



IT-314: Software Engineering

Software Requirements Specifications

Group -14

Social Media Platform

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1. Introduction

The Software Requirements Specification (SRS) introduction overviews the entire SRS, including its purpose, scope, definitions, abbreviations, references, and a general overview of the SRS. This document aims to thoroughly analyze and provide a detailed understanding of the **Social Media Platform** by defining the problem statement. Additionally, the document focuses on the capabilities required by stakeholders and their needs while outlining the high-level features of the product.

1.1 Purpose

This document gathers and analyzes ideas to define the social media platform and its user requirements. It aims to predict and organize how the platform will be used to gain a better understanding of the project. The SRS outlines concepts for future development and documents ideas that may not yet be finalized.

This SRS provides a detailed overview of the social media platform, including its goals, target audience and software requirements. It describes how the client, team, and users perceive the platform and its features. Additionally, this document supports designers and developers throughout the software delivery life cycle (SDLC).

1.2 Introduction to Social Media Platform

1.2.1 Description of Problem

Social media has become an essential part of how people connect and communicate. However, many existing platforms are filled with content overload, ads, and privacy concerns, making it challenging for users to have meaningful and secure interactions. Our social media platform aims to

create a space where users can easily connect with friends and share content in an engaging, ad-free environment. Through this project, we intend to provide a fresh, user-centric social media experience that keeps pace with the dynamic digital landscape and the evolving expectations of today's users.

1.2.2 Features of the project

- Authorized access
- Content sharing
- Messaging System
- Search and discovery

1.3 Scope

The scope of our social media platform project includes designing and developing an intuitive platform where users can create profiles, build connections, and share content, such as posts, photos, and videos. Users will be able to interact through messaging and comments. Key features will include notifications, privacy controls, and content moderation tools to maintain a safe and engaging environment. The platform is intended to be scalable to support an expanding user base and flexible enough for future feature additions.

1.4 Abbreviation

Throughout the document **Social Media Platform** will be denoted as **Vibehub**.

2. Specific Requirements

2.1 Functional Requirements

1. **User Registration and Authentication:**

Users should be able to register and log in securely and the system should implement user authentication to ensure data privacy and access control.

2. **User Profiles:**

Users should be able to create, edit, and update their profiles with information such as bio, profile picture, and contact information.

3. **Content Creation and Sharing:**

Users should be able to create and share posts, including text, photos, videos, and links.

4. **Messaging System:**

Users should be able to send direct messages to other users, with support for text, media, and group conversations.

5. **Friend and Follow System:**

Users can add friends or follow accounts to receive updates from them.

6. **Notifications:**

The system should provide notifications for user activities, such as likes, comments, and follows.

7. **Search and Discovery:**

Users should be able to search for other users, groups, posts, and trending content.

2.2 Non-functional Requirements

1. **Usability:** Create an intuitive and accessible interface tailored to the needs of the users.
2. **Reliability:** Achieve high uptime and consistent data integrity to ensure uninterrupted access to stored and retrieved information.
3. **Scalability:** Design the system to support an increasing number of users as the platform expands.
4. **Scalable Database:** Utilize a robust and scalable database for managing user and inventory data efficiently.
5. **Performance:** The platform should provide fast response times and efficient data loading for a smooth user experience.
6. **Data Privacy:** Safeguard user information and ensure compliance with relevant data protection regulations.
7. **Availability:** Maintain a 24/7 operational status with minimal downtime for necessary maintenance.

3. User Stories

No.	Front of the Card	Back of the Card
1.	As an unregistered user, I want to sign up, so that I can create an account.	Acceptance Criteria: <ul style="list-style-type: none">• The system must provide a sign-up form with fields for username, email, and password.• The sign-up process should only be successful if all required fields are filled correctly.• A confirmation message is displayed after successful sign-up.
2.	As a registered user, I want to log in to my account, so that I can access my personal dashboard.	Acceptance Criteria: <ul style="list-style-type: none">• The system provides a login form with fields for email and password.• The login is only successful if the email and password match an existing account.• Upon successful login, the user is redirected to their dashboard.
3.	As an unregistered user, I want to sign up using verification, so that my account remains secure and only I can access it.	Acceptance Criteria: <ul style="list-style-type: none">• The system will send a code to user's email/phone number for verification.• Upon entering the correct code or

