EAST WEST UNIVERSITY

Project Report

Study Sync

A system design and analysis project

Project team:

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1. Introduction

1.1 Purpose

The purpose of this document is to define the software requirements for **StudySync** Platform. This platform will provide users—both mentees and mentors—with access to a centralized system for managing mentorship requests, organizing study sessions, facilitating messaging, and submitting reviews. It aims to enhance educational support, streamline communication, and offer a user-friendly experience.

1.2 Scope

This system will cater to individuals seeking or offering mentorship and study support. It will enable users to manage profiles, request or accept mentorship, participate in study sessions, exchange messages, provide reviews, and handle optional subscriptions or payments. The platform will also support administrative functions, such as user oversight and system management.

1.3 Intended Audience and Reading Suggestions

This document is intended for:

- This SRS report is intended for several audiences, including users (mentees, mentors, and administrators), project managers, developers, and testers.
- Project managers will use this SRS to plan milestones and delivery dates, ensuring the development team stays on track.
- Developers will use this SRS as a basis for implementing the system's functionality, linking requirements to the software they create.
- Designers will use this SRS to guide the system's design, ensuring it meets the documented needs.
- Testers will use this SRS to derive test plans and cases for each requirement, running tests as portions of the software are completed.
- Stakeholders will use this SRS to assess the system's alignment with organizational goals and provide feedback during development.

2. Usage Scenario

The StudySync platform aims to connect mentees and mentors for educational support. When a user first joins the platform, they cannot create their own account. Platform administrators will create the account and provide a unique user ID for activation. The first step is for users to activate their account with email or phone verification and set a new password. They cannot change their assigned user ID, email, or phone number.

On the login page, there will be two input boxes and a button. Users insert their user ID and password, then click the login button to access the platform. A "forgot password" option and an active user ID check will be available. Users can request a password reset using their email or phone number if their account is activated.

Once logged in, users can access their profile to manage the platform. They can log in from multiple devices at the same time. The platform becomes their go-to place for all mentorship and study-related activities. On the home page, a navigation bar will allow users to move between sections.

In the profile page, users can view and edit their personal details, including full name, contact information, expertise (for mentors), or study interests (for mentees). In the mentorship page, mentees can request mentorship, and mentors can accept or reject requests. Study sessions can be created, joined, or managed, with details like session topic, time, and participants visible.

In the messaging page, users can send and receive messages related to mentorship or study sessions. They can track conversation history and mark messages as read or unread. The review page allows users to rate and provide feedback on mentorship or study sessions.

Administrators can oversee user accounts, manage mentorship requests, and monitor platform activity. Users can calculate their engagement metrics using built-in tools, view payment history for subscriptions, and check outstanding balances in the account ledger page. Users can access a help section for troubleshooting common issues. The platform will send periodic notifications to keep users updated on their activities.

3. System Features and Requirements

3.1 Functional Requirements

Stakeholder	Stakeholder Goal	Functional Requirement
Mentee	We want secure access to manage our study activities.	The system shall require mentees to activate their account and set a new password on first login.
	We want to ensure our personal data isn't altered without approval.	The system shall prevent mentees from changing their user ID, email, or phone number via the portal.
	We want to view all our study and personal information in one place.	The system shall allow mentees to view their profiles, including names, contact info, and study interests.
	We want to stay informed about mentorship and study sessions.	The system shall allow mentees to view current mentorship requests, study sessions, and schedules.
	We want to monitor our engagement in study sessions.	The system shall allow mentees to track participation and session history.
	We want to manage our subscription payments.	The system shall allow mentees to view payment history and outstanding balances for subscriptions.
	We want to evaluate our progress in study sessions.	The system shall include a built-in tool to calculate mentee engagement metrics.

Mentor	We want to manage our mentoring activities securely.	The system shall require mentors to activate their account and set a new password on first login.
	We want to ensure our expertise data isn't altered without approval.	The system shall prevent mentors from changing their user ID, email, or phone number via the portal.
	We want to view and update our mentoring profile.	The system shall allow mentors to view and edit their expertise, availability, and contact info.
	We want to review mentorship requests.	The system shall allow mentors to accept or reject mentorship requests.
	We want to manage study sessions.	The system shall allow mentors to create, edit, and delete study sessions.
Administrator	We want to onboard users securely.	The system shall allow admins to create accounts with unique IDs and credentials.
	We want to enforce policies and control access.	The system shall allow admins to block, suspend, or dismiss user accounts.
	We want to maintain accurate user records.	The system shall allow admins to update user information when needed.
	We want to ensure reliable system performance.	The system shall allow administrators to monitor and maintain portal functionality.

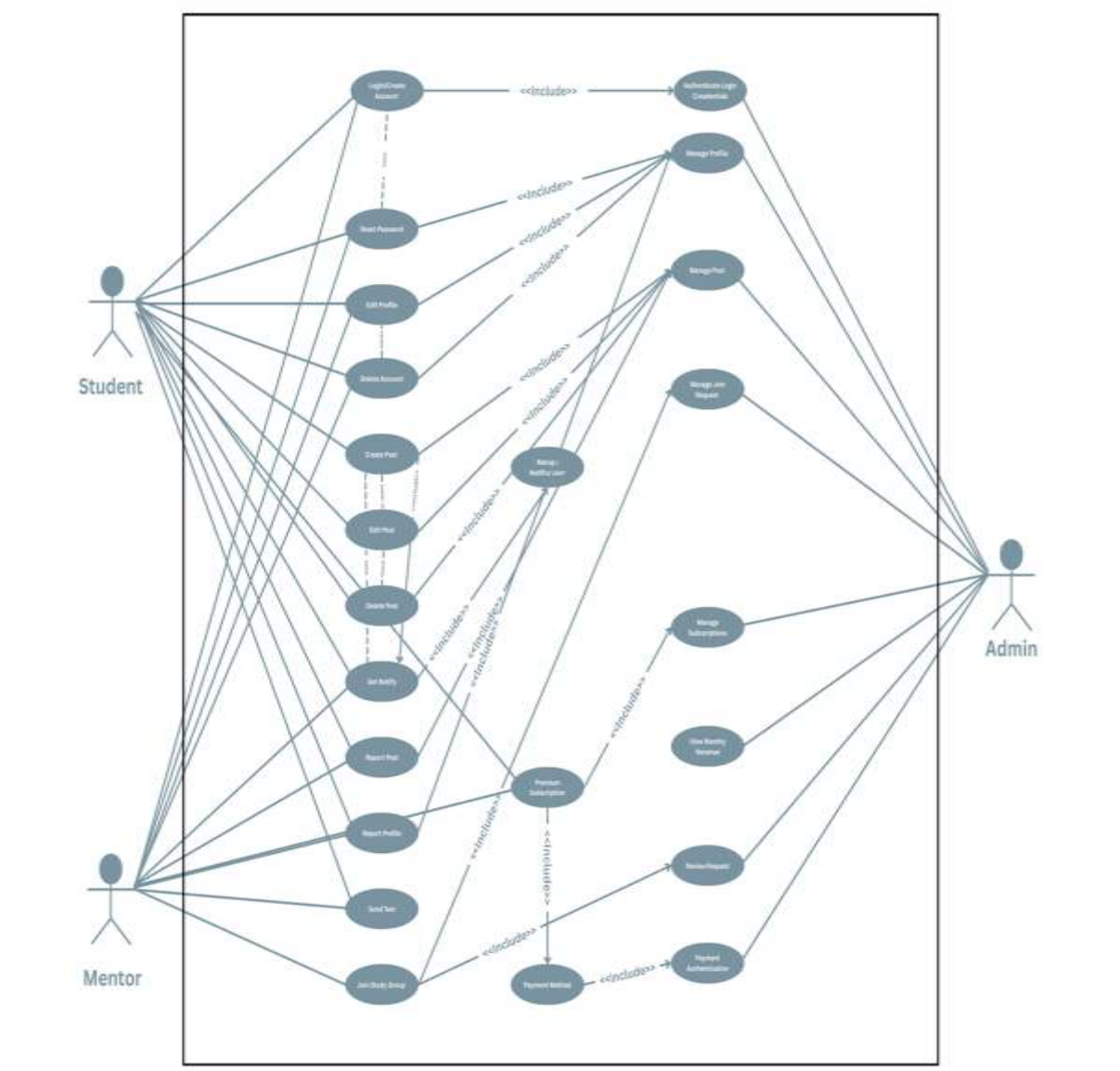
3.2 Non-Functional Requirements

Stakeholder	Stakeholder Goal	Non-Functional Requirement
Mentee	We want to access the platform from multiple devices.	The system shall support simultaneous logins from multiple devices.
	We want quick and smooth mentoring during peak times.	The system shall ensure fast and responsive mentoring functions.
	We want an easy-to-use interface.	The system shall offer a user-friendly and intuitive interface.
	We want our feedback to remain anonymous.	The system shall guarantee anonymity in the feedback system.
Mentor	We want to access the platform from multiple devices.	The system shall support simultaneous logins from multiple devices.
	We want quick and smooth session management during peak times.	The system shall ensure fast and responsive session management functions.
	We want an easy-to-use interface.	The system shall offer a user-friendly and intuitive interface.
	We want our feedback to remain anonymous.	The system shall guarantee anonymity in the feedback system.

