

RESEARCH ABROAD

CSE326: Information System Design Sessional

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INTRODUCTION

- **Research Abroad** is a platform which unleashes your research potential, finds the ideal country for your interests, explore reputable supervisors with insightful reviews, and join a vibrant community forum for knowledge exchange and networking.

User Base:

- **Researchers and Enthusiasts:** Research Abroad caters to a diverse user base of passionate researchers and enthusiasts from various academic disciplines, providing them with a platform to connect, collaborate, and exchange ideas.
- **Supervisors and Mentors:** It serves as a hub for experienced supervisors and mentors who are looking to engage with appropriate researchers, offering them opportunities to mentor aspiring scholars in their research pursuits.
- **International Community:** It attracts users from around the world, fostering a global community of researchers, supervisors, and mentors who can connect transcending geographical boundaries.

Users and Registration:

- **Research Enthusiasts:** These individuals form the core user group, leveraging Research Abroad to explore and select the most suitable region for their interests.
- **Supervisors and Mentors:** This facilitates connections between experienced supervisors and mentors with research enthusiasts. They can utilize the app to showcase their expertise, share valuable insights and connect with potential research collaborators.
- **Guest Users:** Individuals who have not logged into the app or created an account can still access limited functionalities.

Modules:

- **Country/Region Selection:** Users can explore factors regarding different research aspects to determine the best location for their research interests.
- **Supervisor Listings with Reviews:** This module helps research enthusiasts find and connect with the most suitable supervisors for their projects.
- **Community Forum:** This platform serves as a common space for researchers to collaborate, exchange ideas, and stay updated on the latest trends in their fields.

Recommendation Algorithm:

- Research Abroad employs an advanced recommendation algorithm that uses machine learning, user feedback, and data analysis to provide personalized and appropriate suggestions.
- The algorithm considers factors such as research interests, academic background, and user behavior to match research enthusiasts with suitable countries, regions, and research supervisors.

Forum:

- Where research enthusiasts, supervisors, and fellow scholars converge to ignite insightful discussions and foster a vibrant knowledge-sharing ecosystem.

Requirement Analysis Using BPMN Diagram

A Business Process Model and Notation (BPMN) diagram is a graphical representation used in system design to model and document business processes and workflows

Changes Brought According to the Feedback

- Added filtering option in University Recommendation System, if no parameters get passed, recommendation should still work
- Added downvote option in Forum Post and Comments
- Added prompt system for student if their recommendation choice is inconsistent

BPMN Diagrams

Student Profile

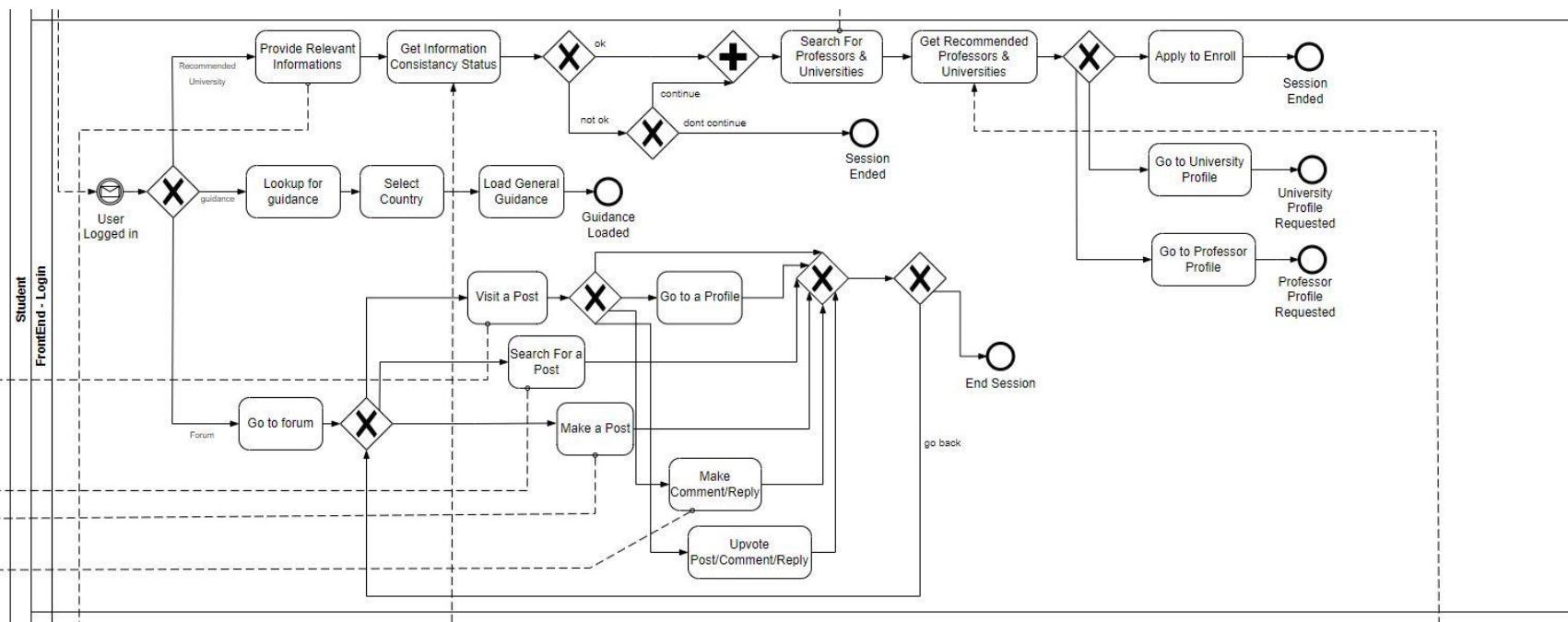


Fig: Student End

Student Login Process

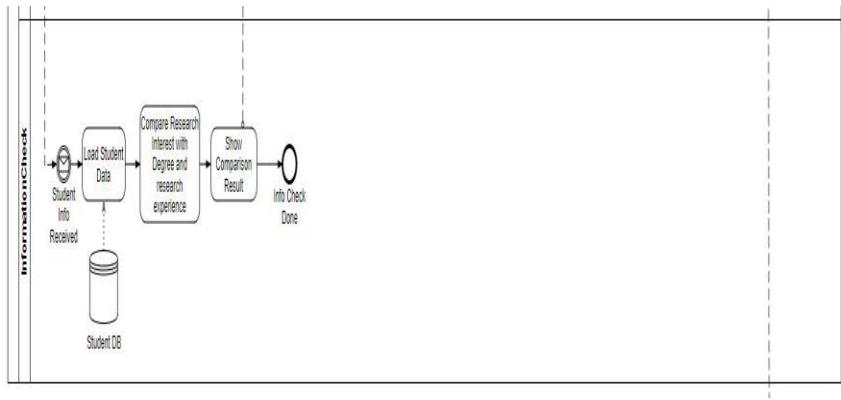


Fig: Student Information check

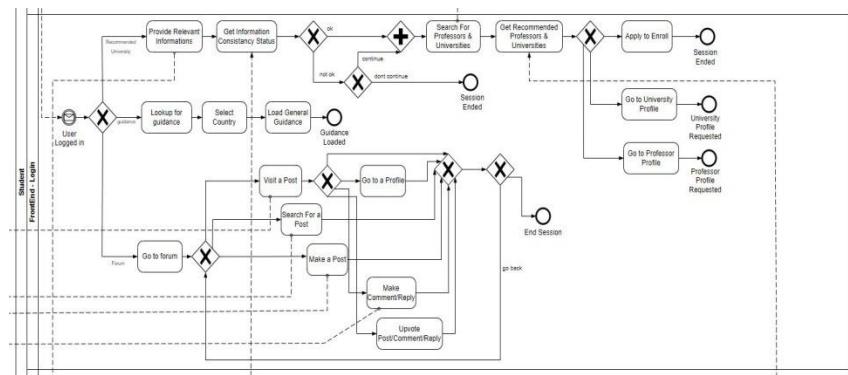


Fig: Student Login

Student UI

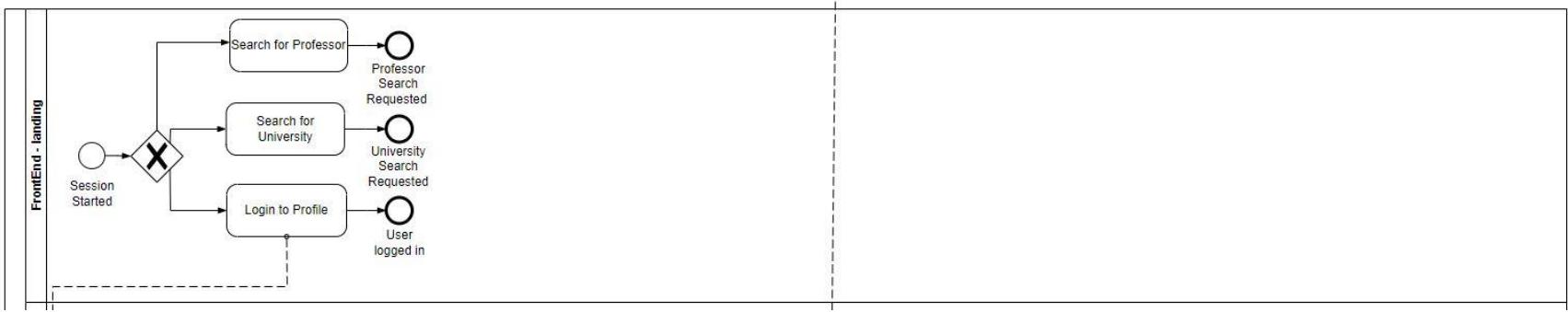


Fig: Student UI

Recommendation System

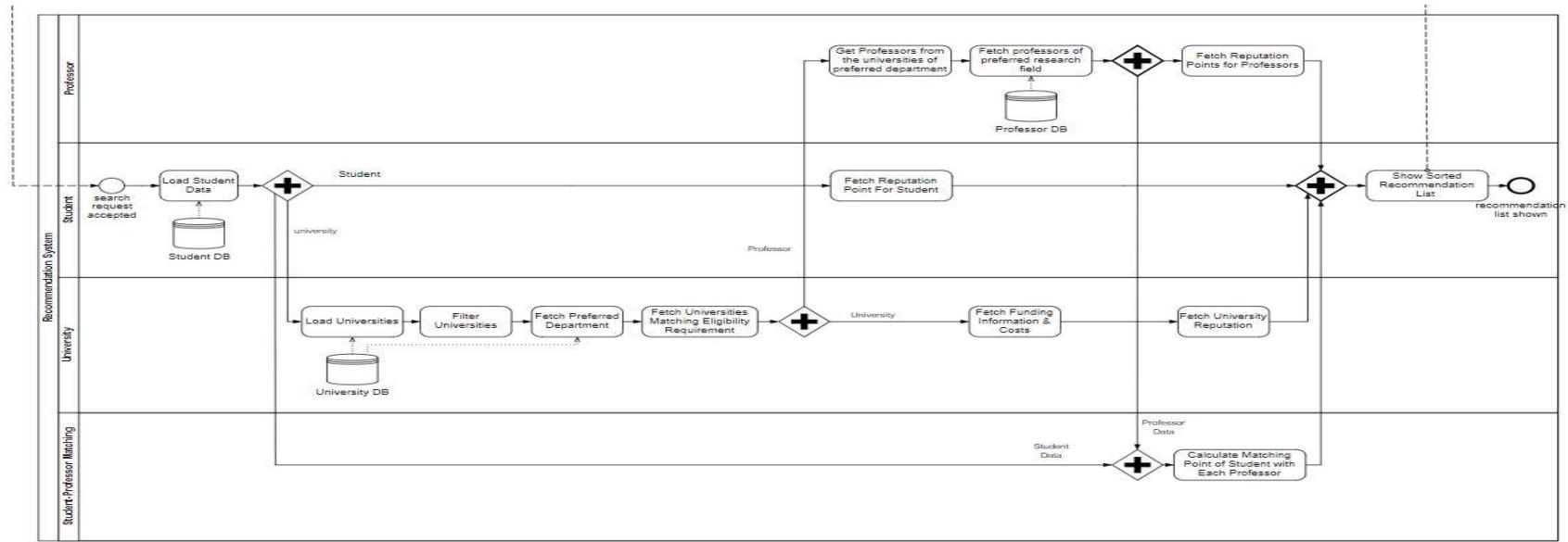


Fig: Recommendation System

Recommendation Student End

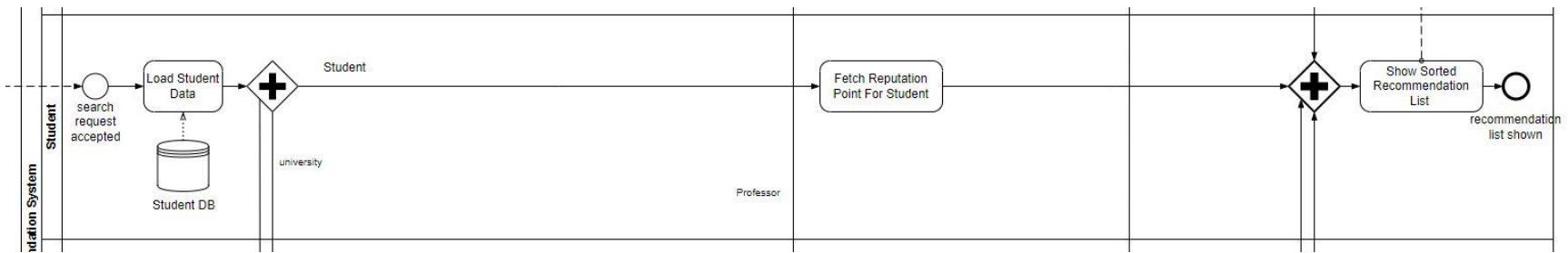


Fig: Recommendation System for Student End

Recommendation of University

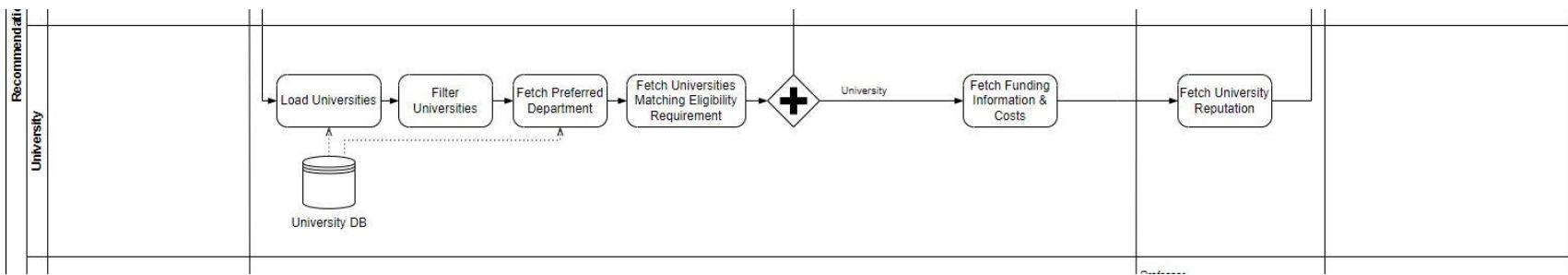


Fig: Recommending University

Recommendation Professor

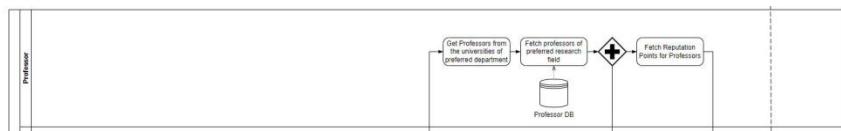


Fig: Recommendation of Professor



Fig: Student-Professor Matching

Forum

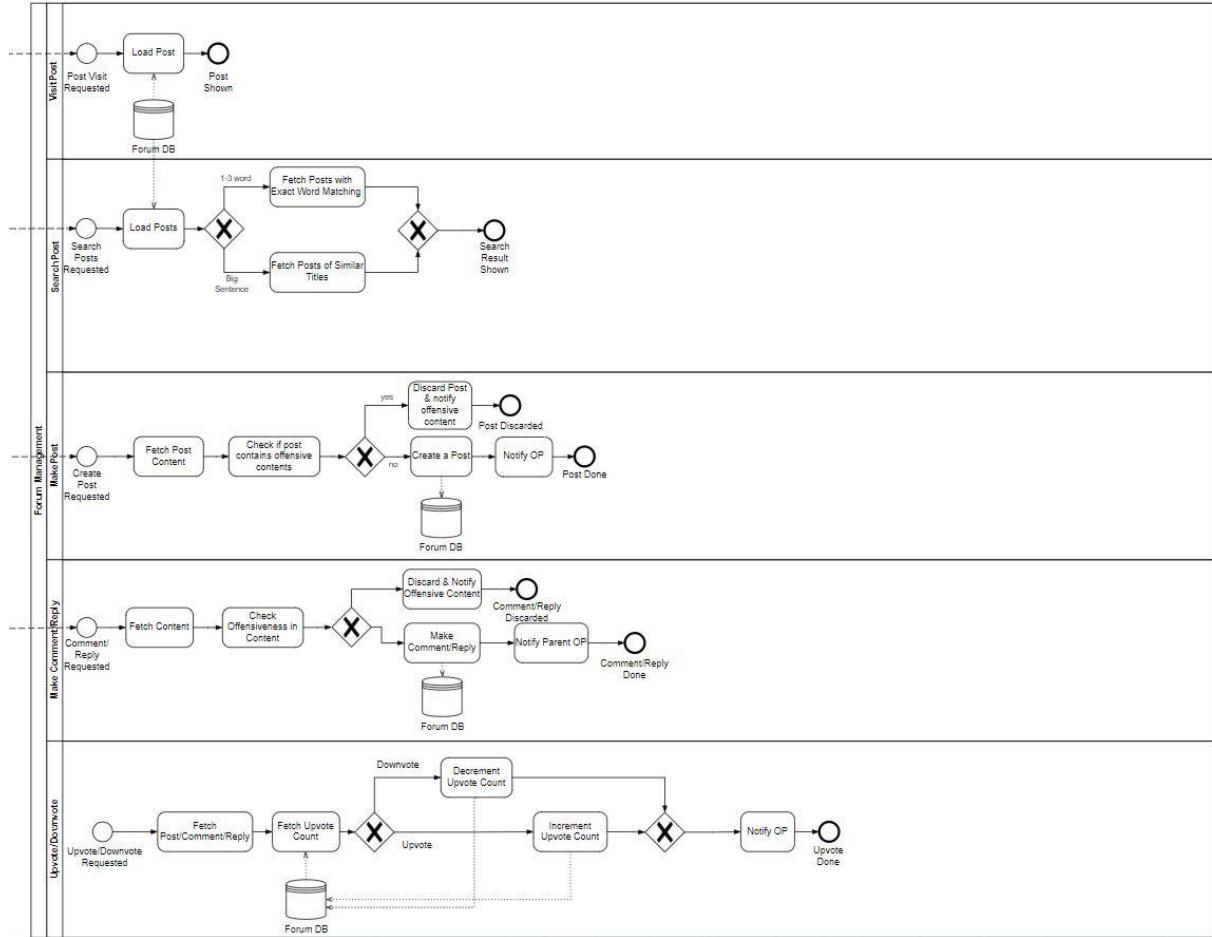


Fig: Forum

Forum Actions

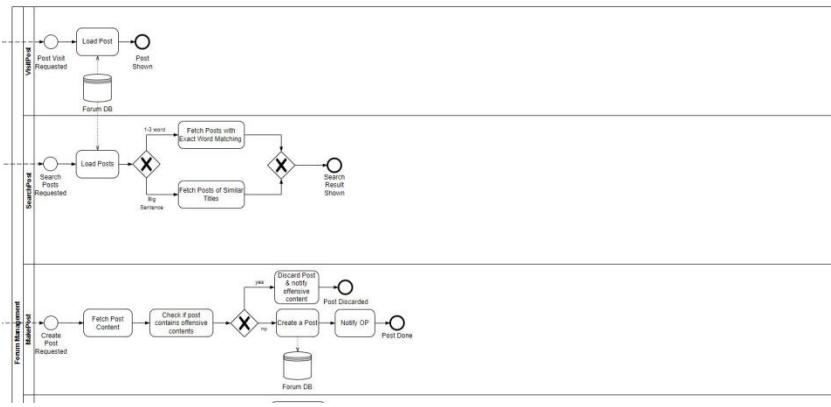


Fig: Forum Visit Post

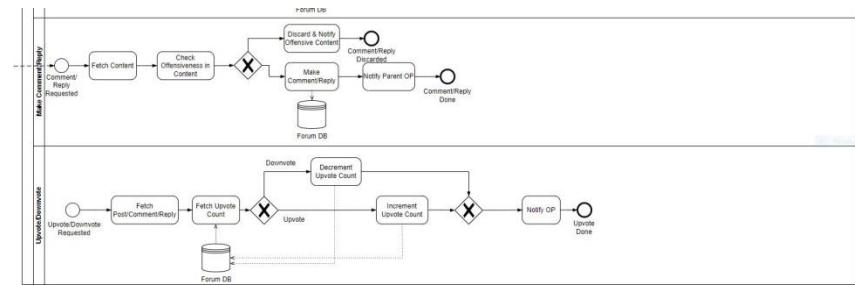


Fig: Forum Up vote & Down vote

Class Diagram

Our project's class diagram provides us with a thorough understanding of the classes involved in the design and how they should interact with the middleware and front-end in the implementation we choose to use.

