- Irrelevant, inappropriate, offensive, or objectionable terms.

In addition, keep in mind that promotional text doesn't affect the app's search ranking so it should not be used to display keywords.

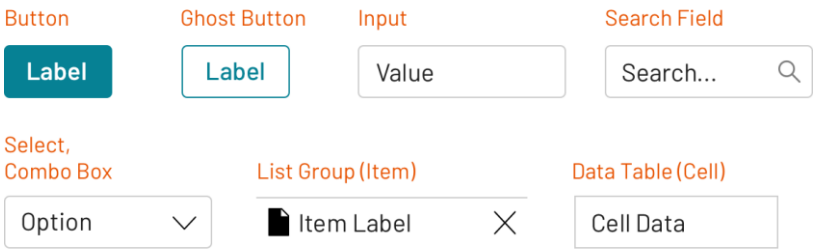
- Bundle id / SKU
- Demo account for reviewers
- Description: Provide an engaging description that highlights the features and functionality of the app. The ideal description is a concise, informative paragraph followed by a shortlist of main features. Let potential users know what makes the app unique and why they'll love it. Communicate in the tone of the brand, and use terminology the target audience will appreciate and understand. The first sentence of the description is the most important — this is what users can read without having to tap to read more. Every word counts, so focus on the app's unique features.
    - If choose to mention an accolade, Apple recommend putting it at the end of the description or as part of the promotional text. Don't add unnecessary keywords to the description in an attempt to improve search results. Also, avoid including specific prices in the app description. Pricing is already shown on the product page, and references within the description may not be accurate in all regions.
    - Can update the app's description when submit a new app's version. If sharing important updates more frequently, consider using promotional text instead.
- Support URL
- Marketing URL
- Privacy policy
- App category
- Copyright information
- Contact information
- App icon (1024×1024)
- App Store distribution provision profile
- App Store distribution code signing identity
- Screenshots (correct sizes based on devices)

5.2.2. General Assets

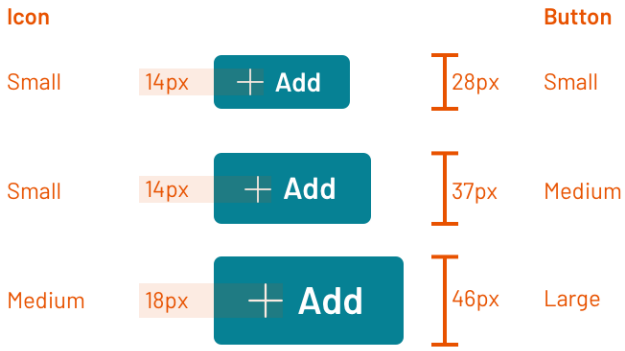
- Icons of supported sizes (iOS: @1x @2x @3x images)
- Splash screens of recommended sizes (iOS: @1x @2x @3x images)
- Screenshots in the correct dimensions and required languages
- App descriptions in required languages
- Search keywords in required languages
- List of supported devices and OS versions

5.2.3. Size in design systems

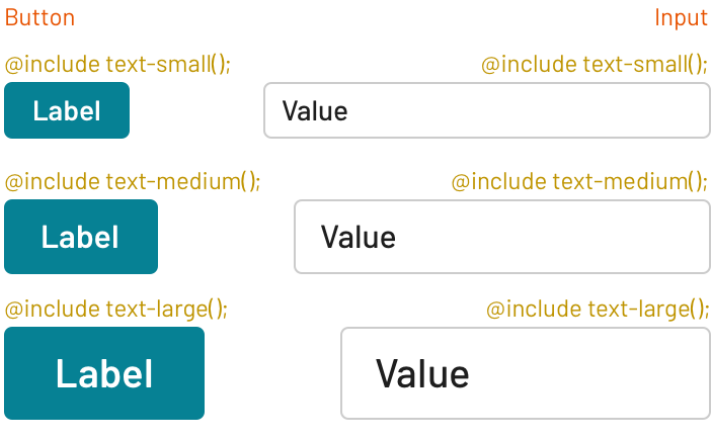
- Small: high-density displays for frequently used interfaces that integrate considerable data and enable diverse tasks.
- Medium: a default for many motifs and long-form reading experiences for any range of consumer, business, and internal apps and content.
- Large: content-rich marketing sites, promotions, and one-time data entry for onboarding, setup, and other simple flows.



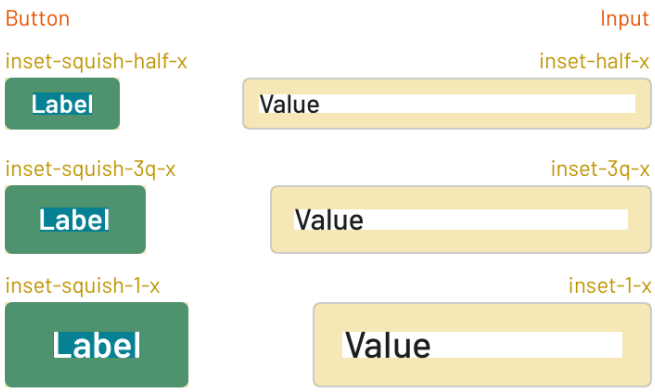
Common components across which height is unified



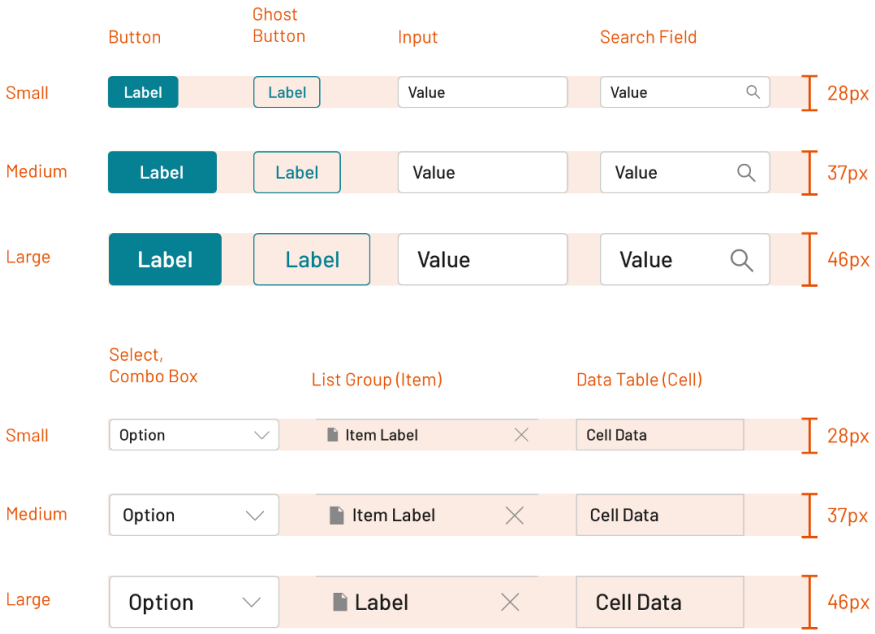
Mapping icon size to button size



Button and Input with associated mixings used for typography



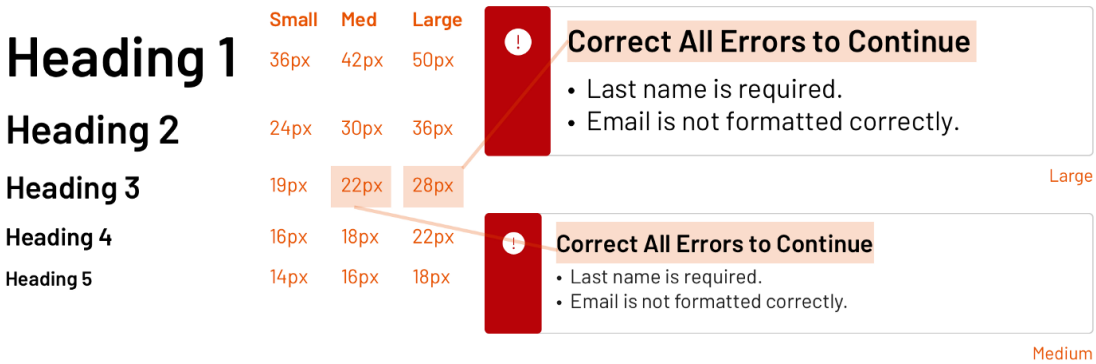
Button and Input with associated space tokens



Grid of components by size

Component-specific extensions and overrides:

- Adjusting an inset's padding-left or -right due to the presence of an icon to the left or right of a button label or list item.
- Zeroing padding-left and padding-right for outer data table cells (see Morningstar Design System).
- Adding a border around a form control or border-top to a list item, reducing or expanding an inset's padding-top and/or -bottom.



Heading level sets per component size

5.3 Application Message List

#	Code	Type	Context	Content
0	MSG-00	Notification	Cannot connect to the server	*Không thể kết nối đến máy chủ*
1	MSG-01	Notification	Device is not connected the internet	*Không có kết nối Internet*

2	MSG-02	Notification	Email is duplicated	*Email đã được đăng ký, vui lòng nhập email khác*
3	MSG-03	Notification	Invalid image format	*Vui lòng chọn ảnh thuộc những định dạng sau: bmp|jpg|gif|png|svg|jpeg|raw|cr2|nef|orf|sr2*
4	MSG-04	Notification	Update Profile Successfully	*Cập nhật thông tin thành công.*
5	MSG-05	Notification	The confirm password does not match	*Mật khẩu xác nhận không đúng, vui lòng nhập lại.*
6	MSG-06	Notification	Name/Email/Password is not valid	*Định dạng không đúng, vui lòng nhập lại.*
7	MSG-07	Notification	Register successfully	*Tạo tài khoản thành công.*
8	MSG-08	Confirmation	Reject registered mentor	*Hủy yêu cầu trở thành gia sư?*
9	MSG-09	Confirmation	Approve registered mentor	*Cho phép người dùng trở thành gia sư?*
10	MSG-10	Notification	Student feedback successfully	*Phản hồi thành công.*
11	MSG-11	Notification	When publish a quiz	*Quiz của bạn đã được hiển thị công khai*
12	MSG-12	Notification	When publish a quiz that total ques is zero,	*Vui lòng nhập ít nhất một bộ câu hỏi*
13	MSG-13	Notification	Login fail due to incorrect email or password, the account will be blocked if login invalid more than 5 times	*Đăng nhập không thành công do sai thông tin đăng nhập, tài khoản sẽ bị khóa nếu đăng nhập không thành công quá 5 lần*
14	MSG-14	Notification	OTP is incorrect	*OTP không chính xác.*
15	MSG-15	Notification	Password is not valid	*Mật khẩu phải có ít nhất 8 ký tự, bao gồm cả chữ cái và số.*
16	MSG-16	Notification	Account is inactive	*Yêu cầu của bạn không thể thực hiện do tài khoản hiện không hoạt động.*
17	MSG-17	Notification	Change password successfully	*Thay đổi mật khẩu thành công.*
18	MSG-18	Notification	Password is incorrect	*Mật khẩu không chính xác.*

19	MSG-19	Notification	The avatar size is greater than 5MB	*Vui lòng chọn ảnh có kích cỡ không vượt quá 5MB.*
20	MSG-20	Confirmation	Confirm to delete quiz	*Bạn có thực sự muốn xóa quiz này?*
21	MSG-21	Notification	Delete moderator successfully	*Xóa điều hành viên thành công.*
22	MSG-22	Notification	Add moderator successfully	*Thêm điều hành viên thành công.*
23	MSG-23	Notification	Email is not valid	*Email không đúng định dạng*
24	MSG-24	Notification	Name is not valid	*Họ và tên chỉ chứa nhiều nhất 255 kì tự*
25	MSG-25	Notification	Invalid Token	*Phiên đăng nhập đã hết hạn*
26	MSG-26	Notification	Mentorship request is cancelled.	*Yêu cầu gia sư này đã bị hủy.*
27	MSG-27	Notification	Create mentorship request successfully.	*Yêu cầu của bạn đã được gửi.*
28	MSG-28	Confirmation	Confirm to exit when doing quiz	*Bạn có muốn thoát khỏi quiz?*
29	MSG-29	Confirmation	Confirm to save quiz as draft	*Lưu dưới dạng nháp?*
30	MSG-30	Notification	When do not fill in question yet	*Vui lòng nhập câu hỏi*
31	MSG-31	Notification	When do not fill in answer yet	*Vui lòng nhập các tùy chọn đáp án*
32	MSG-32	Notification	When do not choose any correct answer yet	*Vui lòng lựa chọn đáp án chính xác*
33	MSG-33	Notification	User has to agree to Terms & Conditions of MentoringMe	*Bạn cần đồng ý với Điều khoản & Điều kiện của chúng tôi để tiếp tục.*
34	MSG-34	Notification	Create mentor-finding post successfully.	*Đăng bài thành công.*
35	MSG-35	Notification	Register mentor successfully	*Bạn đã gửi đăng ký trở thành gia sư. Chúng tôi sẽ liên hệ với bạn trong thời gian sớm nhất.*

36	MSG-36	Confirmation	Confirm deactivate user	*Bạn có chắc chắn muốn khóa tài khoản người dùng này không?*
37	MSG-37	Confirmation	Confirm active user	*Bạn có chắc chắn muốn kích hoạt tài khoản người dùng này không?*
38	MSG-38	Confirmation	Confirm to logout account	*Bạn chắc chắn muốn đăng xuất chứ?*
39	MSG-39	Notification	Cancel a mentor-finding post successfully.	*Hủy bài đăng thành công.*
40	MSG-40	Notification	Login fail, please try again. {n} times	*Đăng nhập không thành công, xin hãy thử lại. Bạn đã thử {n} lần*
41	MSG-41	Notification	Mark a mentor-finding post completed successfully.	*Hoàn tất yêu cầu tìm gia sư thành công.*
42	MSG-42	Notification	Cancel a request that is accepted/rejected.	*Yêu cầu gia sư này đã được xử lý, không thể hủy*
43	MSG-43	Notification	The account is temporarily blocked due to invalid login more than 5 times	*Tài khoản hiện tạm bị khóa do đăng nhập không thành công quá 5 lần*
44	MSG-44	Notification	User not found	*Người dùng không tồn tại*
45	MSG-45	Notification	Category not found	*Chủ đề/chuyên môn phù hợp không tồn tại*
46	MSG-46	Notification	Quiz not found	*Không tìm thấy quiz phù hợp*
47	MSG-47	Notification	Mentorship not found	*Không tìm thấy yêu cầu tìm gia sư phù hợp*
48	MSG-48	Notification	Post not found	*Không tìm thấy bài đăng tìm gia sư phù hợp*
49	MSG-49	Notification	Mentorship request not found	*Không tìm thấy yêu cầu gia sư phù hợp*
50	MSG-50	Notification	Schedule not found	*Không tìm thấy lịch trình phù hợp*
51	MSG-51	Notification	Only user authentication is allowed to change password	*Chỉ khi xác thực người dùng, bạn mới được phép*

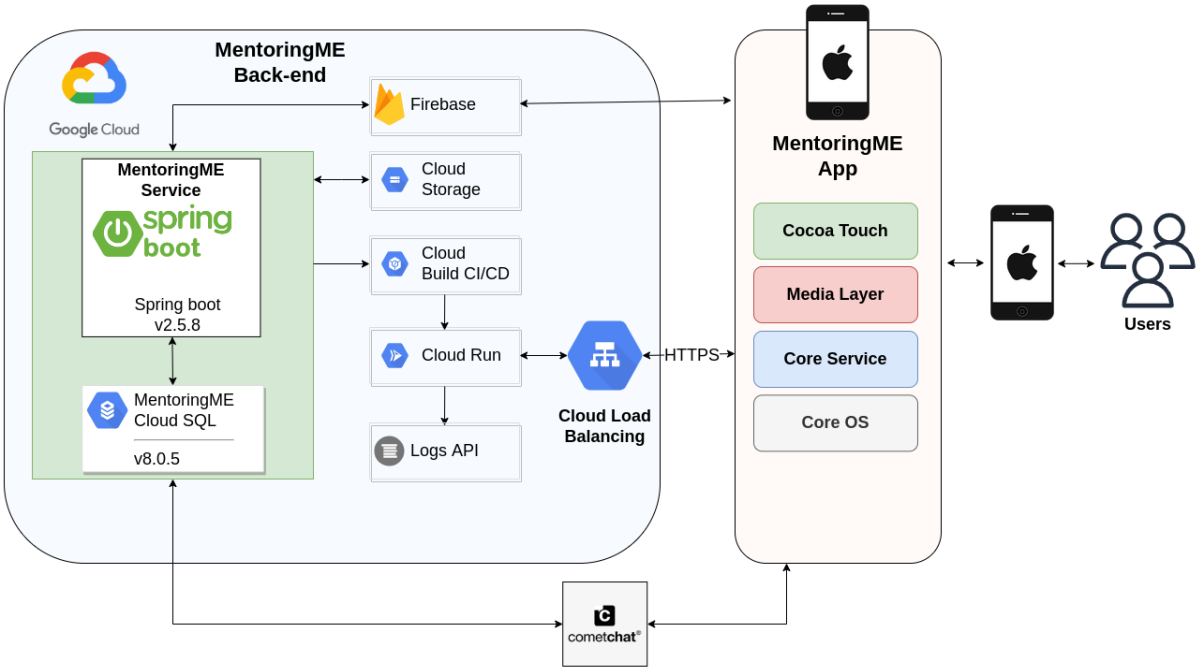
				thay đổi mật khẩu
52	MSG-52	Notification	Email not existed	*Email không tồn tại*
53	MSG-53	Notification	New password must be different current password	*Mật khẩu mới không được trùng với mật khẩu hiện tại*
54	MSG-54	Notification	User status not valid	*Trạng thái người dùng không hợp lệ*
55	MSG-55	Notification	File not existed	*File không tồn tại*
56	MSG-56	Notification	User avatar image uuid not format	*Mã nhận dạng ảnh đại diện của người dùng không đúng định dạng*
57	MSG-57	Notification	User already existed	*Người dùng này đã tồn tại*
58	MSG-58	Notification	Invalid image format	*Định dạng ảnh không hợp lệ*
59	MSG-59	Notification	Class has begun	*Lớp đã bắt đầu*
60	MSG-60	Notification	You cannot re-enroll in this class	*Bạn không thể đăng ký lại lớp này*
61	MSG-61	Notification	Cannot create event	*Không thể tạo sự kiện mới*
62	MSG-62	Notification	You don't have permission to access this	*Bạn không có quyền truy cập vào phần này*
63	MSG-63	Notification	User have already feedbacked mentors	*Người dùng đã đánh giá mentor*

IV. Software Design Description

1. System Design

1.1 System Architecture

1.1.1 Diagram

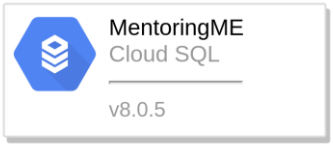


1.1.2 Component Explanation

1.1.2.1 Spring boot

Spring Boot is an open-source Java-based framework used to create a micro Service. It is developed by the Pivotal Team and is used to build stand-alone and production-ready spring applications.

1.1.2.2 Cloud MySQL

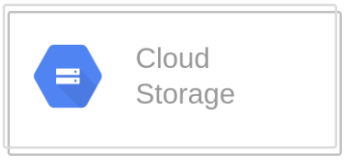


MySQL is a powerful open-source relational database system that uses and extends the SQL language combined with many features that safely store and scale the most complicated data workloads. We use it to store data.

1.1.2.3 Firebase

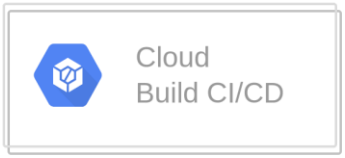
Firebase is a Google product that helps developers quickly build, manage, and grow their apps. It provides services to android, ios, web, and unity. It provides cloud storage. It uses NoSQL for the database for the storage of data.

1.1.2.4 Cloud Storage

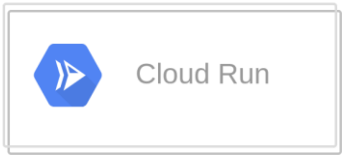


Cloud Storage is a service for storing your objects in Google Cloud. An object is an immutable piece of data consisting of a file of any format.

1.1.2.5 Cloud Build CI/CD



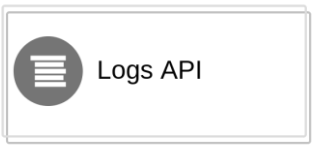
Cloud Build is a service that executes your builds on Google Cloud Platform infrastructure. Cloud Build can import source code from Cloud Storage, Cloud Source Repositories, GitHub, or Bitbucket, execute a build to your specifications, and produce artifacts such as Docker containers or Java archives



1.1.2.6 Cloud Run

Cloud Run is a managed compute platform that enables you to run containers that are invocable via requests or events. Cloud Run is serverless: it abstracts away all infrastructure management.

1.1.2.7 Logs API



Store, search, analyze, monitor, and alert on logging data and events from Google Cloud

1.1.2.8 Cloud Load Balancing

A load balancer distributes user traffic across multiple instances of your applications. By spreading the load, load balancing reduces the risk that your applications experience performance issues.

1.1.2.9 IOS Application

- **Core OS Layer**
  The Core OS layer holds the low-level features that most other technologies are built upon.
- **Core Services Layer**
  Some of the Important Frameworks available in the core services layers are detailed:
- **Media Layer**
  Graphics, Audio, and Video technology are enabled using the Media Layer.

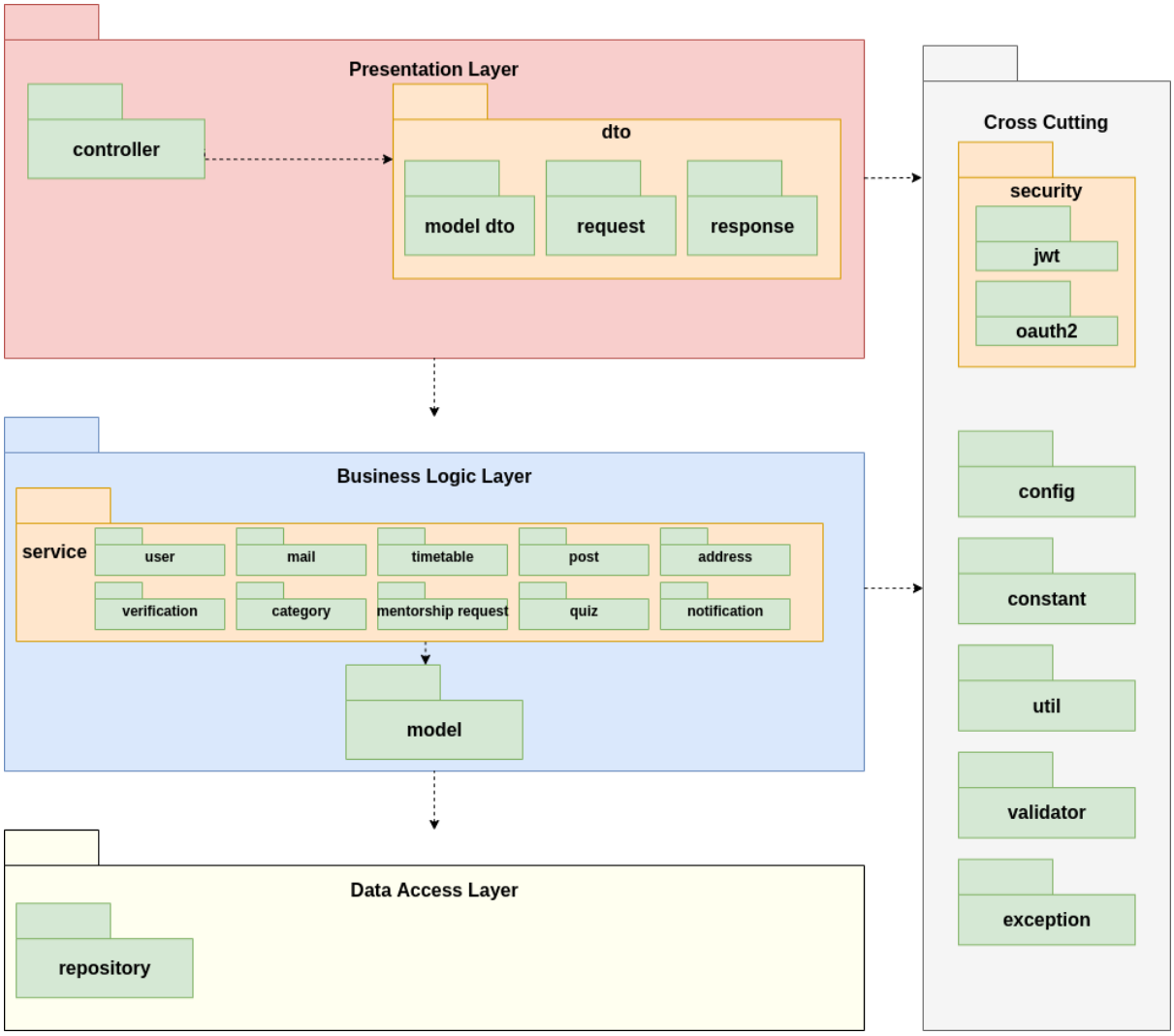
1.1.2.10 ComeChat

cometchat

CometChat's in-app communication platform delivers a scalable, secure, and easy-to-use solution that drives meaningful user-to-user engagement for your growing business.

1.2 Package Diagram

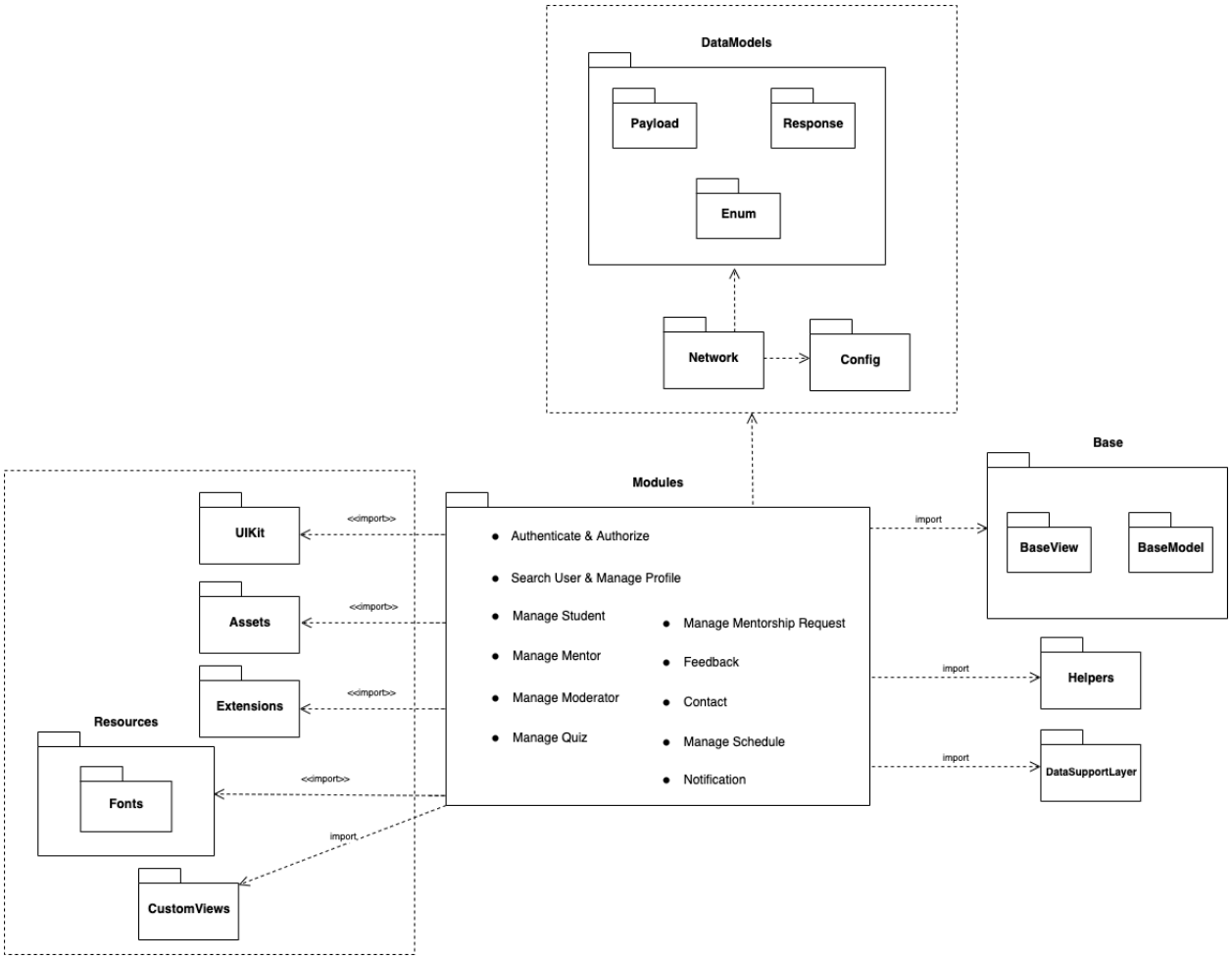
1.2.1 Backend



No	Package	Description
1	controller	Contains classes that handle incoming requests.
2	dto	Contains objects used to transfer data, requests, and responses.
3	service	Contains classes that are used to perform business logic. These classes communicate with the data tier and process data, then return to controller classes.
4	model	Contains classes that represent real entities that can be persisted in the database.
5	repository	Contains interfaces that communicate with the database and return them to service classes.
6	security	Used for authentication and authorization.
7	config	Contains classes used for configuration.
8	constant	Contains enum and message are constant.
9	util	The utilities used in the system.

10	validator	Used for validation information.
11	exception	Contains custom exceptions and exceptions handler.

1.2.2 Mobile



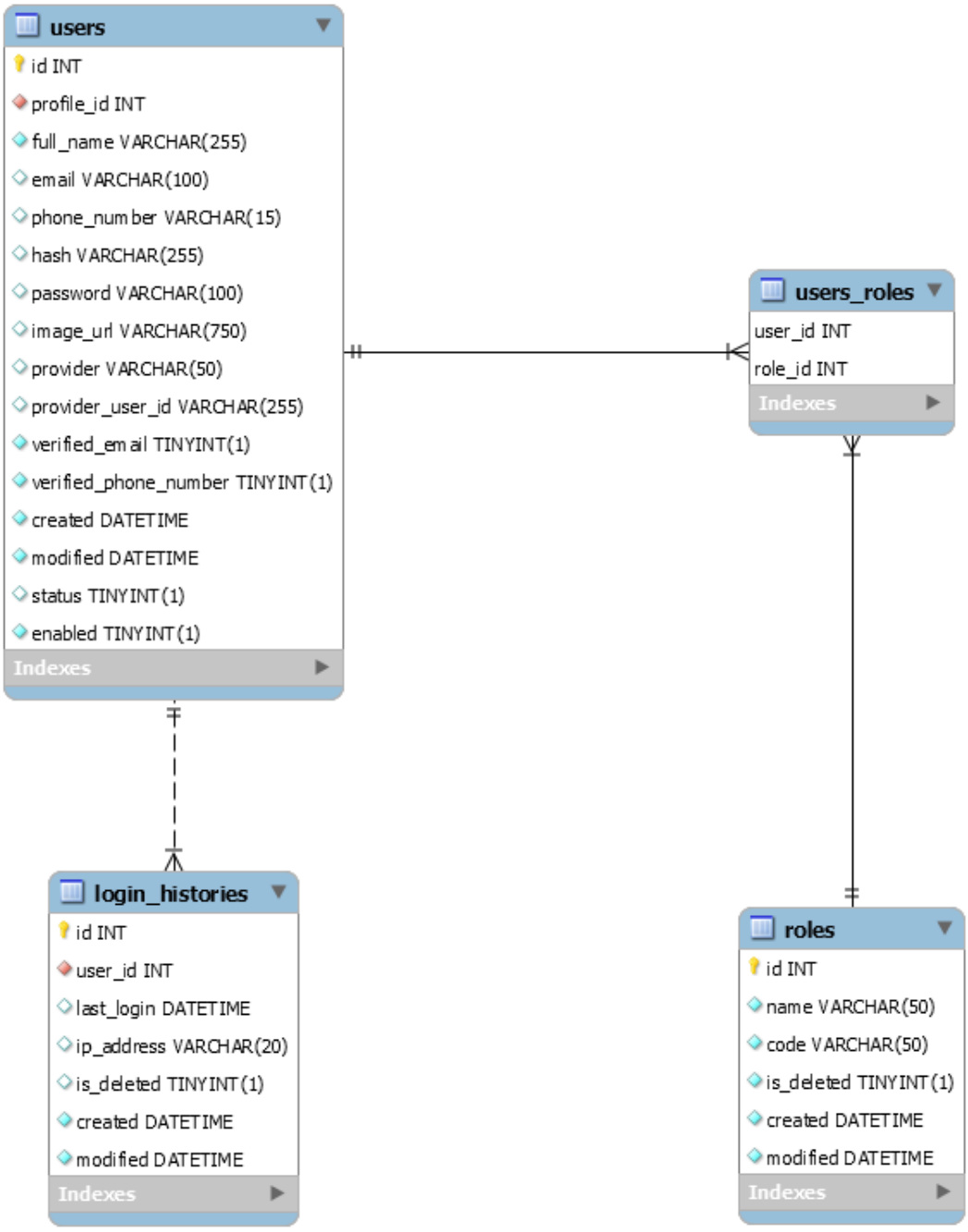
No	Package	Description
1	UIKit	UI Framework
2	Assets	Store static images for the application
3	DataModels	Store Payload, Response, and Enum for API requests
4	Extensions	Extensions (UI, Value,..) for lightweight logic
5	Resources	Extra resources to use for the application (Fonts,...)
6	Config	Store server configuration
7	Network	Center Api Management
8	Base	Store some base views and models
9	DataSupportLayer	Store local application data
10	Helpers	Store AppRouter, Constants, Utilities to use across the application

11	CustomViews	Custom Views to use in multiple screen modules
12	Modules	Store all screens of the application, include 1. Authenticate & Authorize 2. Search User & Manage Profile 3. Manage Student 4. Manage Mentor 5. Manage Moderator 6. Manage Quiz 7. Manage Mentorship Request 8. Feedback 9. Contact 10. Manage Schedule 11. Notification

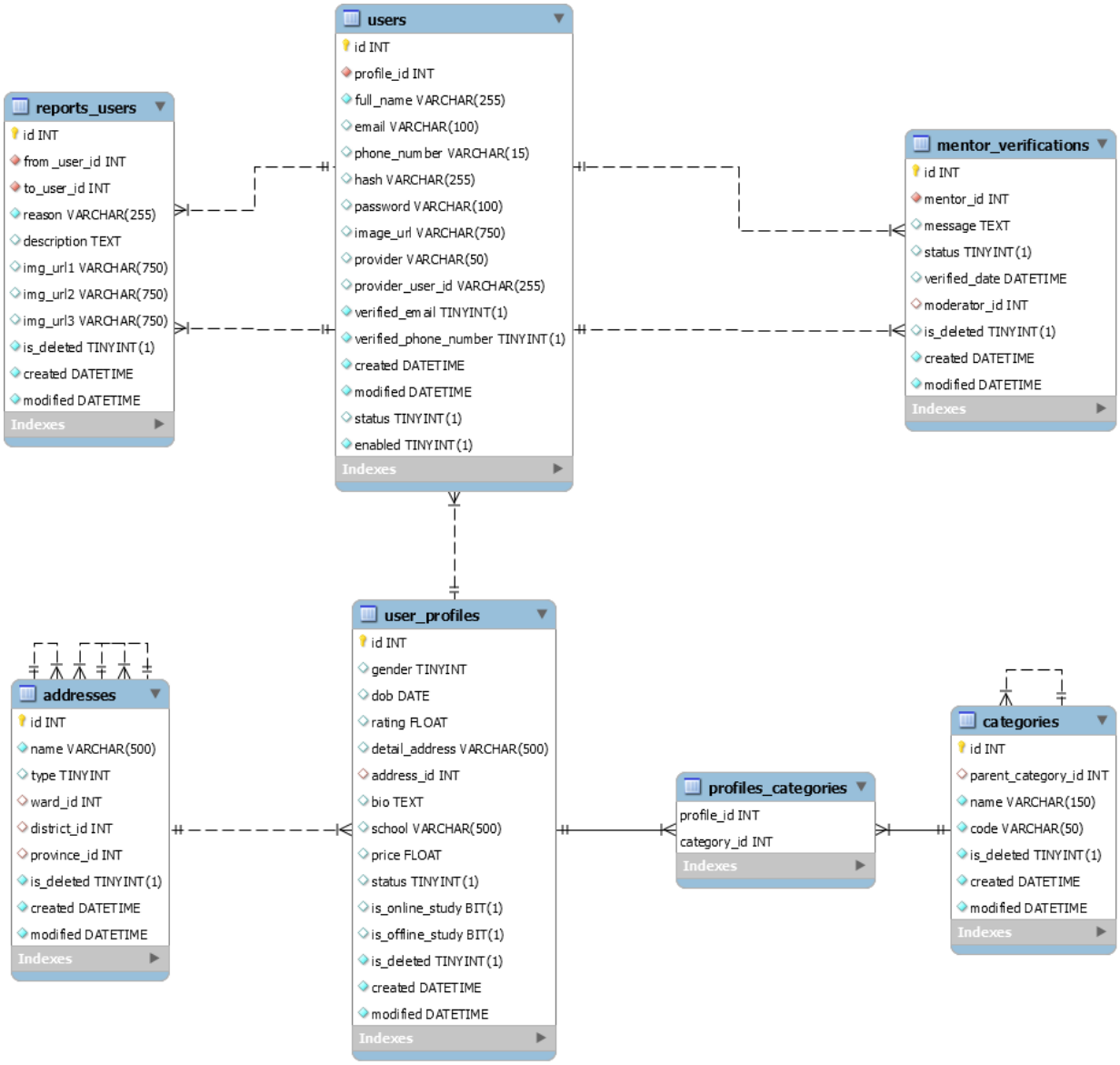
2. Database Design

2.1 Database diagram

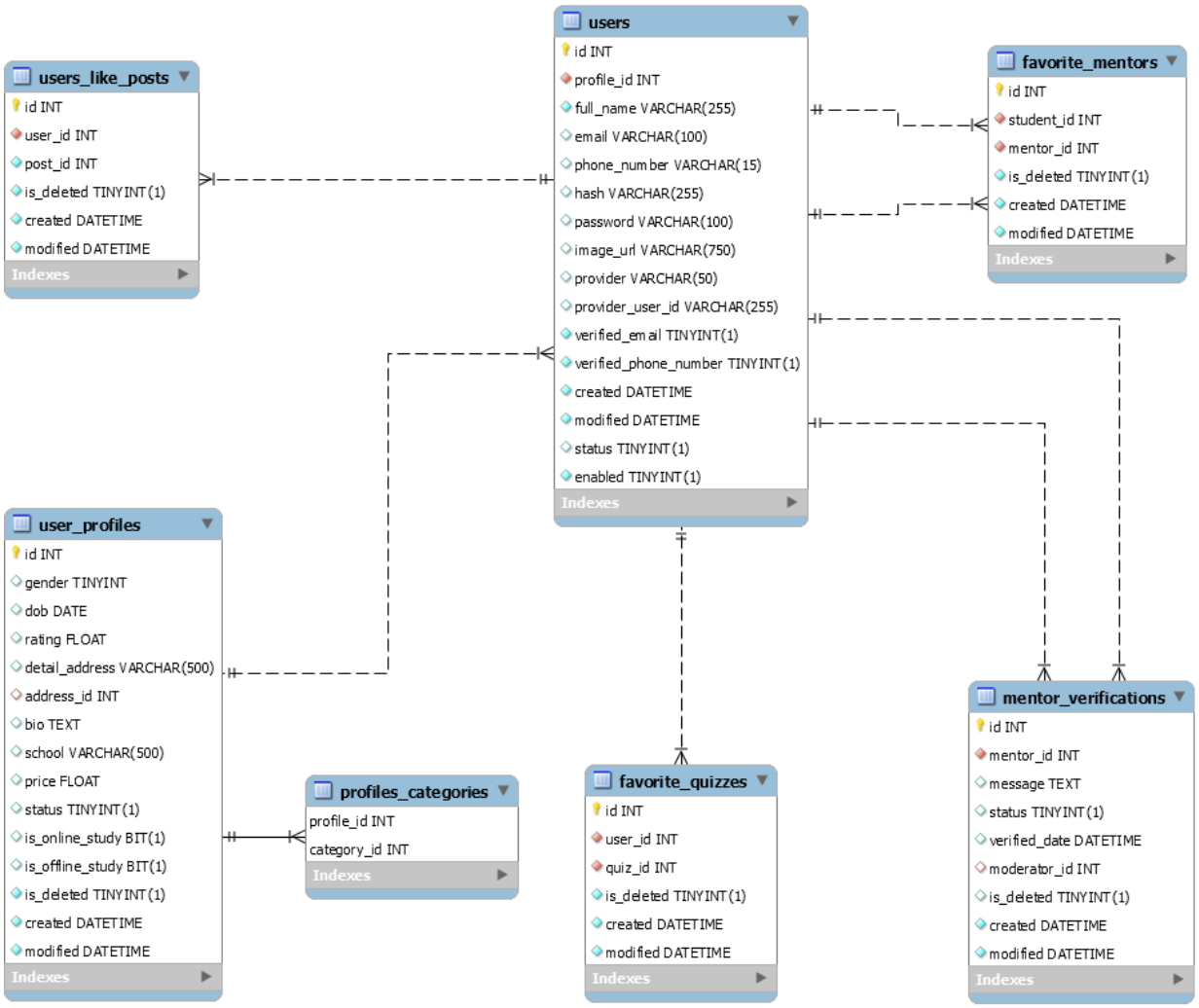
2.1.1 Feature "Authenticate & Authorize"



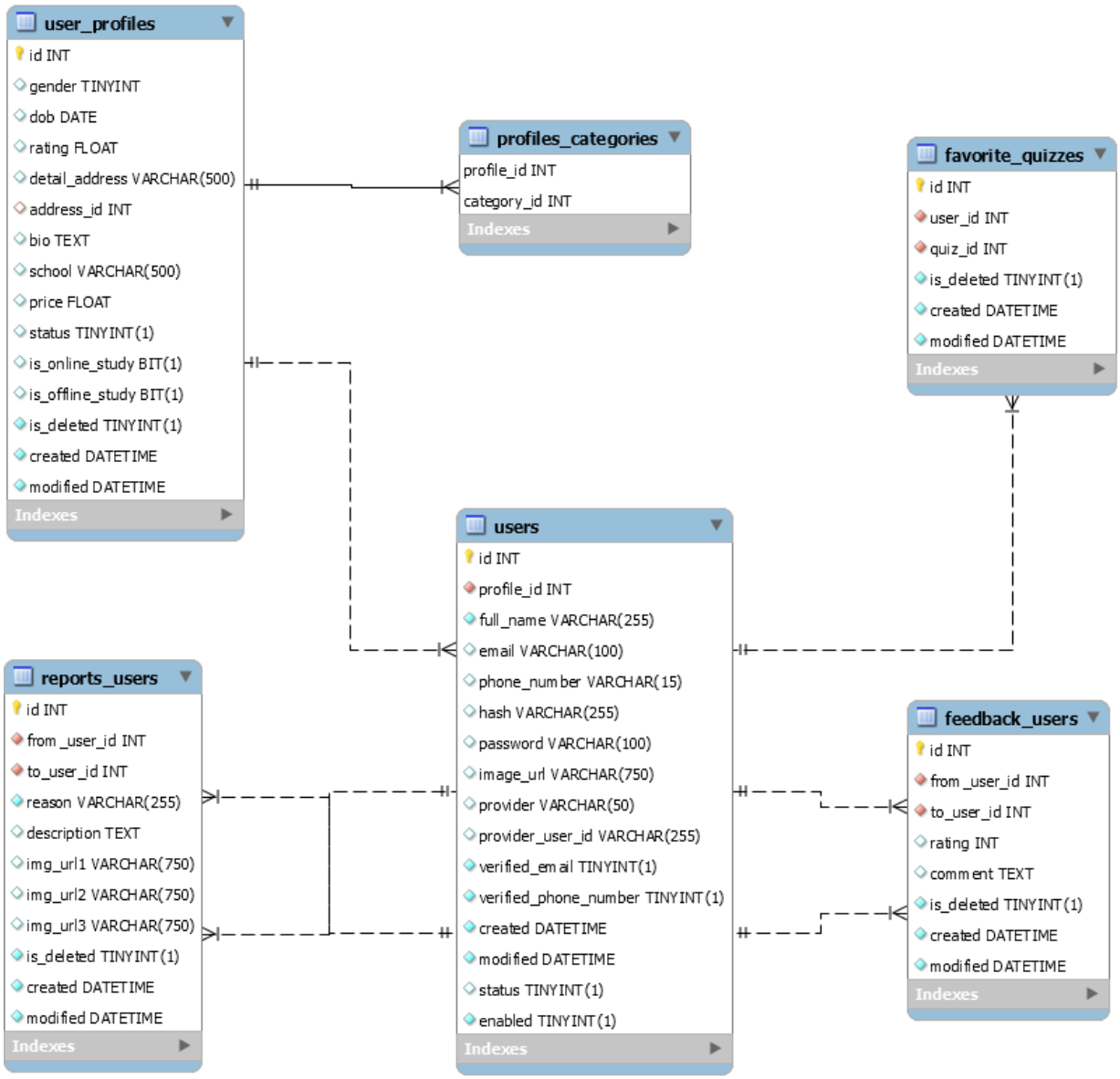
2.1.2 Feature "Search User & Manage Profile"



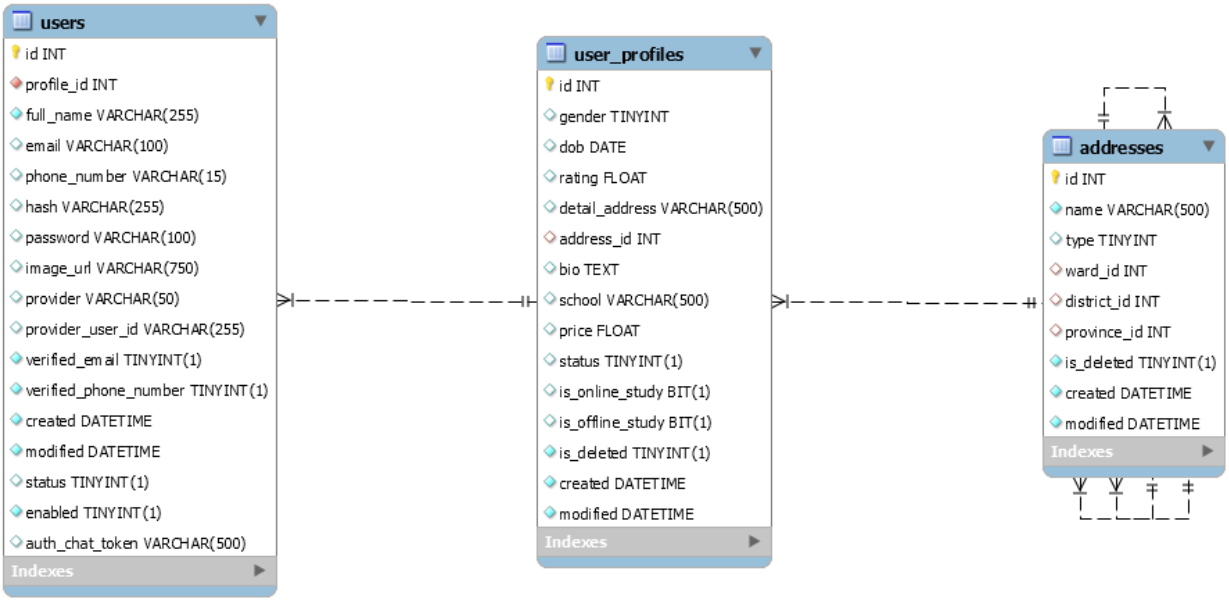
2.1.3 Feature "Manage Student"



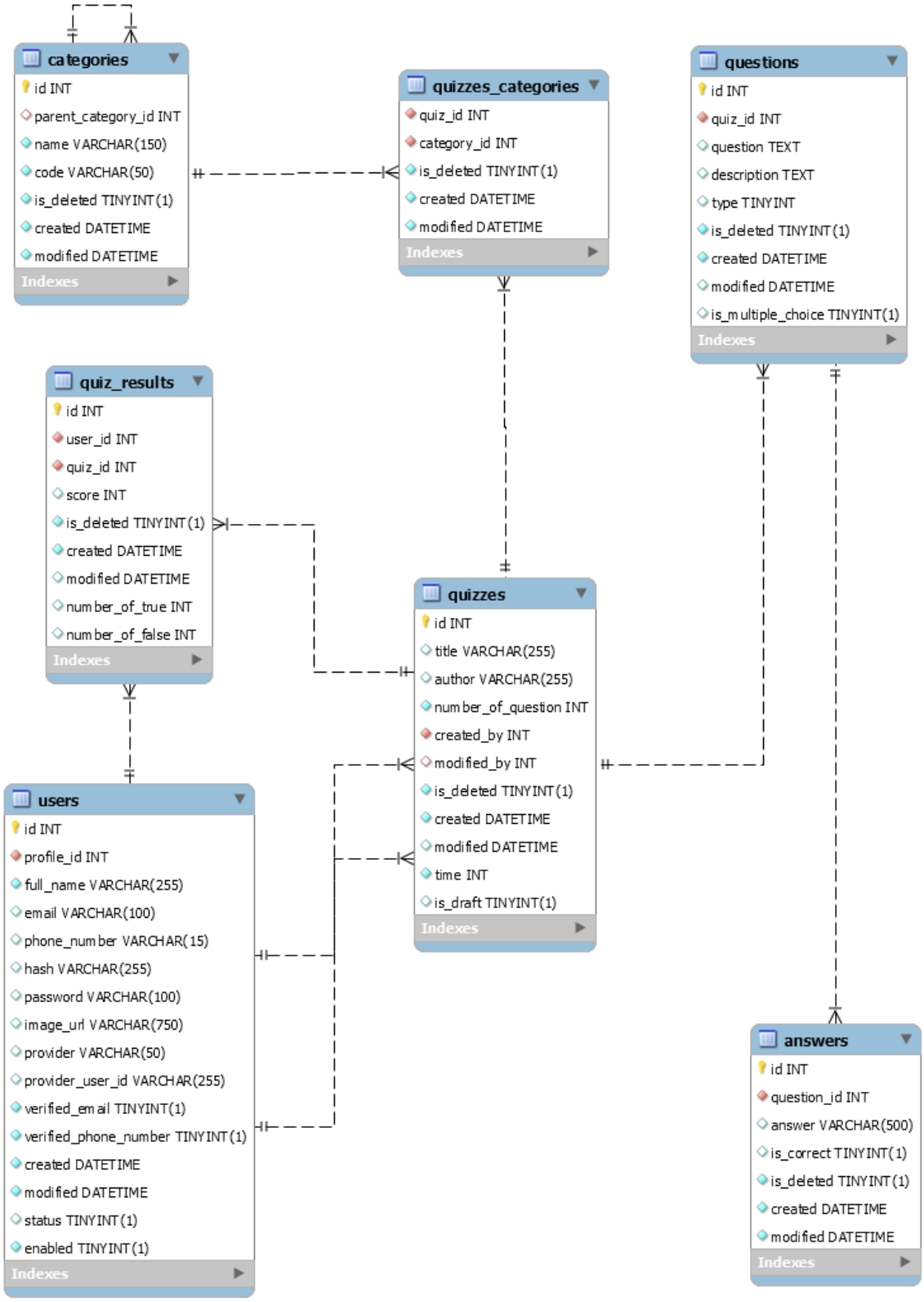
2.1.4 Feature "Manage Mentor"



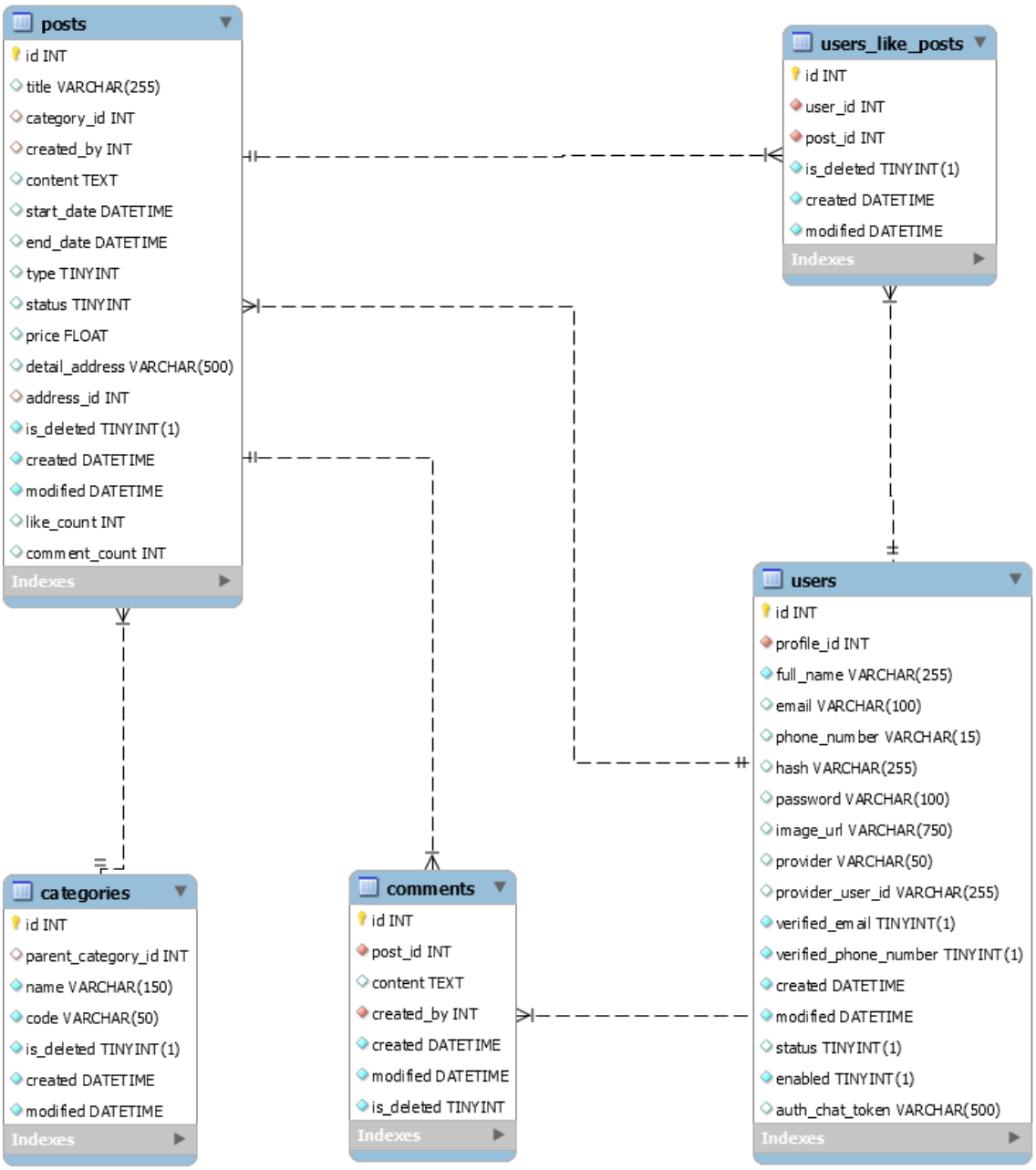
2.1.5 Feature "Manage Moderator"



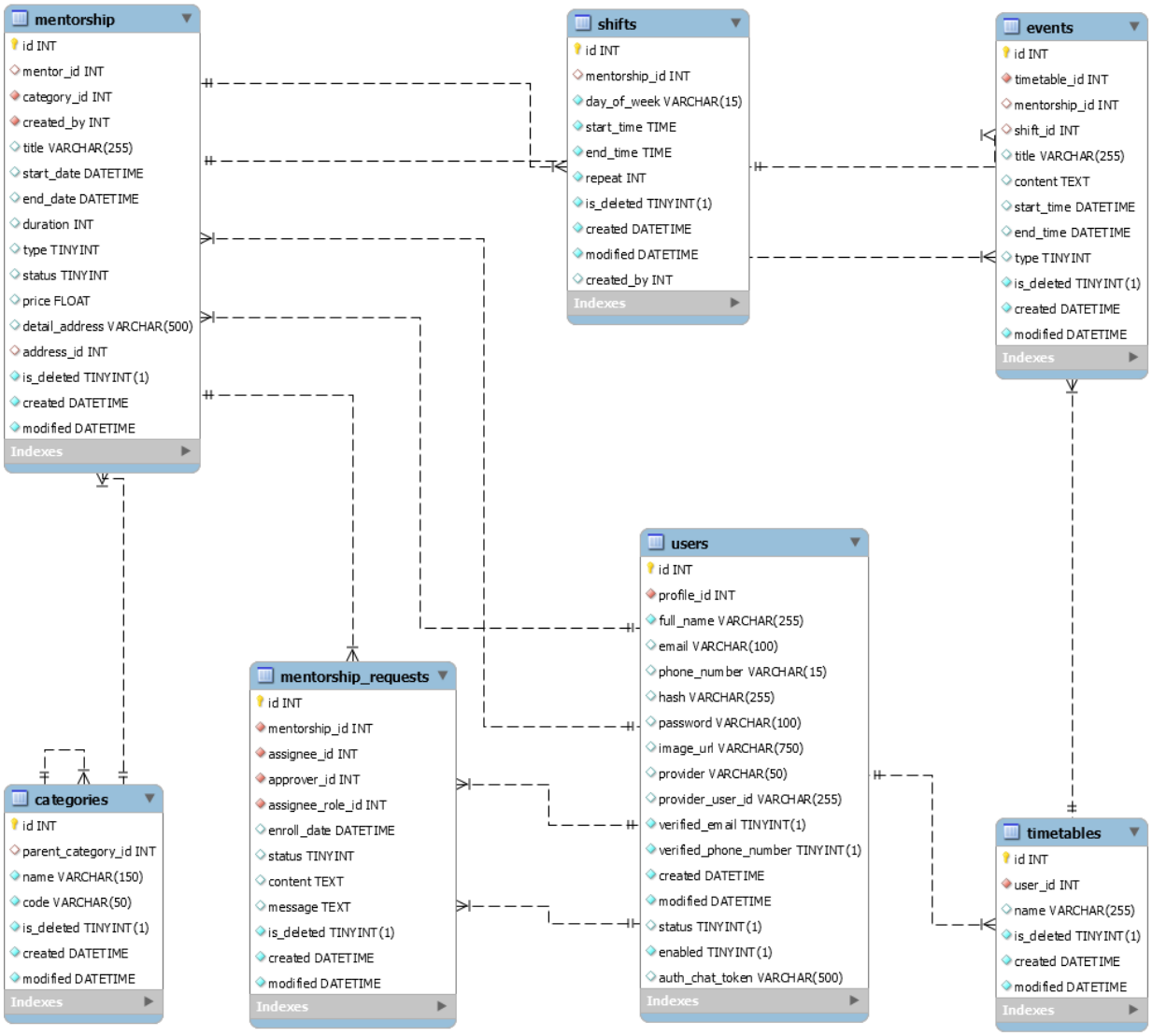
2.1.6 Feature "Manage Quiz"



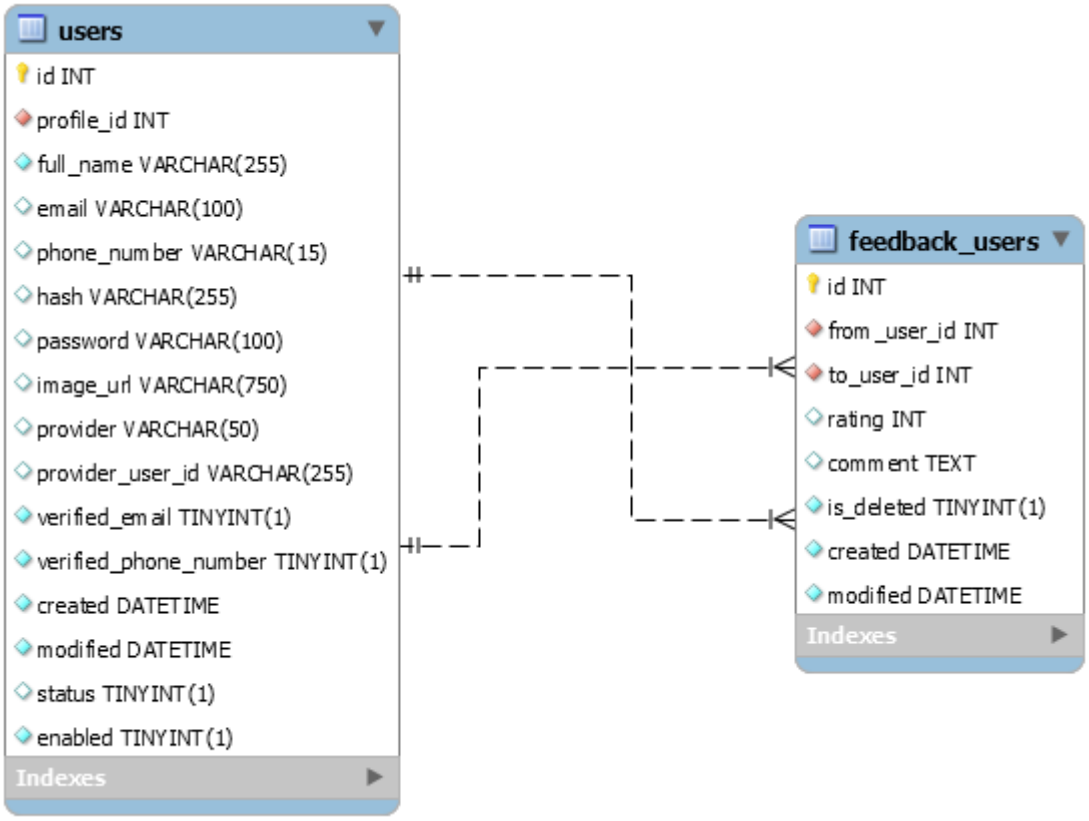
2.1.7 Feature "Manage Mentor-finding Post"



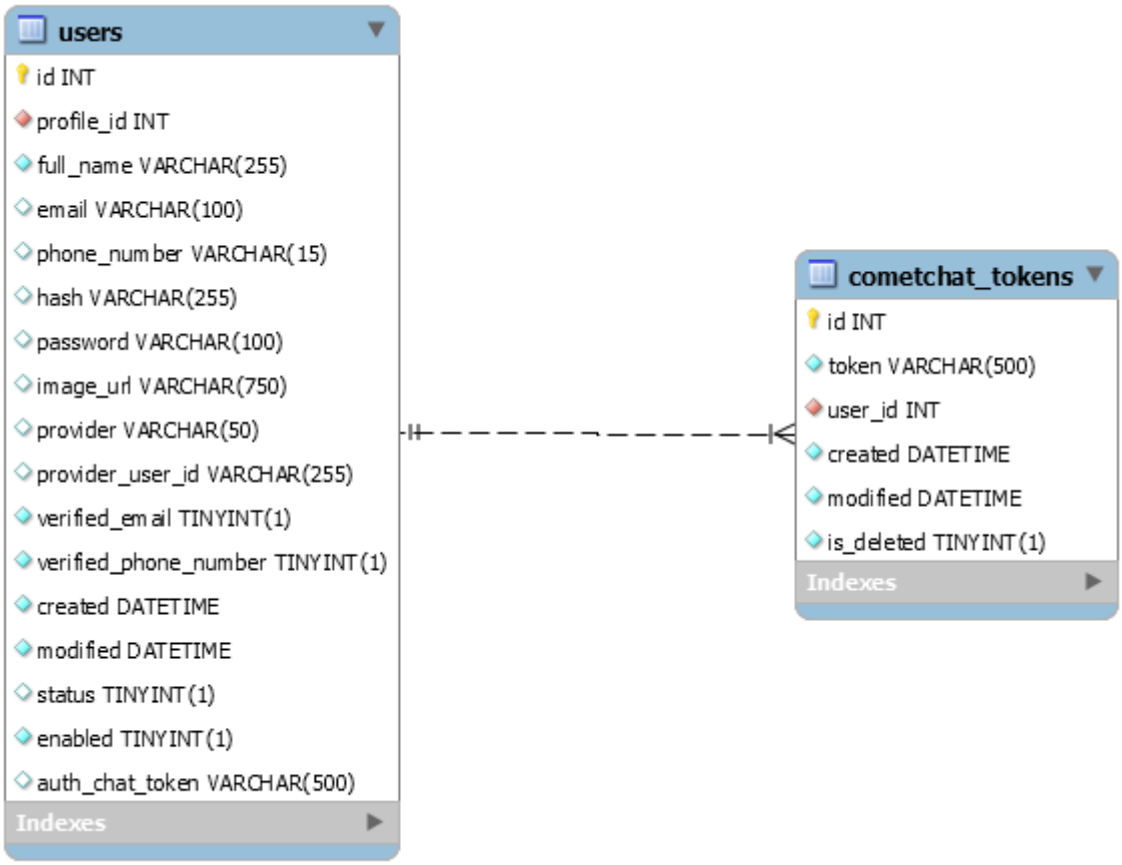
2.1.8 Feature "Manage Mentorship Request"



