

Software Requirements Specification

Version 1.0

18th January, 2025

Alumni Connect Portal

Jasmeen Kaur - 202311037

Manini Rajbhar - 202311049

Namra Koyani – 202311057

Pratham Popatiya - 202311065

Saransh Naik – 202311077

Submitted in partial fulfilment

Of the requirements of

CS266 Software Engineering

<< Any comments inside double brackets such as these are not part of this SRS but are comments upon this SRS example to help the reader understand the point being made.

Refer to the SRS Template for details on the purpose and rules for each section of this document.

The students who submitted these team projects were Jasmeen Kaur, Manini Rajbhar, Namra Koyani, Pratham Popatiya and Saransh Naik. >>

Table of Contents

1. Introduction.

1.1 Purpose

1.2 Definitions, acronyms, and abbreviations

1.3 Intended Audience

1.4 Project Scope

1.5 References

2. Overall description

2.1 System Environment

2.2 Product Perspective

2.3 Product functions

2.4 User characteristics

2.5 Constraints

2.6 Assumptions and dependencies

3. External Interface requirements

3.1 User interfaces

3.2 Hardware interfaces

3.3 Software interface

3.4 Communications interfaces

4. System Features

4.1 Functional Requirements

i. Use Case

ii. Description

iii. Action/Result

4.2 Non-functional Requirements

5. Other Nonfunctional Requirements

5.1 Safety Requirements

5.2 Security Requirements

5.3 Performance Requirements

List of Figures

Figure 1. System Environment

Figure 2. Admin Use Case Diagram

Figure 3. Alumni Use Case Diagram

Figure 4. Current Student Use Case Diagram

Figure 5. Faculty Use Case Diagram

1. Introduction

This section gives a scope description and overview of everything included in this SRS document. Also, the purpose for this document is described and a list of abbreviations and definitions is provided.

1.1 Purpose

The purpose of this document is to give a detailed description of the requirements for the “Alumni Connect Portal” software. It will illustrate the purpose and complete declaration for the development of system. It will also explain system constraints and interface. Once finalized, this document will state what must be accomplished for the system to be considered finished.

1.2 Definitions, acronyms, and abbreviations

| Term | Definition |
|--|--|
| User (Alumni, current Student, Faculty) | Someone who interacts with the web-application. |
| Admin/Administrator | System administrator who is given specific permission for managing and controlling the system |
| Web-Portal | A web-platform that serves as a centralized interface where alumni, students, and administrators can interact, access resources, share opportunities, and stay connected with their alma mater. |
| Stakeholders | Individuals or groups who have an interest in the project's outcome, including users, developers, clients, and other parties affected by the system. Their needs and expectations shape the requirements and scope of the project. |
| System Environment | External factors and conditions that the system interacts with. |

| | |
|-----------|--|
| Web-based | Systems that are accessed and operated through a web browser over the internet, without requiring installation on a user's device. |
| Interface | It is a shared boundary or point of interaction between two or more systems enabling communication and data exchange between them. |

1.3 Intended Audience

The intended audience for the Alumni Connect Portal includes alumni who wish to network with peers, mentor students, and access exclusive opportunities. It is also designed for current students seeking guidance, and career support from alumni. Administrators play a key role in managing portal activities, events, and resources, ensuring a smooth experience for all users.

Faculty members can use the platform to connect with alumni for academic collaborations or professional initiatives.

1.4 Product Scope

The Alumni Connect Portal is web-designed to bring alumni, students, faculty, and the institution closer together in a meaningful and engaging way. It provides a platform where alumni can stay connected with their alma mater, share valuable opportunities, mentor students, and contribute to the institution's growth. For students, it offers a chance to learn from alumni, gain career guidance, and explore opportunities in their field. Faculty and administrators can use the portal to manage alumni interactions, organize events, and track contributions effectively.

With features like personalized profiles, job postings, event management and messaging the portal creates a space where everyone feels connected and valued. It's more than just a tool—it's a way to strengthen relationships, encourage

collaboration, and build a vibrant alumni community that continues to grow and thrive.