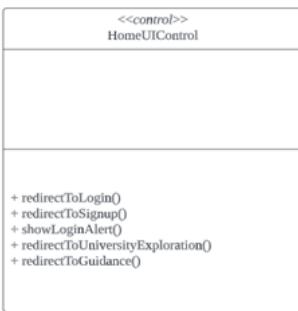
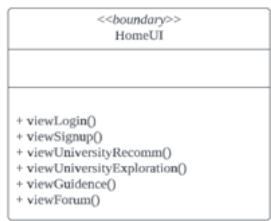
Changes brought according to the feedback:

No particular Comments were provided during this presentation

Class Diagram

Home UI

HomeUI



HomeUI : Student Logged in

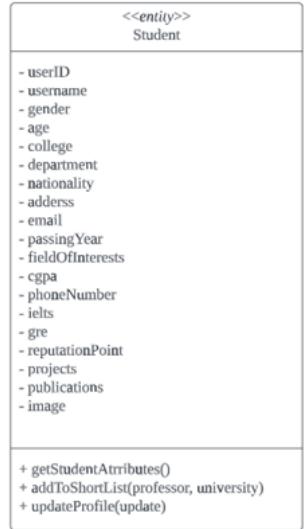
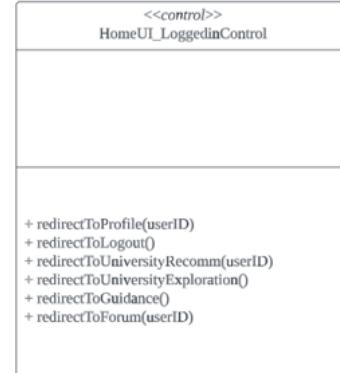
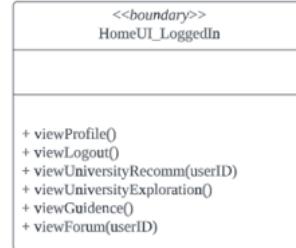
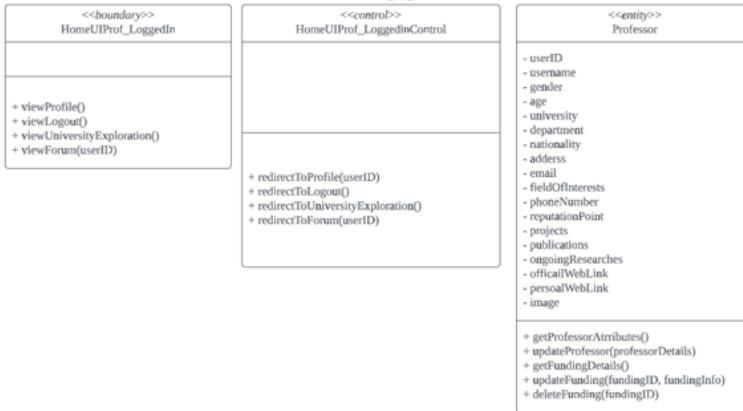


Fig: Home UI

Home UI: Admin & Professor

HomeUI : Professor Logged in



HomeUI : Admin Logged in

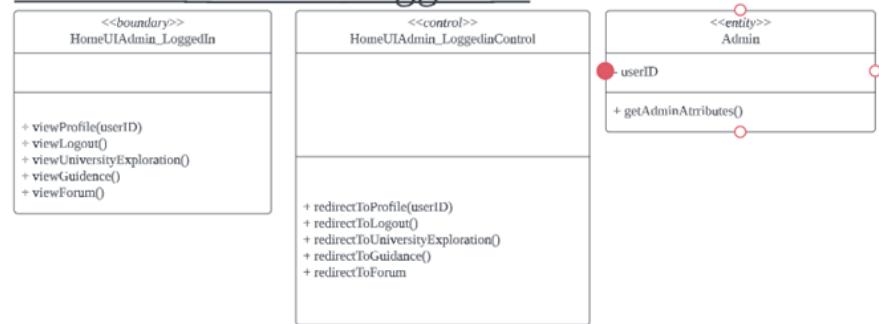


Fig: Home UI for Admin & Professors

User Profile: Student UI

User studentUI

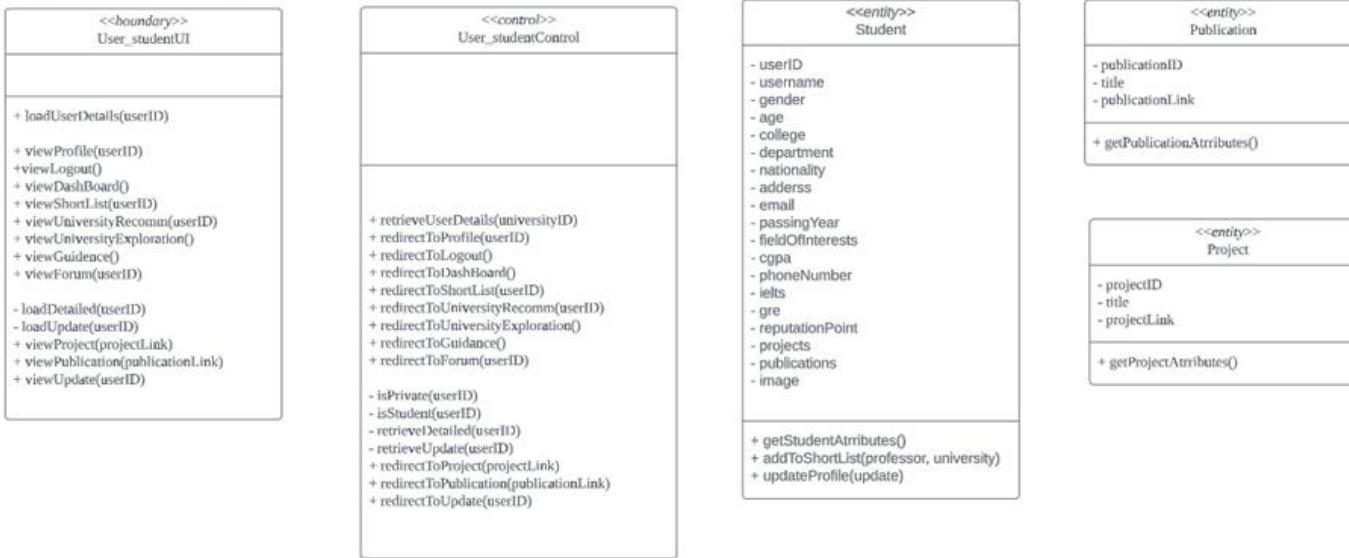


Fig: User Profile (Students End)

User Profile: Professor UI

User professorUI



Fig: User Profile (Professor End)

User Profile: Professor Edit Profile

Professor Profile Edit : Professor

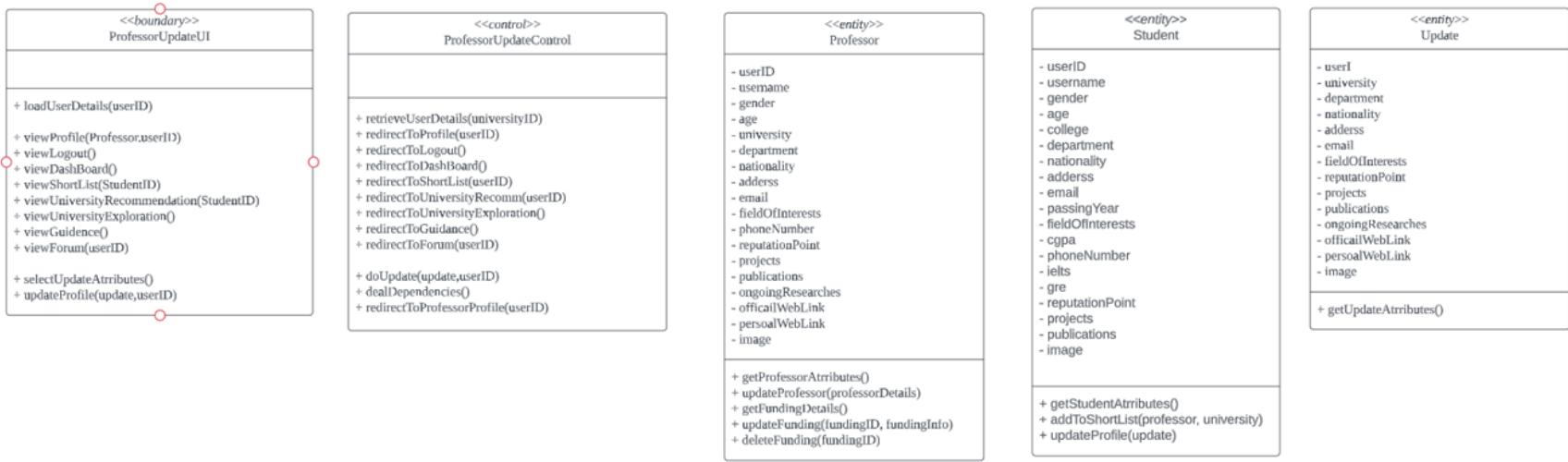


Fig: User Profile (Professor Edit Profile)

University Profile

UniversityUI

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+ loadUniversityDetails(universityID)	
+ viewProfile(userID)	
+ viewLogout()	
+ viewDashBoard()	
+ viewShortList(userID)	
+ viewUniversityRecomm(userID)	
+ viewUniversityExploration()	
+ viewGuidence()	
+ viewForum(userID)	
+ viewProfessors(universityID)	
+ viewWebsite(webLink)	
+ loadEditUni(userID,universityID)	
+ viewEditUni(universityID,userID)	

<<control>> UniversityControl	
<hr/>	
+ retrieveUniversityDetails(universityID)	
+ redirectToProfile(userID)	
+ redirectToLogon()	
+ redirectToDashBoard()	
+ redirectToShortList(userID)	
+ redirectToUniversityRecomm(userID)	
+ redirectToUniversityExploration()	
+ redirectToGuidance()	
+ redirectToForum(userID)	
+ redirectToProfessors(universityID)	
+ redirectToWebsite(webLink)	
+ retrieveEditUni(userID, universityID)	
+ redirectToEditUni(universityID, userID)	

<<entity>> University	
<hr/>	
- universityID	
- name	
- departments	
- country	
- state	
- reputationPoint	
- tuitionFee	
- livingCost	
- description	
- webLink	
- eligibility_requirements	
+ getUniversityAttributes()	
+ checkUniversityEligibilityRequirements(studentAcademicInfo)	
+ updateUni(updates)	

Professor List

<<boundary>> ProfessorListUI	
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+ viewProfile(userID)	
+ viewLogout()	
+ viewDashboard()	
+ viewShortList(userID)	
+ viewUniversityRecommendation(userID)	
+ viewUniversityExploration()	
+ viewGuidelines()	
+ viewForum(userID)	
+ loadProfessors(universityID)	
+ viewProfessor(Professor.userID, userID)	

<<controller>> Professor List Control	
<hr/>	
+ retrieveProfessors(universityID)	
+ redirectToProfessor(Professor.userID, userID)	
<<entity>> Professor	
- userID	
- username	
- gender	
- age	
- university	
- department	
- nationality	
- address	
- email	
- fieldOfInterests	
- phoneNumber	
- reputationPoint	
- projects	
- publications	
- ongoingResearches	
- officialWebLink	
- personalWebLink	
- image	
+ getProfessorAttributes()	
+ updateProfessor(professorDetails)	
+ getFundingDetails()	
+ updateFunding(fundingID, fundingInfo)	
+ deleteFunding(fundingID)	

Fig: University Profile

University Profile: Edit

UniversityEdit : Admin

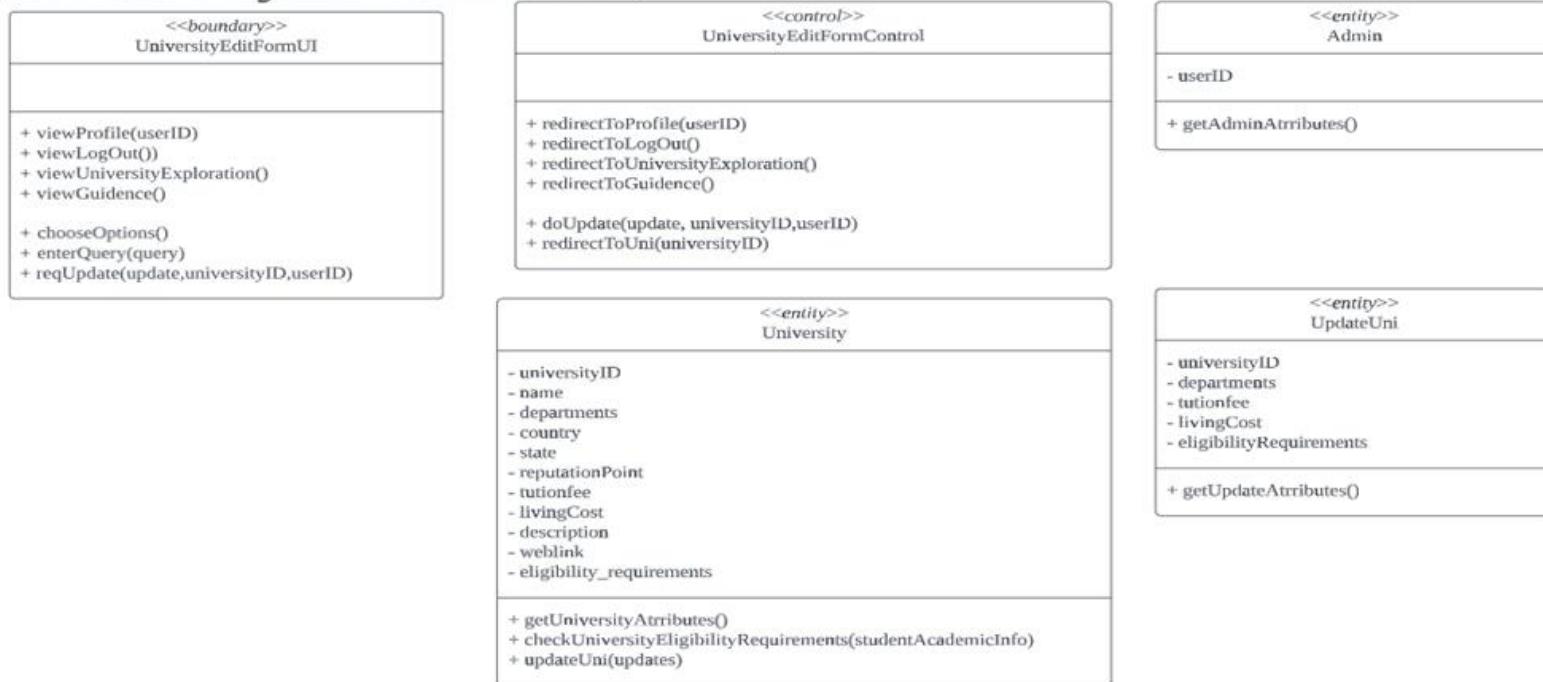


Fig: University Profile (Edited By Admin)

Explore University

University Explore



Fig: Explore University

University Recommendation

Recommendation



Fig: University Recommendation

University Recommendation: Show

Show Recommendations



Fig: Show Recommendation

My Shortlist

My ShortLists

<code><<boundary>></code> StudentShortLists	<code><<control>></code> RecommendationController	<code><<entity>></code> Student	<code><<entity>></code> Professor
<pre>+ viewProfile(studentID) + viewLogOut() + viewDashBoard() + viewShortList(userID) + viewUniversityRecommendation(userID) + viewUniversityExploration() + viewGuidence() + viewForum(userID) + loadShortLists(userID); + viewUniversity(universityID) + viewProfessor(Professor.userID) + removeFromShortList(universityID, Professor.userID, userID)</pre>	<pre>+ redirectToProfile(userID) + redirectToDashBoard() + redirectToShortList(userID) + redirectToUniversityRecommendation(userID) + redirectToUniversityExploration() + redirectToGuidence() + redirectToForum(userID) + retrieveShortLists(); + redirectToUniversity(universityID) + redirectToProfessor(Professor.userID) + removeFromshortList(studentID, universityID, Professor.userID);</pre>	<pre>- userID - username - gender - age - college - department - nationality - address - email - passingYear - fieldOfInterests - cgpa - phoneNumber - ielts - gre - reputationPoint - projects - publications - image</pre>	<pre>- userID - username - gender - age - university - department - nationality - address - email - fieldOfInterests - phoneNumber - reputationPoint - projects - publications - ongoingResearches - officialWebLink - personalWebLink - image</pre>
<code><<entity>></code> University		<pre>+ getStudentAttributes() + addToShortList(professor, university) + updateProfile(update)</pre>	<pre>+ getProfessorAttributes() + updateProfessor(professorDetails) + getFundingDetails() + updateFunding(fundingID, fundingInfo) + deleteFunding(fundingID)</pre>
<code>+ getUniversityAttributes()</code> <code>+ checkUniversityEligibilityRequirements(studentAcademicInfo)</code> <code>+ updateUni(updates)</code>			

Fig: My Shortlist (Student End)