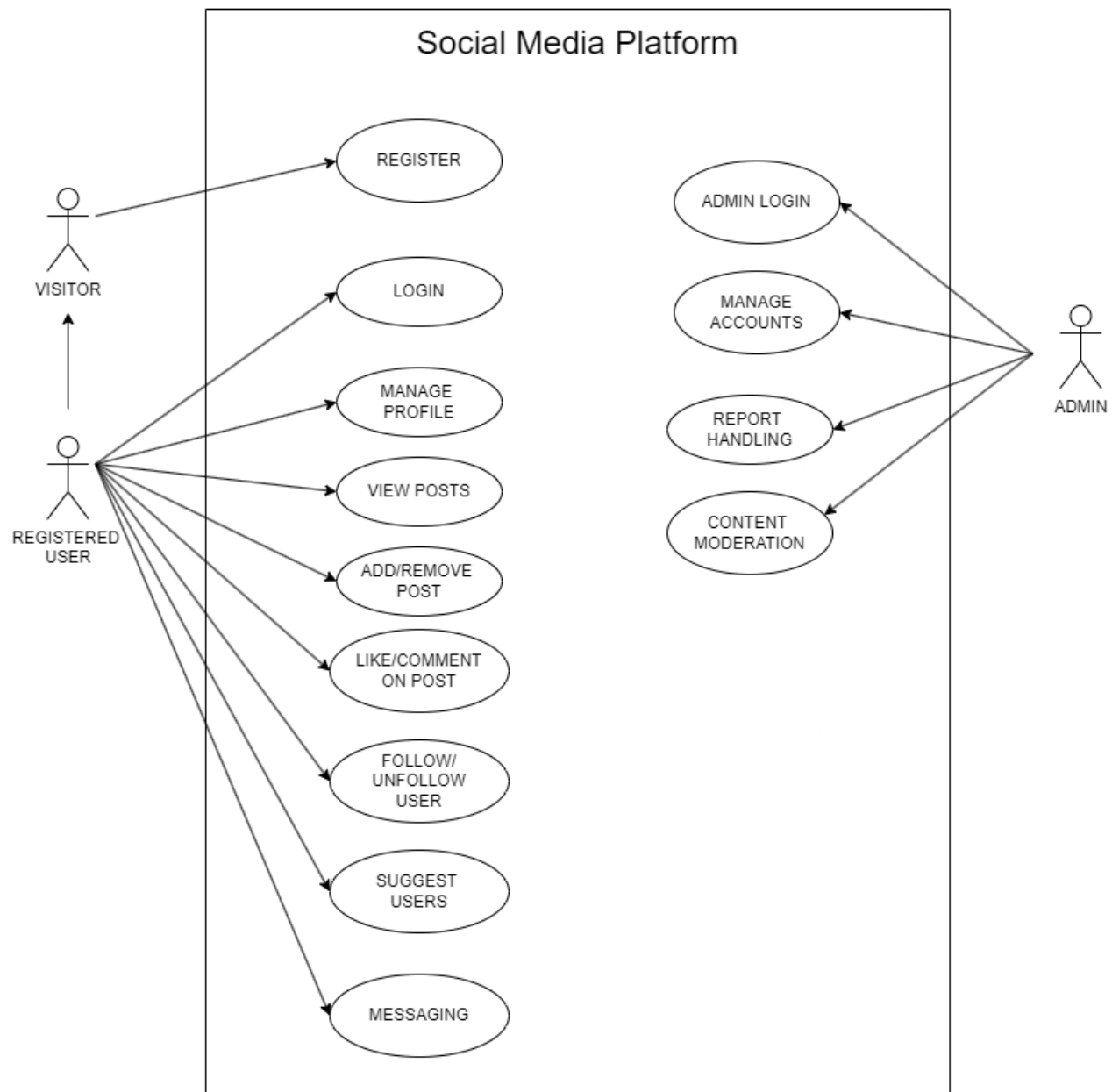
		<p>completing CAPTCHA, the user should be logged in and redirected to his/her account dashboard.</p>
4	<p>As a registered user, I want to recover my account if I forget my password, so that I can regain access easily.</p>	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • The login page provides a “Forgot Password” option. • Users can request a password reset by entering their email. • The system sends an OTP to the user’s email, allowing them to set a new password.
5.	<p>As a registered user, I want to view my profile, so that I can see my personal information.</p>	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • The information on the user profile page should be up-to-date, accurate and should reflect recent changes.
6.	<p>As a registered user, I want to search for other accounts, so that I can find and interact with other users.</p>	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • A search bar is available on the user interface to logged in users. • Users can search for other accounts by username. • The search results display matching accounts with a link to view their profiles.
7.	<p>As a registered user, I want to create a post, so that I can share content with others.</p>	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • The user can access a form to create a new post. • The post is published and visible on the user’s feed after submission. • The post must include content, and optional caption.

8.	As a registered user, I want to edit my post, so that I can update or delete the post.	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • The user can access and edit their existing posts. • Edits are saved, and the updated post is immediately visible on the feed.
9.	As a registered user, I want to follow/unfollow other users. so that I can customize my feed.	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • Users can follow or unfollow other accounts. • The feed updates to include posts from followed accounts or exclude those from unfollowed accounts. • The user's profile displays a list of accounts they follow.
10.	As a registered user, I want to see the posts of users I follow in my feed.	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • The feed updates to include posts from following accounts. • The user's profile displays a list of accounts they follow.
11.	As a registered user, I want to like or dislike a post, so that I can express my opinion on the content.	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • Users can like or dislike posts directly on their feed by clicking or tapping the respective icons. • The like/dislike count updates immediately after interaction. • Users can undo their like or dislike by clicking the same icon again, with the count adjusting accordingly.
12.	As a registered user, I want to comment on a post, so that I can engage in discussions and share my thoughts.	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • Users can add comments to posts by typing in a comment box and submitting their input. • Submitted comments are displayed immediately below the post,

		showing the user's name and a timestamp..
13.	As a registered user, I want to receive notifications for liked posts, so that I stay informed.	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • Users receive notifications when other users like their posts. • Users can control notification settings.
14.	As a registered user, I want to send messages, so that I can communicate more effectively.	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • Users can attach images, videos, or audio to messages. • The multimedia content is sent along with the message and viewable by the recipient.
15.	As a registered user, I want to log out, so that I can securely end my session.	<p>Acceptance Criteria:</p> <ul style="list-style-type: none"> • A logout option is available to users who are logged in. • The system ends the user session and redirects to the homepage after logout. • Clicking the logout button ends the user's session, effectively clearing all session data.