1.5 References

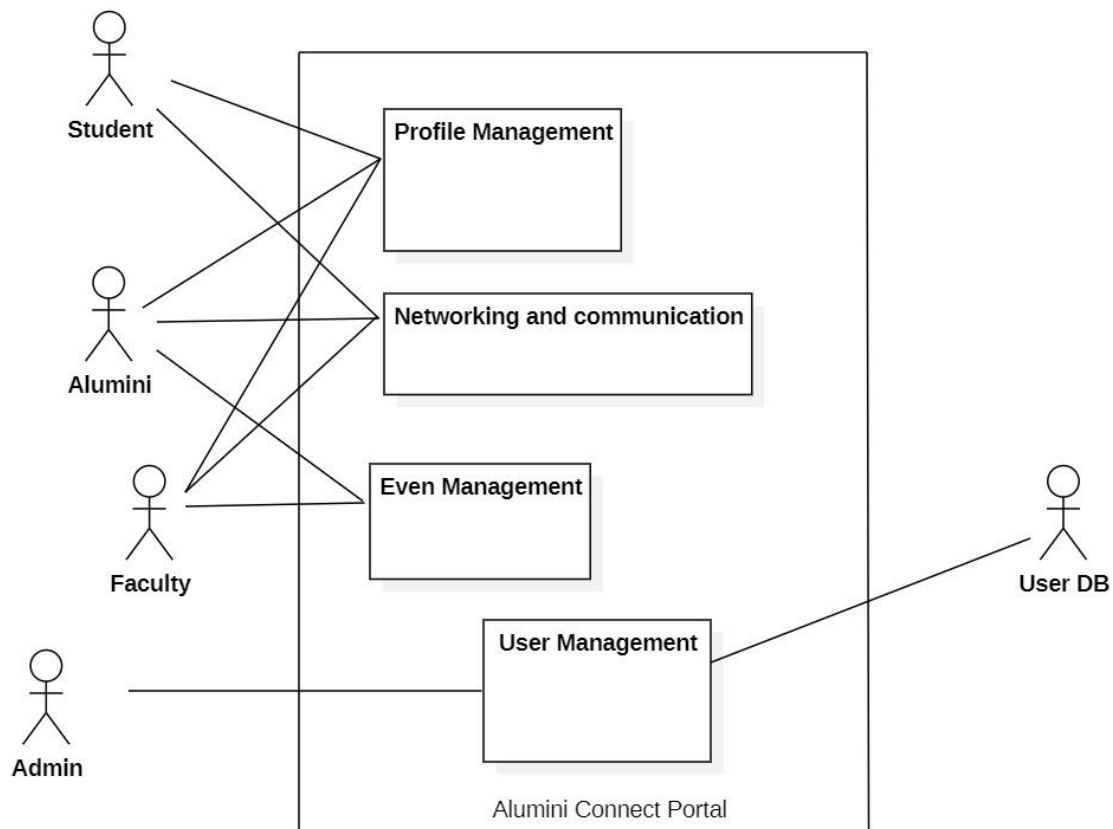
[1] IEEE Software Engineering Standards Committee, “IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications”, October 20, 1998

2.Overall description

This section will give an overview of the whole web-application. The Alumni connect portal will be explained in its context to show how it interacts with other systems and introduce the basic functionality of it. It will also describe what type of stakeholders that will use the portal and what functionality is available for each type. At last, the constraints and assumptions for the system will be presented.

2.1 System Environment

Fig 1. System Environment



The Alumni Connect Portal has four active actors and one cooperating system.

The Alumni, Current Students, and Faculty access the Alumni Connect Portal through the Internet. Any communication between Alumni, Faculty, and Students is facilitated through the portal's messaging system. The admin accesses the entire system directly to manage users and events. There is an integration with a (pre-existing) Institutional Database for user verification and data retrieval.

2.2 Product perspective

This project is a web-based platform created to make stronger connections between alumni, current students, faculty, and the institution. It brings together a variety of features like alumni directories, mentorship opportunities and event management all in one easy-to-use interface. This portal acts as a communication hub for alumni to stay engaged with their alma mater, while offering students valuable career guidance and networking opportunities. By connecting with the institution's existing databases and systems, the platform ensures that everyone has access to the latest information on alumni, upcoming events, and academic resources.

2.3 Product functions

The project is designed to help alumni and students stay connected in an easy and efficient way. Alumni can create and update their profiles, providing both personal and professional information, and upload relevant documents like resumes or certificates. This feature makes it easy for them to showcase their career journey and stay engaged with the institution.

Communication between different users is made simple with the direct messaging system. This feature allows them to reach out to one another for networking, guidance, or mentorship. Whether it's a student looking for career advice or an alumni sharing opportunities, it helps foster connections that benefit both. They can organize events like webinars, reunions, or networking meetups

Admins play a crucial role in managing the portal. The Admin Dashboard allows them to monitor activities on the platform, manage user accounts, publish important announcements, and ensure that everything runs smoothly.

The portal also features a **Search** system, enabling users to easily find alumni profiles, events, or mentorship opportunities based on specific interests or criteria. Whether a user is looking for career advice or an upcoming event, this feature helps them quickly navigate the platform and find what they need.

2.4 User characteristics

There are three types of users who interact with the **Alumni Connect Portal**, each with distinct roles and requirements.

1. **Alumni:** Alumni are one of the primary users of the portal. They can create and update their profiles, showcasing their personal and professional information. They use the platform to network with fellow alumni, participate in mentorship programs, access job opportunities, and engage with events. Their main interaction with the portal is to maintain their profiles and stay connected with their alma mater.
2. **Students:** Current students are another important group of users. They use the portal to find career guidance, connect with alumni for mentorship, and access job or internship postings. Students also participate in events and webinars organized by alumni or faculty members. Their primary goal is to leverage the platform to enhance their academic and career prospects by networking with alumni and staying updated on opportunities.
3. **Administrators:** Administrators manage the overall functioning of the Alumni Connect Portal. They are responsible for overseeing user accounts, maintaining the accuracy of the data, and ensuring smooth platform operations. Administrators can monitor activities, publish announcements, organize events, and manage both alumni and student profiles. They ensure that all interactions on the platform are in line with the institution's guidelines and goals.
4. **Faculty:** Faculty members interact with the portal to facilitate connections between students and alumni. They may participate in academic collaborations, share opportunities for students, or invite alumni for guest lectures or industry insights. Faculty can also access alumni profiles and event information, contributing to the development of academic programs and student engagement.