Administrator	We want to protect user data.	The system shall ensure secure storage and handling of user information.
	We want strong data security.	The system shall use encryption and access controls to protect data.
System Admin	We want high availability during peak periods.	The system shall maintain 99.9% uptime during critical periods.
	We want scalability to support many users.	The system shall be scalable to handle simultaneous user access.

4. Use case Diagram

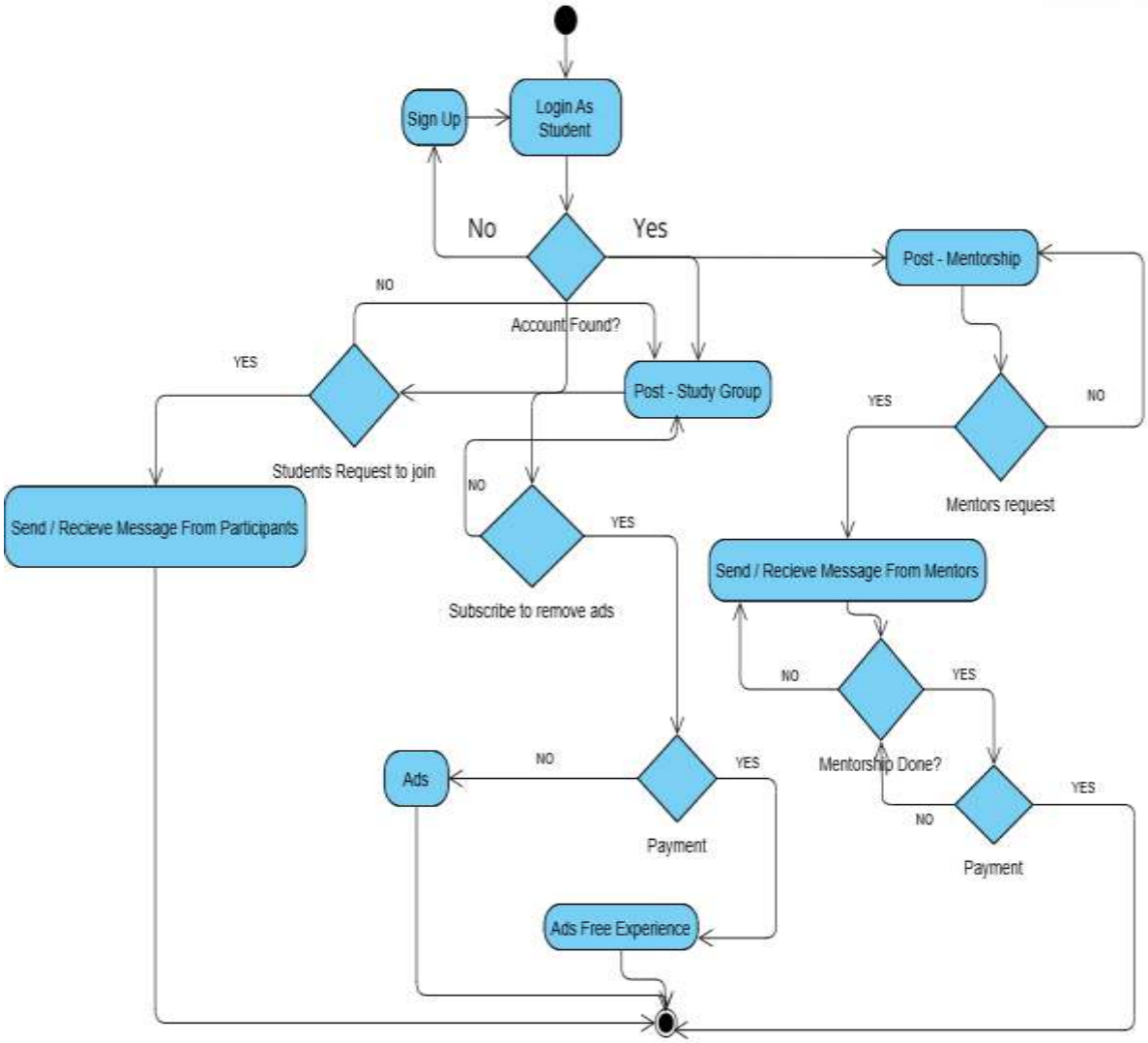
A Use Case Diagram is a type of UML (Unified Modeling Language) diagram used to represent the functional requirements of a system. It shows how different users (called actors) interact with the system through use cases, which are the major functions or services the system offers.



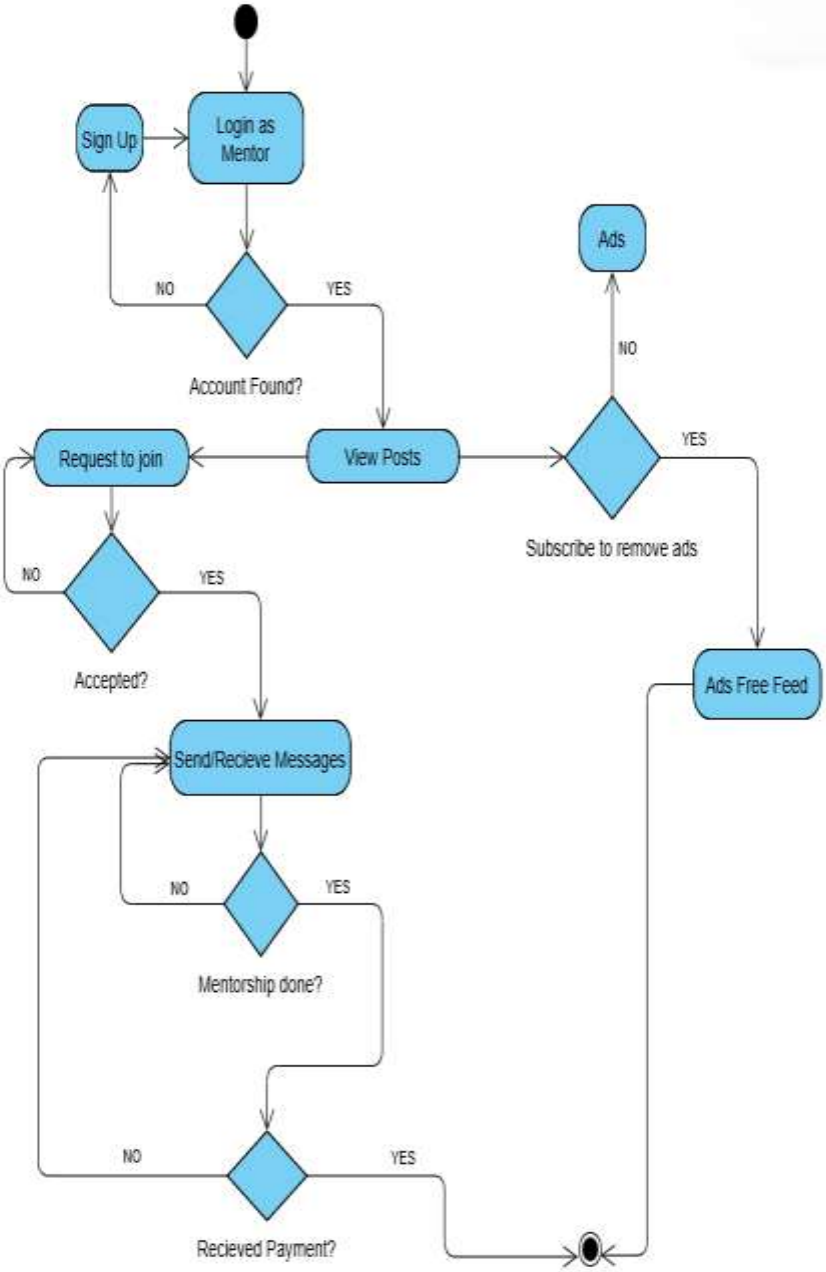
5. Activity Diagram

An Activity Diagram is a type of UML (Unified Modeling Language) diagram used to model the dynamic behavior of a system, illustrating the flow of activities and decisions involved in a process. It highlights the sequence of actions, decision points, and parallel processes within the StudySync platform.