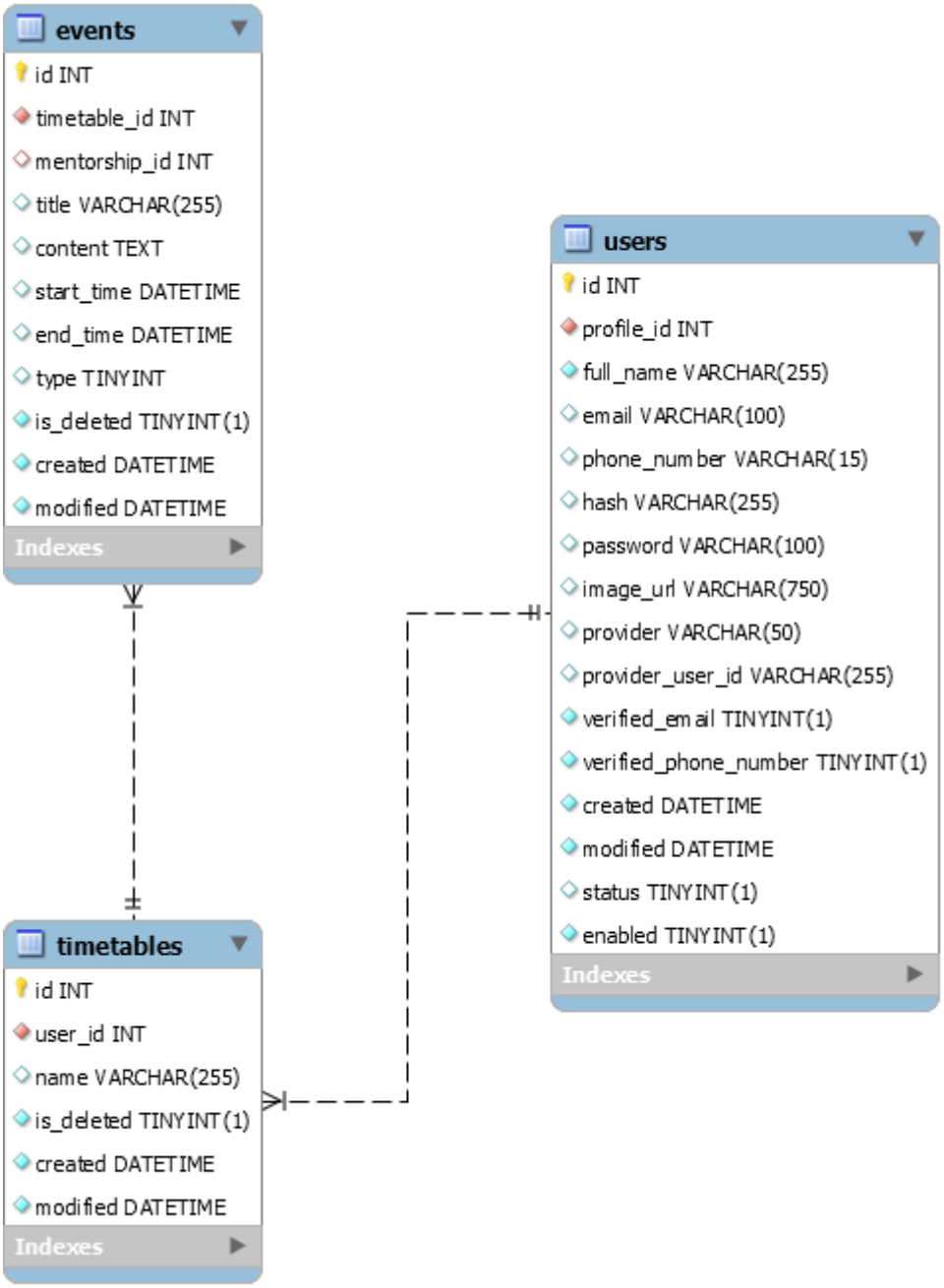
2.1.9 Feature "Feedback"



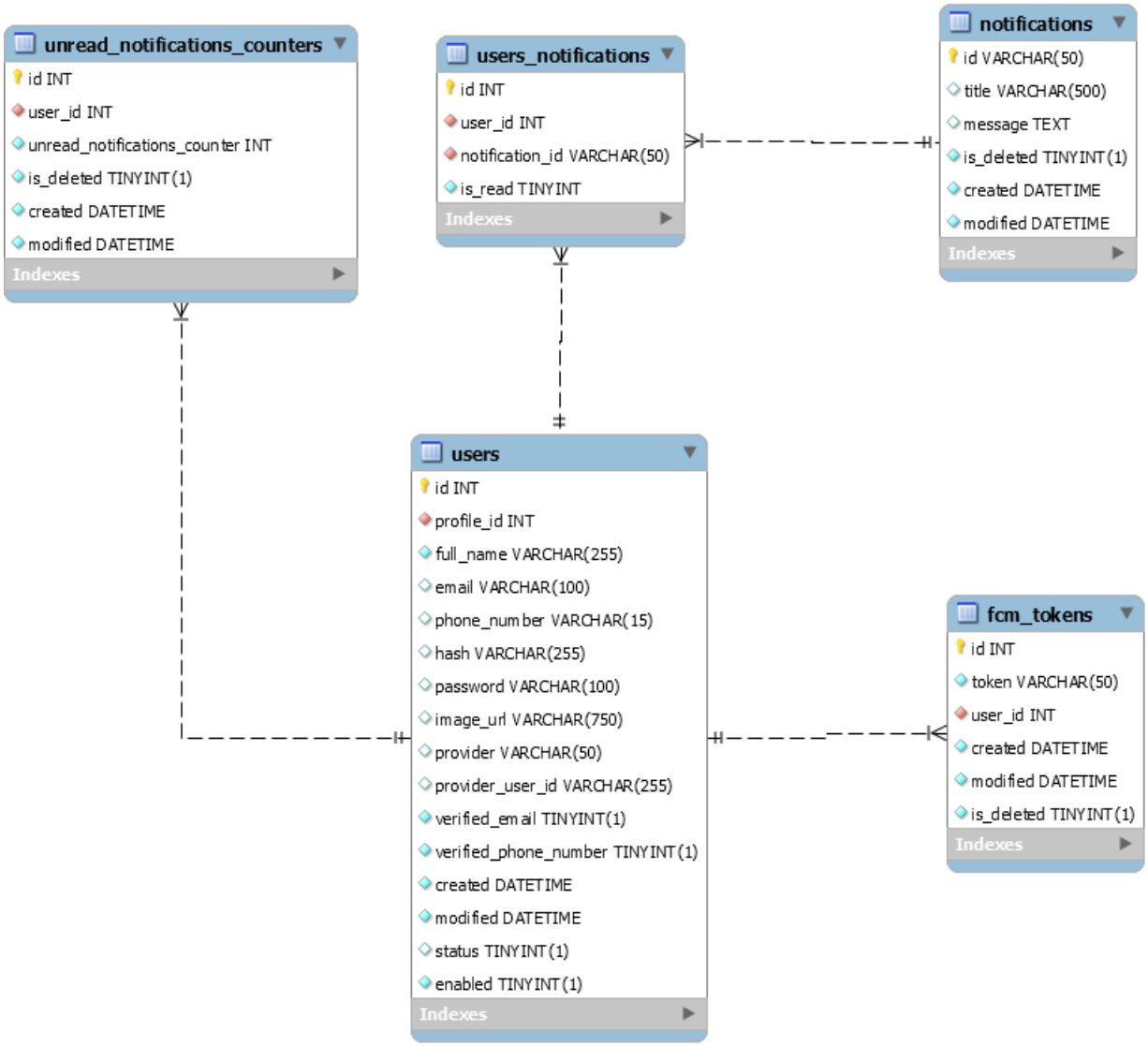
2.1.10 Feature "Contact"



2.1.11 Feature "Manage Schedule"



2.1.12 Feature "Notification"



2.2 Table descriptions

2.2.1 Addresses

Store data about the addresses.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int	x	x	PK	
2	name	varchar(500)		x		
3	type	tinyint				
4	ward_id	int			FK	FK to Address(id)
5	district_id	int			FK	FK to Address(id)
7	province_id	int			FK	FK to Address(id)
8	is_deleted	tinyint(1)		x		default is '0'

9	created	datetime		x		default is current_timestamp
10	modified	datetime		x		default is current_timestamp

2.2.2 Categories

Store data about the categories about user profile, mentorship request, quiz.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int	x	x	PK	
2	parent_category_id	int	x		FK	FK to Categories(id)
3	name	varchar(150)		x		
4	code	varchar(50)	x	x		
5	is_deleted	tinyint(1)		x		default is '0'
6	created	datetime		x		default is current_timestamp
7	modified	datetime		x		default is current_timestamp

2.2.3 Quizzes

Store data about the quizzes (include published and draft)

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int	x	x	PK	
2	title	varchar(255)		x		
3	author	varchar(150)		x		
4	number_of_question	int		x		
5	is_draft	tinyint(1)		x		
6	time	int		x		
7	create_by	int		x	FK	FK to User(id)
8	number_of_taken	int				
9	number_of_like	int				
10	is_deleted	tinyint(1)		x		default is '0'
11	created	datetime		x		default is current_timestamp
12	modified	datetime		x		default is current_timestamp

2.2.4 Quizzes_categories

Store data about the categories about quizzes.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	quiz_id	int		x	PK,FK	FK to Quizzes(id)
2	category_id	int		x	PK, FK	FK to Categories(id)
3	is_deleted	tinyint(1)		x		default is '0'
4	created	datetime		x		default is current_timestamp
5	modified	datetime		x		default is current_timestamp

2.2.5 Question

Store data about the questions.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int	x	x	PK	
2	quiz_id	int		x	FK	FK to Quizzes(id)
3	question	text		x		
4	is_multiple_choice	tinyint(1)		x		default is '0'
5	is_deleted	tinyint(1)		x		default is '0'
6	created	datetime		x		default is current_timestamp
7	modified	datetime		x		default is current_timestamp

2.2.6 Answer

Store data about the answers.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int	x	x	PK	
2	question_id	int		x	FK	FK to Questions(id)
3	answer	text		x		
4	is_correct	tinyint(1)		x		
5	is_deleted	tinyint(1)		x		default is '0'
6	created	datetime		x		default is current_timestamp
7	modified	datetime		x		default is current_timestamp

2.2.7 Quiz_results

Store data about the user's quiz taking result.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int	x	x	PK	

2	user_id	int		x	FK	FK to Users(id)
3	quiz_id	int		x	FK	FK to Quizzes(id)
4	score	int		x		
5	number_of_true	int		x		
6	number_of_false	int		x		
7	is_deleted	tinyint(1)		x		default is '0'
8	created	datetime		x		default is current_timestamp
9	modified	datetime		x		default is current_timestamp

2.2.8 Favorite_quizzes

Store data about the favorite quizzes of users.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int	x	x	PK	
2	user_id	int		x	FK	FK to Users(id)
3	quiz_id	int		x	FK	FK to Quizzes(id)
4	is_deleted	tinyint(1)		x		default is '0'
5	created	datetime		x		default is current_timestamp
6	modified	datetime		x		default is current_timestamp

2.2.9 Roles

Store data about the roles.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int	x	x	PK	
2	name	varchar(50)		x		
3	code	varchar(50)	x	x		
4	is_deleted	tinyint(1)		x		default is '0'
5	created	datetime		x		default is current_timestamp
6	modified	datetime		x		default is current_timestamp

2.2.10 Users_roles

Store data about the roles of users.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	user_id	int		x	PK, FK	FK to Users(id)

2	role_id	int		x	PK, FK	FK to Roles(id)
3	is_deleted	tinyint(1)		x		default is '0'
4	created	datetime		x		default is current_timestamp
5	modified	datetime		x		default is current_timestamp

2.2.11 Users

Store data about the users (rarely change)

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int	x	x	PK	
2	profile_id	int		x	FK	FK to Users_Profiles(id)
3	fullname	varchar(255)		x		
4	email	varchar(100)	x	x		
5	phone_number	varchar(15)				
6	hash	varchar(255)				
7	password	varchar(100)				
8	image_url	varchar(750)				
9	provider	varchar(50)				
10	provider_user_id	varchar(255)				
11	verified_email	tinyint(1)		x		default is '0'
12	verified_phone_numer	tinyint(1)		x		default is '0'
13	status	tinyint(1)		x		
14	enable	tinyint(1)				default is '0'
15	is_deleted	tinyint(1)		x		default is '0'
16	created	datetime		x		default is current_timestamp
17	modified	datetime		x		default is current_timestamp

2.2.12 Users_profiles

Store data about the users

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int	x	x	PK	
2	gender	tinyint(1)				
3	dob	date				

4	rating	float				
5	detail_address	varchar(500)				
6	address_id	int			FK	FK to Addresses(id)
7	bio	text				
8	school	varchar(500)				
9	price	float				
10	status	tinyint(1)				
11	is_online_study	tinyint(1)		x		default is '0'
12	is_offline_study	tinyint(1)		x		default is '0'
13	is_deleted	tinyint(1)		x		default is '0'
14	created	datetime		x		default is current_timestamp
15	modified	datetime		x		default is current_timestamp

2.2.13 Login_histories

Store data about the user's login history

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	user_id	int		x	FK	FK to Users(id)
3	last_login	datetime		x		
4	ip_address	varchar(20)		x		
5	is_deleted	tinyint(1)		x		default is '0'
6	created	datetime		x		default is current_timestamp
7	modified	datetime		x		default is current_timestamp

2.2.14 Users_like_posts

Store data about the post's like amount

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	user_id	int		x	FK	FK to Users(id)
3	post_id	int		x	FK	FK to Posts(id)
4	is_deleted	tinyint(1)		x		default is '0'
5	created	datetime		x		default is current_timestamp

6	modified	datetime		x		default is current_timestamp

2.2.15 Timetable

Store data about user's timetable

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	user_id	int		x	FK	FK to Users(id)
3	name	varchar(255)				
4	is_deleted	tinyint(1)		x		default is '0'
5	created	datetime		x		default is current_timestamp
6	modified	datetime		x		default is current_timestamp

2.2.16 Events

Store data about the user's event in the timetable.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	timetable_id	int		x	FK	FK ti Timetables(id)
3	mentorship_id	int		x	FK	FK to Mentorships(id)
4	title	varchar(255)				
5	content	text				
6	start_time	datetime				
7	end_time	datetime				
8	type	tinyint				
9	is_deleted	tinyint(1)		x		default is '0'
10	created	datetime		x		default is current_timestamp
11	modified	datetime		x		default is current_timestamp

2.2.17 Shifts

Store data about the user's shift in mentorship request

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	mentorship_id	int		x	FK	Fk to Mentorships(id)
3	day_of_week	varchar(15)		x		

4	start_time	time		x		
5	end_time	time		x		
6	is_deleted	tinyint(1)		x		default is '0'
7	created	datetime		x		default is current_timestamp
8	modified	datetime		x		default is current_timestamp

2.2.18 Profile_categories

Store data about the mentor's profile category

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	profile_id	int		x	PK, FK	FK to Users_Profiles(id)
2	category_id	int		x	PK, FK	FK to Categories(id)

2.2.19 Post

Store data about the post

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	title	varchar(255)		x		
3	category_id	int		x	FK	FK to Categories(id)
4	created_by	int		x	FK	FK to Users(id)
5	content	text				
6	start_date	datetime				
7	end_date	datetime				
8	type	tinyint				
9	status	tinyint				
10	price	float				
11	detail_address	varchar(500)				
12	address_id	int		x	PK	
13	is_deleted	tinyint(1)		x		default is '0'
14	created	datetime		x		default is current_timestamp
15	modified	datetime		x		default is current_timestamp

2.2.20 Mentorship_request

Store data about the mentorship request.

#	Field name	Type	Unique	Not Null	PK/FK	Note

1	id	int		x	PK	
2	mentorship_id	int		x	FK	FK to Mentorships(id)
3	assignee_id	varchar(15)		x	FK	FK to Users(id)
4	approver_id	time		x	FK	FK to Users(id)
5	assignee_role_id	time		x	FK	FK to Roles(id)
6	enroll_date					
7	status					
8	content					
9	message					
10	is_deleted	tinyint(1)		x		default is '0'
11	created	datetime		x		default is current_timestamp
12	modified	datetime		x		default is current_timestamp

2.2.21 Mentorship

Store data about the mentorships.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	mentor_id	varchar(255)		x	FK	FK to Users(id)
3	category_id	int		x	FK	FK to Categories(id)
4	created_by	int		x	FK	FK to Users(id)
5	title	varchar(255)				
6	start_date	datetime				
7	end_date	datetime				
8	type	tinyint				
9	status	tinyint				
10	price	float				
11	detail_address	varchar(500)				
12	address_id	int		x	PK	PK to Addresses(id)
13	is_deleted	tinyint(1)		x		default is '0'
14	created	datetime		x		default is current_timestamp
15	modified	datetime		x		default is current_timestamp

2.2.22 Mentor_verifications

Store data about the mentor request.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	mentor_id	int		x	FK	FK to Users(id)
3	message	text				
4	status	tinyint(1)				
5	verified_date	datetime				
6	moderator_id	int			FK	FK to Users(id)
7	is_deleted	tinyint(1)		x		default is '0'
8	created	datetime		x		default is current_timestamp
9	modified	datetime		x		default is current_timestamp

2.2.23 Feedback_users

Store data about the feedback of mentors.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	from_user_id	int		x	FK	FK to Users(id)
3	to_user_id	int		x	FK	FK to Users(id)
4	rating	int		x		
5	comment	text		x		
6	is_deleted	tinyint(1)		x		default is '0'
7	created	datetime		x		default is current_timestamp
8	modified	datetime		x		default is current_timestamp

2.2.24 Favorite_mentors

Store data about the favorite mentors of users.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	student_id	int		x	FK	FK to Users(id)
3	mentor_id	int		x	FK	FK to Users(id)
4	is_deleted	tinyint(1)		x		default is '0'
5	created	datetime		x		default is current_timestamp
6	modified	datetime		x		default is current_timestamp

2.2.25 Reports_users

Store data about the user's report

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	from_user_id	int		x	FK	FK to Users(id)
3	to_user_id	int		x	FK	FK to Users(id)
4	reason	varchar(255)		x		
5	description	text		x		
6	img_url1	varchar(700)				
7	img_url2	varchar(700)				
8	img_url3	varchar(700)				
9	is_deleted	tinyint(1)		x		default is '0'
10	created	datetime		x		default is current_timestamp
11	modified	datetime		x		default is current_timestamp

2.2.26 Comments

Store data about the comments.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	post_id	int		x	FK	FK to Posts(id)
3	created_by	int		x	FK	Fk to Users(id)
4	content	text		x		
5	is_deleted	tinyint(1)		x		default is '0'
6	created	datetime		x		default is current_timestamp
7	modified	datetime		x		default is current_timestamp

2.2.27 Users_notifications

Store data about the user's notification

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	user_id	int		x	FK	FK to Users(id)
3	notification_id	int		x	FK	Fk to Notifications(id)
3	is_read	tinyint(1)		x		default is '0'

2.2.28 Unread_notifications_counters

Store data about the unread notification amount

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	user_id	int		x	FK	FK to Users(id)
3	unread_notifications_counter	int		x	FK	Default is '0'
4	is_deleted	tinyint(1)		x		default is '0'
5	created	datetime		x		default is current_timestamp
6	modified	datetime		x		default is current_timestamp

2.2.29 Fcm_tokens

Store data about the device tokens

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	user_id	int		x	FK	FK to Users(id)
3	token	varchar(50)		x		Default is '0'
4	is_deleted	tinyint(1)		x		default is '0'
5	created	datetime		x		default is current_timestamp
6	modified	datetime		x		default is current_timestamp

2.2.30 Notifications

Store data about the notifications.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	title	varchar(500)				
3	message	text				
4	is_deleted	tinyint(1)		x		default is '0'
5	created	datetime		x		default is current_timestamp
6	modified	datetime		x		default is current_timestamp

2.2.31 Cometchat_tokens

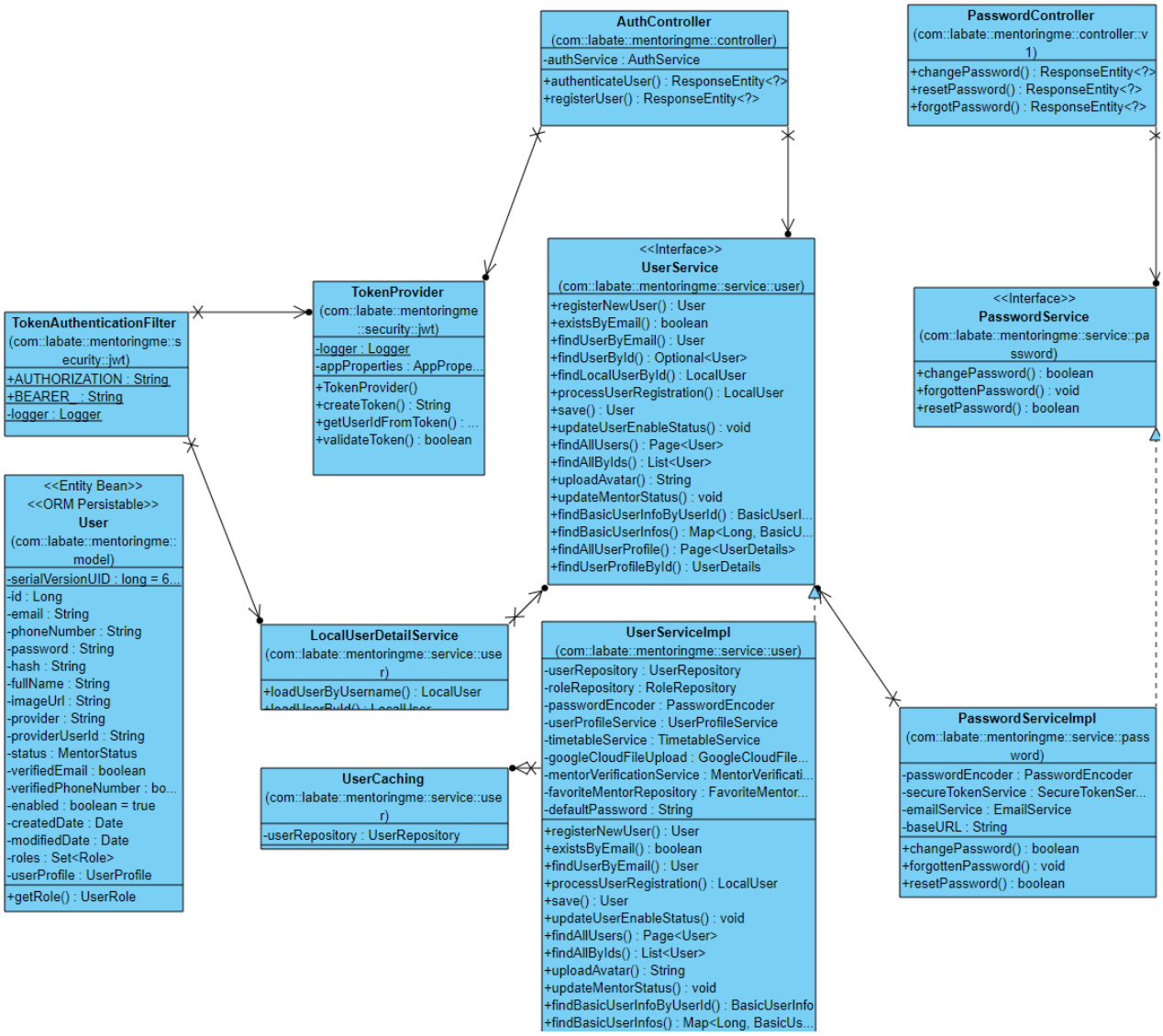
Store data about the user's token to access cometchat server.

#	Field name	Type	Unique	Not Null	PK/FK	Note
1	id	int		x	PK	
2	user_id	int		x		FK to Users(id)
3	token	varchar(500)		x		
4	is_deleted	tinyint(1)		x		default is '0'
5	created	datetime		x		default is current_timestamp
6	modified	datetime		x		default is current_timestamp

3. Detailed Design

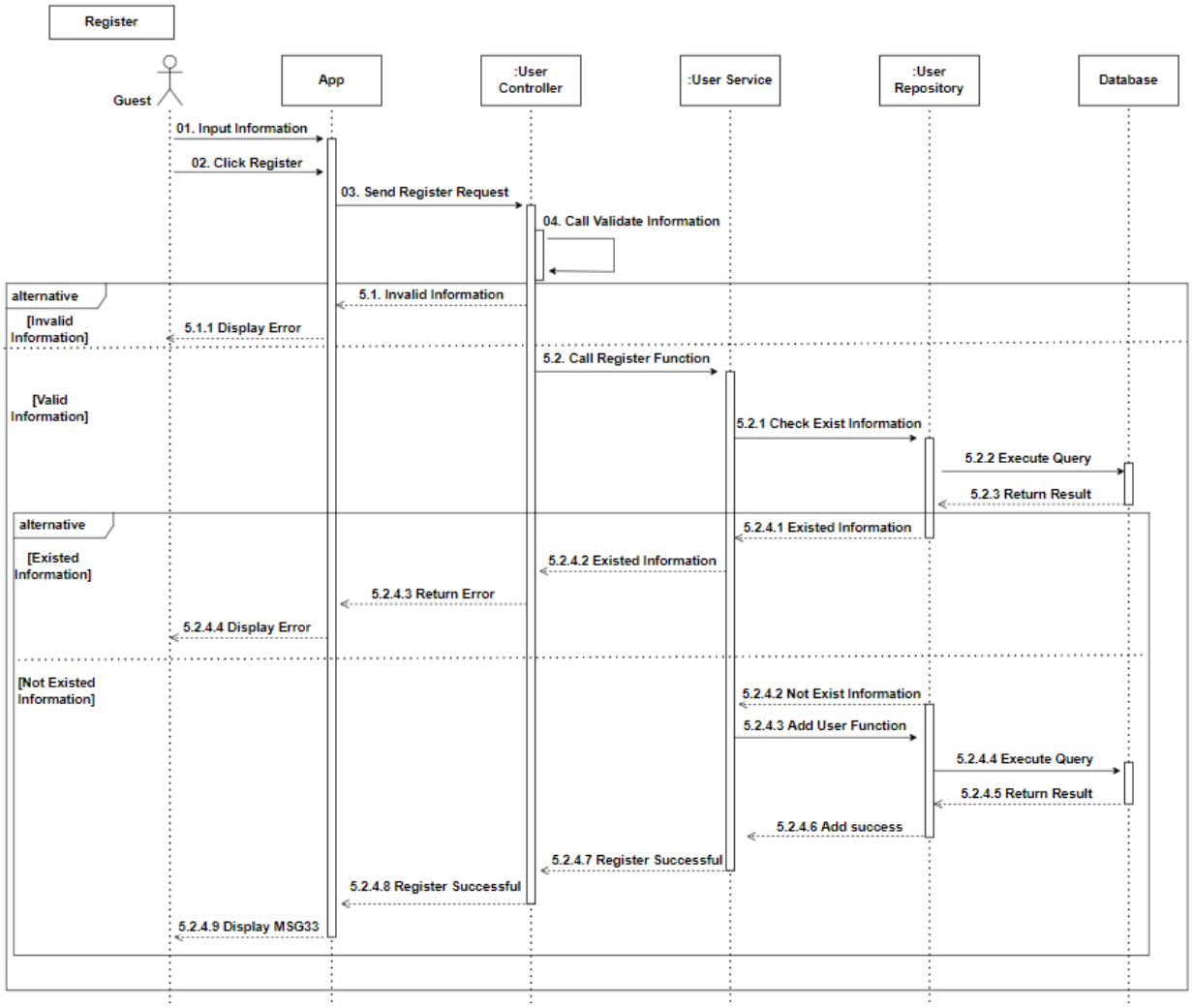
3.1 Feature "Authenticate & Authorize"

3.1.1 Class Diagram

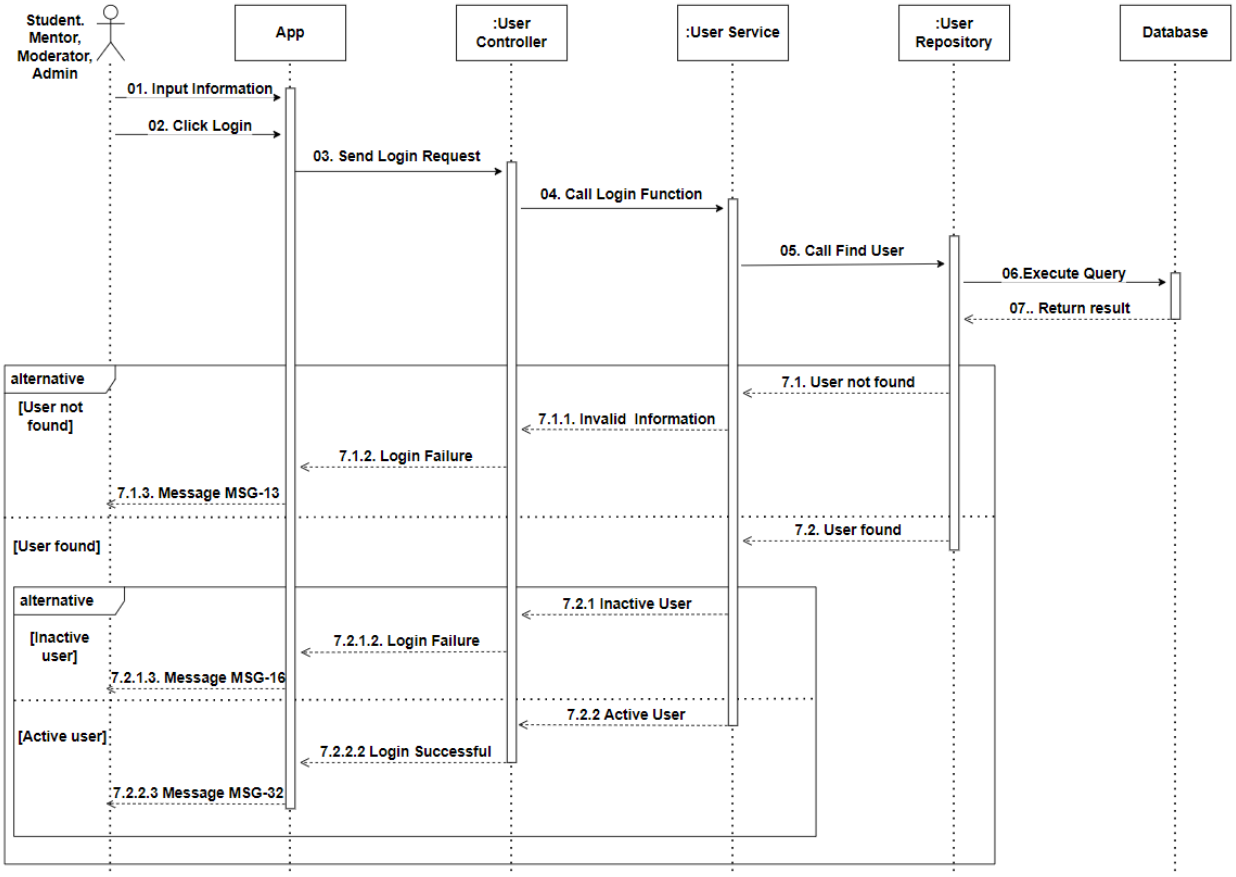


3.1.2 Sequence Diagram

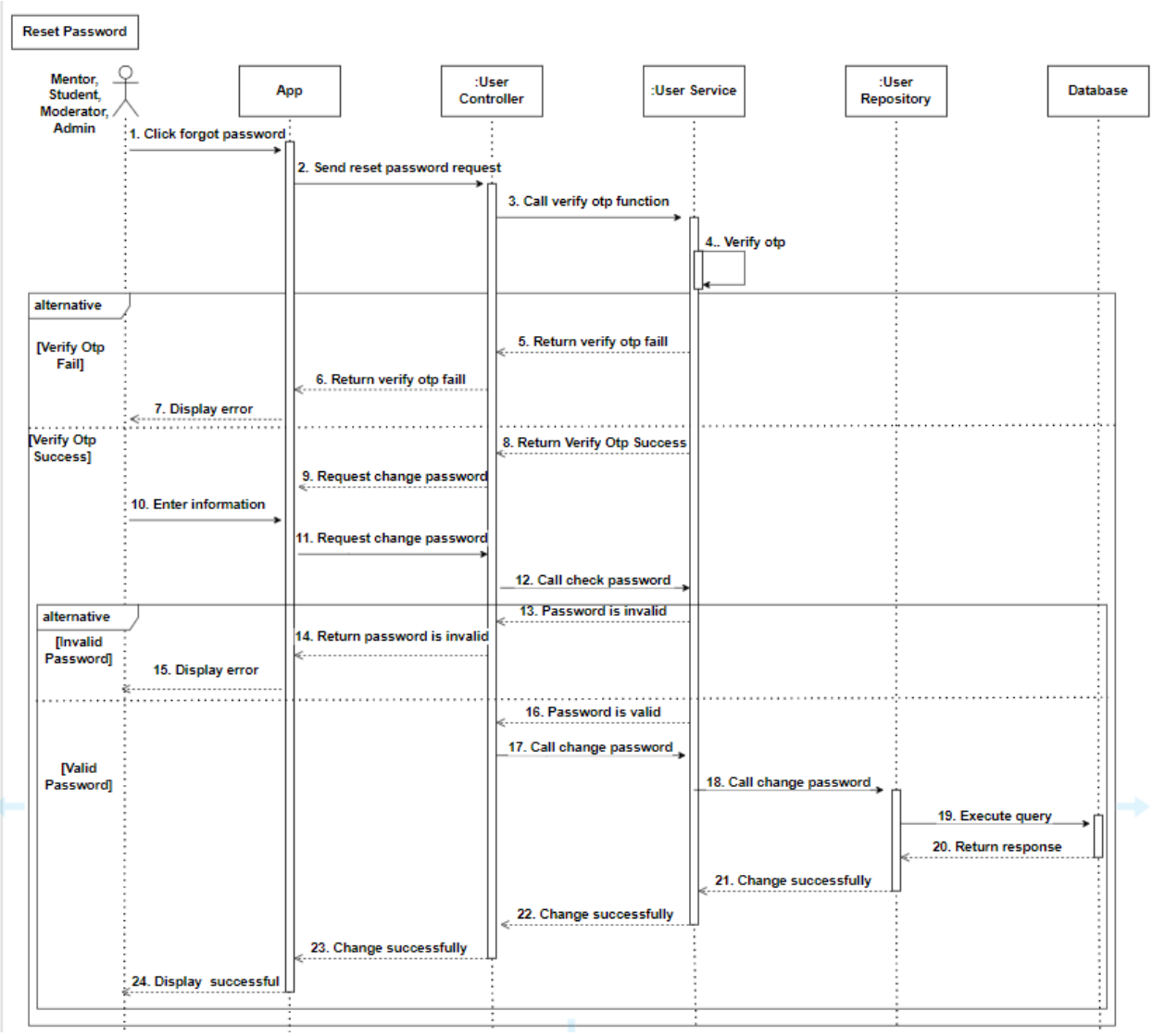
3.1.2.1 Register



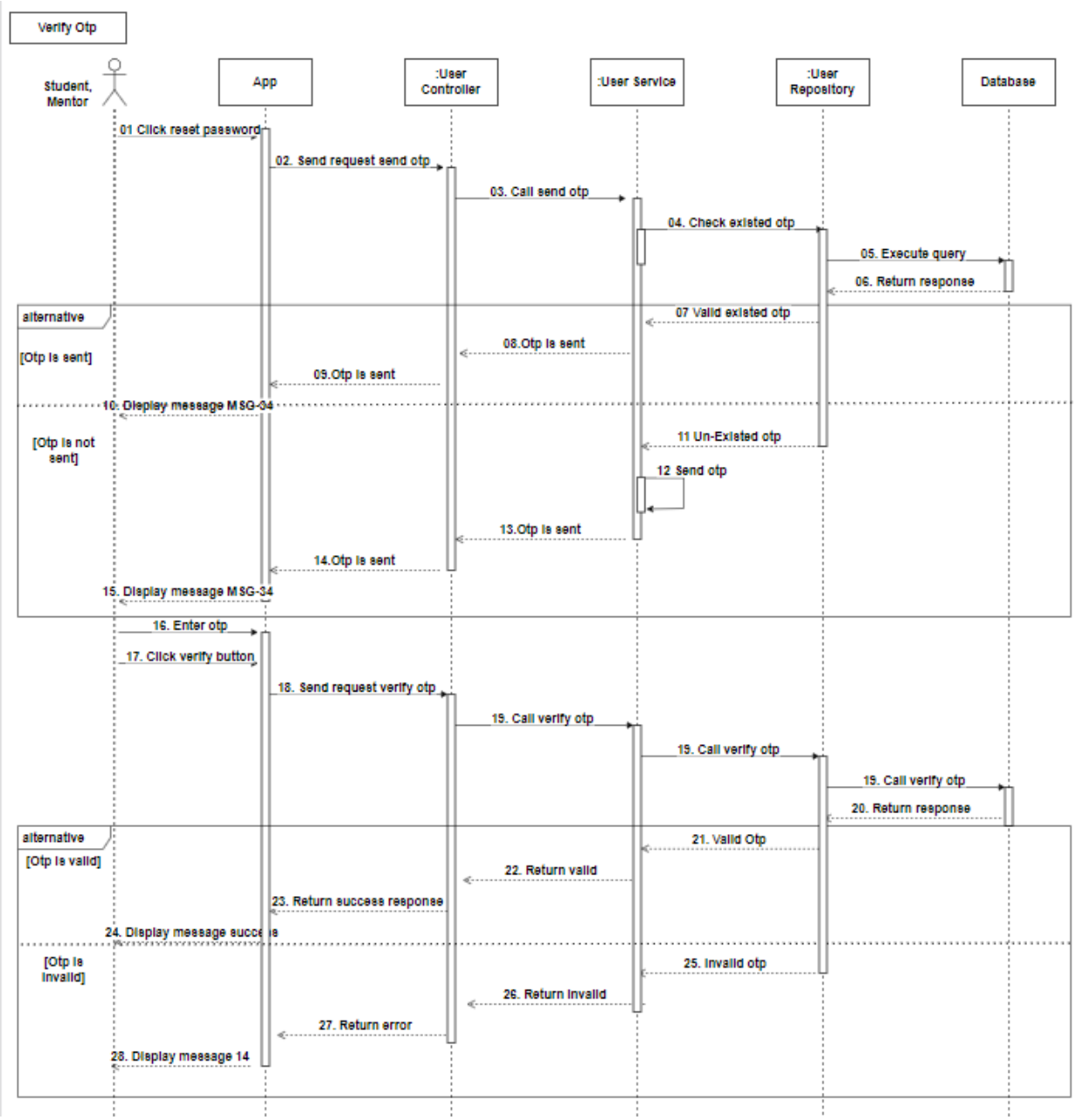
3.1.2.2 Login


Student. Mentor, Moderator, Admin
App
:User Controller
:User Service
:User Repository
Database
01. Input Information
02. Click Login
03. Send Login Request
04. Call Login Function
05. Call Find User
06.Execute Query
07.. Return result
alternative
[User not found]
7.1. User not found
7.1.1. Invalid Information
7.1.2. Login Failure
7.1.3. Message MSG-13
[User found]
7.2. User found
alternative
[Inactive user]
7.2.1 Inactive User
7.2.1.2. Login Failure
7.2.1.3. Message MSG-16
[Active user]
7.2.2 Active User
7.2.2.2 Login Successful
7.2.2.3 Message MSG-32

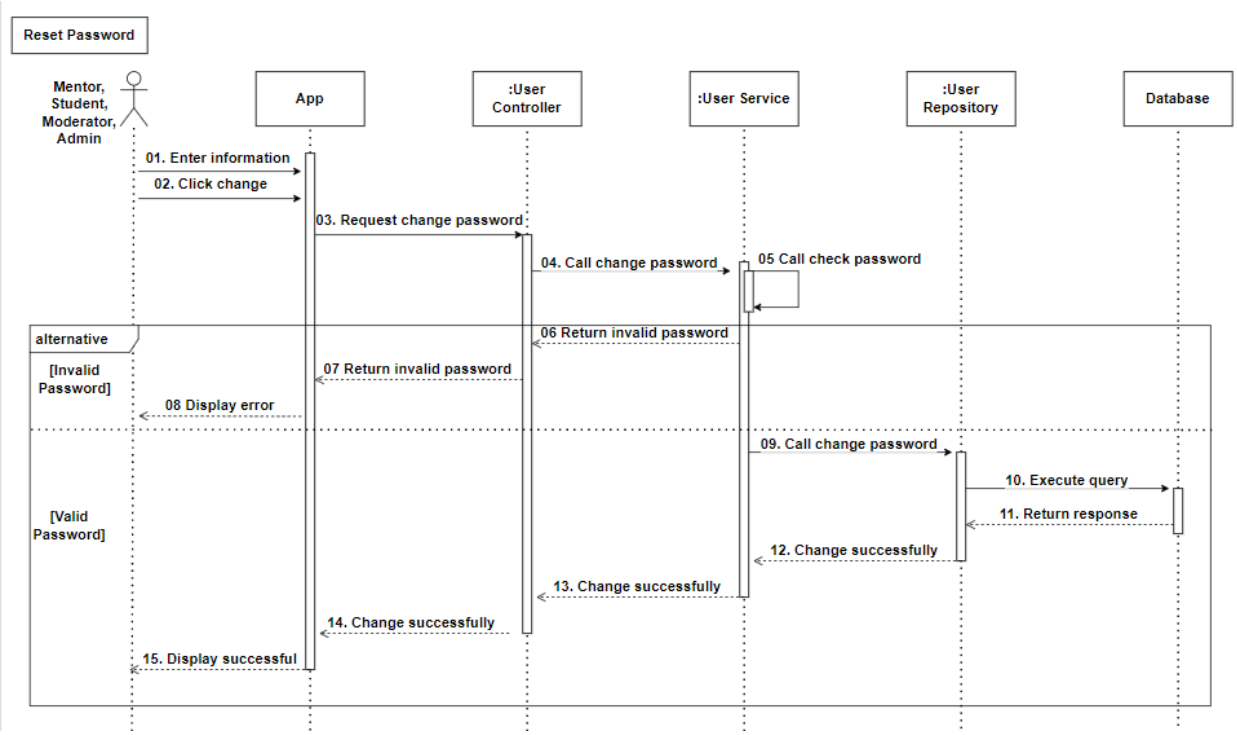
3.1.2.3 Reset Password



3.1.2.4 Verify Otp

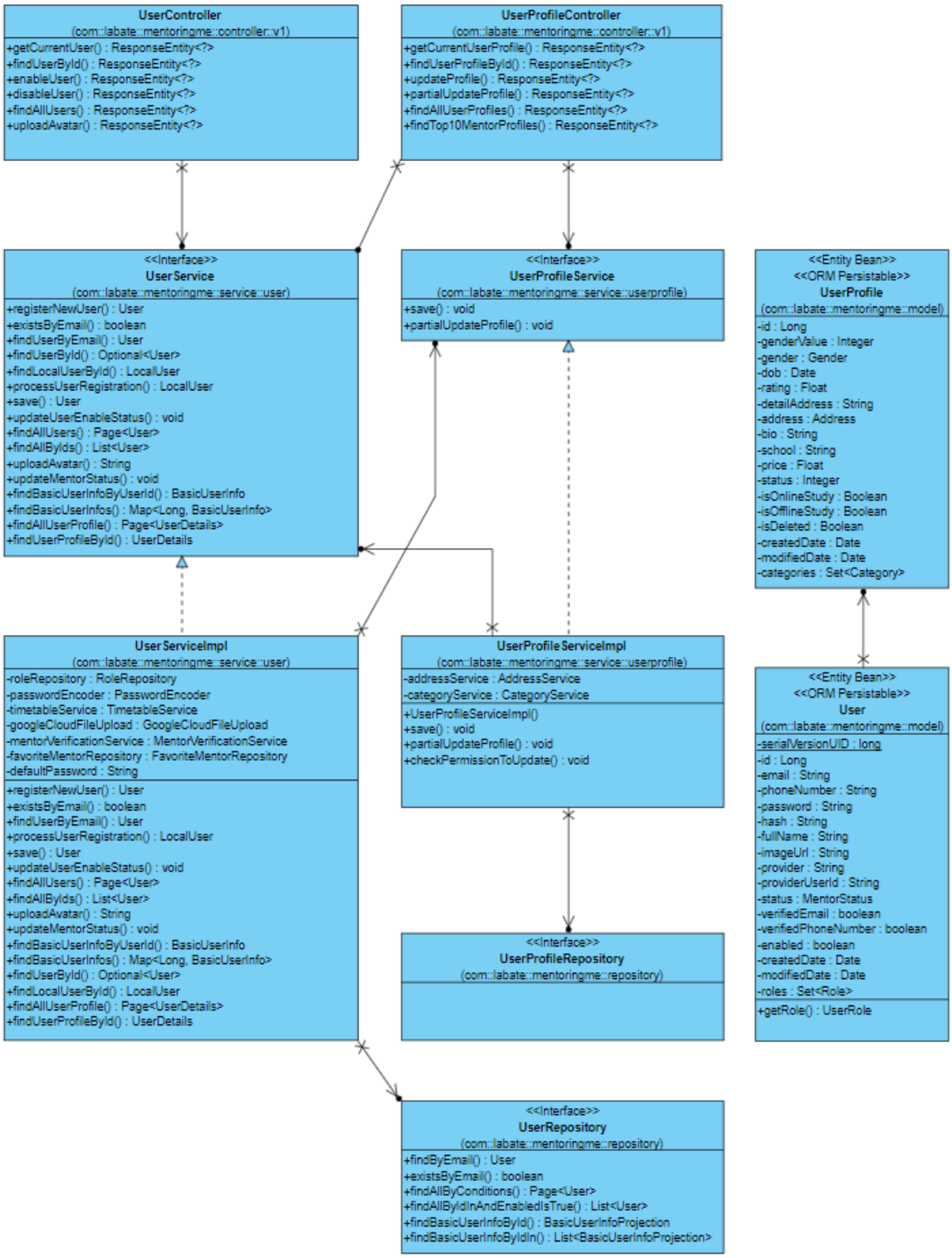


3.1.2.5 Change Password



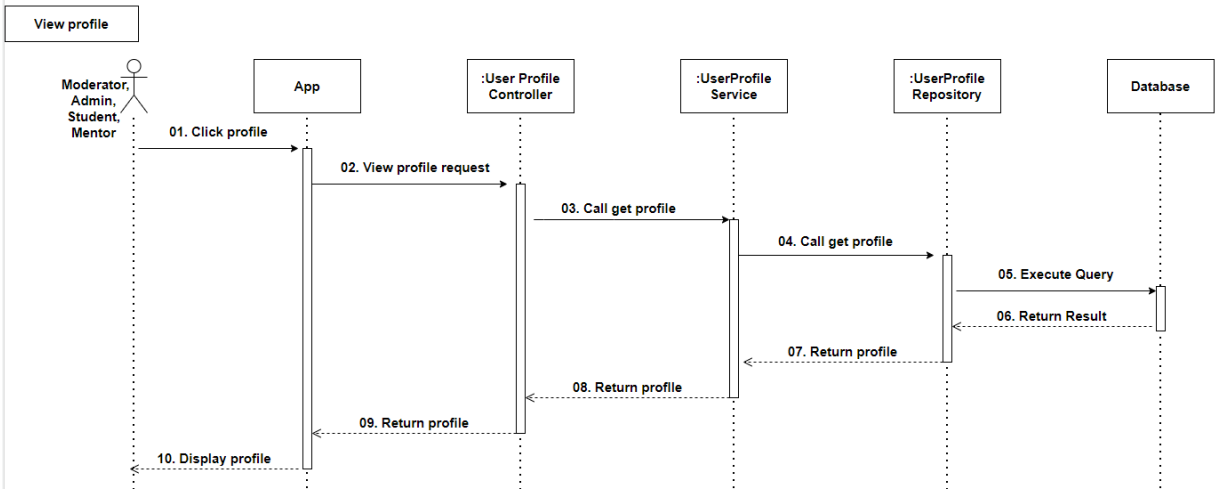
3.2 Feature "Search User & Manage Profile"

3.2.1 Class Diagram

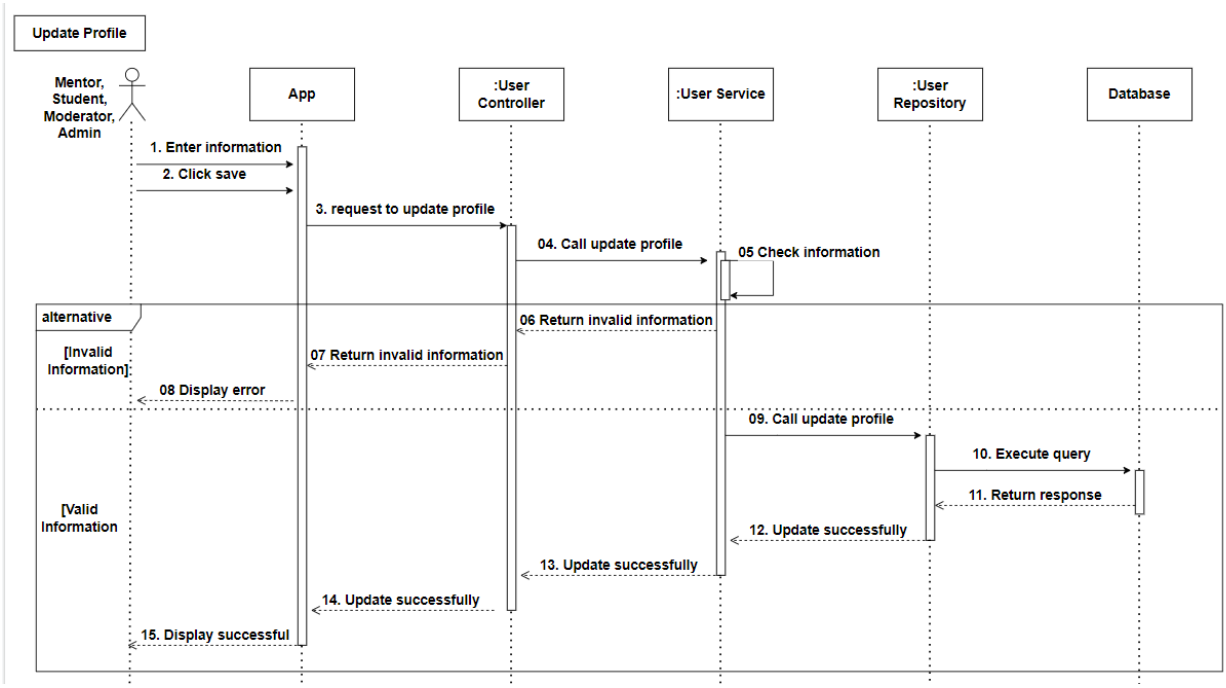


3.2.2 Sequence Diagram

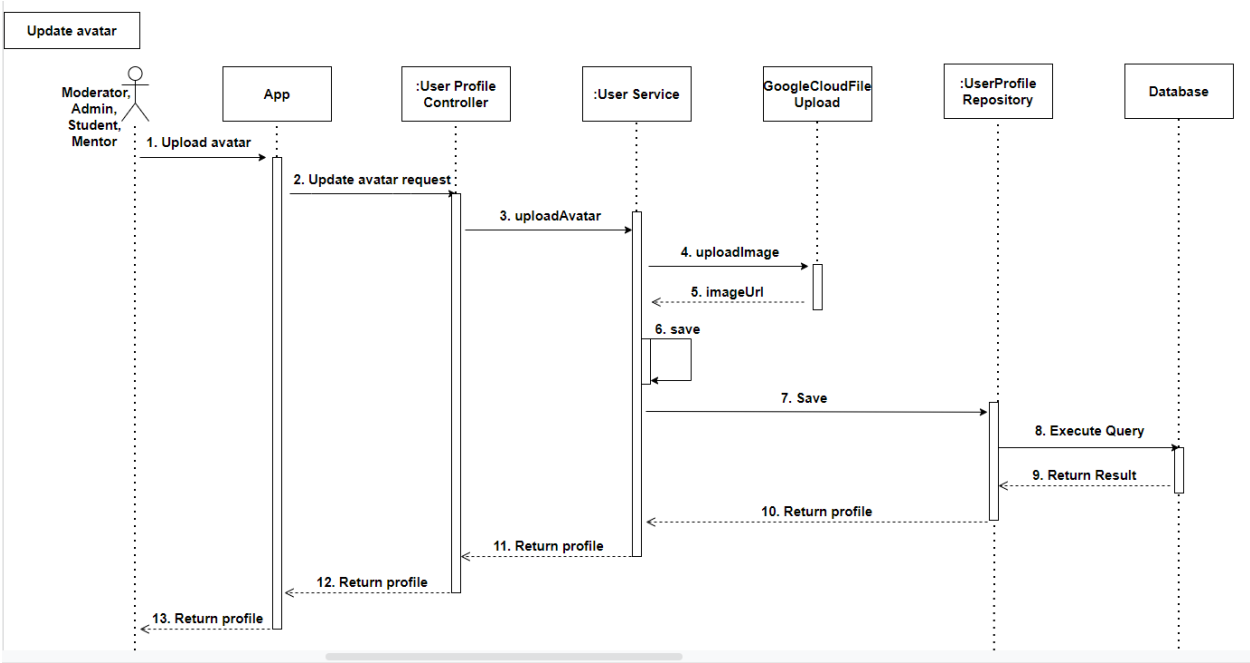
3.2.2.1 View Profile



3.2.2.2 Update Profile

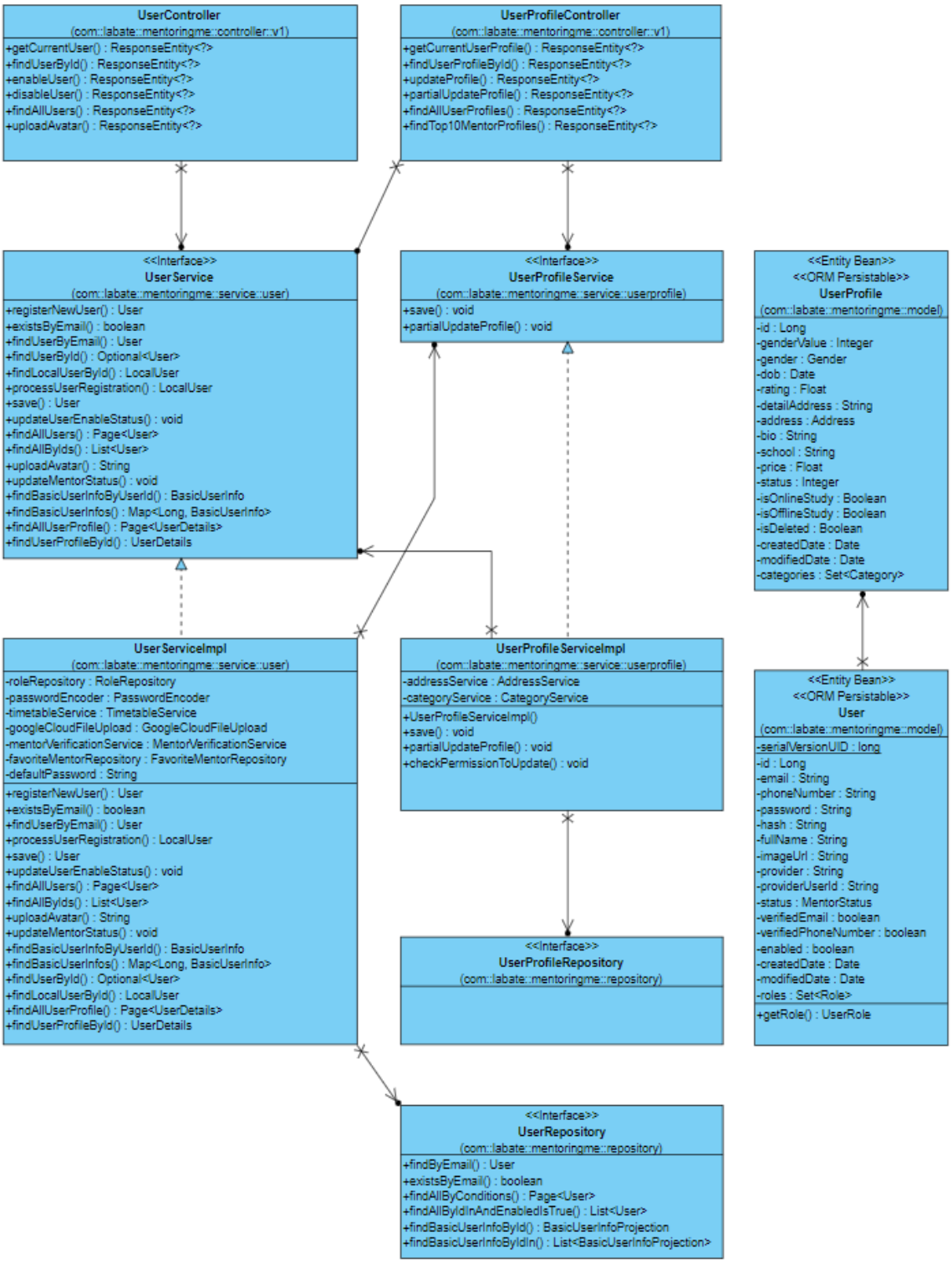


3.2.2.3 Upload Avatar



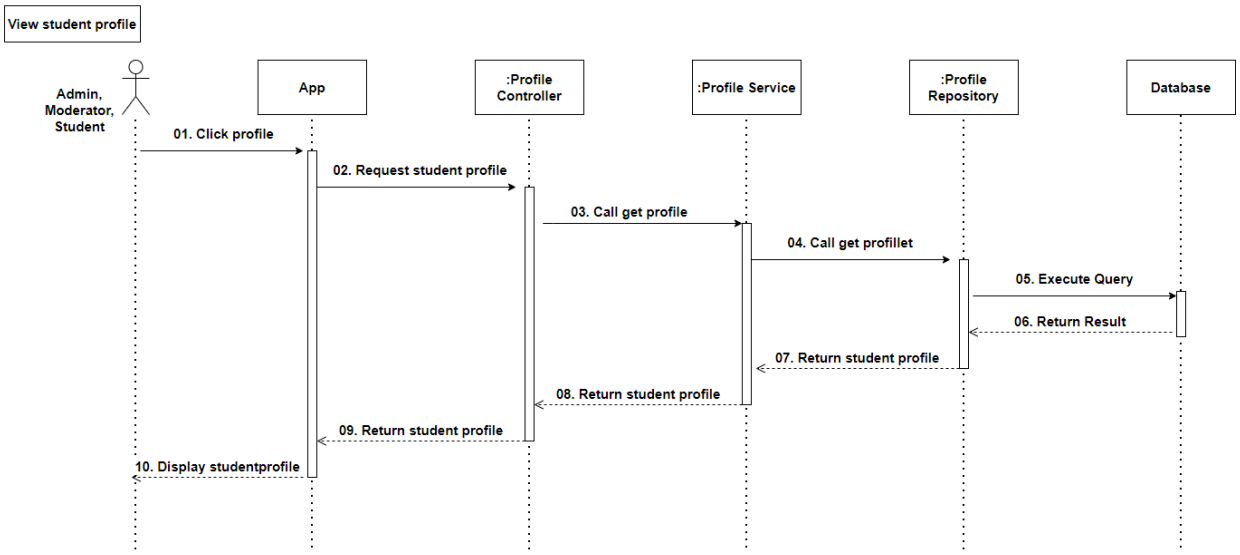
3.3 Feature "Manage Student"

3.3.1 Class Diagram

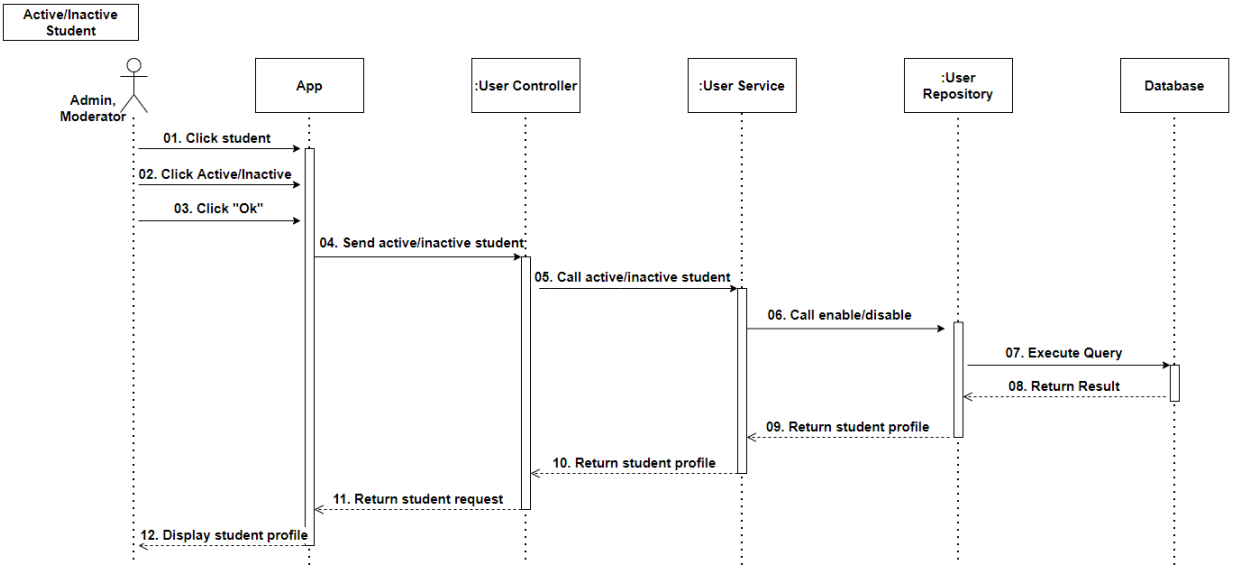


3.3.2 Sequence Diagram

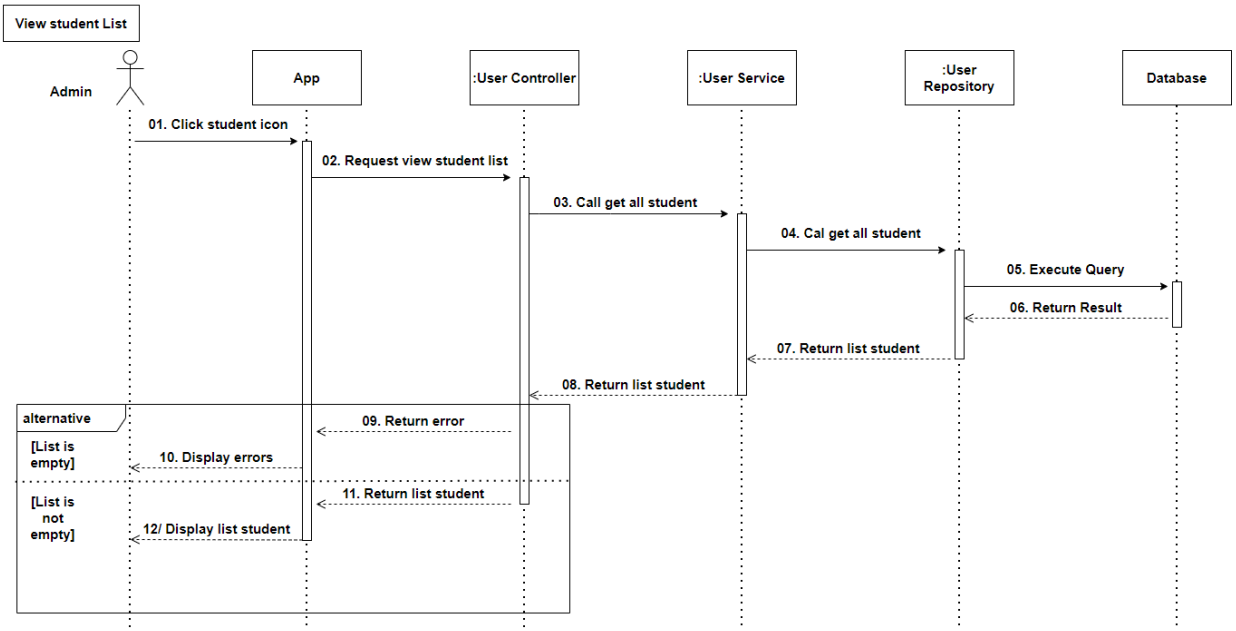
3.3.2.1 View Student Profile



3.3.2.2 Active/Inactive Student

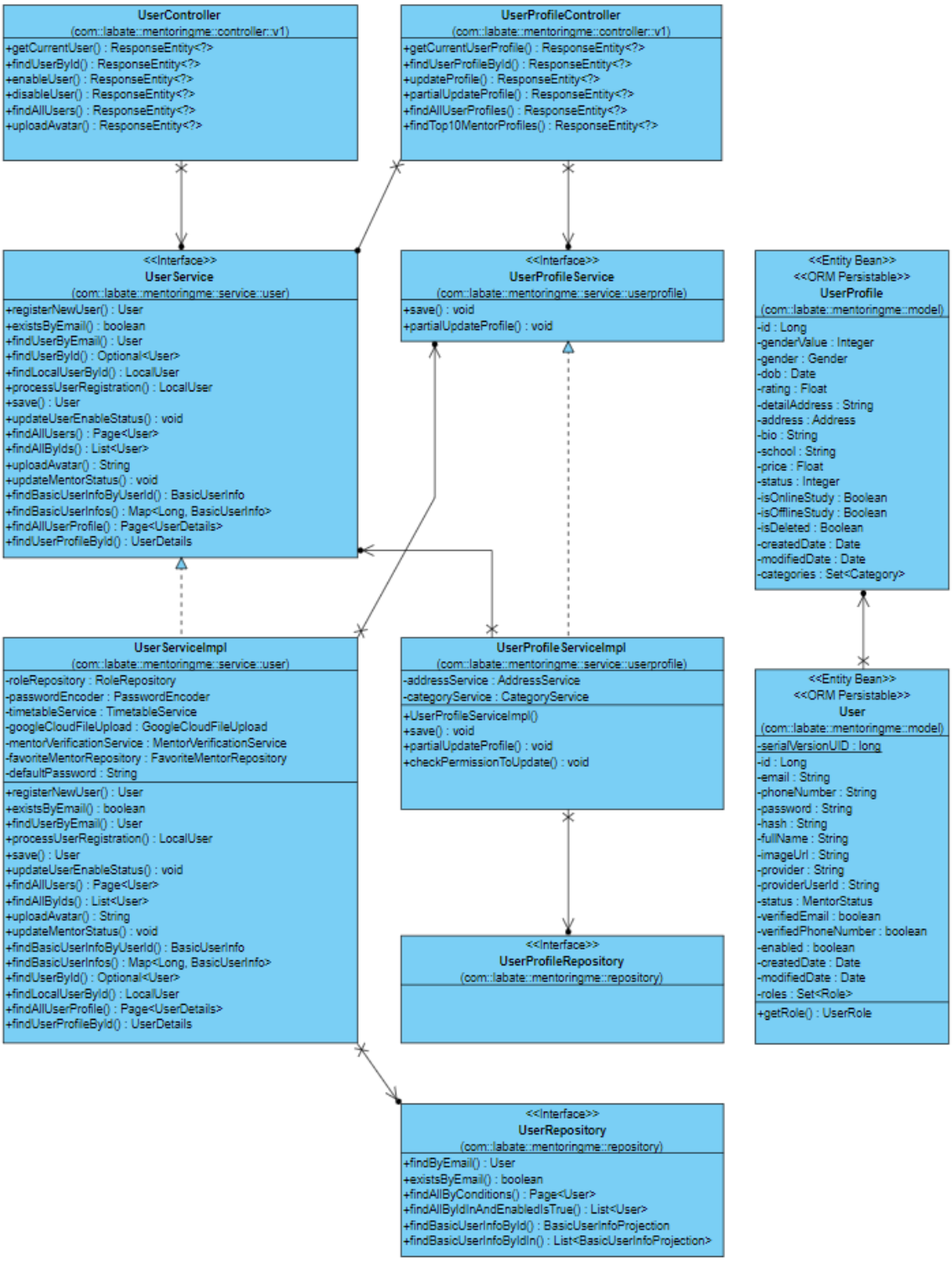


3.3.2.3 View Student List



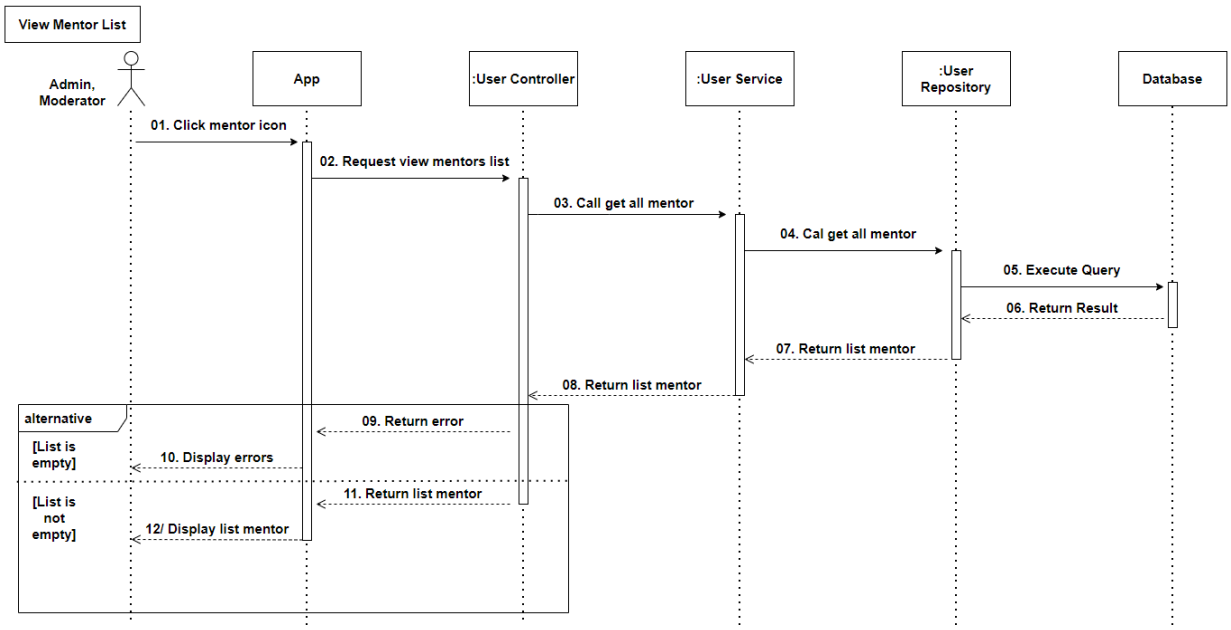
3.4 Feature "Manage Mentor"