2.5 Constraints

The Alumni Connect Portal is constrained by the system's dependency on the institution's existing databases. Since the portal must integrate with these

databases to fetch up-to-date information about alumni, events, and student records, any limitations or inconsistencies in the database structure can affect the portal's performance. If the database experiences high traffic or is unable to handle large data volumes, it may cause delays or errors when accessing the required information.

The **Internet connection** also plays a critical role in the portal's functionality. Since the portal fetches data from the server in real-time, a stable and fast internet connection is necessary for smooth performance. Inconsistent or slow internet speeds can result in delayed loading times for profiles, events, and other data, negatively impacting user experience.

Both the **web portal** and **mobile applications** are constrained by **server capacity**. As the portal grows and attracts more users, the server may experience higher traffic and struggle to manage the volume of data and requests. This could lead to slower response times, especially during peak usage times. Adequate server resources are required to ensure that users can access the portal seamlessly and without interruptions.

2.6 Assumptions and dependencies

One assumption about the **Alumni Connect Portal** is that it will be accessed on devices with sufficient performance capabilities. If users access the portal on outdated devices or those running low on hardware resources, such as memory or processing power, certain features of the platform may not function as intended or may perform slowly.

Another assumption is that the institutional database and related systems are consistently updated and structured in a standardized manner. If the database contains incomplete or inaccurate information, or if its format varies, the integration and data retrieval processes of the portal might not work as specified in this document. This could require additional adjustments to ensure compatibility.

The portal also assumes that users will have reliable internet access. If the internet connection is unstable or slow, users may experience delays in accessing profiles, events, or messaging features, which could hinder the intended user experience.

3.External Interface Requirements

This section outlines the specific requirements of the Alumni Connect Portal, including the user interfaces, hardware, software, and communication interfaces essential for the system to function effectively.

3.1 User Interface

The Alumni Connect Portal provides a user-friendly and intuitive interface designed to accommodate alumni, current students, faculty, and administrators. The web interface is accessible through modern web browsers such as Chrome, Firefox, Edge, and Safari. It includes features such as login and registration pages, personalized dashboards for managing profiles, event registrations, and networking functionalities. Additionally, the portal ensures mobile compatibility, offering either a responsive mobile web interface. These interfaces provide seamless navigation and support for push notifications to keep users updated about events, job opportunities, and new messages.

3.2 Hardware Interface

The portal requires minimal client-side hardware, including desktops, laptops, tablets, or smartphones with a reliable internet connection. These devices should run on modern operating systems and have sufficient processing power to handle the functionalities of the portal. On the server side, the system should be hosted on robust and secure servers to manage large-scale data processing and user requests effectively.

3.3 Software Interface

The Alumni Connect Portal relies on a backend system built on a scalable and secure architecture. It includes user authentication modules, data storage systems, and real-time notification services. The software should integrate seamlessly with the existing institutional database to verify user identities and retrieve relevant information. Additionally, the portal supports email notifications and in-app messaging services to facilitate smooth communication between alumni, faculty, and students.

3.4 Communication Interface

The portal facilitates effective communication through email notifications, which are triggered for events, job postings, and other updates. An integrated messaging system within the portal allows alumni, faculty, and students to communicate directly. The system also supports real-time notifications for important updates, ensuring users are consistently informed about relevant activities and announcements.

4. System Features

4.1 Functional Requirements

This section outlines the use cases for each of the active actors in the Alumni Connect Portal. Each actor—alumni, current students, faculty, and admin—has distinct use cases based on their role and interactions with the system

4.1.1 Admin use case: The admin has following use cases:

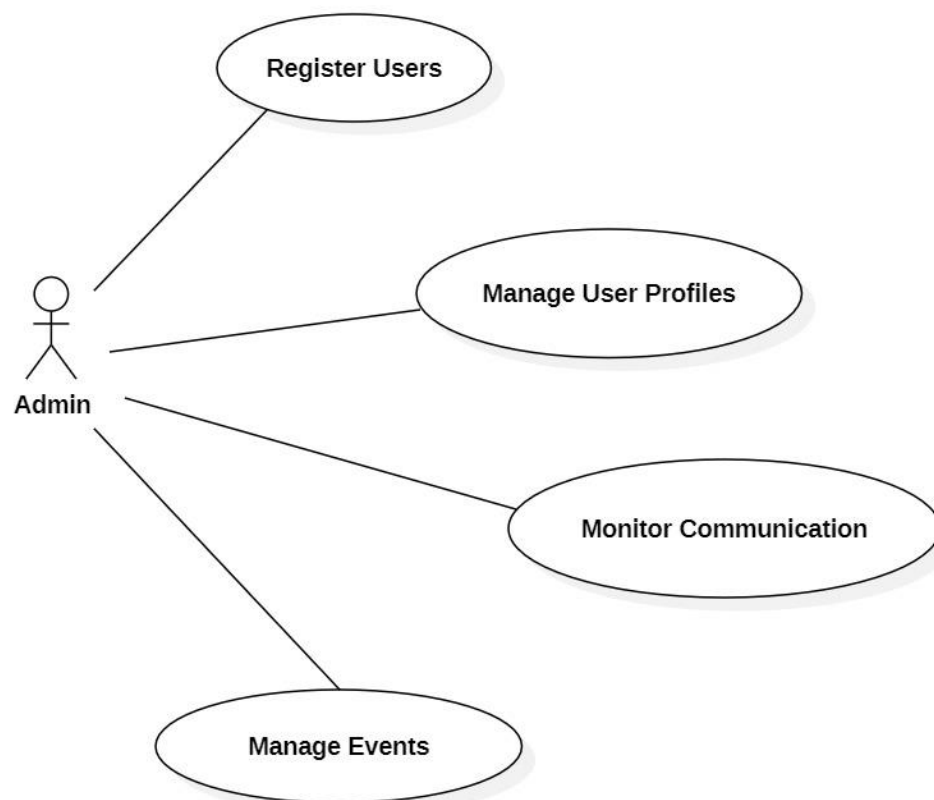
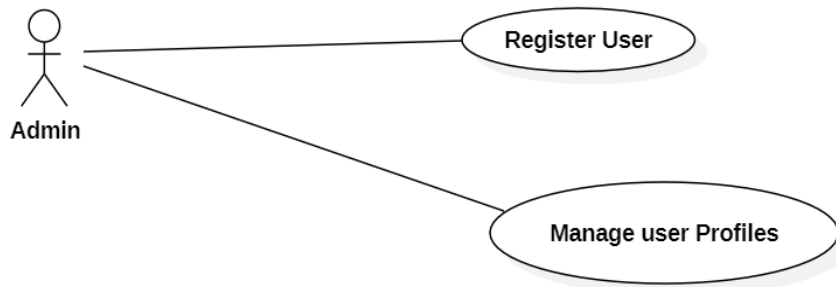