5.1 Student

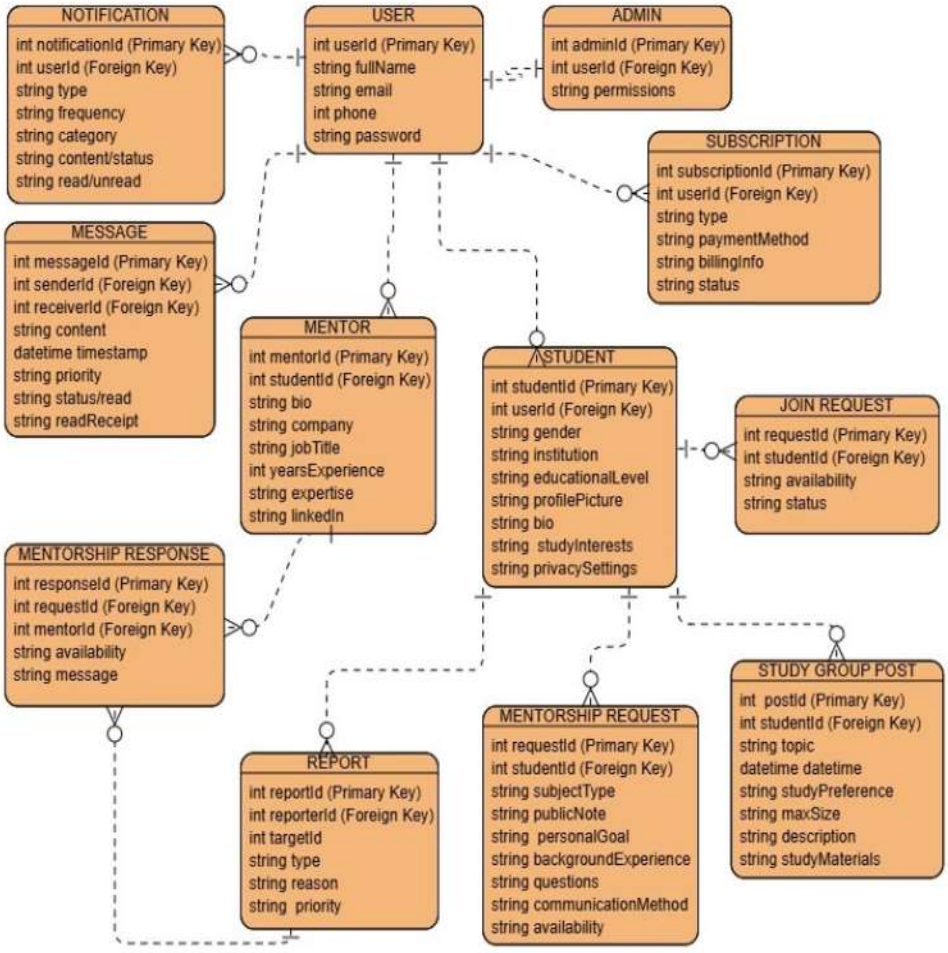


5.2 Mentor


Sign Up
Login as Mentor
NO
YES
Account Found?
Ads
NO
YES
Subscribe to remove ads
Request to join
View Posts
NO
YES
Accepted?
Ads Free Feed
Send/Recieve Messages
NO
YES
Mentorship done?
NO
YES
Recieved Payment?

6. ER Diagram

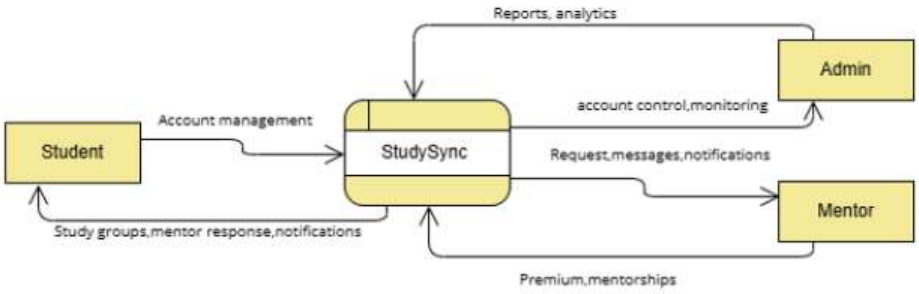
An ER Diagram is a visual representation of the database structure, illustrating entities, their attributes, and the relationships between them. It serves as a blueprint for the StudySync platform's data management system, ensuring efficient storage and retrieval of information.



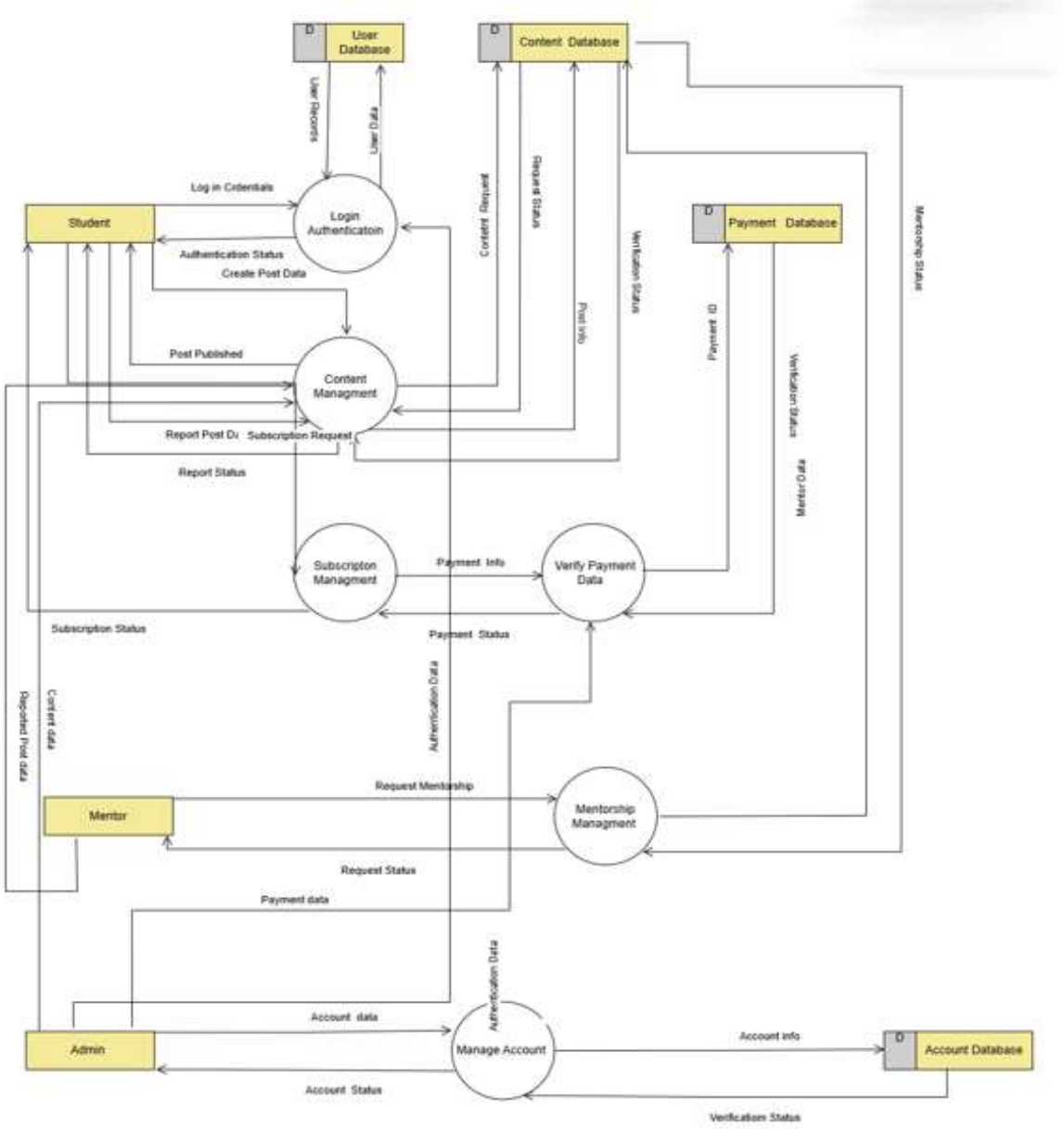
7. Data Flow Diagram

A Data Flow Diagram (DFD) illustrates how data moves through the StudySync platform, showing processes, data stores, external entities, and data flows. It provides a high-level view of the system's data handling, focusing on how information is input, processed, stored, and output.