Guidelines

Guidelines

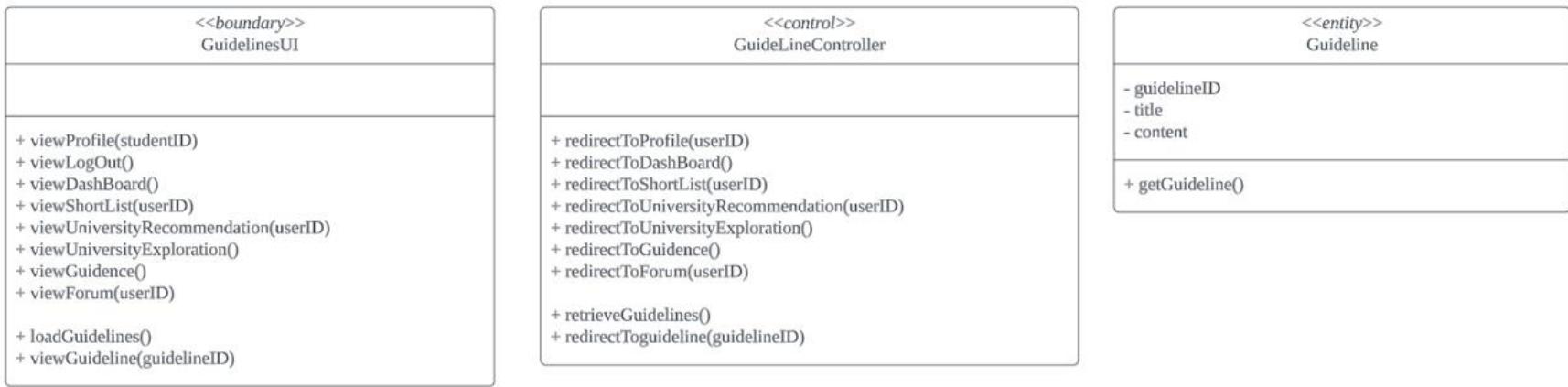


Fig: Guidelines

Forum: Home

Forum : Home



Fig: Forum (Home)

Forum Home: Admin

Forum : Home (Admin)

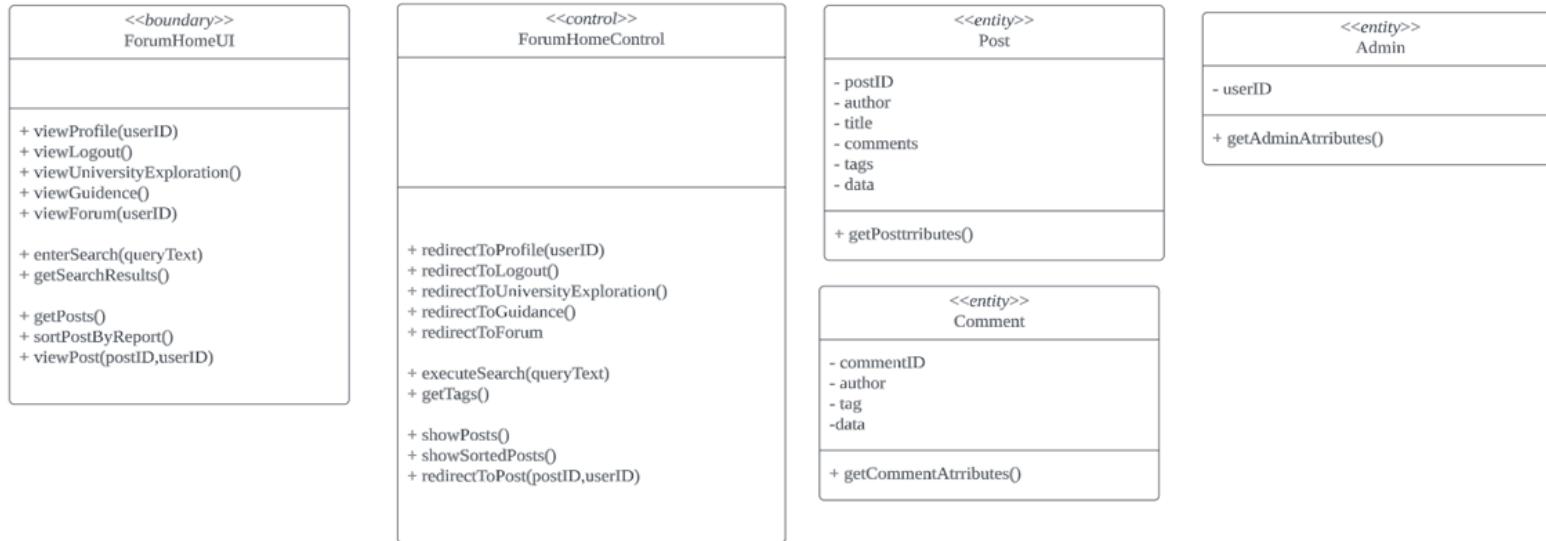


Fig: Forum Home (Admin)

Forum Post

Forum : Post

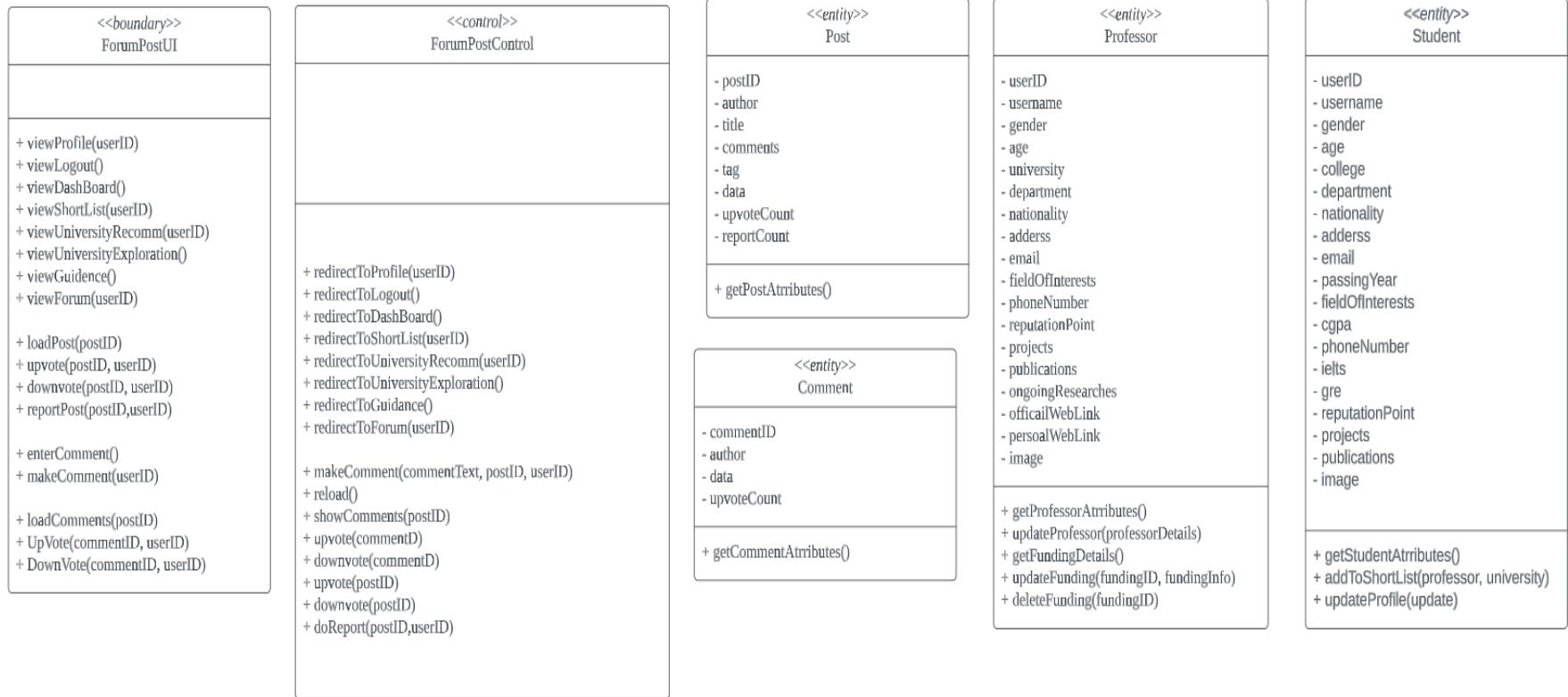


Fig: Forum Post

Forum Post: Admin

Forum : Post (Admin)

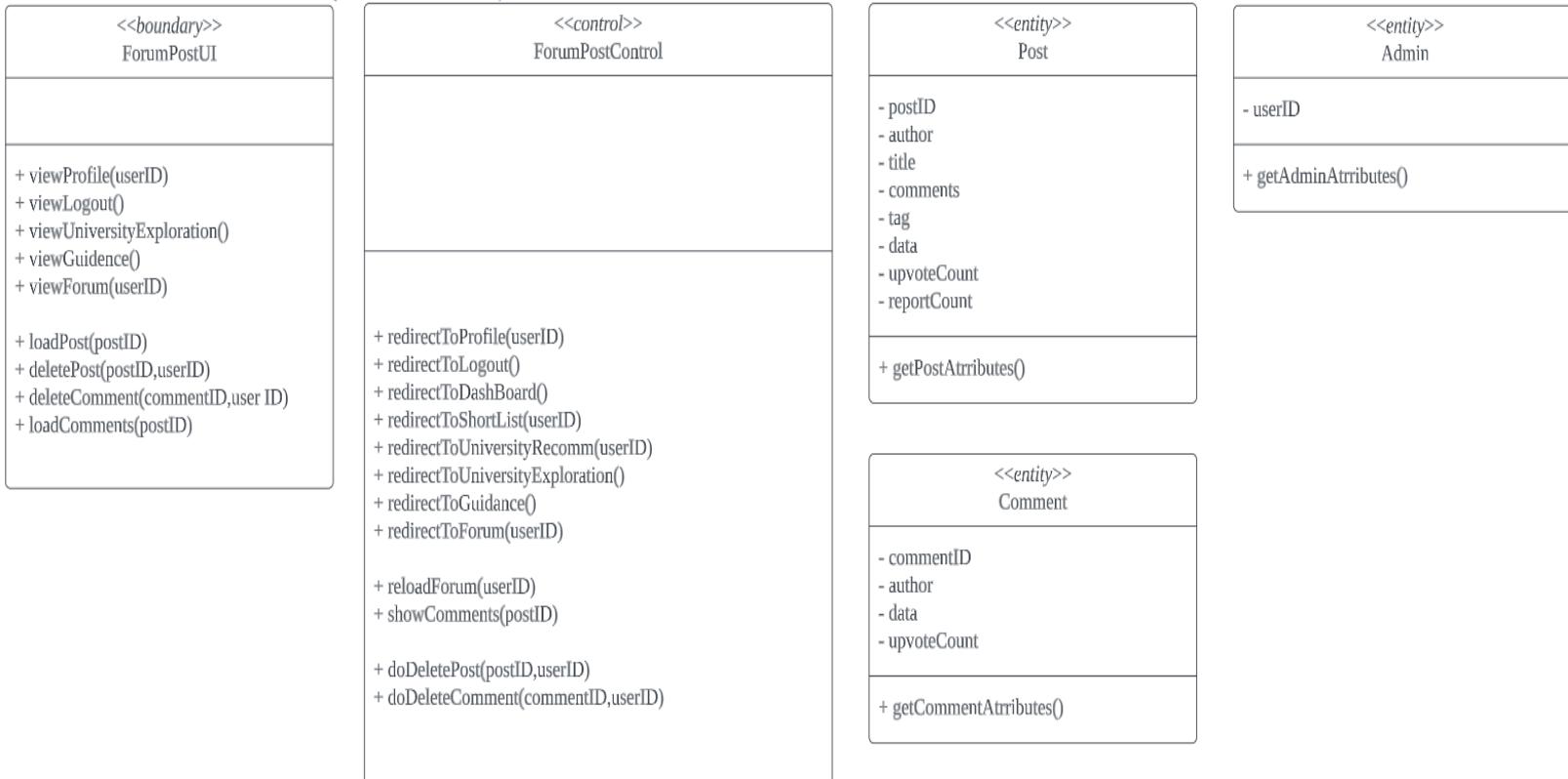


Fig: Forum Post (Admin)

ER Diagram

The Entity-Relationship (ER Diagram) gives us a visual representation of the database structure and the relationship between different entities in our design. It helps us with:

- Data Clarity
- Data Modeling
- Entity Identification
- Attribute Specification
- Relationship Representation etc.

Changes brought according to the feedback:

Adding a "Delete" relationship with user and comment, allowing the user to delete the comment/reply

Full ER Diagram

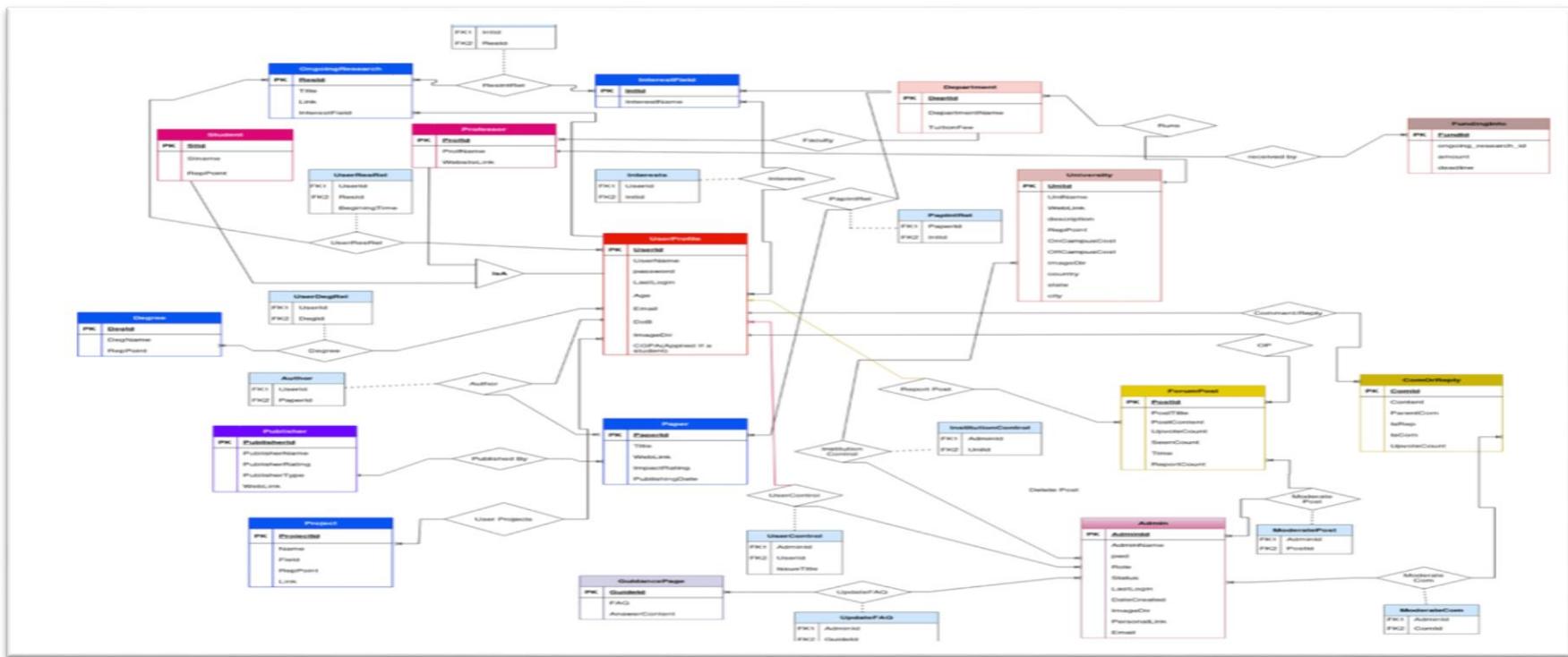


Fig : Full ER Diagram

Sequence Diagram

Our project's sequence diagram gives us a visual picture of the interactions and communication flow through time between items and components. They make it simple to comprehend how various system components interact since they display the messaging hierarchy and the lifelines of the involved parties.

Changes brought according to the feedback:

No particular feedback was provided regarding this design.