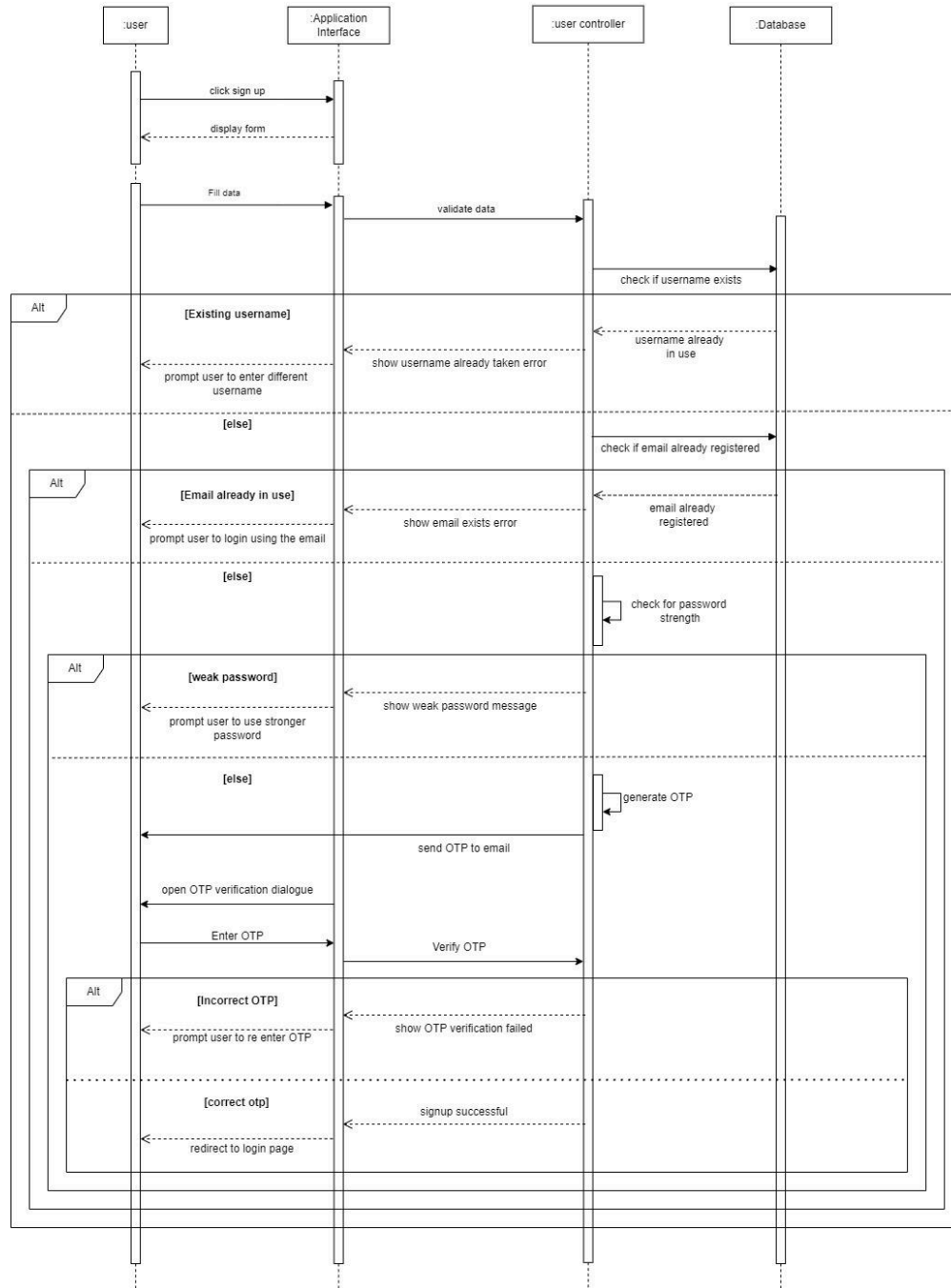
4. System behavior

4.1 Use case diagram

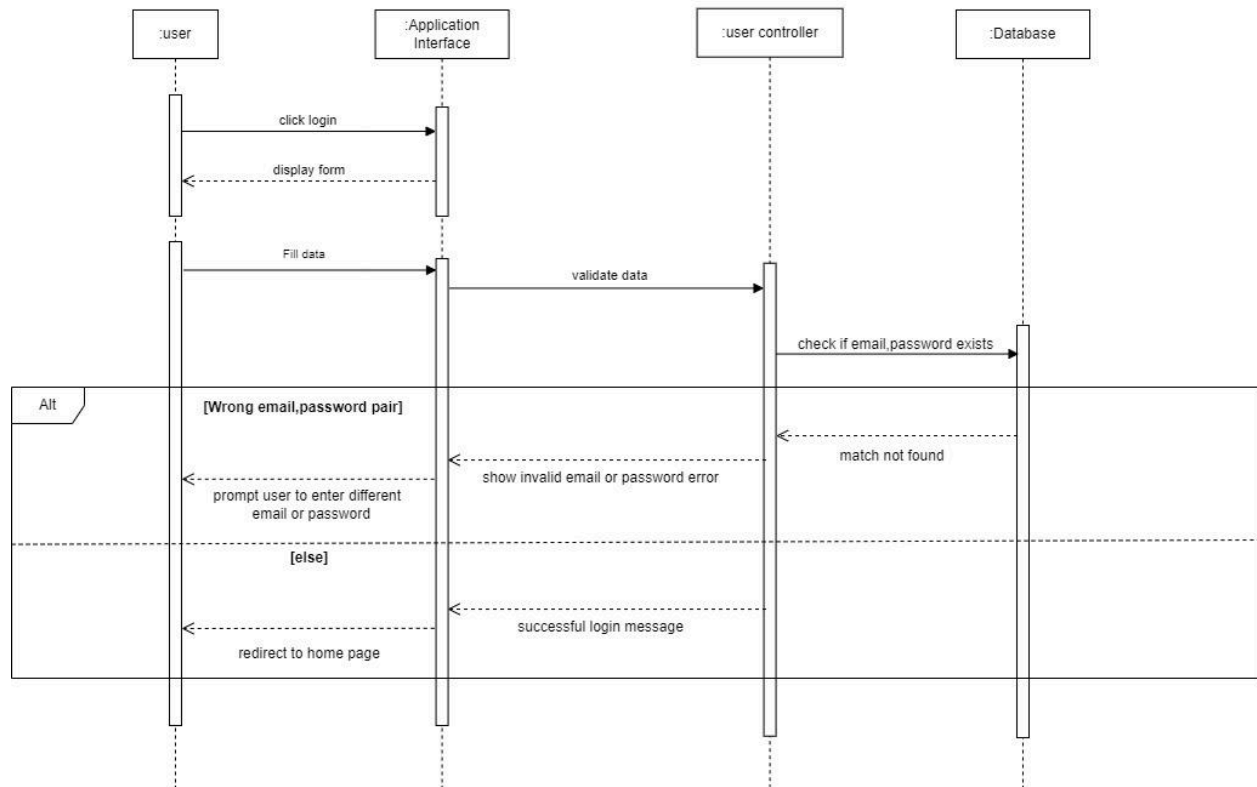


4.2 Sequence diagram

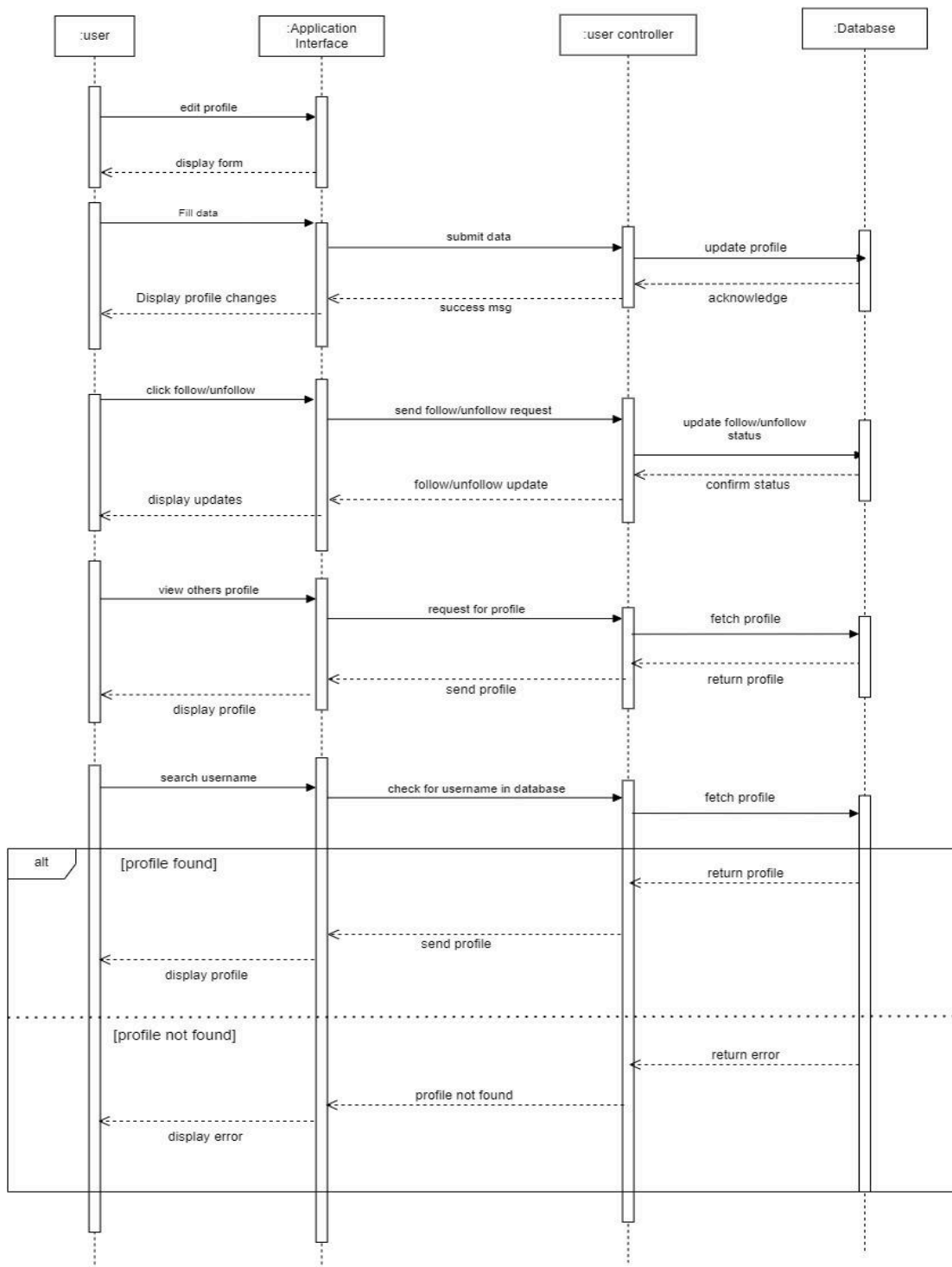
Sprint 1: Sign up



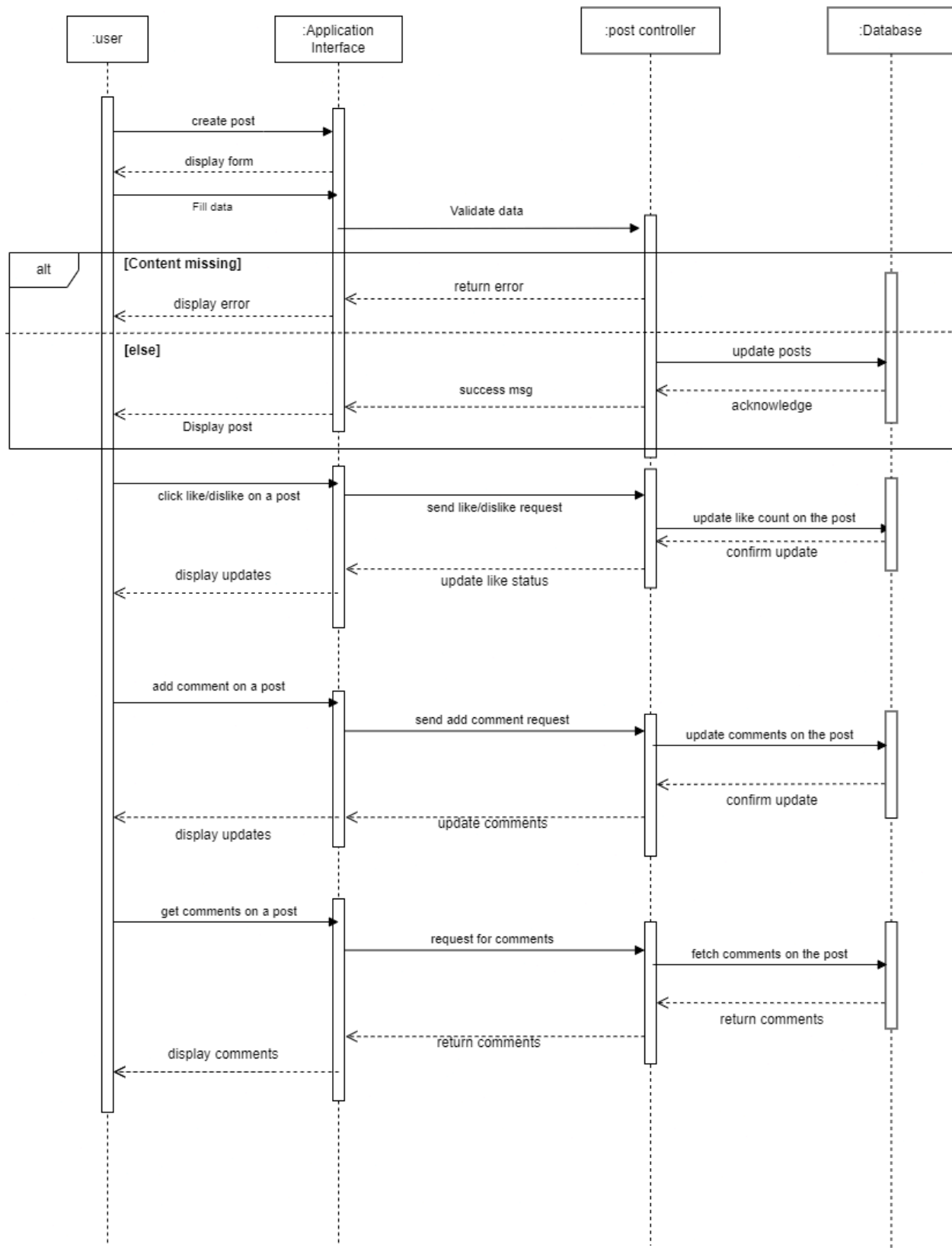
Sprint 1: login



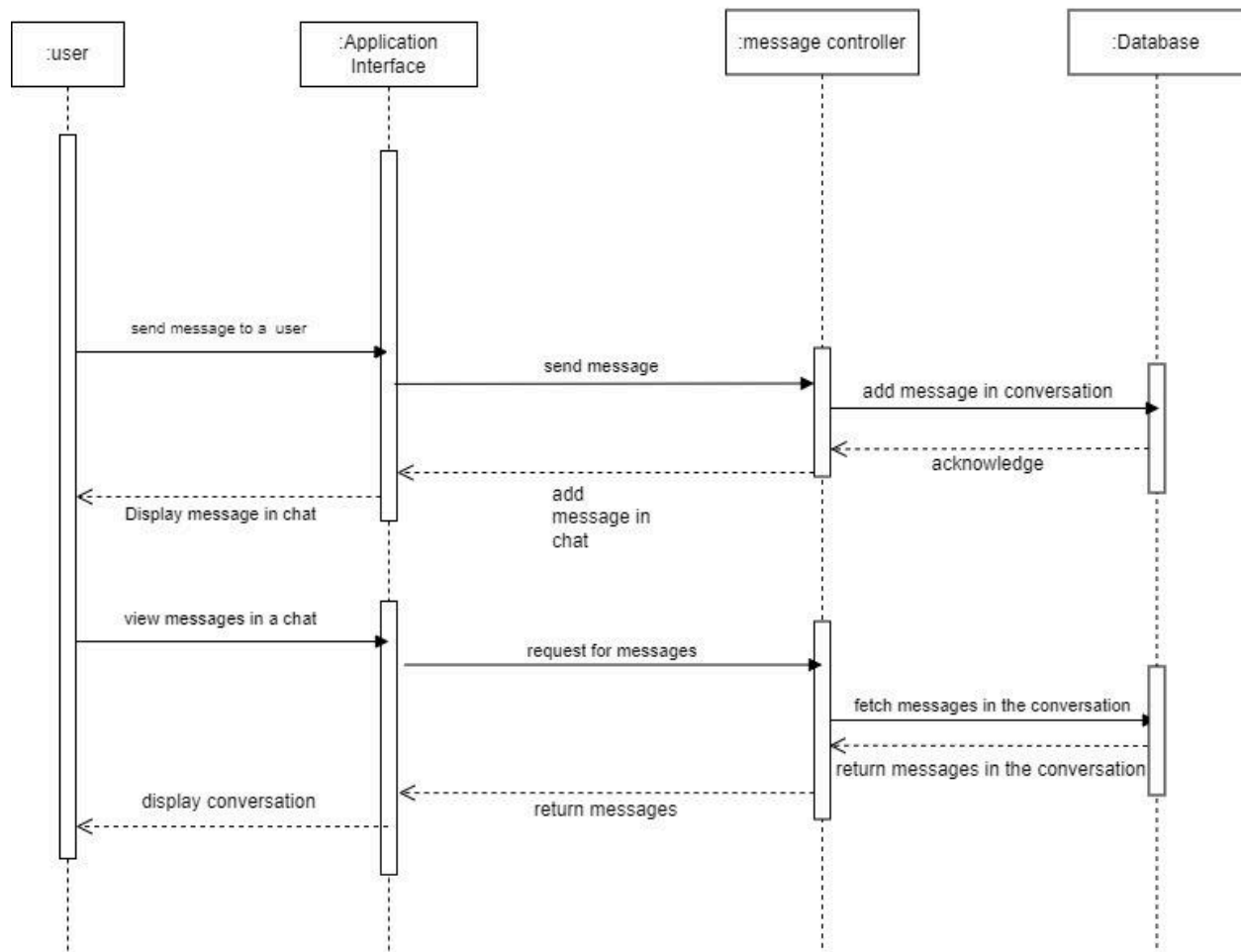
Sprint 2



Sprint 3

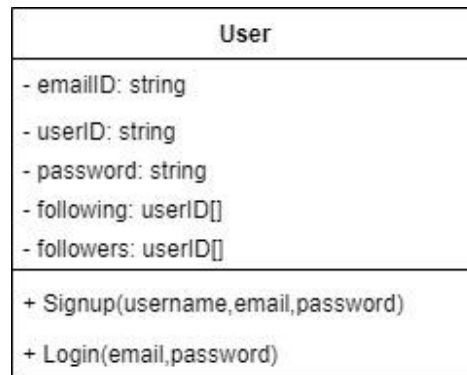


Sprint 4

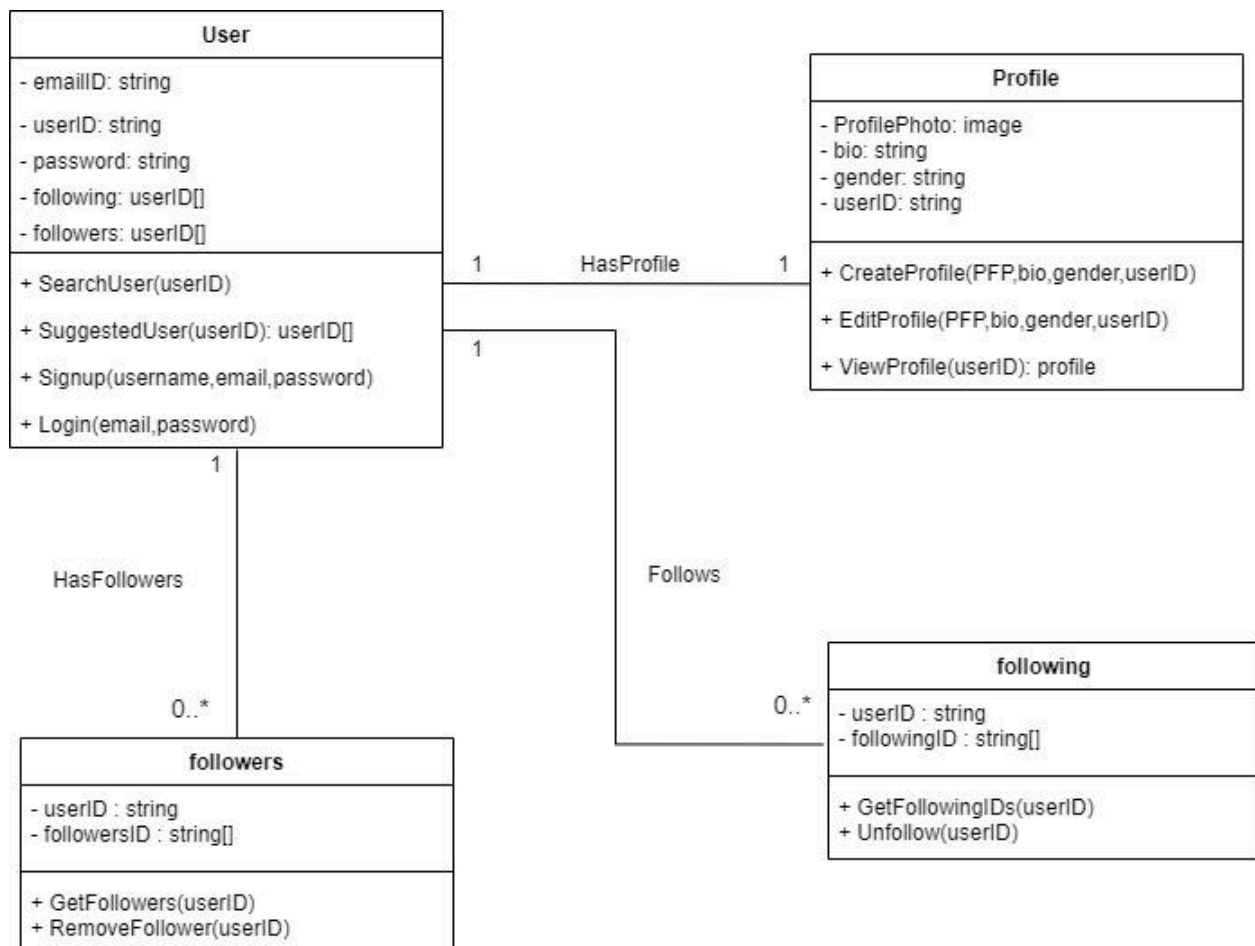