3.4.1 Class Diagram

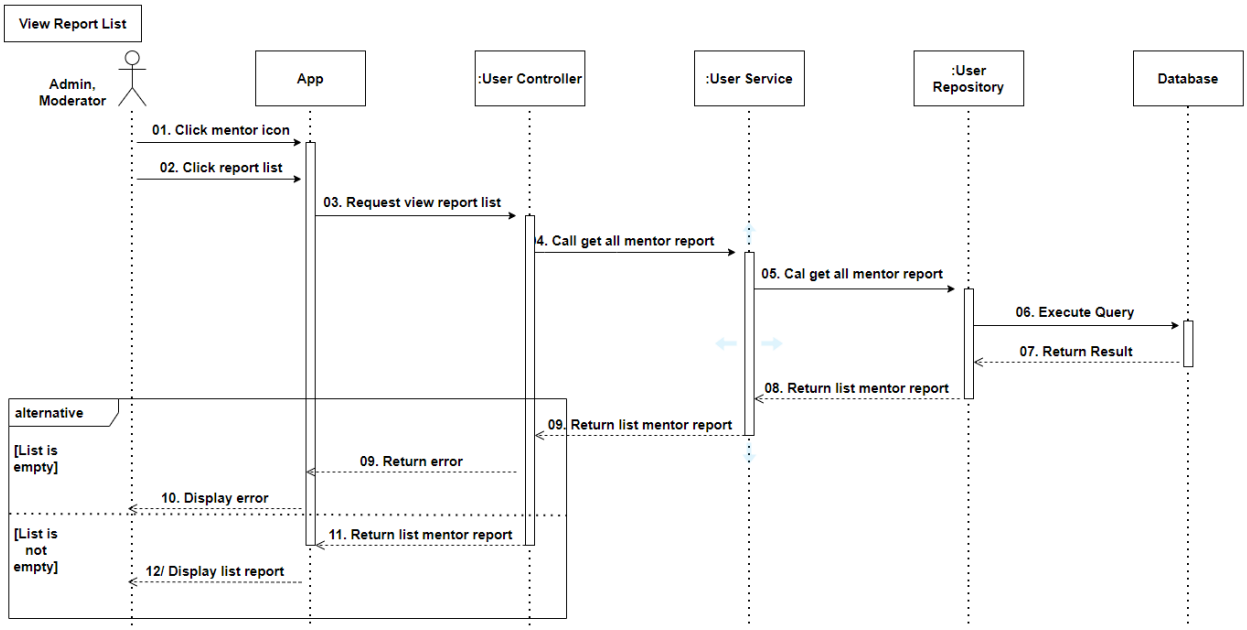


3.4.2 Sequence Diagram

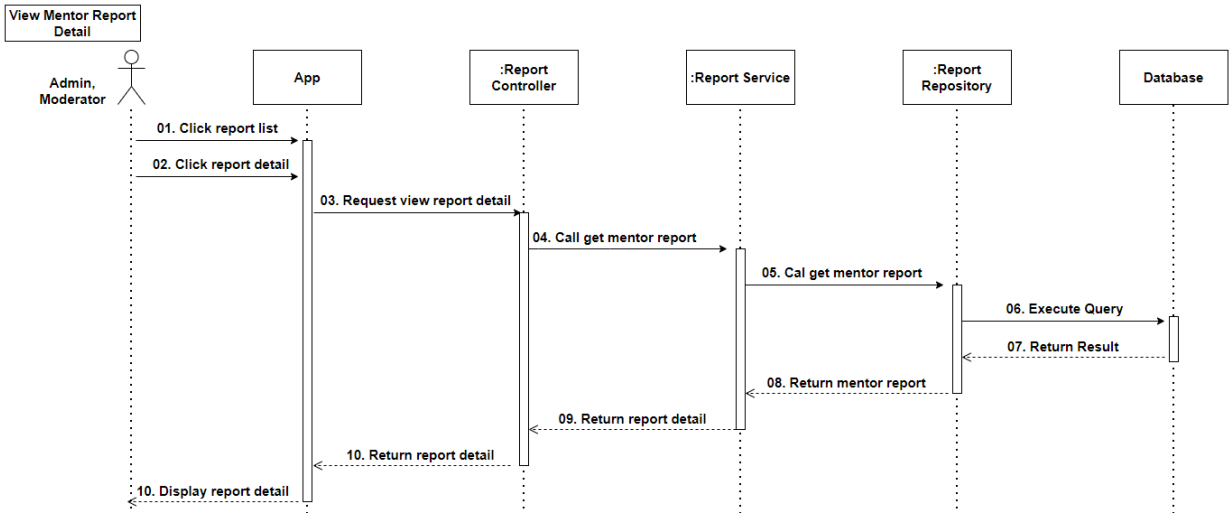
3.4.2.1 View Mentor List



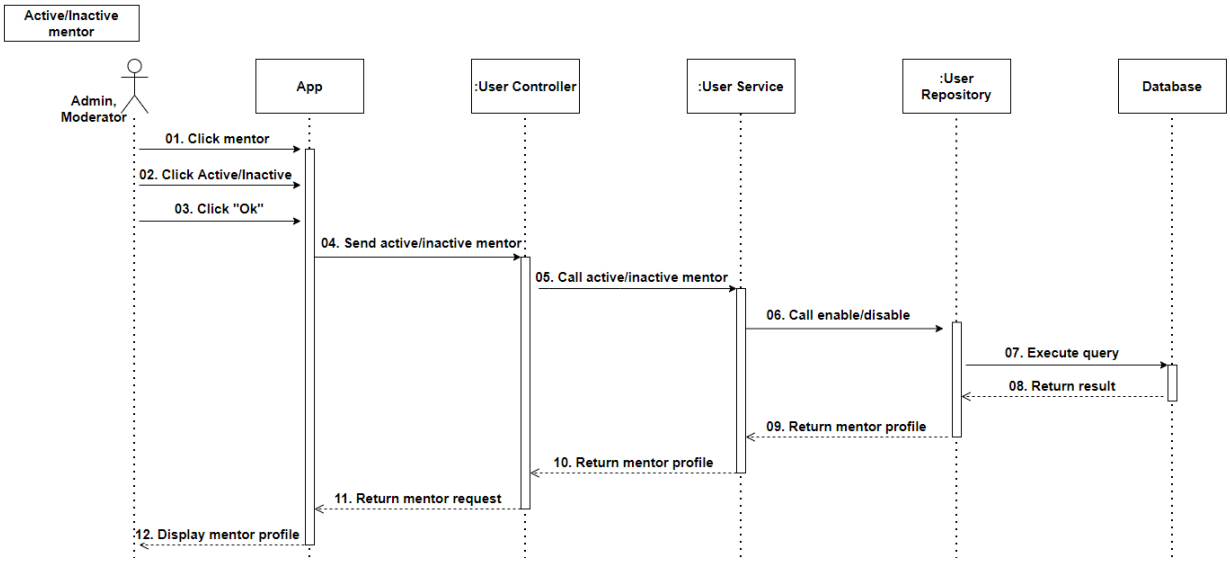
3.4.2.2 View Mentor Report List



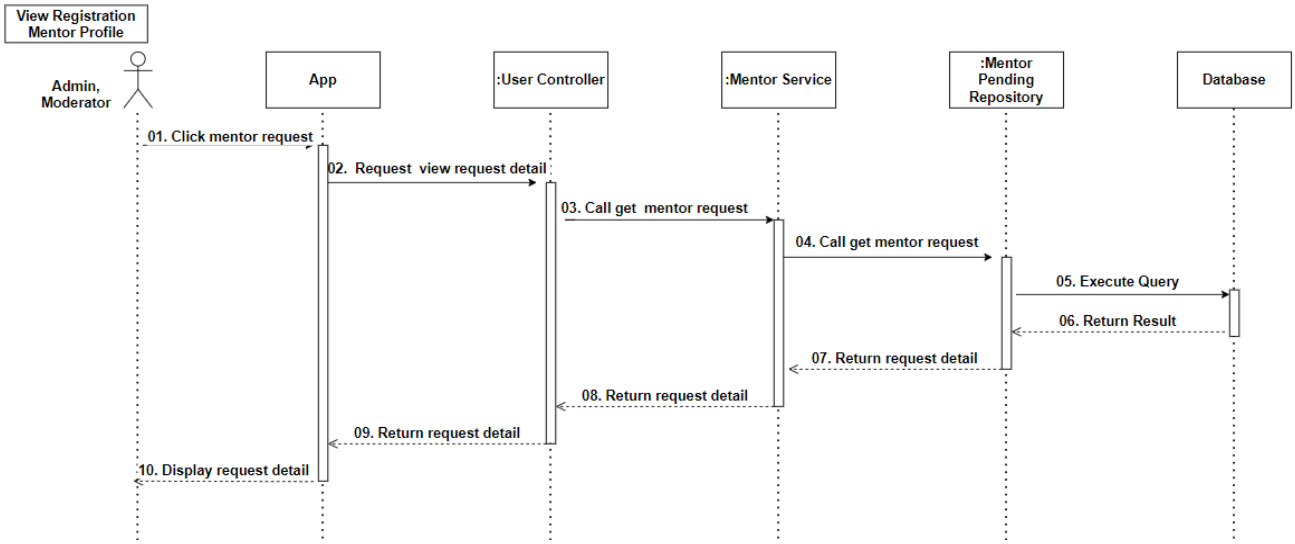
3.4.2.3 View Mentor Report Detail



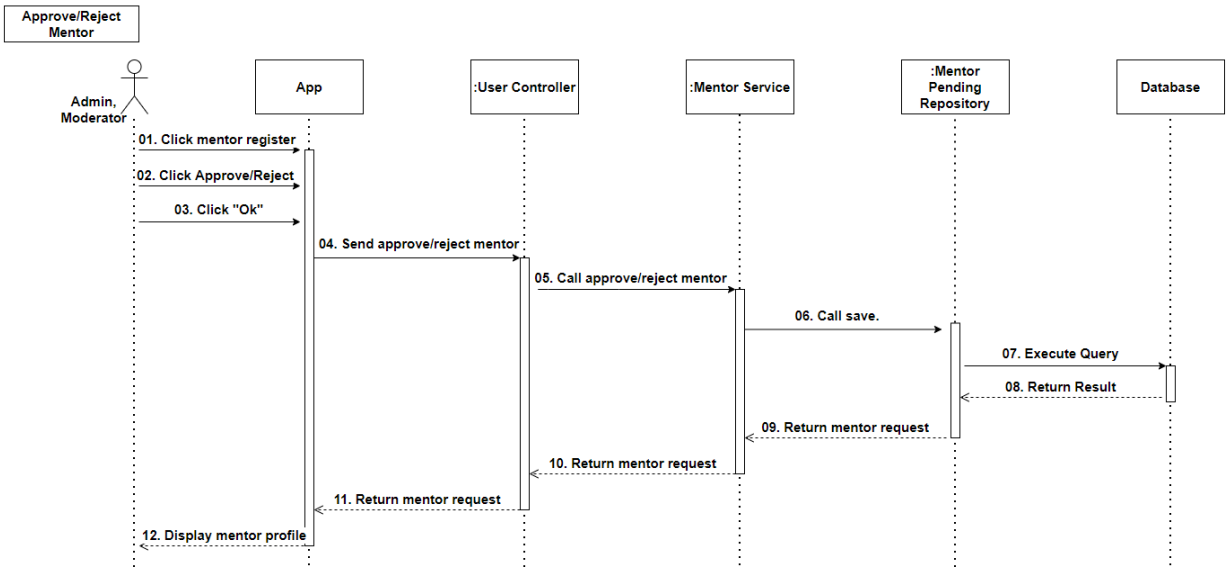
3.4.2.4 Active/Inactive Mentor



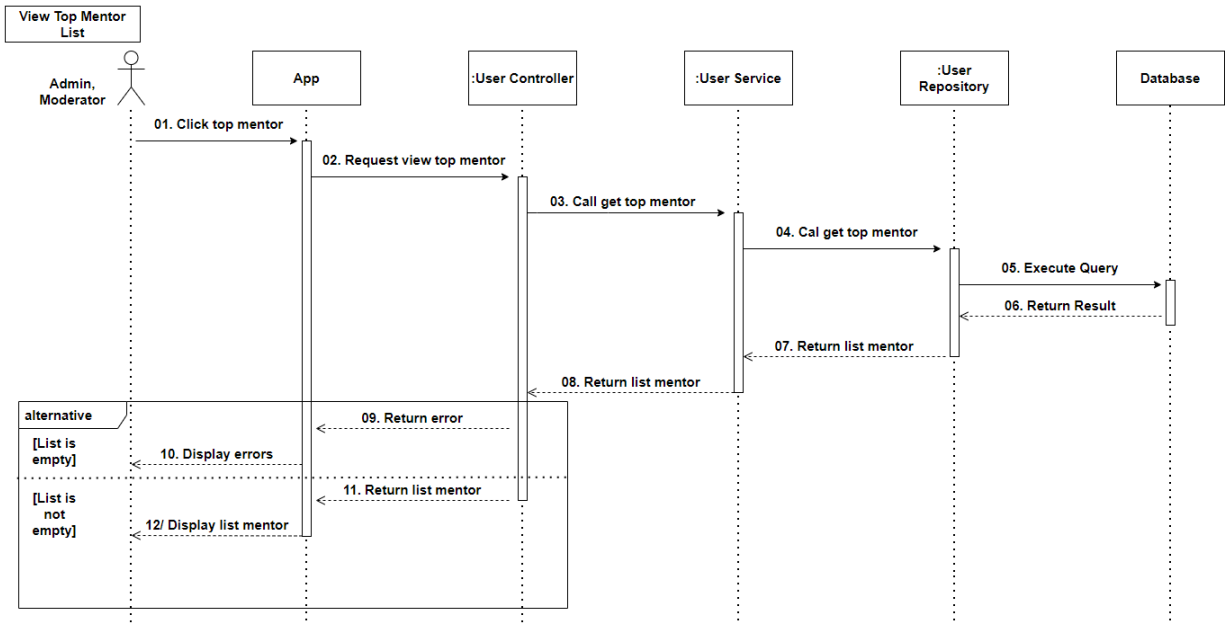
3.4.2.5 View Mentor Registration Profile



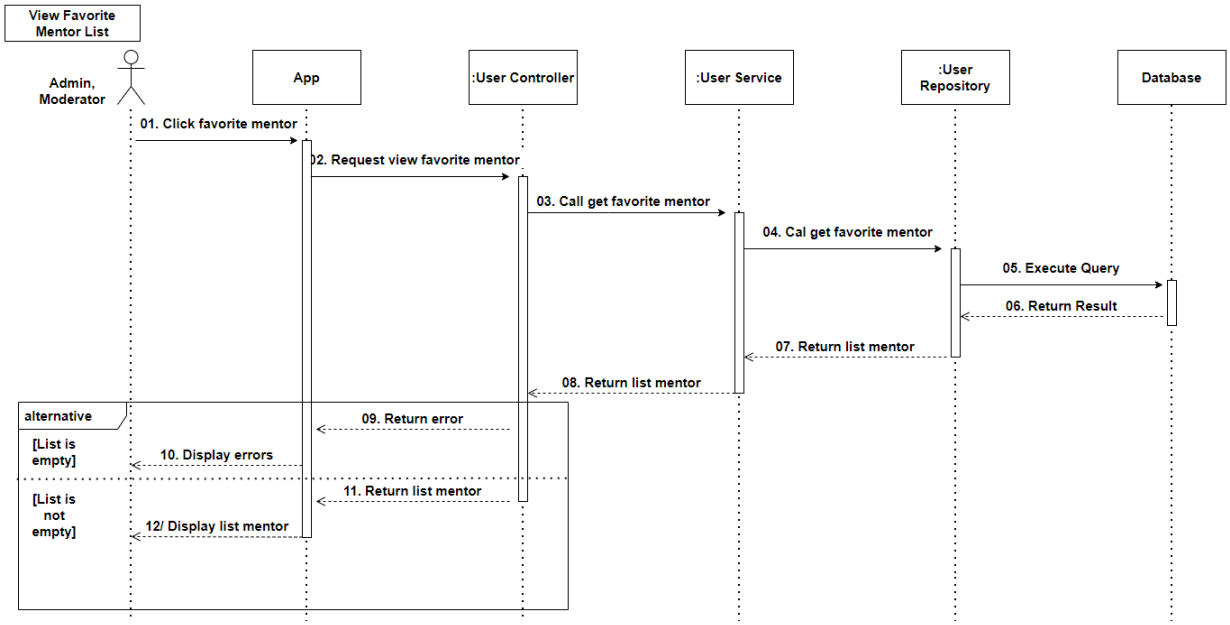
3.4.2.6 Approve/Reject Mentor



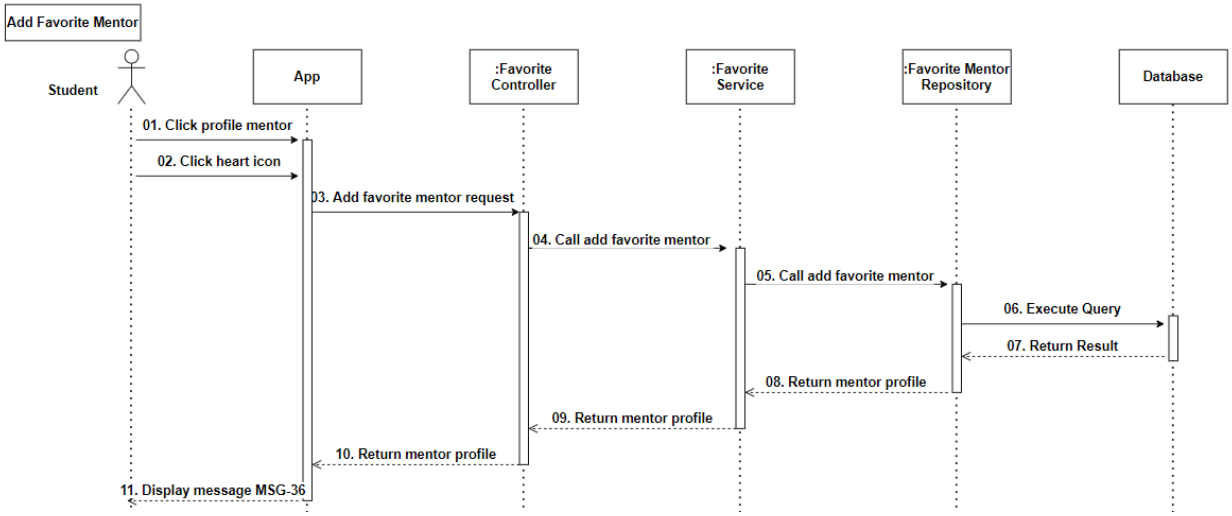
3.4.2.7 View Top Mentor List



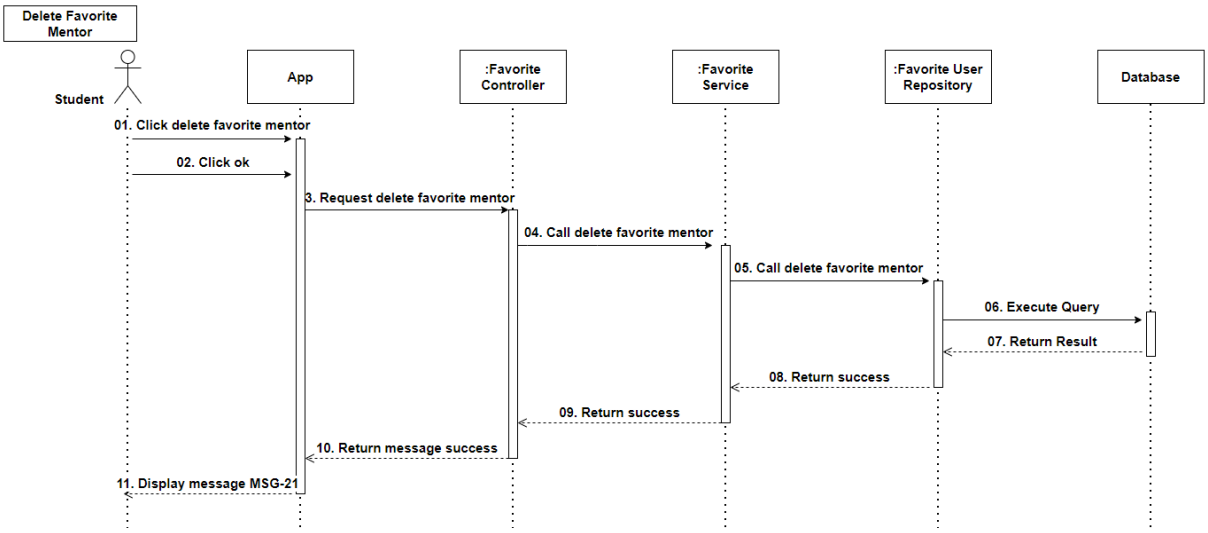
3.4.2.8 View Favorite Mentor List



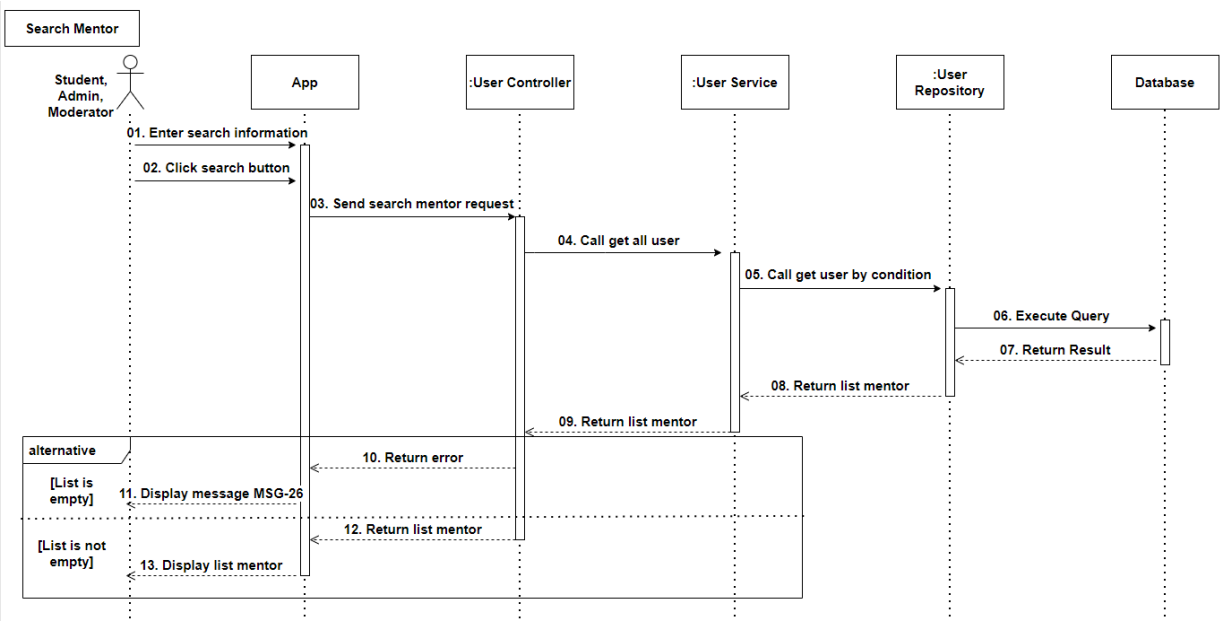
3.4.2.9 Add Favorite Mentor



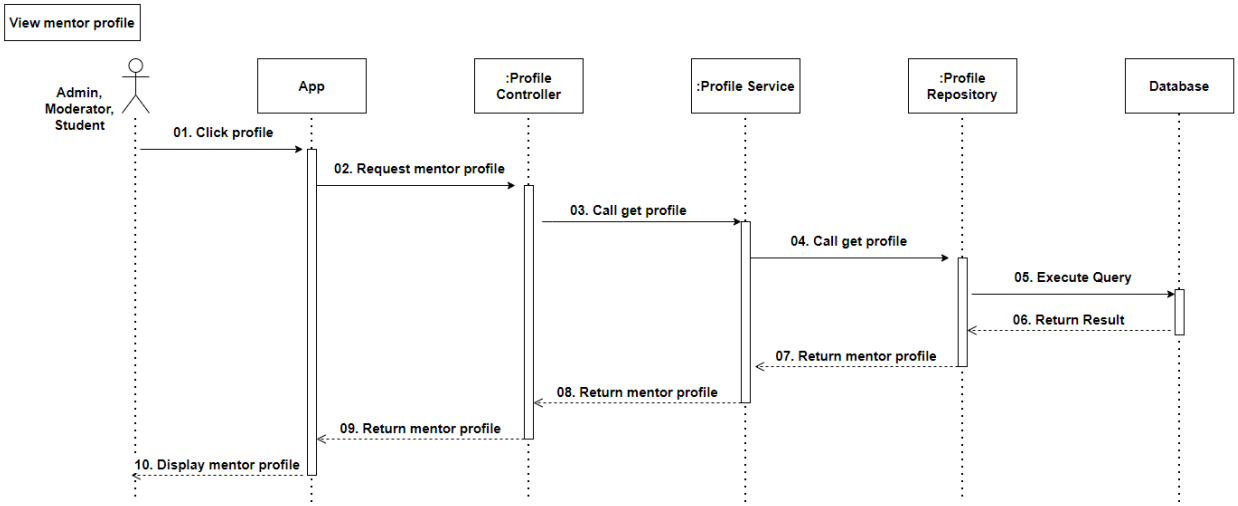
3.4.2.10 Delete favorite mentor



3.4.2.11 Search mentor

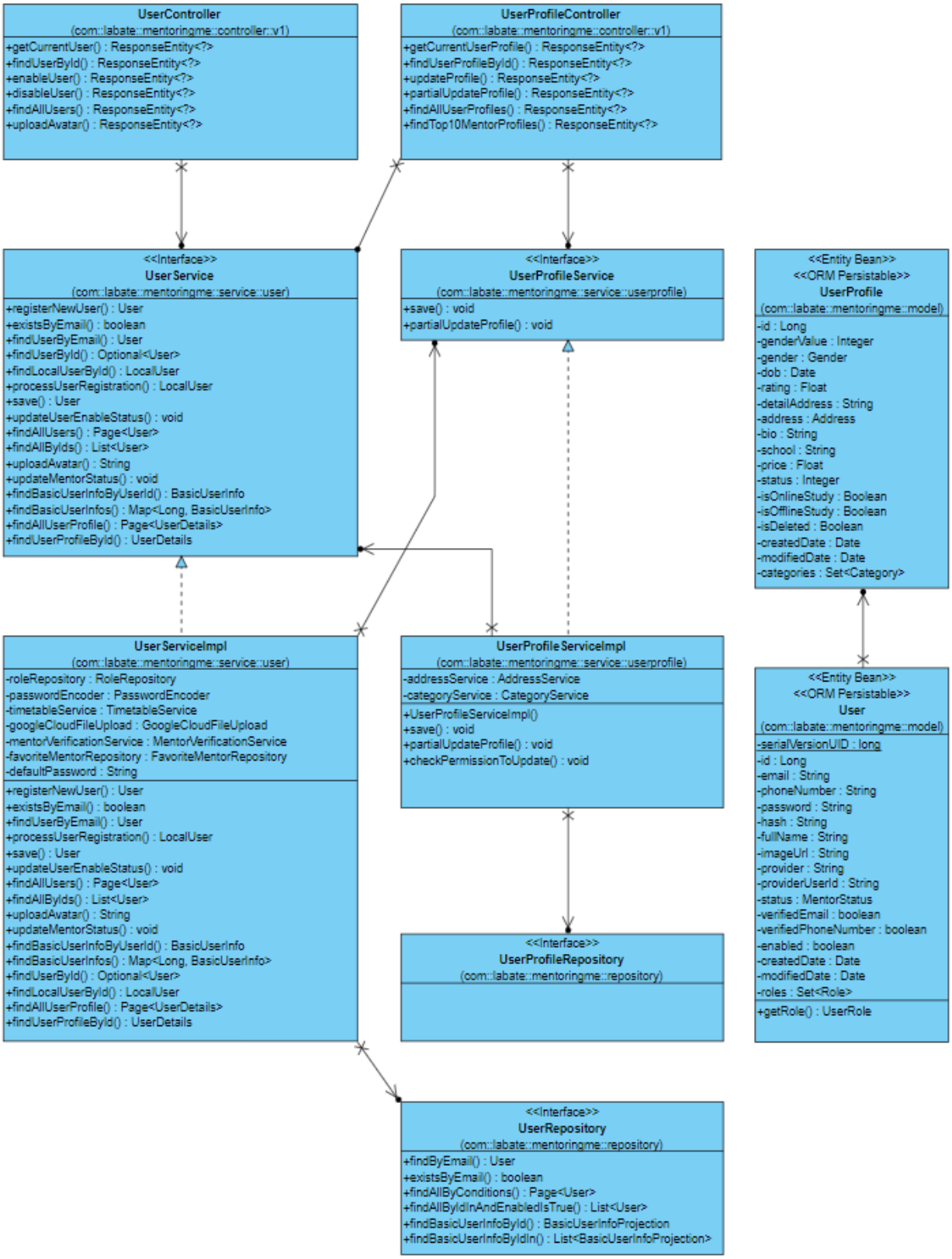


3.4.2.12 View Mentor Profile



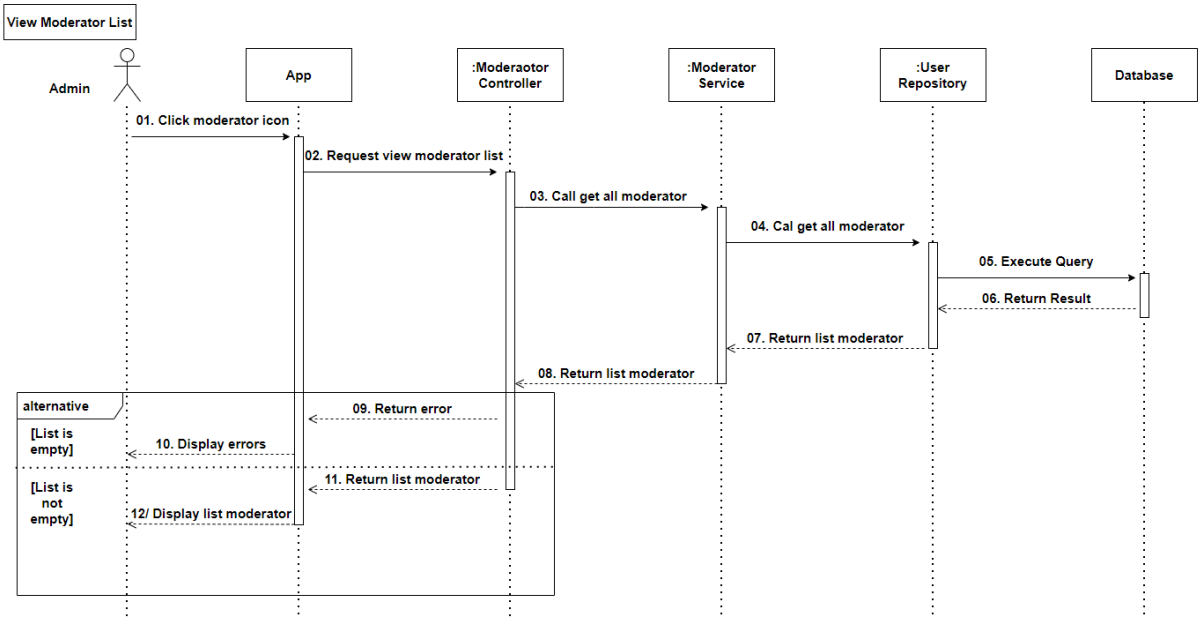
3.5 Feature "Manage Moderator"

3.5.1 Class Diagram

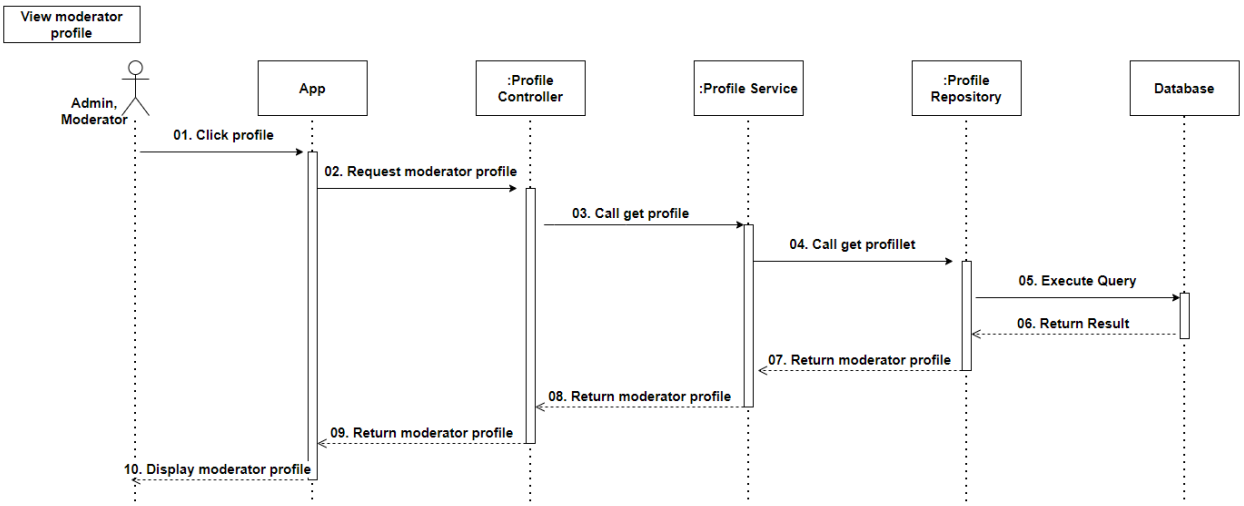


3.5.2 Sequence Diagram

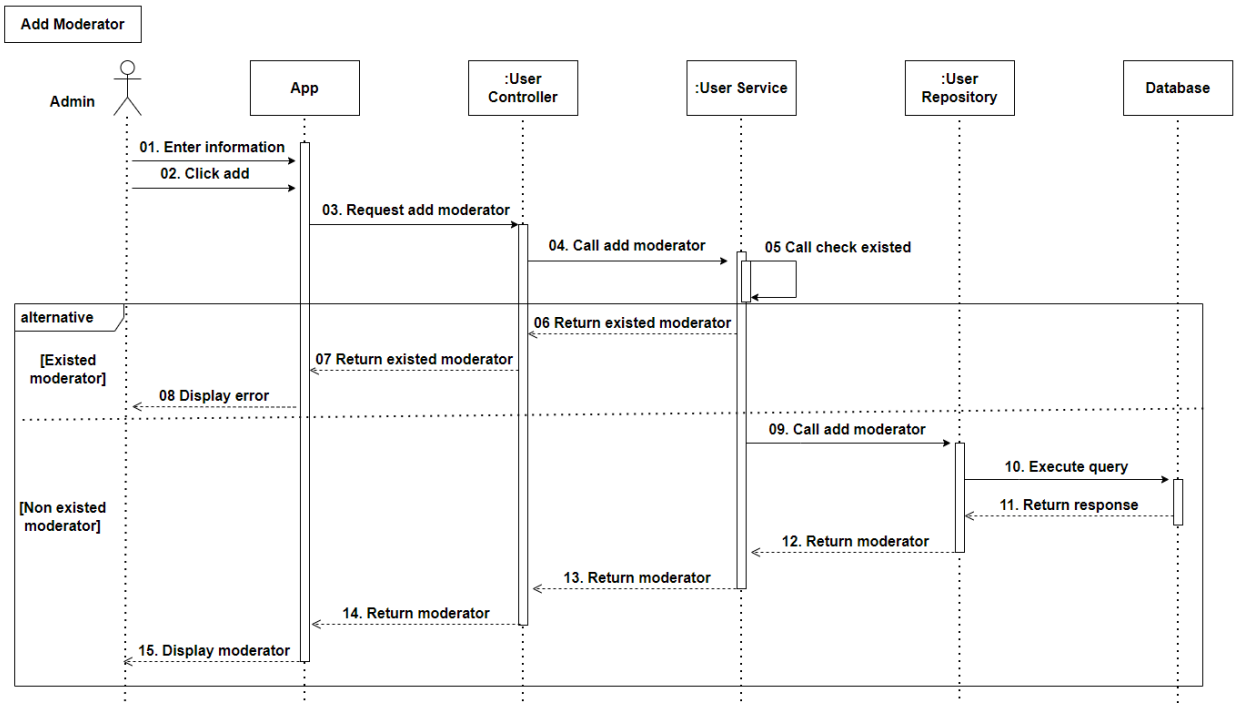
3.5.2.1 View moderator list



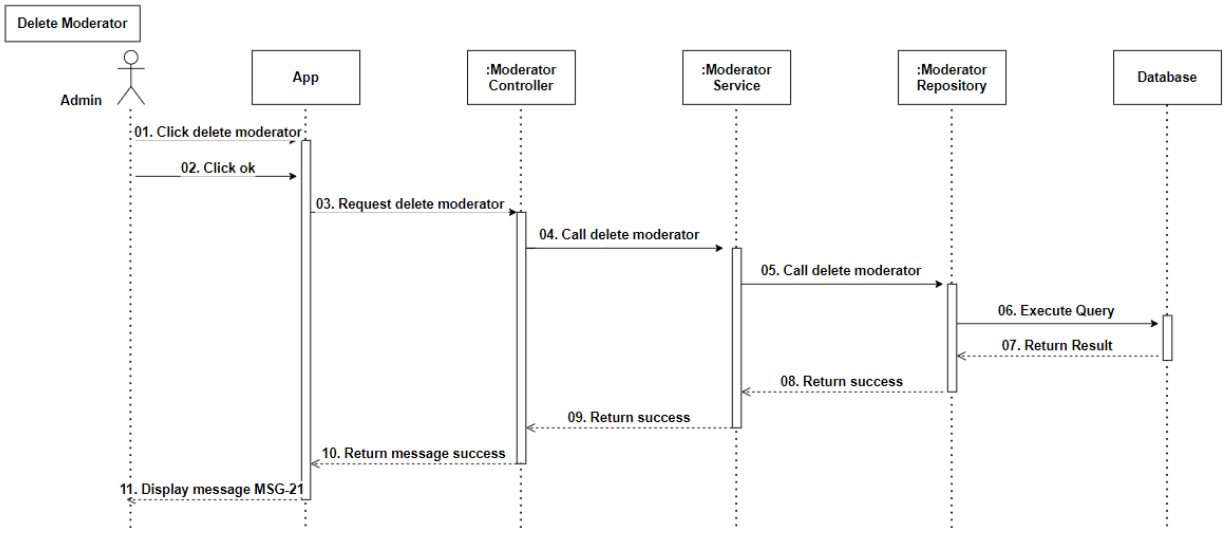
3.5.2.2 View moderator profile



3.5.2.3 Add moderator

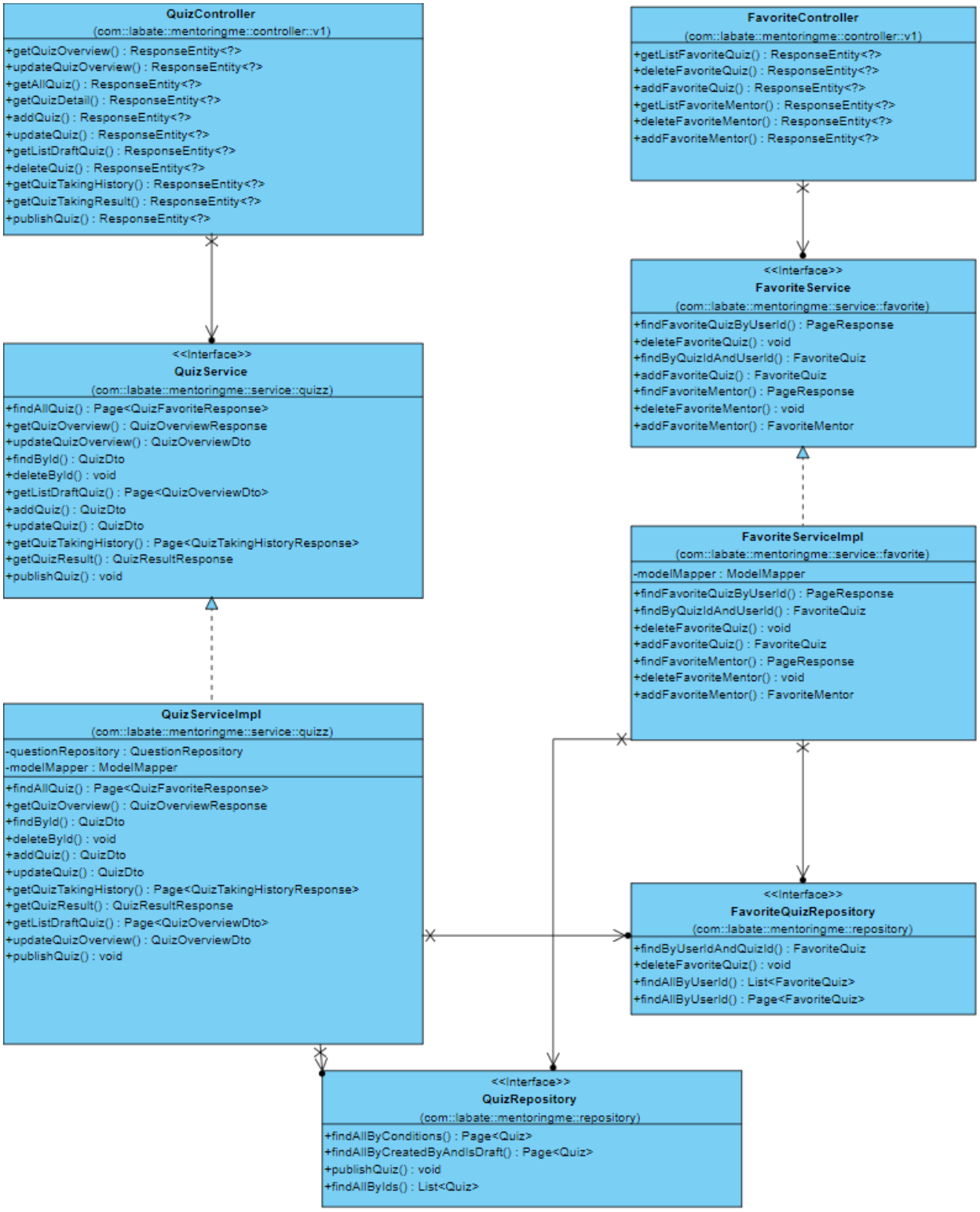


3.5.2.4 Delete moderator



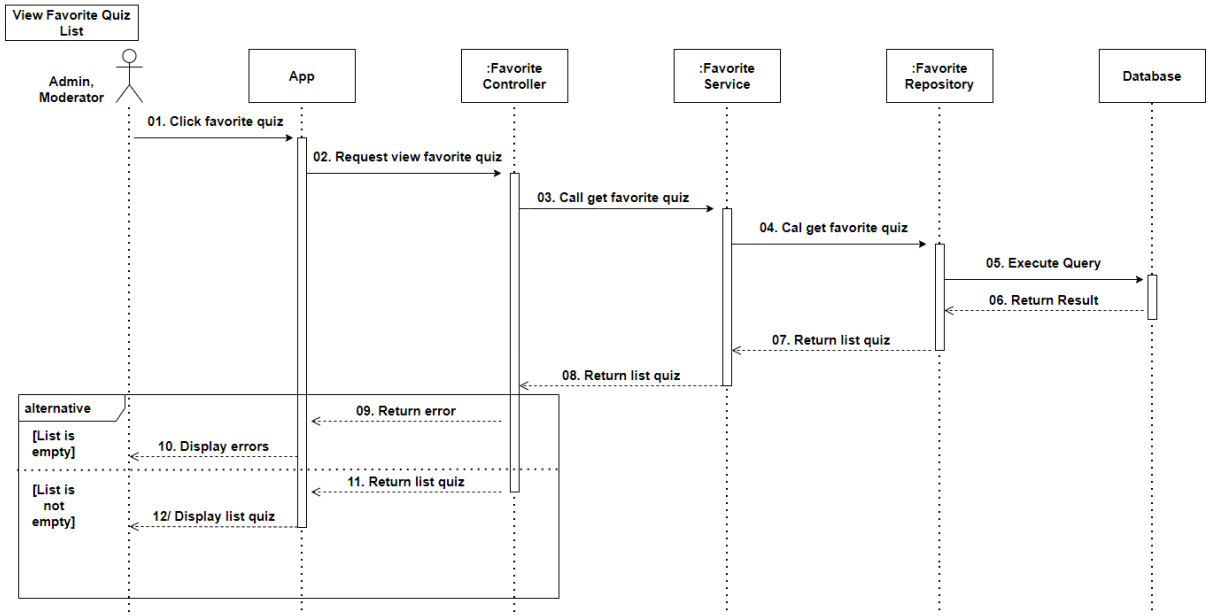
3.6 Feature "Manage Quiz"

