

Software Requirements Specification

for

Study Club

Version 1

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Syracuse University CIS 453

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1. Introduction

1.1 Purpose

The SRS is designed to outline the software requirements and provides a system overview for the social platform StudyClub. StudyClub provides a platform for users to share class notes and interact with each other on their study needs. This SRS is intended as a guide for developers and stakeholders to navigate how the platform functions as well as testing for different use cases.

1.2 Scope

The following capabilities are outlined in this document:

1. User registration
2. User verification
3. System verification
4. User post feature

1.3 Definitions

- SRS: Software Specification Requirements
- UML: Unified Modeling Language
- API: Application Programming Interface

1.5 Overview

This documentation is based on the “IEEE Std 830-1998 IEEE Recommended Practice for Software Specifications.”

2. Overall Description

2.1 Product Perspective

StudyClub is an educational social platform designed for students to share their upload/share notes with their classmates and students all around the world. The app’s two fundamental features are: the user’s ability to collaborate with their other users on textbook sections or course chapters by submitting notes to a common repository, and the user ability to communicate with each other via the integrated instant messaging system. This allows students to ask each other questions and share ideas between their classes.

Apart from this, the ability to register and log in with an email and password are essential to maintaining basic security within the system. This involves a server securely storing user data, as well as

an authentication system to verify new user email registration. The figure below outlines the relations between all the objects of the system.

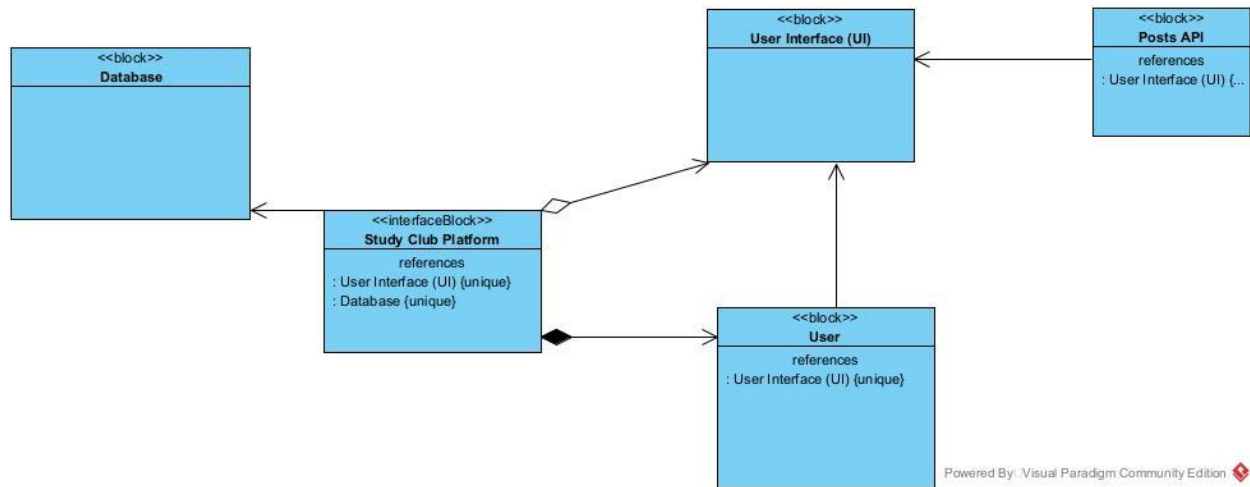


Figure 1: Block Diagram

2.2 Product Functions

The following figure demonstrates the different users within our system, their roles, and how they interact from a broad perspective. Insert use case figure.



Figure 2: Use cases diagram

2.3 Use Case Descriptions

2.3.1 User selects 'Register'.

General Characteristics	
Intent	To allow a new user to create an account on the StudyClub platform, ensuring they have secure access to the platform's features.
Scope	This use case covers the process from a user selecting the 'Register' option to the successful creation of a new account or the display of an error message in case of failure.
Primary Actor	Prospective StudyClub member
Secondary Actors	StudyClub platform
Preconditions	The user has accessed the StudyClub platform. The user does not already have an account or is not already logged in.
2.3.4 Assumptions	The user has a valid email address that they can access. The user has a stable internet connection. The platform's database and email system are functioning correctly.
Trigger	The user clicks on the 'Register' button or link on the StudyClub platform.
Success Post Condition	A new user account is successfully created. The user receives a confirmation message on the platform. A verification email is sent to the user's provided email address.
Failed Post Condition	The user account is not created. The user receives an error message detailing the reason for the failure (e.g., email already in use, weak password, etc.).