Sequence Diagram

Home

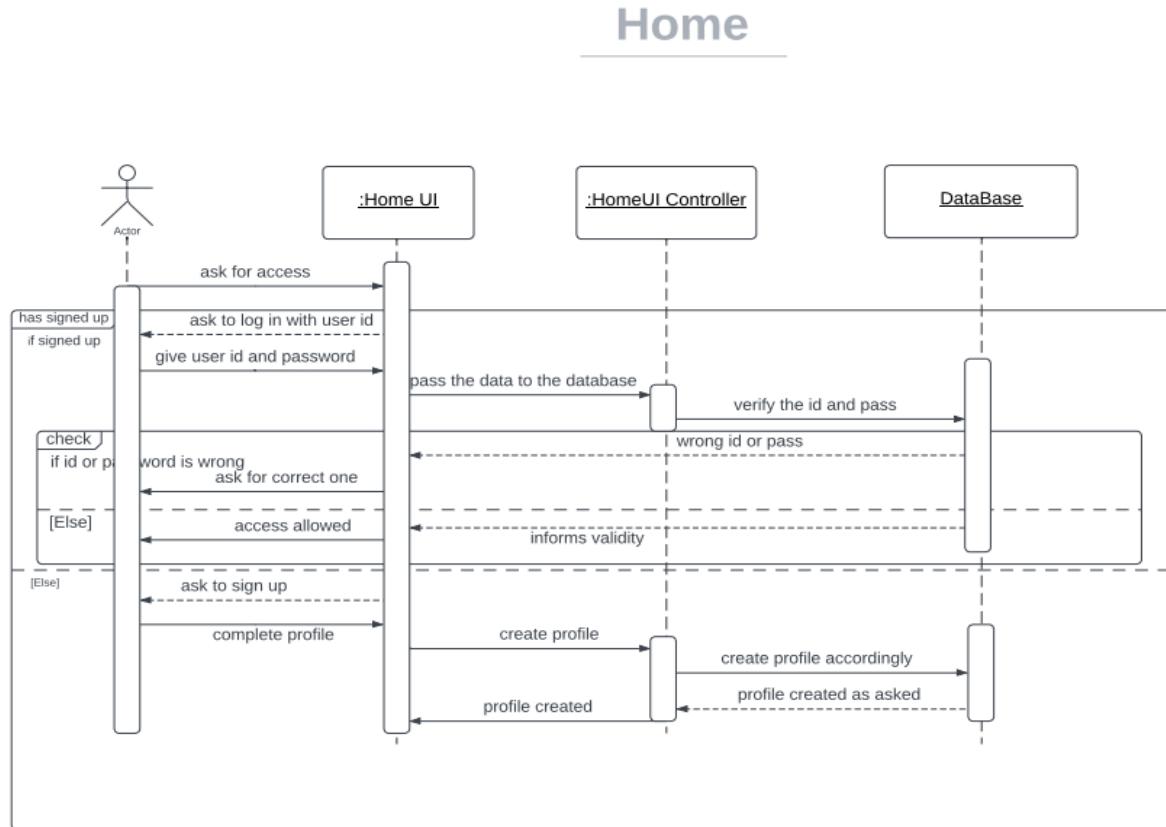


Fig: Home

User Profile

User Profile

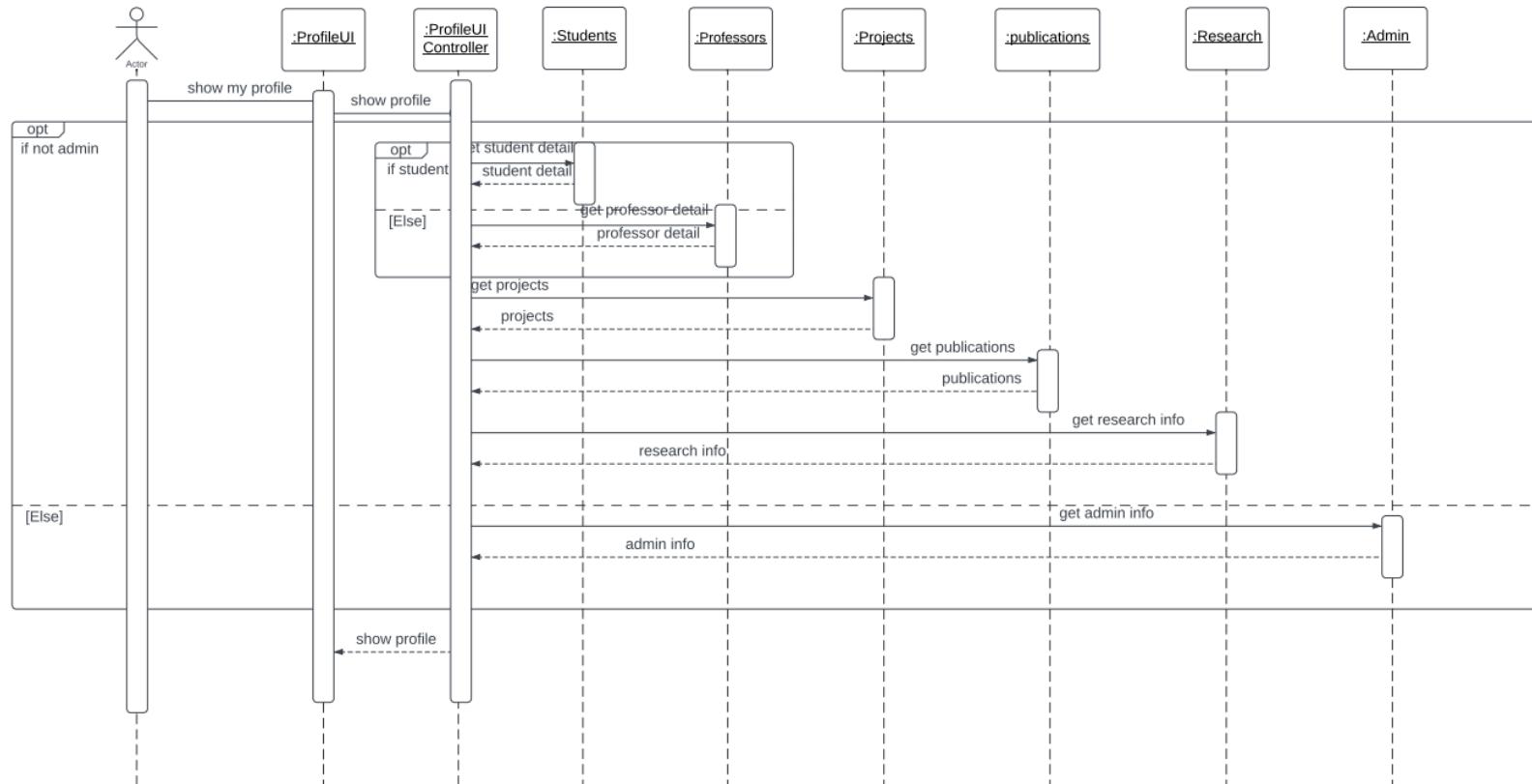


Fig: User Profile

Edit My Profile

Edit My Profile

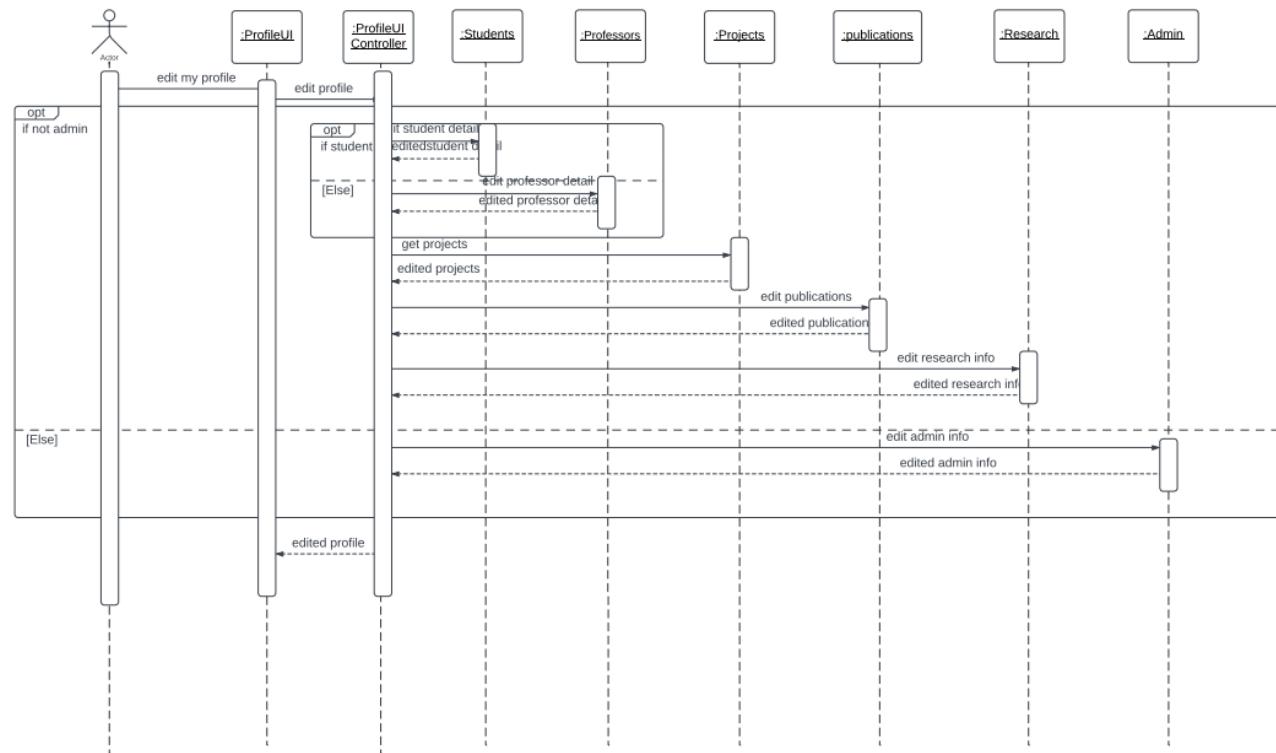


Fig: Edit My Profile

Explore University

Explore University

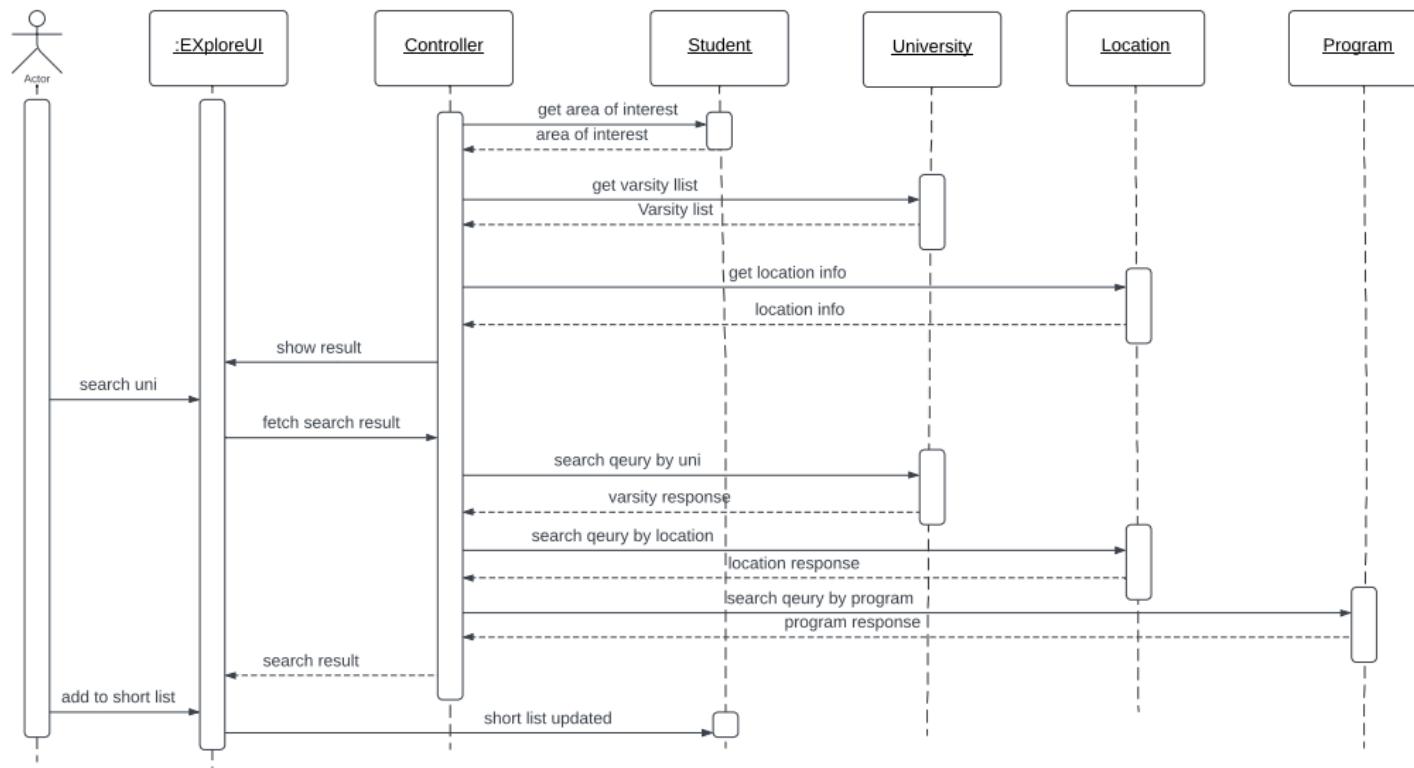


Fig: Explore University

University Recommendation

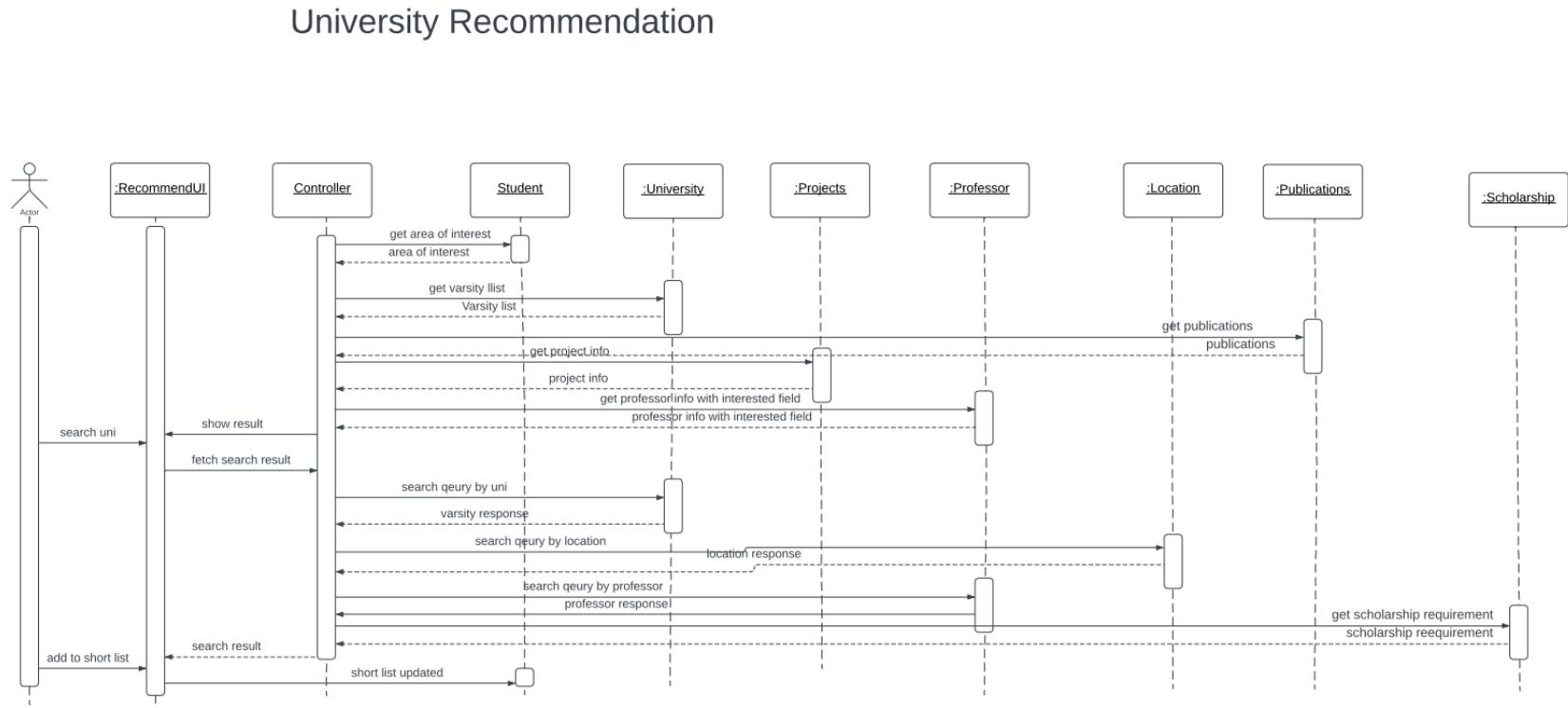


Fig: University Recommendation

University Detail

University Detail

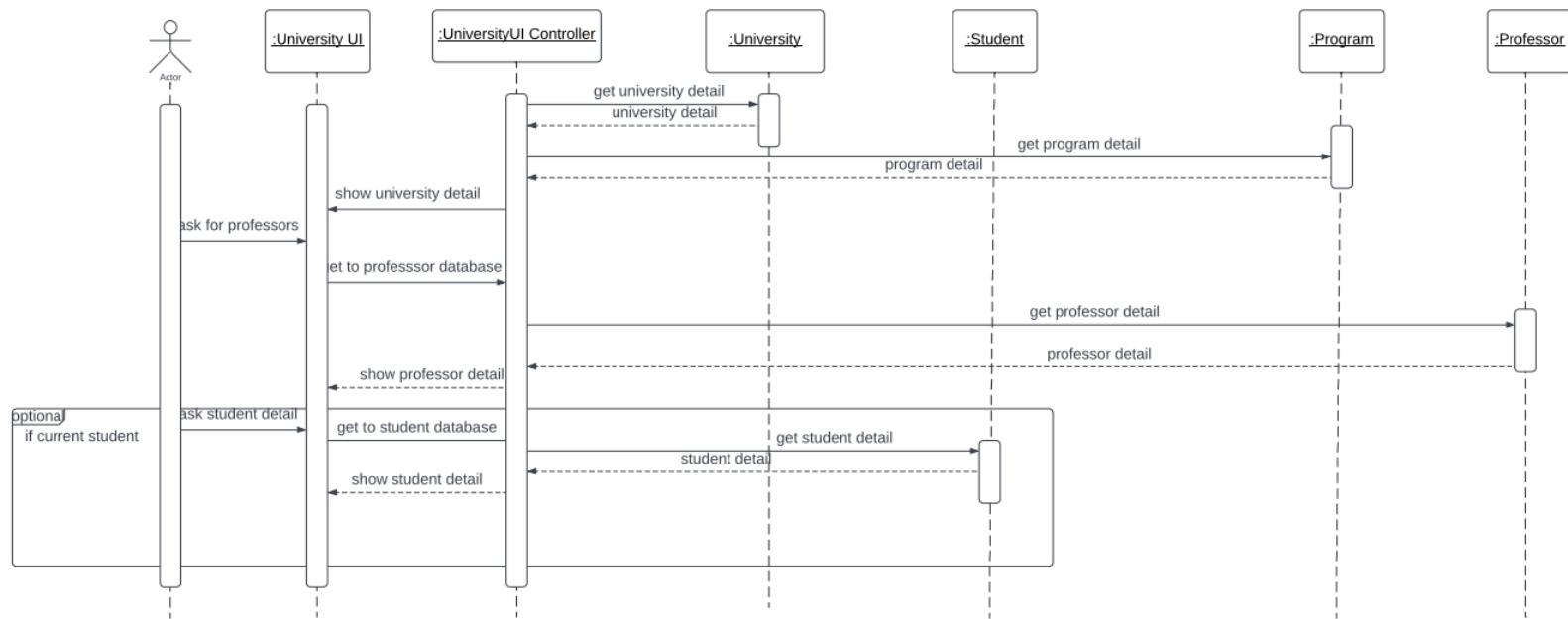


Fig: University Detail

Professor Detail

professor Details

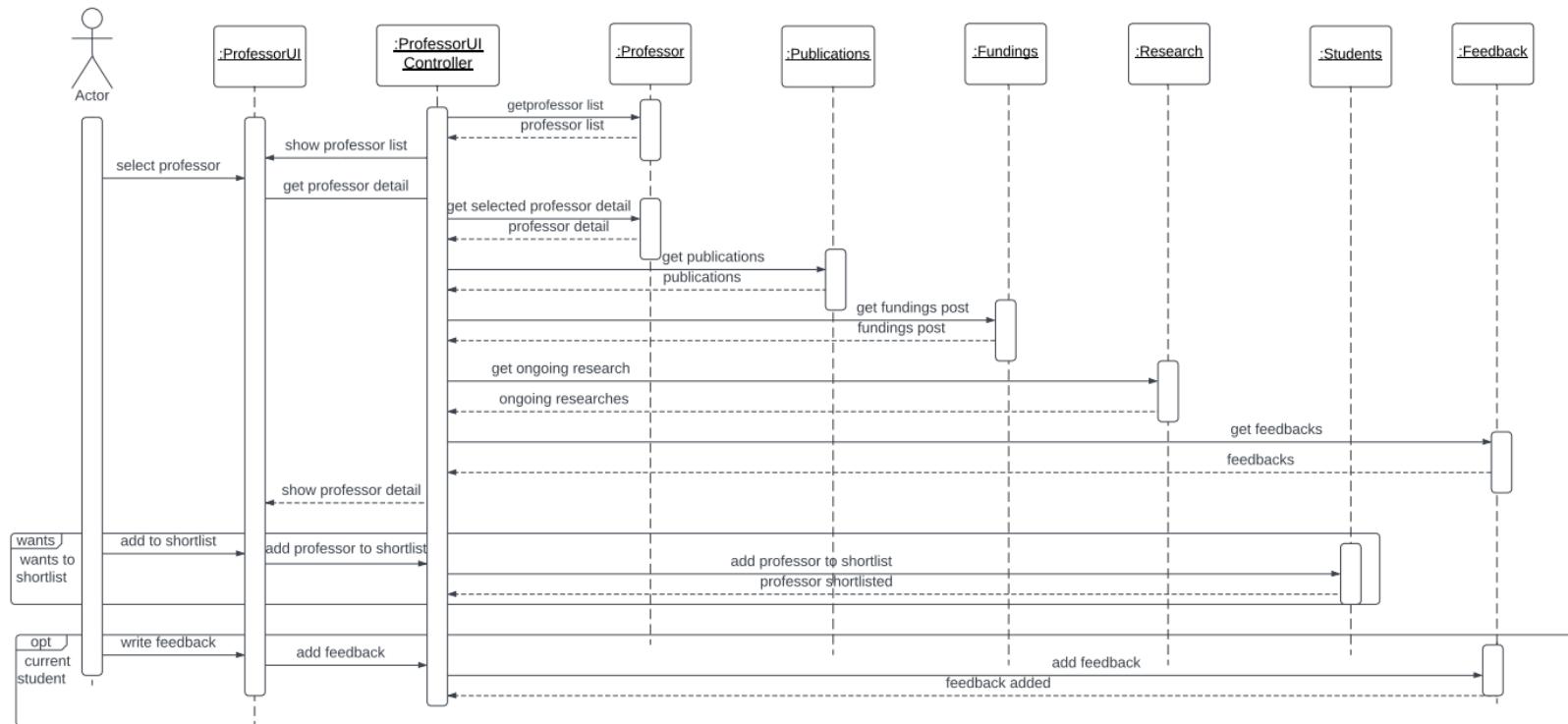


Fig: Professor Detail

Forum

Forum

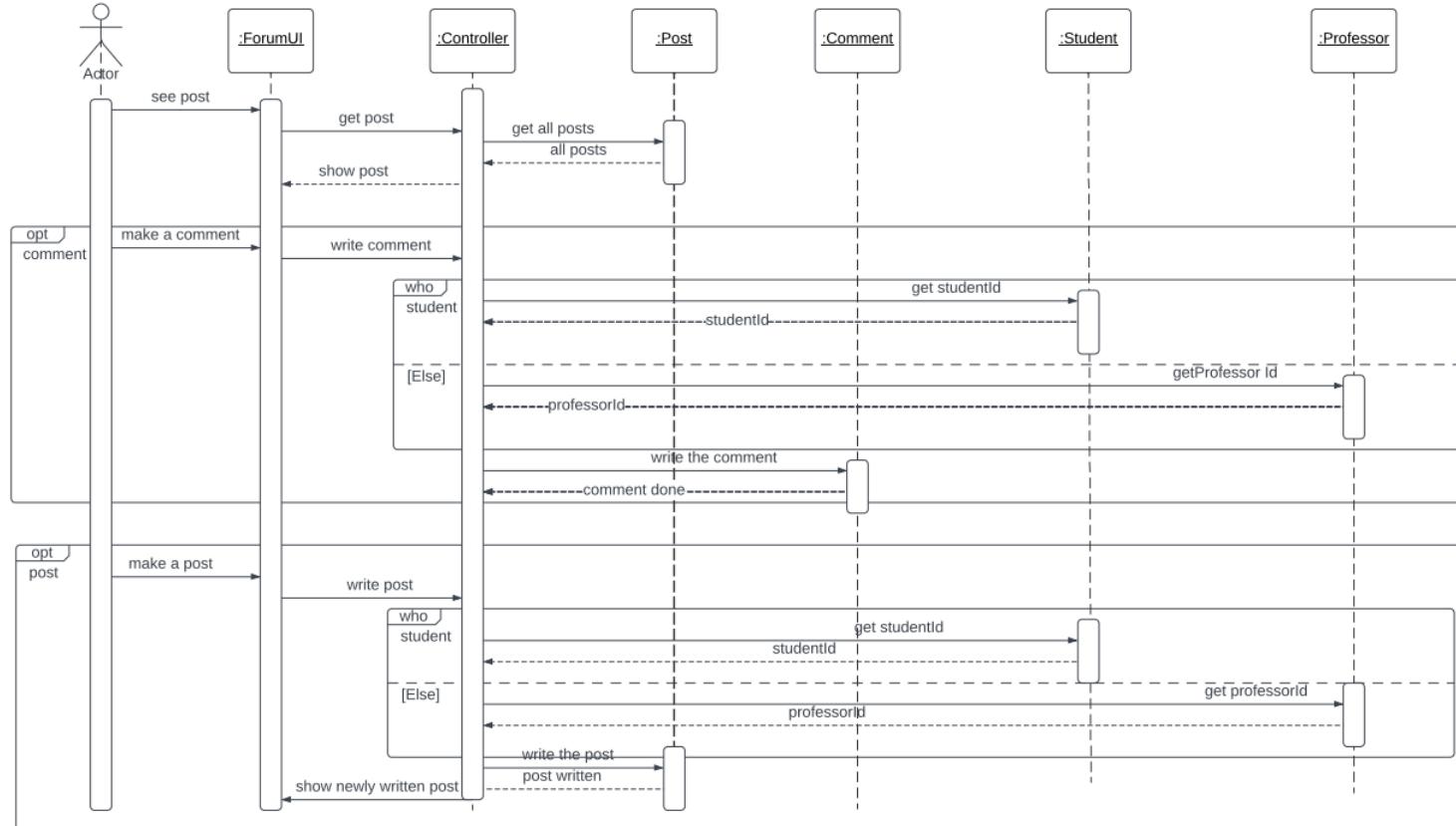


Fig: Forum

Forum: Admin

Forum (Admin)

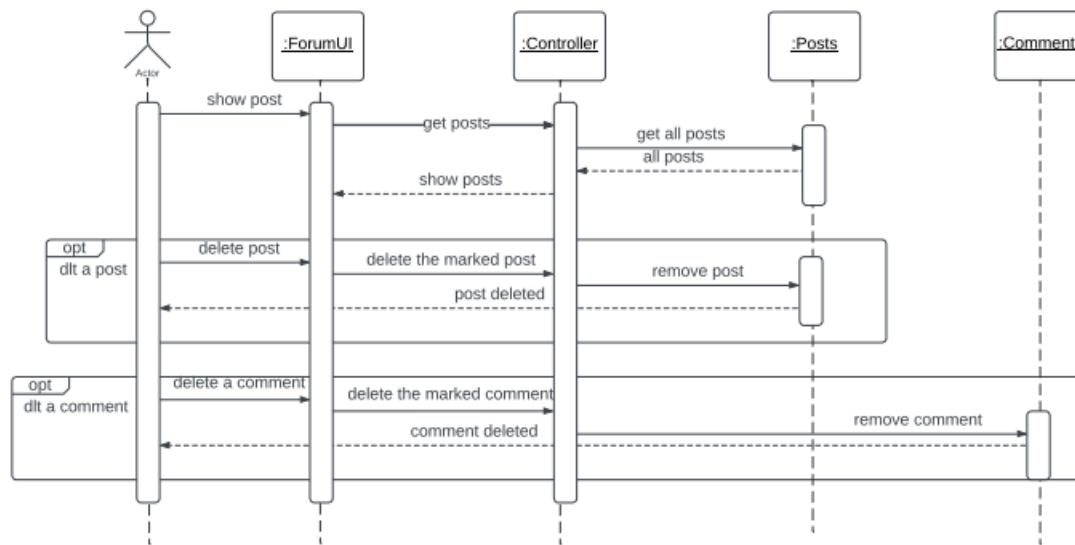


Fig: Forum (Admin)

Guidelines

Guidelines

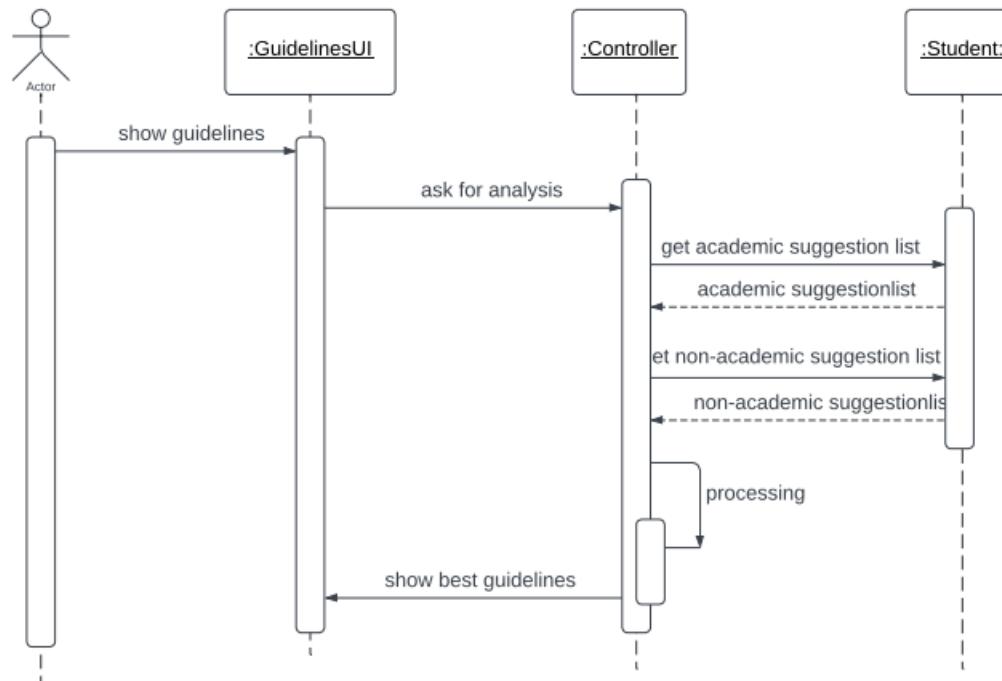


Fig: Guidelines

My Shortlist

My Shortlist

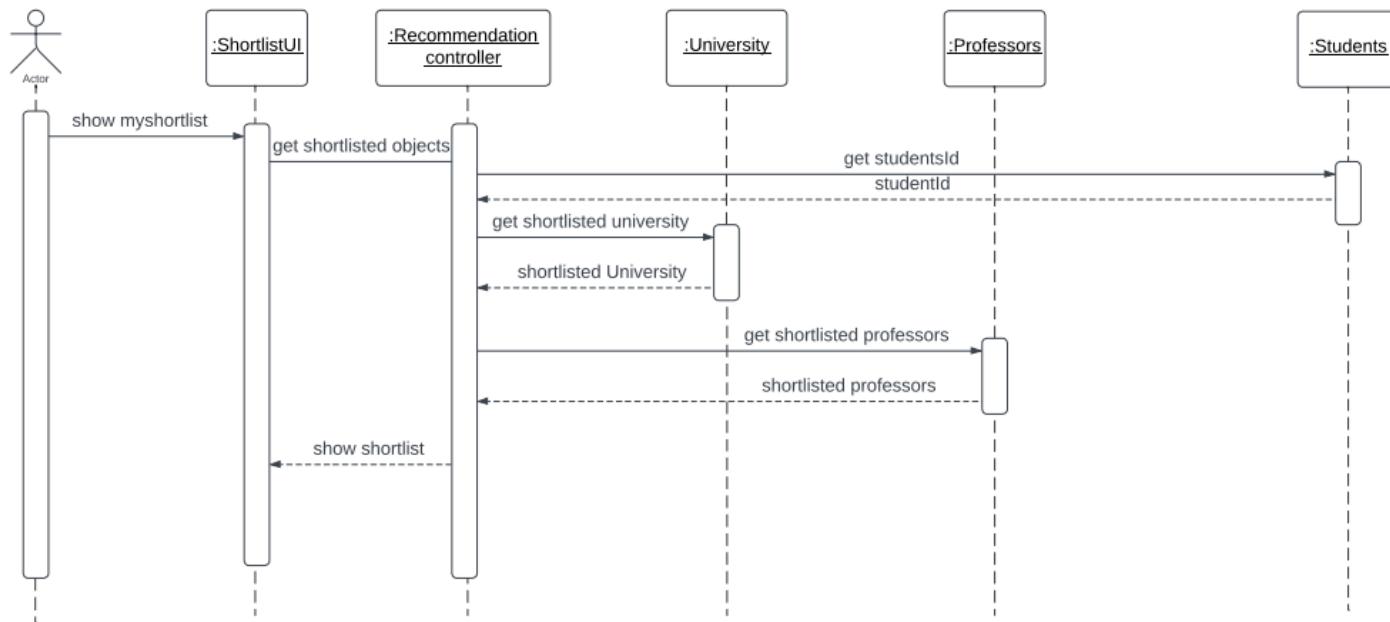


Fig: My Shortlist

Collaboration Diagram

From a software development perspective, collaboration diagrams let us see how one item interacts and collaborates with the others. A collaboration diagram in system design is primarily used to show the connections, interactions, and message exchanges between objects or components, with an emphasis on how they cooperate to deliver certain functionality.