3.6.1 Class Diagram

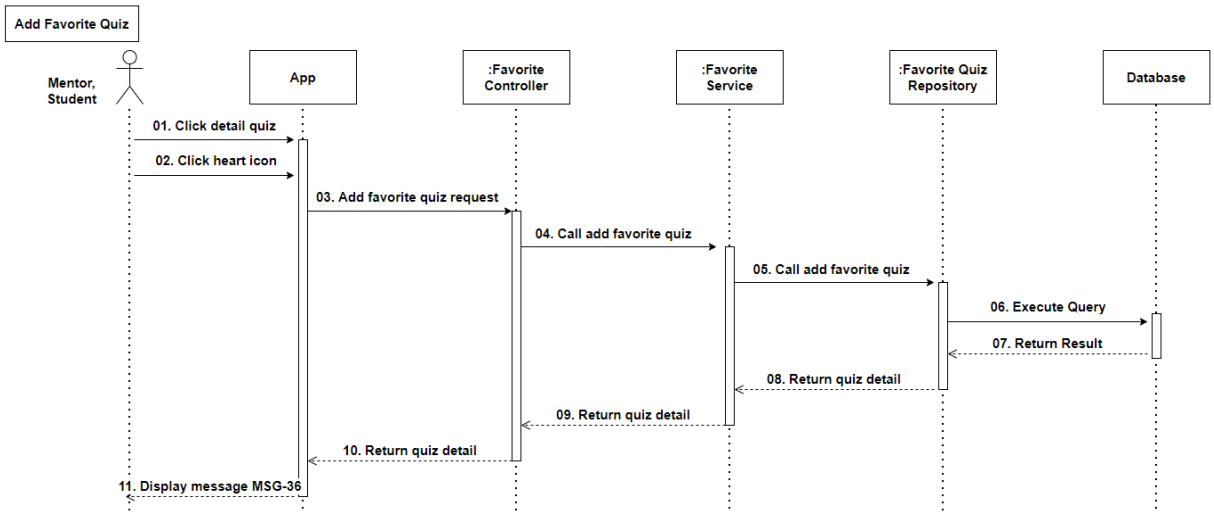


3.6.2 Sequence Diagram

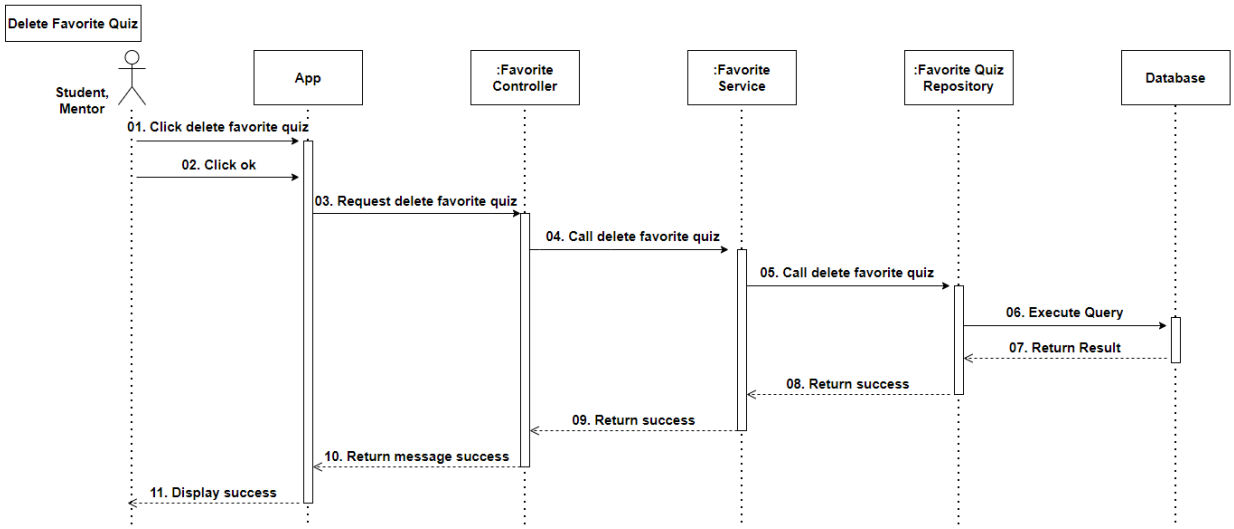
3.6.2.1 View favorite quiz list



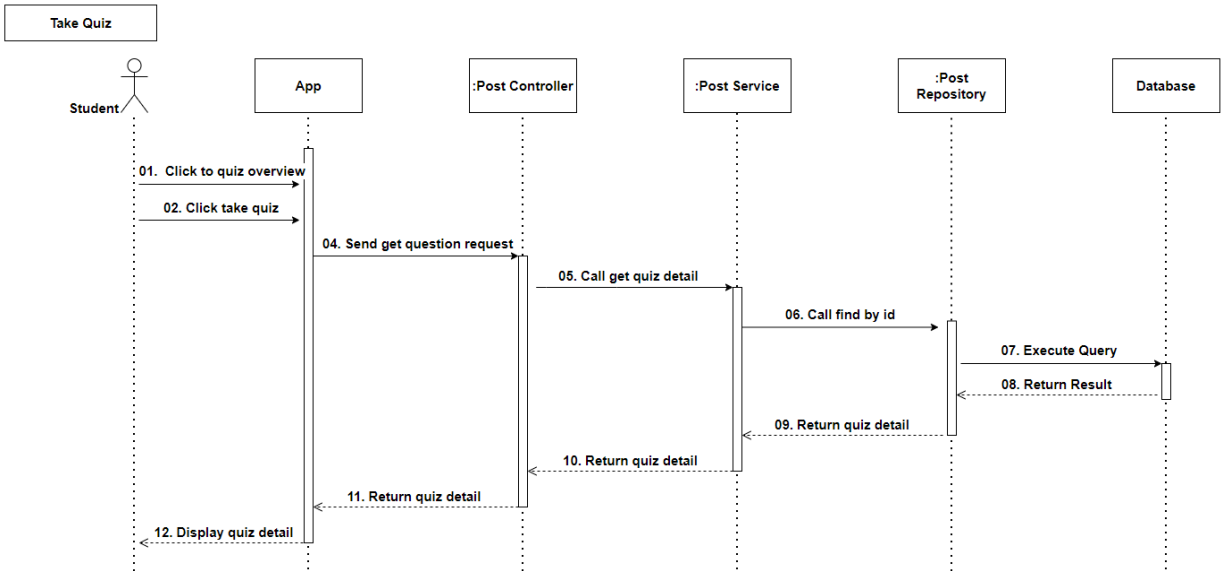
3.6.2.2 Add Favorite Quiz



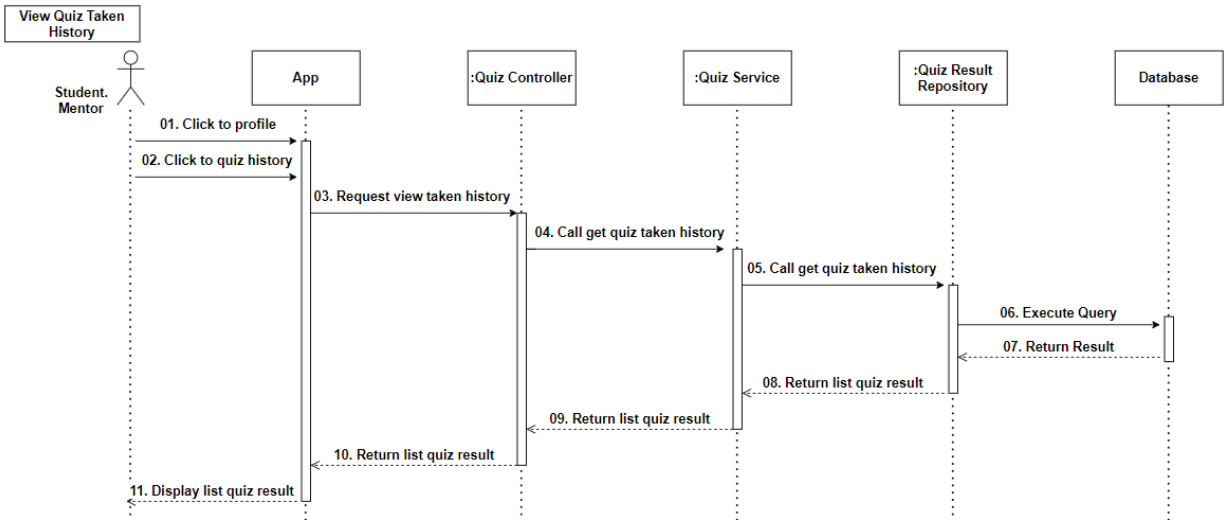
3.6.2.3 Delete Favorite Quiz



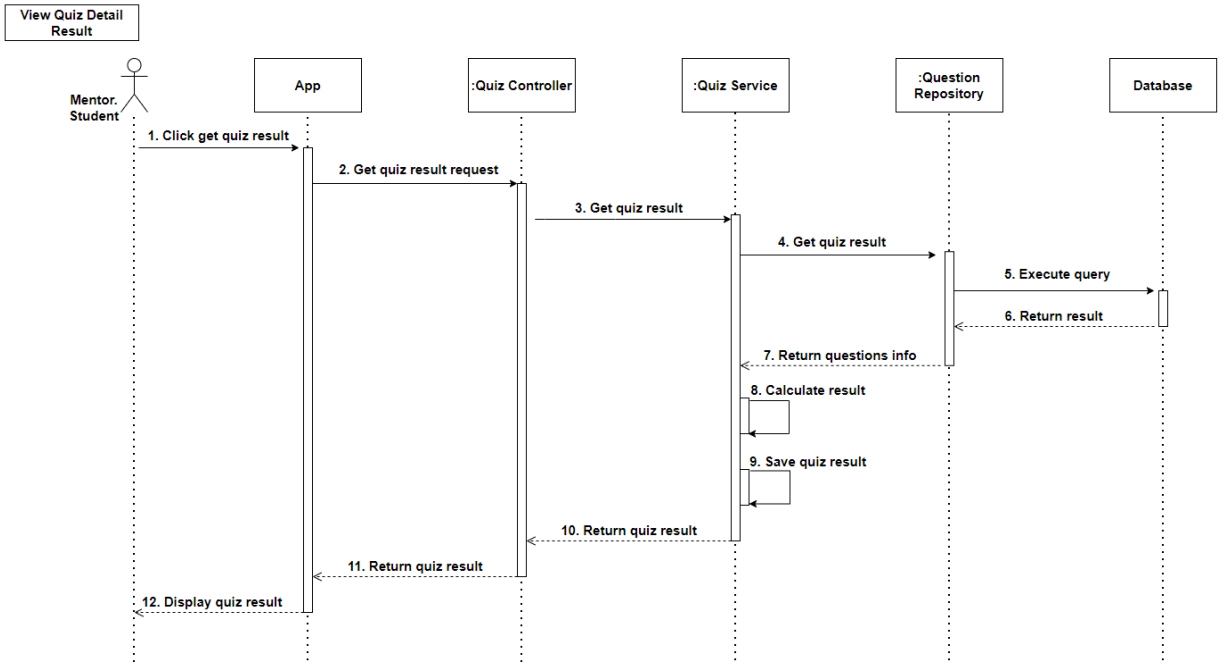
3.6.2.4 Take Quiz



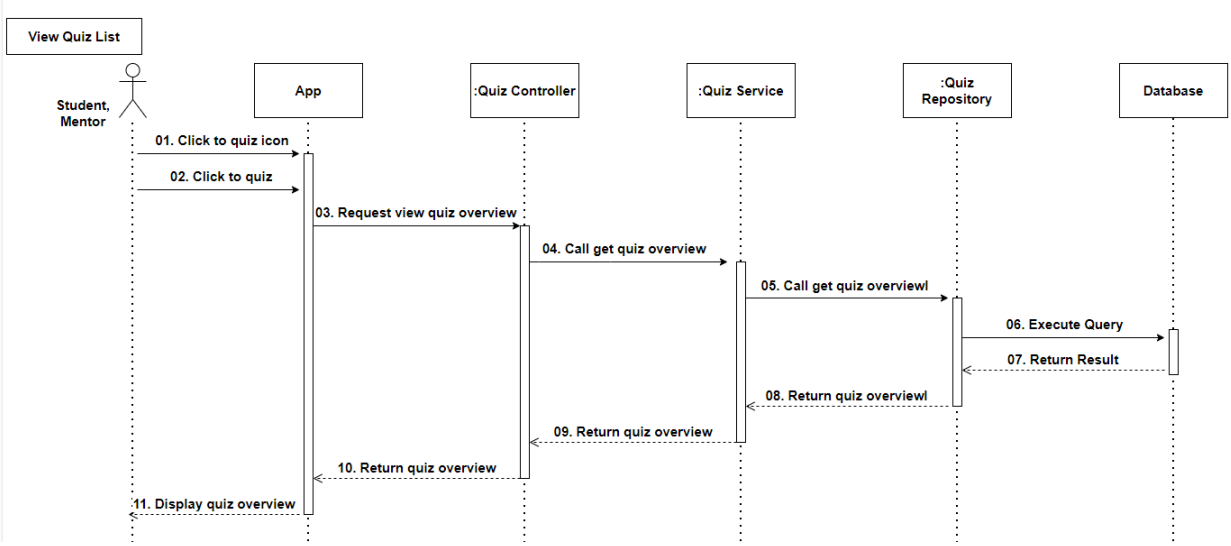
3.6.2.5 View Taken Quiz History



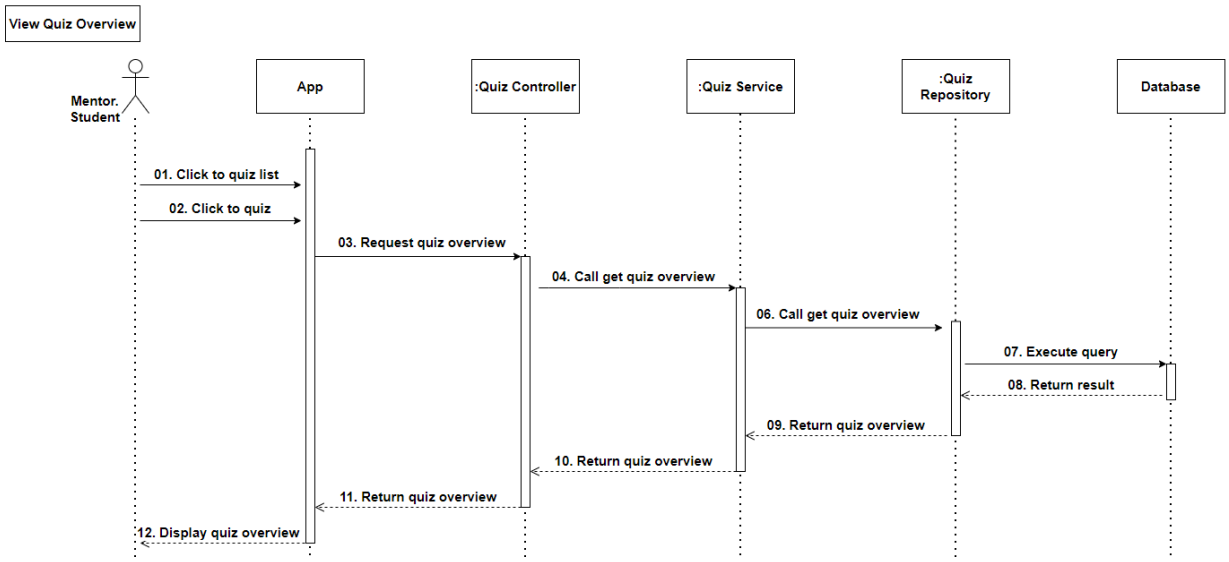
3.6.2.6 View Quiz Detail Result



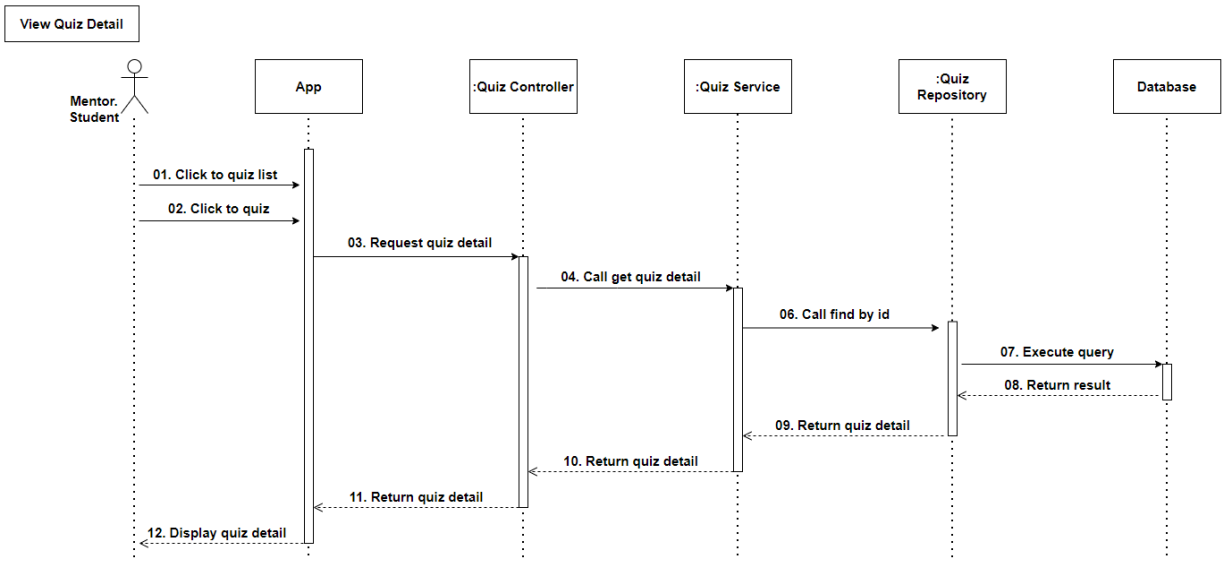
3.6.2.7 View Quiz List



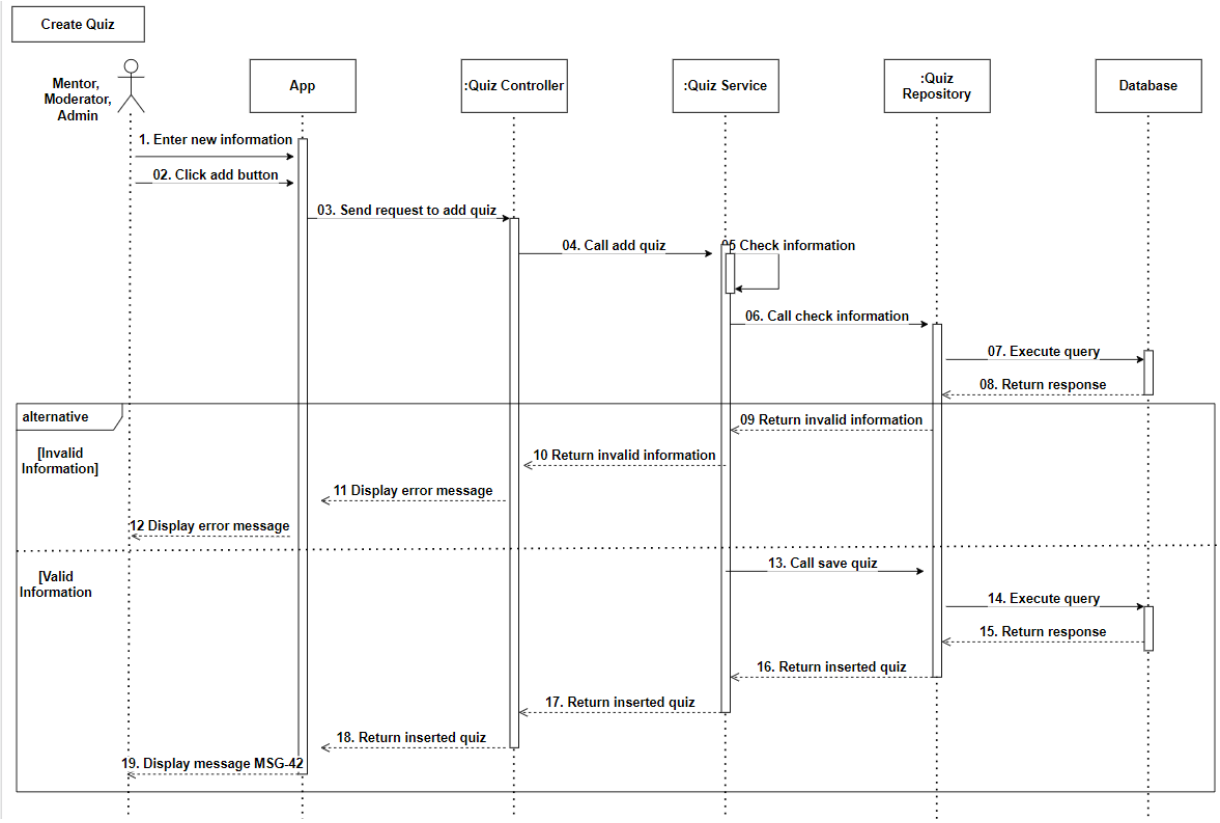
3.6.2.8 View Quiz Overview



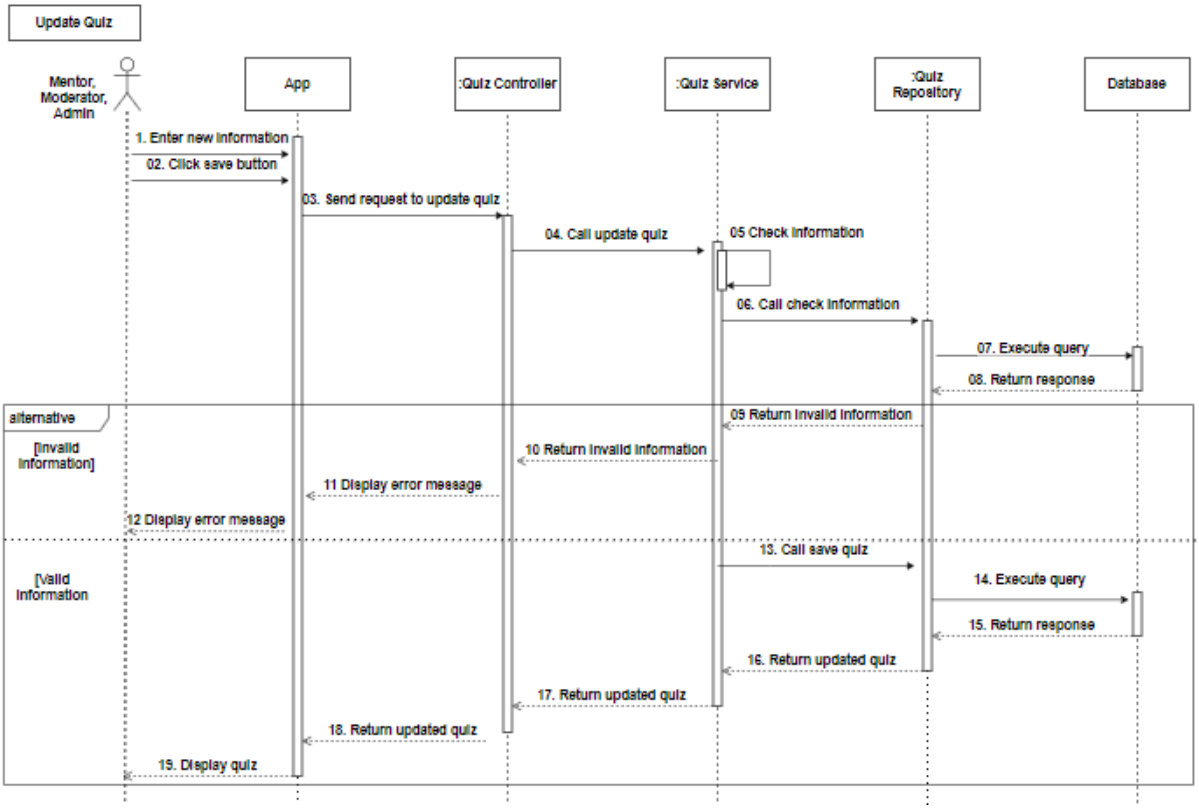
3.6.2.9 View Quiz Detail



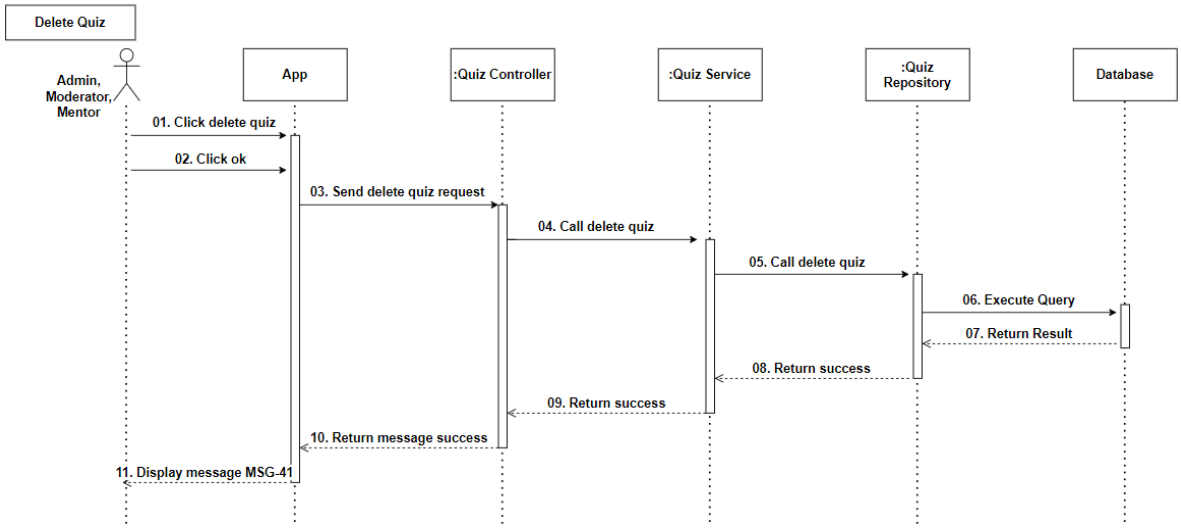
3.6.2.10 Create Quiz



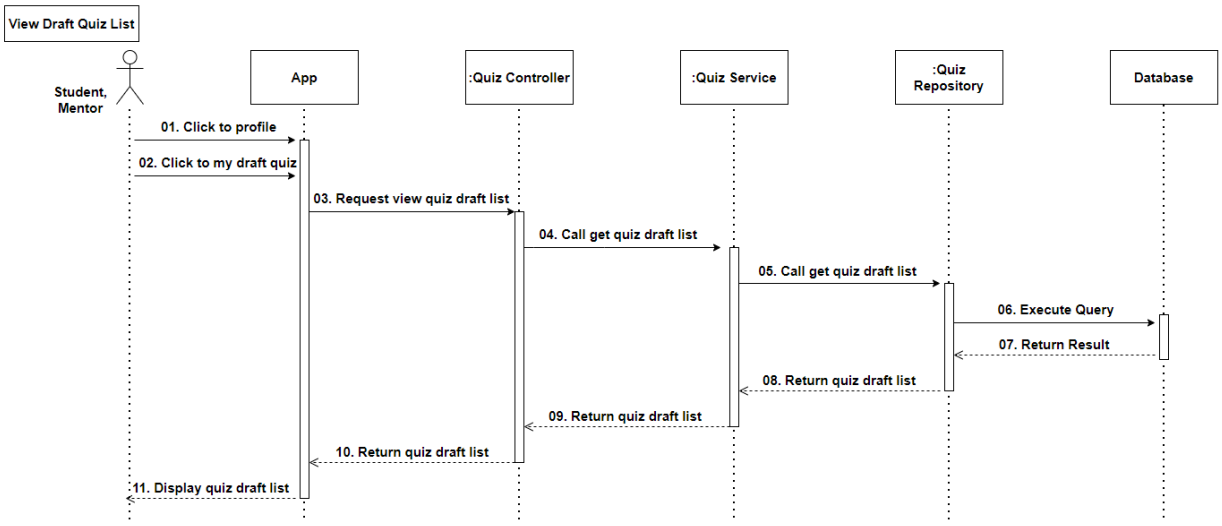
3.6.2.11 Update Quiz



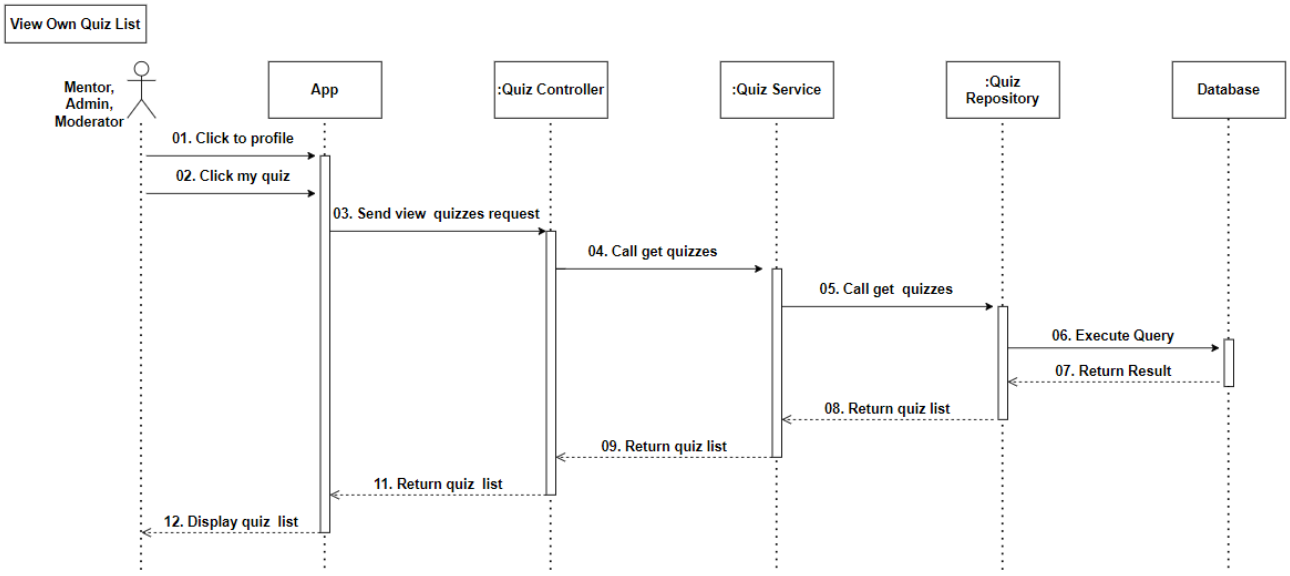
3.6.2.12 Delete Quiz



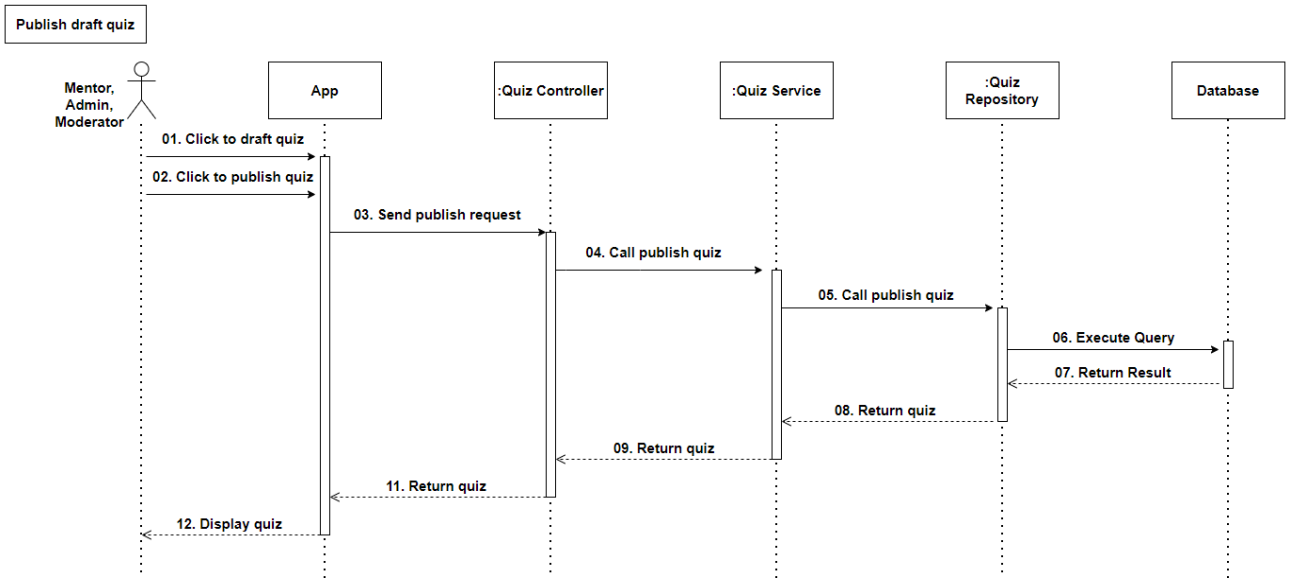
3.6.2.13 View Draft Quiz List



3.6.2.14 View Own Quiz List

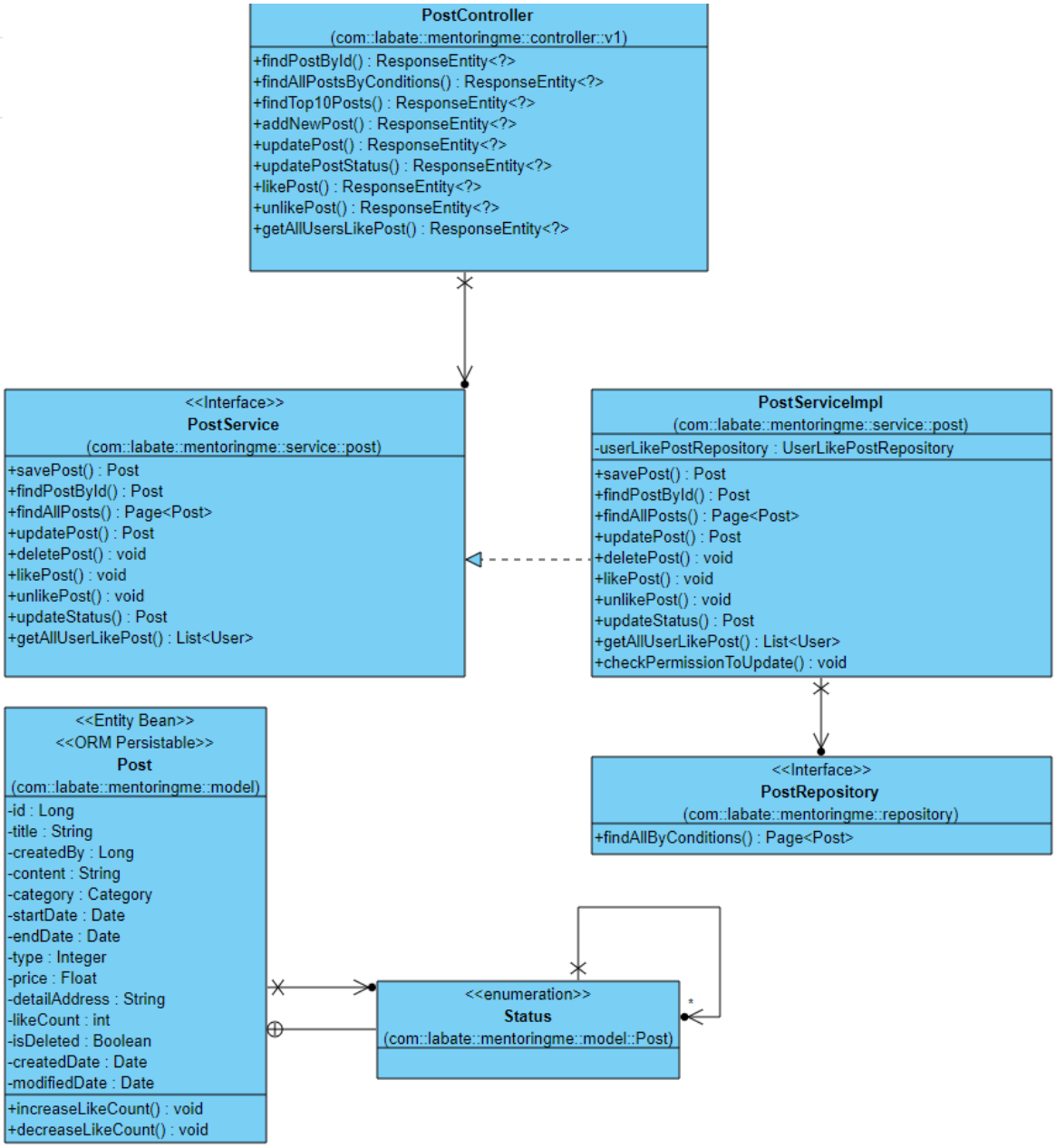


3.6.2.15 Publish Draft Quiz



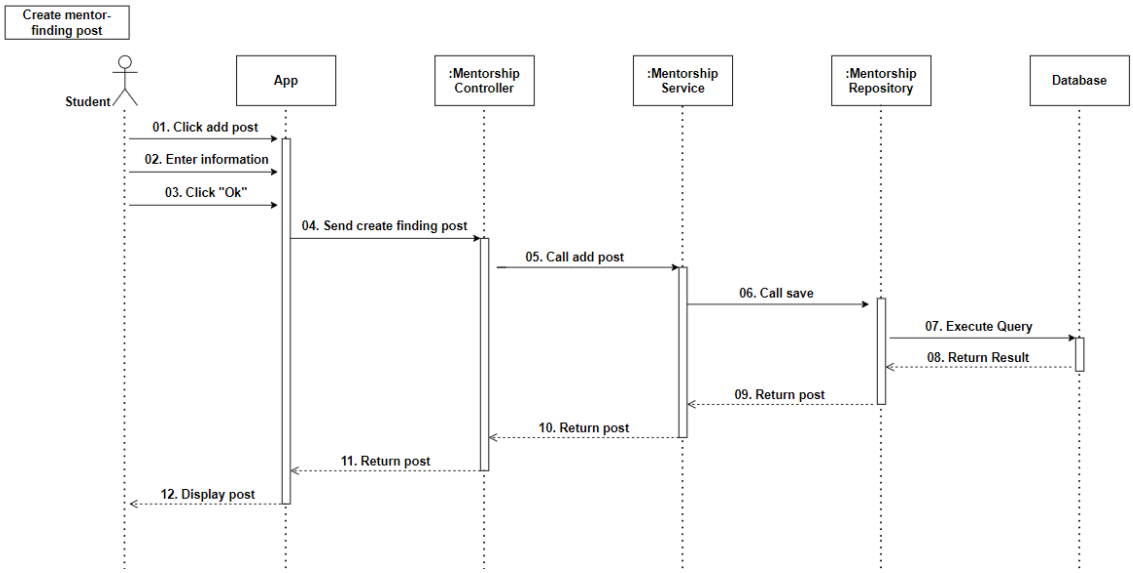
3.7 Feature "Manage Mentor-finding Post"

3.7.1 Class Diagram

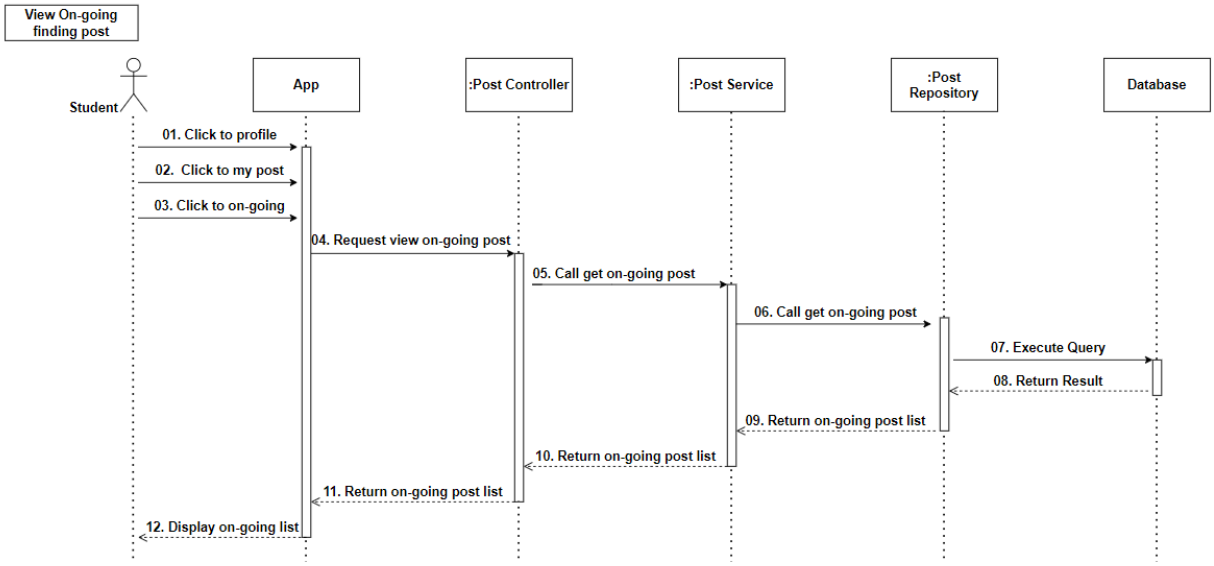


3.7.2 Sequence Diagram

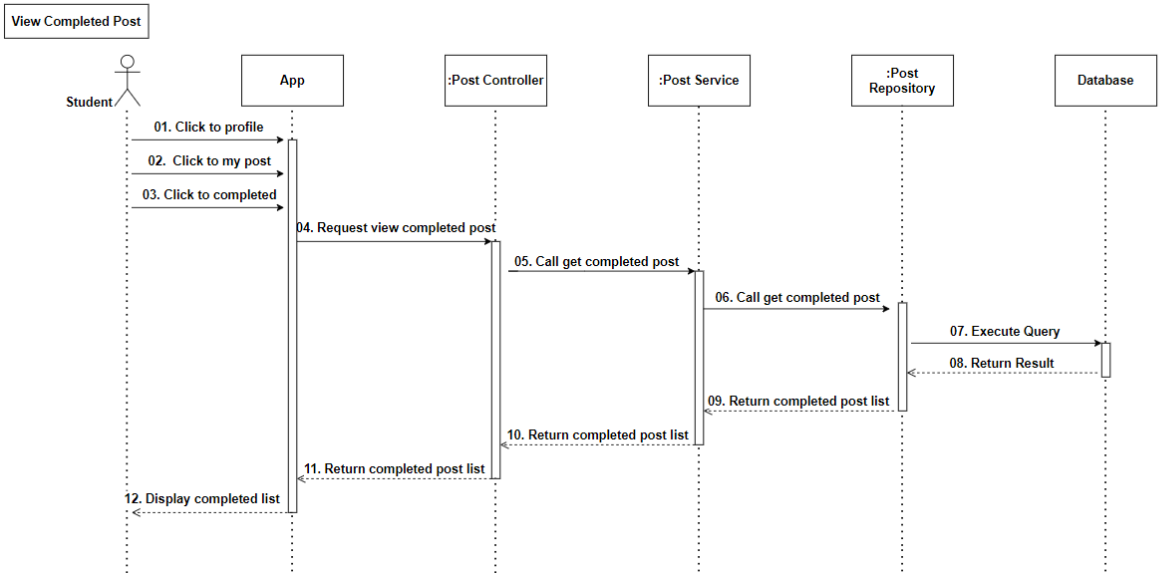
3.7.2.1 Create Mentor-finding Post



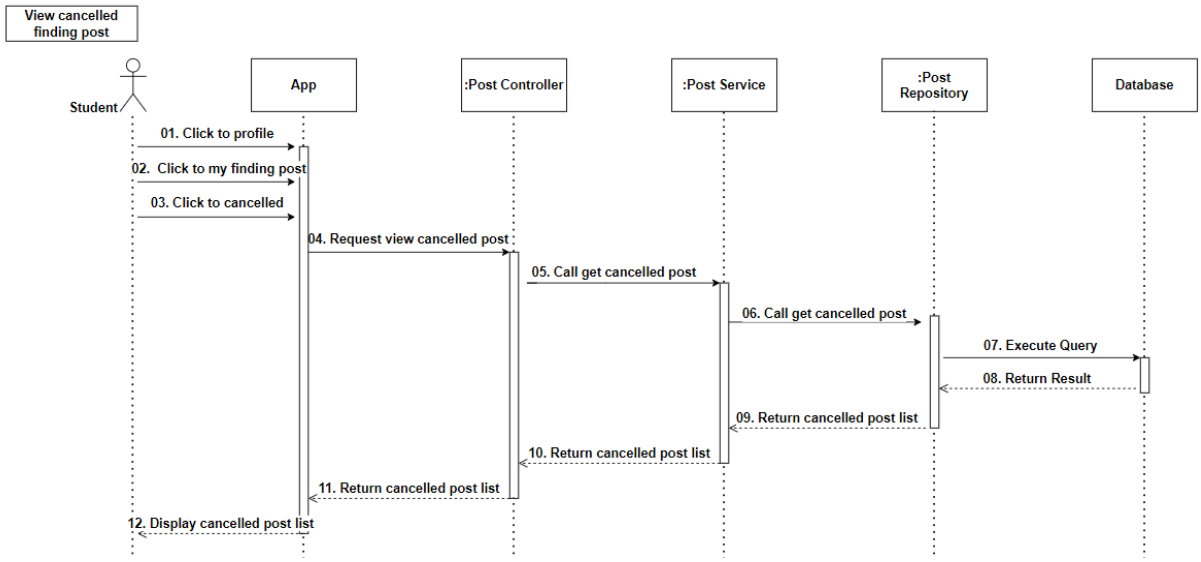
3.7.2.2 View On-Going Mentor-finding Post List



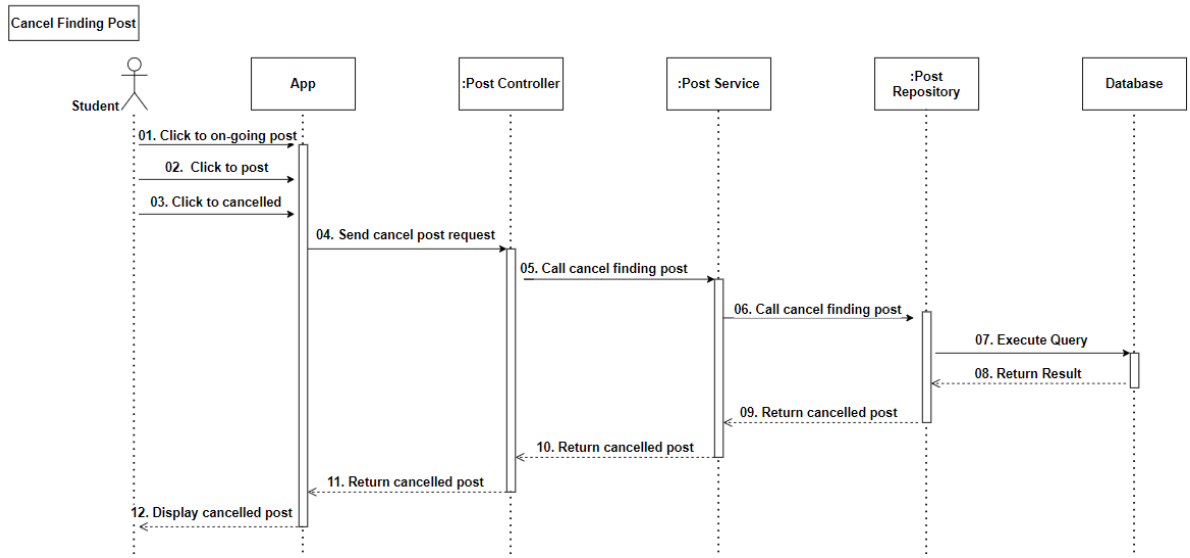
3.7.2.3 View Completed Mentor-fiding Post List



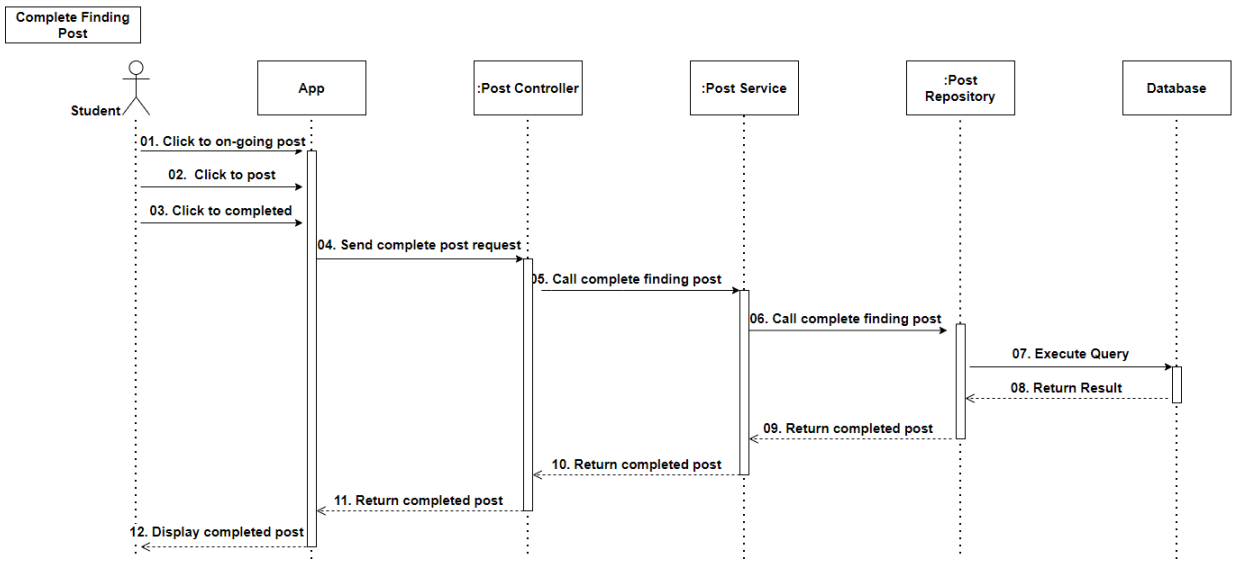
3.7.2.4 View Canceled Mentor-finding Post List



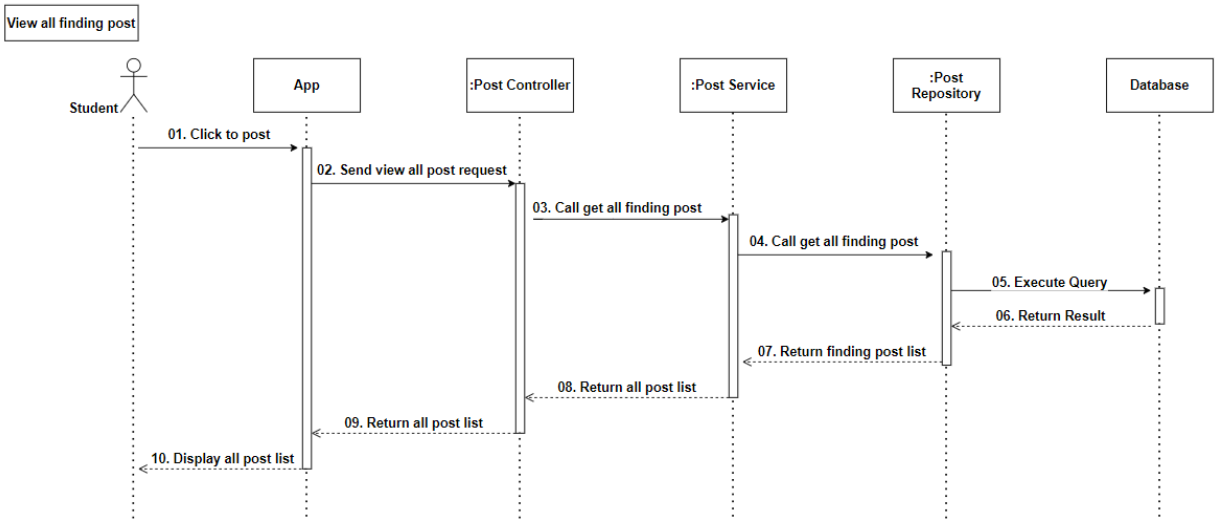
3.7.2.5 Cancel Mentor-finding Post



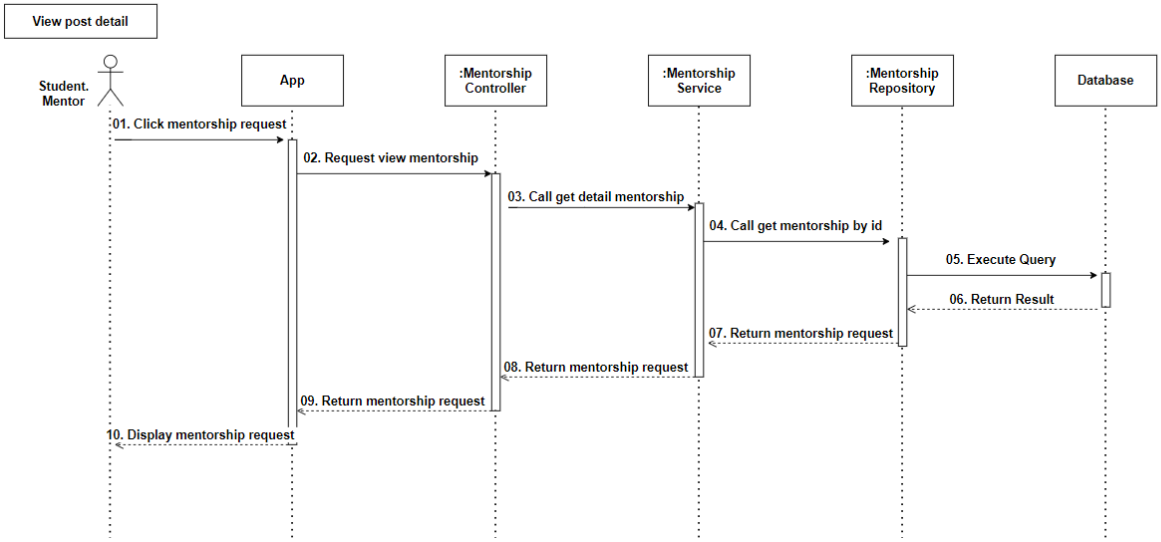
3.7.2.6 Mark Completed Mentor-fiding Post



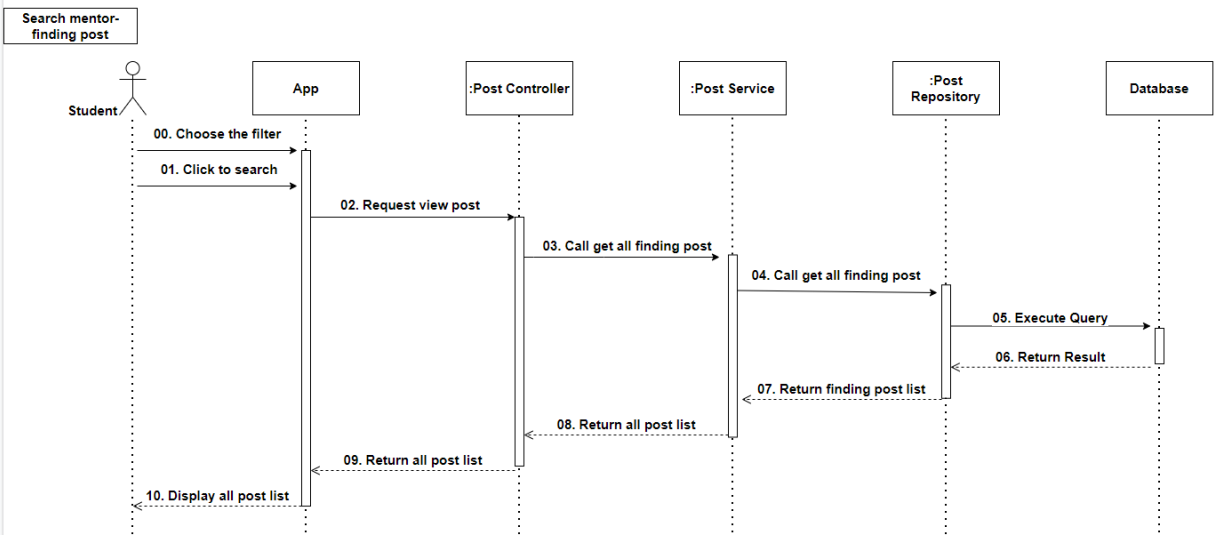
3.7.2.7 View All Mentor-finding Post



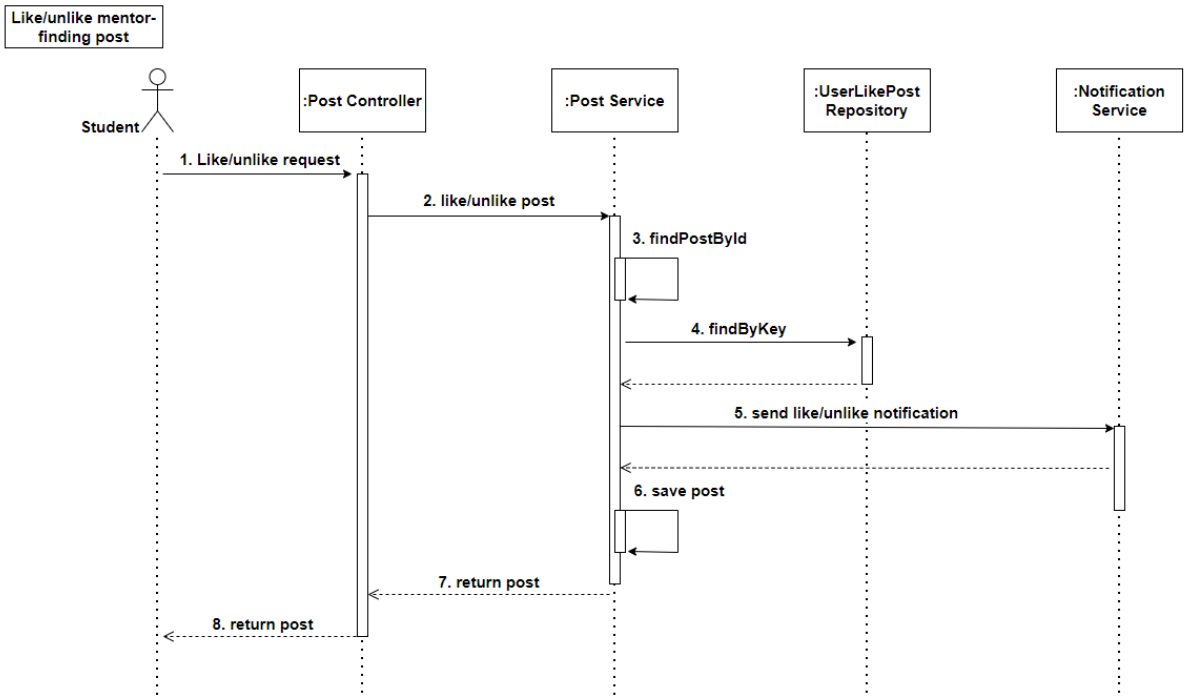
3.7.2.8 View Mentor-finding Post Detail



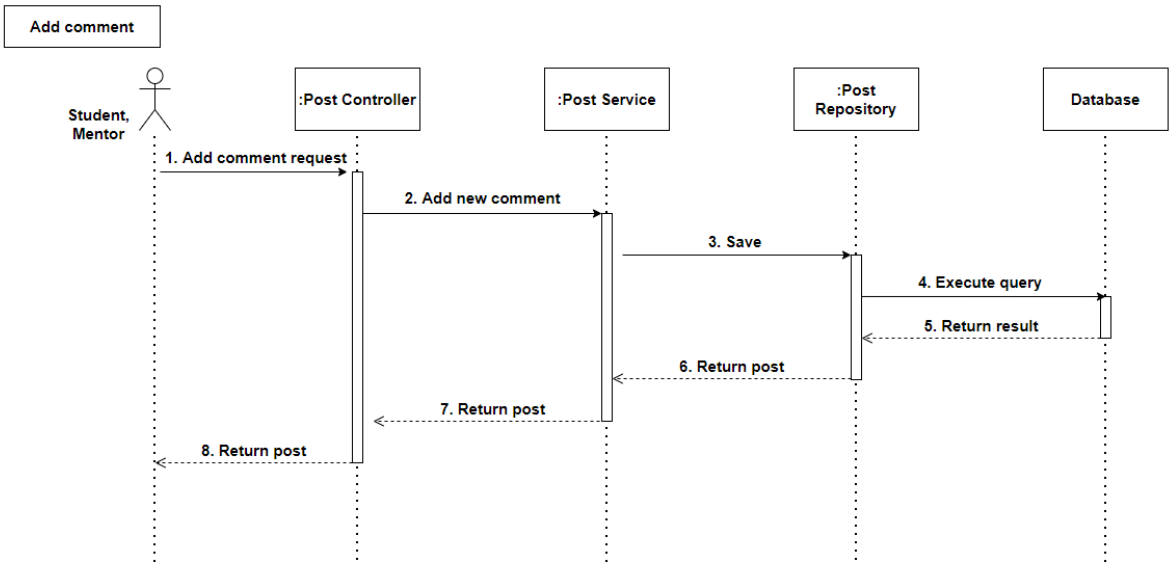
3.7.2.9 Search Mentor-finding Post



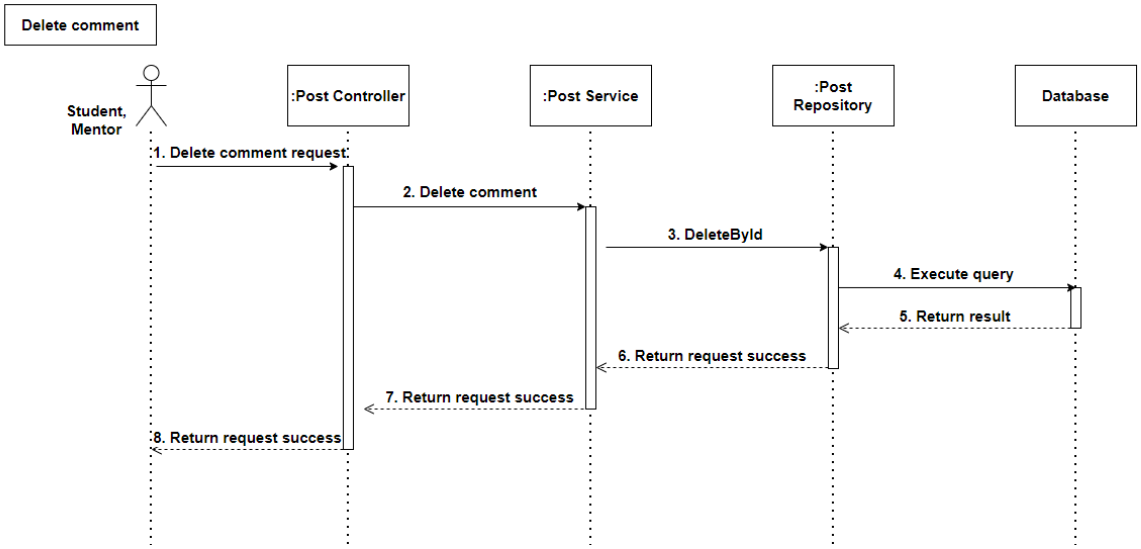
3.7.2.10 Like/Unlike Post



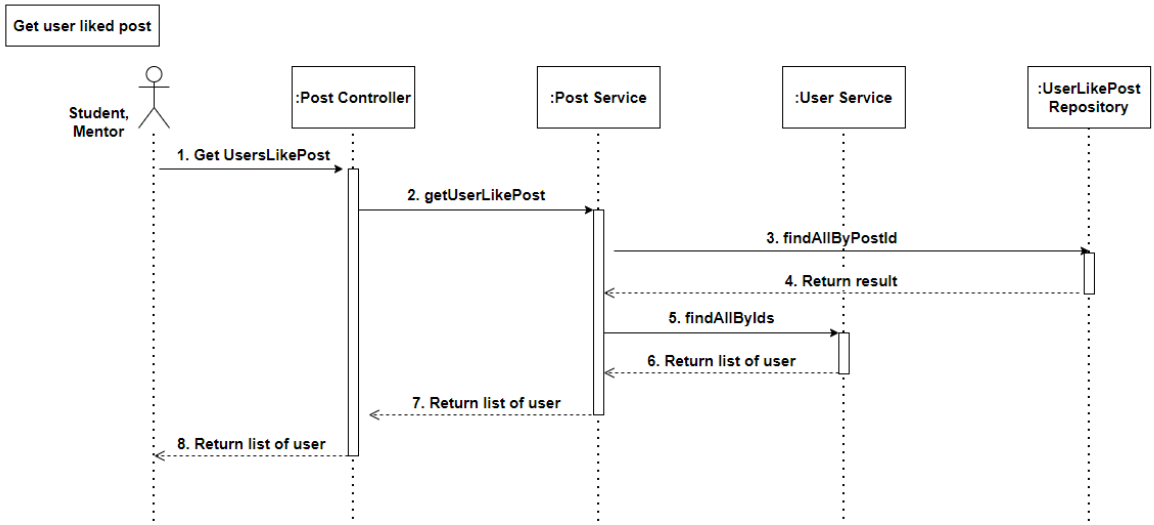
3.7.2.11 Add Comment



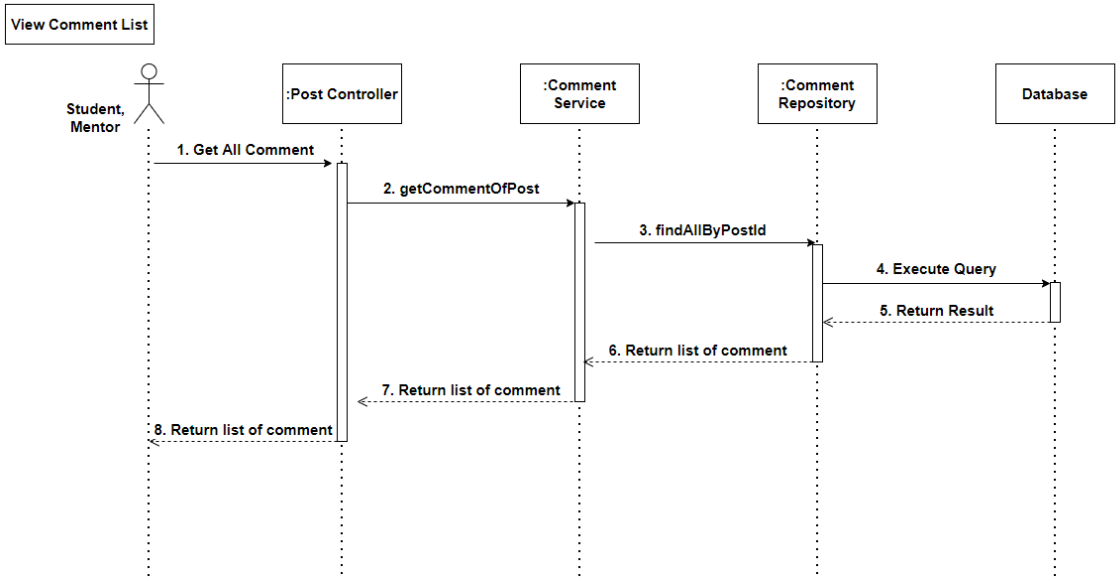
3.7.2.12 Delete Comment



3.7.2.13 View Liked User List

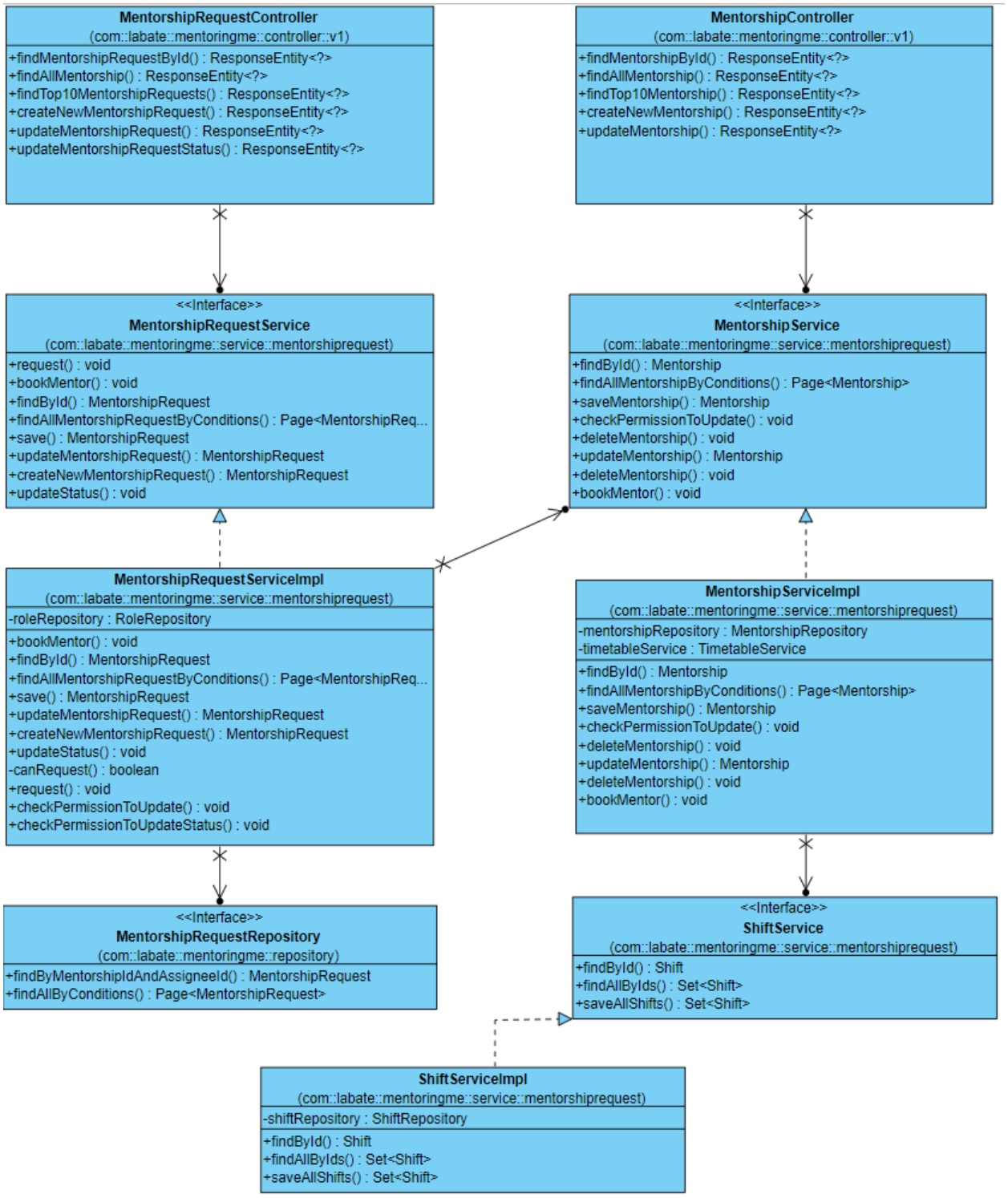


3.7.2.14 View Comment List



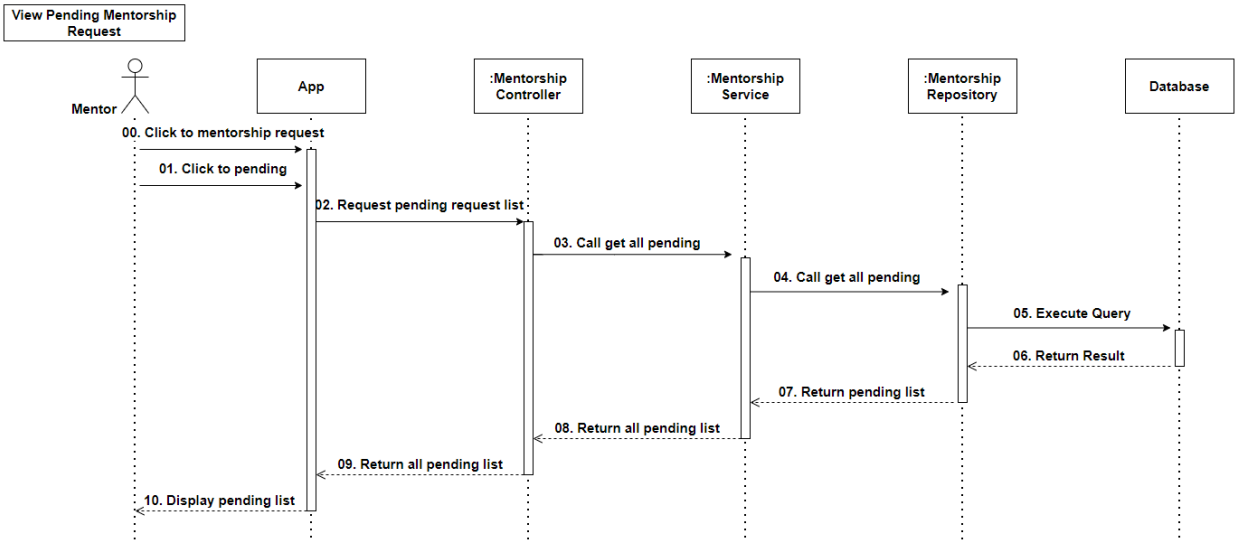
3.8 Feature “Manage Mentorship Request”

3.8.1 Class Diagram

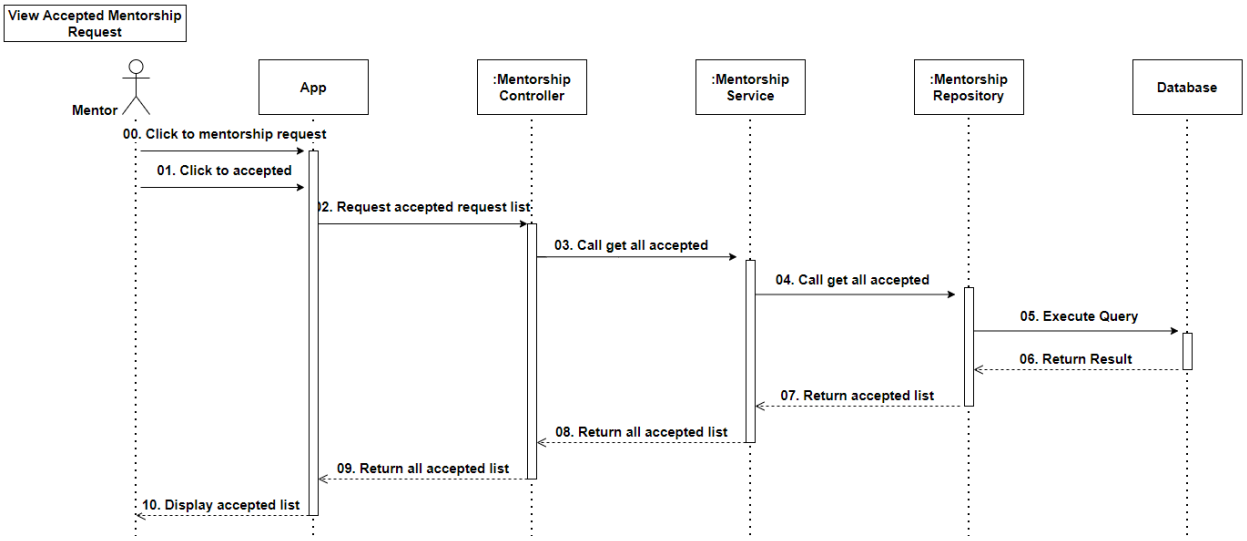


3.8.2 Sequence Diagram

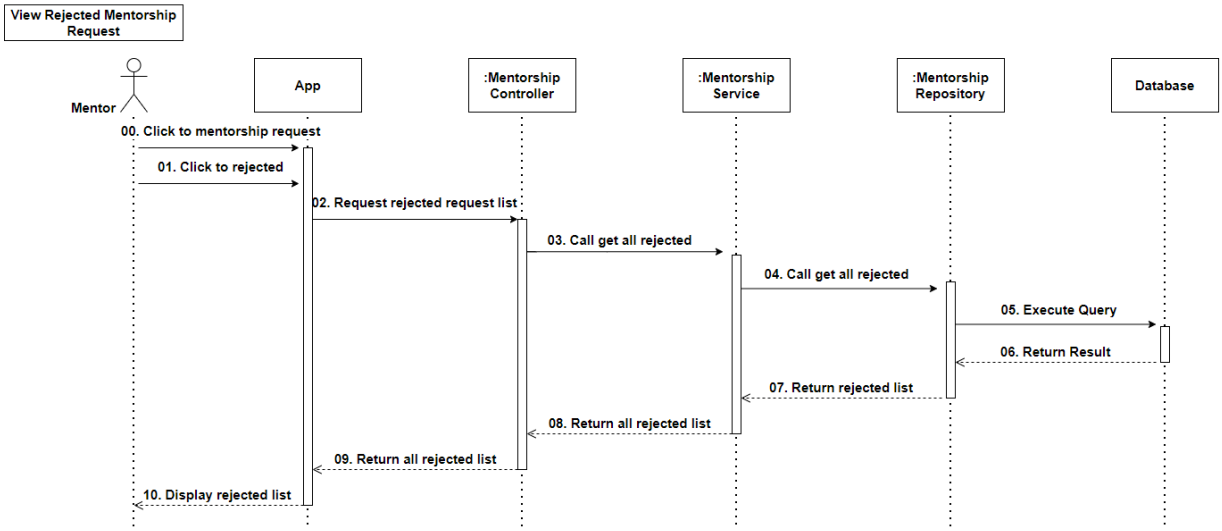
3.8.2.1 View Pending Mentorship Request List



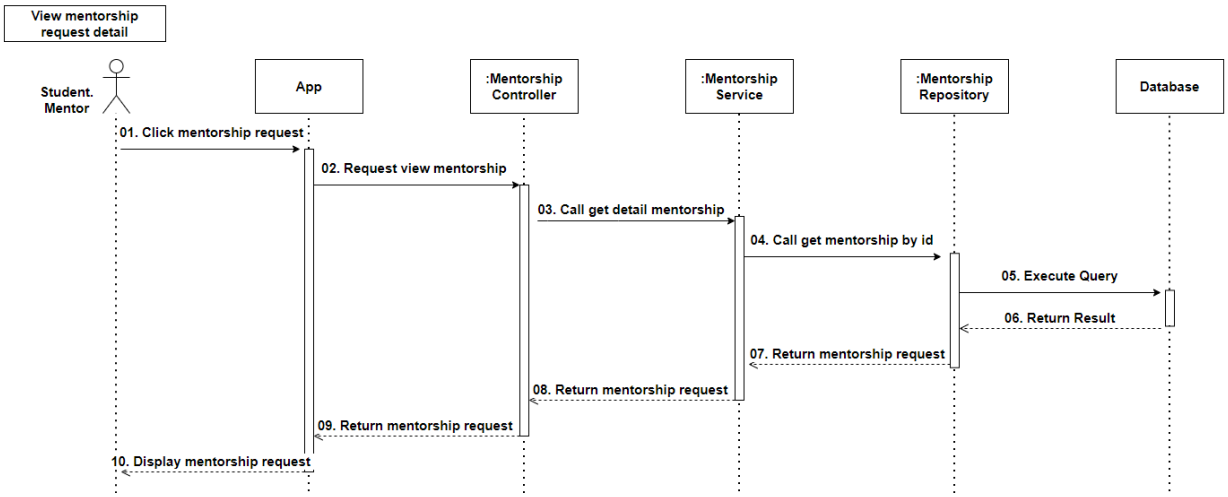
3.8.2.2 View Accepted Mentorship Request List



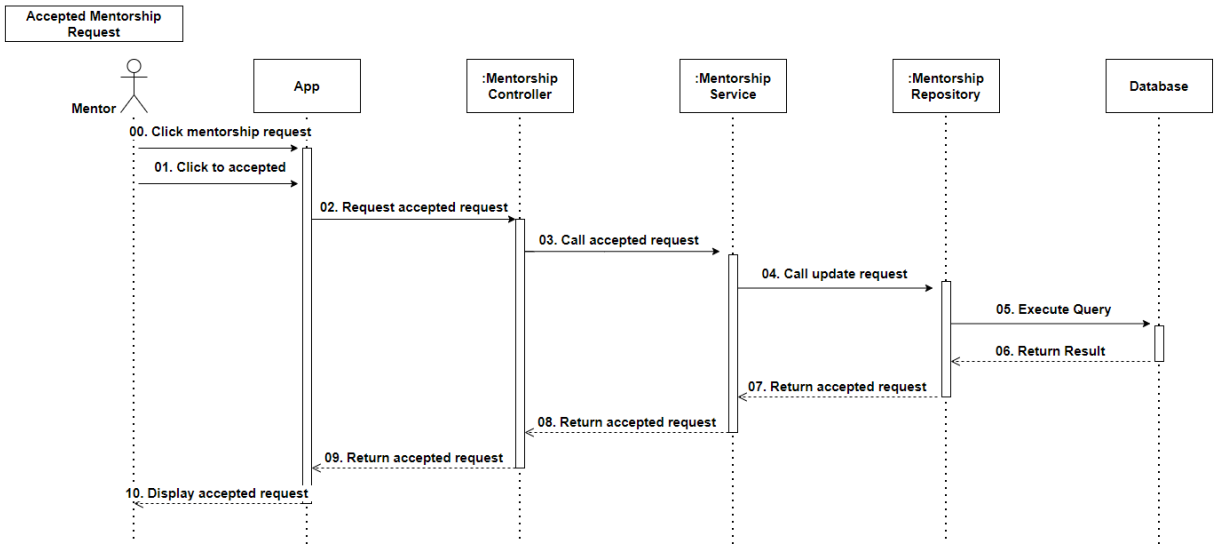
3.8.2.3 View Rejected Mentorship Request List