Fig 2. Admin Use Case

Use Cases

Register User and Manage User Profile Use Case

Diagram:

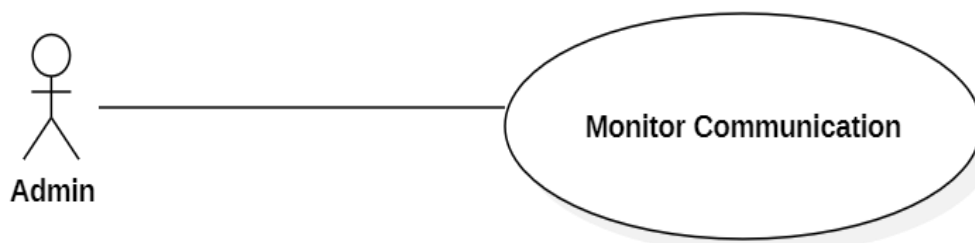


Brief Description: The admin manages users by approving or rejecting registration requests, and updating, deactivating user accounts and monitor the contents of the portal for safety.

Initial Step-By-Step Description

1. The Admin logs into the portal and navigates to the section for managing user registrations.
2. The system displays pending registration requests with details.
3. The Admin reviews each request and either approves or rejects it.
 - a. Approved users are granted access and notified.
 - b. Rejected users are informed.
4. The Admin can also modify or deactivate existing user accounts as needed.
5. The system updates its records and logs all actions performed by the Admin.

Monitor Communication Use Case: Diagram:



Brief Description: The Admin monitors system activities and user communications to ensure smooth operation and security.

Initial Step-By-Step Description

1. The Admin logs into the portal.
2. The system displays the admin dashboard.
3. The Admin selects "Monitor Communication."
4. The system shows recent user interactions.
5. The Admin reviews and flags any issues.
6. The system updates the logs and notifies the Admin of critical issues.

4.1.2 Alumni Use Case: The Alumni has following use cases:

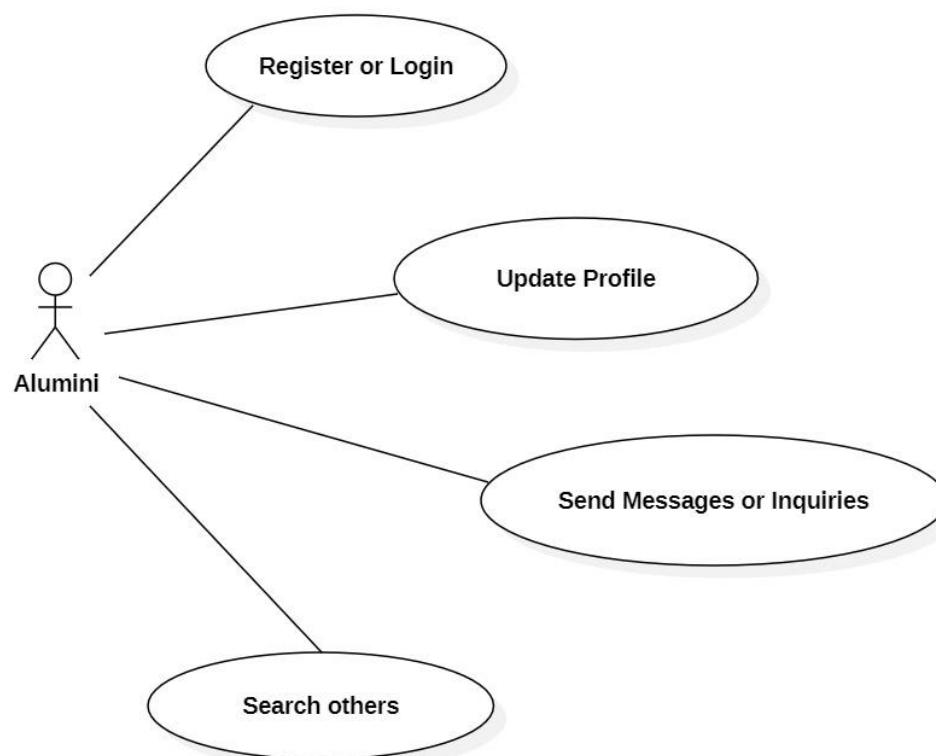
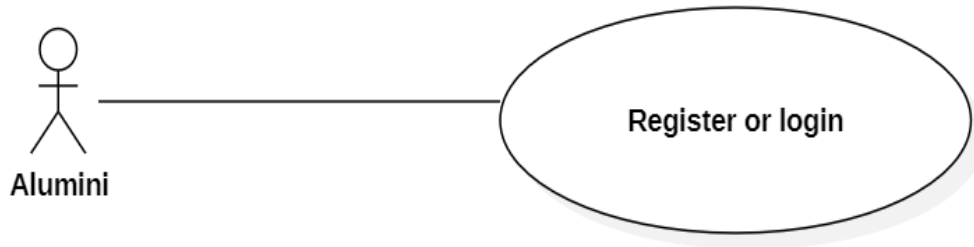