Changes brought according to the feedback:

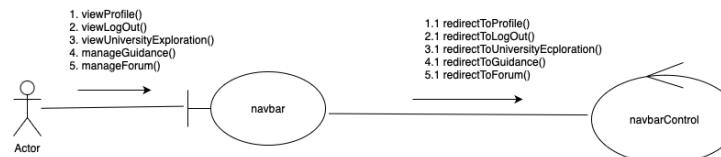
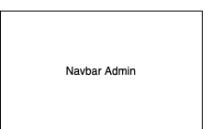
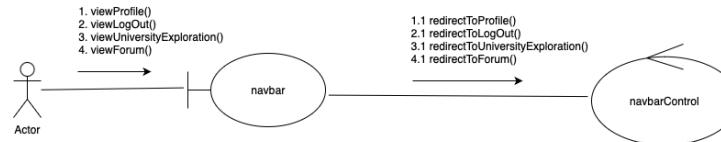
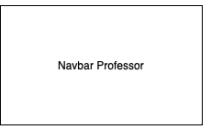
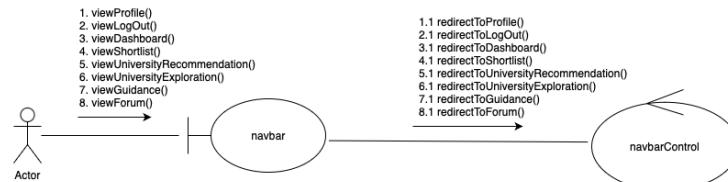
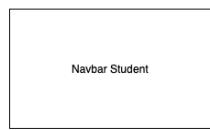
- University Exploration page
 - i. "Add to Shortlist" option is added
 - ii. New Professor exploration option along with University exploration
 - iii. User can filter with more attributes like Recommendation page.
- Recommendation Page –
"Add to shortlist" option

Collaboration Diagram

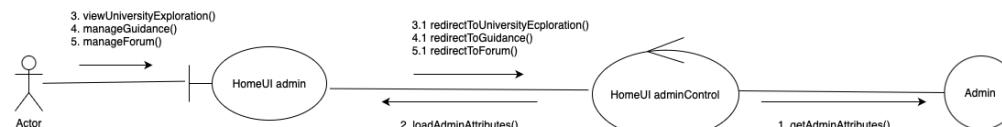
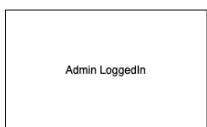
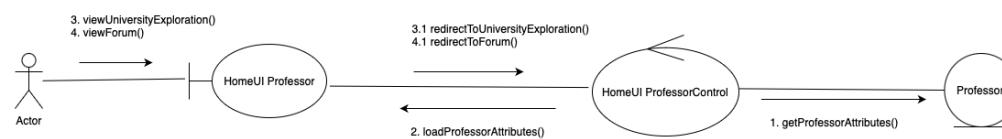
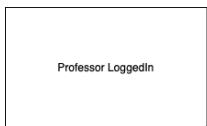
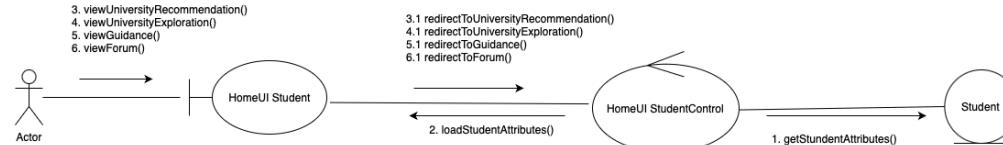
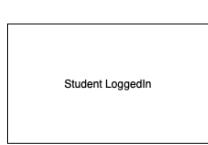
- Changes in collaboration diagram
 1. University Exploration page
 - i. "Add to Shortlist" option is added
 - ii. New Professor exploration option along with University exploration
 - iii. User can filter with more attributes like Recommendation page
 2. Recommendation Page
 - i. "Add to shortlist" option