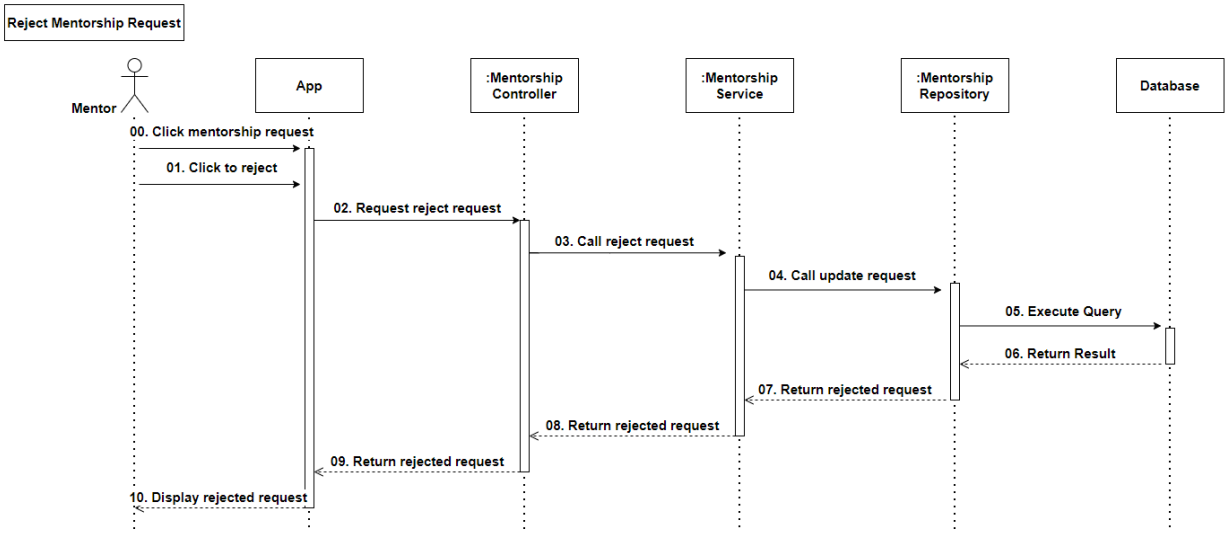
3.8.2.4 View Detail Mentorship Request



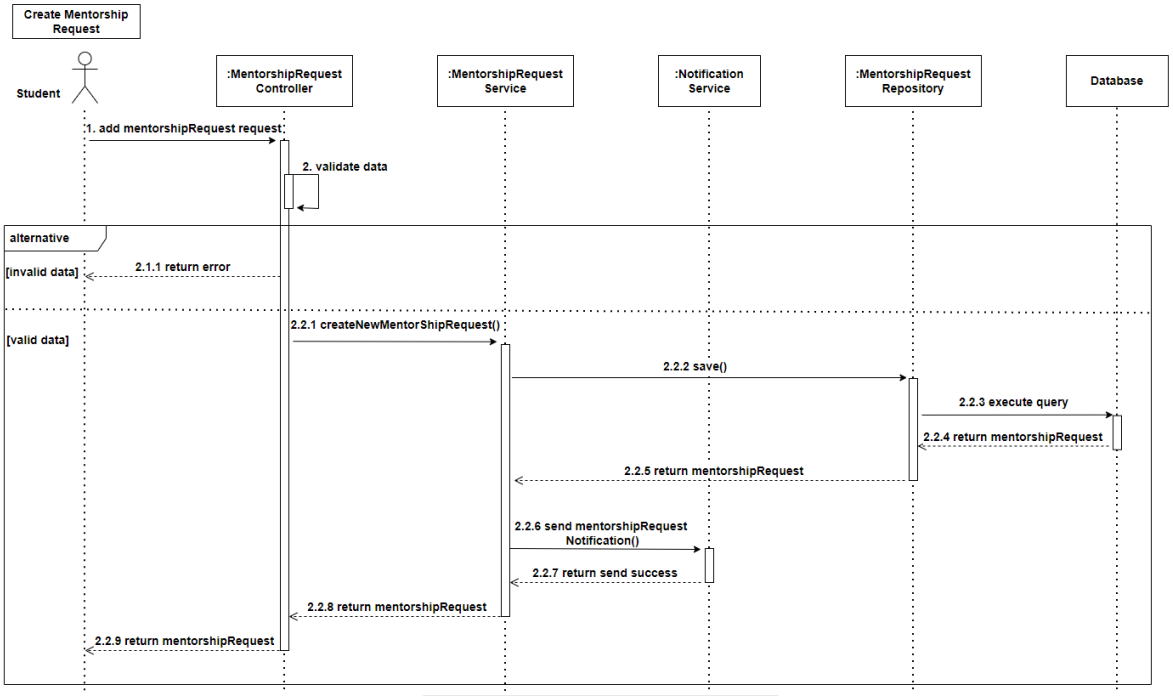
3.8.2.5 Accept Mentorship Request



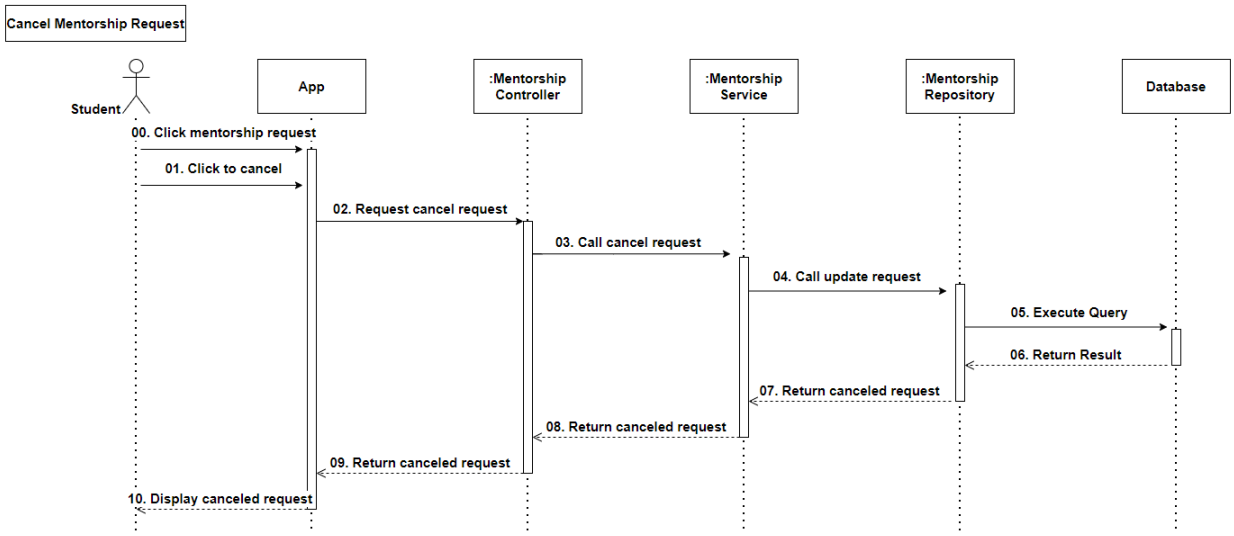
3.8.2.6 Reject Mentorship Request



3.8.2.7 Create MentorShip Request

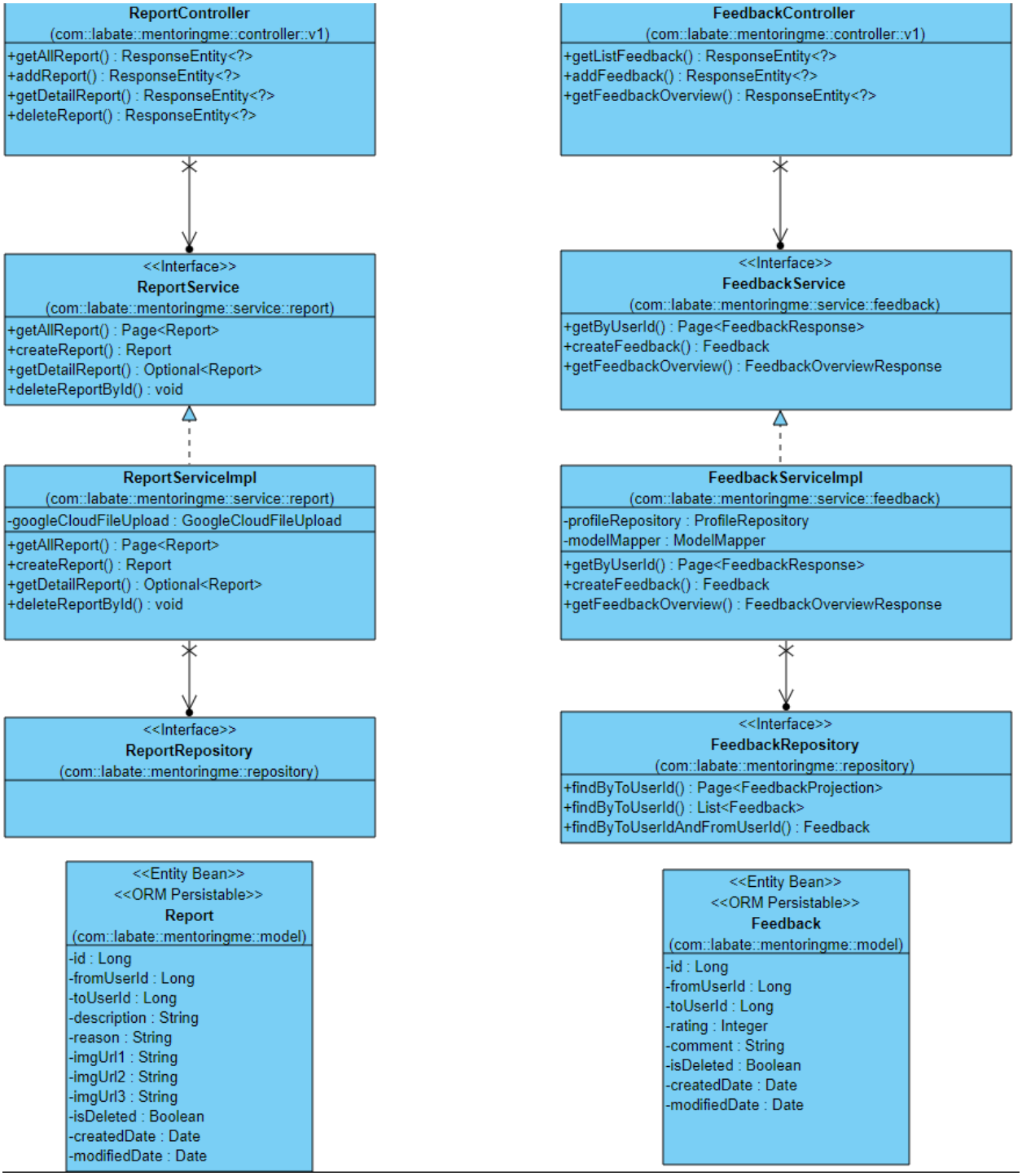


3.8.2.8 Cancel Book MentorShip Request



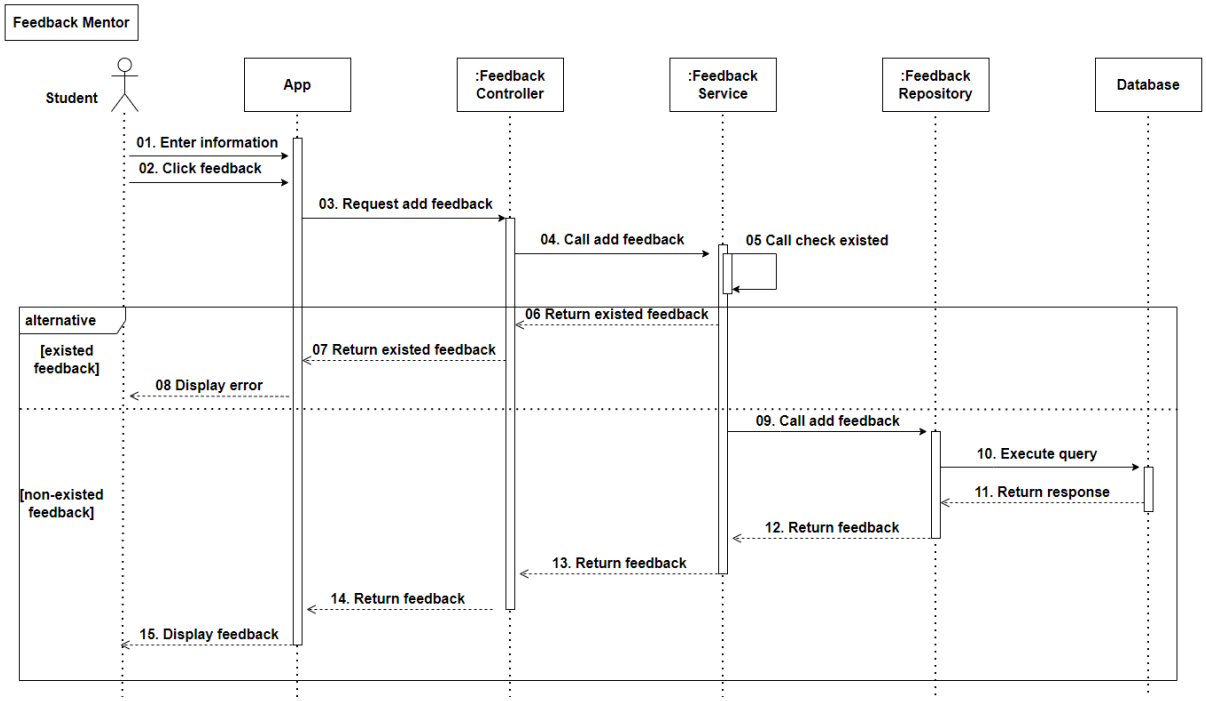
3.9 Feature "Feedback"

3.9.1 Class Diagram

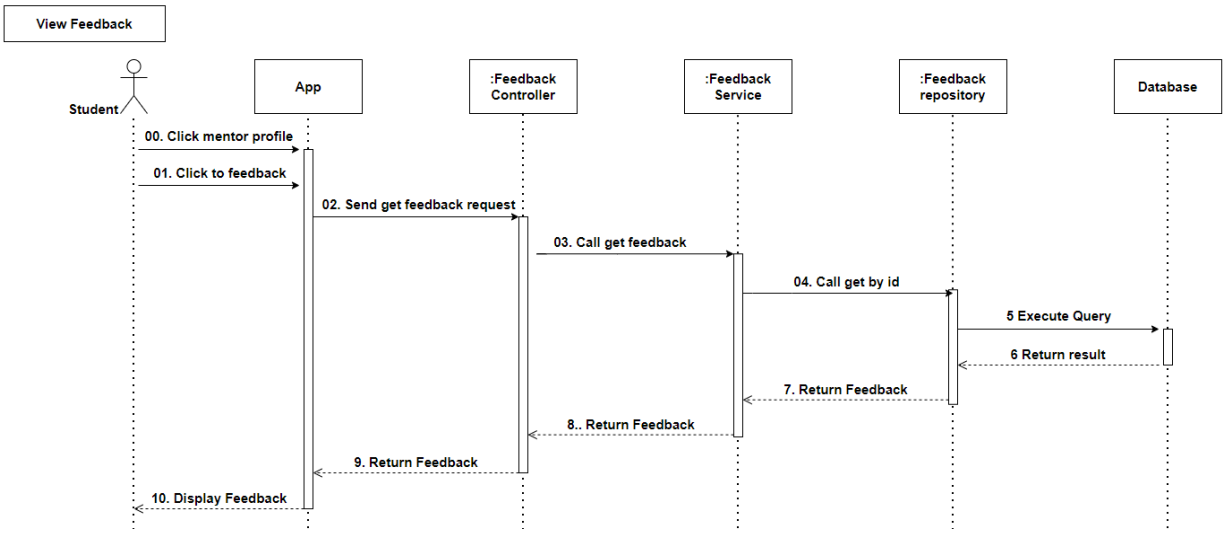


3.9.2 Sequence Diagram

3.9.2.1 Feedback Mentor

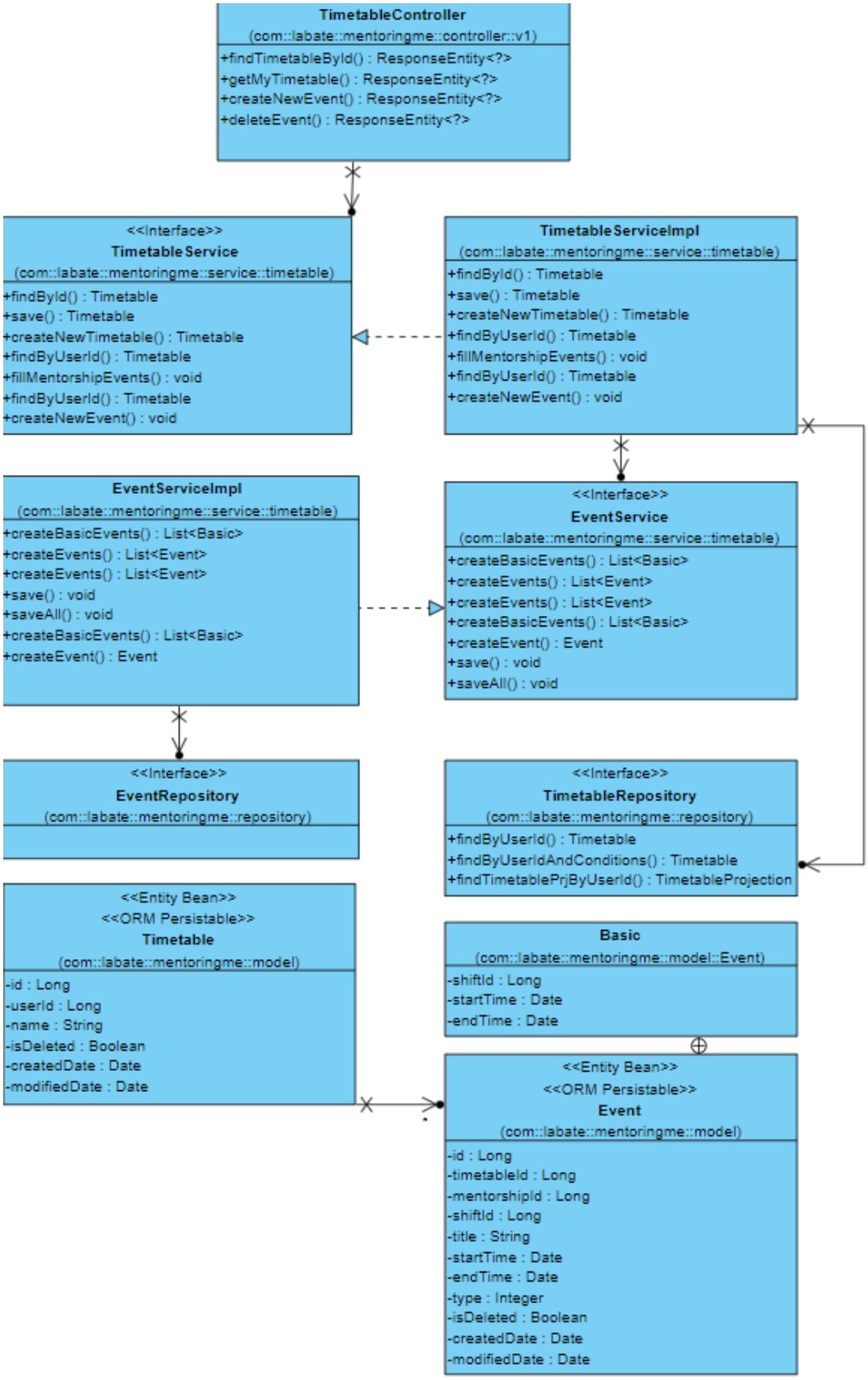


3.9.2.2 View Feedback



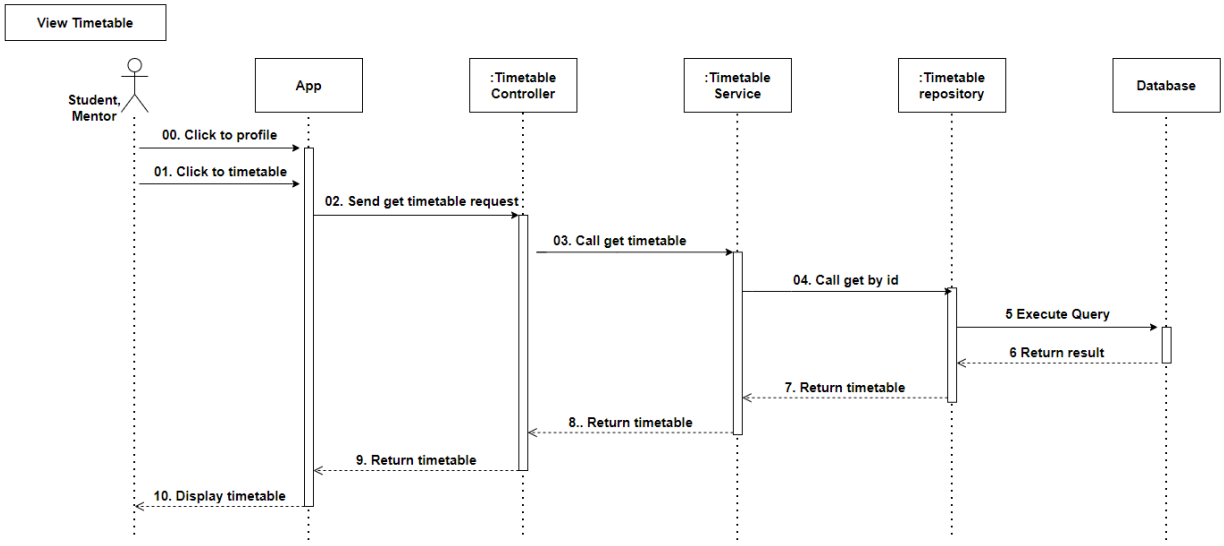
3.10 Manage Schedule

3.10.1 Class Diagram

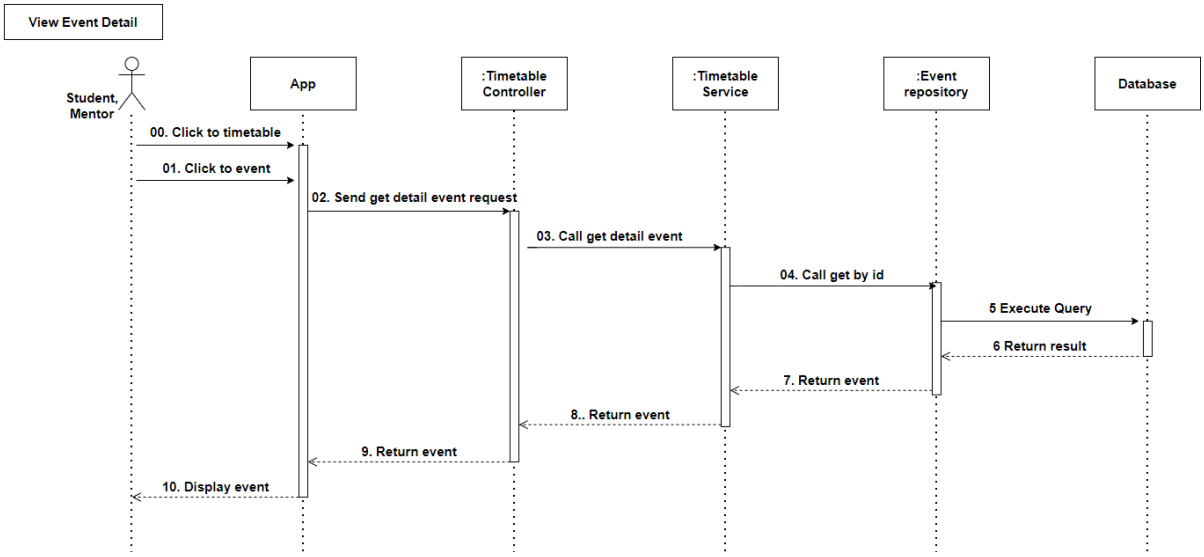


3.10.2 Sequence Diagram

3.10.2.1 View Schedule

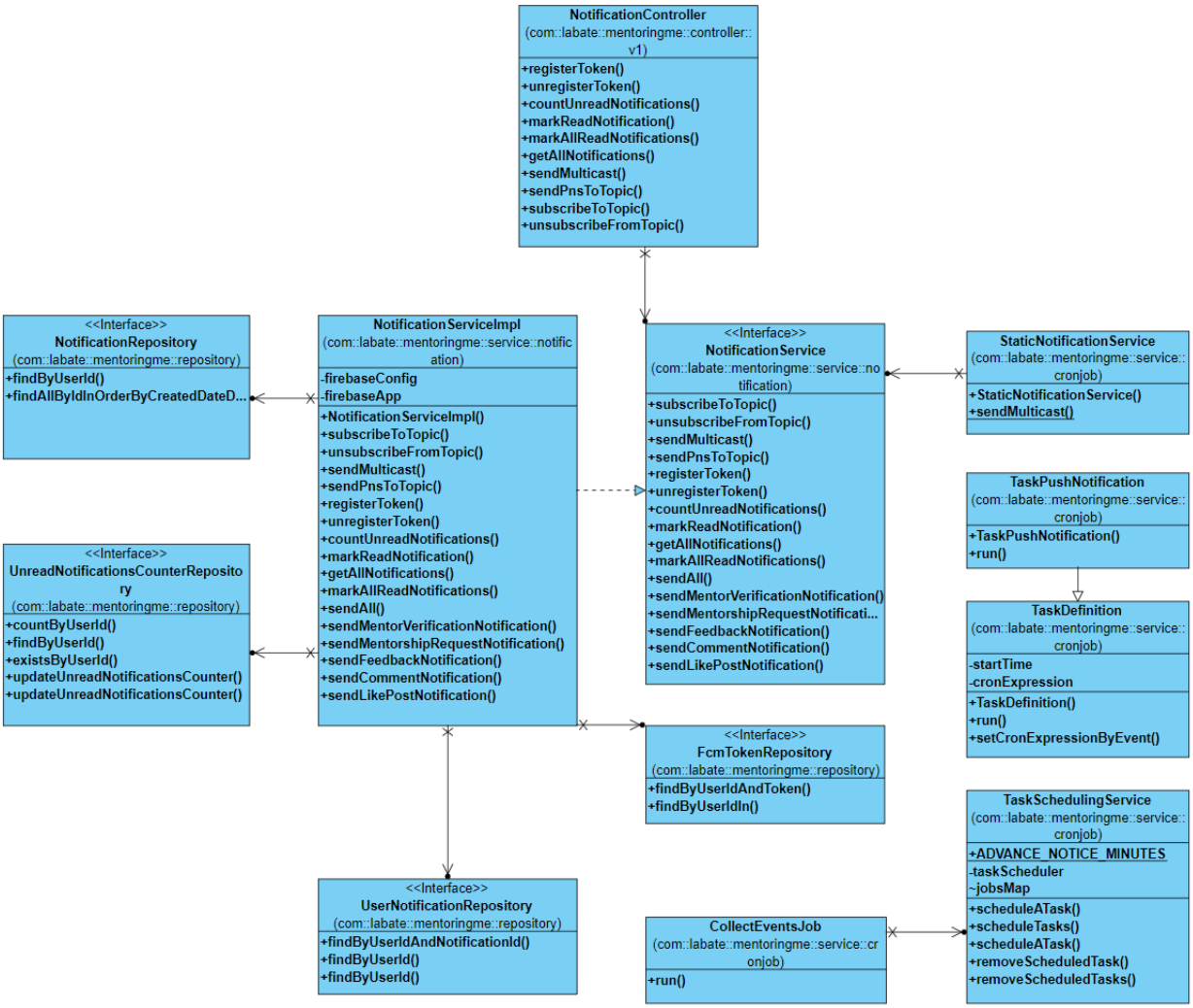


3.10.2.2 View Event Detail



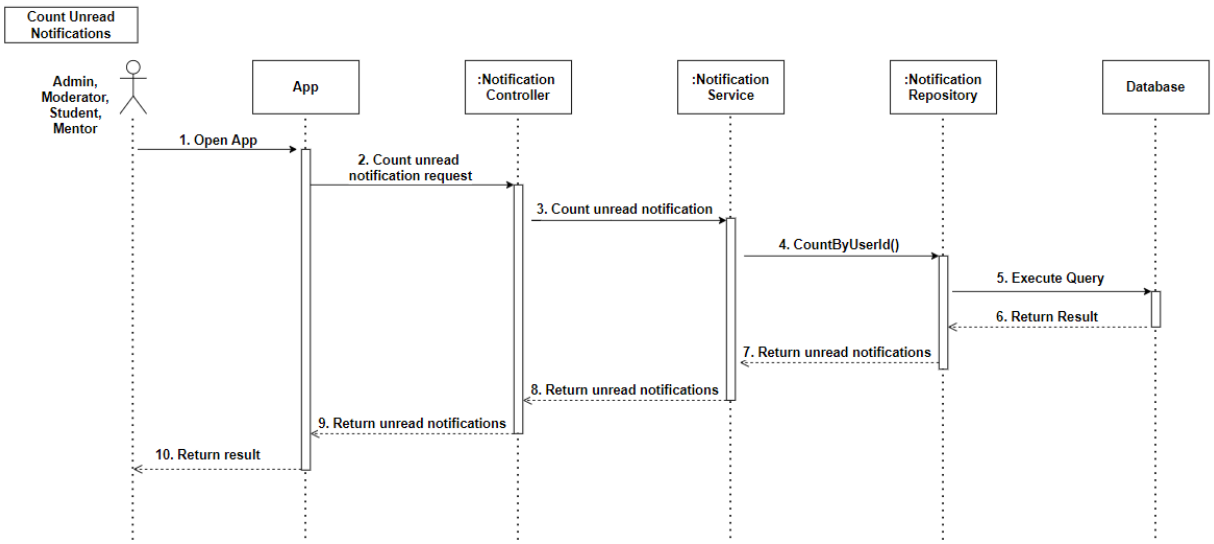
3.11 Notification

3.11.1 Class Diagram

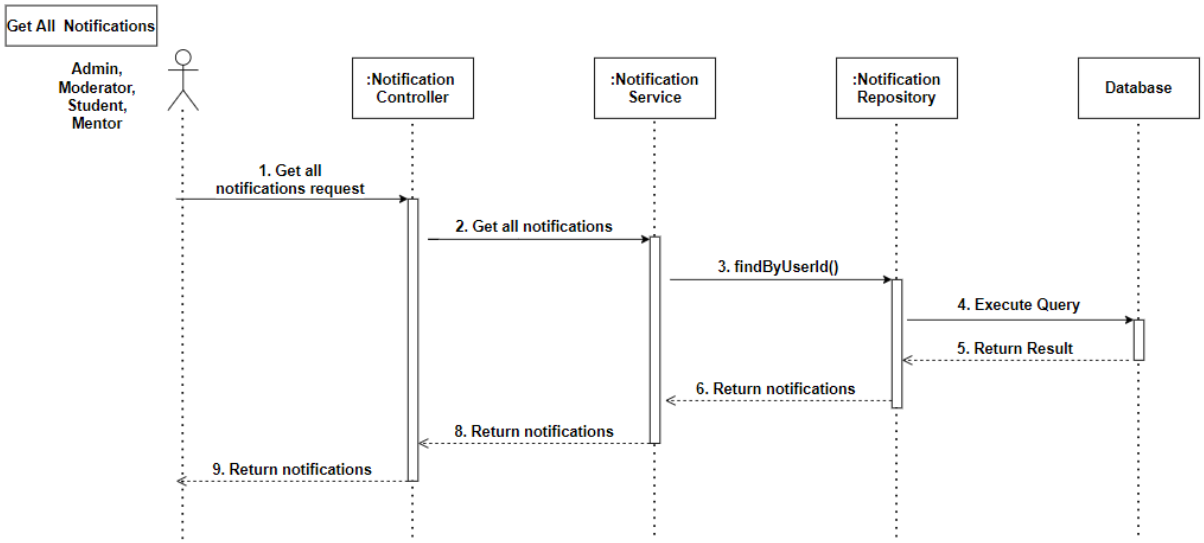


3.11.2 Sequence Diagram

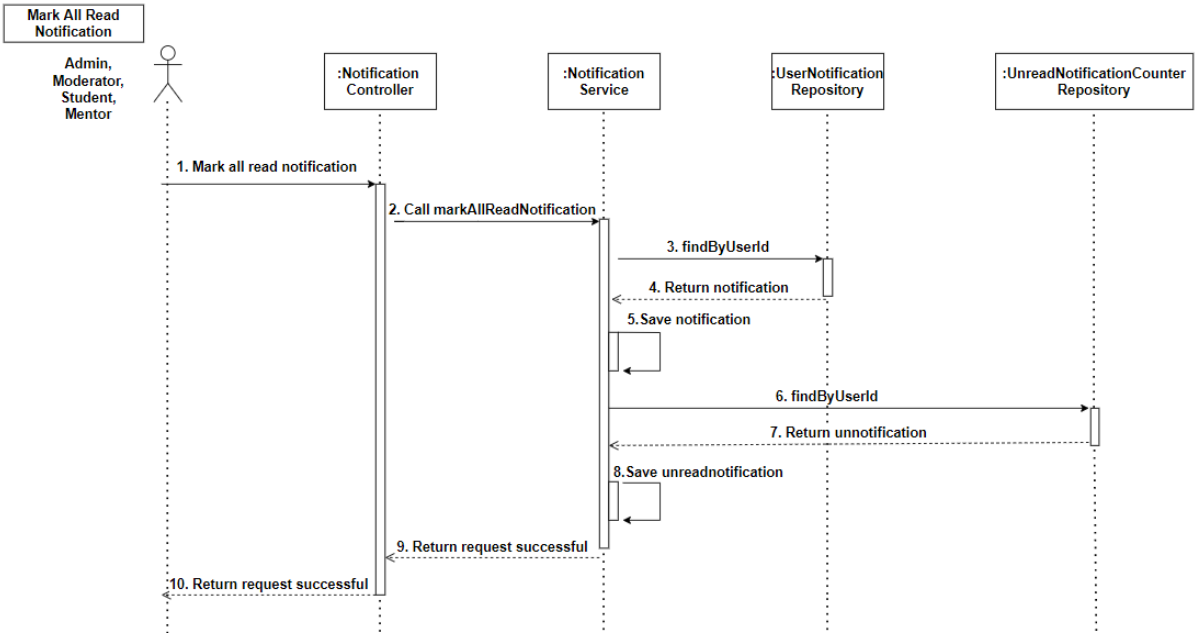
3.11.2.1 Count Unread Notifications



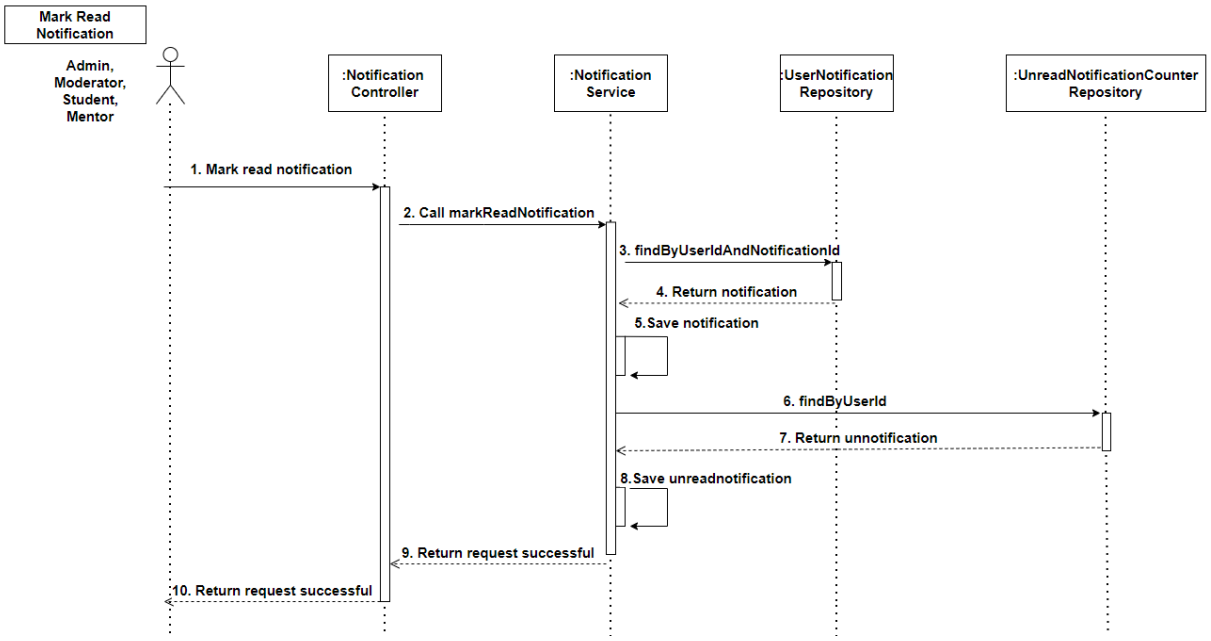
3.11.2.2 Get All Notifications



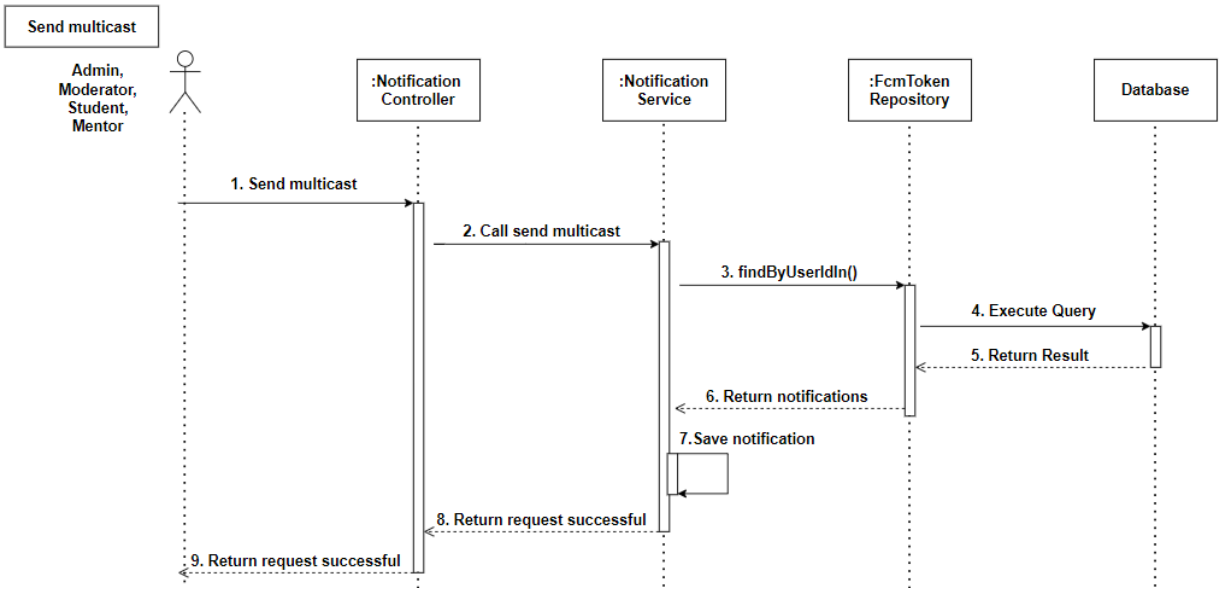
3.11.2.3 Mark All Read Notifications



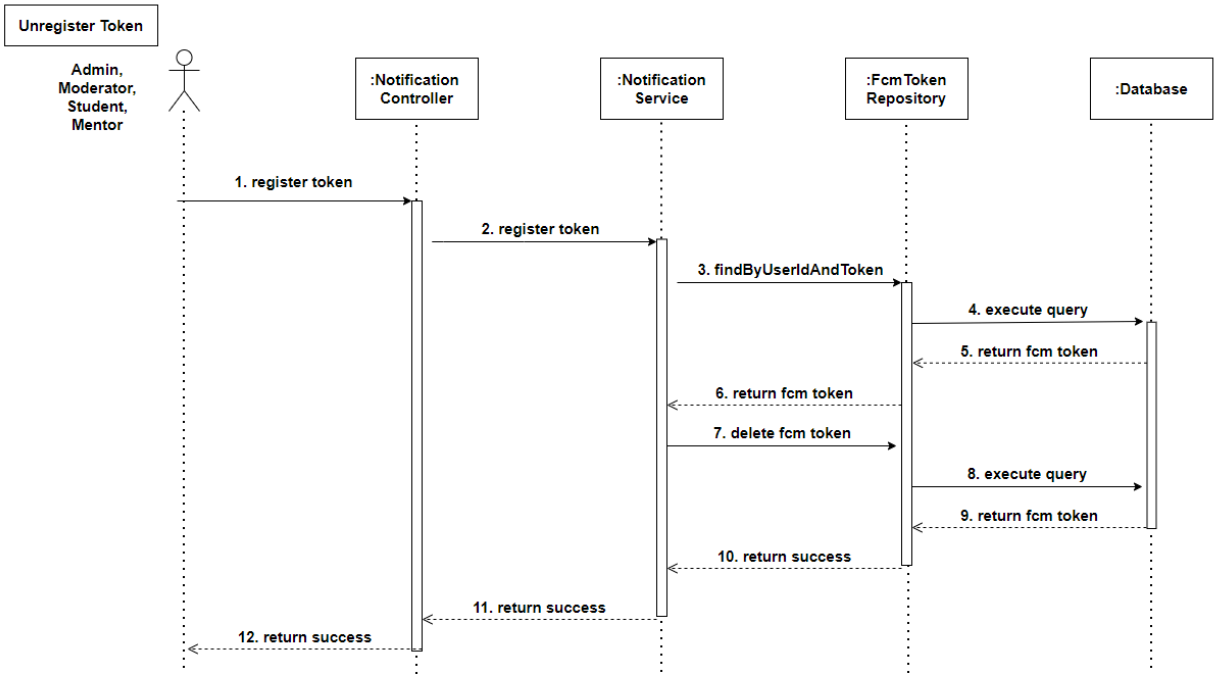
3.11.2.4 Mark Read Notifications



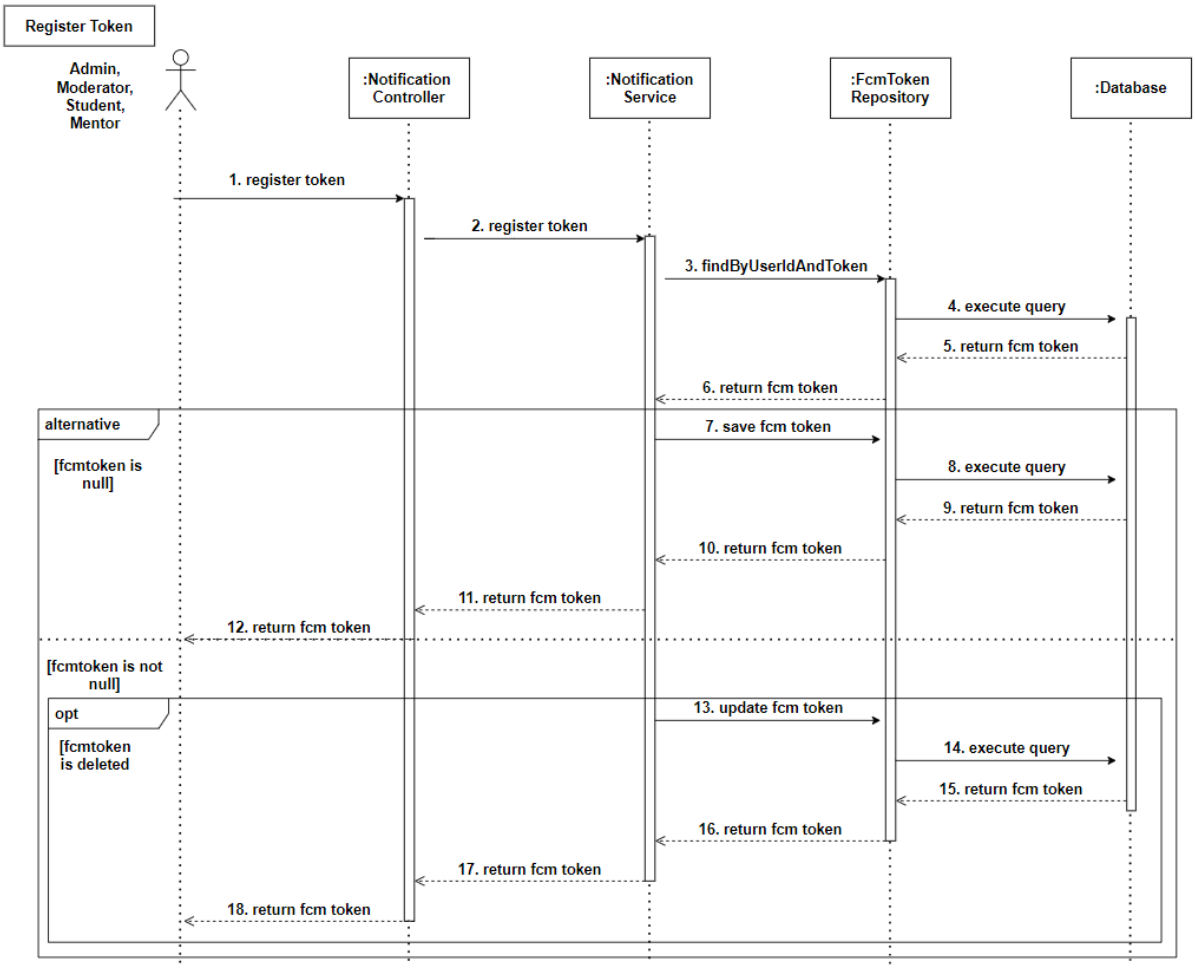
3.11.2.5 Send Multicast



3.11.2.6 Unregister Token



3.11.2.7 Register Token



V. Software Testing Documentation

1. Scope of Testing

1.1 Testing Targets

Features – Functions: All features – functions defined in *[WBS]*

Non-functional:

- User Interface
  - ✓ All pages of the Query-able Data Repository(QDR) UI should employ an organizational method that separates the major sections of the application for easy access. The user should be able to determine the sections of the QDR UI currently being viewed using visual cues, such as bold fonts, arrows, and highlighting.
  - ✓ The application's major sections should include the following pages: Help, Introduction, Contact Information.
  - ✓ The user must be presented with a login page when accessing any page, expecting a landing or front page, as an anonymous user.
  - ✓ Use micro animation to hide less important content.
  - ✓ All pages should have a bottom navigation bar.
  - ✓ Administrative tasks must have a UI. The UI for administrative tasks must include the ability to manage users, manage permissions, manage data templates, manage group assignments, and manage query templates.
  - ✓ Running queries must have a UI. The UI for running queries may include the ability to query the database using query templates defined by the administrator.
  - ✓ All pages should use a consistent visual theme. Pop-ups displaying notifications, error messages, or warnings should use the same theme and template as the rest of the application.

- Performance Requirements
  - ✓ UI change time when user ticks on buttons/checkbox/switch or writes on textbox does not exceed 0.5s.
  - ✓ Waiting time to submit 1 quiz and receive the result report does not exceed 5s.
  - ✓ Waiting time to post or update a new quiz does not exceed 3s.
  - ✓ Waiting time to receive a response of any filter does not exceed 3s.
  - ✓ OTP timeout is a maximum of 5 minutes.

- Security Requirements
  - ✓ A user MUST authenticate to the device using a passcode containing a minimum of 6 characters, with at least 1 special character and 1 capital letter.
  - ✓ Access to enterprise resources MUST be restricted, based on the user access rights.

1.2 Testing Levels

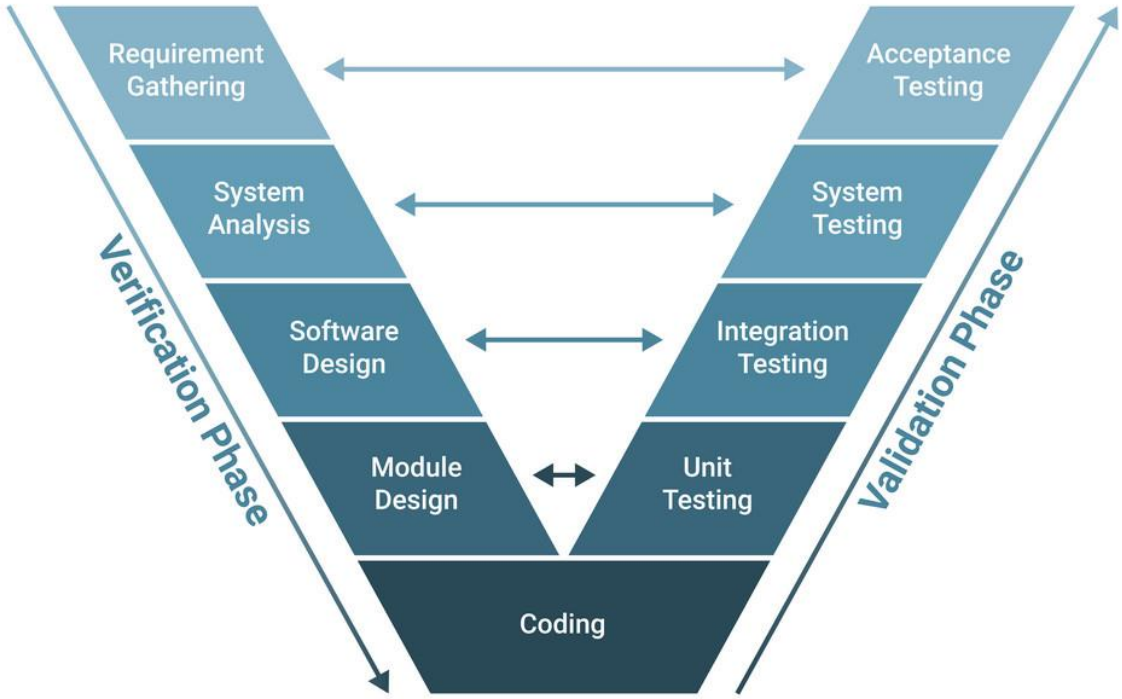
We have 4 levels of testing: Unit Test, Integration Test, System Test, and Acceptance Test.

Test Level	In charge	Time	Focuses	Acceptance criteria
Unit Test	Developers	Implementing	Searches for defects in and verifies the functioning of software components that are separately testable.	100% branch conditions of the entire source code must be covered and executed successfully without unforeseeable exceptions.
Integration Test	Testers	After accepting UT	Ensure all components incorporate well.	Ensure the data transmitted/received between controller layer and service

				layer, repository, finally, the database is exchanged correctly.
System Test	Testers	After accepting IT	Integrate different modules and test the interface between them to check data integrity.	All logic flows work exactly as designed. Non-functional requirements and system interfaces perform properly in the production.
Acceptance Test	End-users	After release full ST	Pure functional testing to check system behaviour with real data.	The system meets customer business needs, product availability.

2. Test Strategy

Based on the above test criteria, we apply the V-model test model to perform software testing.



We consider the use of above model is suitable for testing this product because:
- It is simple, easy to use.
- There are specific activities and plans for the testing process.
- Be proactive in detecting bugs, find bugs early from the very beginning.

However, besides the above advantages, there are also some disadvantages such as:
- There is little flexibility, there is still rigidity. It shows that after each step, there must be a test stage.
- The product of the project is only released when all the steps are completed, there is no prototype from the beginning.

- If there is a technical change halfway through, it will have to go back to the first steps, do it again, update the document.
Though, with the resources and scope of the project, we have planned and arranged a reasonable time to be able to carry out all the stages as much as possible.

2.1 Testing Types

We have 5 types of testing: Unit Test, API Test, Functional Test, User Interface Test and Regression Test.

Types	Objective	Technique	Completion criteria
Unit Test	Make sure all method code in the program works with the function for which it was created without any unexpected exceptions.	Dev create test cases for each method of code. Then execute and evaluate the results. Testers use the white-box testing method to check if the individual modules of the source code are working properly.	All branch conditions of the entire source code must be covered and executed successfully without unforeseeable exceptions.
API Test	Make sure the components that are linked together work efficiently. Check the program logic from the controller layer to the service and finally the repository layer.	Testers create test cases according to the flow scenario that runs from controller layer to service, repository and finally database to track expected and actual results. Use black box testing techniques, mock data to execute test cases.	Ensure the data transmitted/received between controller layer and service layer, repository, finally database is exchanged correctly.
Functional Test	Verify the application and its internal processes by interacting with the application via the Graphical User Interface (GUI) and analysing the outputs or results	Base on functional requirements, testers create test scenarios. Test scenarios will be created based on black-box test technique. Testers execute tests based on test scenarios and create reports. Common defects will be collected for an improved checklist.	All functional test cases have been executed to ensure: - Verify proper data acceptance, processing, retrieval, the appropriate implementation of the business rules. - The appropriate activities will be performed when valid data is used. - The corresponding error/warning message mechanism is applied for each specific case. - Cover both normal, abnormal and boundary case.
User Interface (GUI) Test	GUI testing includes application behaviour for keyboard and mouse movements and how various GUI objects such as toolbars, buttons, menu bars, dialogue boxes, edit fields, lists, user behaviour use input.	Base on design/mockup of each screen and nonfunctional requirements, tester confirm which includes components, and the characteristics that come with that component. Check if those components are correct with the design set out or not.	All GUI checklist have been executed and passed. Nonfunctional is also checked.

Regression Test	Verify the application after bug fixing and build new pakage, and be sure that other functions are not affected by fixed parts each iteration.	Retest all usecase that defined on test report of previous round.	Cover all changes and detect both old and new bugs.

2.2 Test Stages

Type of Tests	Test Level			
	Unit	Integration	System	Acceptance
Unit Test	X			
API Test		X		
Functional Test			X	X
GUI Test			X	X
Regression Test	X	X	X	

3. Test Plan

3.1 Human Resources

Worker/Doer	Role	Specific Responsibilities/Comments
Nguyen Hong Thuy	Tester	Create Test Plan. Create Test Cases and execute tests, report Test Results (IT, ST).
Le Ngoc Lan	Leader	Review Test Plan. Execute Test (IT, ST) Review Test Report.
Duong Minh Thao	Back-end developer	Create Test Cases and execute tests, report Test Results (UT).
Dinh Tuan Anh	Back-end developer	Create Test Cases and execute tests, report Test Results (UT).
Nguyen Duong Thu Thuy	Mobile developer	Create Test Cases and execute tests, report Test Results (UT).

3.2 Test Environment

Purpose	Tool	Provider
Write unit test documents	Excel	Microsoft
Write test report documents	Excel	Microsoft
Run UT	Postman, IntelliJ	
Run IT	Postman	
Run ST, AT	iOs13 or up	Apple

Tracking defects, issues and Q&A	Jira	

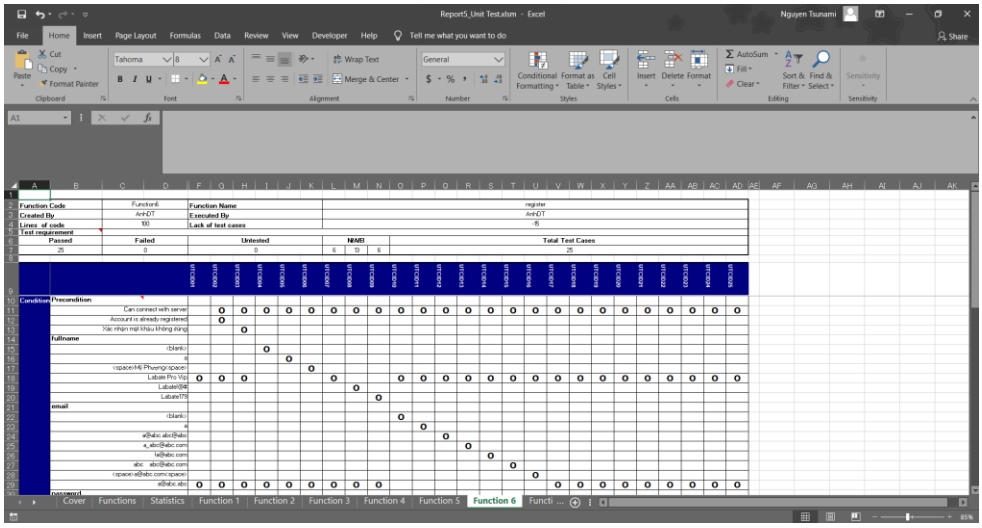
3.3 Test Milestones

Milestone Task		Start Date	End Date
Plan	Create test plan	08/02/2022	14/02/2022
Iteration 1	Create and execute unit test	15/02/2022	28/02/2022
	Create and execute integration test	15/02/2022	28/02/2022
	Create and execute system test	15/02/2022	28/02/2022
Iteration 2	Create and execute unit test	01/03/2022	14/03/2022
	Create and execute integration test	01/03/2022	14/03/2022
	Create and execute system test	01/03/2022	14/03/2022
Iteration 3	Create and execute unit test	15/03/2022	28/03/2022
	Create and execute integration test	15/03/2022	28/03/2022
	Create and execute system test	15/03/2022	28/03/2022
Overall Testing	Full system testing	29/03/2022	11/04/2022
Deliver	Create Test Report	12/02/2022	18/04/2022

4. Test Cases

4.1. Unit Test

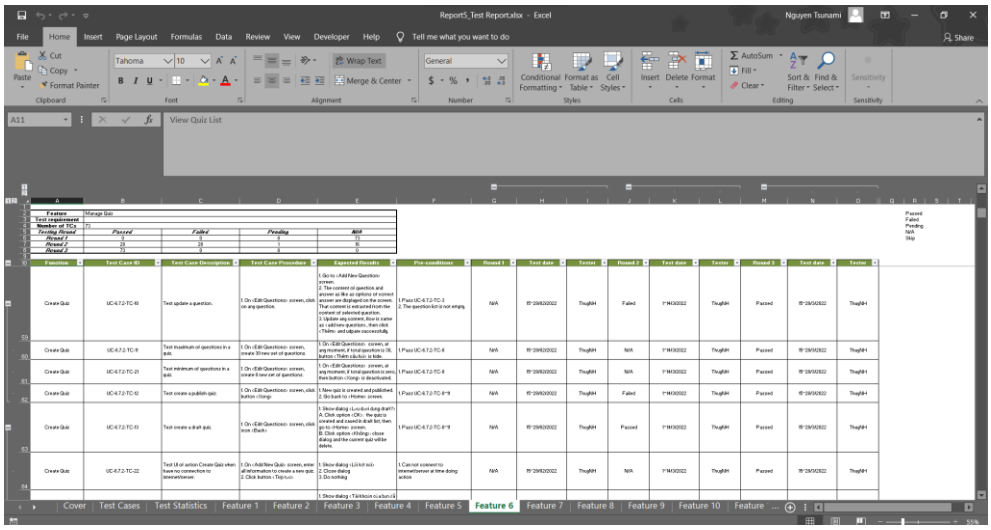
Functional testing will be done on the server development side by the backend developer:



4.2. Integration Test

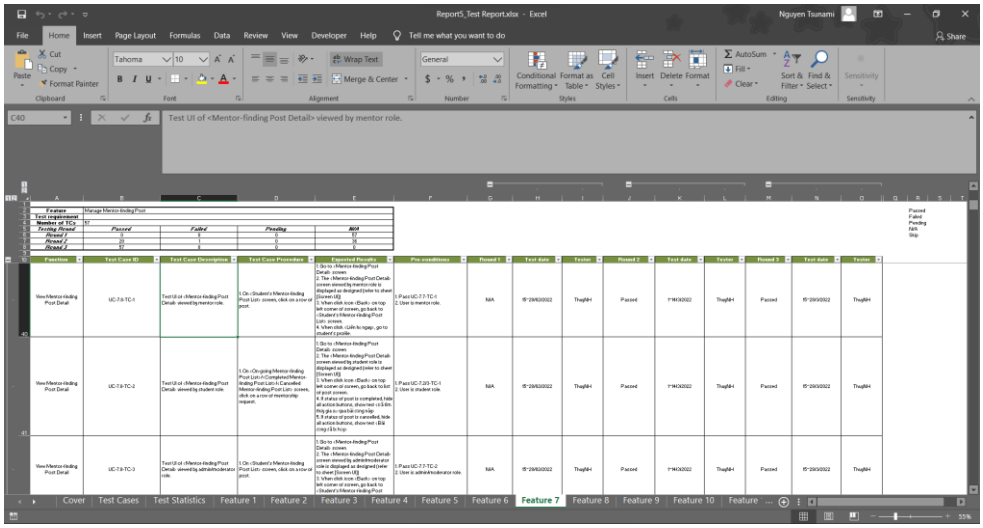
Integration Test will incorporate the API into the app's interface to test what the data represents to the user. From test cases define in TestReport, the tester chooses the test cases which have performed action incorporated between functions or exchange data between modules, then user Postman tests the inp-out data. During testing, if any errors are related to data that is not as

expected, testers will log defects or bugs on Jira, and track that test case is failed until it will be fixed by developers.



4.3. System Test

This stage of testing is performed after the functions outlined in the requirement are fully implemented. We will practice on a physical phone with iOS 11 or higher operating systems. The goal of this test phase is to test the performance that can be run on the device and assuming the cases that the user will operate on application.



4.4. Acceptance Test

Due to project is only built on the assumption of the Information Technology Capstone course scope, team members were unable to go outside to deliver apps to specific customers. So we do alpha testing with our supervisors, family, and friends nearby who have demand to find mentor, or interested in education field. The purpose of this test is to evaluate the system's compliance with the business requirements and assess whether it is acceptable for delivery.

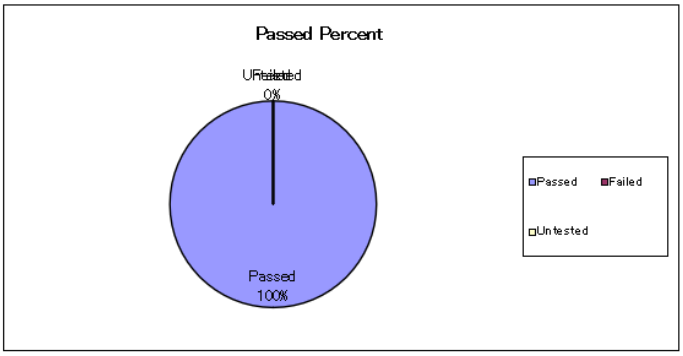
Our project will use the checklist as a substitute for acceptance testing, including items from business scope, vision, opportunity which mentioned in Project Introduction, and also from non-

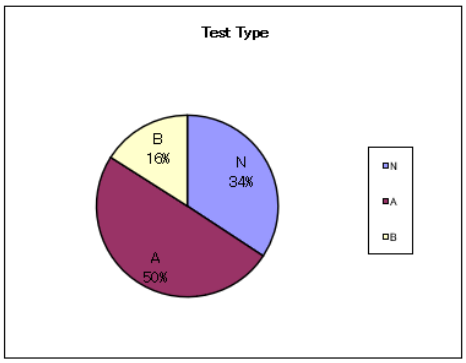
functional requirement specified in Software Requirement Specification. By that, we perform Acceptance Test by creating a survey form and asking for user opinions after they have experienced the product that the team has completed.