Fig 3. Alumni Use Case

Use Cases

Register or Login Use case

Diagram:



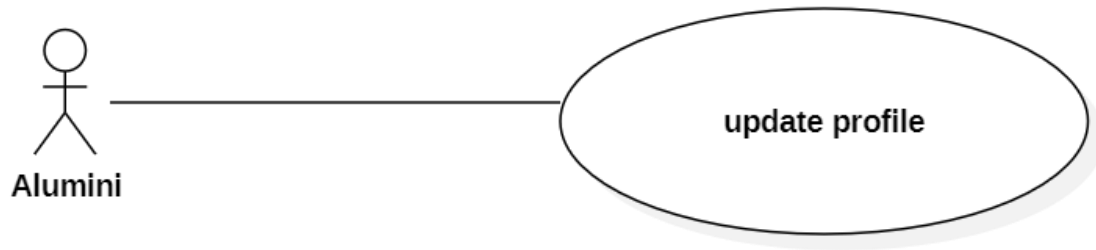
Brief Description: Users can register to gain access to the Alumni Connect Portal. Existing users can log in using their credentials to access features and services.

Initial Step-By-Step Description

1. A new user accesses the portal and navigates to the registration page.
 - The system prompts the user to fill out a registration form
 - The user submits the form, and the system notifies the admin of the registration request.
 - The admin reviews and approves/rejects the request.
 - Upon approval, the user can proceed to log in.
2. An existing user accesses the login page and enters their email and password.
 - The system verifies the credentials:
 - If valid, the user is granted access to the portal.
 - If invalid, the system displays an error and prompts the user to try again or reset their password.

Update Profile Use Case

Diagram:



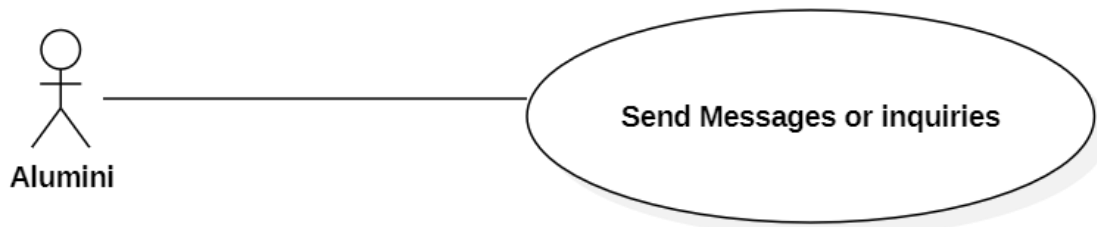
Brief Description: Users can update their profile to ensure accurate personal and professional details for better networking.

Initial Step-by-Step Description

1. The user logs into the portal and navigates to their profile.
2. The system displays current profile details with an option to edit.
3. The user updates information and saves changes.
4. The system validates and stores the updates, confirming the changes to the user.

Send Messages Use Case

Diagram:



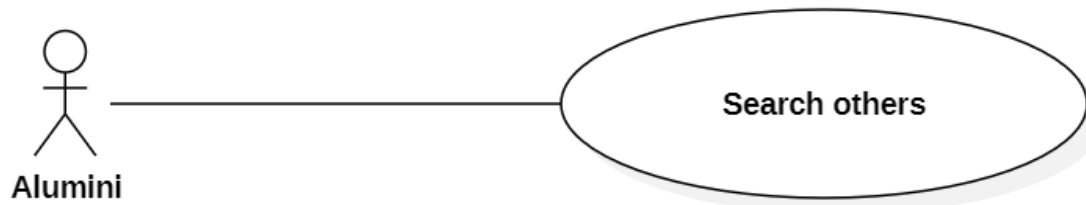
Brief Description: Alumni can send messages or inquiries to other users through the portal's messaging system.

Initial Step-By-Step Description

1. The Alumni logs into the portal.
2. The Alumni navigates to the messaging system.
3. The system prompts the Alumni to select the recipient and enter a message.
4. The Alumni sends the message.
5. The recipient receives the message notification, and the system updates the messaging interface.