2.3.2 User provides Name, Email, Password, Occupation, Major/Minor, School, and Year.

General Characteristics	
Intent	Get users information for algorithms to show relevant information.
Scope	This use case covers the process from a user being prompted to provide detailed profile information to the successful storage of this information or the display of an error message in case of failure.
Primary Actor	Existing StudyClub member
Secondary Actor	System (StudyClub platform) Database (for storing user profile information)
Preconditions	The user is registered on the StudyClub platform. The user is logged in and is either setting up their profile for the first time or updating their existing profile.
2.3.4 Assumptions	The user is willing to provide accurate and detailed information. The platform's database is functioning correctly. The algorithms used by the platform can effectively use the gathered information to provide relevant content.
Trigger	Registers for the first time and is directed to the profile setup page. Chooses to update their profile from their account settings.
Success Post condition	The user's profile information is successfully stored in the database. The user receives a confirmation message on the platform.

	Algorithms start using the new information to display relevant content to the user.
Failed Post condition	The user's profile information is not stored. The user receives an error message detailing the reason for the failure (e.g., invalid input, system error, etc.).

2.3.3 System verifies the information.

General Characteristics	
Intent	To ensure the authenticity and validity of the information provided by the user during registration or profile update, thereby maintaining the integrity and security of the StudyClub platform.
Scope	This use case covers the process from the system receiving user information to the successful verification of this information or the display of an error message in case of discrepancies.
Primary Actor	StudyClub platform
Secondary Actors	Registered User (Existing or prospective StudyClub member providing the information) Database (for cross-referencing and storing user information) Email System (for sending verification emails, if applicable)
Preconditions	The user has provided their information, either during registration or profile update. The system is ready to process and verify the information.
2.3.4 Assumptions	The database contains accurate records for cross-referencing (if applicable).

	<p>The email system is operational (if email verification is required).</p> <p>Users typically provide accurate information, but there's a need to verify for exceptions.</p>
Trigger	The user submits their information, prompting the system to initiate the verification process.
Success Post Condition	<p>The user's information is verified as authentic and valid.</p> <p>The information is stored or updated in the database.</p> <p>The user receives a confirmation message, and if applicable, a verification email is sent to the user's provided email address.</p>
Failed Post Condition	<p>The user's information is found to be inauthentic or invalid.</p> <p>The user receives an error message detailing the reason for the failure (e.g., email already in use, mismatched information, etc.).</p> <p>If it's during registration, the account creation process is halted. If it's during profile update, the changes are not saved.</p>

2.3.4 System sends a verification email.

General Characteristics	
Intent	To ensure the email address associated with the user account is valid and accessible to the account holder.
Scope	This use case covers the process from the user submitting a request to register or reset their password to the successful sending of a verification email to the user's inbox.
Primary Actor	StudyClub platform

Secondary Actors	Registering user System database (temporarily holds potential emails) StudyClub platform (sends email to user)
Preconditions	The user has provided a valid email address to be verified.
2.3.4 Assumptions	The email system is operational The user has an active email inbox that accepts messages from automated verification systems such as the StudyClub platform. The user has access to their email
Trigger	The user submits their information, prompting the system to initiate the verification process.
Success Post Condition	The user receives a verification email in a timely manner.
Failed Post Condition	The user never receives an email. The verification email takes too long to send. The user's email address rejects the email.