Level 0:

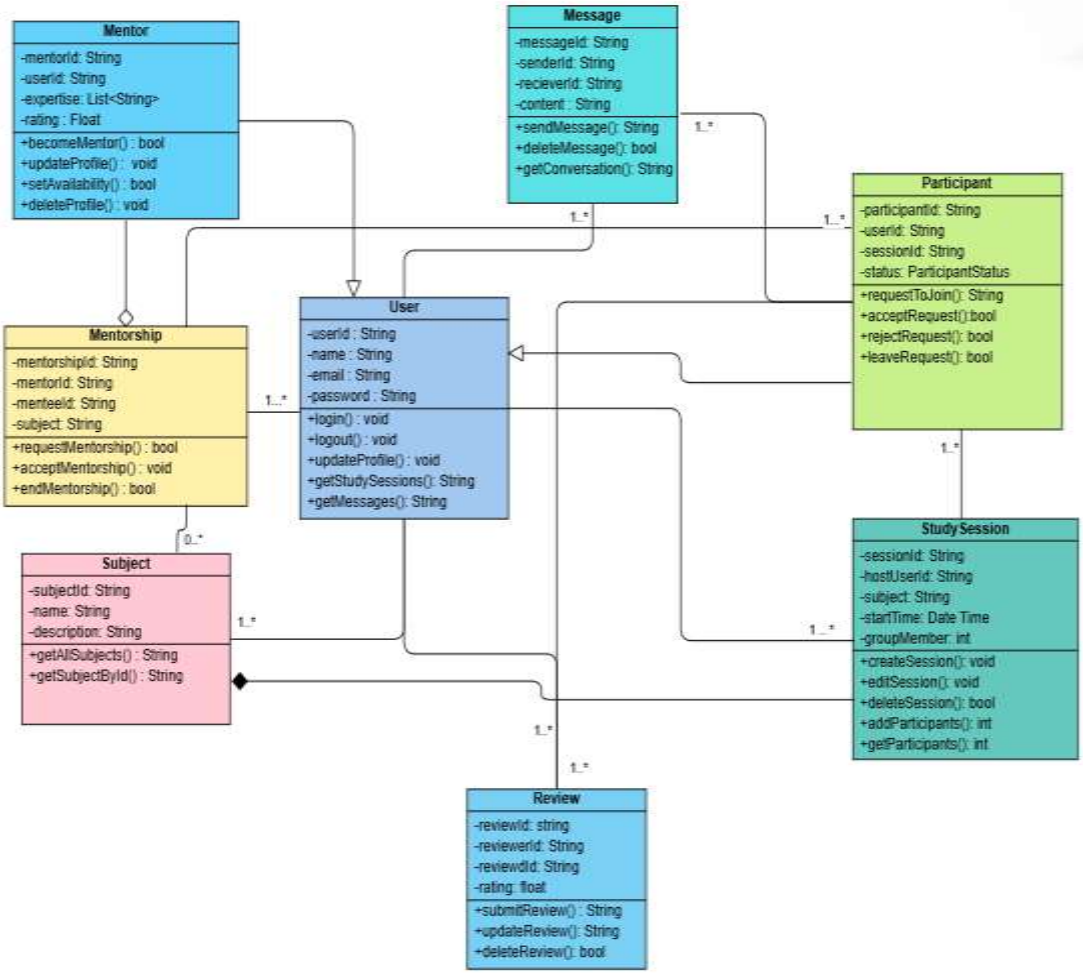


Level 1:


User Database
Content Database
Payment Database
Account Database
User Records
User Data
Log in Credentials
Login Authenticatoin
Student
Authentication Status
Create Post Data
Post Published
Content Managment
Report Post Da
Subscription Request
Report Status
Content Request
Request Status
Post Info
Verification Status
Payment ID
Verification Status
Mentorship Status
Mentor ID
Subscripton Managment
Payment Info
Verify Payment Data
Subscription Status
Payment Status
Authentication Data
Content data
Reported Post data
Request Mentorship
Mentor
Mentorship Managment
Request Status
Payment data
Authentication Data
Account data
Admin
Manage Account
Account info
Account Status
Verification Status