Navbar

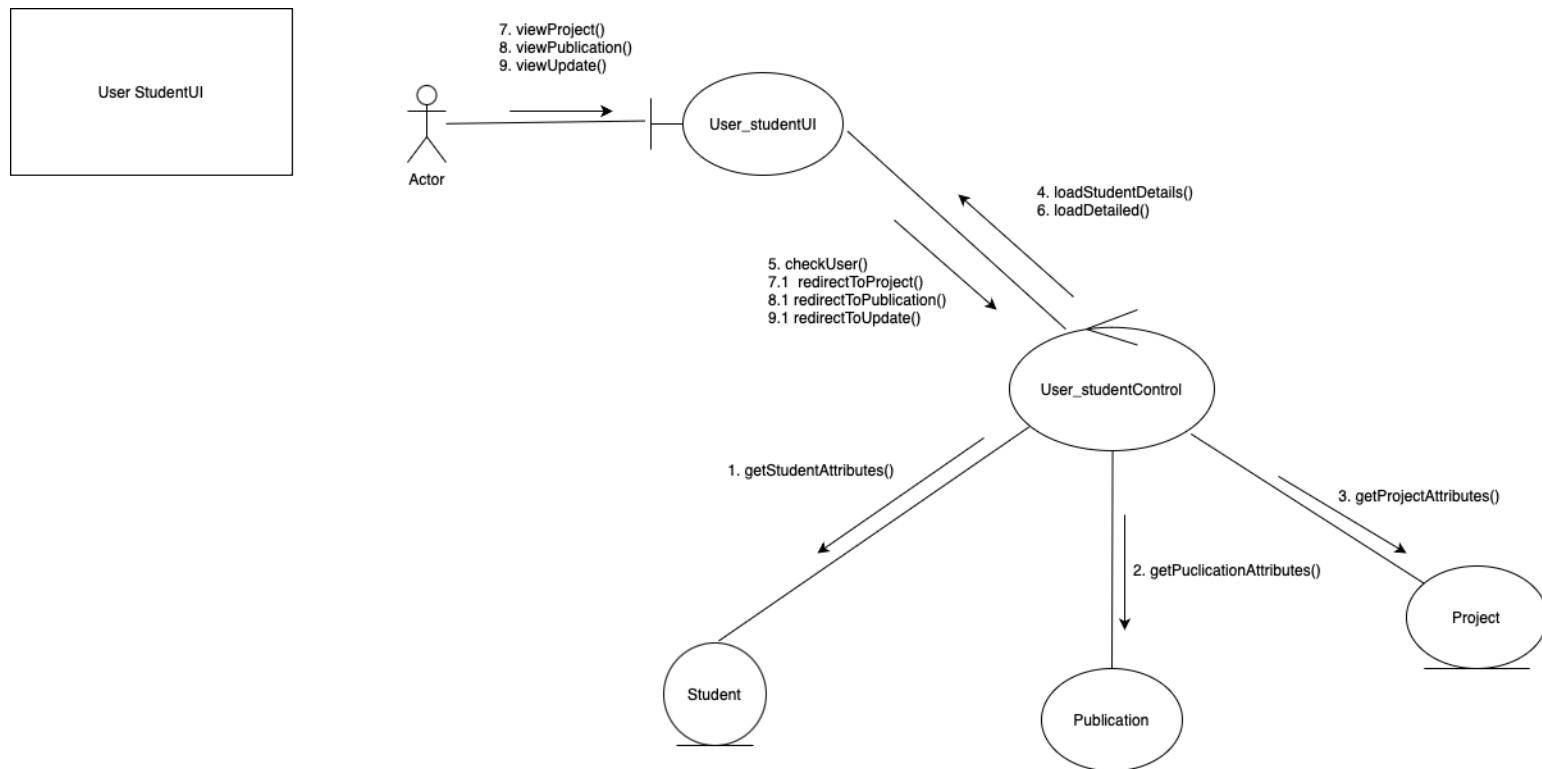
Text



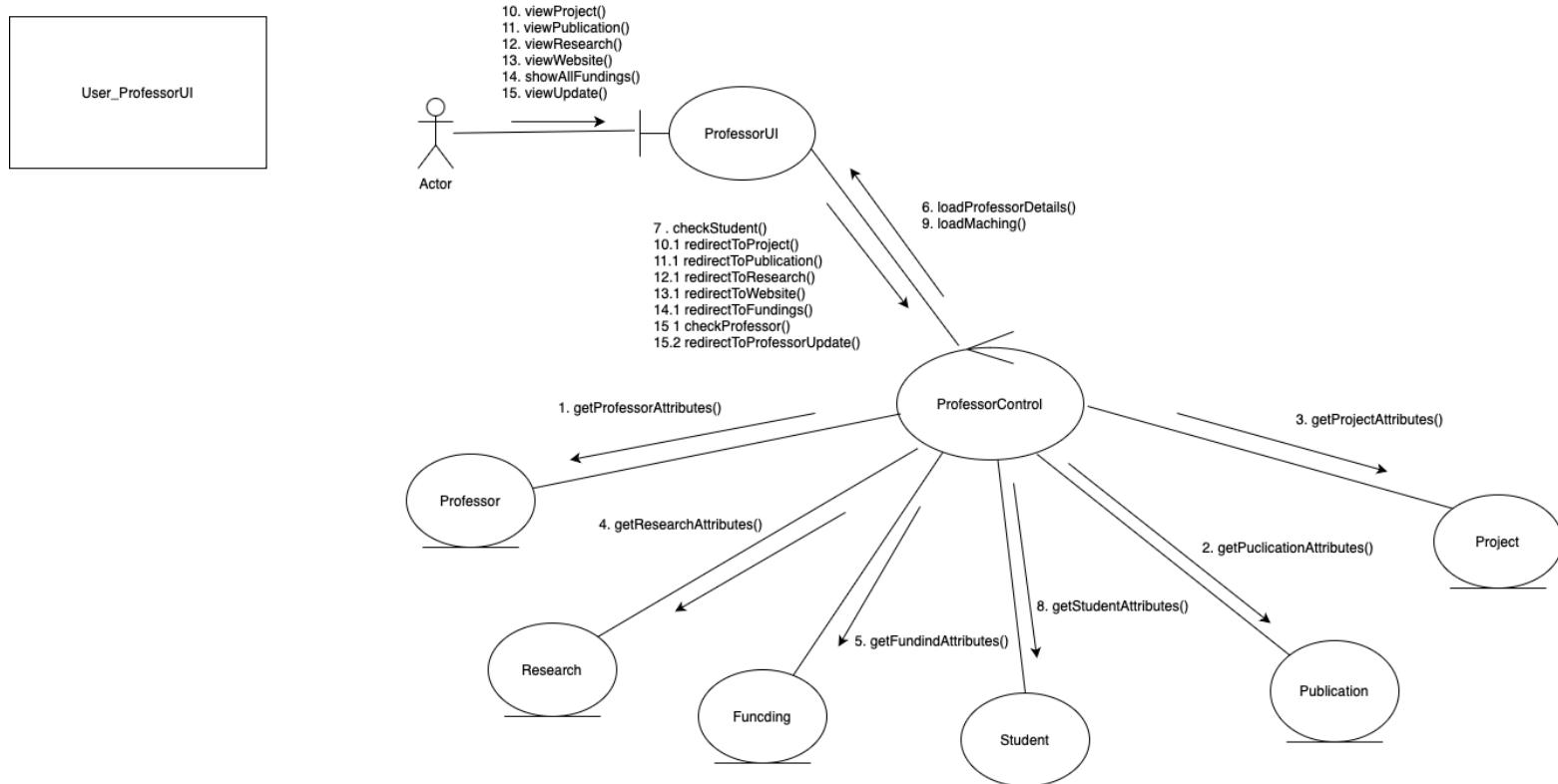
Logged In Page



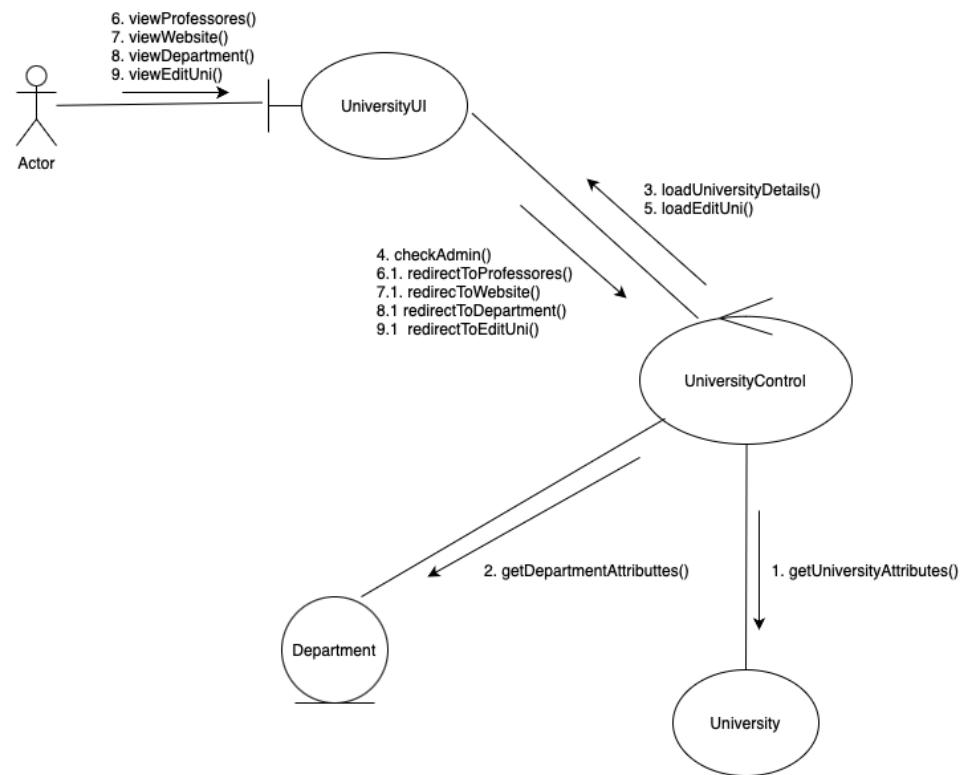
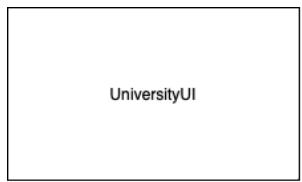
Student Profile