2.3.5 User verifies through email.

General Characteristics	
Intent	To authenticate and confirm the user's email address, ensuring that the user has access to the provided email and enhancing the security of the StudyClub platform.
Scope	This use case covers the process from the system sending a verification email to the user's successful verification through a link or code, or the display of an error message in case of failure.
Primary Actor	Registered User (Existing or prospective StudyClub

	member)
Secondary Actors	System (StudyClub platform) Email System (for sending and verifying the verification emails)
Preconditions	The user has provided an email address during registration or profile update. The system has sent a verification email to the provided address.
2.3.4 Assumptions	The user has access to the provided email address. The email system is operational and can send and receive emails without issues. The verification link or code in the email is unique and time-bound.
Trigger	The system sends a verification email to the user's provided email address after registration or email update.
Success Post Condition	The user successfully verifies their email by clicking on the verification link or entering the verification code. The user's email status in the database is updated to "verified." The user receives a confirmation message on the platform and can proceed with other activities.
Failed Post Condition	The user fails to verify their email (e.g., incorrect code, expired link, etc.). The user's email status remains "unverified" in the database. The user receives an error message detailing the reason for the failure and may be prompted to request a new verification email.

2.3.6 System confirms the registration.

General Characteristics	
Intent	To finalize and acknowledge the successful registration of a user on the StudyClub platform, ensuring the user is aware that they can now access the platform's features.
Scope	This use case covers the process from the system validating the user's provided information and email verification to the successful confirmation of registration or the display of an error message in case of discrepancies.
Primary Actor	System (StudyClub platform)
Secondary Actors	Registered User (Prospective StudyClub member who has just completed the registration process) Database (for storing and confirming user registration details)
Preconditions	The user has completed the registration process, including providing necessary information and verifying their email. The system has validated the user's information.
2.3.4 Assumptions	The database is operational and can store and retrieve registration details accurately. The user has followed all necessary steps in the registration process.
Trigger	The system has successfully validated the user's registration details and email verification status.

Success Post Condition	<p>The user's registration is confirmed in the system.</p> <p>The user receives a confirmation message on the platform, acknowledging their successful registration.</p> <p>The user's status in the database is updated to "registered" or "active."</p>
Failed Post Condition	<p>The system encounters an error or discrepancy during the final stages of registration.</p> <p>The user receives an error message detailing the reason for the failure (e.g., system error, incomplete verification, etc.).</p> <p>The user's status remains "pending" or "inactive" in the database.</p>

2.3.7 User is registered and can access the system

General Characteristics	
Intent	To allow a successfully registered user to access and utilize the features of the StudyClub platform.
Scope	To allow a successfully registered user to access and utilize the features of the StudyClub platform.
Primary Actor	Registered User (StudyClub member)
Secondary Actors	<p>System (StudyClub platform)</p> <p>Database (for verifying user credentials and status)</p>
Preconditions	<p>The user has successfully registered on the StudyClub platform.</p> <p>The user has a valid username (or email) and password.</p>

2.3.4 Assumptions	<p>The database is operational and can verify user credentials accurately.</p> <p>The user remembers their login credentials.</p>
Trigger	The user enters their login credentials (username/email and password) and attempts to log in.
Success Post Condition	<p>The user's credentials are verified as correct.</p> <p>The user gains access to the StudyClub platform and can utilize its features.</p> <p>The user's last login timestamp is updated in the database.</p>
Failed Post Condition	<p>The user's credentials are incorrect or there's a system error.</p> <p>The user receives an error message detailing the reason for the failure (e.g., incorrect password, account not found, system error, etc.).</p> <p>The user remains logged out and cannot access the platform's features.</p>

2.3.8 User creates a post.

General Characteristics	
Intent	To allow a user to create a post and post on their feed.
Scope	Users feed
Primary Actor	StudyClub member
Secondary Actors	StudyClub platform
Preconditions	The user has an account and is signed into our platform.

2.3.8 Assumptions	The user follows proper input procedures. The user has all content required for their post.
Trigger	The user clicks on the 'create post' button.
Success Post Condition	The post is visible to the user and is located at the top of their homepage feed.
Failed Post Condition	User receives an error detailing why the post failed to appear on their feed. No post is seen on their end.

3. Specific Requirements

3.3 System Features

The system software supports the Use Cases described in Figure 2.