4.3 Class diagram

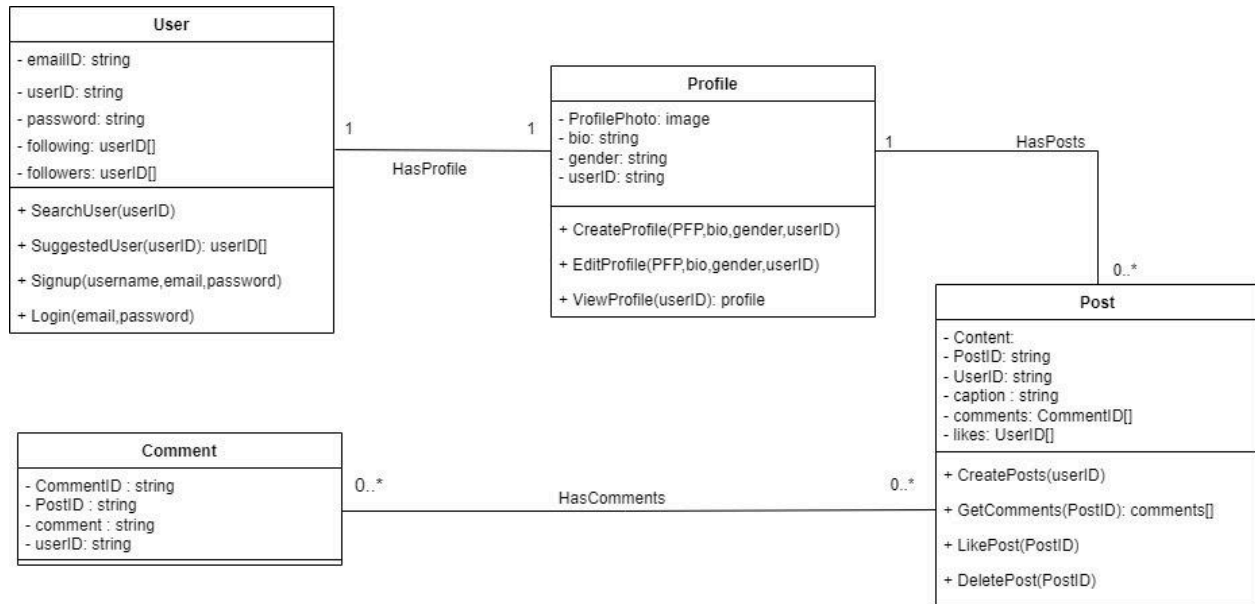
Sprint 1



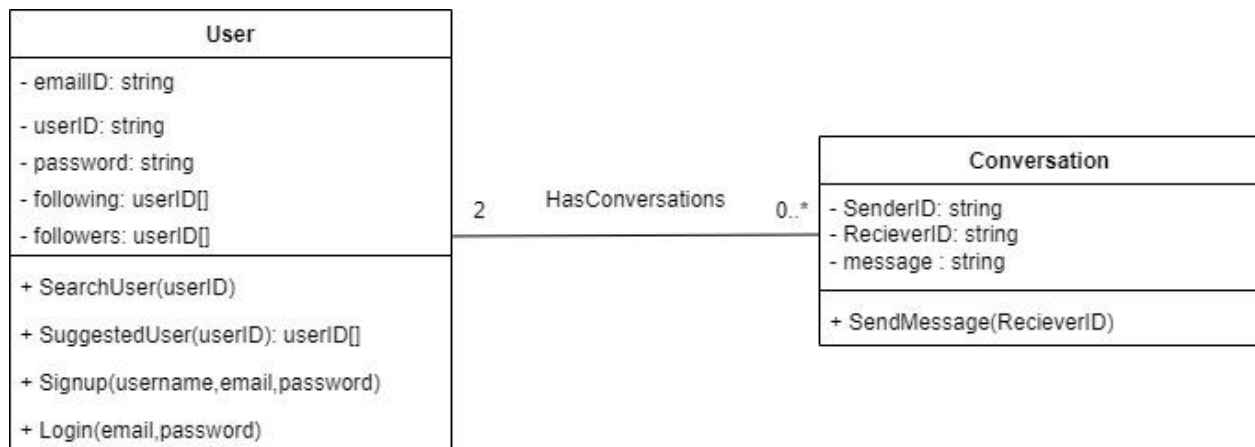
Sprint 2



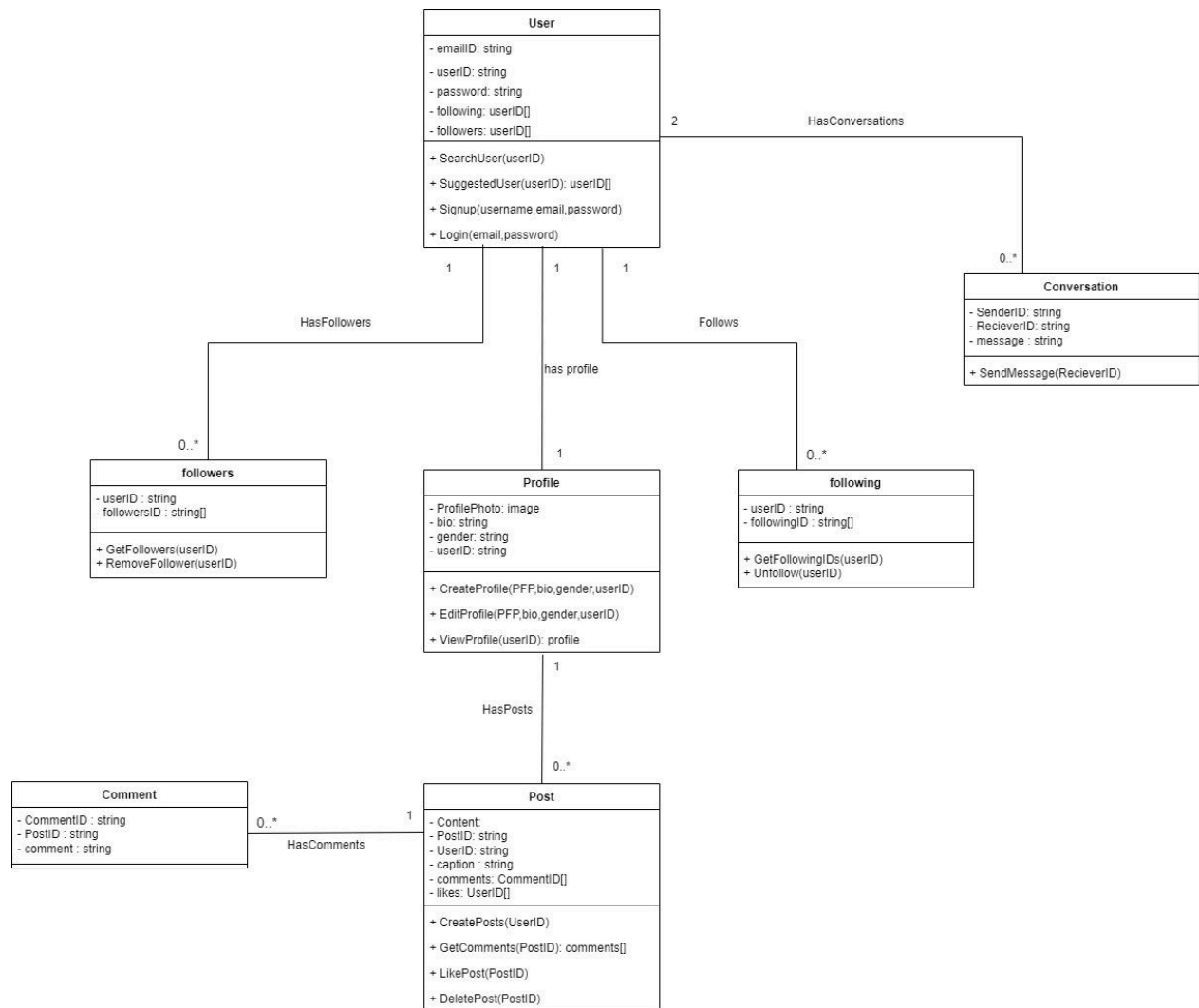
Sprint 3



Sprint 4



Merged Class Diagram



5. PRODUCT BACKLOG

The product backlog for the platform contains the user stories sorted in prioritized manner with highest or core user features and technical requirements at the top.

Sprint 1:

User registration and login

1. As an unregistered user, I want to sign up, so that I can create an account.
2. As a registered user, I want to log in to my account, so that I can access my personal dashboard.
3. As a registered user, I want to complete a verification step during login, so that my account remains secure and only I can access it.

Sprint 2:

User profile and connections

1. As a registered user, I want to view my profile, so that I can see my personal information.
2. As a registered user, I want to update my profile, so that I can keep my personal information up-to-date.
3. As a registered user, I want to search for other accounts, so that I can find and interact with other users.
4. As a registered user, I want to follow/unfollow other users, so that I can customize my feed.

Sprint 3:**Posts,likes and comments**

1. As a registered user, I want to create a post, so that I can share content with others.
2. As a registered user, I want to edit my post, so that I can update or delete the post.
3. As a registered user, I want to like or dislike a post, so that I can express my opinion on the content.
4. As a registered user, I want to comment on a post, so that I can engage in discussions and share my thoughts.