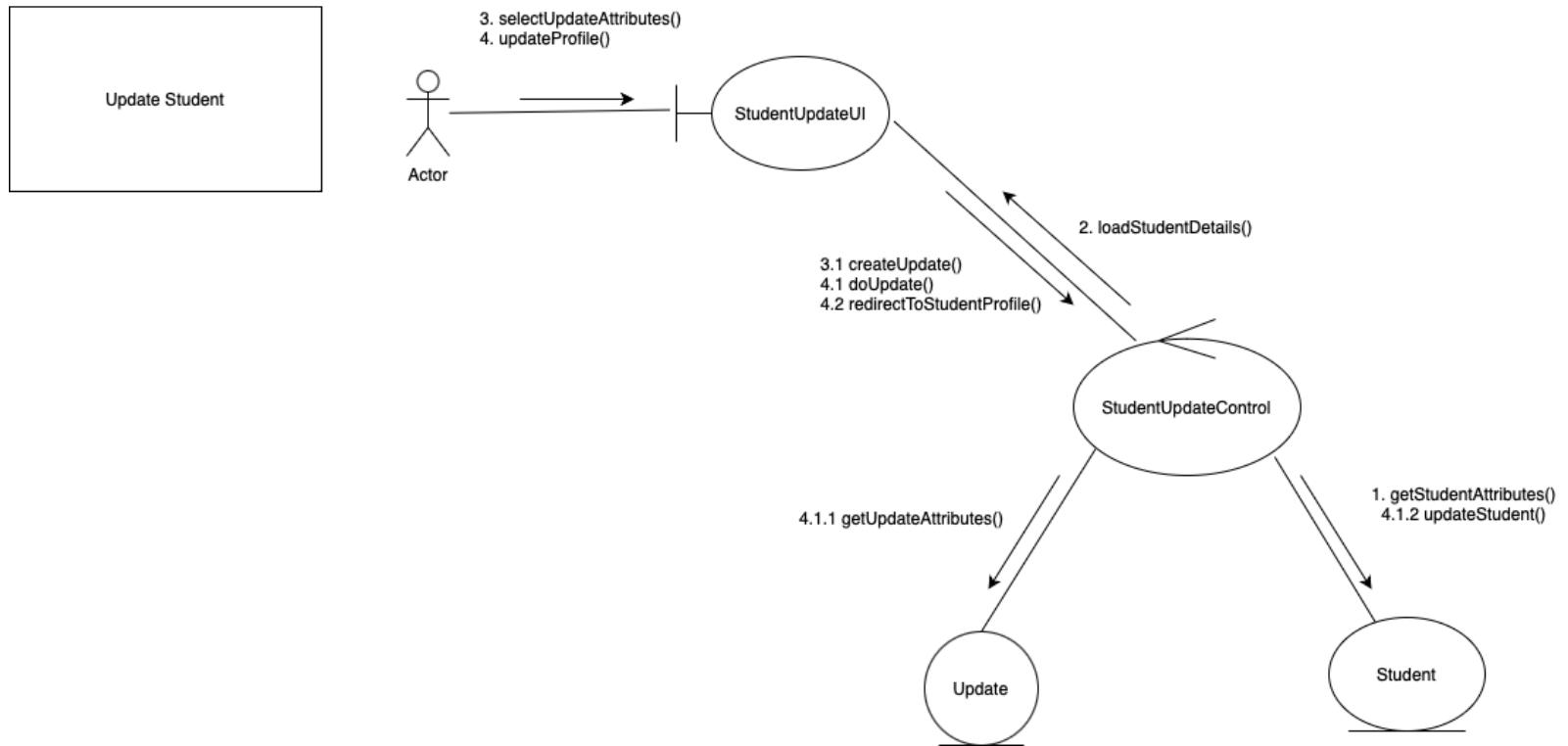
Professor Profile



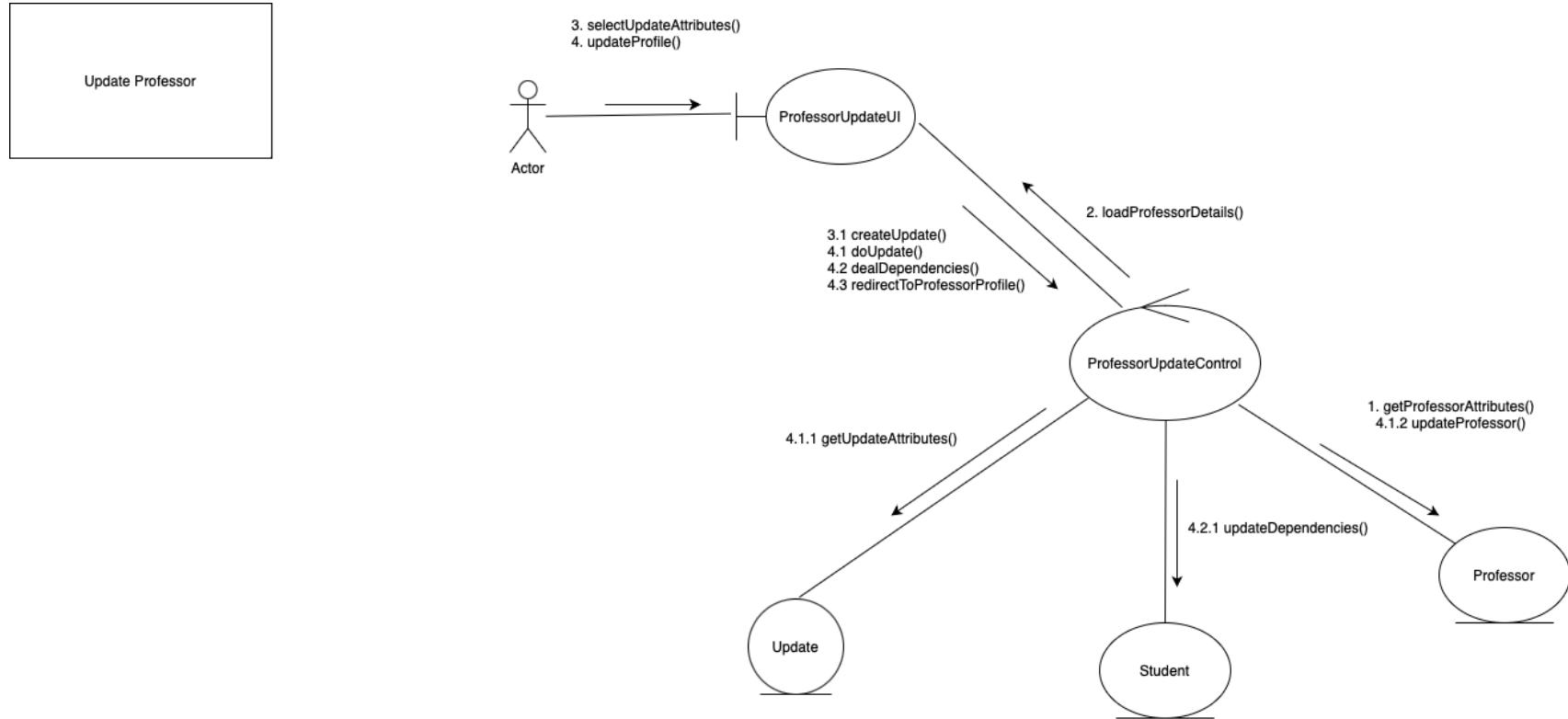
University Profile



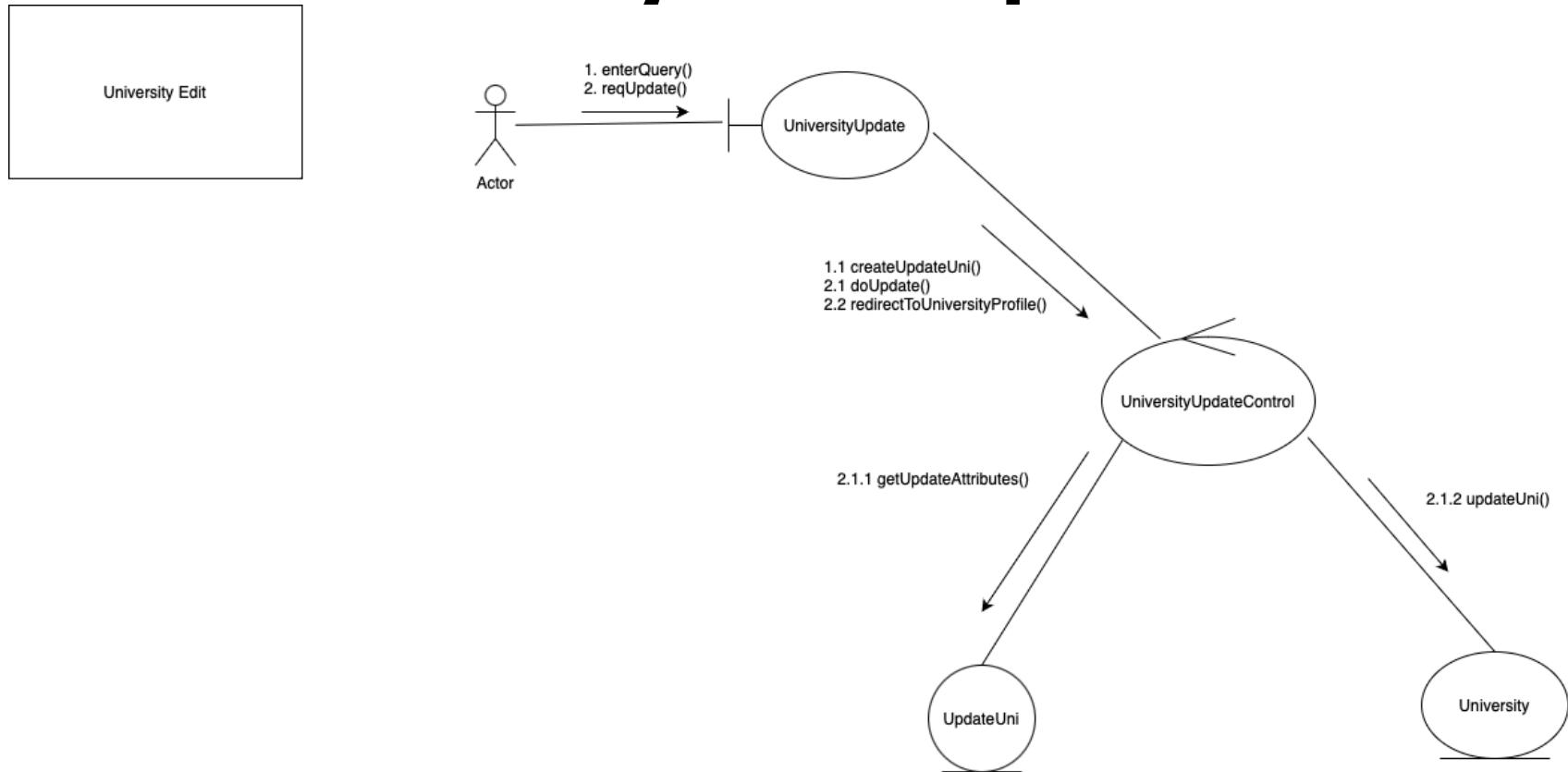
Student Update



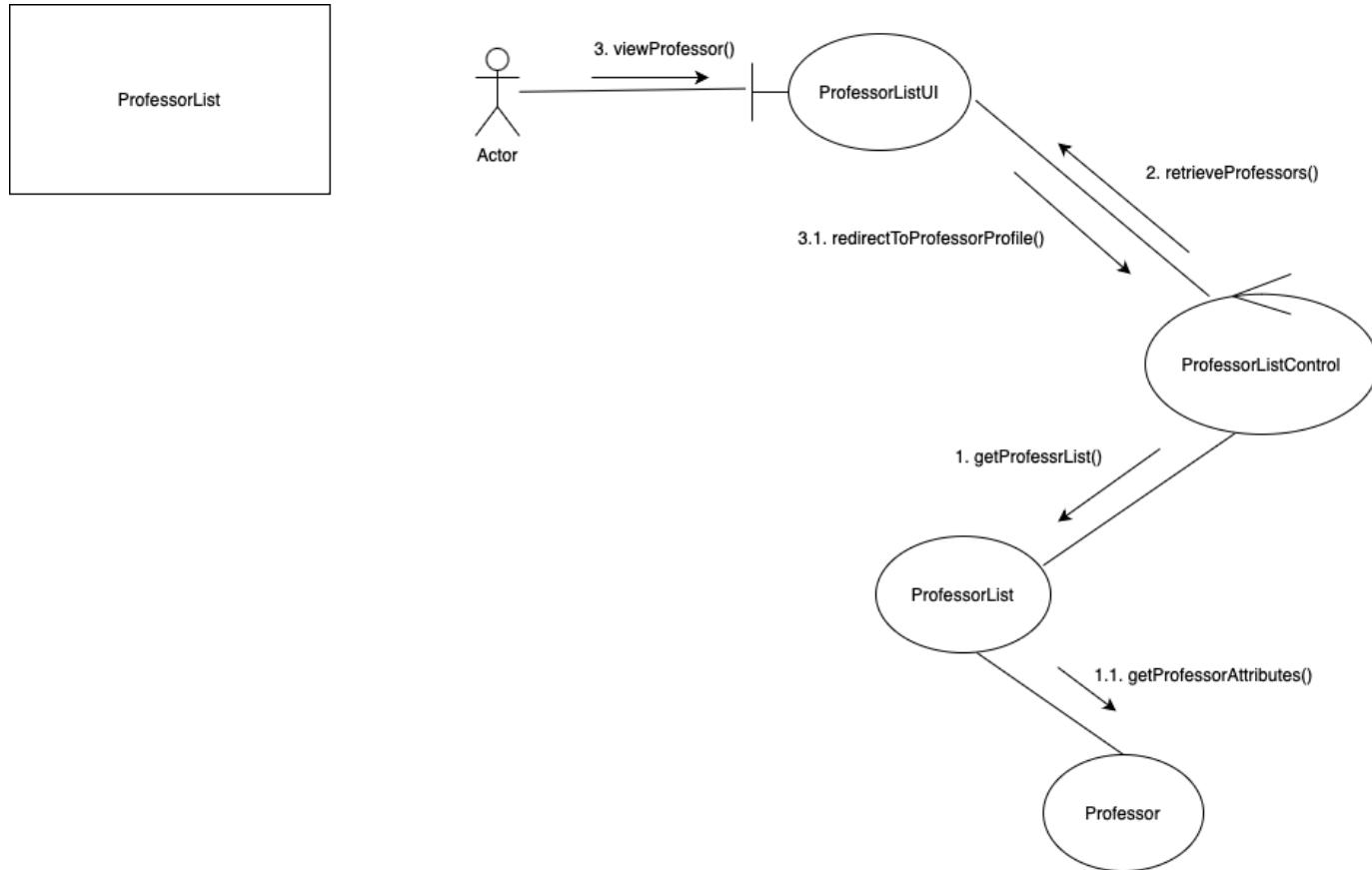
Professor Update



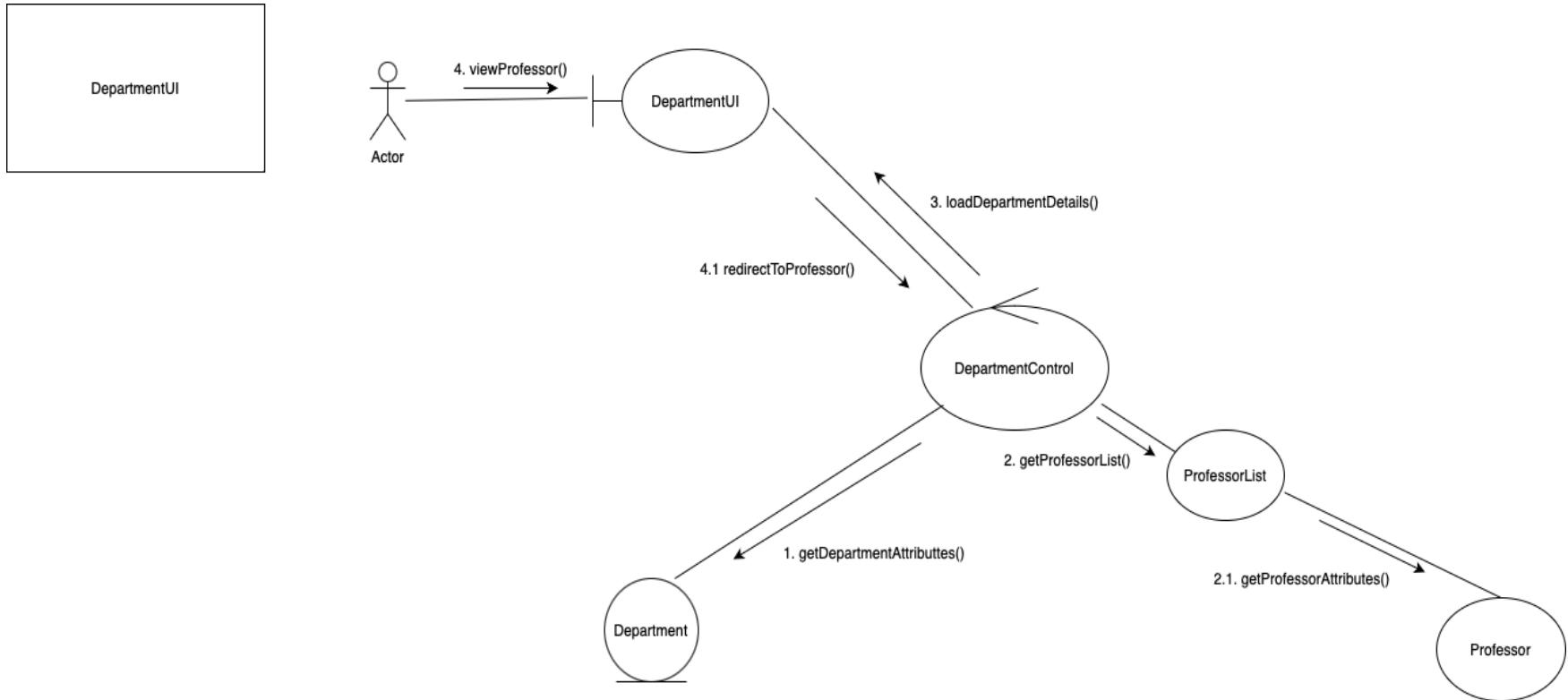
University Info Update



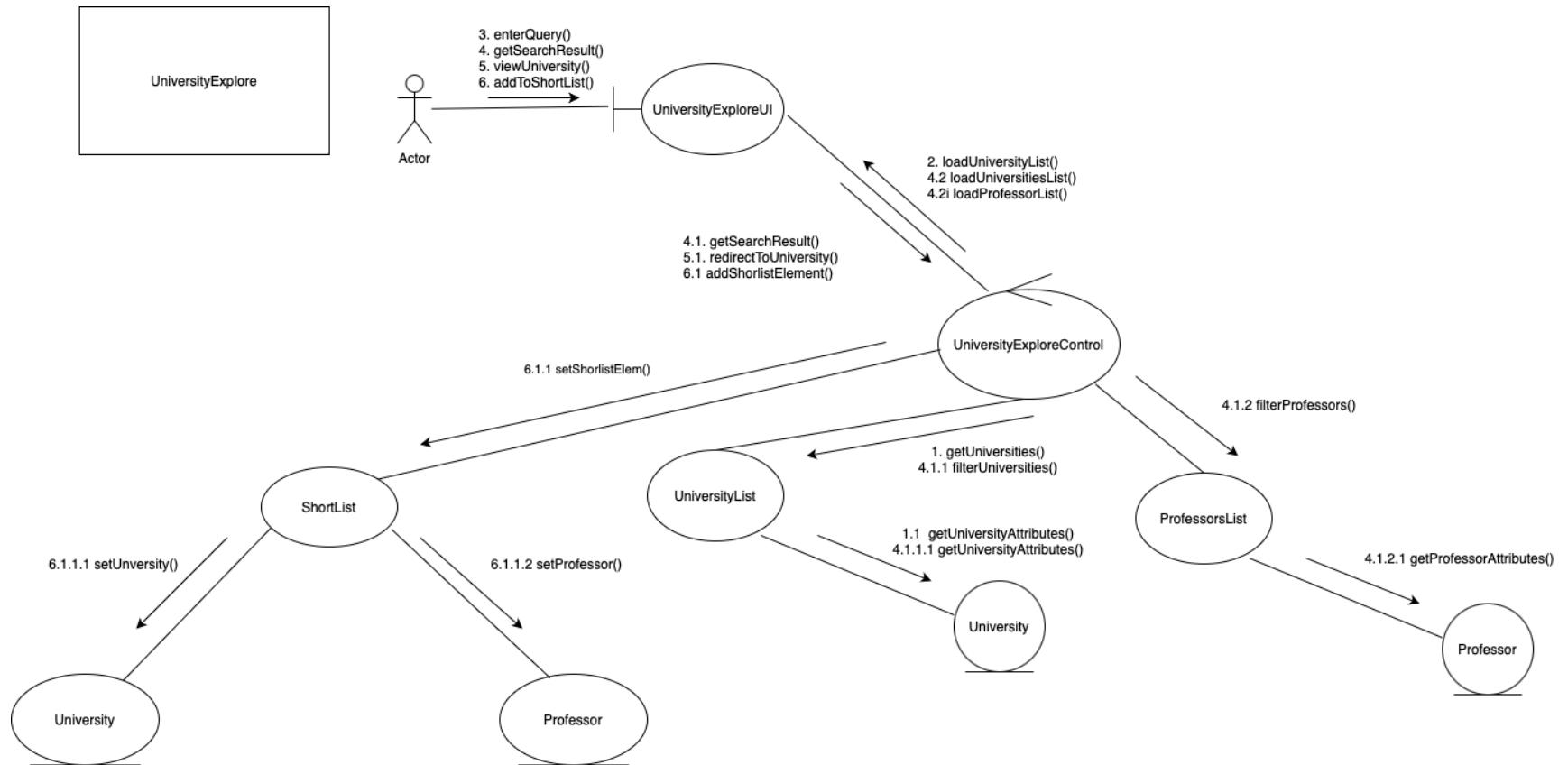
Professors' List



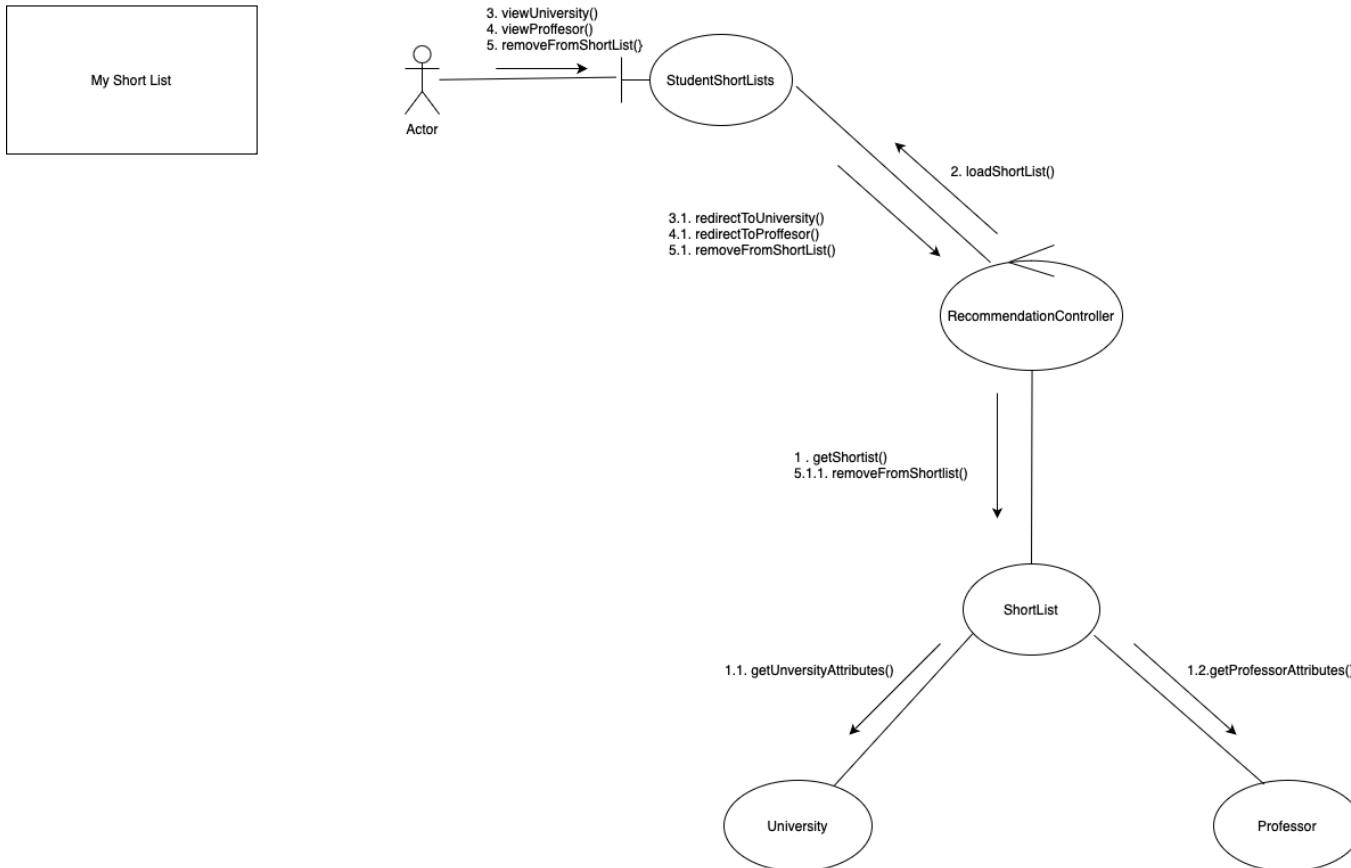
Department



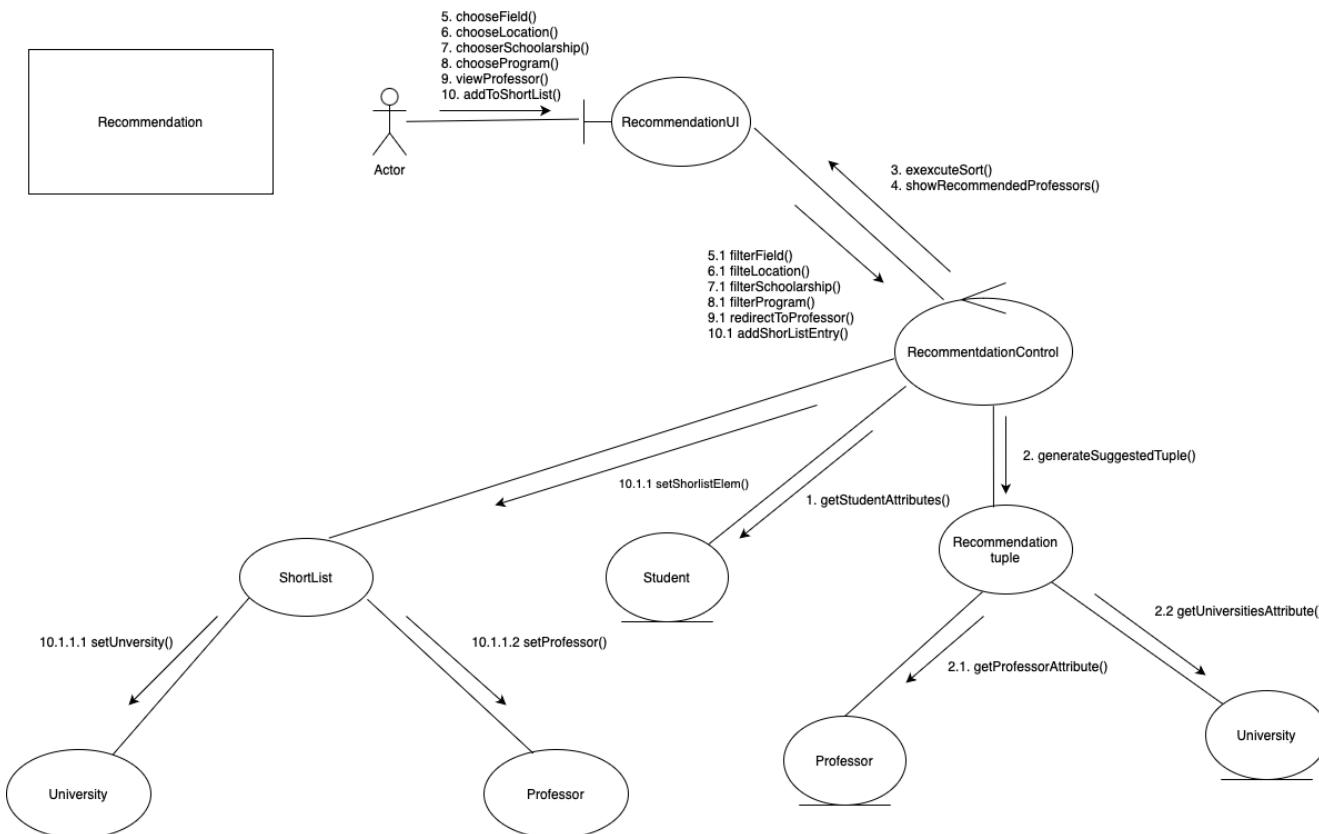
University Explore



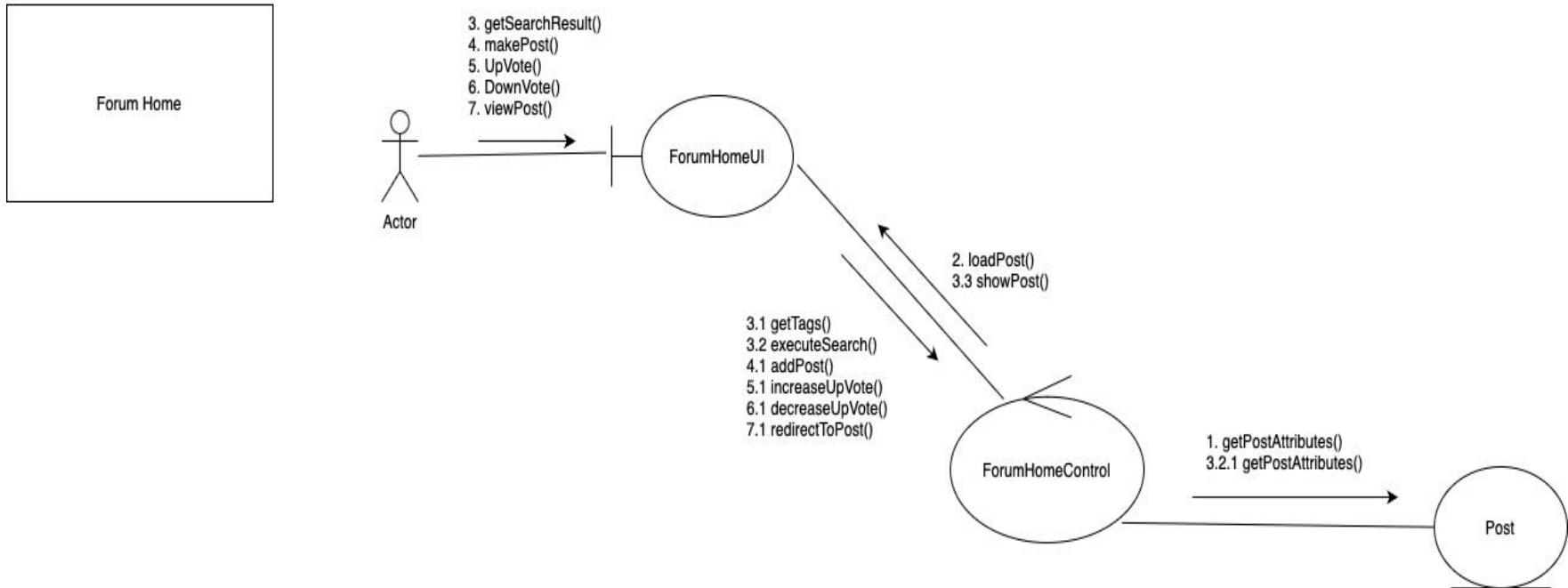
My Shortlist



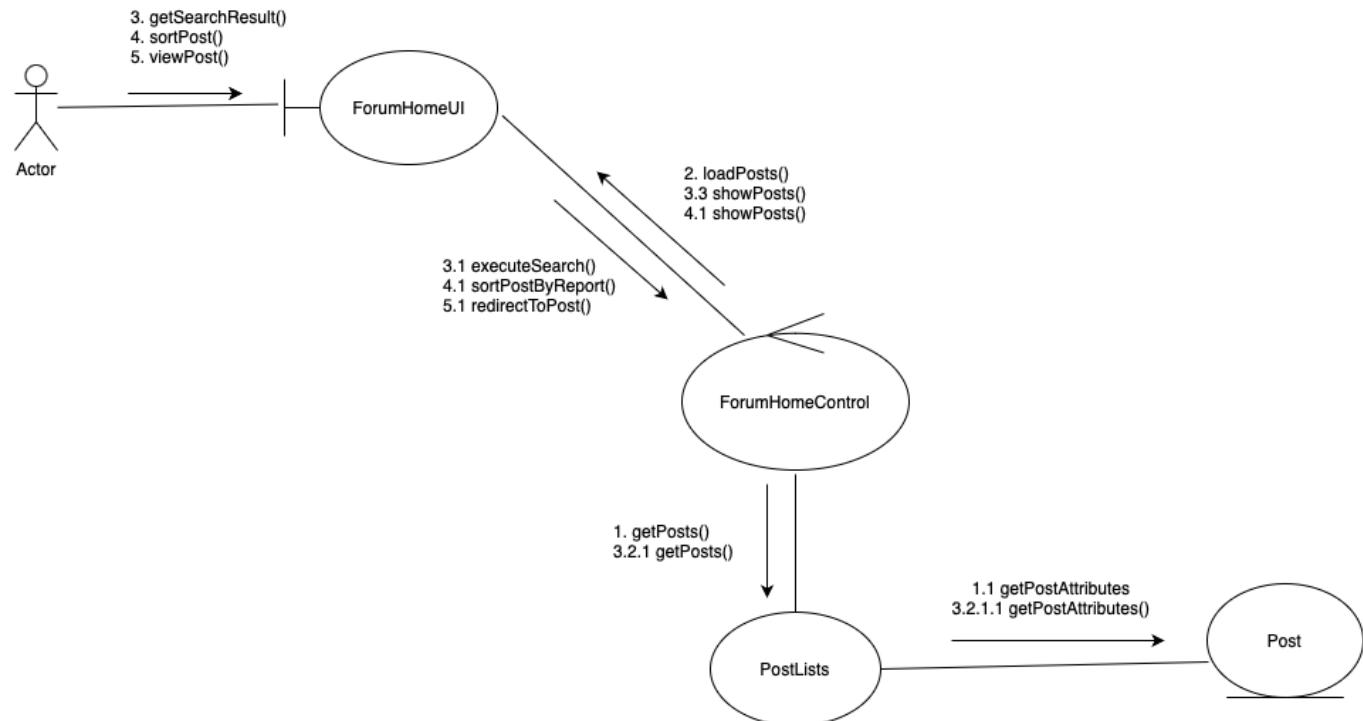
Recommendation



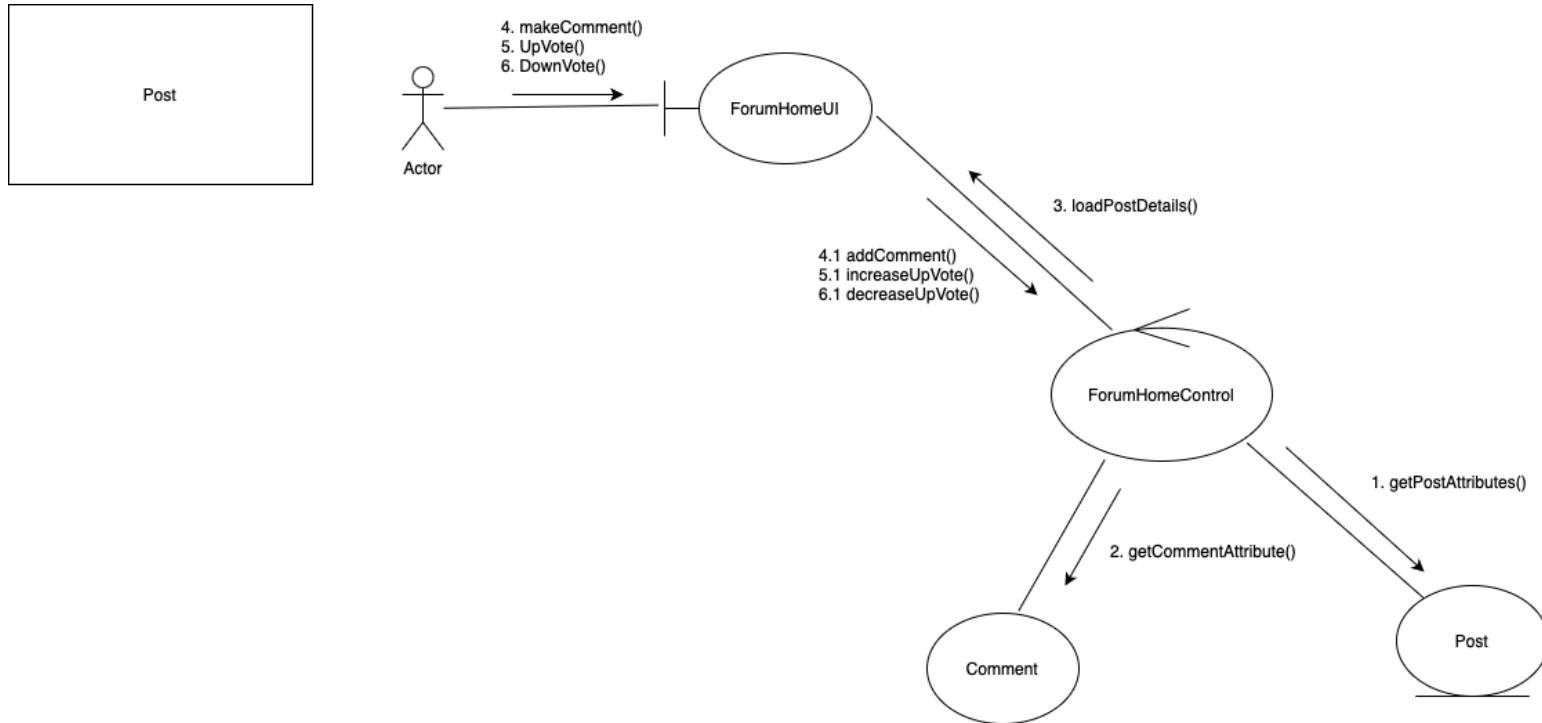
Forum (Home)



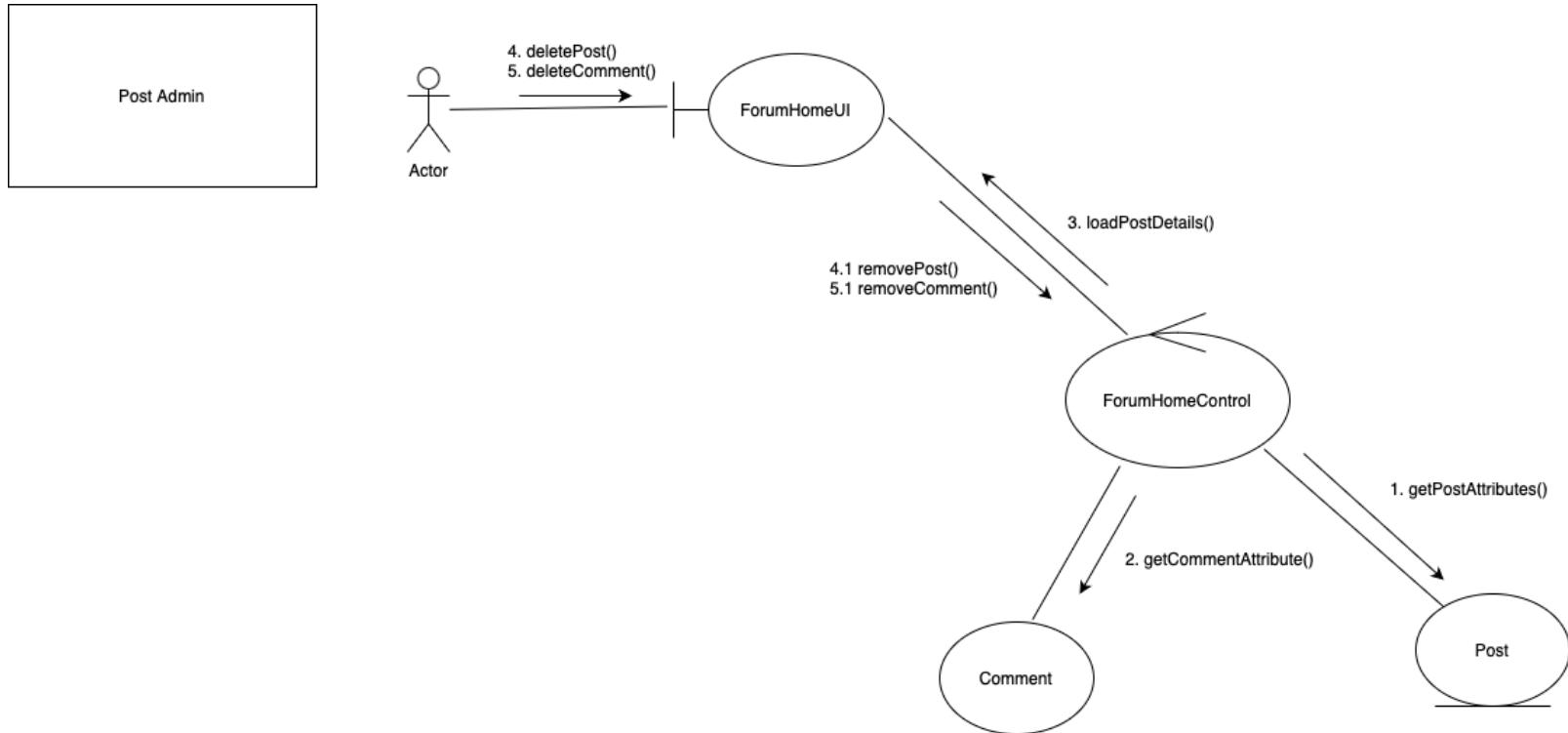
Forum (Admin)



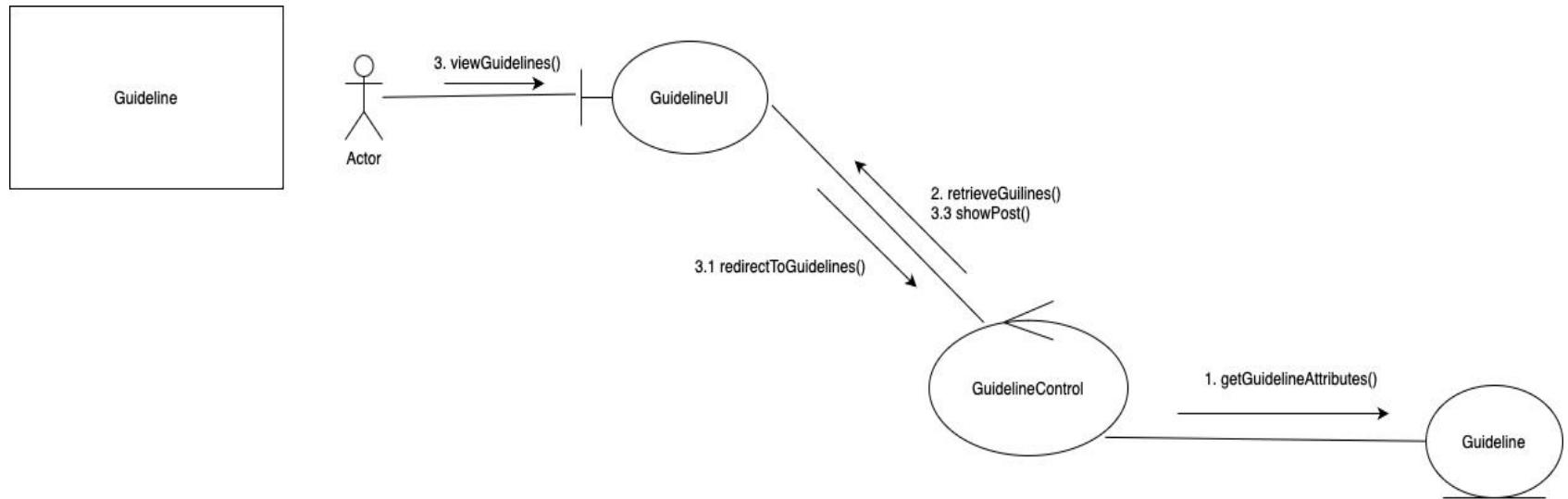
Post



Post (Admin)



Guidelines



Mock UI

Mock UI serves as both a visual representation of the system's user interface and a specification for how it should appear. The main goals of creating a mock user interface are:

- Visualization & Conceptualization
- Usability testing
- requirement clarification & requirement documentation
- requirement documentation, user feedback & validation

Changes brought based on the feedback

- 1.Added Filtering in University Recommendation
- 2.Added Admin Panel and its actions
- 3.Added Report button in comment section to report inappropriate comment by any user

Homepage



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University Exploration

Guidence

Forum



Name: Zarif Hossain

Gender: Male

Age: 22

College: BUET

Department: CSE

Email: abcd@gmail.com

Passing Year: 2025

Field of Interests: Artificial Intelligence,
Database, Machine Learning

Projects:

1. Hunterbee, <https://github.com/hossainzarif/hunterbee>

2. BolodAI, <https://github.com/hossainzarif/bolodAI>

Publications:

1. AN IMPROVED SAFETY ALGORITHM FOR ARTIFICIAL
INTELLIGENCE ENABLED PROCESSORS IN SELF DRIVING CARS,
<https://www.irojournals.com/aicn/article/view/12/5>

User Profile(Private)



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Name: Zarif Hossain
Gender: Male
Age: 22
College: BUET
Department: CSE
Email: abcd@gmail.com
Passing Year: 2025
Field of Interests: Artificial Intelligence, Database, Machine Learning
Phone No: XXXXXXXXXX
CGPA: X.XX
GRE: 3XX
IELTS: X.XX

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California [Show Result](#)

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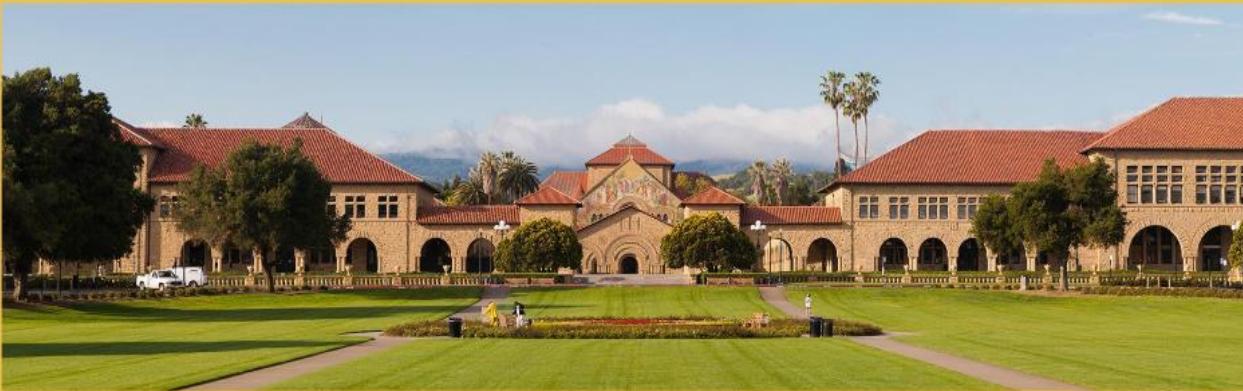
[San Francisco State University](#)

University

[!\[\]\(1d35465292847a9dc88bab44322f1d65_img.jpg\)](#)  **ResearchAbroad** [Profile](#) [Log Out](#)

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Stanford University



Stanford University, officially Leland Stanford Junior University, is a private research university in California. The campus occupies 8,180 acres, among the largest in the United States, and enrolls over 17,000 students. Stanford is widely considered to be one of the most prestigious universities in the world.

Tution fee: \$25000/yr

Living Cost: \$80000/yr

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Showing Professors



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Showing Professors Based on Your field of Interest

AI

Eberechi Eze

Jackob Henry

Networking

Donald Knuth

Professor's Profile

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Professor's Profile