Search Others

Diagram:



Brief Description: Alumni can search for other. This allows them to network, offer mentorship, or collaborate on projects.

Initial Step-By-Step Description

1. The Alumni logs into the portal.
2. The Alumni accesses the "Search" feature.
3. The system prompts the Alumni to enter search criteria.
4. The Alumni selects the profiles

4.1.3 Current Student Use Case

Diagram:

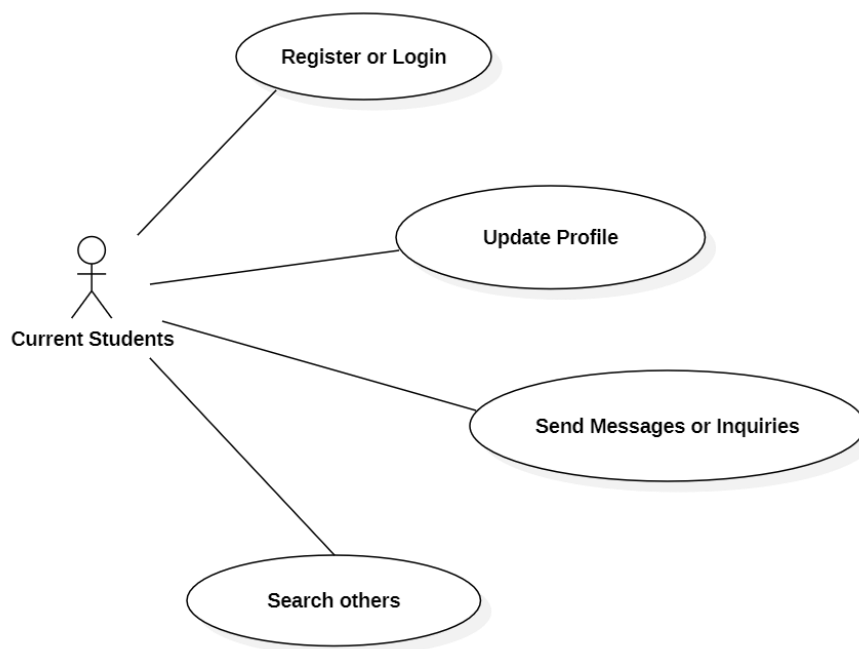
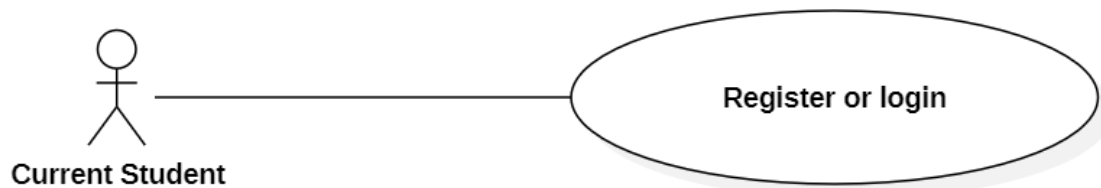


Fig 4. Current Students Use Case

Use Case

Register or Login Use case

Diagram:



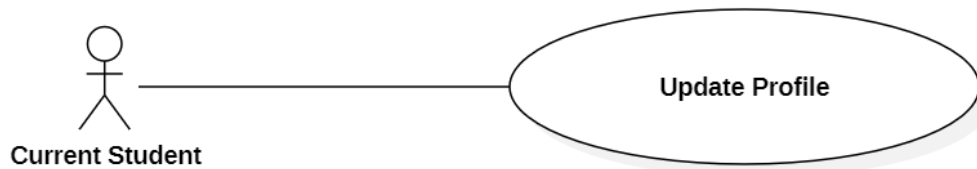
Brief Description: Users can register to gain access to the Alumni Connect Portal. Existing users can log in using their credentials to access features and services.

Initial Step-By-Step Description

1. A new user accesses the portal and navigates to the registration page.
 - The system prompts the user to fill out a registration form.
 - The user submits the form, and the system notifies the admin of the registration request.
 - The admin reviews and approves/rejects the request, and the system notifies the user of the outcome.
 - Upon approval, the user can proceed to log in.
2. An existing user accesses the login page and enters their email and password.
 - The system verifies the credentials.
 - If valid, the user is granted access to the portal.
 - If invalid, the system displays an error and prompts the user to try again or reset their password.

Update Profile Use Case

Diagram:



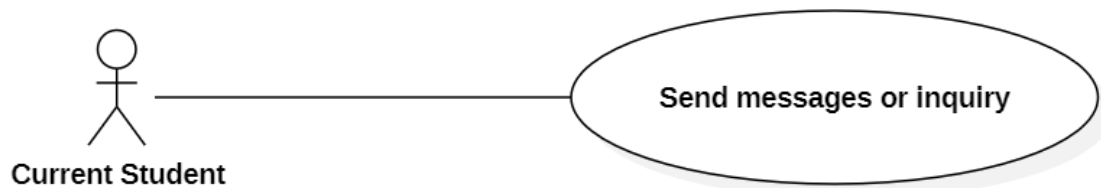
Brief Description: Users can update their profile to ensure accurate personal and professional details for better networking.

Initial Step-by-Step Description

1. The user logs into the portal and navigates to their profile.
2. The system displays current profile details with an option to edit.
3. The user updates information and saves changes.
4. The system validates and stores the updates, confirming the changes to the user.