Sprint 4:**Messaging and notification**

1. As a registered user, I want to receive notifications for new messages, so that I stay informed.
2. As a registered user, I want to send multimedia messages, so that I can communicate more effectively.

6. Domain Analysis

The domain for the system is to provide a dedicated space where the users of the system can connect, share information and engage with content in a meaningful way. Vibehub has become a vital tool for fostering connections and spreading information, but there is an ongoing demand for a platform that enhances user experience while ensuring privacy and security. This system aims to meet these needs by providing an engaging, user-friendly platform that encourages connection, communication, and safe sharing of information. Core domain concepts include **User Profiles**, **Connections** (friends, followers), **Posts** (text, images, videos), **Engagement** (likes, comments, shares) to ensure user data is managed securely.

Entity Objects:

1. **User:** A user can be an individual or an organization who can create a profile, connect with others and share content. They can also like, comment, and engage with posts shared on the platform.
2. **Post:** Represents content shared by a user, which can include text, images, videos, or links. Posts appear on the feed of the user and their connections, allowing others to like, comment, or share them.
3. **Comment:** Allows users to engage with posts by sharing their opinions or feedback. Comments are displayed below the respective post, along with the commenter's name and timestamp.
4. **Messages:** A message represents direct communication between users. Messages can include text, images, or other multimedia and are delivered in real-time through the platform's messaging feature.

5. **Conversation:** A conversation is the history of message exchanges done between 2 users. A user can have a conversation with any of the users he/she follows.

Boundary Objects:

1. **Registration Interface:** For creating accounts, setting up profiles, and verifying user information (e.g., email, phone).
2. **Login Interface :** For user authentication, including login, logout, password reset, and authentication.
3. **Profile Management Interface:** For updating user information (name, bio, profile picture) and viewing other users' profiles.
4. **Post Creation Interface:** For creating and sharing posts, including text, images, videos, and location tagging options.
5. **Comment Interface:** For adding, editing, or deleting comments on posts, with a real-time display of comments under posts.
6. **Messaging Interface:** For direct messaging, group chats, and multimedia sharing, including notifications for new messages.
7. **Friend Request/Connection Interface:** For sending, accepting, and managing friend requests or followers.

Control Objects:

1. **User controller** : It manages user-related actions, allowing users to create, update, and view profiles. It also handles interactions between users, such as following/unfollowing, viewing other profiles, and performing user searches.
2. **Post controller**: It manages content-related actions, enabling users to create, like, comment on, share, and delete posts.
3. **Message controller**: It handles user messaging activities, enabling the sending, receiving, and organization of message threads and conversations. It also manages notifications for new messages and interactions like post likes and comments.

7. Proposed Model For Development

Reasons for choosing Agile methodology for the Project:

- **Flexibility to adjust**: As feedback is continuously integrated, the platform can evolve based on real user insights.
- **Frequent releases**: You can release features incrementally, allowing users to test parts of the platform as they're ready.
- **Collaborative**: Agile encourages regular engagement with users and stakeholders, making sure the final product aligns with user needs.

1. Requirements Gathering:

- **Goal:** Capture essential features for the platform, such as user profiles, posts, comments, likes, messaging, and more.
- **Actions:** Conduct user interviews, if possible, to understand what users expect from the platform. Look at other social media sites to gather ideas and insights. Develop user personas to capture potential user needs.
- **Output:** A list of prioritized requirements and initial wireframes or prototypes of the core features.

2. Sprint Planning:

- **Goal:** Break down features into smaller, actionable tasks and prioritize them.
- **Actions:** Identify core components (e.g., user authentication, news feed, profile page) and divide them into tasks. Assign priority based on importance and build dependency order.
- **Output:** A well-organized sprint backlog with tasks for the sprints (e.g., 2-3 weeks) that covers high-priority features.

3. Development and Testing:

- **Goal:** Develop features within the sprint, ensuring each feature works and integrates well.
- **Actions:** Develop the website's UI, backend, and API endpoints. Test each feature individually (unit tests) and ensure they work well together (integration testing). Conduct code reviews for quality assurance.
- **Output:** Completed, tested features that are ready for stakeholder review.

4. Sprint Review:

- **Goal:** Present completed features to stakeholders, gather feedback, and adjust as needed.
- **Actions:** Share the developed features (or a demo version) with stakeholders, such as potential users or project collaborators, to get feedback on design, usability, and functionality.
- **Output:** Insights and any feedback that will influence adjustments in future sprints.

5. Sprint Retrospective:

- **Goal:** Reflect on the sprint's successes and areas for improvement.
- **Actions:** Gather the team to discuss what went well and what can be improved. Identify changes to processes, tools, or team collaboration methods that will help future sprints run more smoothly.
- **Output:** Actionable improvements for the next sprint.

6. Repeat Sprint Cycles Until Completion

- Continue iterating through sprints, using feedback and retrospectives to guide development, until all critical features are complete, and the platform meets the requirements.
- After all essential features are implemented, you might want to enter a **stabilization phase** to test and polish the platform thoroughly before a full launch.

7. Final Review and Launch Preparation

- Conduct a comprehensive review once all core requirements are met.
- Execute final rounds of testing, including security and performance tests.
- Plan for a soft launch or beta testing to gather final feedback before full release.

8. Technology Used

Vibehub is crafted to enhance and streamline user interactions and social connections. Developed using modern technologies, it leverages MongoDB, Express.js, ReactJS, and Node.js (MERN stack) for an intuitive and responsive full-stack application. The frontend, built with React.js, ensures dynamic user interfaces, while the backend powered by Node.js and Express.js, coupled with MongoDB database, ensures robust functionality and efficient data management.

For the project, Visual Studio Code (VSCode) served as the integrated development environment (IDE). VSCode's features, including debugging and source control integration, accelerate development. Github is employed for version control, enhancing collaboration.

9. Assumptions

- Users have access to compatible devices (smartphones/computers) with stable internet.
- All the users do have email ID.
- Users share appropriate content respecting copyright and community guidelines.
- Personal information shared is accurate and legitimate.

10. References

1. StackOverflow - <https://stackoverflow.com/>
2. GeeksForGeeks - <https://www.geeksforgeeks.org/>
3. ChatGPT - <https://chat.openai.com/chat>