Name : Eberechi Eze

University : Stanford University

Email : EbeEze123@gmail.com

Personal Website : <https://sites.google.com/site/EbeEze/home>

Official Website : <https://web.stanford.edu/EbeEze>

Field Of Interest : Networking,Deep Learning,Artificial Intelligence

Availability Of Funding : Yes

Publication Links : 1. https://scholar.google.com/citation?99vs_1mane1_avs_artificial_intelligence
2. https://scholar.google.com/citation?99vs_1mane1_wert_networking

Ongoing Researches : 1. https://sites.google.com/site/deep_learning
2. https://sites.google.com/site/ai_searching_techniques

Profile Matching : 73%

User's Shortlist

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<u>Stanford University</u>	Supervisor : <u>Eberechi Eze</u>
<u>University of California, Los Angeles</u>	Supervisor : <u>Callum Wilson</u>

Forum

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California is too costly.

Housing is costly here. Room rent is skyrocketing. Everything is too damn expensive here.....[Read More](#)

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California is too costly

Jhon Smith Housing is very costly here. Room rent is skyrocketing. Everything is too damn expensive here. Please don't come to California if you're not financially super strong.

Add a comment Comment

Comments:

 Very good guideline. Thanks a lot.
Anderson

  Report Reply

 You're Welcome
Jhon Smith

  Report Reply

1 2 3 4 Next

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How Do I Get Started in Research?

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How Do I Get Started in Research?

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How Do I Get Started in Research?

1. Brainstorm an idea or identify a problem or question. No matter how much guidance the assignment provides, an integral part of nearly any research project is allowing each researcher to come up with their own idea.
2. Use the tools you've already been given. If you just can't seem to brainstorm anything very interesting, and you've been given a vague and unhelpful prompt, your next best bet is to review a textbook or lecture notes. Skim over them and look for subjects you found interesting.

.....

Adding Post

The screenshot shows the ResearchAbroad application interface. At the top left is a back arrow icon. Next to it is a circular profile picture placeholder with a purple gradient background. To the right of the profile picture is the text "ResearchAbroad". On the far right of the top bar are two buttons: "Profile" and "Log Out". Below the top bar is a navigation menu with six items: "DashBoard", "ShortList", "University Recommendation", "University Exploration", "Guidence", and "Forum". The "University Exploration" item is highlighted with a blue background. In the center of the page, the word "Admin" is displayed. Below "Admin" is a large input field containing the placeholder text "What's on your mind...". At the bottom center of the page is a button labeled "ADD POST".

What's on your mind...

ADD POST

Admin's Profile

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Admin's Profile



Name : xyz

Email : xyz123@gmail.com

Modifications by Admin



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Admin

Reported Comment

This comment may be abusive or irrelevant to some users...

xyz.....

Cancel Delete Comment