Send Messages Use Case

Diagram:



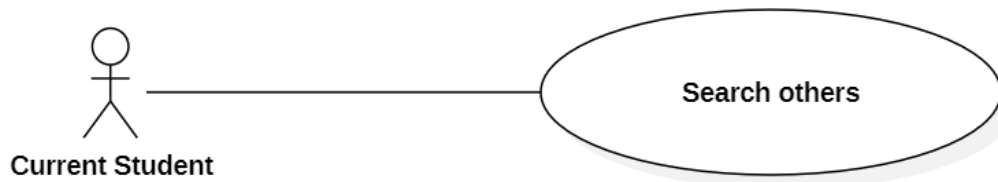
Brief Description: Students can send messages or inquiries to other users through the portal's messaging system.

Initial Step-By-Step Description

1. The student logs into the portal.
2. The student navigates to the messaging system.
3. The system prompts the student to select the recipient and enter a message.
4. The student sends the message.
5. The recipient receives the message notification, and the system updates the messaging interface.

Search Others

Diagram:



Initial Step-By-Step Description

1. The student logs into the portal.
2. The student accesses the "Search" feature.
3. The system prompts the student to enter search criteria.
4. The student selects the profiles.

4.1.4 Faculty Use Case

Diagram:

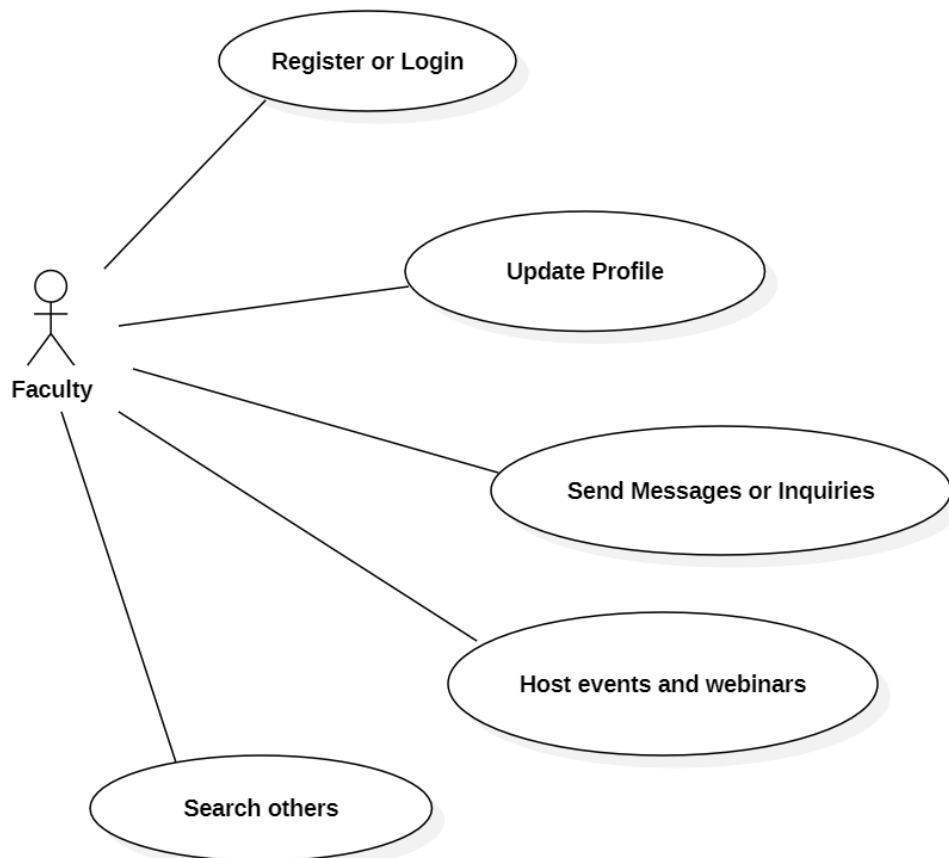
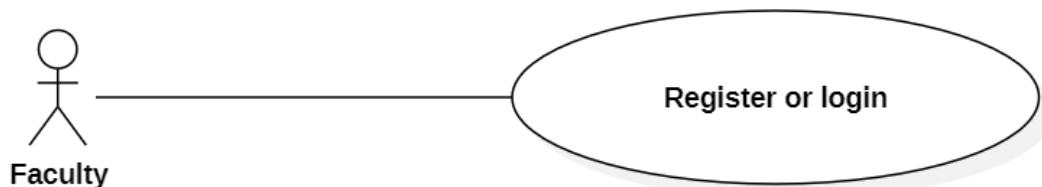


Fig 5. Faculty Use Case

Use Case

Register or Login Use case

Diagram:



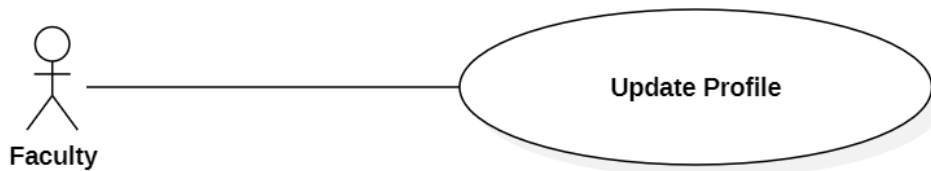
Brief Description: Users can register to gain access to the Alumni Connect Portal. Existing users can log in using their credentials to access features and services.