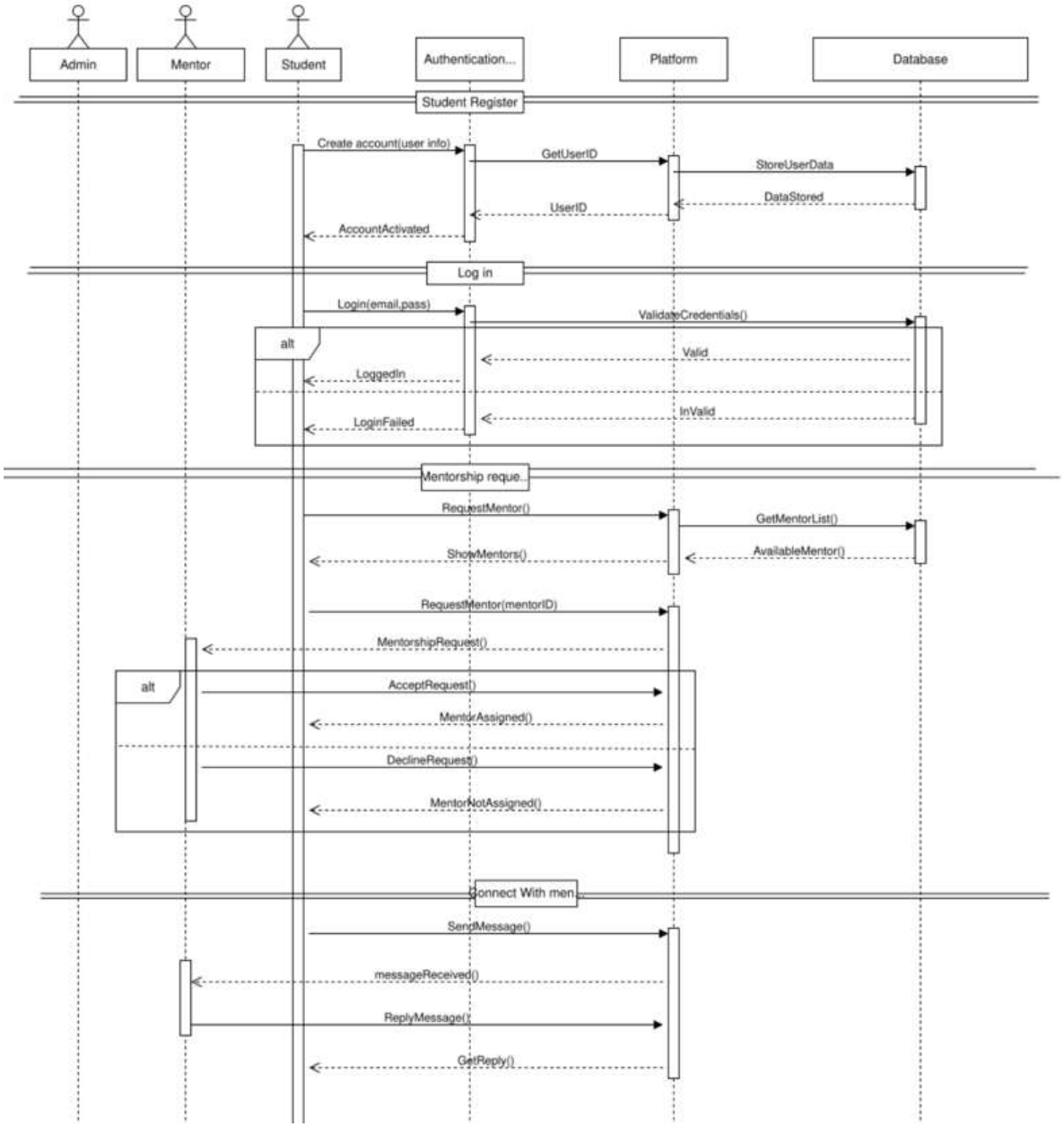
8. Class Diagram

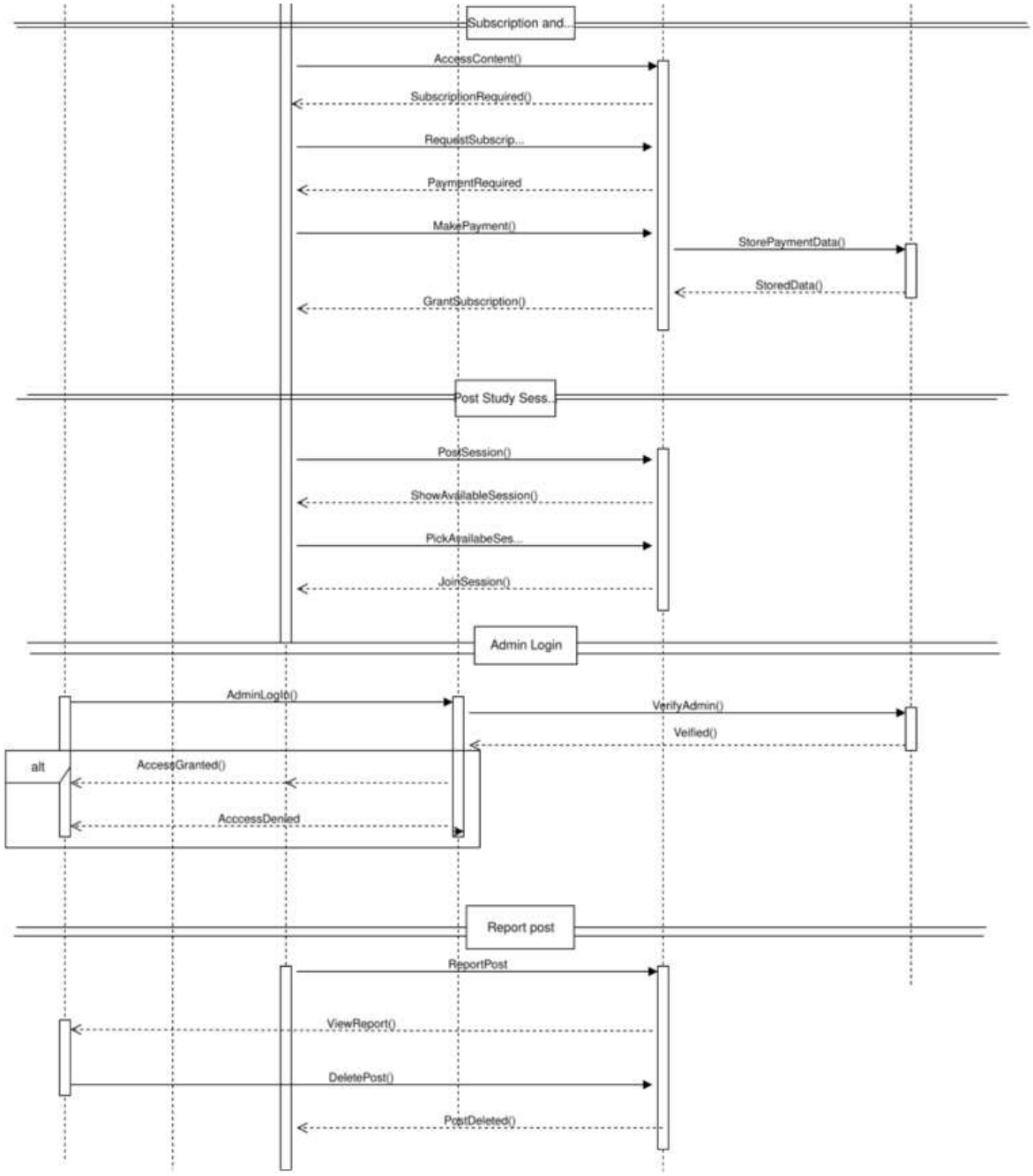
A Class Diagram is a type of UML (Unified Modeling Language) diagram that represents the static structure of the StudySync platform by showing its classes, their attributes, methods, and the relationships between them. It serves as a foundation for the system's object-oriented design and implementation.



9. Sequence Diagram

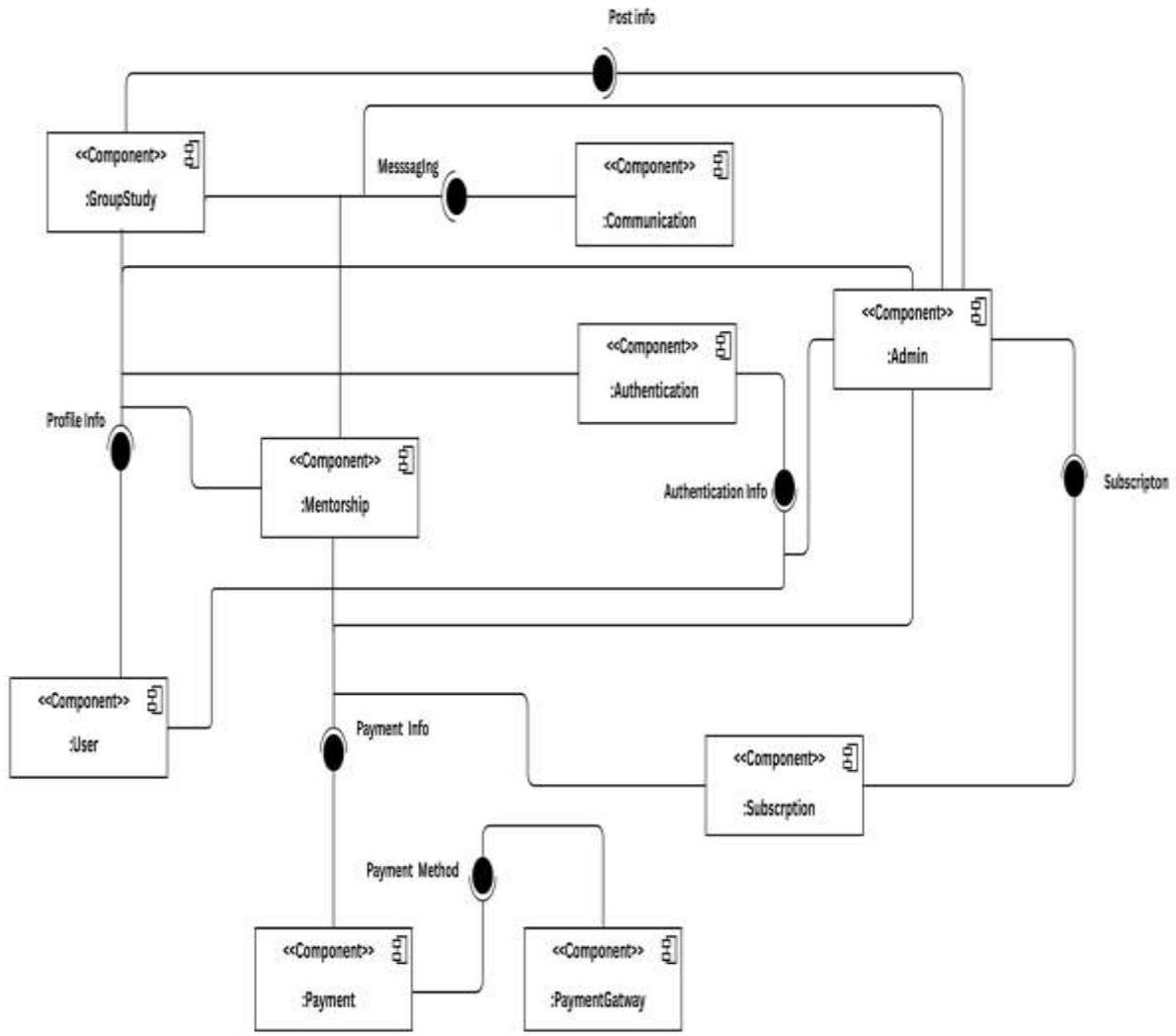
A Sequence Diagram is a type of UML (Unified Modeling Language) diagram that depicts the dynamic behavior of the StudySync platform by showing how objects interact in a particular scenario over time. It uses lifelines, messages, and return values to illustrate the sequence of actions.




Subscription and..
AccessContent()
SubscriptionRequired()
RequestSubscrip...
PaymentRequired
MakePayment()
StorePaymentData()
StoredData()
GrantSubscription()
Post Study Sess...
PostSession()
ShowAvailableSession()
PickAvailabeSes...
JoinSession()
Admin Login
AdminLogIn()
VerifyAdmin()
Veified()
alt
AccessGranted()
AccessDenied
Report post
ReportPost
ViewReport()
DeletePost()
PostDeleted()

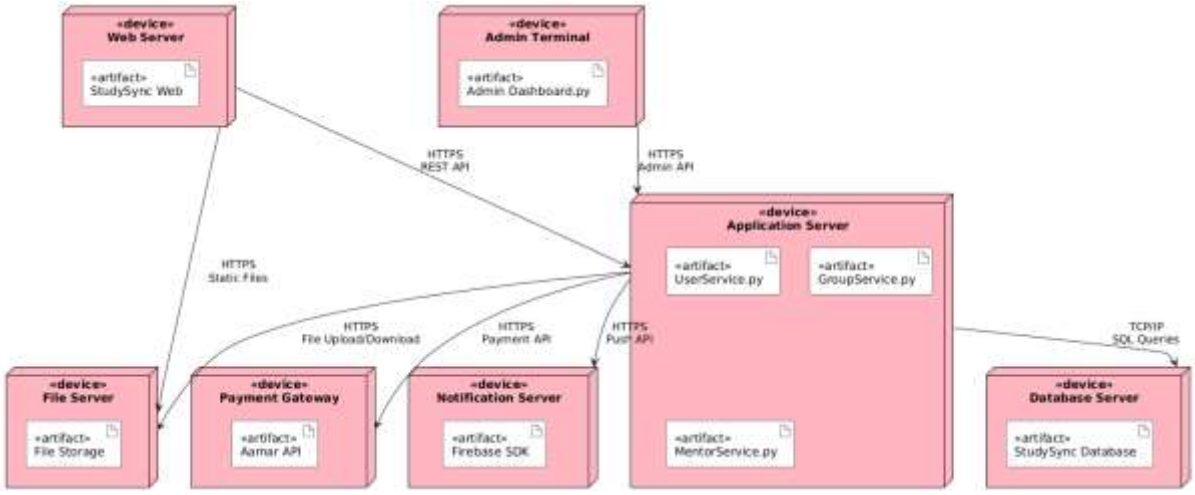
10. Component Diagram

A Component Diagram is a type of UML (Unified Modeling Language) diagram that represents the physical structure of the StudySync platform, showing its software components, their interfaces, and the dependencies between them. It provides a high-level view of the system's architecture and how its parts are organized.