5. Test Reports

5.1. Unit Test

Test coverage	**100.00 %**
Test successful coverage	**100.00 %**
Normal case	**34.20 %**
Abnormal case	**49.67 %**
Boundary case	**15.96 %**





5.2. Integration Test, System Test

No	Module code	Passed	Failed	Pending	N/A	Number of test cases
1	Authenticate & Authorize	64	0	0	0	64
2	Search User & Manage Profile	70	0	0	0	70
3	Manage Student	17	0	0	0	17
4	Manage Mentor	30	0	0	0	30
5	Manage Moderator	10	0	0	0	10
6	Manage Quiz	73	0	0	0	73
7	Manage Mentor-finding Post	57	0	0	0	57
8	Manage Mentorship Request	41	0	0	0	41
9	Feedback	12	0	0	0	12
10	Contact	13	0	0	0	13
11	Manage Schedule	5	0	0	0	5
12	Notification	14	0	0	0	14
	Sub total	406	0	0	0	406

Test coverage	**100.00 %**
Test successful coverage	**100.00 %**

5.3. Acceptance Test

The user experience survey was conducted with about 100 users, and obtained the following results:

ID	Checklists	Yes	No
	GUI and Usability		
1	Text on all screens are grammatically correct	**o**	
2	All mandatory fields are validated	**o**	
3	Links, buttons, and checkboxes are easily clickable	**o**	
4	User interface should be clear and easy to use	**o**	
5	Main functions are organized into navigator for easier access	**o**	
	Usability		

6	Student can find mentors that suitable with study purpose of them.	**o**	
7	Mentor can find students who need their help.	**o**	
8	System provide a useful quiz store for users to conveniently evaluate mentors or serve as support for learning purposes.	**o**	
9	View schedule of studying easily, clearly and automatically update when user book a tutor.	**o**	
10	Support to exchange directly 1-1 with each other right on the application.	**o**	
11	Support evaluate the quality of mentors effectively.	**o**	
	Security		
12	Using authentication and authorization to access protected resources	**o**	
13	Password must be protected and encrypt before store in database.	**o**	
14	Only send the OTP to the user's email.	**o**	
15	Access to enterprise resources have been restricted, based on the user access rights.	**o**	
	Performance		
16	UI change time when user ticks on buttons/checkbox/switch or writes on textbox does not exceed 0.5s.	**o**	
17	Waiting time to submit 1 quiz and receive result report does not exceed 5s.	**o**	
18	Waiting time to post or update a new quiz does not exceed 3s.	**o**	
19	OTP timeout is maximum 5 minutes.	**o**	
	Compatibility		
20	The device must be iOS 11 or higher.	**o**	
	Localization		
21	The language is Vietnamese.	**o**	
22	The date format in the application must be: dd/MM/yyyy or dd/MM/yyyy HH:mm:ss.	**o**	

VI. Release Package & User Guides

1. Deliverable Package

No.	Deliverable Items	Sub-Items	Type	Version
Code packages				
1	Frontend source code	mentoring-me-ios.zip	.zip	1.1.1
2	Backend source code	mentoring-me-be-master.zip	.zip	1.0.0
Databases Script				
1	Tables	script.sql	.sql	1.0.0
Documents				
1	Final Report	MentoringMe.pdf	.pdf	1.0.0
2	Slide	MentoringMe.pptx	.pptx	1.0.0
3	Mockup (Figma)	MentoringMe.fig	.fig	1.0.0
4	Project Schedule/Tracking	Report3_Project Tracking.xlsx		
5	Unit test	MentoringMe_UnitTest_v1.0.xlsx	.xlsx	1.0.0
6	Integration test & System test	MentoringMe_TestReport_v1.0.xlsx	.xlsx	1.0.0

Table 1. Deliverable Packages

2. Installation Guides

2.1 System Requirements

2.1.1 Backend

- Ubuntu[1] or Ubuntu Server[2] (18.04 or higher)
- Google Cloud Platform Account[3]

2.1.2 iOS

2.1.2.1 For a Real Device

- TestFlight[4]

2.1.2.2 For Xcode

- Xcode[5]
- Homebrew[6]
- Cocoapods[7]

---

[1] Ubuntu: Get Ubuntu | Download - https://ubuntu.com/download

[2] Ubuntu Server: Get Ubuntu Server | Download - https://ubuntu.com/download/server

[3] Google Cloud Platform Account: Google Cloud Platform - https://console.cloud.google.com

[4] TestFlight: TestFlight on the App Store - https://apps.apple.com/app/testflight/

[5] Xcode: Xcode on the App Store - https://apps.apple.com/app/xcode/

[6] Homebrew: Homebrew - https://brew.sh/

[7] CocoaPods: CocoaPods - https://cocoapods.org/

2.2 Installation Instruction

2.2.1 Backend

2.2.1.1 Setup Environment

2.2.1.1.1 Java Development Kit version 11

- Run the command to install:

```
$ sudo apt install openjdk-11-jdk
```

- Confirm Java version:

```
$ java -version
openjdk version "11.0.7" 2020-04-14
OpenJDK Runtime Environment (build 11.0.7+10-post-Ubuntu-3ubuntu1)
OpenJDK 64-Bit Server VM (build 11.0.7+10-post-Ubuntu-3ubuntu1, mixed mode, sharing)
```

2.2.1.1.2 Gradle

- Run the command to install:

```
$ sdk install gradle
```

- Confirm Java version:

```
$ gradle -v
------------------------------------------------------------
Gradle 7.4.2
------------------------------------------------------------
(environment specific information)
```

2.2.1.2 MySQL on Google Compute Engine

2.2.1.2.1 Create a Compute Engine instance

- To create a Compute Engine instance in the Google Cloud Console[1]:
  - Open the Google Cloud Console[1].
  - Select your newly created project and click **Continue**.
  - Click **Create instance** (**New instance** if you have existing instances). Name the instance **mysql-test**.
  - To specify an operating system other than the default value, in the **Boot disk** section, click **Change** to configure the properties for the boot disk. In the **Public images** tab, select an operating system and then click **Save**.
  - Click **Create**.
- To establish an SSH connection:
  - On the **VM instances** page, find your new VM instance in the list.
  - In the **Connect** column, click **SSH**. The SSH terminal opens in a browser window.

---

[1] Google Cloud Console - https://console.cloud.google.com/

2.2.1.2.2 Install MySQL

- Install MySQL:

```
$ sudo apt-get -y install mysql-server
```

- Verify default configuration:

```
$ echo "SELECT user, authentication_string, plugin, host
      FROM mysql.user WHERE user='root' ;" \
    | sudo mysql -t -u root


+------+-------------------------------+------------------+-------------+
| user | authentication_string | plugin           | host        |
+------+-------------------------------+--------------- --+-------------+
| root |                               | auth_socket | localhost |
+------+-------------------------------+------------------+-------------+
```

- Change this setting, and change the root password:

```
$ export PASSWORD=`uuidgen`; echo "Root password is : $PASSWORD"
echo "ALTER USER 'root'@'localhost'
     IDENTIFIED WITH mysql_native_password BY '$PASSWORD'" \
     | sudo mysql -u root


Root password is : xxxx-xxxx-xxxx-xxxx
```

2.2.1.3 Start the Build CI/CD Pipeline with Google Cloud Services

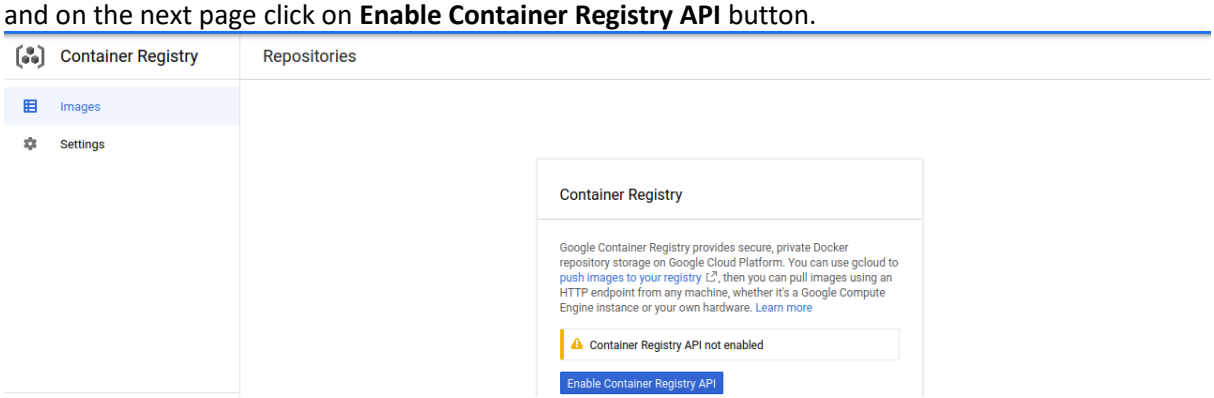
2.2.1.3.1 Project Setup

- Once the account is created, on the home page there is an option to create a project. Go ahead and create a new project.

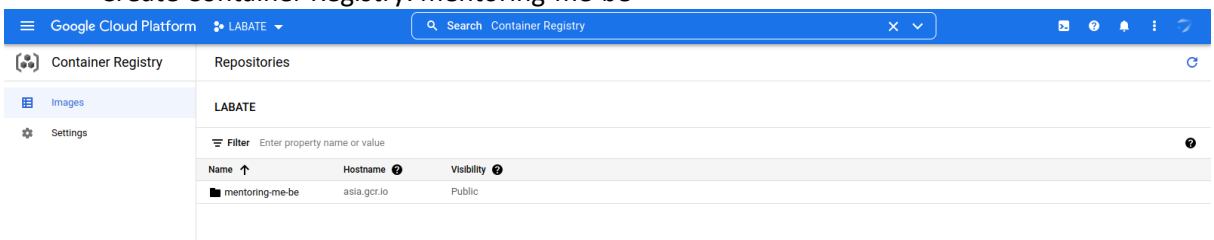
- I have created a project, **LABATE** so I will use that for setting up a complete pipeline

2.2.1.3.2 Container Registry

- It is used to store Docker Container images, Similar to DockerHub, AWS ECS, and other private cloud container registries.
- To use the service we need to activate the API, search for **Container registry** in the search bar, and on the next page click on **Enable Container Registry API** button.



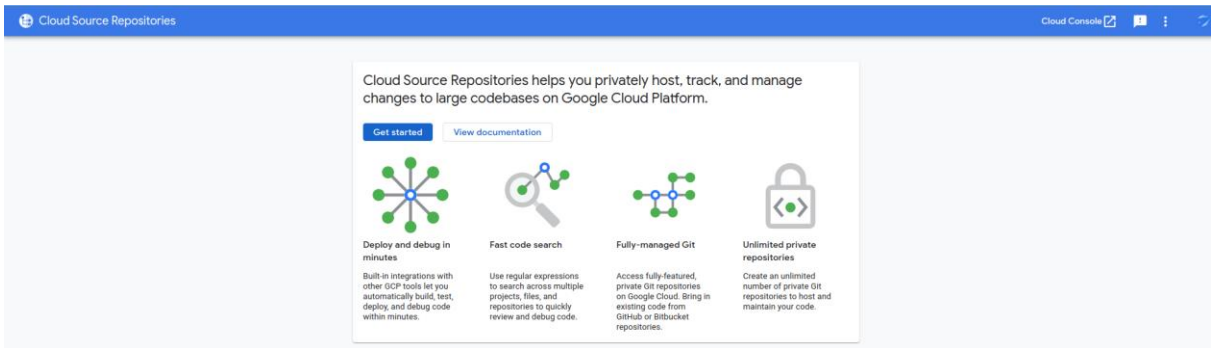
- Create Container Registry: mentoring-me-be



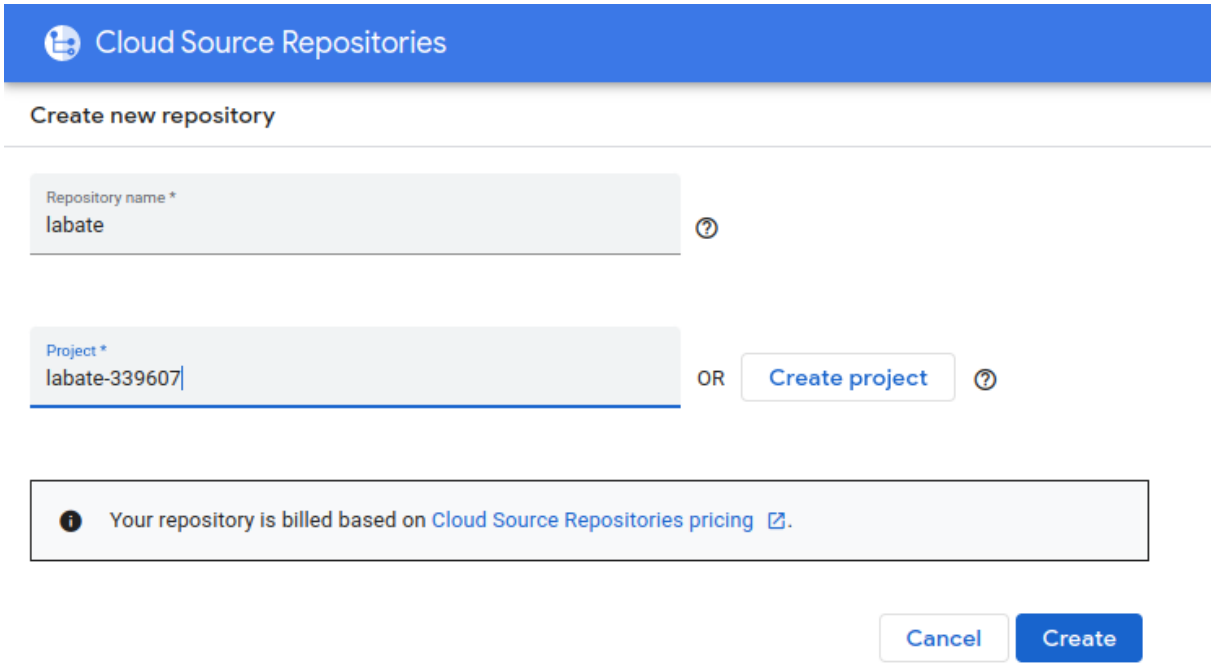
2.2.1.3.3 Google Source Repositories

- It is a version control similar to Github/Bitbucket used to store, manage, and track code.
- For more details refer to the Google Source Repositories page.

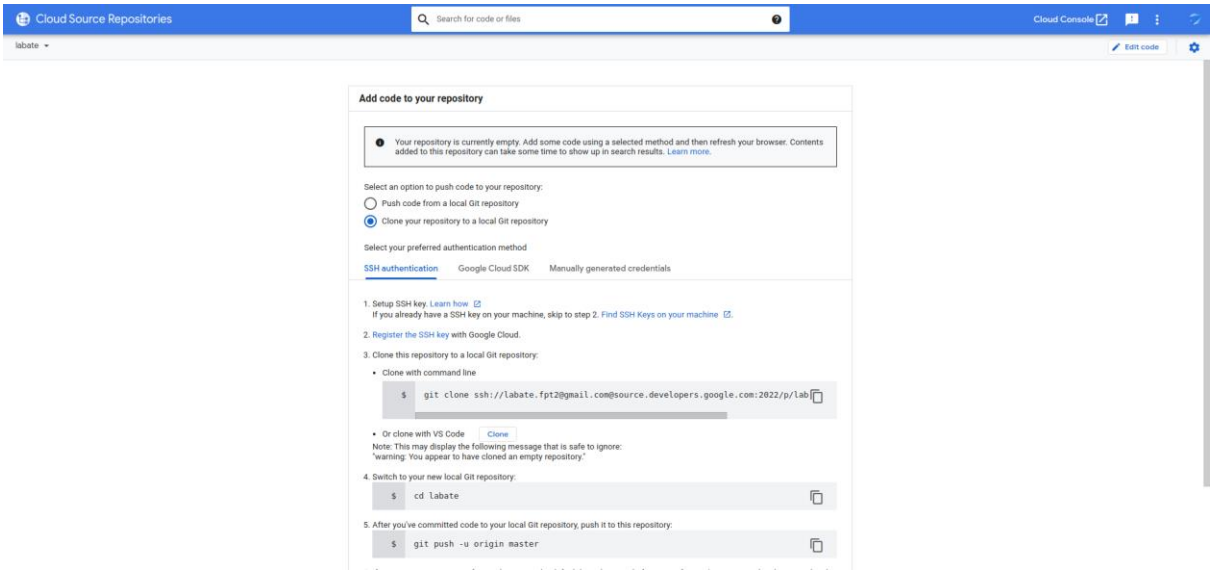
- Now to use the service we need to activate the API, search for **Cloud Source Repositories API**, and on the landing page click on **Enable**.
- Once the API is enabled, click **Go to Cloud Source Repositories** button and then click **Get Started.**



- Now, select Create a new repository, enter repository name and select the project that we have created earlier and then click **Create**.



- Once Cloud Source Repository is created you will be landed on a page to **Add code to your repository**. Select Clone repository to a local Git repository and follow the mentioned steps under **Manually generated credentials**.



- Step 1 is to **Generate and store Git credentials**, click on the link and it will display a command, copy that and run it in your local terminal/command prompt. Now we can access our Cloud Source Repository.
- Follow the next steps, Create a folder in your local system, open the terminal/command prompt, run the git clone command to clone the repository. Now copy the application code files to the clone folder and then run commit and push commands to update the Google Cloud Source Repository.

2.2.1.3.4 CloudBuild

- Cloud Build is a service that executes your builds on Google Cloud Platform's infrastructure.
- Cloud Build can import source code from a variety of repositories or cloud storage spaces, execute a build to your specifications, and produce artifacts such as Docker containers or Java archives.
- It executes the commands in steps and is similar to executing commands in a script.

```
steps:
  - name: 'gradle:7.3.3-jdk11'
    args:
      - assemble
    entrypoint: gradle
  - name: gcr.io/cloud-builders/docker
    args:
      - build
      - '--no-cache'
      - '-t'
      - '$_GCR_HOSTNAME/$PROJECT_ID/$REPO_NAME/$_SERVICE_NAME:$COMMIT_SHA'
```

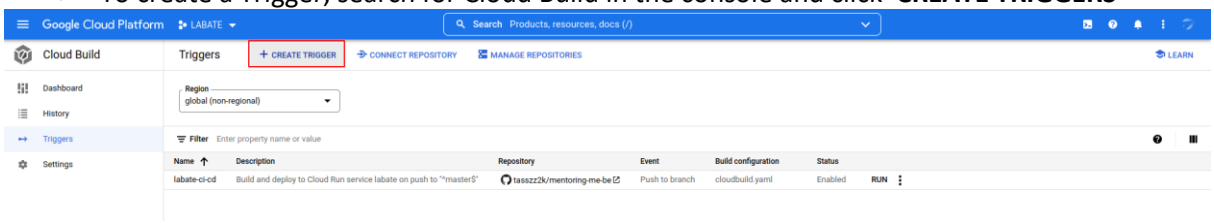
```
    - .
    - '-f'
    - Dockerfile
  id: Build
- name: gcr.io/cloud-builders/docker
  args:
    - push
    - '$_GCR_HOSTNAME/$PROJECT_ID/$REPO_NAME/$_SERVICE_NAME:$COMMIT_SHA'
  id: Push
- name: 'gcr.io/google.com/cloudsdktool/cloud-sdk:slim'
  args:
    - run
    - services
    - update
    - $_SERVICE_NAME
    - '--platform=managed'
    - '--
image=$_GCR_HOSTNAME/$PROJECT_ID/$REPO_NAME/$_SERVICE_NAME:$COMMIT_SHA'
    - >-
      --labels=managed-by=gcp-cloud-build-deploy-cloud-run,commit-sha=$COMMIT_SHA,gcb-
build-id=$BUILD_ID,gcb-trigger-id=$_TRIGGER_ID,$_LABELS
    - '--region=$_DEPLOY_REGION'
    - '--quiet'
  id: Deploy
  entrypoint: gcloud
images:
- '$_GCR_HOSTNAME/$PROJECT_ID/$REPO_NAME/$_SERVICE_NAME:$COMMIT_SHA'
options:
  substitutionOption: ALLOW_LOOSE
substitutions:
  _SERVICE_NAME: labate
```

```
  _DEPLOY_REGION: asia-southeast1
  _GCR_HOSTNAME: asia.gcr.io
  _LABELS: gcb-trigger-id=83efd0d1-dfcc-4633-8214-4ad415bc2ce9
  _TRIGGER_ID: 83efd0d1-dfcc-4633-8214-4ad415bc2ce9
  _PLATFORM: managed
tags:
  - gcp-cloud-build-deploy-cloud-run
  - gcp-cloud-build-deploy-cloud-run-managed
  - labate
```

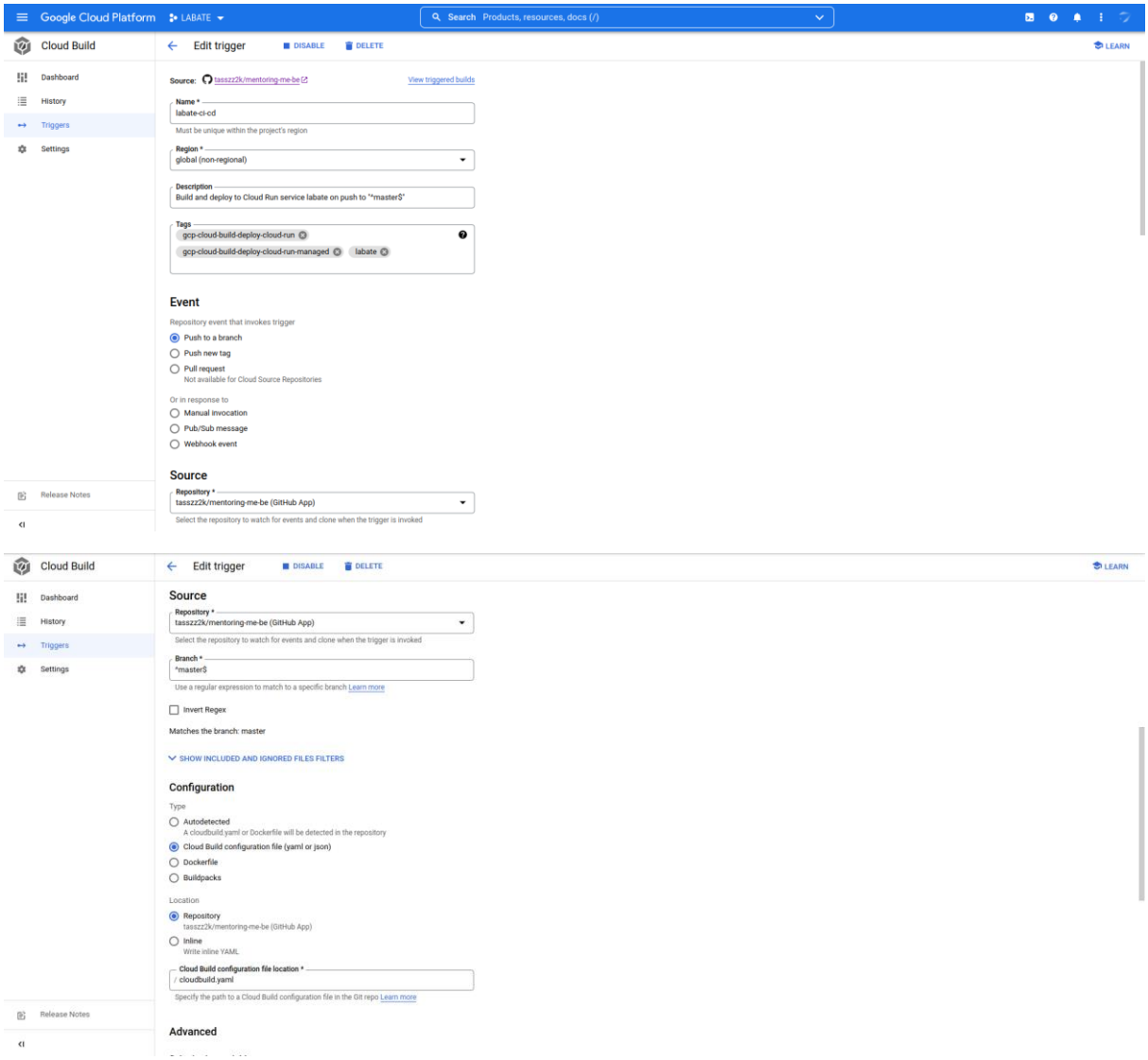
- In the first step, we will build the Docker image and in the next step, we will push the image to Google Container Registry. The final step is to deploy the application on the Kubernetes cluster, filename is the folder directory that will have Deployment and Service YAML files, specify the image and cluster name that we have created earlier.
- Note:
    - $PROJECT_ID: variable value will be fetched from the environment.

Trigger

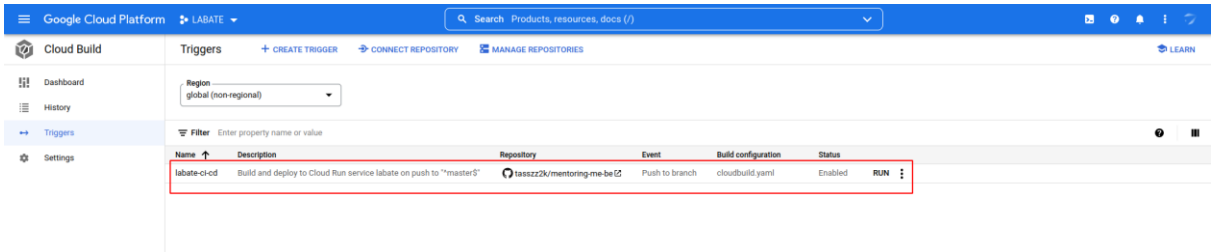
- First, we need to create a **Trigger** so that whenever new changes are made in the Code repository the pipeline will trigger.
- To create a Trigger, search for Cloud Build in the console and click **CREATE TRIGGERS**



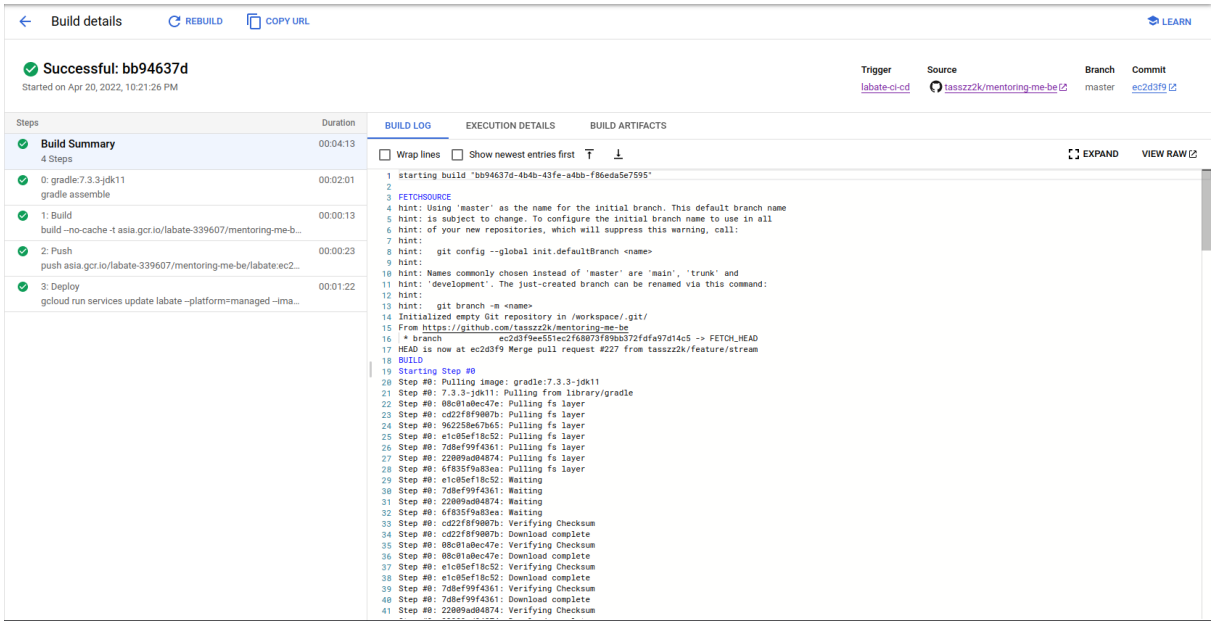
- Select the event on how to trigger the pipeline and provide the Repository and Branch for monitoring for any changes, type select Cloud Build config file and provide the file location and then click **CREATE**



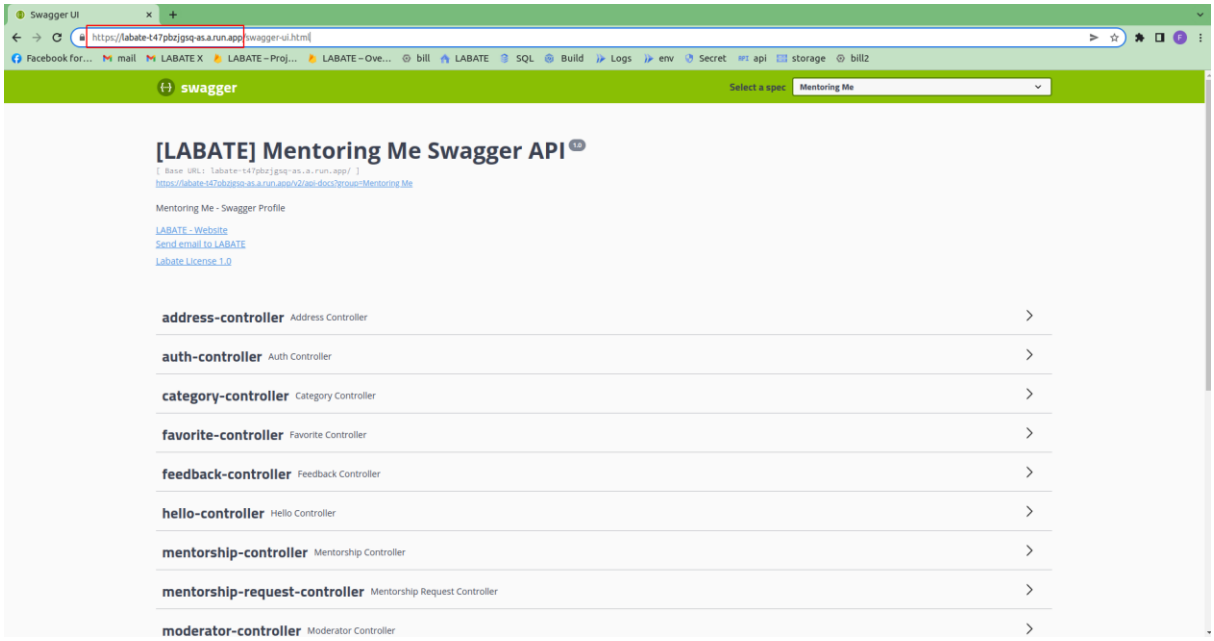
- Once the Trigger is setup, we will have the option to Trigger the pipeline automatically



- Let's first check the manual process, click **RUN** and then click **RUN TRIGGER**, it will start the pipeline and follows the steps in the Cloud Build YAML file. It will take 3-4 minutes to complete the build. Once the build is completed we can check the container registry for the docker image and the Kubernetes Engine for confirming the Workloads and Service are up and running. If the build fails we can look into the logs and check where the error is and try to resolve it.
- Make sure to add the correct Cloud Build service account.



- **Workloads** are deployable units of computing that can be created and managed in a cluster
- **Services** are sets of Pods with a network endpoint that can be used for discovery and load balancing
- **Ingresses** are collections of rules for routing external HTTP(S) traffic to Services
- Now we can go to the endpoint and check our application



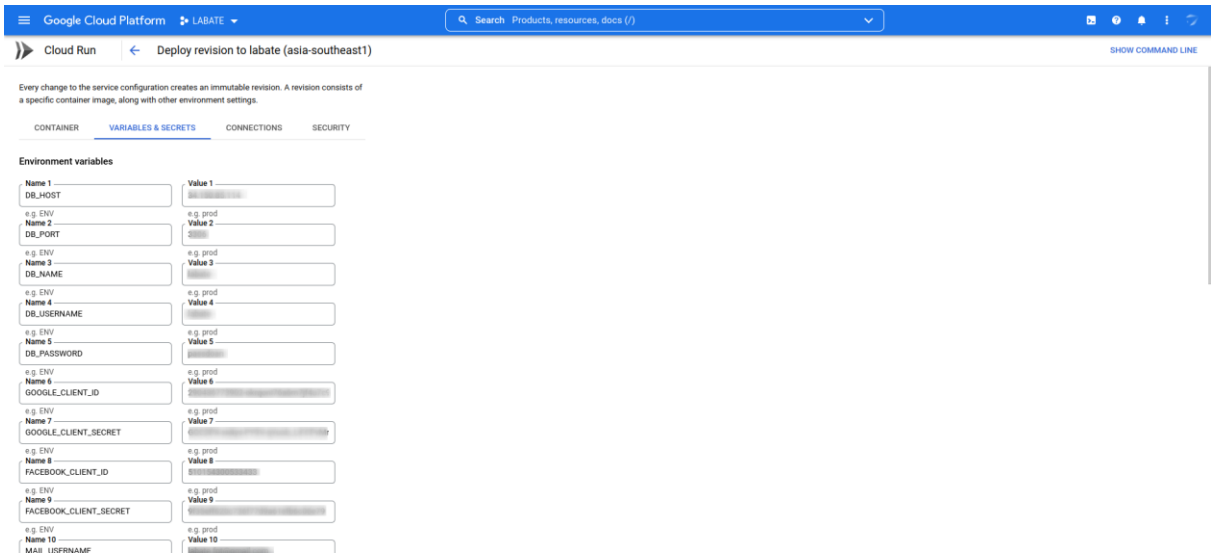
2.2.1.4 Cloud Run

2.2.1.4.1 Setting environment variables

- When you set environment variables, they are injected into the container and are accessible to your code. Environment variables are set as key/value pairs.
- Go to Cloud Run
- Click **Create Service** if you are configuring a new service you are deploying to. If you are configuring an existing service, click on the service, then click **Edit and Deploy New Revision**.
- If you are configuring a new service, fill out the initial service settings page as desired, then click **Next** > **Container, Variables & Secrets, Connections, Security** to reach the service configuration page.
- Click the **Variables & Secrets** tab.

- Do the following:
  - If you are adding a variable, click **Add Variable**, and specify the name you want for the variable and its value in the **Name** and **Value** text boxes.
  - If you are changing a value for a variable, replace the current value in the **Value** text box with the one you want.
  - If you are removing one or more environment variables, hover your cursor to the left of the **Value** textbox of the variable you are removing to display the Trash icon, and click it.
- Click **Create** or **Deploy**.
- List of environment variable:
  - DB_HOST
  - DB_PORT
  - DB_NAME
  - DB_USERNAME
  - DB_PASSWORD

- GOOGLE_CLIENT_ID
- GOOGLE_CLIENT_SECRET
- FACEBOOK_CLIENT_ID
- FACEBOOK_CLIENT_SECRET
- MAIL_USERNAME
- MAIL_PASSWORD
- SITE_BASE_URL_HTTPS
- LABATE_SECURE_DEFAULT_PASSWORD
- GCP_BUCKET_NAME
- GCP_SUBDIRECTORY
- GCP_CREDENTIALS
- GCP_FIREBASE_CONFIGURATION_FILE
- COMETCHAT_APP_ID
- COMETCHAT_API_KEY
- COMETCHAT_AUTH_KEY



2.2.2 iOS

2.2.2.1 For a Real Device

- Go to Apple App Store, install TestFlight.
- Check mail, and accept the invitation from Appstore connect. TestFlight will open.
- Inside TestFlight, click the Install button next to the app you want to install to start the installation.
- Once the installation is finished, the app can be opened from inside TestFlight or directly from a shortcut on the home screen. Just like any other app on your device.

2.2.2.2 For Xcode

2.2.2.2.1 Application and Dependency Installation

- Install Xcode in Apple App Store

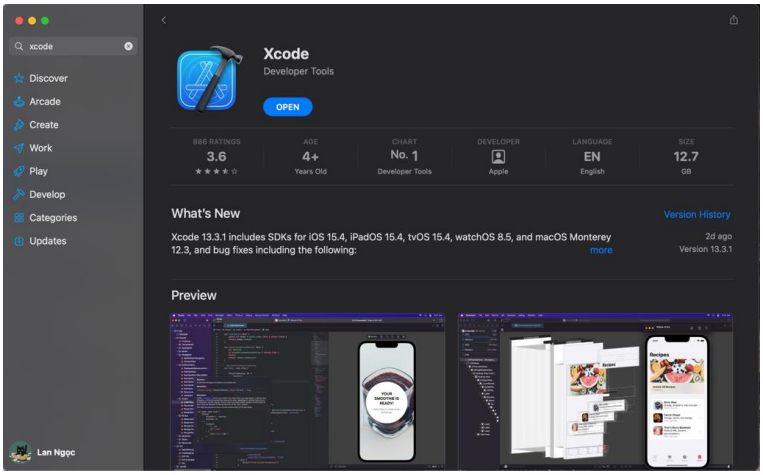


Figure 2.2.2.1. Install Xcode in Apple App Store

- Install Homebrew by pasting the code line below in a macOS Terminal:

```
$ /bin/bash -c "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

- Install Cocoapods by pasting the code line below in a macOS Terminal:

```
$ sudo gem install cocoapods
```

2.2.2.2.2 Start the Build

```
$ git clone git@github.com:bigdreamer1610/mentoring-me-ios.git

$ cd mentoring-me-ios

$ pod install

$ open MentoringMe.xcworkspace
```

3. User Manual

3.1 Overview

This app has been built and developed to provide an easy way for students and mentors to connect more efficiently by online chat, post mentorship requests, take quizzes, and arrange schedules.

3.2 Guest

3.2.1 Register

- Open the application.
- Press “Đăng ký ngay” at the bottom, below the Google icon. The screen will redirect to the registration screen.
- Enter the full name, email, password, re-enter the password, choose a role, agree to terms & conditions, then press the “Đăng ký” button. The screen appears registration successfully confirm-dialog and will redirect to the edit profile screen to add more information. This screen is optional to fill in all blanks, so guests can press the cross-x icon (in the top right corner) to skip the step below.

- Enter information and press the “Cập nhật” button. The screen appears the updated information successfully confirm-dialog.

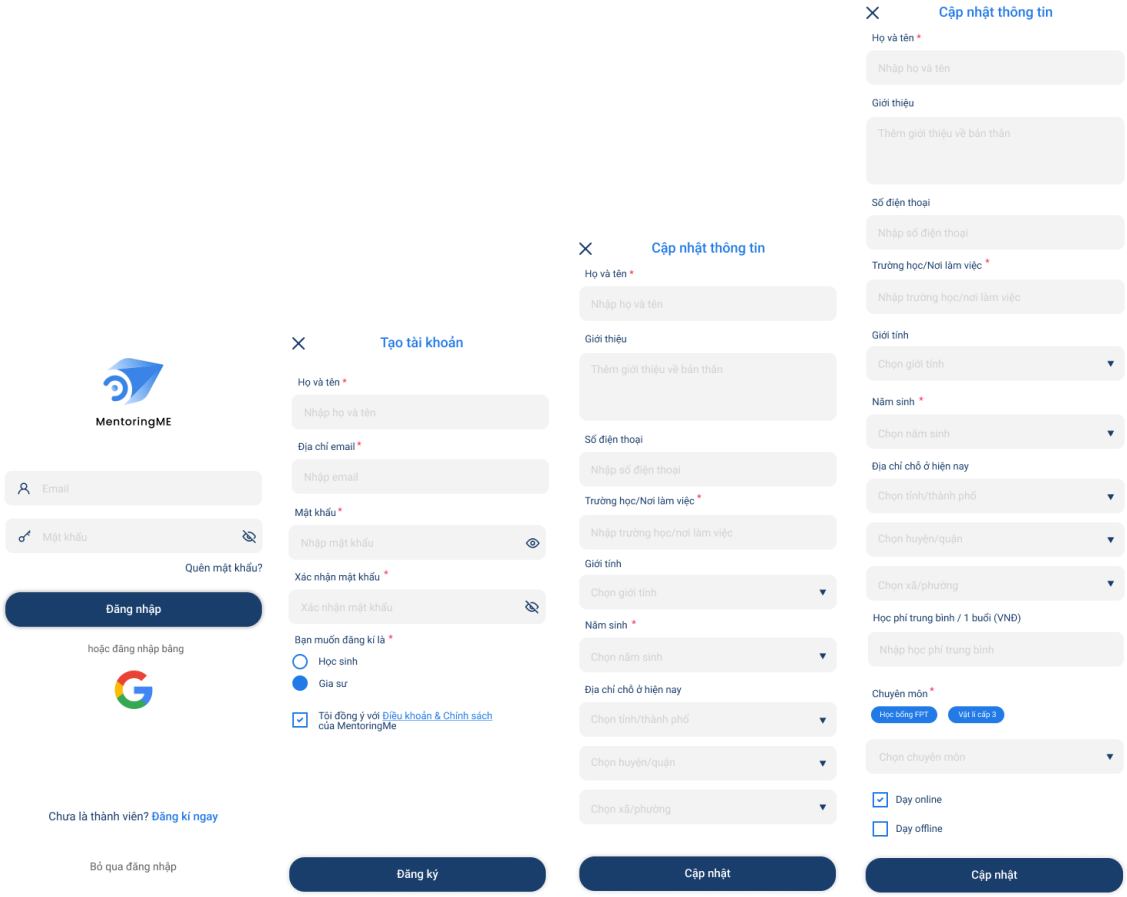


Figure 3.2.1. Register

3.2.2 Take quiz

- Access the quiz list screen by clicking “Quiz” tab at the bottom of the screen.
- Choose a quiz from “Thư viện quiz”.
- Click button “Làm quiz” (take quiz).
- Confirm dialog to start a quiz.
- The time run decrease from max to 00:00:00.
- The order number of questions increases or decreases depending on the action of pressing the button “Câu trước”/”Câu tiếp” (next/previous question)
- If user is on the first question, the screen hide button “Câu trước”. If user is on the last question, the screen hide button “Câu sau”.
- When clicking “Status Answer” icon, the screen show up the list of questions with corresponding status of answered or not.
- Click button “Nộp bài” (submit).

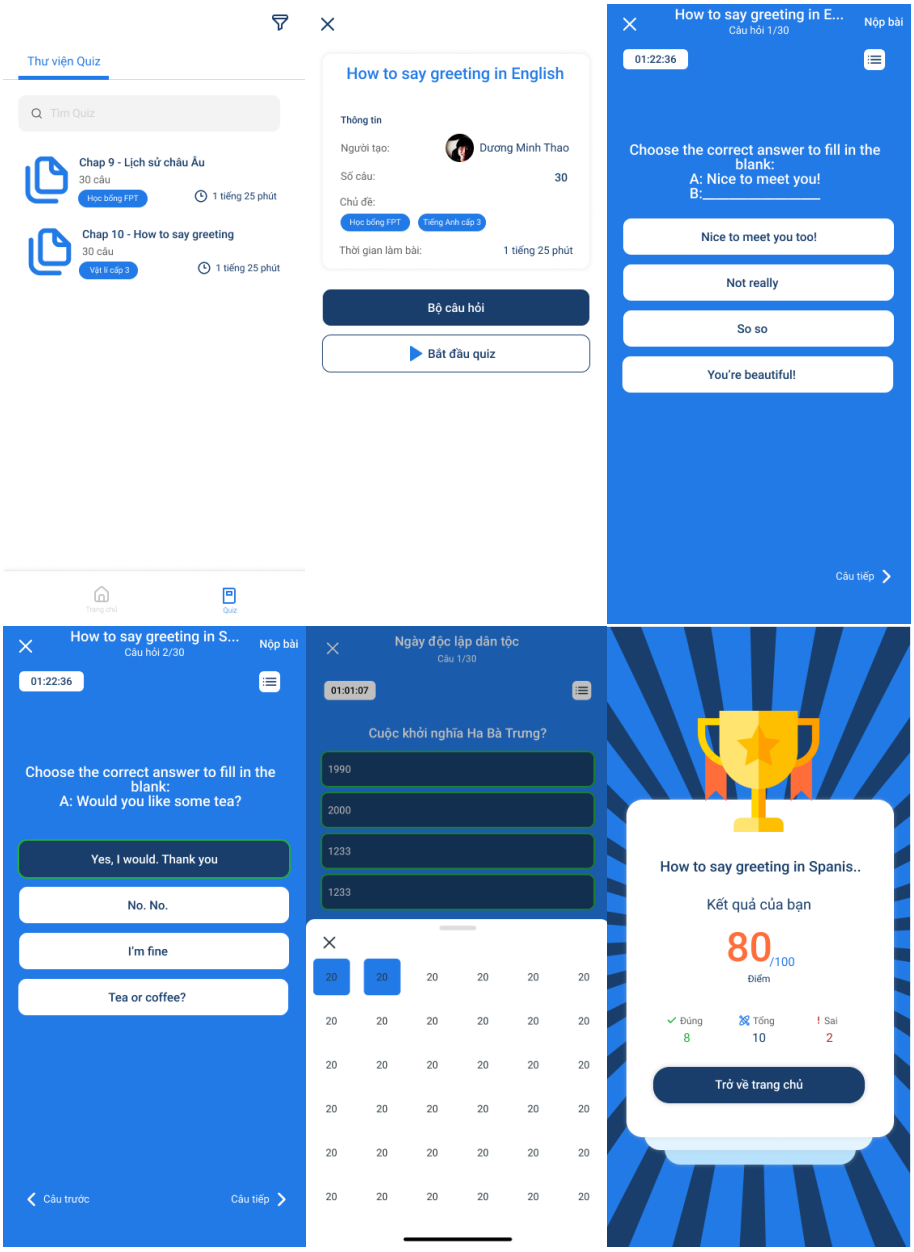


Figure 3.3.10 Take Quiz

3.3 Student

3.3.1 Login/Logout Account

3.3.1.1 Login Account

- Open the application.
- Enter login information: email and password.
- Press "Đăng nhập" button.

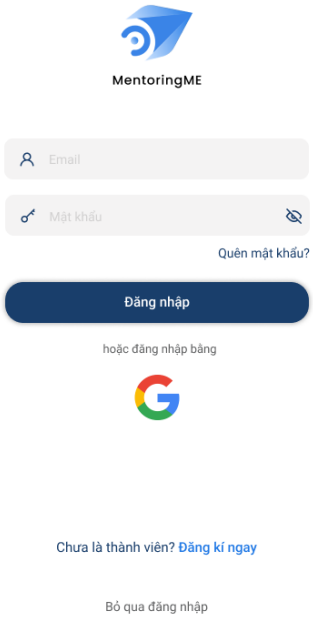


Figure 3.3.1.1 Login Account

3.3.1.2 Logout Account

- Access the home screen.
- Click profile icon (filled avatar circle) in the top-left corner.
- Click setting icon in the top-right corner.
- Press “Đăng xuất” button. The screen appears the logout confirm-dialog. Press agree button.

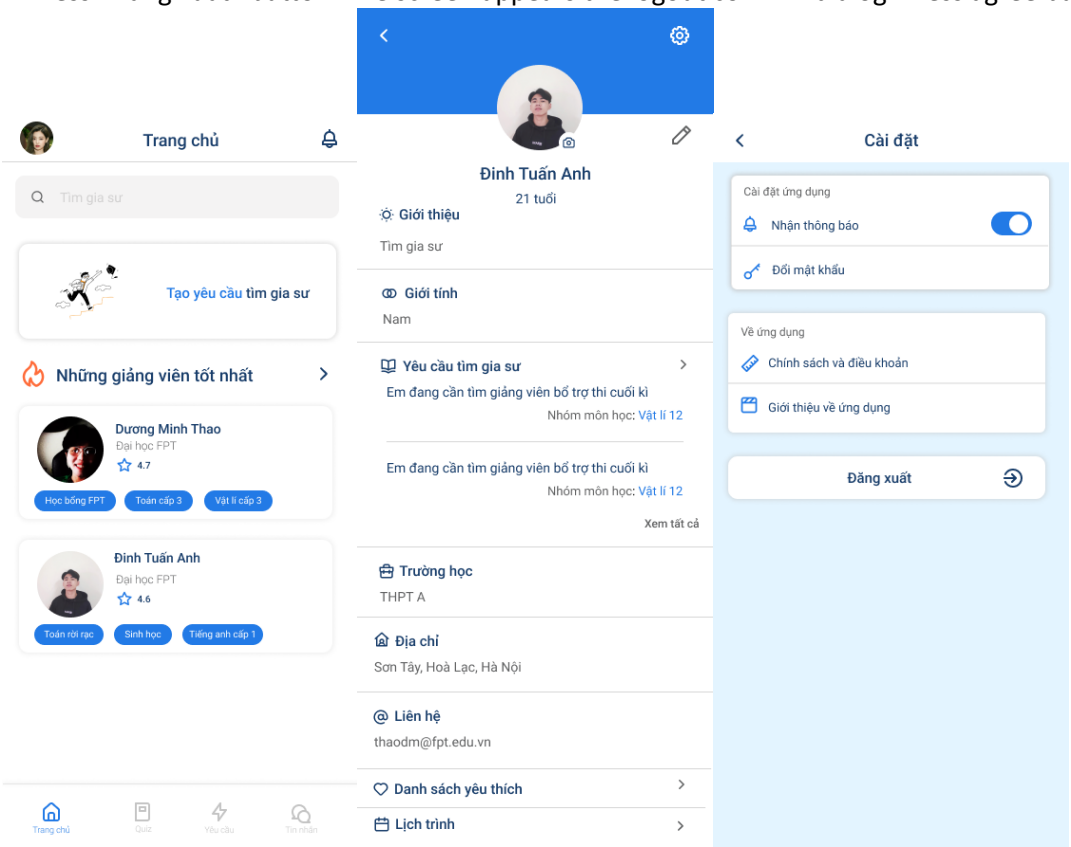


Figure 3.3.1.2 Logout Account

3.3.2 Reset Password

- Open the application.
- Click “Quên mật khẩu?” (forgot password).
- Enter email.
- Click the “Tiếp tục” button (continue button).
- Enter OTP (one-time-password) from inputted email. If the email did not receive any OTP, click “Gửi lại” (resend) to receive a new OTP.
- Click the “Xác nhận” button (confirm button). The screen will redirect to the reset password screen.
- Enter the new password and confirm the new password, then click the “Xác nhận” button (confirm button). The screen appears the reset password successfully confirm-dialog. When the user clicks OK, the dialog is closed and the screen returns to the login screen.

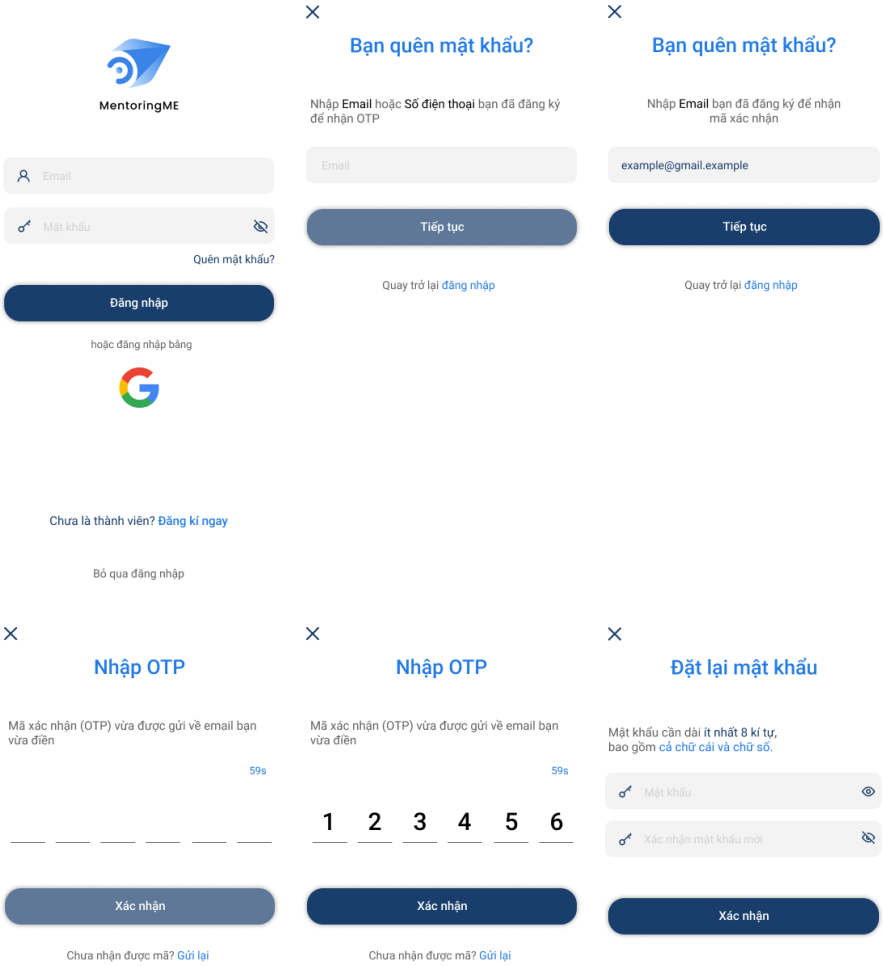


Figure 3.3.2 Reset Password

3.3.3. Change Password

- Access the home screen.

- Click the profile icon (filled avatar circle) in the top-left corner.
- Click the setting icon in the top-right corner.
- Click “Đổi mật khẩu” (change password).
- Enter current password, new password, and re-enter new password.
- Click “Xác nhận” button (confirm button).

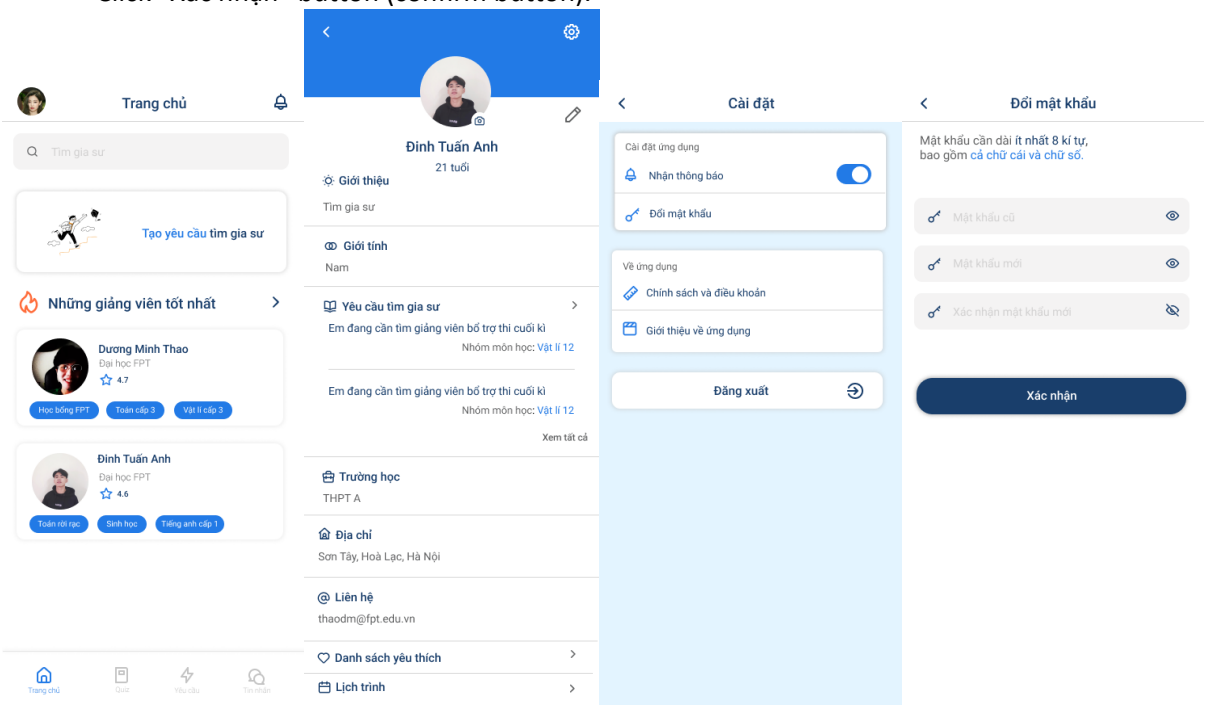


Figure 3.3.3 Change Password

3.3.4 Search User

- Access the home screen.
- Click search bar.
- Enter name, email, phone or school/work place.
- Click filter icon to choose filter criteria (when filter mentor only): location - city/province to the district only, average fee, gender, rating, teaching platform.
- Click search icon on keyboard.

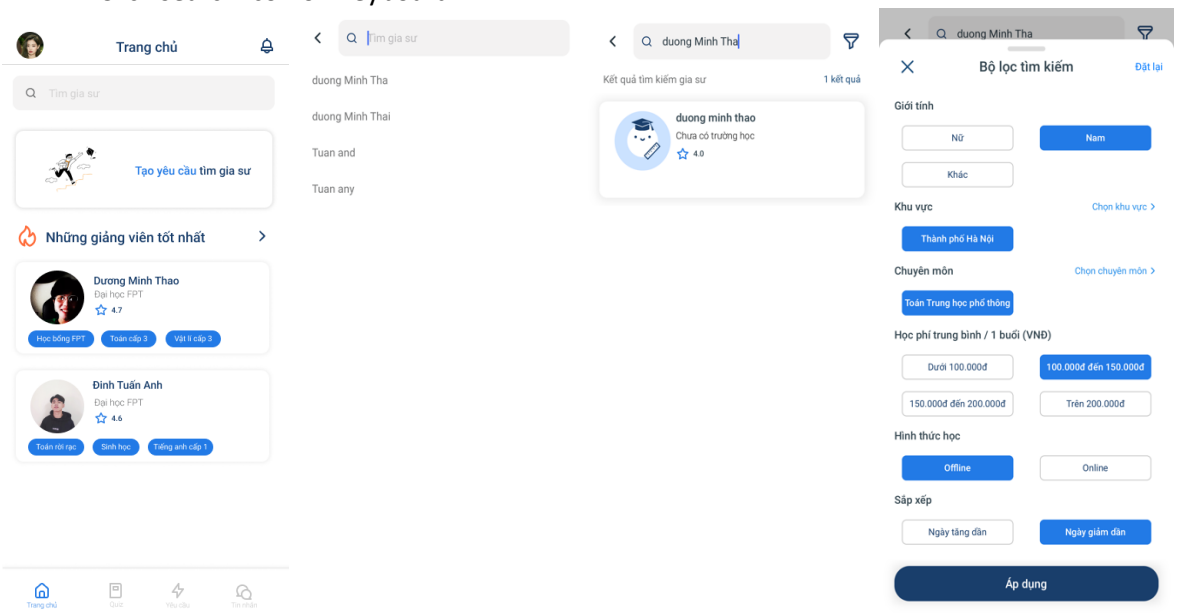


Figure 3.3.4 Search User

3.3.5 Manage Profile

3.4.4.1 View Profile

- Access the home screen.
- Click the profile icon (filled avatar circle) in the top-left corner.

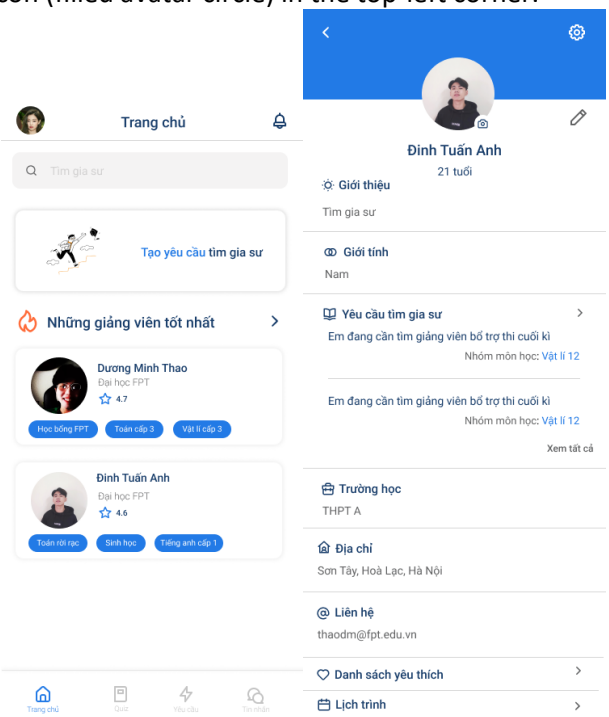


Figure 3.3.5.1 View Profile

3.4.4.2 Update Profile

- Access the profile screen.
- Click the edit icon (pencil) in the top-right corner below the setting icon.
- Enter information and press the “Cập nhật” button. The screen appears the updated information successfully confirm-dialog.

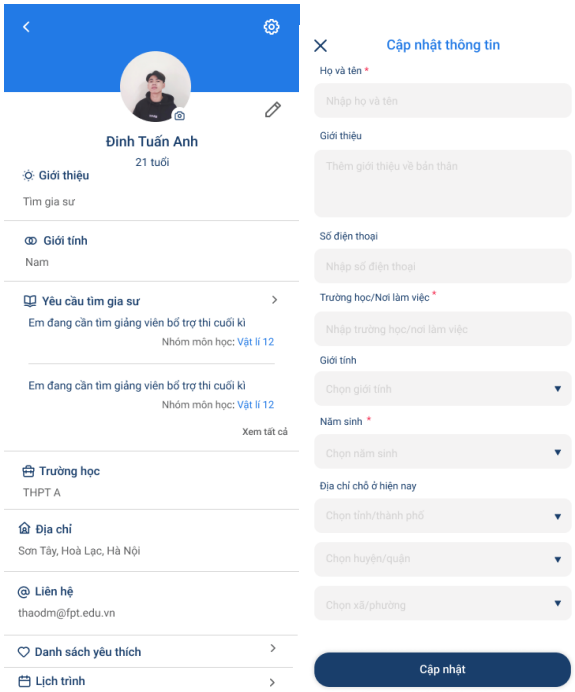


Figure 3.3.5.2 Update Profile

3.4.4.3 Upload Avatar

- Access the profile screen.
- Click camera icon near current avatar.
- Upload new avatar.

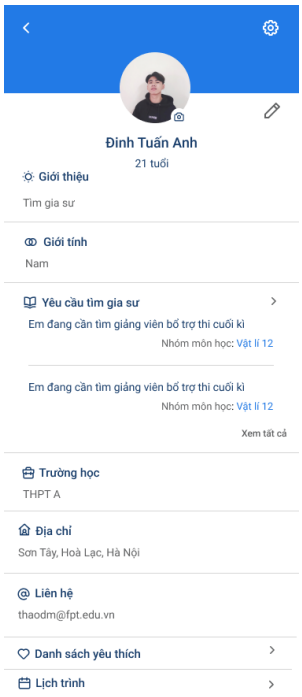


Figure 3.3.5.3 Update Avatar

3.3.6 View Top Mentor List

- Access the home screen.
- Click “Những giảng viên hot nhất” option.

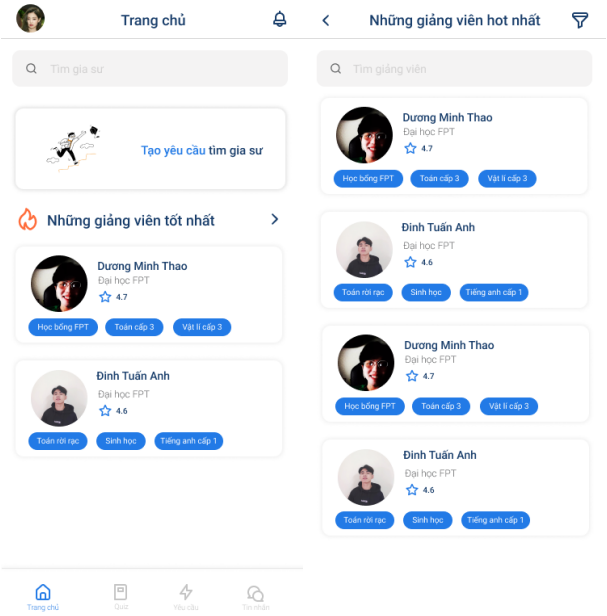


Figure 3.3.6 View Top Mentor List

3.3.7 Manage Favorite Mentor

3.3.7.1 View Favorite Mentor List

- Access the profile screen by clicking the profile icon (filled avatar circle) in the top-left corner of the home screen.
- Click “Danh sách yêu thích” (favorite list).
- Click filter and choose “Gia sư yêu thích” (favorite mentor).

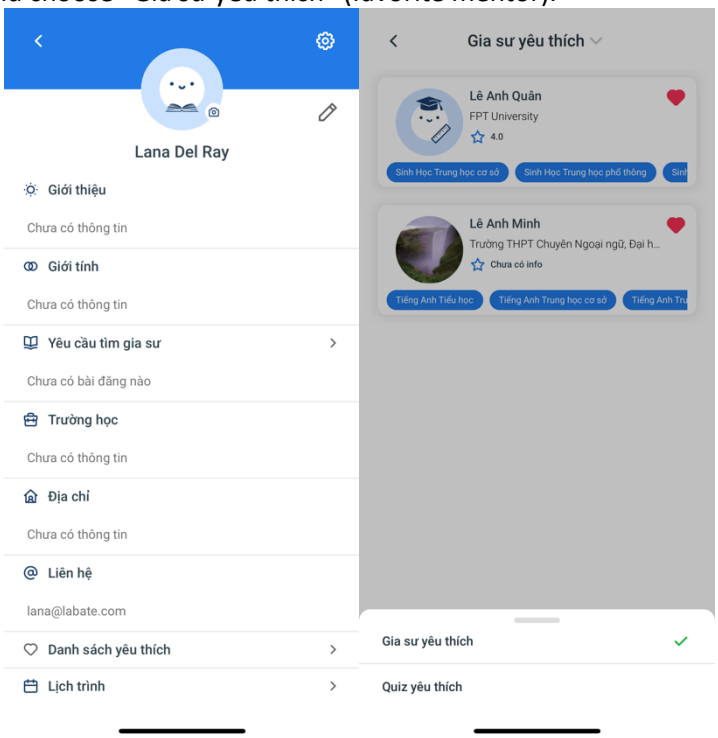


Figure 3.3.7.1 View Favorite Mentor List

3.3.7.2 Add Favorite Mentor

- Access the mentor list screen.
- Click to any mentor. The screen will redirect to the mentor’s profile screen.

- Click the heart icon.

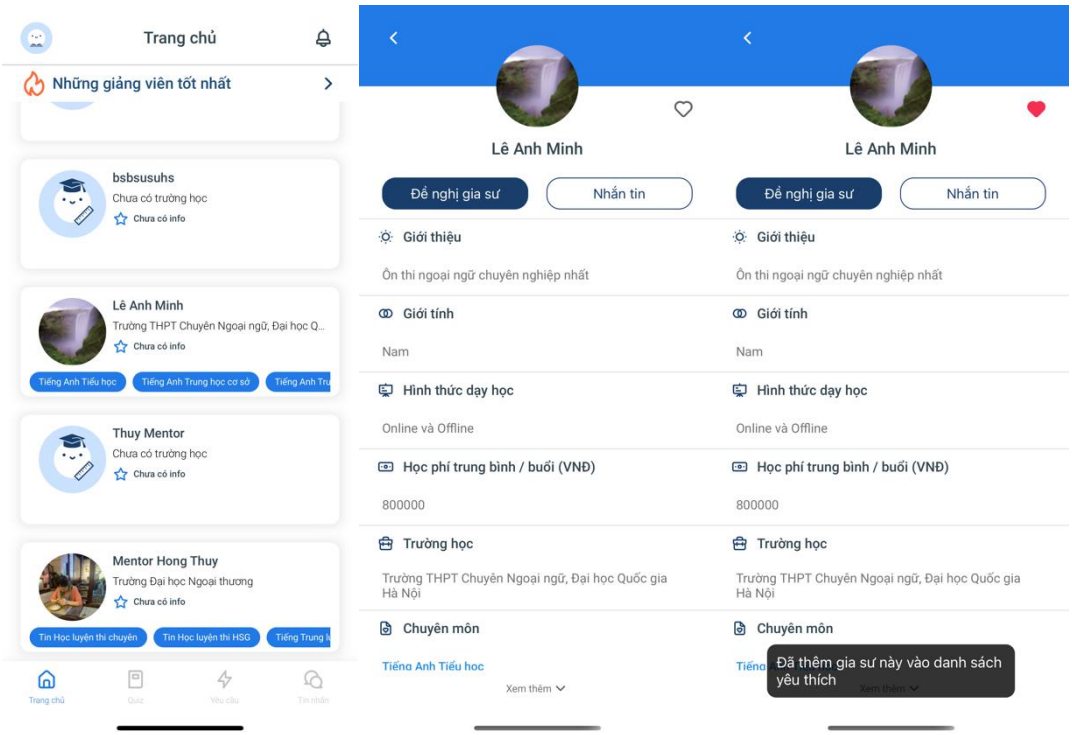


Figure 3.3.7.2 Add Favorite Mentor

3.3.7.3 Delete Favorite Mentor

- Access the mentor list screen.
- Click to any mentor. The screen will redirect to the mentor's profile screen.
- Click the heart icon.

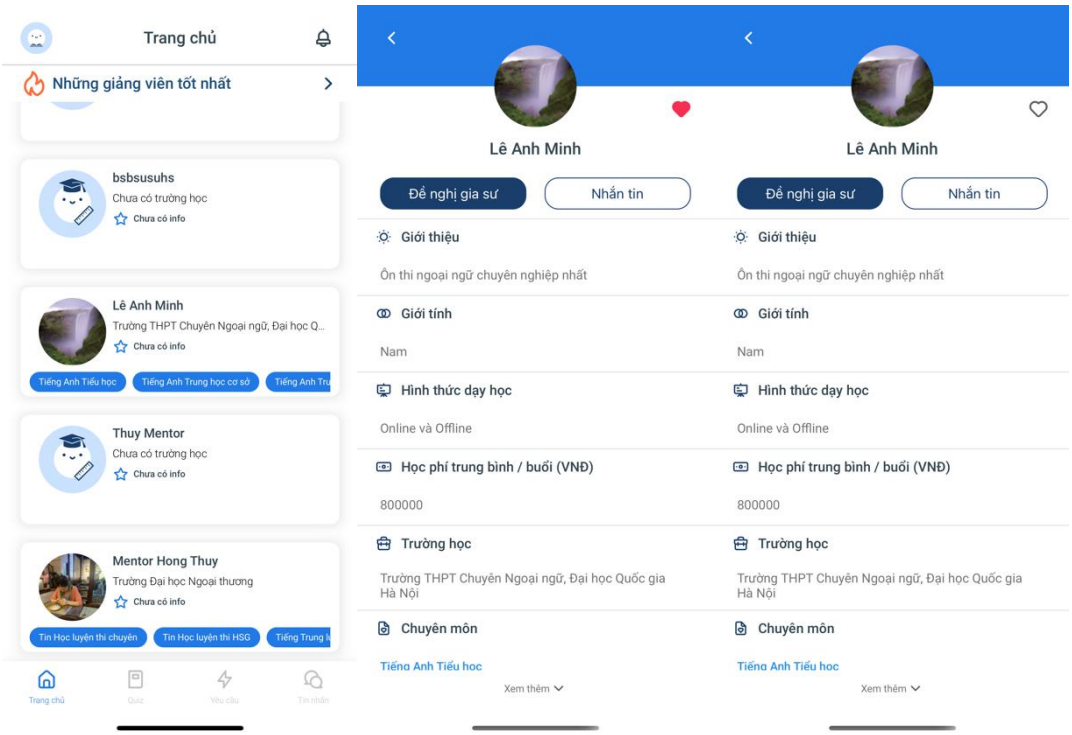


Figure 3.3.7.3 Delete Favorite Mentor

3.3.8 View Mentor Profile

- Access the home screen.
- Click to any mentor. The screen will redirect to the mentor's profile screen.

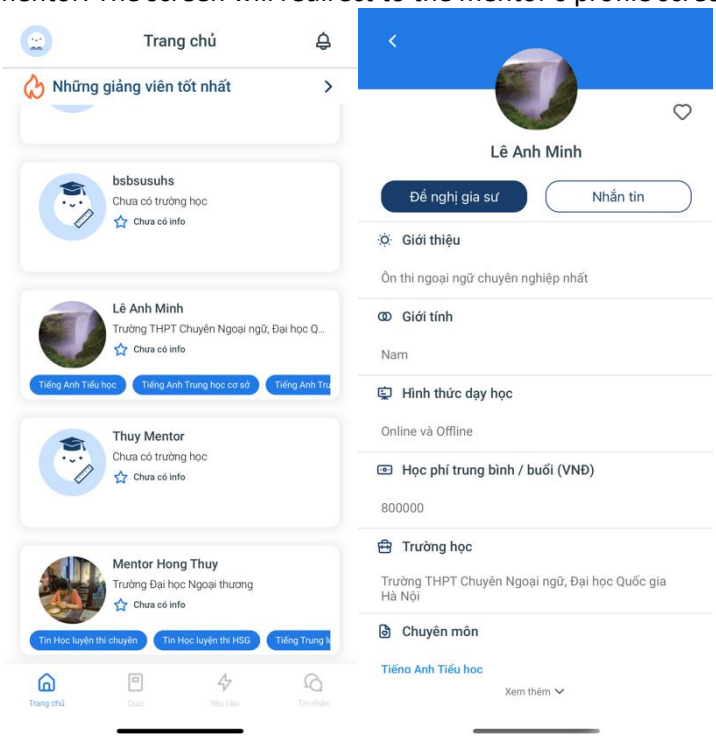


Figure 3.3.8 View Mentor Profile

3.3.9 Manage Favorite Quiz

3.3.9.1 View Favorite Quiz List

- Access the profile screen by clicking the profile icon (filled avatar circle) in the top-left corner of the home screen.
- Click "Danh sách yêu thích" (favourite list).
- Click filter and choose "Quiz yêu thích" (favorite quiz).

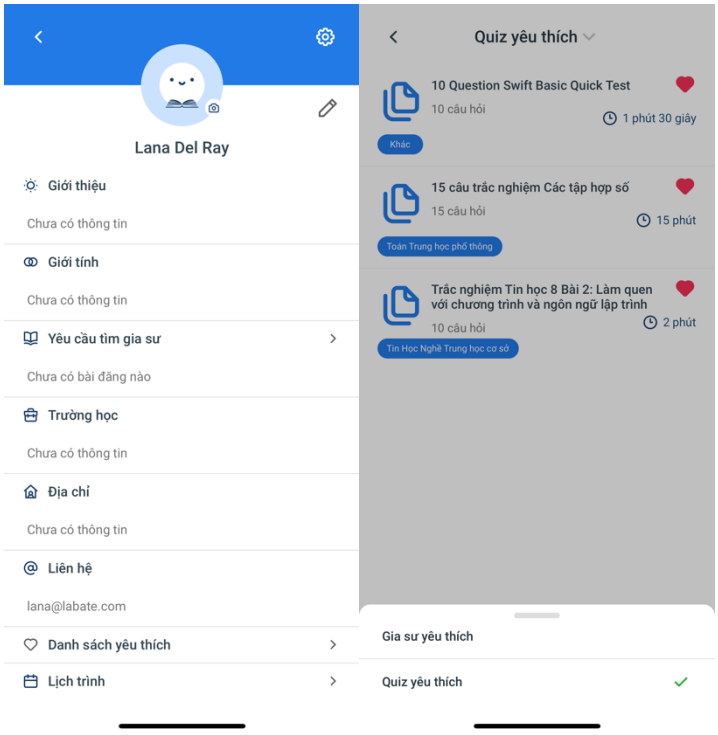


Figure 3.3.9.1 View Favorite Quiz List

3.3.9.2 Add Favorite Quiz

- Access the quiz list screen.
- Click to any quiz. The screen will redirect to the quiz's overview screen.
- Click the heart icon.

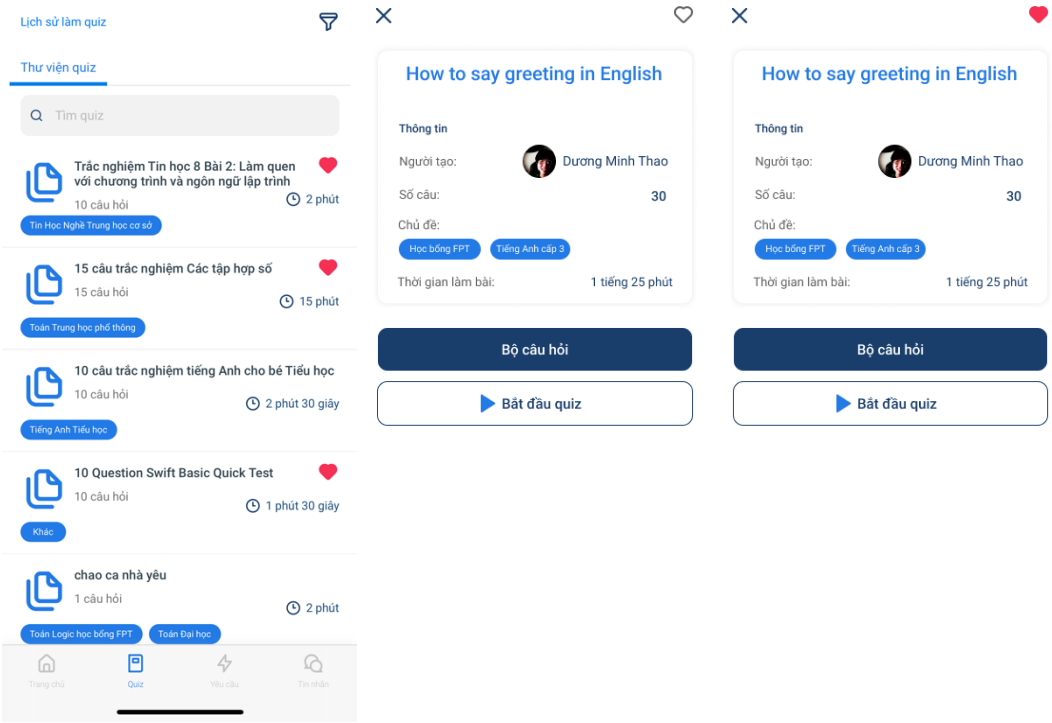


Figure 3.3.9.2 Add Favorite Quiz

3.3.9.3 Delete Favorite Quiz

- Access the quiz list screen.

- Click to any quiz. The screen will redirect to the quiz's overview screen.
- Click the heart icon.

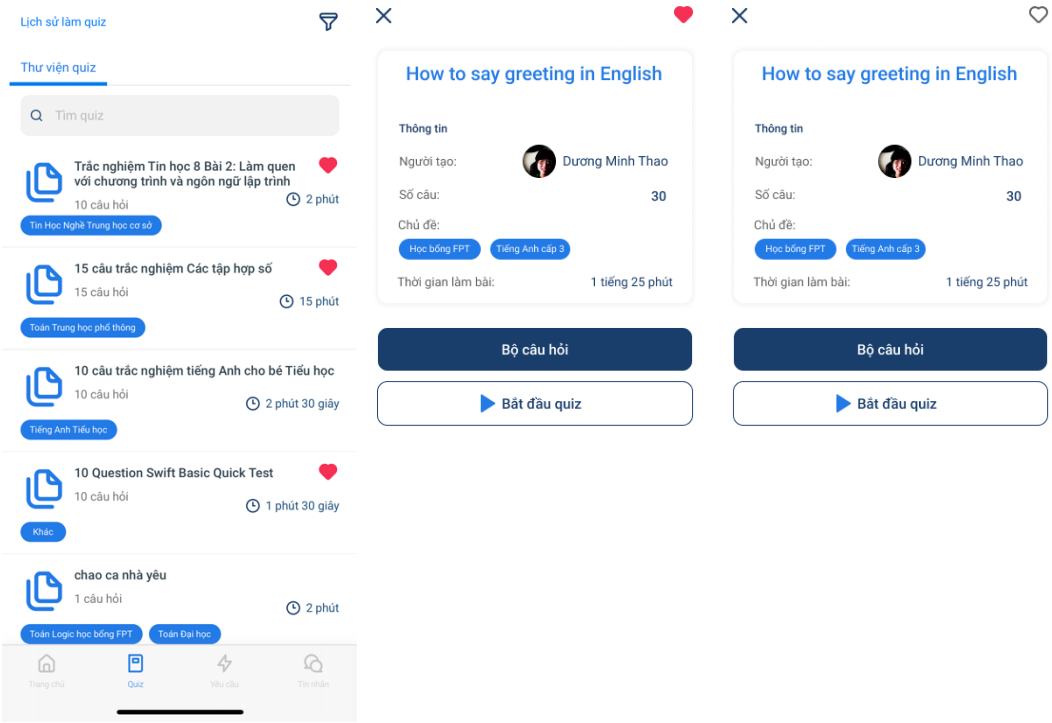


Figure 3.3.9.3 Delete Favorite Quiz

3.3.10 Take Quiz

- Access the quiz list screen by clicking "Quiz" tab at the bottom of the screen.
- Choose a quiz from "Thư viện quiz".
- Click button "Làm quiz" (take quiz).
- Confirm dialog to start a quiz.
- The time run decrease from max to 00:00:00.
- The order number of questions increases or decreases depending on the action of pressing the button "Câu trước"/"Câu tiếp" (next/previous question)
- If user is on the first question, the screen hide button "Câu trước". If user is on the last question, the screen hide button "Câu sau".
- When clicking "Status Answer" icon, the screen show up the list of questions with corresponding status of answered or not.
- Click button "Nộp bài" (submit).

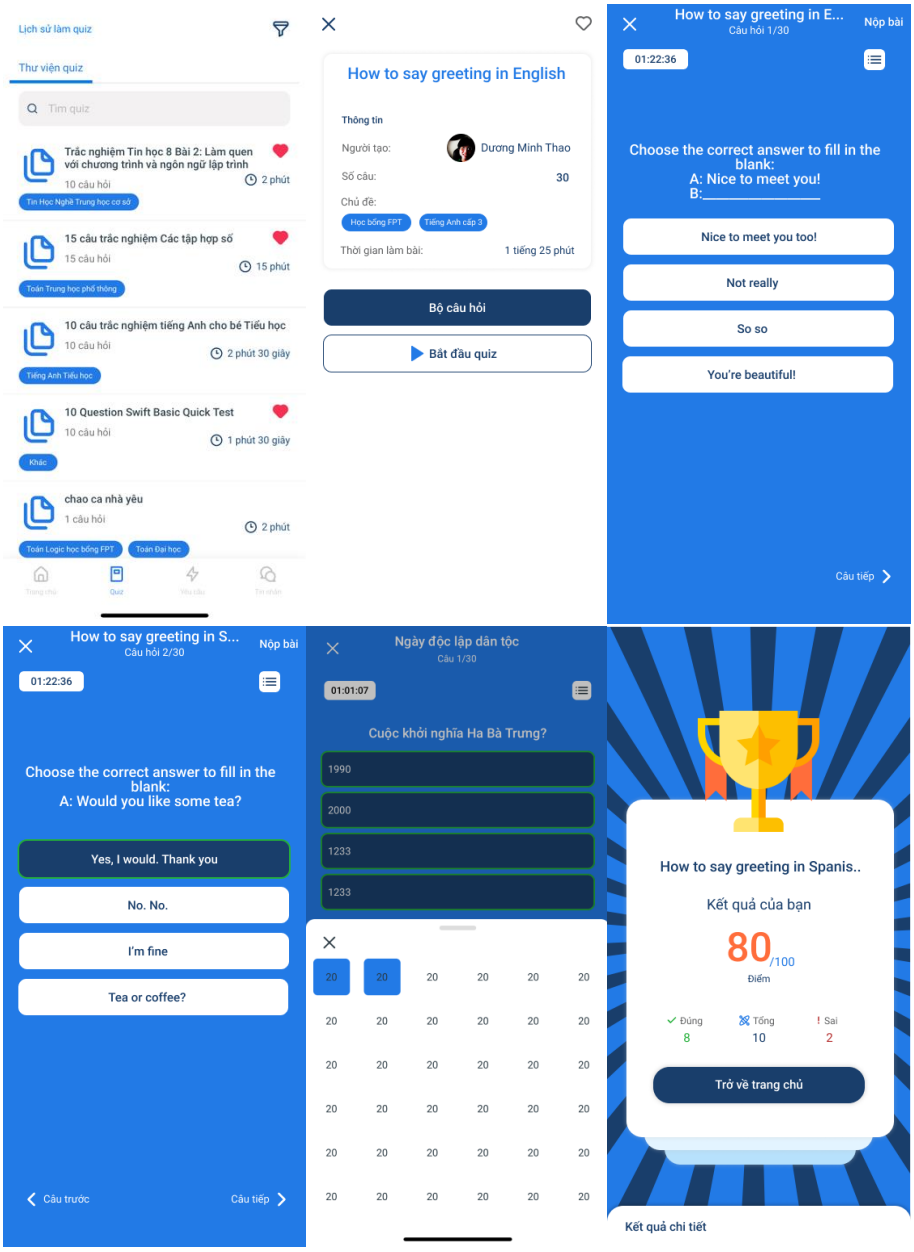


Figure 3.3.10 Take Quiz

3.3.11 View Taken Quiz History

- Access the quiz list screen by clicking "Quiz" tab at the bottom of the screen.
- Click "Lịch sử làm quiz" (taken quiz history). The screen will redirect to the taken quiz history screen.

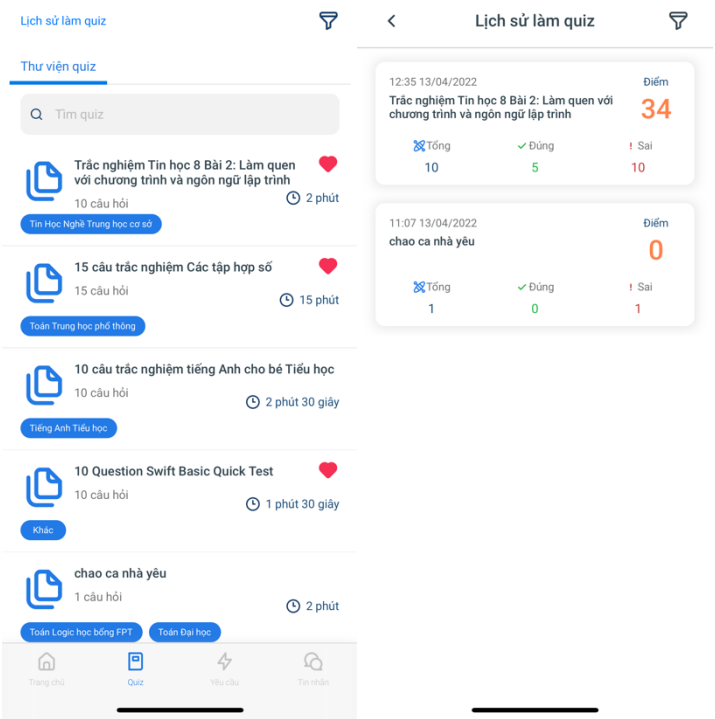


Figure 3.3.11 View Taken Quiz History

3.3.12 View Quiz Detail Result

- On the ontaking quiz screen, click button “Nộp bài” (submit) or times up.
- Drag option “Kết quả chi tiết” from bottom to top. The screen will display each question with corresponding answers (tick on user’s answer).

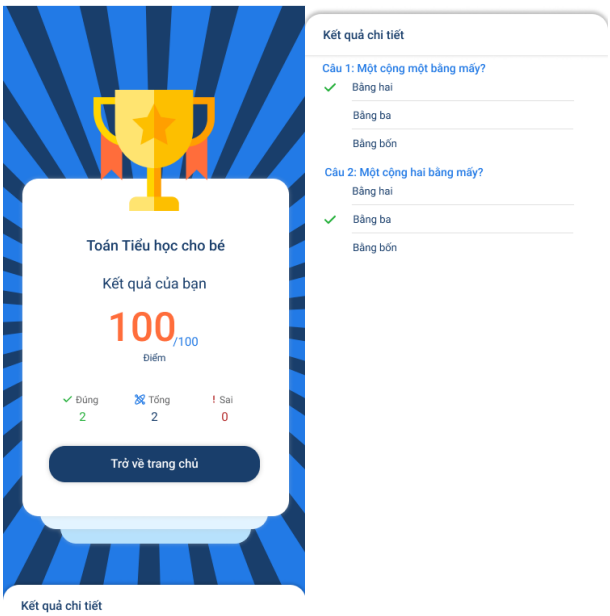


Figure 3.3.12 View Quiz Detail Result

3.3.13 View Quiz List

- Access the home screen.
- Press “Quiz” tab at the bottom of the screen. The screen will redirect to the quiz screen.

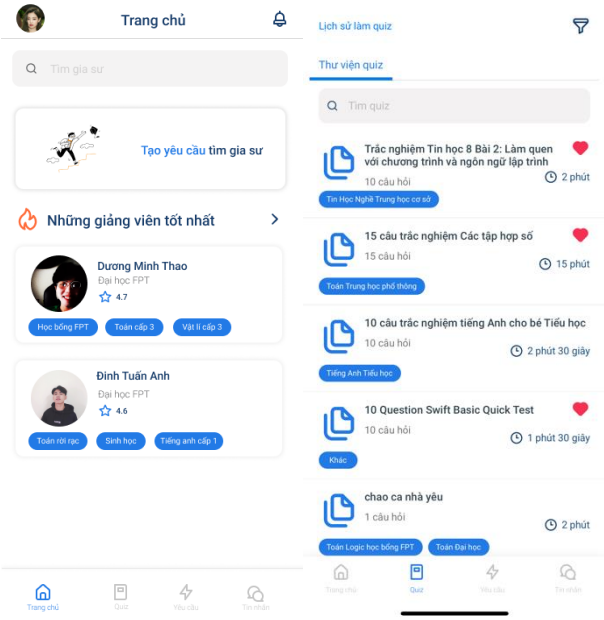


Figure 3.3.13 View Quiz List

3.3.14 View Quiz Overview

- Access the quiz list screen by clicking “Quiz” tab at the bottom of the screen.
- Click to any quiz. The screen will redirect to the quiz’s overview screen.

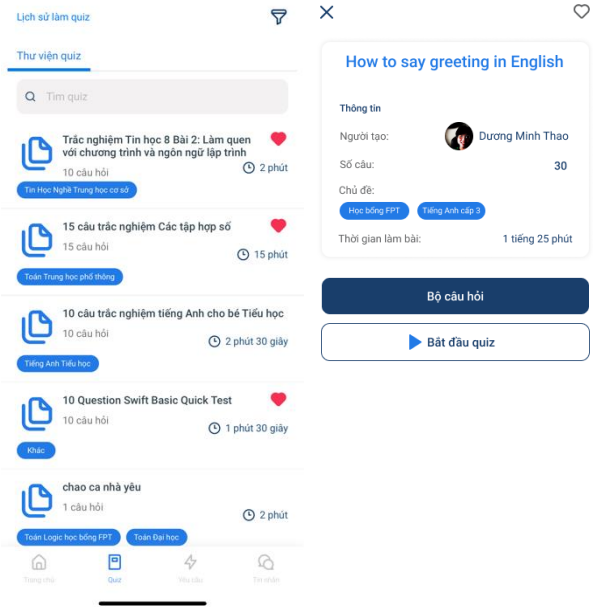


Figure 3.3.14 View Quiz Overview

3.3.15 Manage Quiz

3.3.15.1 View Quiz Detail

- Access the quiz list screen by clicking “Quiz” tab at the bottom of the screen.
- Click to any quiz. The screen will redirect to the quiz’s overview screen.
- Click “Bộ câu hỏi” button (question list button). The screen will redirect to the quiz’s question list screen.

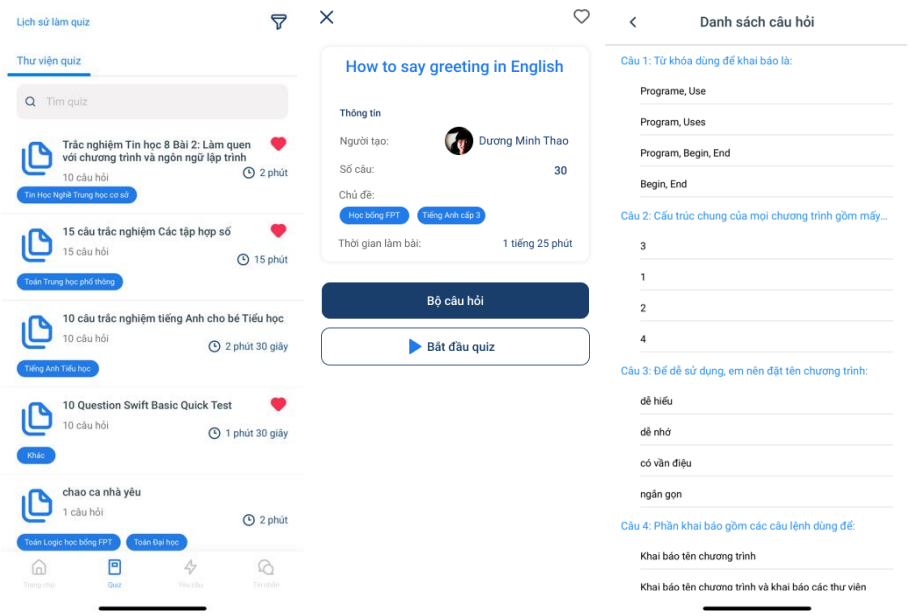


Figure 3.3.15.1 View Quiz Detail

3.3.15.2 Search Quiz

- Access the quiz list screen by clicking "Quiz" tab at the bottom of the screen.
- Click "Tìm quiz" (search quiz) search bar and enter keyword(s).
- Click search icon on keyboard.
- Click filter icon and choose any filter criteria.
- Click "Áp dụng" (apply) button.
- The screen will display all quiz that have name/topic contains keyword(s), and match with selected filter criteria.

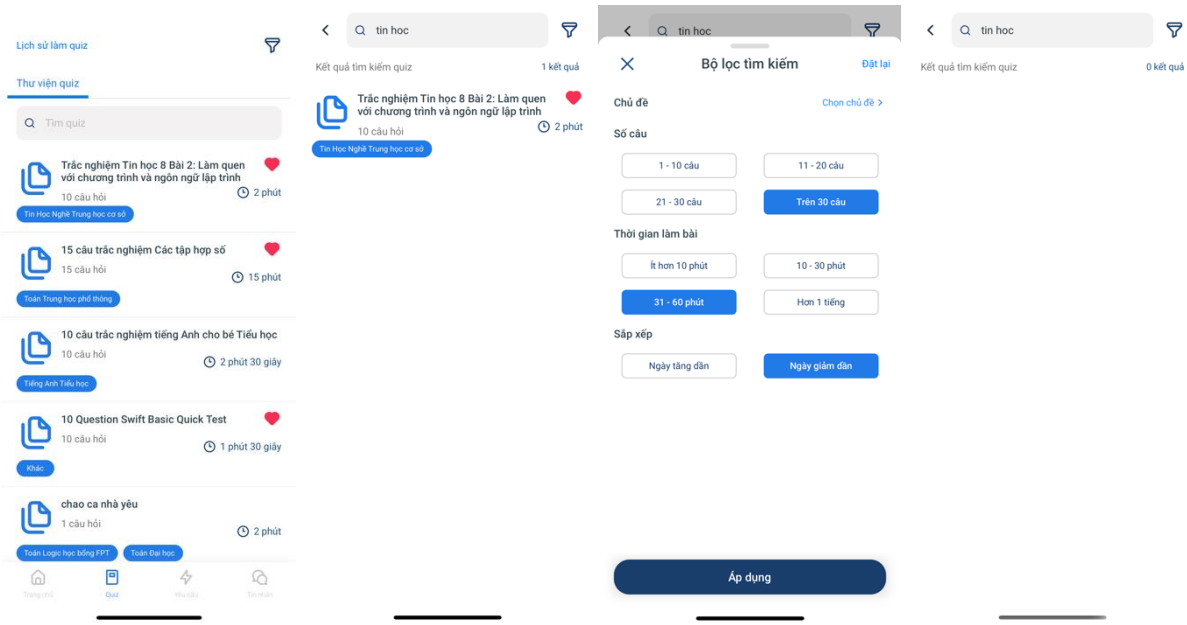


Figure 3.3.15.2 Search Quiz

3.3.16 Create Mentor-finding Post

- Access the profile screen by clicking profile icon (filled avatar circle) in the top-left corner in home screen.

- Click “Yêu cầu tìm gia sư” (mentor-finding post). The screen will redirect to the on-going mentor-finding post list screen.
- Click the cross icon in the bottom-right corner. The screen will redirect to the create mentor-finding post screen.
- Choose expertise category in “Chủ đề”.
- Fill in “Chi tiết” (detail description).
- Fill in “Học phí mong muốn / 1 buổi (VNĐ)” (wish fee per slot).
- Click “Đăng” (post). The screen appears the create mentor-finding post successfully confirm-dialog.

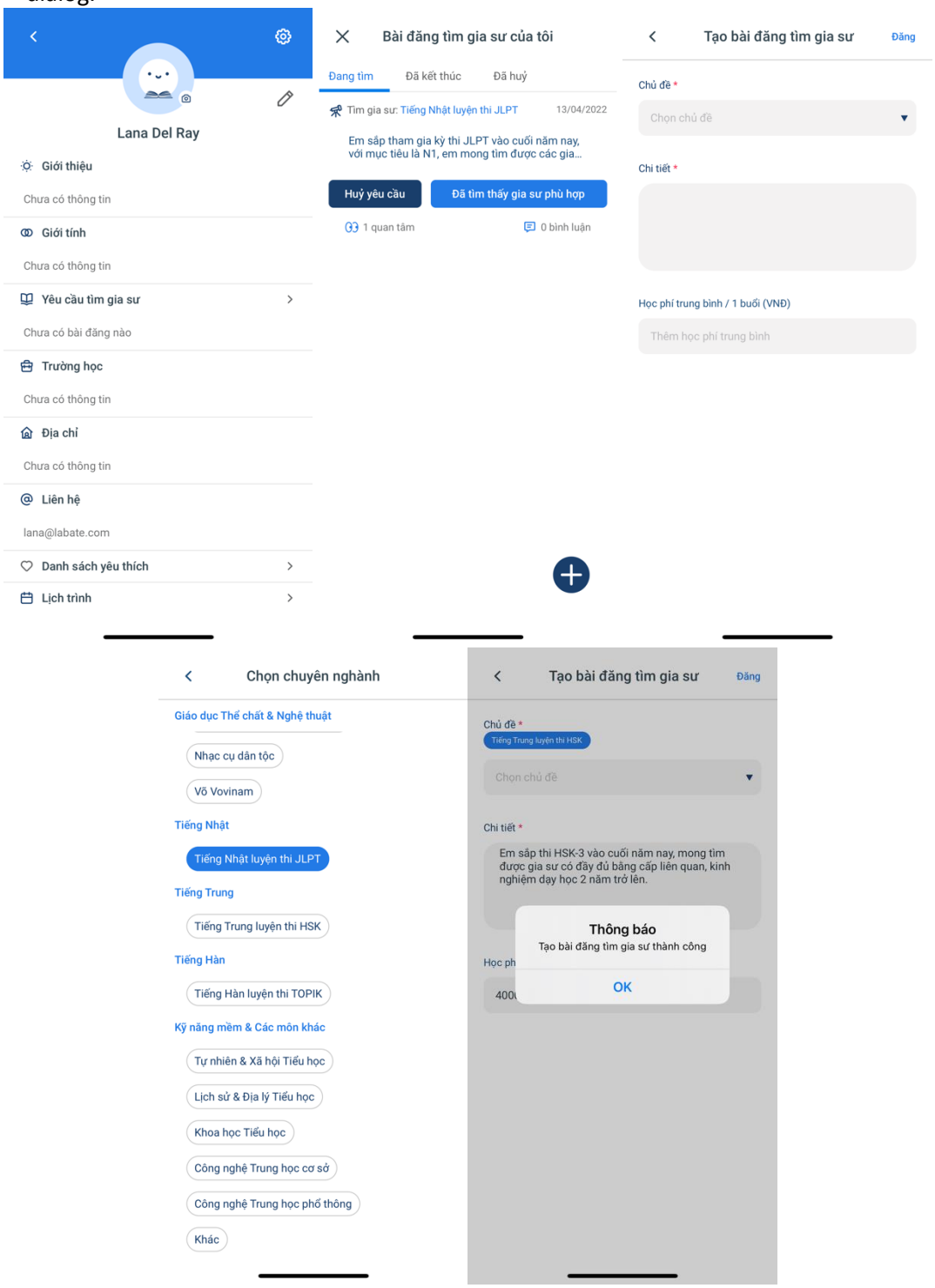


Figure 3.3.16 Create Mentor-finding Post

3.3.17 View On-going Mentor-finding Post List

- Access the profile screen by clicking profile icon (filled avatar circle) in the top-left corner in home screen.
- Click “Yêu cầu tìm gia sư” (mentor-finding post). The screen will redirect to the on-going mentor-finding post list screen.

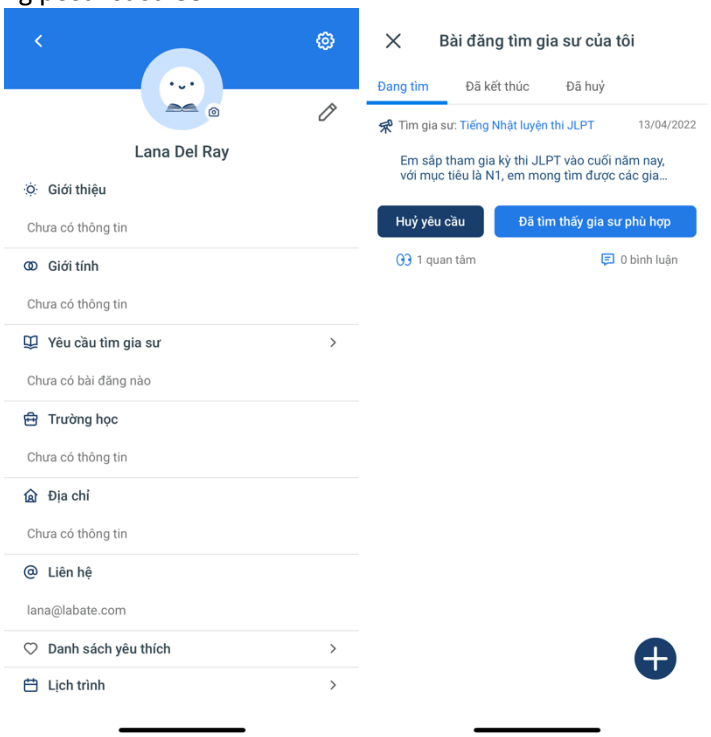


Figure 3.3.17 View On-going Mentor-finding Post List

3.3.18 View Completed Mentor-finding Post List

- Access the profile screen by clicking profile icon (filled avatar circle) in the top-left corner in home screen.
- Click “Yêu cầu tìm gia sư” (mentor-finding post). The screen will redirect to the on-going mentor-finding post list screen.
- Click “Đã kết thúc” tab (completed tab). The screen will redirect to the completed mentor-finding post list screen.

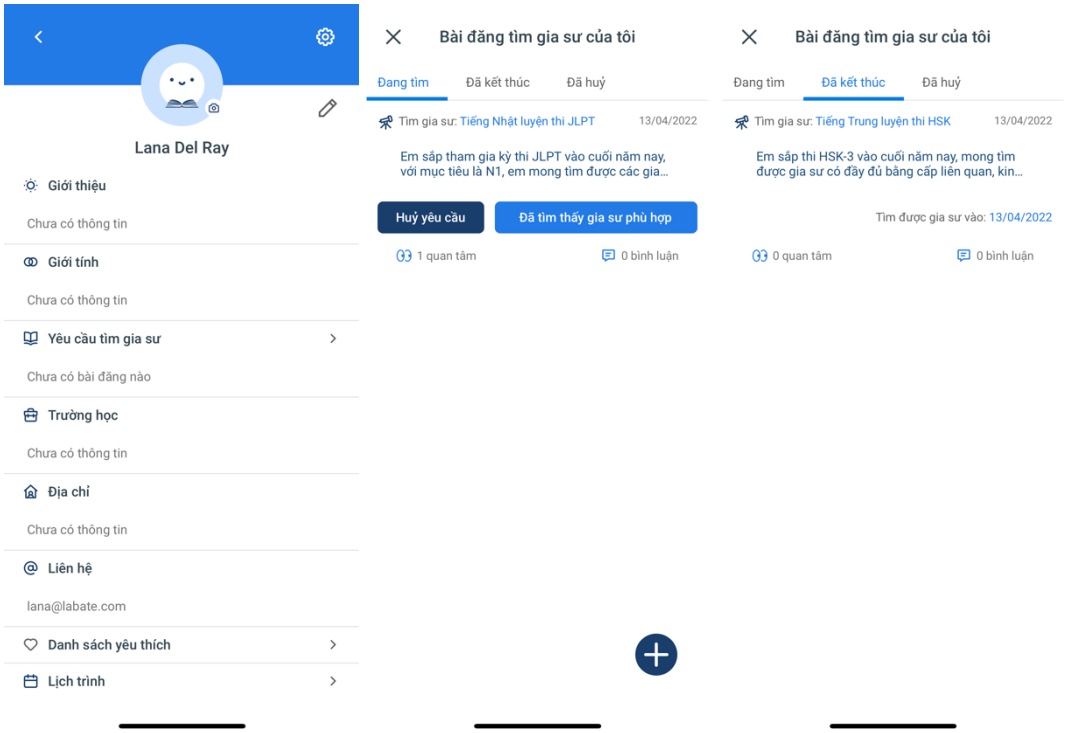


Figure 3.3.18 View Completed Mentor-finding Post List

3.3.19 View Cancelled Mentor-finding Post List

- Access the profile screen by clicking profile icon (filled avatar circle) in the top-left corner in home screen.
- Click “Yêu cầu tìm gia sư” (mentor-finding post). The screen will redirect to the on-going mentor-finding post list screen.
- Click “Đã hủy” tab (completed tab). The screen will redirect to the cancelled mentor-finding post list screen.

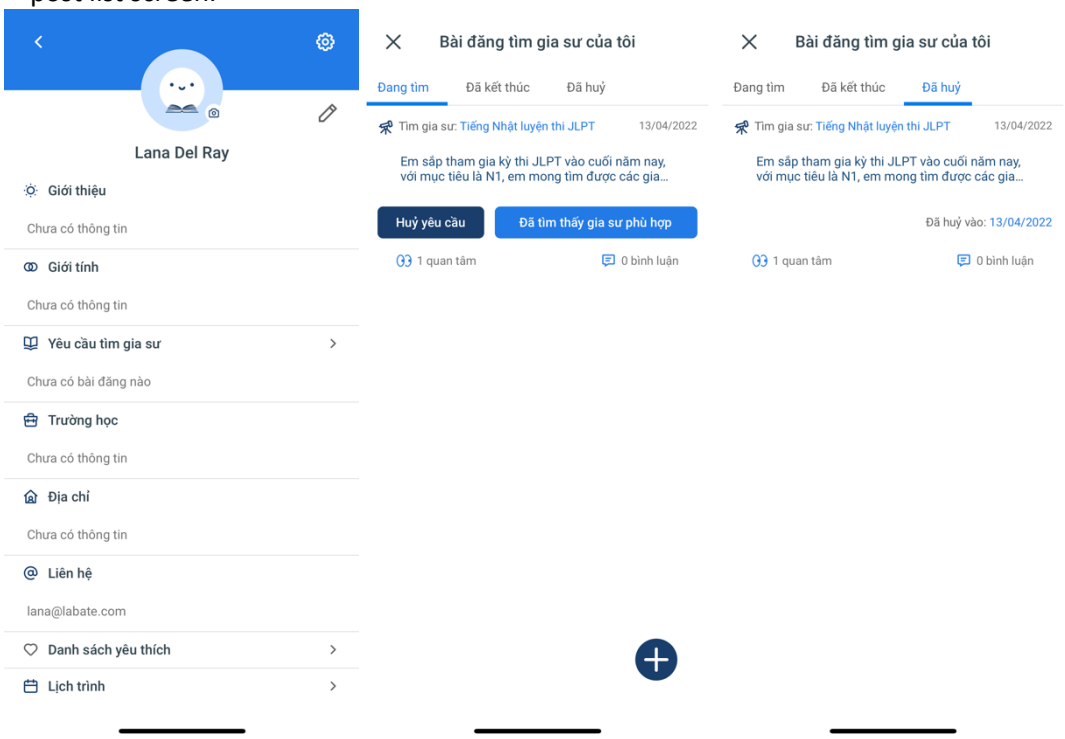


Figure 3.3.19 View Cancelled Mentor-finding Post List

3.3.20 Cancel Mentor-finding Post

- Access the profile screen by clicking profile icon (filled avatar circle) in the top-left corner in home screen.
- Click “Yêu cầu tìm gia sư” (mentor-finding post). The screen will redirect to the on-going mentor-finding post list screen.
- Click “Hủy yêu cầu” (cancel post) button in any post, or click any post and click “Hủy yêu cầu” button in post detail screen. The screen appears the cancel mentor-finding post successfully confirm-dialog.

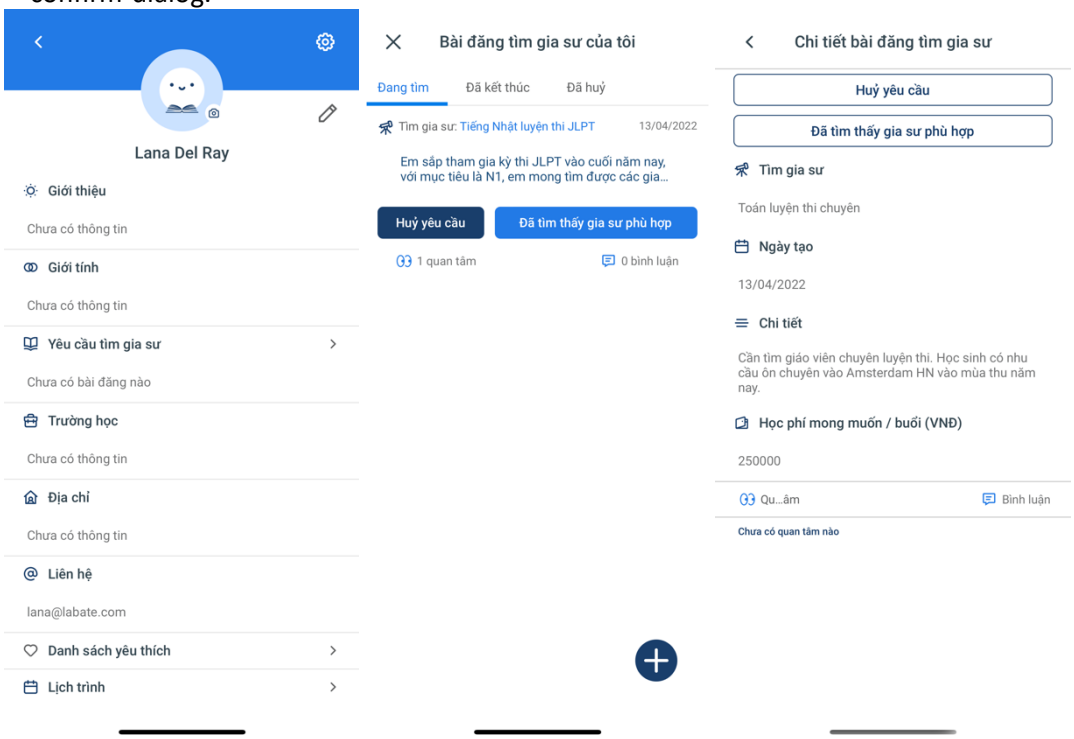


Figure 3.3.20 Cancel Mentor-finding Post

3.3.21 Mark Completed Mentor-finding Post

- Access the profile screen by clicking profile icon (filled avatar circle) in the top-left corner in home screen.
- Click “Yêu cầu tìm gia sư” (mentor-finding post). The screen will redirect to the on-going mentor-finding post list screen.
- Click “Đã tìm thấy gia sư phù hợp” (mark completed post) button in any post, or click any post and click “Đã tìm thấy gia sư phù hợp” button in post detail screen. The screen appears the mark completed mentor-finding post successfully confirm-dialog.

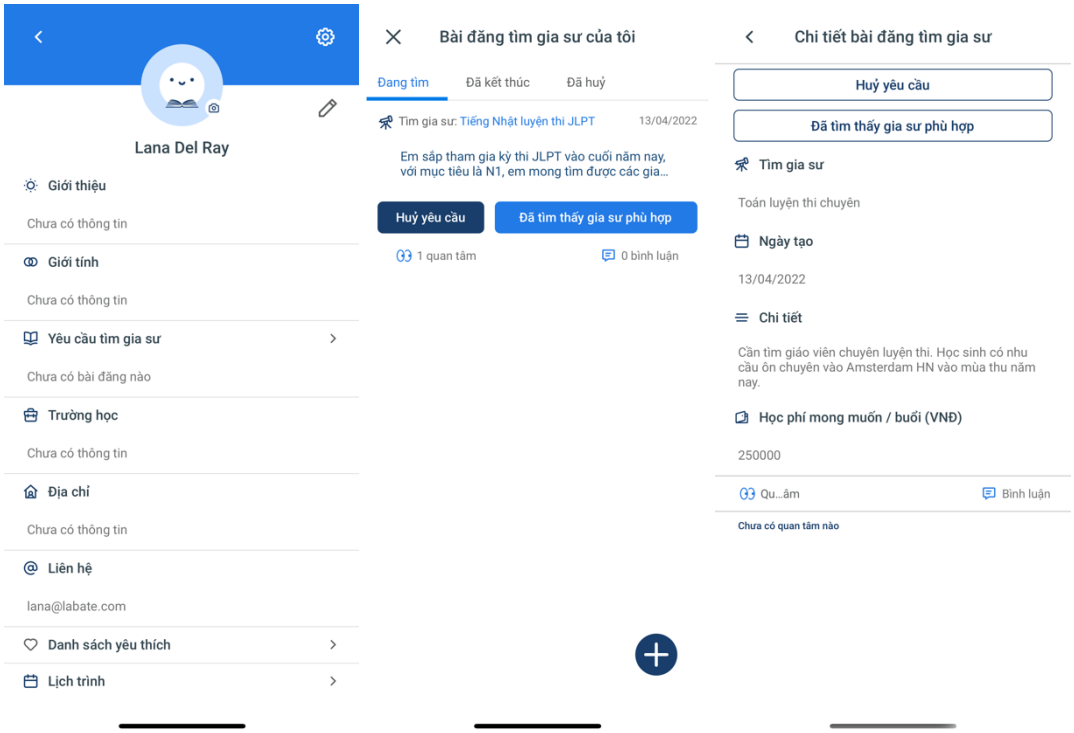


Figure 3.3.21 Mark Completed Mentor-finding Post

3.3.22 View Pending Mentorship Request List

- Access the request list screen by clicking "Yêu cầu" (request) tab at the bottom of the screen.
- The screen will redirect to the pending mentorship request list screen.

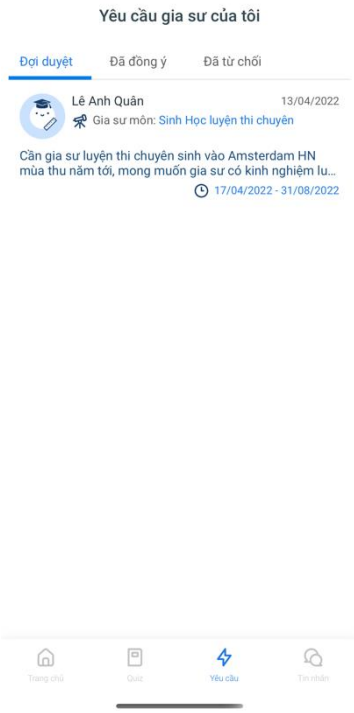


Figure 3.3.22 View Pending Mentorship Request List

3.3.23 View Accepted Mentorship Request List

- Access the request list screen by clicking "Yêu cầu" (request) tab at the bottom of the screen. The screen will redirect to the pending mentorship request list screen.

- Click “Đã đồng ý” tab (accepted tab). The screen will redirect to the accepted mentorship request list screen.

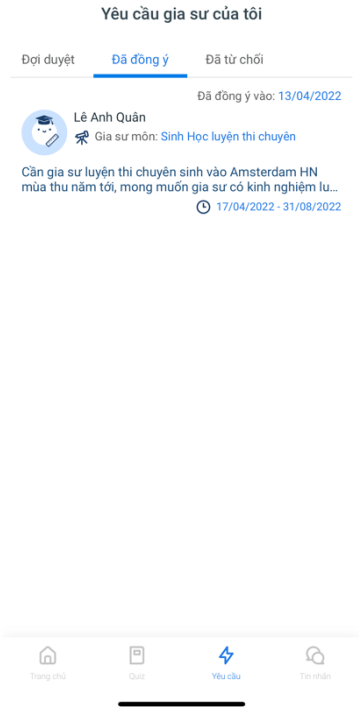


Figure 3.3.23 View Accepted Mentorship Request List

3.3.24 View Rejected Mentorship Request List

- Access the request list screen by clicking “Yêu cầu” (request) tab at the bottom of the screen. The screen will redirect to the pending mentorship request list screen.
- Click “Đã từ chối” tab (rejected tab). The screen will redirect to the rejected mentorship request list screen.

Figure 3.3.24 View Rejected Mentorship Request List

3.3.25 View Detail Mentorship Request

- Access the request list screen by clicking “Yêu cầu” (request) tab at the bottom of the screen. The screen will redirect to the pending mentorship request list screen.
- Click to one of three tabs: “Đợi duyệt” (pending), “Đã đồng ý” (accepted) and “Đã từ chối” (rejected). The screen will redirect to the mentorship request list screen.
- Click to any request.

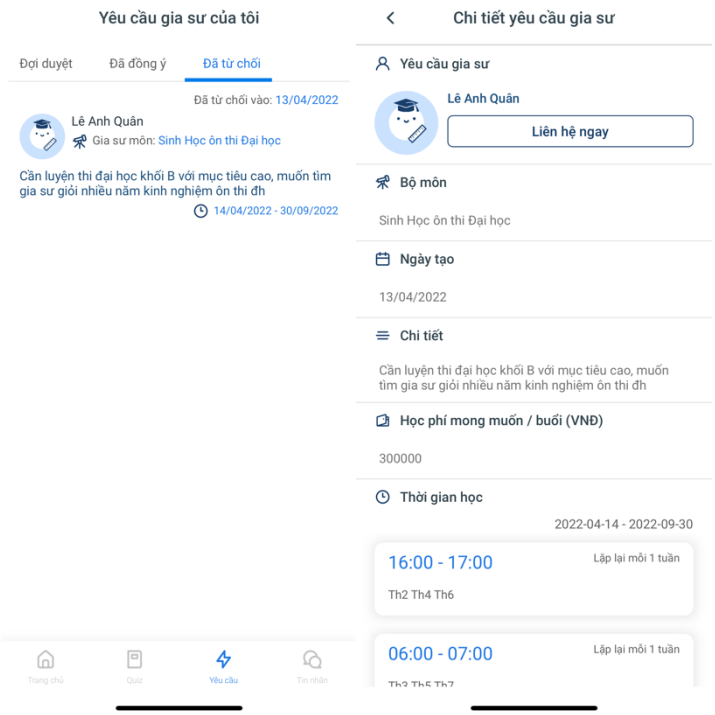


Figure 3.3.25 View Detail Mentorship Request

3.3.26 Cancel Mentorship Request

- Access the request list screen by clicking “Yêu cầu” (request) tab at the bottom of the screen. The screen will redirect to the pending mentorship request list screen.
- Click to any request. The screen will redirect to the detail mentorship request screen.
- Click “Hủy yêu cầu” (cancel request) button. The screen appears the cancel mentorship request successfully confirm-dialog.

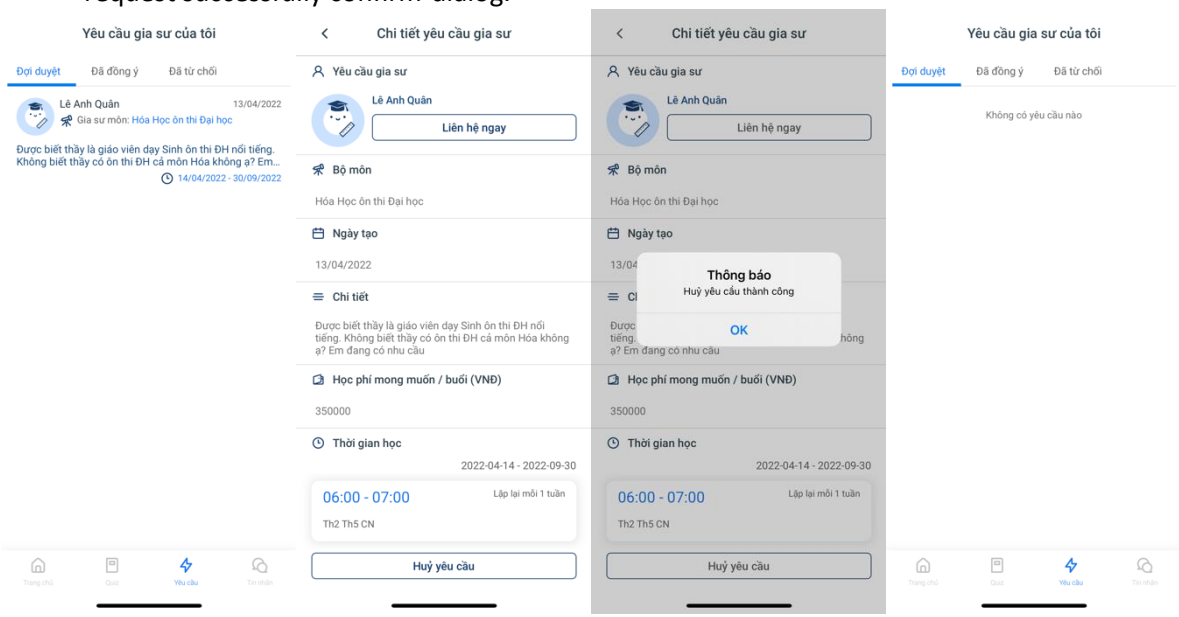


Figure 3.3.26 Cancel Mentorship Request

3.3.27 Book Mentorship Request

- Access the mentor list screen.
- Click to any mentor. The screen will redirect to the mentor's profile screen.
- Click "Đề nghị gia sư" (book mentorship request) button. The screen will redirect to the book mentorship request screen.