3.3.1 System Sends Verification Email Sequence

3.3.1.1 Platform sends an email to the user to create a method for the user to verify their email address.

3.3.1.2 Activity diagram

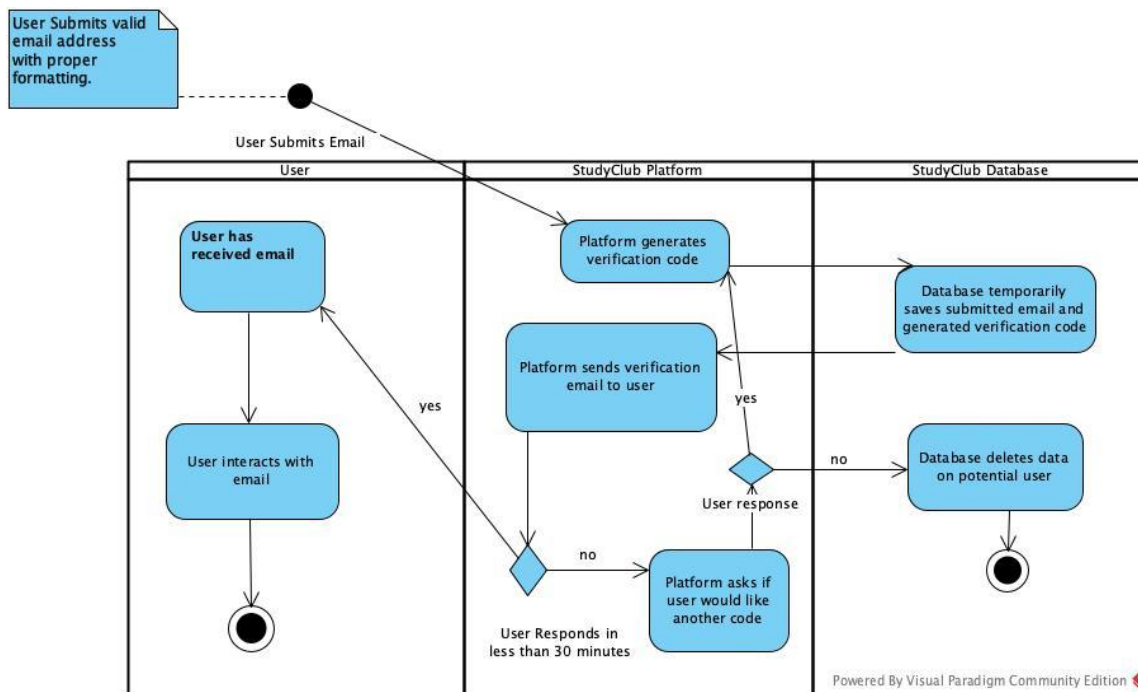


Fig 3.3.4.2 Email Verification Activities

3.3.1.3 Associated Functional Requirements:

3.3.1.3.1 The platform shall verify that the user input for email is a valid entry.

3.3.1.3.2 The platform shall provide users with verification code.

3.3.1.3.3 The platform shall verify if user code is valid.

3.3.2 User Select “Register”

3.3.2.1 Platform will allow new users to register within our database.

3.3.2.2 Activity diagram:

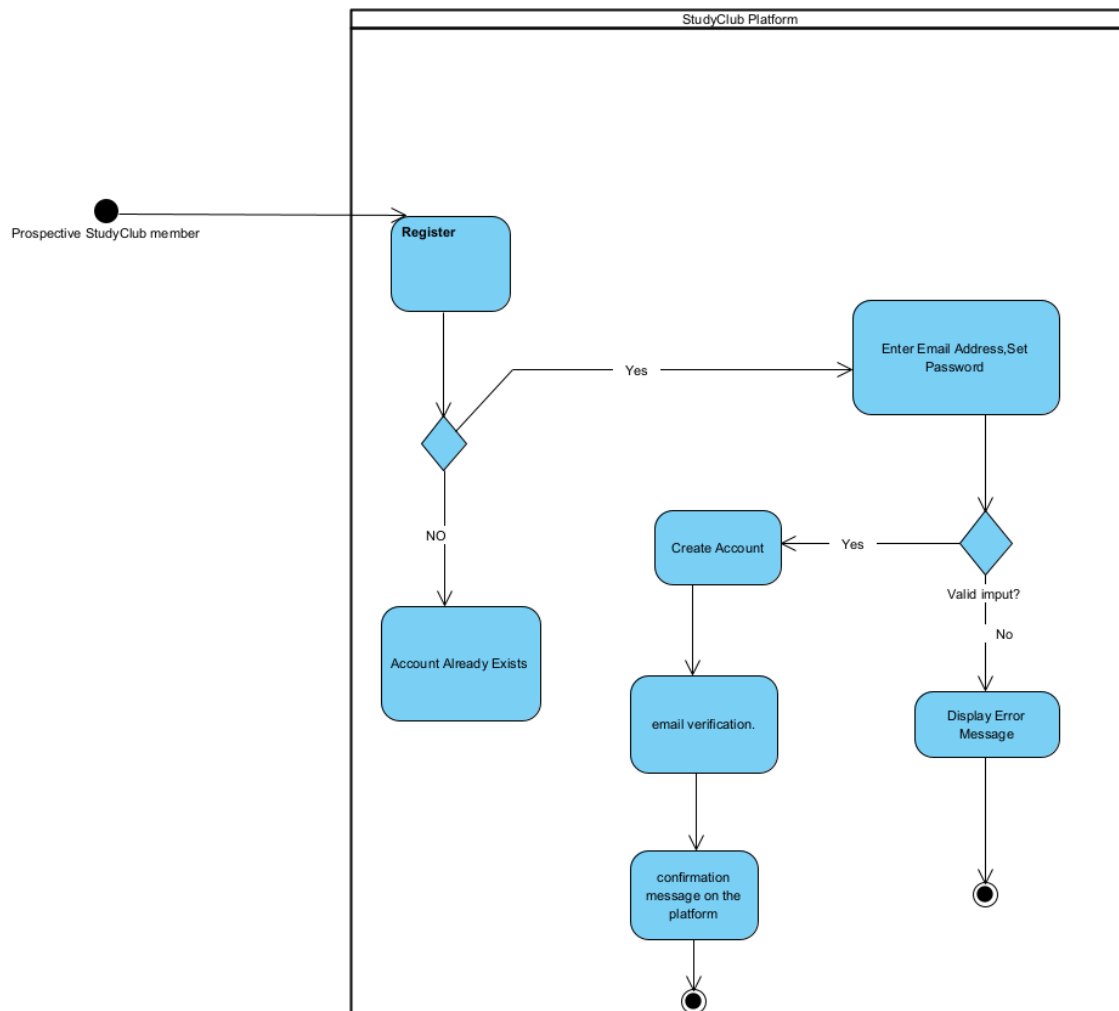


Figure 3.3.2.2 activity diagram

3.3.2.3 Associated functional requirements:

User registration interface:

3.3.2.3.1 The system shall display a 'Register' option on the StudyClub platform's main interface.

3.3.2.3.2 The system shall present a form requiring an email address and password when a user initiates registration.

Account verification:

3.3.2.3.3 The system shall verify whether an existing account is associated with the provided email address during registration.

3.3.2.3.4 The system shall notify the user with a predefined error message if registration fails due to an existing account.

Input Validation:

3.3.2.3.5 The system shall validate the format of the user-provided email address against standard email formatting rules.

3.3.2.3.6 The system shall require the user to create a password that meets predefined strength criteria.

3.3.2.3.7 The system shall provide an error message if the user's input fails to satisfy the system's validation rules.

Account creation:

3.3.2.3.8 The system shall create a new user account if the provided information passes all validation checks.

3.3.2.3.9 The system shall securely store the new user's credentials and profile information.

Email Verification:

3.3.2.3.10 The system shall send a verification email to the provided address upon successful registration.

3.3.2.3.11 The system shall require users to verify their email address by clicking a link embedded in the verification email.

3.3.2.3.12 The system shall confirm and activate the user's account upon successful email verification.

Error Handling:

3.3.2.3.13 The system shall deliver a clear and specific error message if the registration process encounters issues at any stage.