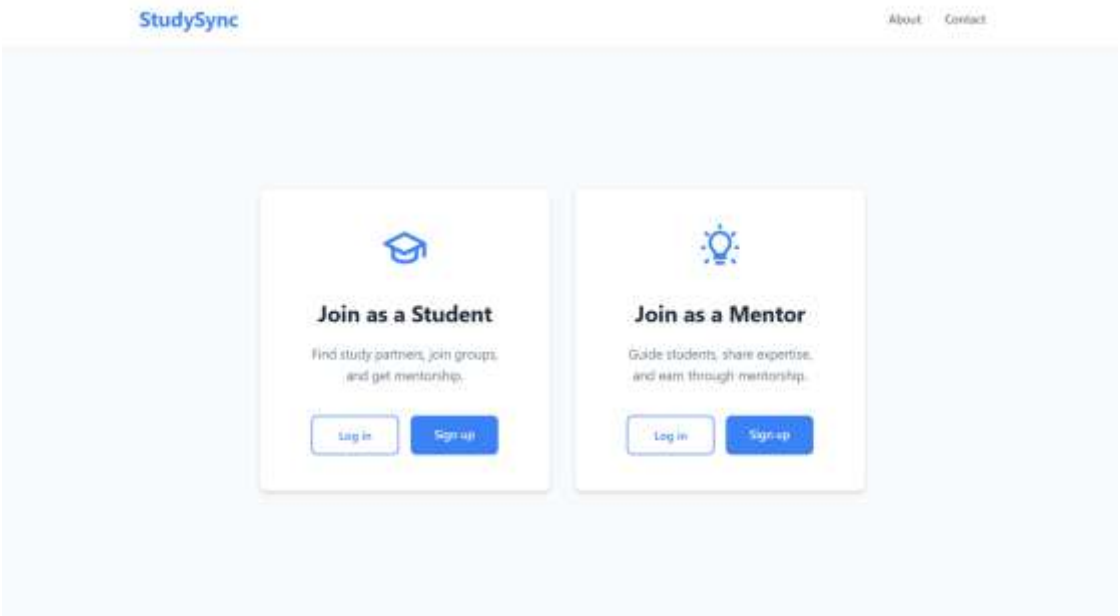
11. Deployment Diagram

A Deployment Diagram is a type of UML (Unified Modeling Language) diagram that illustrates the physical architecture of the StudySync platform, showing the hardware nodes, the software components deployed on them, and the communication links between them. It provides a view of how the system is distributed across a network.