- Fill in all required information.
- Click "Gửi" (send) button. The screen appears the book mentorship request successfully confirm-dialog. Click OK and the screen will redirect to the pending mentorship request screen.

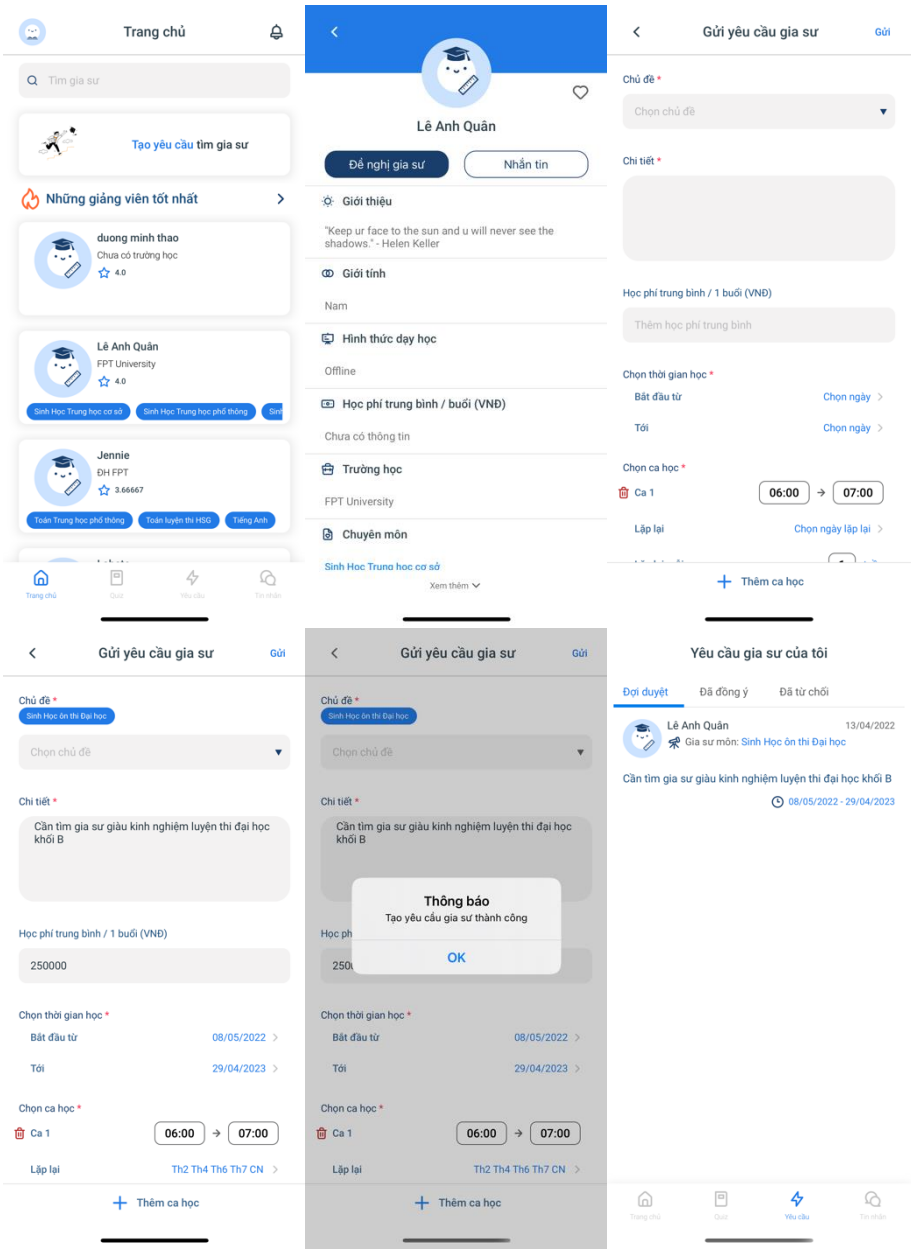


Figure 3.3.27 Book Mentorship Request

3.3.28 Feedback Mentor

- Access the mentor list screen.
- Click to any mentor. The screen will redirect to the mentor's profile screen.
- Click "Đánh giá" (feedback). The screen will redirect to the feedback list screen.

- Click “Thêm đánh giá / nhận xét” (add rating / feedback) at the bottom of screen. The screen will redirect to the feedback screen.
- Click star icon and enter feedback.
- Click “Đăng” (post). The screen appears the post feedback successfully confirm-dialog. Click OK and the screen will redirect to the feedback list screen.

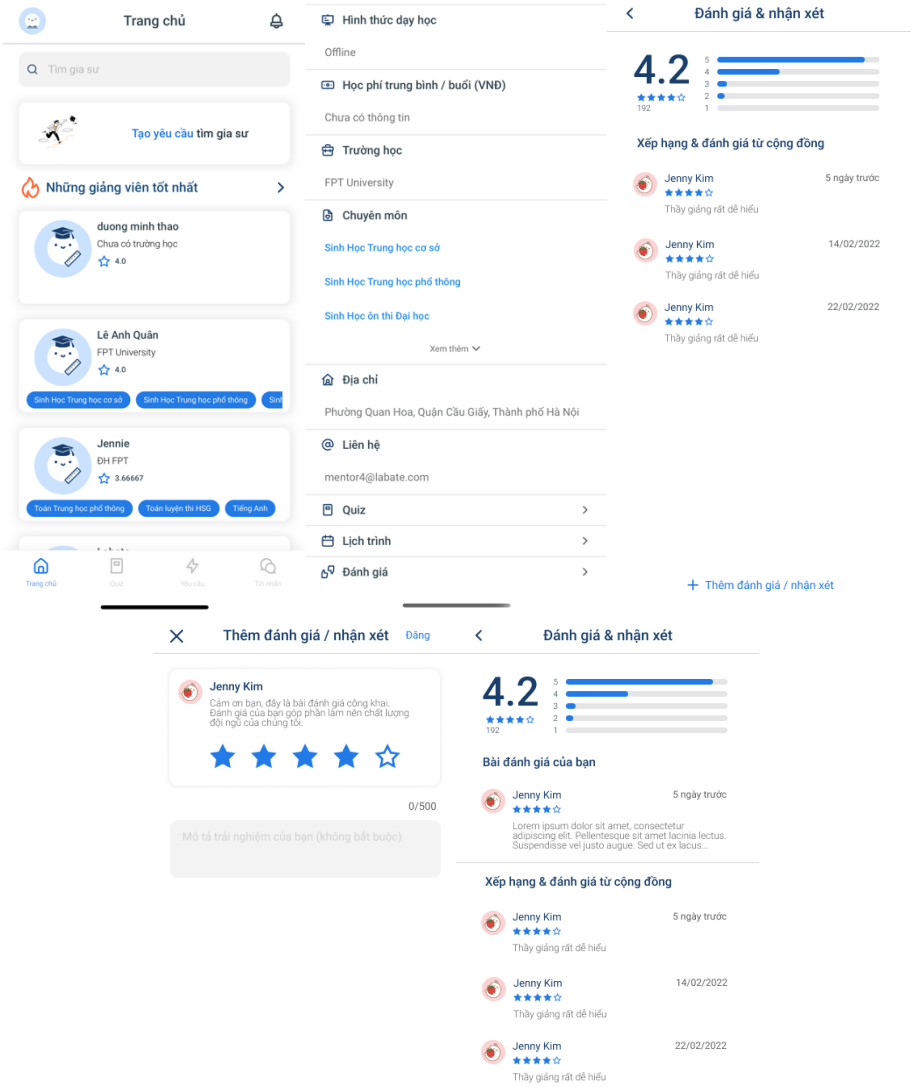


Figure 3.3.28 Feedback Mentor

3.3.29 View Feedback

- Access the mentor list screen.
- Click to any mentor. The screen will redirect to the mentor’s profile screen.
- Click “Đánh giá” (feedback). The screen will redirect to the feedback list screen.

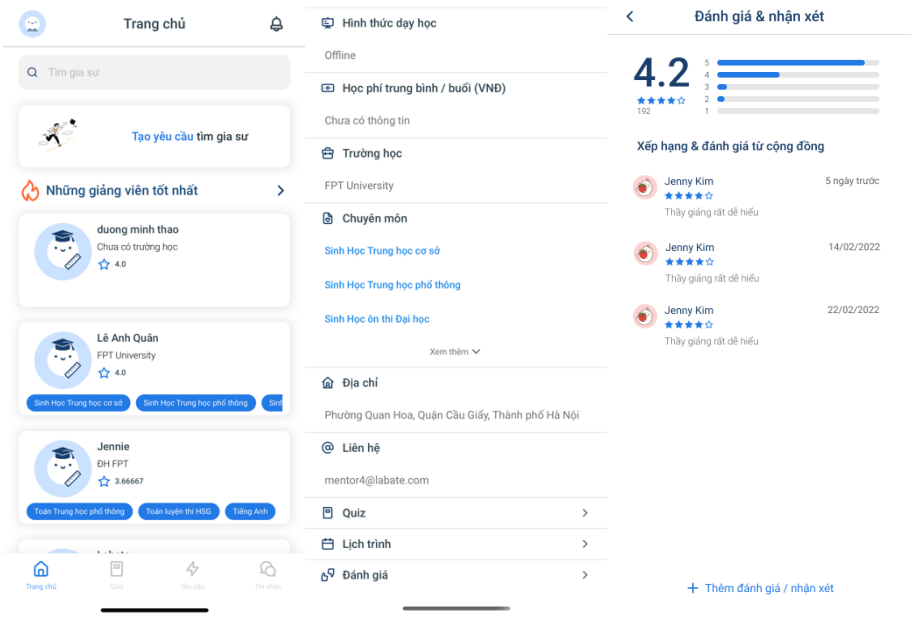


Figure 3.3.29 View Feedback

3.3.30 Contact

- Access chat icon in the tab bar
- Choose a conversation
- Start chatting.

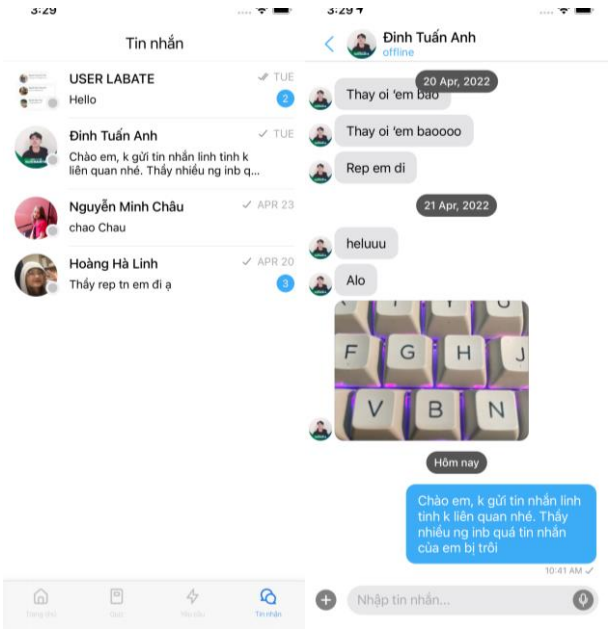


Figure 3.3.30 Contact

3.3.31 View Schedule

- Access my profile screen or student access any other's profile screen.
- Click "Lịch trình" (schedule). The screen will redirect to the schedule screen.

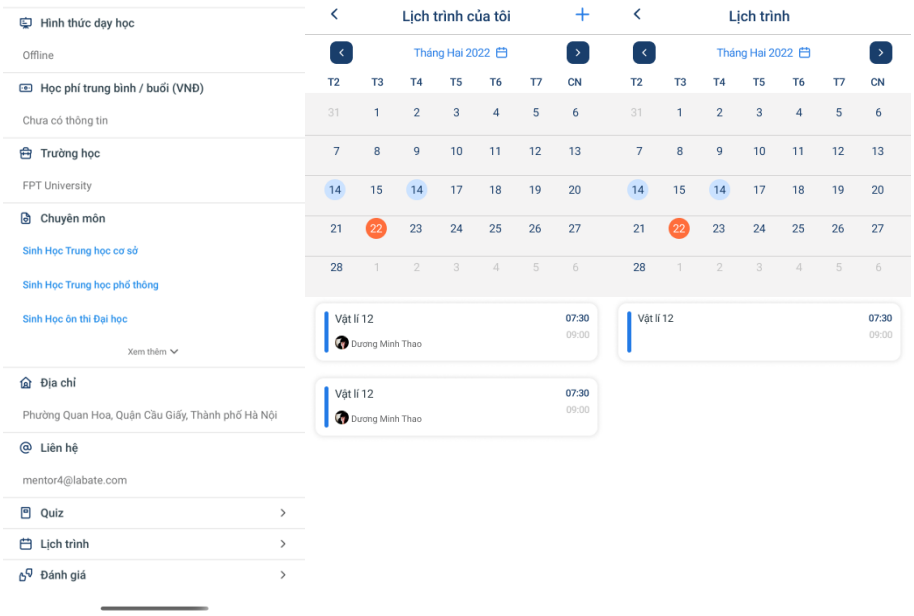


Figure 3.3.31 View Schedule

3.3.32 View Event Detail

- Access own schedule
- Click to any own event. The screen will redirect to the event detail screen.

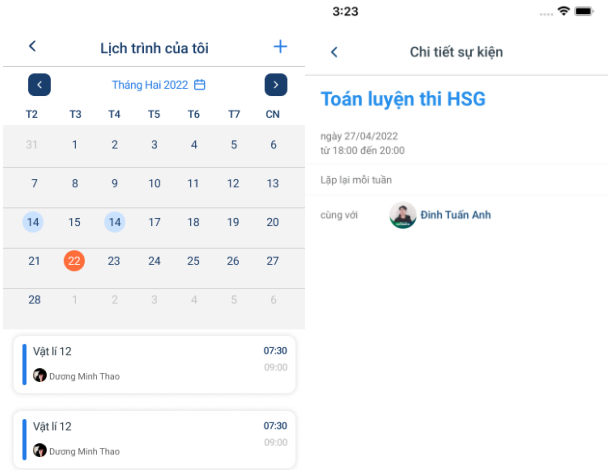


Figure 3.3.32 View Event Detail

3.3.33 View Notification List

- Access the home screen.
- Click notification icon in the top-right corner. The screen will redirect to the notification list screen.
- If user clicks to any notification, it changes from unread to read status.
- Click “Đánh dấu tất cả đã đọc” (mark all read) to mark all notification read.

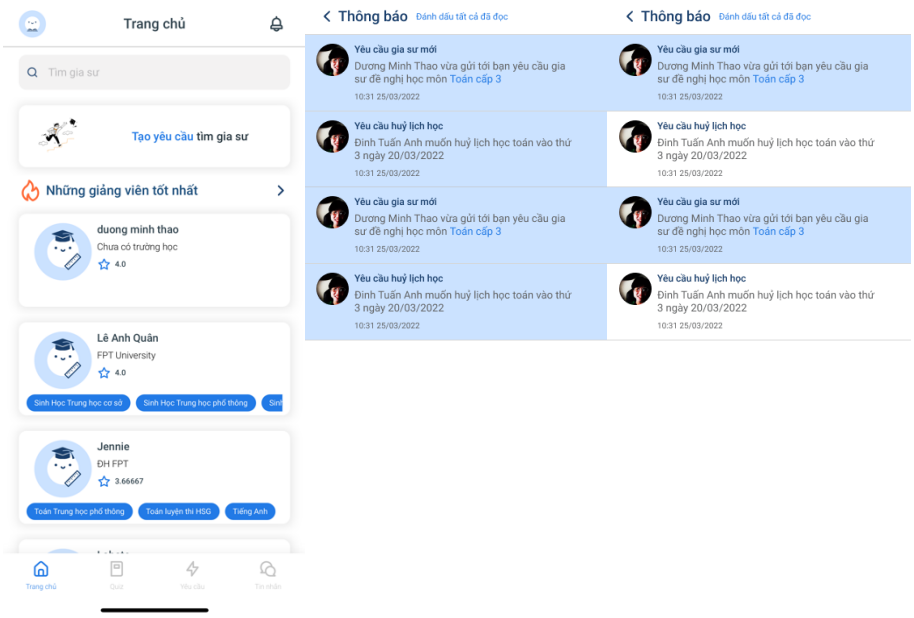


Figure 3.3.33 View Notification List

3.4 Mentor

3.4.1 Login/Logout Account

3.4.1.1 Login Account

- Open the application.
- Enter login information: email and password.
- Press “Đăng nhập” button.

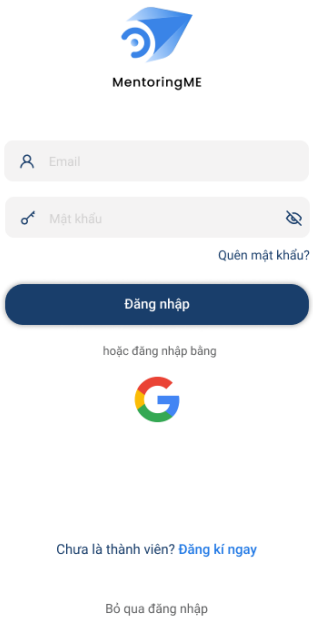


Figure 3.4.1.1 Login Account

3.4.1.2 Logout Account

- Access the home screen.
- Click profile icon (filled avatar circle) in the top-left corner.

- Click setting icon in the top-right corner.
- Press “Đăng xuất” button. The screen appears the logout confirm-dialog. Press agree button.

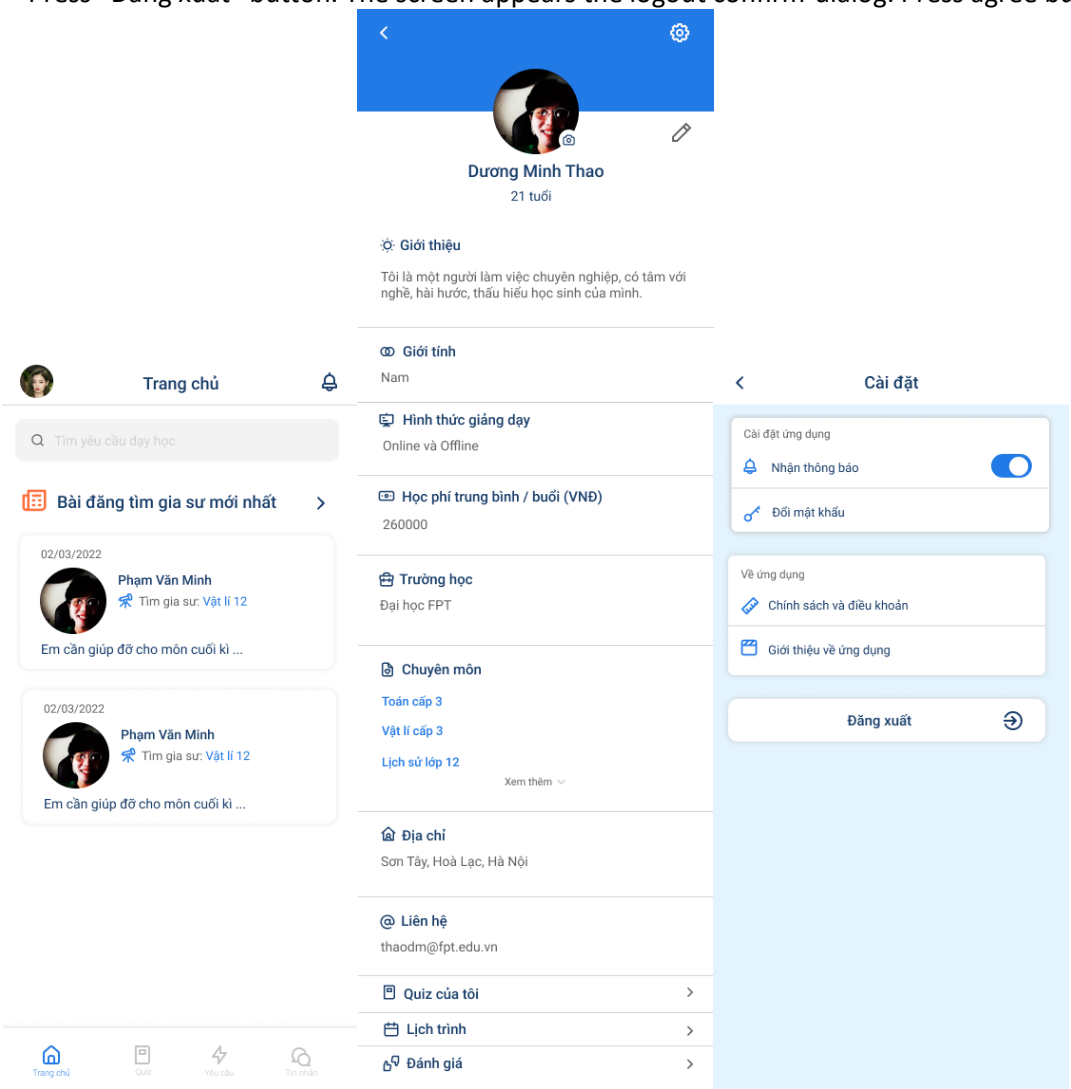


Figure 3.4.1.2 Logout Account

3.4.2 Reset Password

- Open the application.
- Click “Quên mật khẩu?” (forgot password).
- Enter email
- Click “Tiếp tục” button (continue button).
- Enter OTP (one-time-password) from inputted email. If email did not receive any OTP, click “Gửi lại” (resend) to receive new OTP.
- Click “Xác nhận” button (confirm button). The screen will redirect to the reset password screen.
- Enter new password and confirm new password, then click “Xác nhận” button (confirm button). The screen appears the reset password successfully confirm-dialog. When the user clicks OK, the dialog is closed and the screen returns to the login screen.

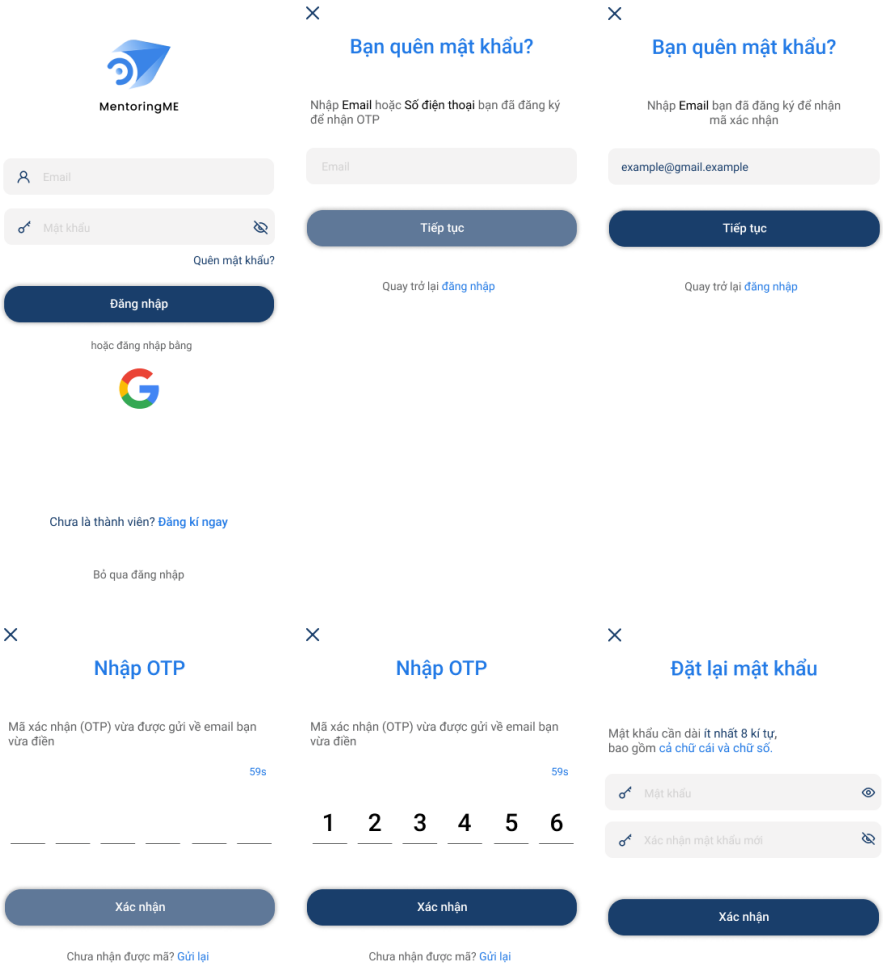


Figure 3.4.2 Reset Password

3.4.3 Change Password

- Access the home screen.
- Click profile icon (filled avatar circle) in the top-left corner.
- Click setting icon in the top-right corner.
- Click “Đổi mật khẩu” (change password).
- Enter current password, new password, and re-enter new password.
- Click “Xác nhận” button (confirm button).

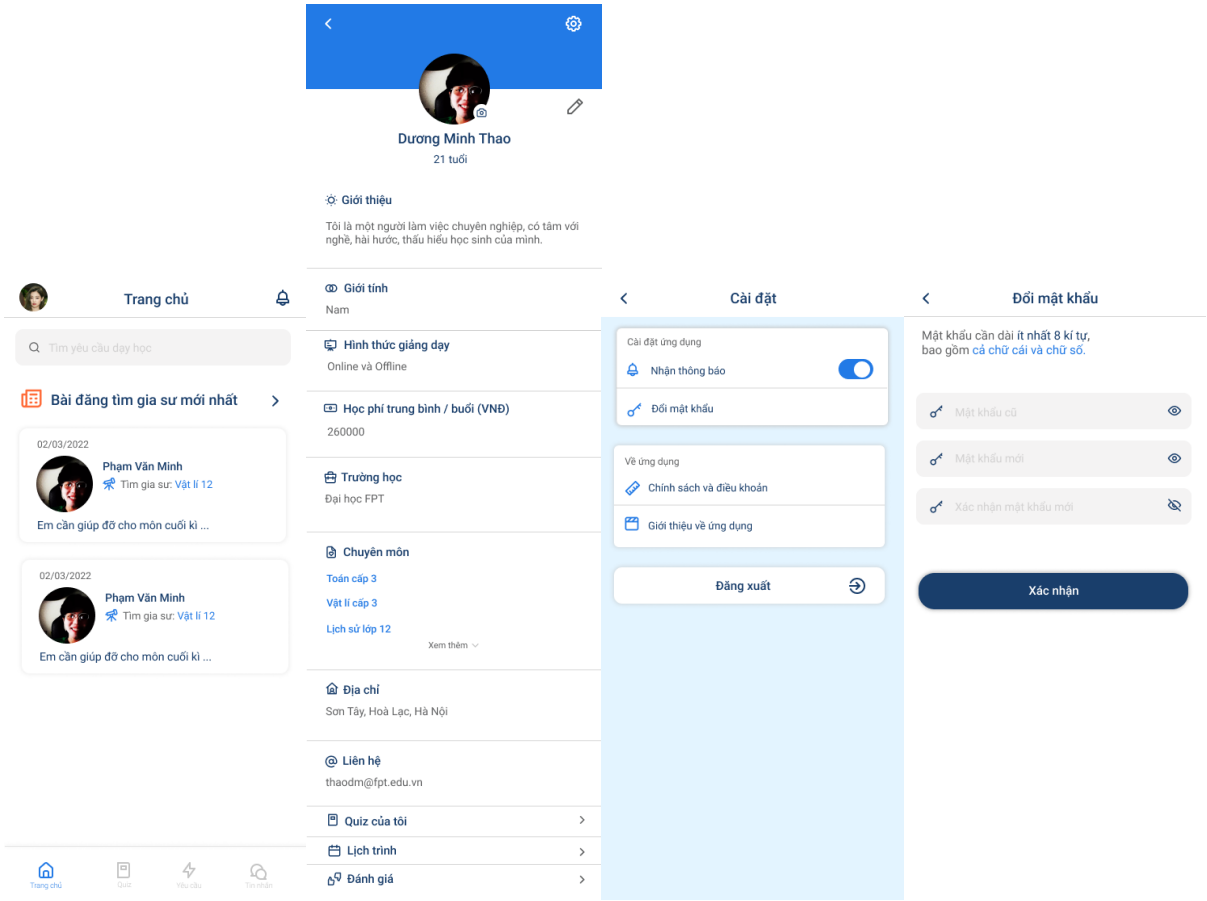


Figure 3.4.3 Change Password

3.4.4 Manage Profile

3.4.4.1 View Profile

- Access the home screen.
- Click profile icon (filled avatar circle) in the top-left corner.

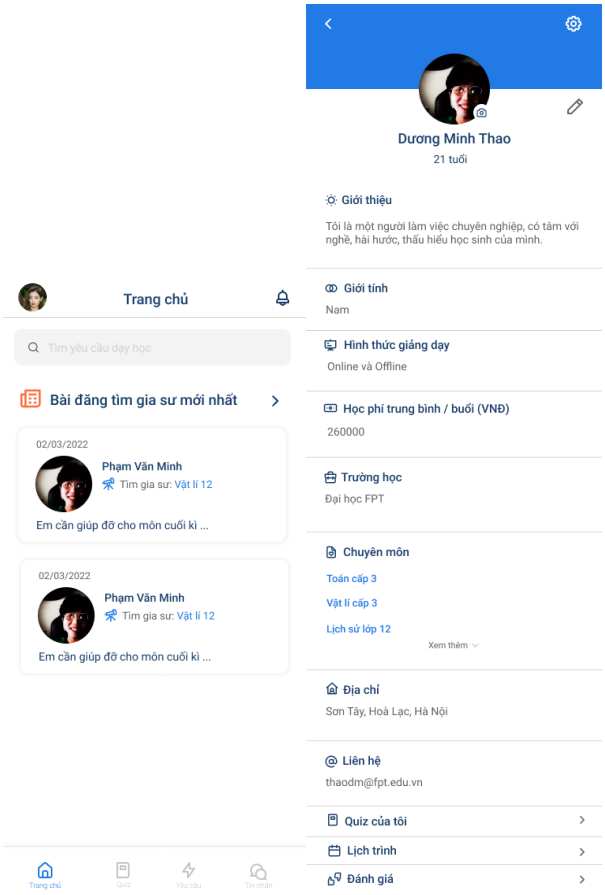


Figure 3.4.4.1 View Profile

3.4.4.2 Update Profile

- Access the profile screen.
- Click edit icon (pencil) in the top-right corner below setting icon.
- Enter information and press “Cập nhật” button. The screen appears the updated information successfully confirm-dialog.

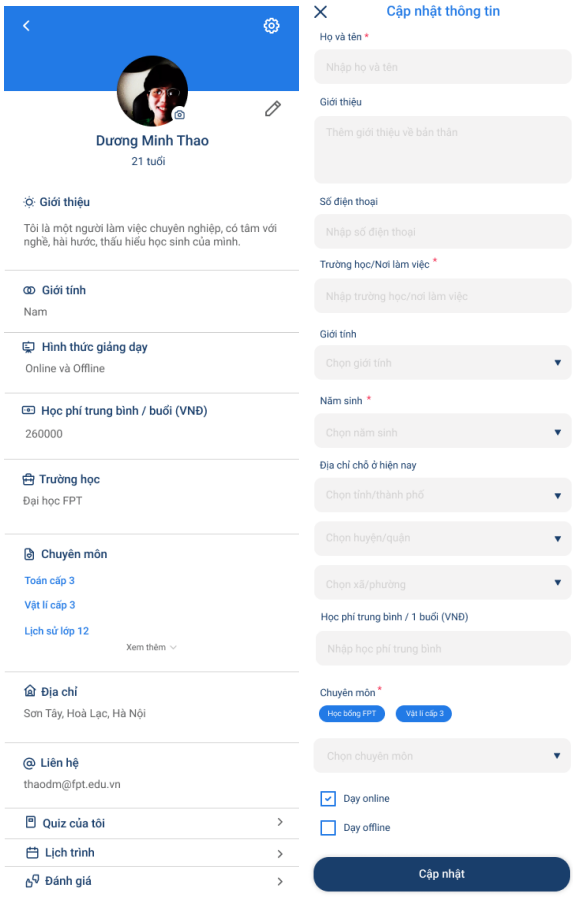


Figure 3.4.4.2 Update Profile

3.4.4.3 Upload Avatar

- Access the profile screen.
- Click camera icon near current avatar.
- Upload new avatar.

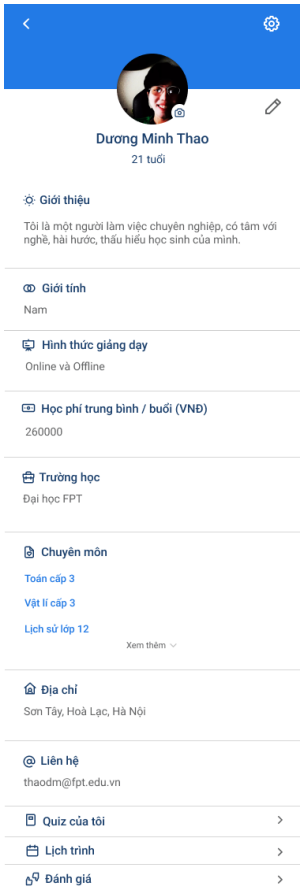


Figure 3.4.4.3 Update Avatar

3.4.5 Take Quiz

- Access the quiz list screen by clicking “Quiz” tab at the bottom of the screen.
- Choose a quiz from “Thư viện quiz”.
- Click button “Làm quiz” (take quiz).
- Confirm dialog to start a quiz.
- The time run decrease from max to 00:00:00.
- The order number of questions increases or decreases depending on the action of pressing the button “Câu trước”/”Câu tiếp” (next/previous question)
- If user is on the first question, the screen hide button “Câu trước”. If user is on the last question, the screen hide button “Câu sau”.
- When clicking “Status Answer” icon, the screen show up the list of questions with corresponding status of answered or not.
- Click button “Nộp bài” (submit).

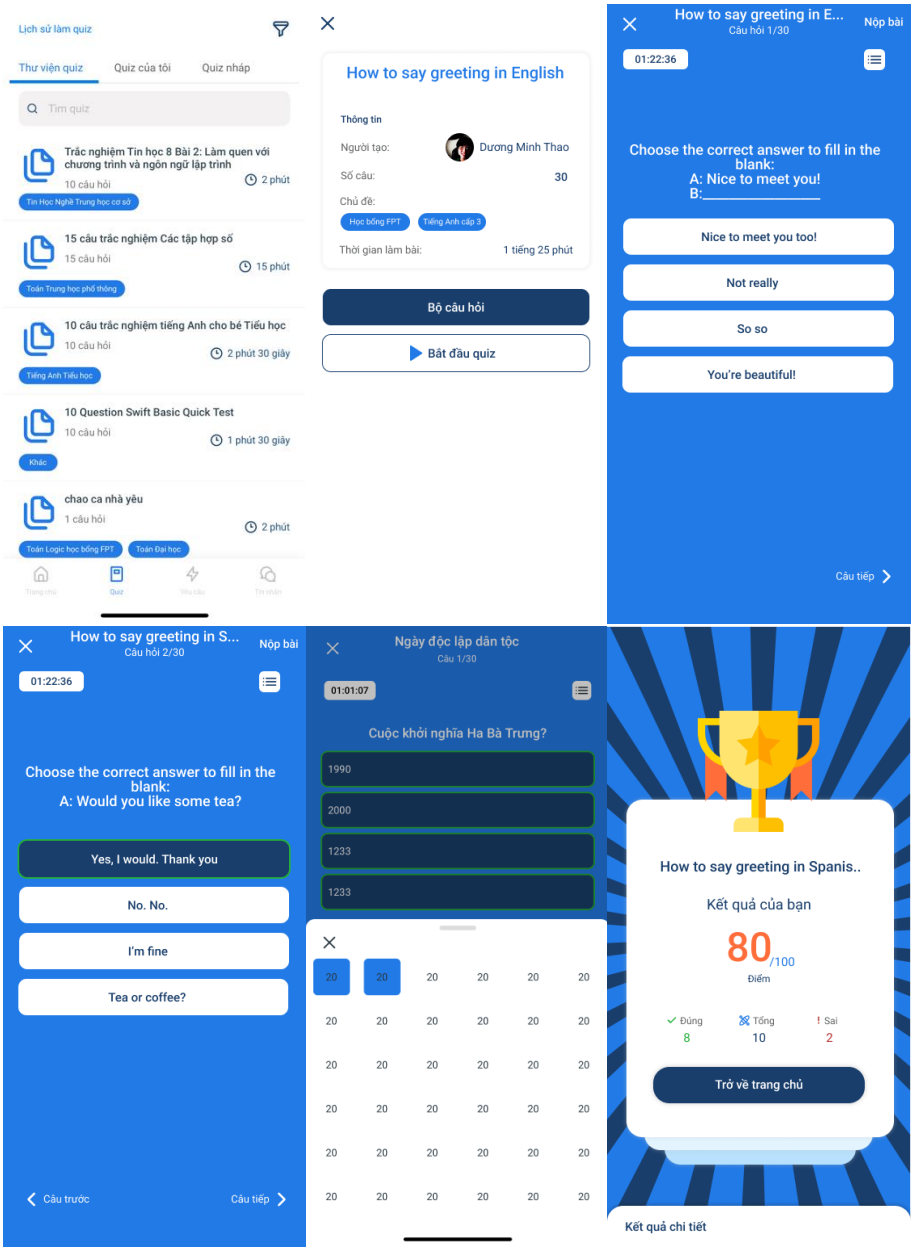


Figure 3.4.5 Take Quiz

3.4.6 View Taken Quiz History

- Access the quiz list screen by clicking "Quiz" tab at the bottom of the screen.
- Click "Lịch sử làm quiz" (taken quiz history). The screen will redirect to the taken quiz history screen.

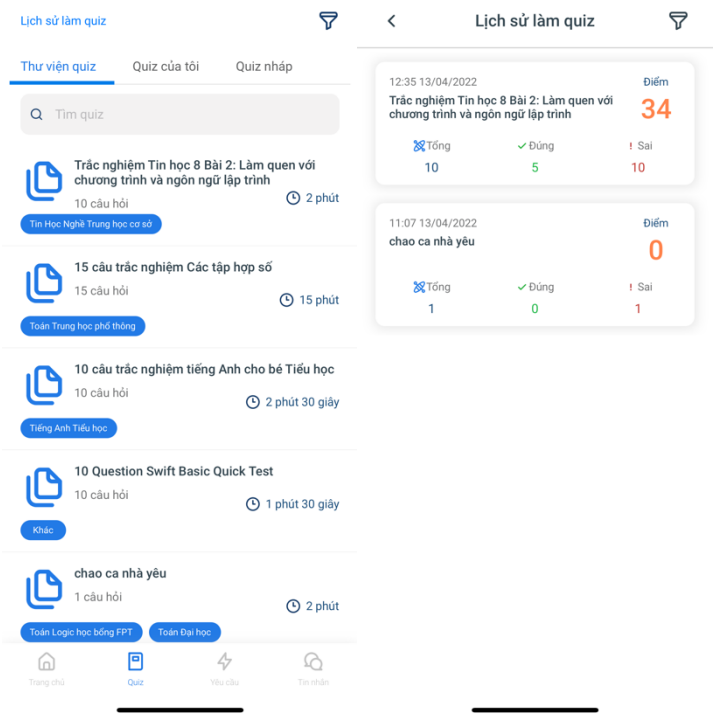


Figure 3.4.6 View Taken Quiz History

3.4.7 View Quiz Detail Result

- On the ontaking quiz screen, click button “Nộp bài” (submit) or times up.
- Drag option “Kết quả chi tiết” from bottom to top. The screen will display each question with corresponding answers (tick on user’s answer).

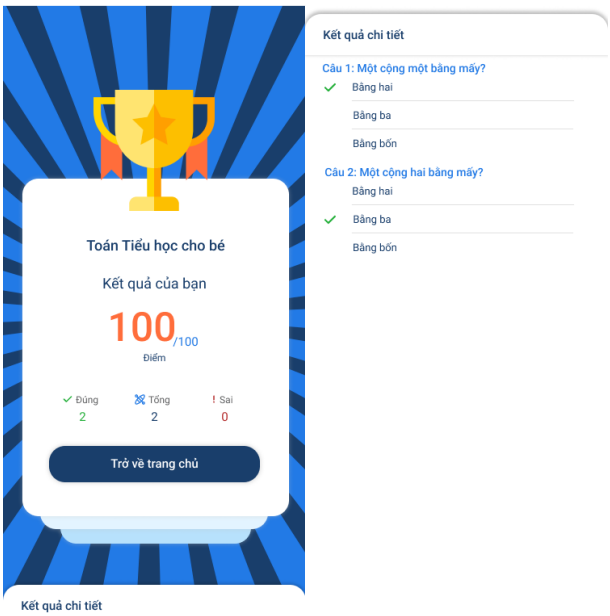


Figure 3.4.7 View Quiz Detail Result

3.4.8 View Quiz List

- Access the home screen.
- Press “Quiz” tab at the bottom of the screen. The screen will redirect to the quiz screen.

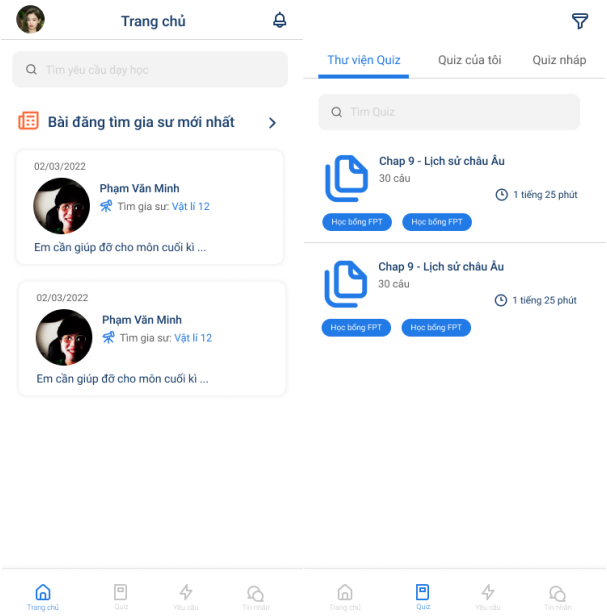


Figure 3.4.8 View Quiz List

3.4.9 View Quiz Overview

3.4.9.1 View Quiz Overview in Quiz Library

- Access the quiz list screen by clicking “Quiz” tab at the bottom of the screen.
- Click to any quiz. The screen will redirect to the quiz’s overview screen.

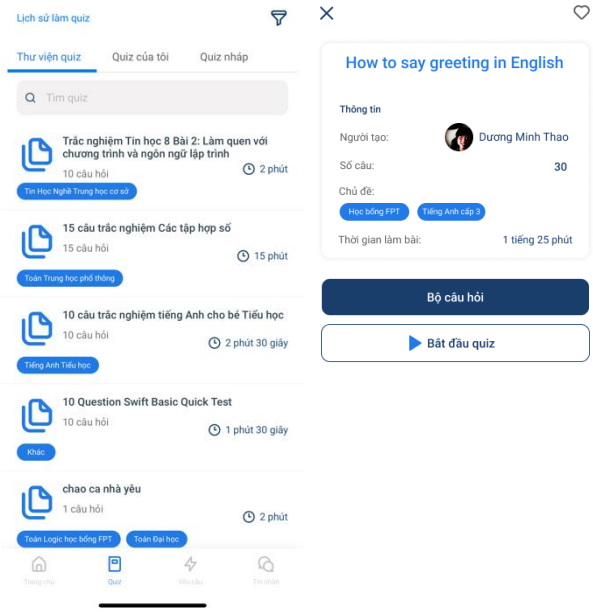


Figure 3.4.9.1 View Quiz Overview in Quiz Library

3.4.9.2 View Quiz Overview in My Quiz

- Access the quiz list screen by clicking “Quiz” tab at the bottom of the screen.
- Click to
- Click to any quiz. The screen will redirect to the quiz’s overview screen.

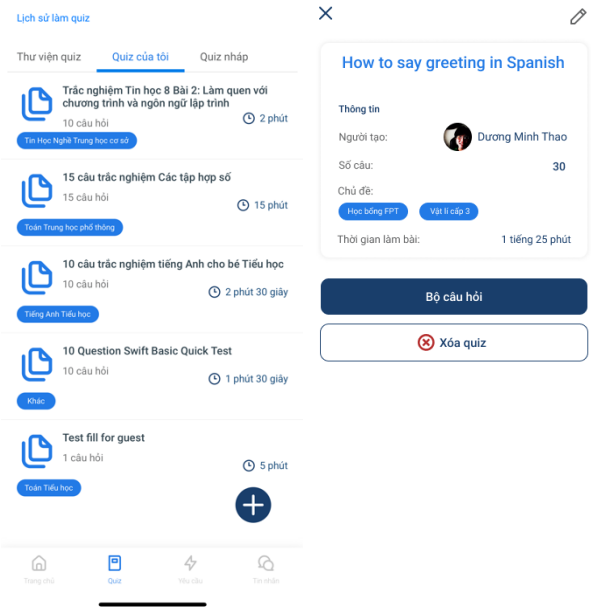


Figure 3.4.9.2 View Quiz Overview in My Quiz

3.4.9.3 View Quiz Overview in Draft Quiz

- Access the quiz list screen by clicking “Quiz” tab at the bottom of the screen.
- Click to any quiz. The screen will redirect to the quiz’s overview screen.

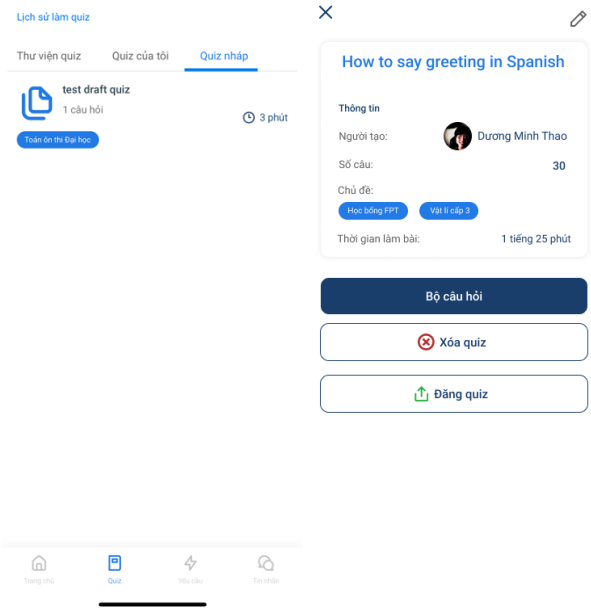


Figure 3.4.9.3 View Quiz Overview in Draft Quiz

3.4.10 Manage Quiz

3.4.10.1 View Quiz Detail

- Access the quiz list screen by clicking “Quiz” tab at the bottom of the screen.
- Click to any quiz. The screen will redirect to the quiz’s overview screen.
- Click “Bộ câu hỏi” button (question list button). The screen will redirect to the quiz’s question list screen.

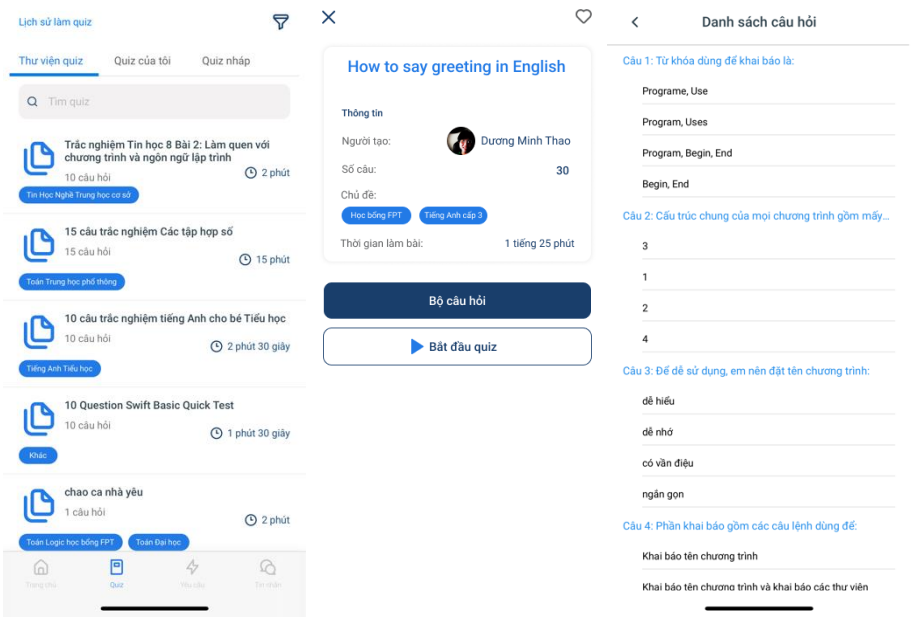


Figure 3.4.10.1 View Quiz Detail

3.4.10.2 Create Quiz

- Access home screen.
- Click quiz icon on the tab bar.
- Choose “Quiz của tôi” (my quiz) on the top tab bar.
- Click the cross icon in the bottom-right corner. The screen will redirect to the create quiz screen.
- Fill in all required information: quiz name, category, total time, input type.
- Click “Tiếp tục” (continue) button. The screen will redirect to the edit question screen.
- Click “Thêm câu hỏi” (add question). The screen will redirect to the add new question screen.
- Fill in questions and answers.
- Click “Thêm” (add) button. The screen will redirect to the edit question screen (a new question is added).
- Click “Lưu” (Save) button.

3.4.10.3 Update Quiz

3.4.10.3.1 Update Quiz Overview

- Access home screen.
- Click quiz icon on the tab bar.
- Choose “Quiz của tôi” (my quiz) or “Quiz nháp” (draft quiz) on the top tab bar.
- Choose any quiz.
- Click update icon (pencil). The screen will redirect to the update quiz overview screen with existing information in textbox: quiz name, category, total time, input type.
- Fill in updated information.
- Click “Cập nhật” (update) button

3.4.10.3.1 Update Quiz Question(s)

- Access home screen.
- Click quiz icon on the tab bar.
- Choose “Quiz của tôi” (my quiz) or “Quiz nháp” (draft quiz) on the top tab bar.
- Choose any quiz.
- Click “Bộ câu hỏi” (question list) button. The screen will redirect to the edit question screen with existing question list.
- Click to any question to edit, or click “Thêm câu hỏi” (add question) to add new question.

- After adding new question, click “Thêm” (add) button. The screen will redirect to the edit question screen (list question is updated).
- Click “Lưu” (Save) button.

3.4.10.4 Delete Quiz

- Access home screen.
- Click quiz icon on the tab bar.
- Choose “Quiz của tôi” (my quiz) or “Quiz nháp” (draft quiz) on the top tab bar.
- Choose any quiz.
- Click “Xóa quiz” (delete quiz) button. The screen appears the delete quiz confirm-dialog. Press agree button. The screen appears delete quiz successfully confirm-dialog.

3.4.10.5 View Draft Quiz List

- Access home screen.
- Click quiz icon on the tab bar.
- Choose “Quiz nháp” (draft quiz) on the top tab bar.

Figure 3.4.10.5 View Draft Quiz List

3.4.10.6 View Own Quiz List

- Access home screen.
- Click quiz icon on the tab bar.
- Choose “Quiz của tôi” (my quiz) on the top tab bar.

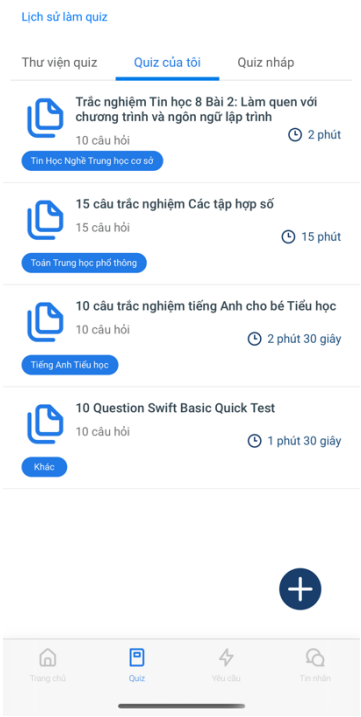


Figure 3.4.10.6 View Own Quiz List

3.4.10.7 Publish Draft Quiz

- Access home screen.
- Click quiz icon on the tab bar.
- Choose “Quiz nháp” (draft quiz) on the top tab bar.
- Choose any quiz.
- Click “Đăng quiz” (publish quiz) button. The screen appears the publish quiz confirm-dialog. Press agree button. The screen appears publish quiz successfully confirm-dialog.

3.4.10.8 Search Quiz

- Access the quiz list screen by clicking “Quiz” tab at the bottom of the screen.
- Click “Tìm quiz” (search quiz) search bar and enter keyword(s).
- Click search icon on keyboard.
- Click filter icon and choose any filter criteria.
- Click “Áp dụng” (apply) button.
- The screen will display all quiz that have name/topic contains keyword(s), and match with selected filter criteria.

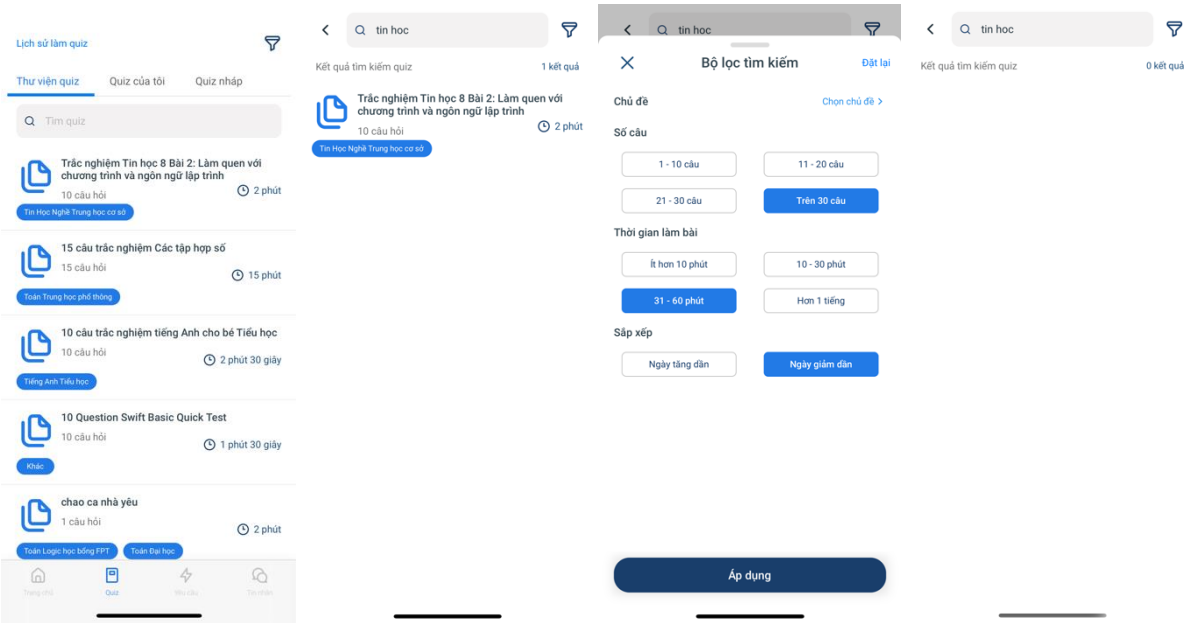


Figure 3.4.10.8 Search Quiz

3.4.11 View Student's Mentor-finding Post List

- Access home screen
- Click "Yêu cầu tìm gia sư mới nhất" (newest mentor-finding post list). The screen will redirect to the student's mentor-finding post list screen.

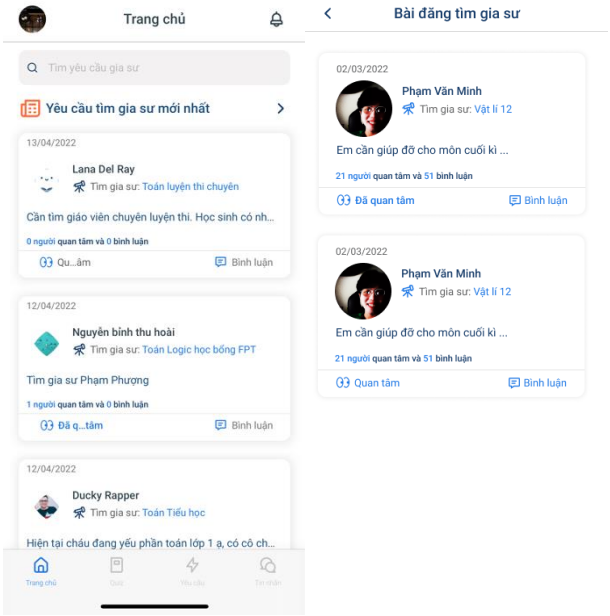


Figure 3.4.11 View Student's Mentor-finding Post List

3.4.12 View Mentor-finding Post Detail

- Access the student's mentor-finding post list screen.
- Click to any post. The screen will redirect to the mentor-finding post detail screen.

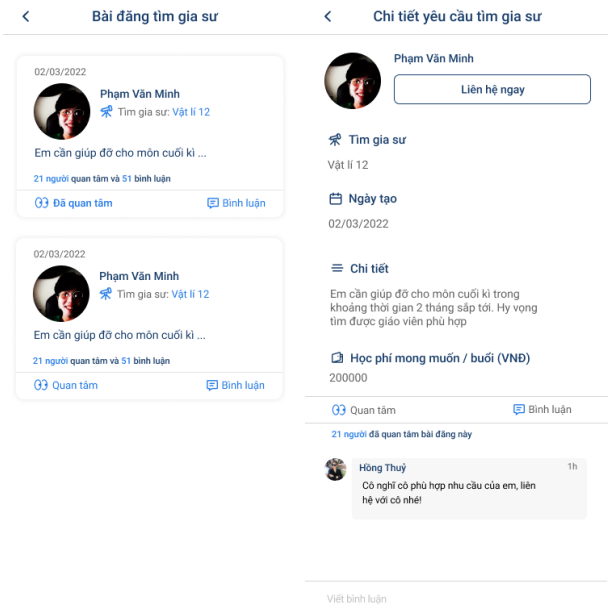


Figure 3.4.12 View Mentor-finding Post Detail

3.4.13 Search Mentor-finding Post

- Access home screen, enter keyword(s) to search bar "Tìm yêu cầu gia sư"
- Click search icon on keyboard.
- Click filter icon and choose any filter criteria.
- Click "Áp dụng" (apply) button.
- The screen will display all post that have detail/creator name contains keyword(s), and match with selected filter criteria.

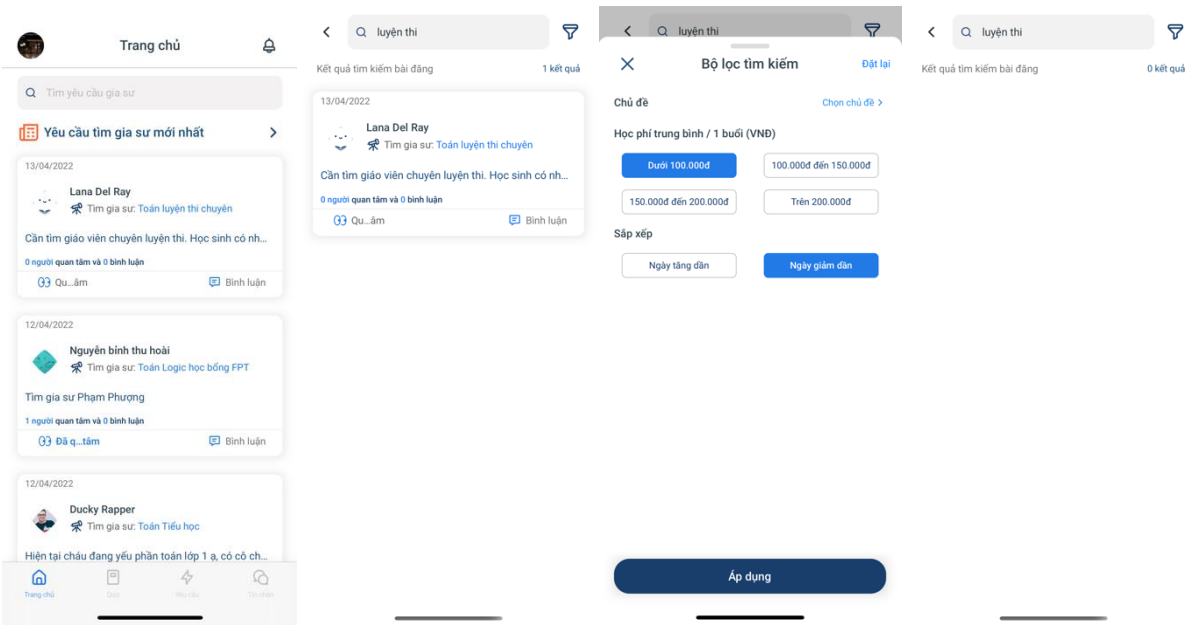


Figure 3.4.13 Search Mentor-finding Post

3.4.14 View Pending Mentorship Request List

- Access the request list screen by clicking "Yêu cầu" (request) tab at the bottom of the screen.
- The screen will redirect to the pending mentorship request list screen.

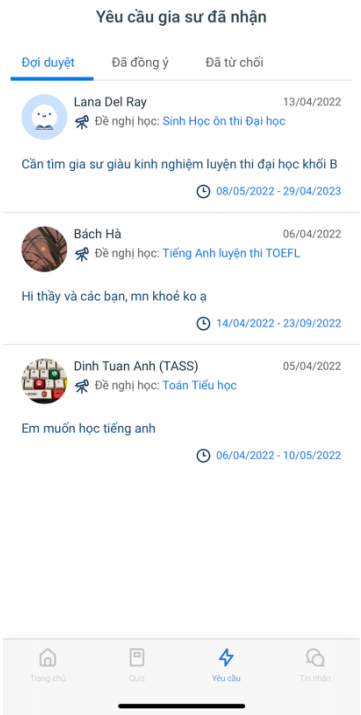


Figure 3.4.14 View Pending Mentorship Request List

3.4.15 View Accepted Mentorship Request List

- Access the request list screen by clicking "Yêu cầu" (request) tab at the bottom of the screen. The screen will redirect to the pending mentorship request list screen.
- Click "Đã đồng ý" tab (accepted tab). The screen will redirect to the accepted mentorship request list screen.

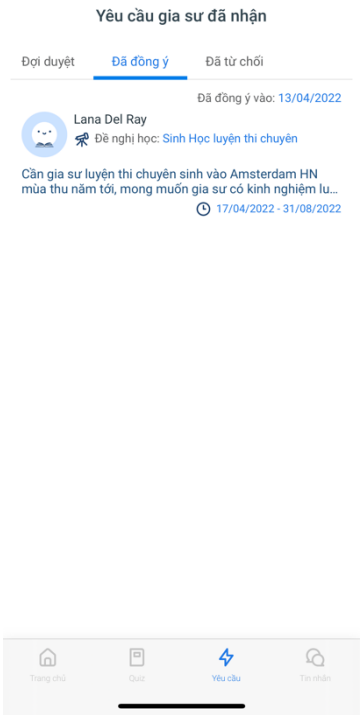


Figure 3.4.15 View Accepted Mentorship Request List

3.4.16 View Rejected Mentorship Request List

- Access the request list screen by clicking “Yêu cầu” (request) tab at the bottom of the screen. The screen will redirect to the pending mentorship request list screen.
- Click “Đã từ chối” tab (rejected tab). The screen will redirect to the rejected mentorship request list screen.

Figure 3.4.16 View Rejected Mentorship Request List

3.4.17 View Detail Mentorship Request

- Access the request list screen by clicking “Yêu cầu” (request) tab at the bottom of the screen. The screen will redirect to the pending mentorship request list screen.
- Click to one of three tabs: “Đợi duyệt” (pending), “Đã đồng ý” (accepted) and “Đã từ chối” (rejected). The screen will redirect to the mentorship request list screen.
- Click to any request.

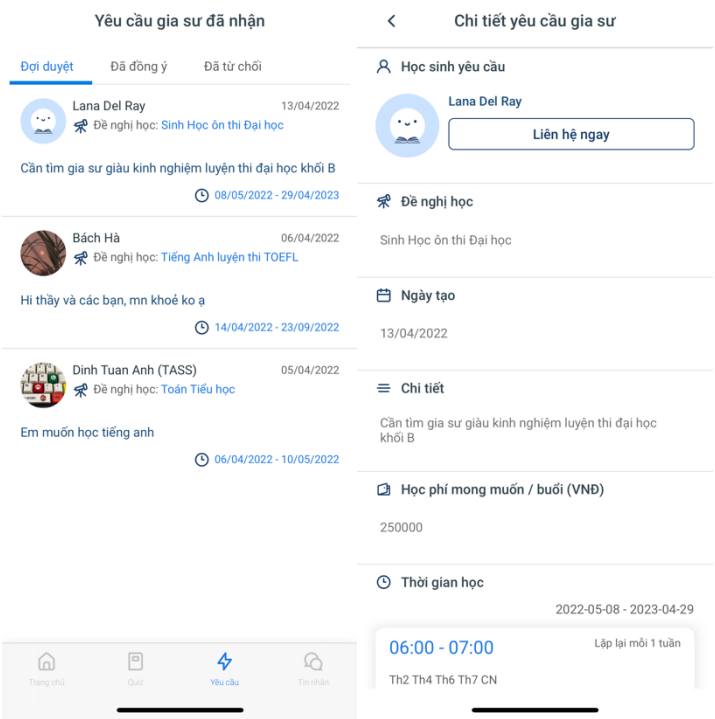


Figure 3.4.17 View Detail Mentorship Request

3.4.18 Accept Mentorship Request

- Access the detail mentorship request screen.
- Click "Đồng ý dạy" (accept) button. The screen appears the accept mentorship request successfully confirm-dialog. Click OK and the screen will redirect to the accepted mentorship request screen.

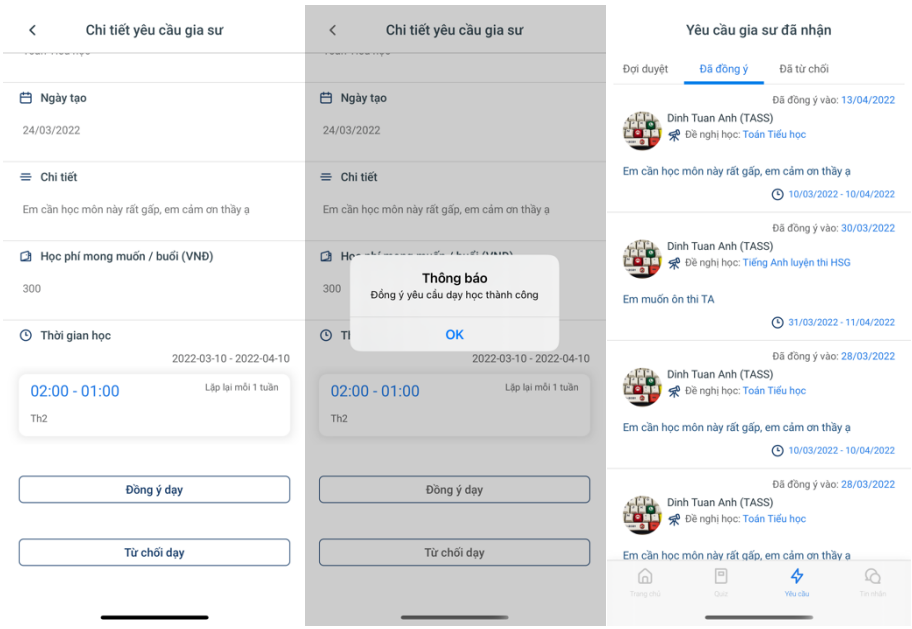


Figure 3.4.18 Accept Mentorship Request

3.4.19 Reject Mentorship Booking

- Access the detail mentorship request screen.

- Click “Đồng ý dạy” (accept) button. The screen appears the accept mentorship request successfully confirm-dialog. Click OK and the screen will redirect to the accepted mentorship request screen.

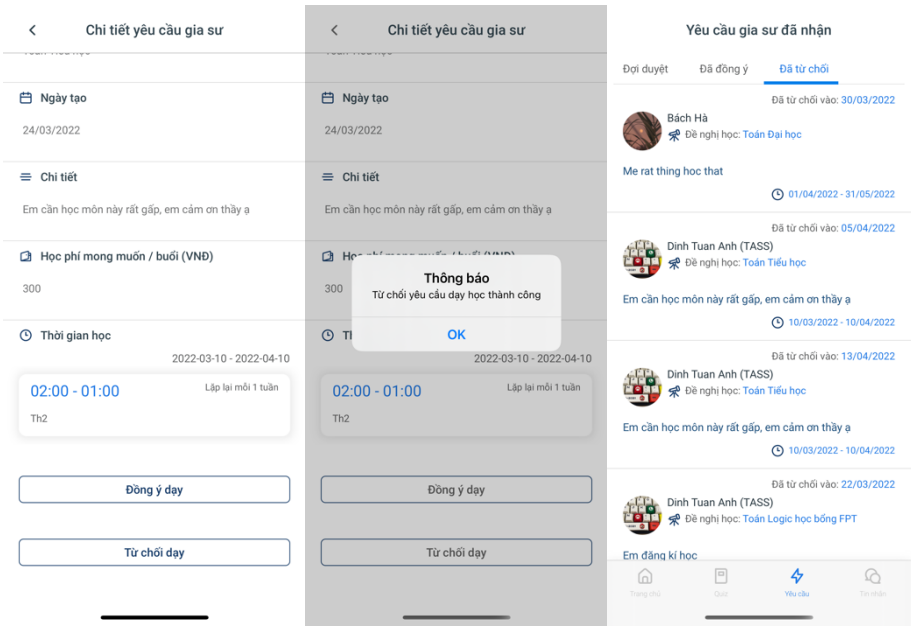


Figure 3.4.19 Reject Mentorship Request

3.4.20 View Feedback

- Access the profile screen.
- Click “Đánh giá” (feedback). The screen will redirect to the feedback list screen.

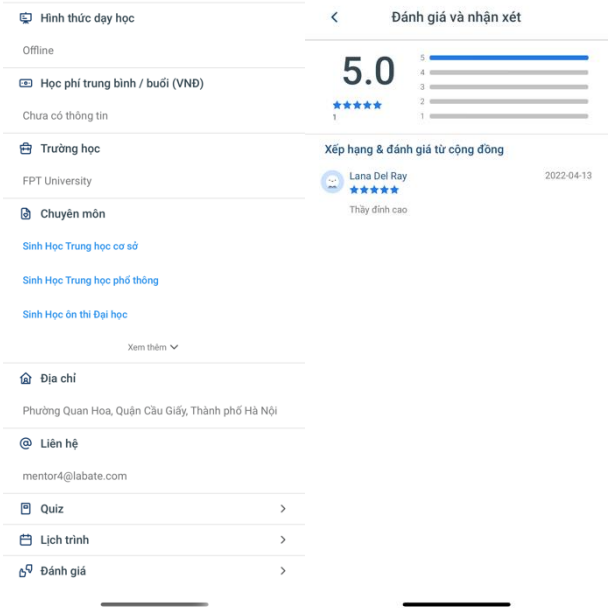


Figure 3.4.20 View Feedback

3.4.21 Contact

- Access chat icon in the tab bar
- Choose a conversation
- Start chatting.

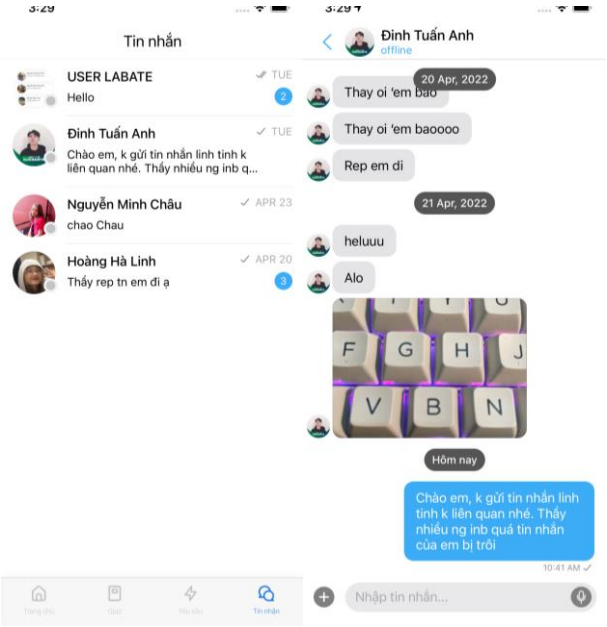


Figure 3.4.21 Contact

3.4.22 View Schedule

- Access my profile screen or student access any other's profile screen.
- Click "Lịch trình" (schedule). The screen will redirect to the schedule screen.

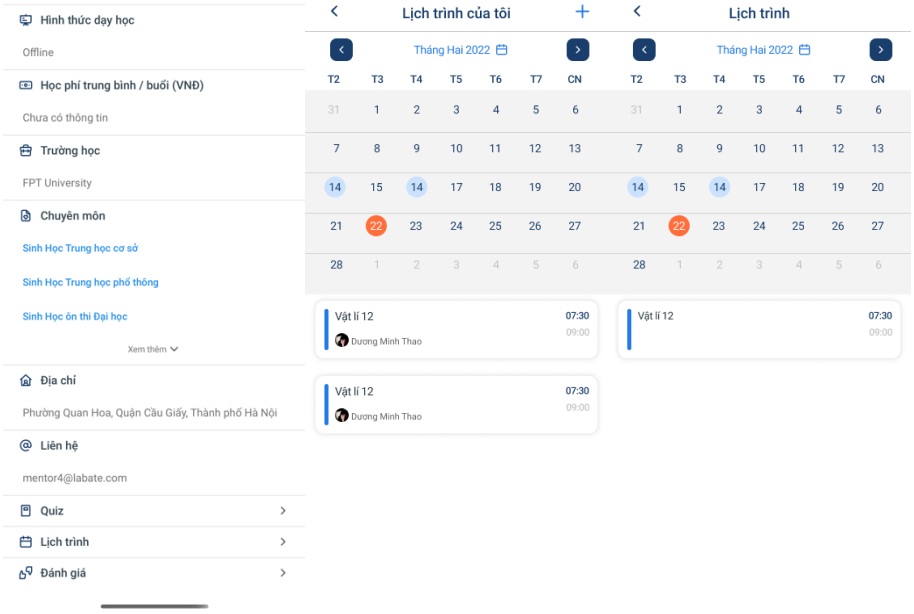


Figure 3.4.22 View Schedule

3.4.23 View Event Detail

- Access own schedule
- Click to any own event. The screen will redirect to the event detail screen.

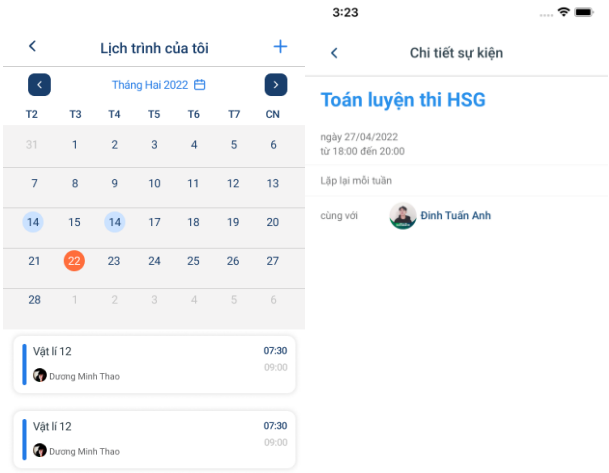


Figure 3.4.23 View Event Detail

3.4.24 View Notification List

- Access the home screen.
- Click the notification icon in the top-right corner. The screen will redirect to the notification list screen.
- If user clicks to any notification, it changes from unread to read status.
- Click "Đánh dấu tất cả đã đọc" (mark all read) to mark all notifications read.

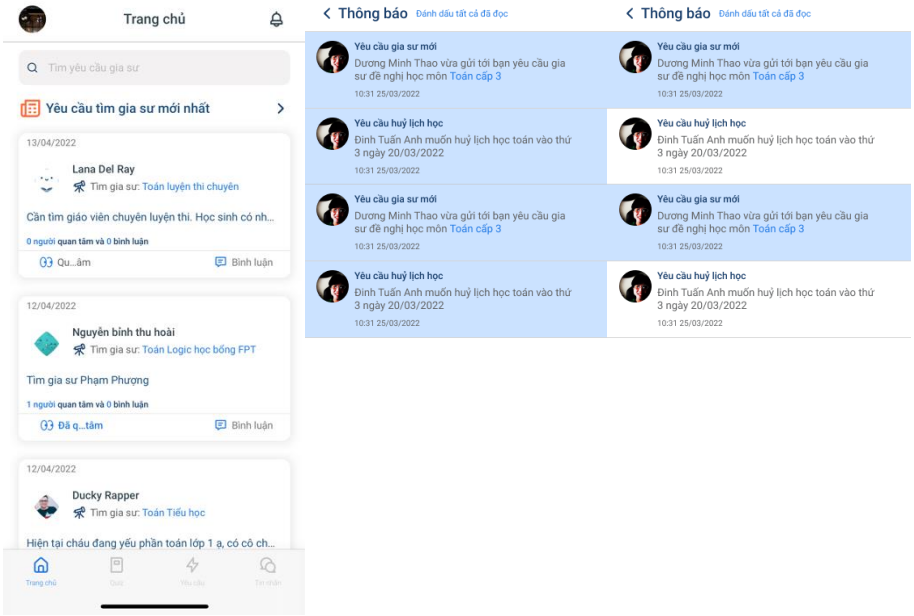


Figure 3.4.24 View Notification List