3.3.2.3.14 The system shall provide guidance within error messages to assist users in resolving the issues.

Security:

3.3.2.3.15 The system shall encrypt user data during transmission and in storage.

3.3.2.3.16 The system shall prohibit the disclosure of sensitive user information without explicit user authorization.

3.3.3 User creates a post

3.3.3.1 This feature will allow users to create a post onto our platform to share with other users.

3.3.3.2 Activity diagram:

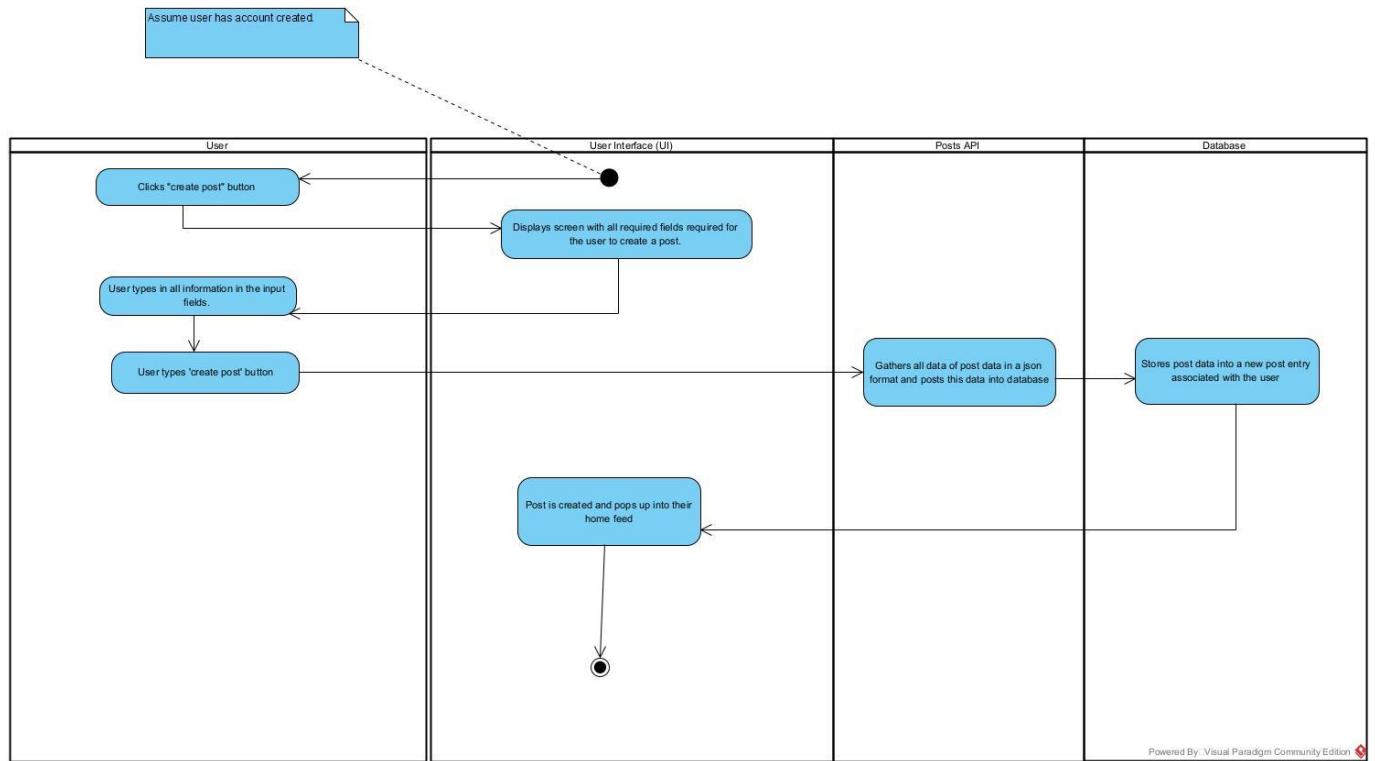


Figure 3.3.2 activity diagram

3.3.3.3 Associated functional requirements:

3.3.3.3.1 The platform shall contain a 'create post' button.

3.3.3.3.2 The user shall have an account created.

3.3.3.3.3 The platform shall store post data into the database.

3.3.3.3.4 The platform shall validate that the user input is valid.

3.3.3.3.5 The platform shall provide input fields for the user so they can create a post.