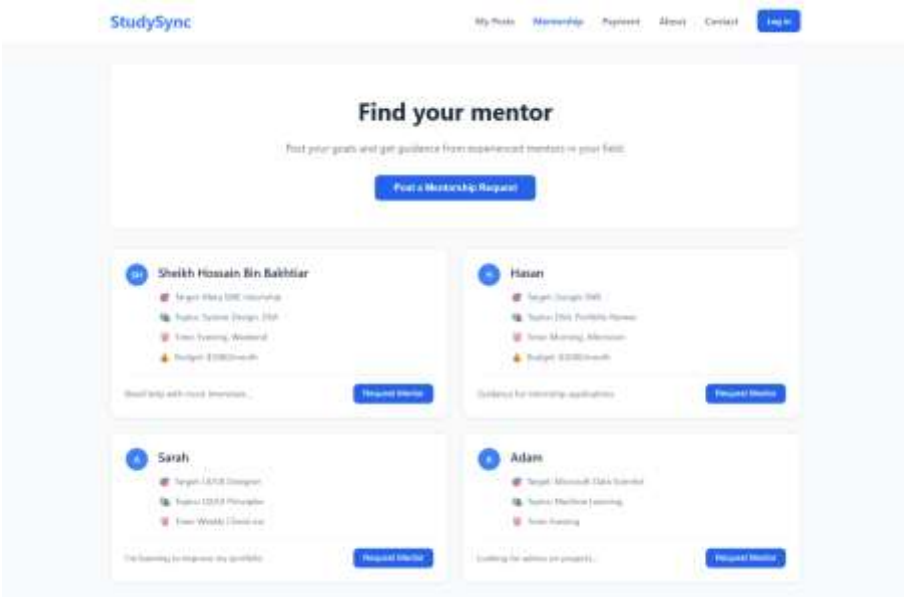


12. Snapshot

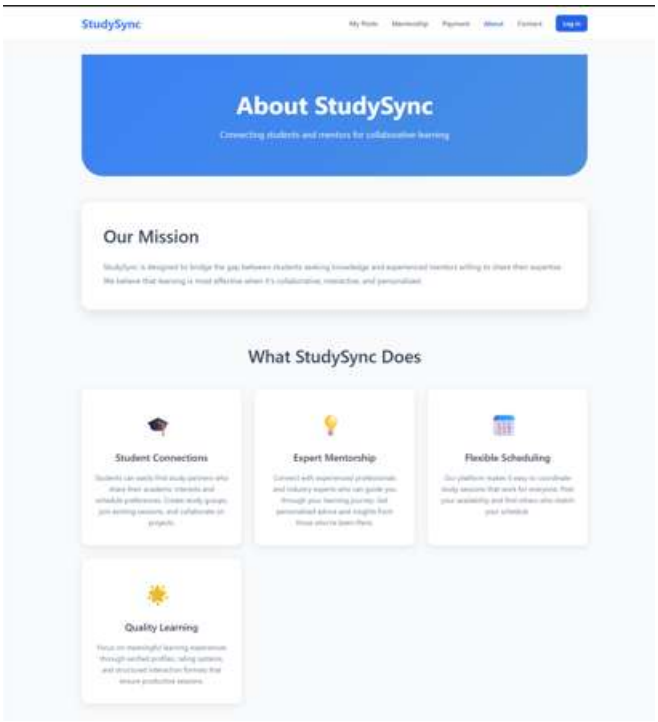
12.1 Login Page

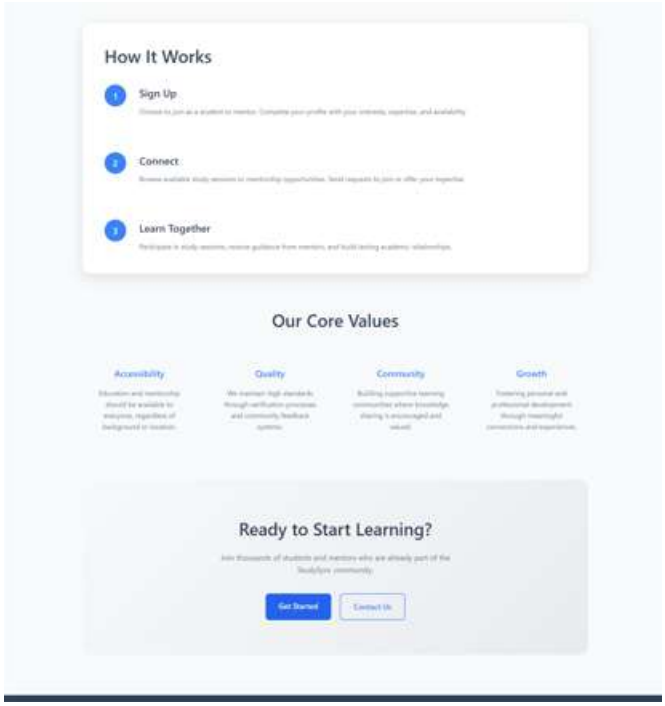


12.2 Mentorship Page

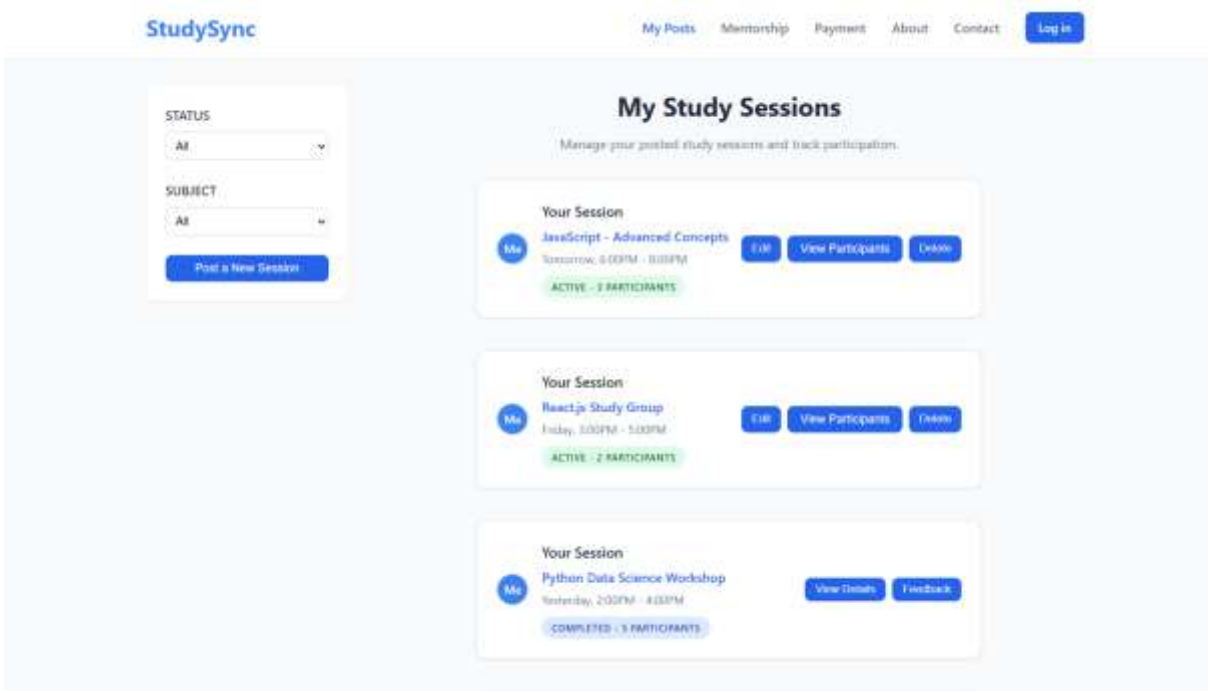


12.3 About page

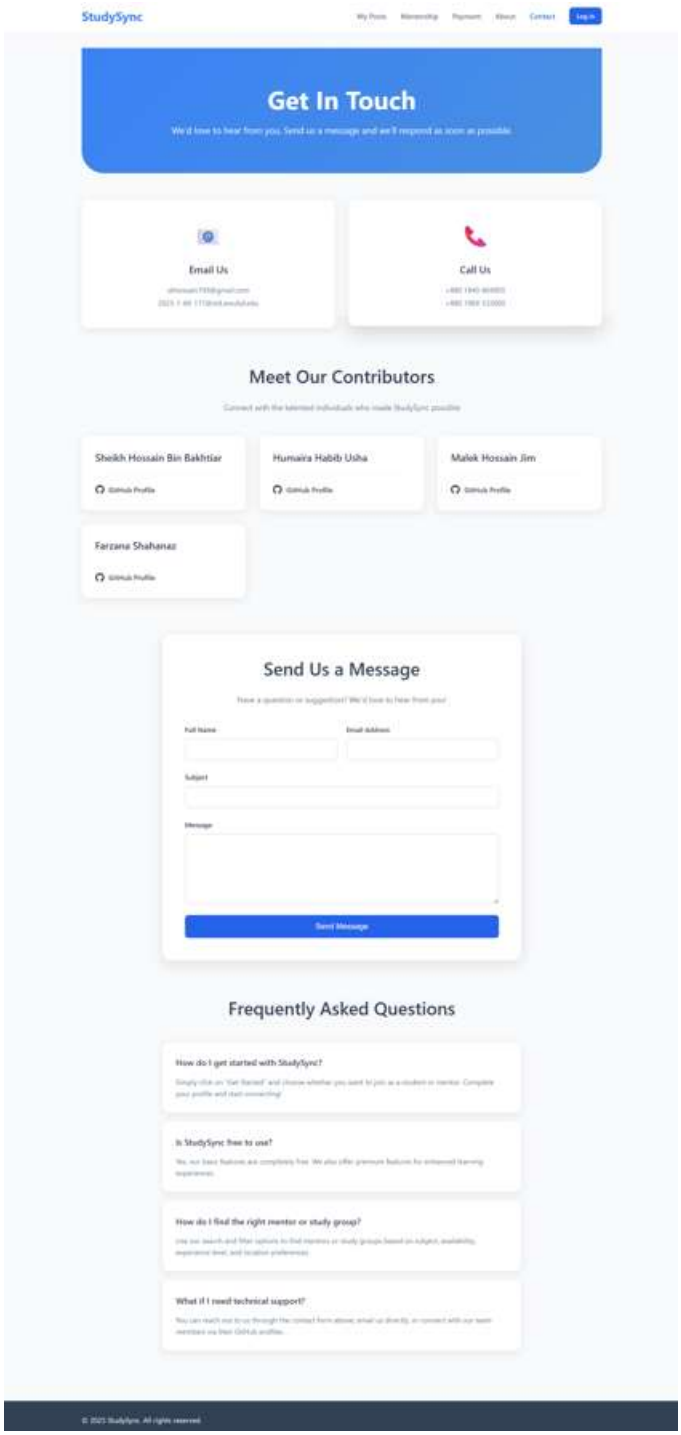




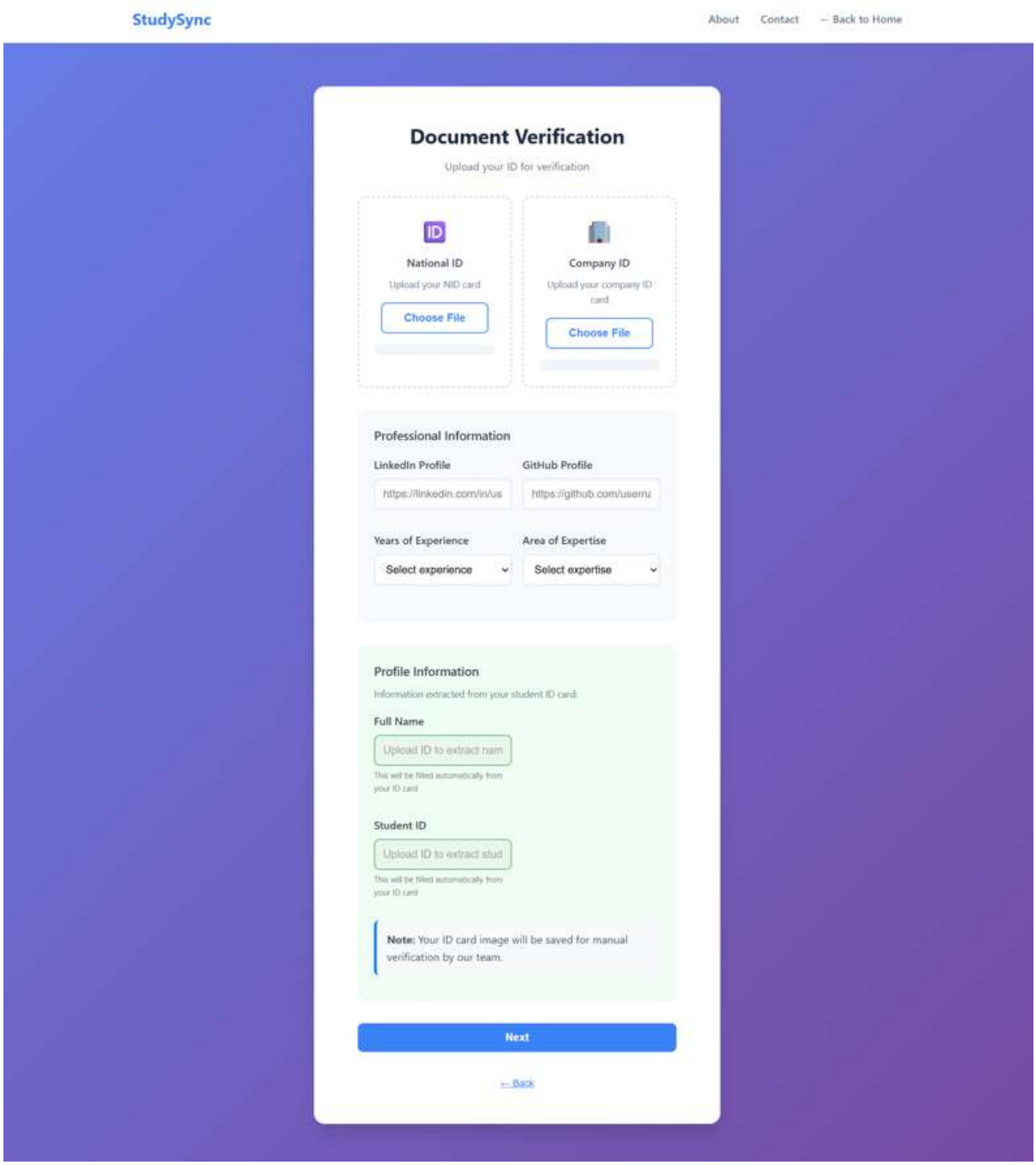
12.4 My posts Page



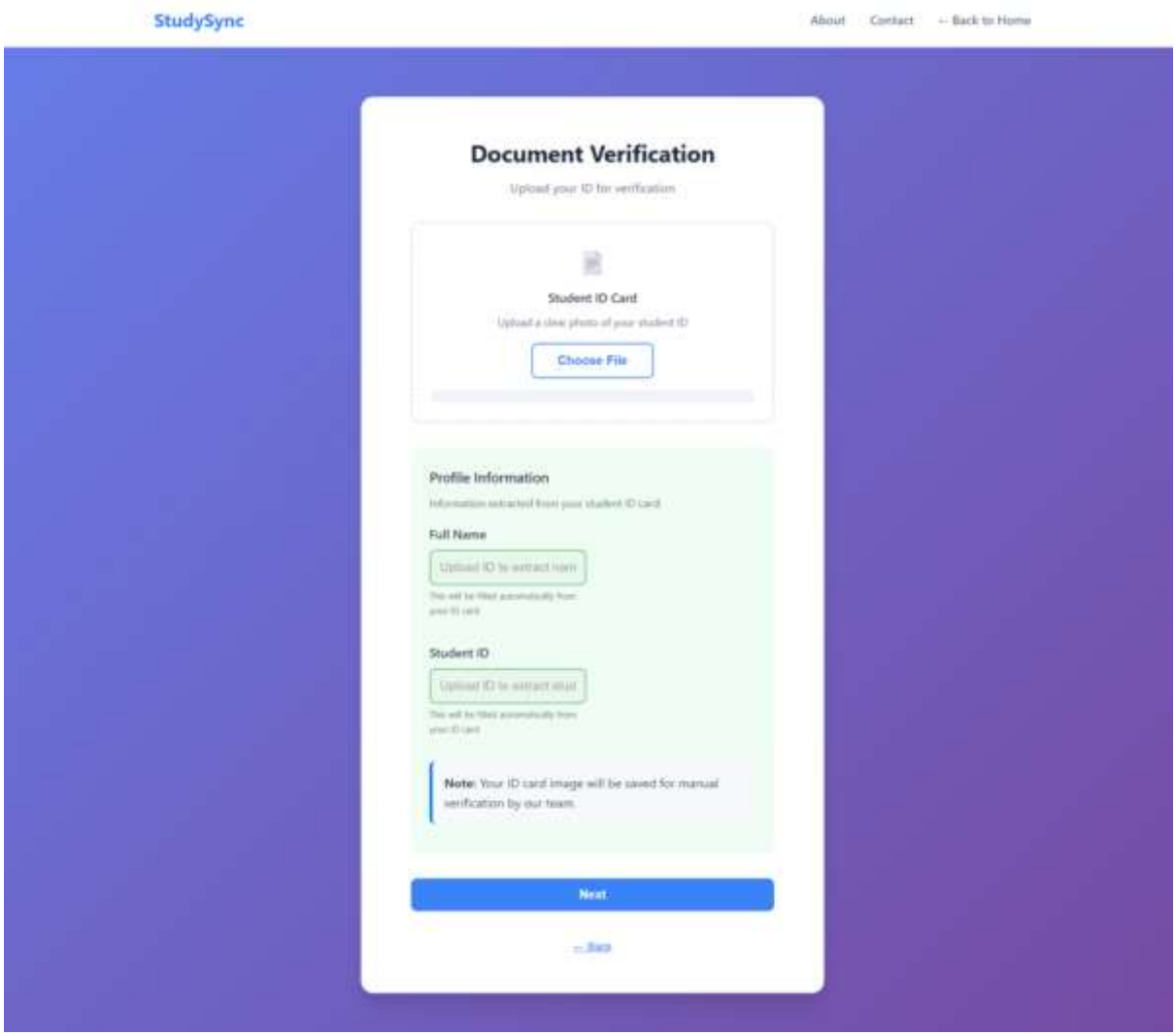
12.5 Contact Page



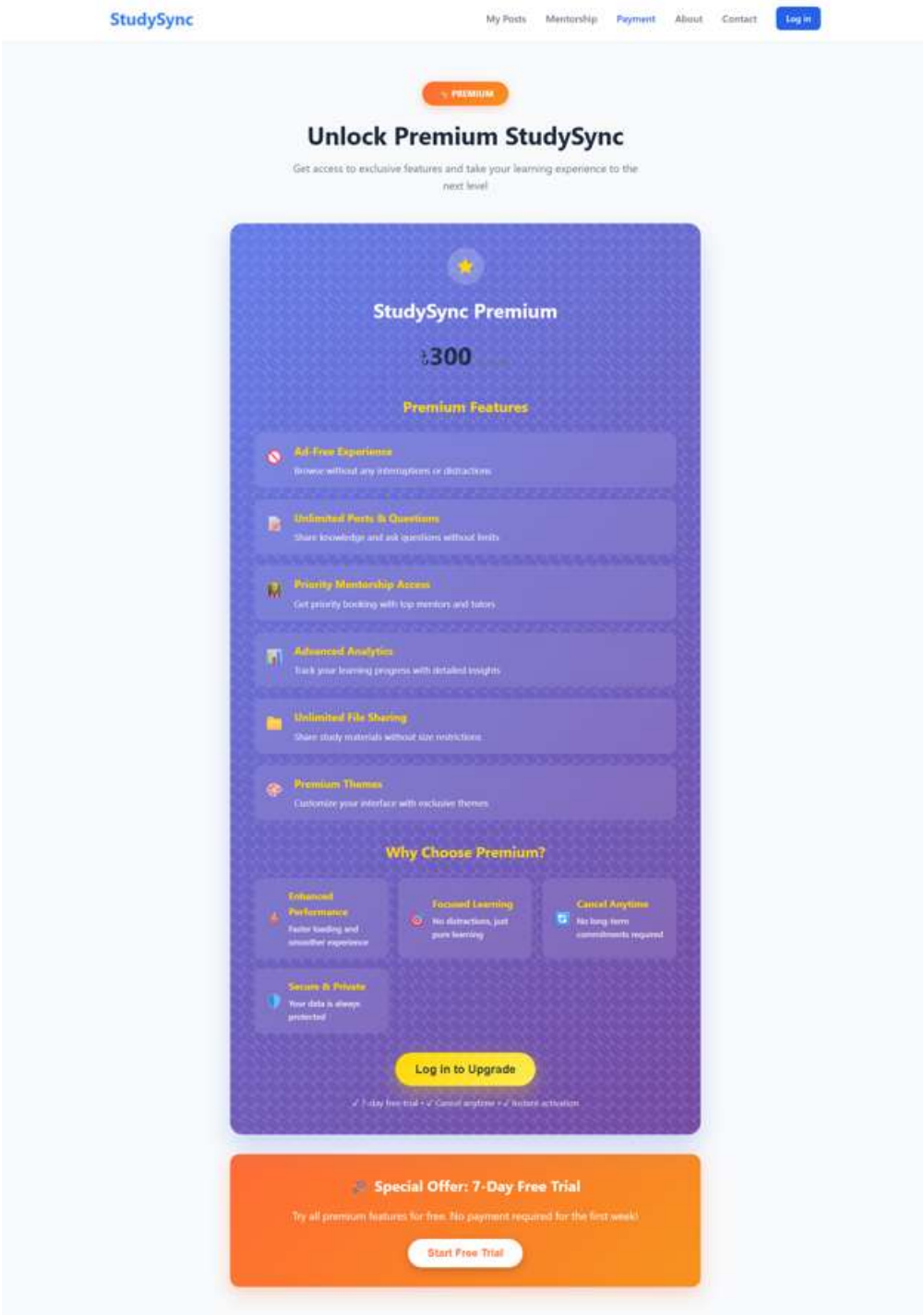
12.6 Mentor Signup Page



12.7 Student Signup Page



12.8 Payment page



13. Limitations

The StudySync platform, while designed to facilitate mentoring and study sessions, is subject to several limitations that may impact its performance and user experience. The requirement for administrators to manually create user accounts may lead to delays or errors during onboarding, especially with a growing user base, while the restriction on users modifying their assigned UserID, email, or phone number could cause inconvenience if updates are needed. The current architecture, relying on a single Web Server Node and Database Server Node, may struggle with scalability during peak usage, potentially necessitating load balancing or additional servers, and the dependence on an external Payment Gateway Node introduces risks of service interruptions or integration issues affecting subscription processing. Furthermore, the lack of offline support for features like messaging or session management may hinder users in areas with unreliable internet, while ensuring complete anonymity in reviews while maintaining traceability for administrative purposes presents a technical challenge. Additionally, the notification system's limitation to email and in-app alerts may exclude users preferring alternative methods like SMS, suggesting areas for future enhancements such as automation, improved scalability, and expanded offline and notification capabilities.

14. Conclusion

The StudySync platform represents a comprehensive solution for facilitating mentoring and study sessions, effectively addressing the needs of mentees, mentors, and administrators through a well-defined set of functional and non-functional requirements. The detailed design, encompassing use case, activity, ER, class, sequence, component, and deployment diagrams, provides a solid foundation for implementation, ensuring a user-friendly interface, secure data management, and scalable architecture. Despite identified limitations such as manual account creation, scalability constraints, and restricted offline functionality, the project is poised for success with planned enhancements in future phases, including automation and expanded features.

15.Github Link

Frontend:
https://github.com/MHossainJim/StudySync/tree/ce1e1ae2c320386829e14207d69c566561f410d7/frontend

Backend:

https://github.com/MHossainJim/StudySync/tree/ce1e1ae2c320386829e14207d69c566561f410d7/backend