Initial Step-By-Step Description

2. A new user accesses the portal and navigates to the registration page.
 - The system prompts the user to fill out a registration form.
 - The user submits the form, and the system notifies the admin of the registration request.
 - The admin reviews and approves/rejects the request
 - Upon approval, the user can proceed to log in.
2. An existing user accesses the login page and enters their email and password.
 - The system verifies the credentials.
 - If valid, the user is granted access to the portal.
 - If invalid, the system displays an error and prompts the user to try again or reset their password.

Update Profile Use Case

Diagram:



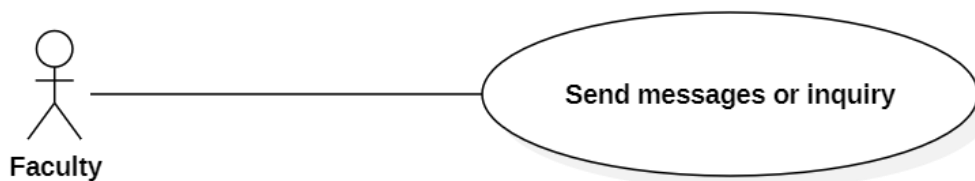
Brief Description: Users can update their profile to ensure accurate personal and professional details.

Initial Step-by-Step Description

1. The user logs into the portal and navigates to their profile.
2. The system displays current profile details with an option to edit.
3. The user updates information and saves changes.
4. The system validates and stores the updates, confirming the changes to the user.

Send Messages Use Case

Diagram:



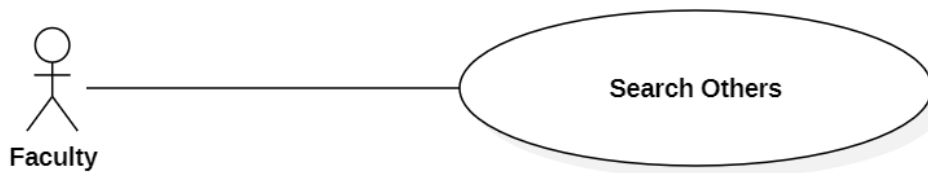
Brief Description: Faculty can send messages or inquiries to other users through the portal's messaging system.

Initial Step-By-Step Description

1. The faculty logs into the portal.
2. The faculty navigates to the messaging system.
3. The system prompts the student to select the recipient and enter a message.
4. The faculty sends the message.
5. The recipient receives the message notification, and the system updates the messaging interface.

Search Others

Diagram:

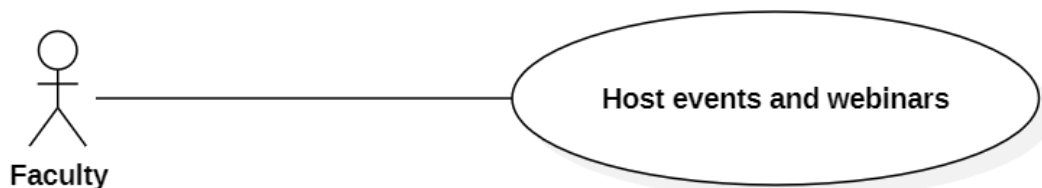


Initial Step-By-Step Description

1. The faculty logs into the portal.
2. The faculty accesses the "Search" feature.
3. The faculty prompts the student to enter search criteria.
4. The faculty selects the profiles.

Host events and webinars

Diagram:



Brief Description:

Faculty members can create and host events or webinars exclusively for other faculty.

Initial Step-by-Step Description:

1. The faculty member logs in and navigates to the "Host Event/Webinar" section.
2. They provide event details and set the audience.
3. The system schedules the event, notifies faculty, and allows registration.

4.2 Non-Functional requirements

The Alumni Connect Portal will be hosted on a server with high-speed internet capability to ensure seamless access for all users. The physical server to be used will be chosen by the institution, and the system assumes the use of a tool like Apache or Nginx for handling communication between the web pages and the database. The speed of the user's connection will depend on their individual hardware and internet service provider.

The administrative tools will run on the administrators' PCs and will connect to the database server, which uses MySQL or PostgreSQL. The portal will support access through modern devices running Linux, Windows, or macOS operating systems and will work across major web browsers such as Chrome, Firefox, and Edge.

5. Other Nonfunctional Requirements

5.1 Safety Requirements

The Alumni Connect Portal must allow admin access to monitor user activity. If any suspicious activity is detected, the admin has the authority to ban the user to prevent harm or further issues on the platform.

5.2 Security Requirement

The Alumni Connect Portal keeps users safe by using secure logins and only giving access based on their role. Personal data is protected with encryption, and users can control who sees their profile. Messages stay private, and all posts are checked to block harmful content. If users are inactive for a while, they are logged out to stay secure. Backups are made regularly to avoid losing data, and admins can manage activities like registrations and events without accessing private messages or sensitive info. These steps make the portal secure and trustworthy.

5.3 Performance Requirement

The Alumni Connect Portal should load quickly, with pages opening in less than 3 seconds. It should handle lots of users at once without slowing down, ensuring smooth interactions even during busy times. The system must also be able to store and manage a lot of data without crashing. Regular backups are needed to keep everything safe and running well.