San Francisco State University

SW Engineering CSC648/848

Professor Isabel Song

Section 1 Team 5

Team Lead: Kao Saephan, Scrum Master: Sean Ibarra Diaz, Back End Lead: Luke Thilgen, Front End Lead: Collins Gichohi, Git-Master: Zacharia Angha, Front Assist: Salvador Avila.

Milestone 1

March 4th, 2024

History Table:

Milestone 1	3/4/2024

Task 1: Executive Summary, StudyConnect App

In today's ever changing educational landscape, the need for intuitive, and engaging platforms for campus communication has never been more important. StudyConnect, our application, emerges as a contender in this domain, offering a seamless blend of functionality and user engagement that stands to change the way educational communities interact.

The motivation behind StudyConnect is clear: to address the pressing challenges faced by educational institutions in offering effective communication and collaboration amongst students and faculty. With the digitalization of education accelerating faster than ever before, there's a gap in the market for a platform that not only simplifies communication but also enhances the learning experience. StudyConnect is designed to bridge this gap, offering a one-stop solution that caters to the needs of all different types of campuses.

At its core, StudyConnect offers real-time Q&A forums, class-wide discussions, personalized messaging, and document sharing, all within a secure and intuitive interface. These features are not just about keeping pace with technological trends; they're about setting new standards for educational engagement and support.

What sets StudyConnect apart is its commitment to accessibility, security, and personalization. Recognizing the diverse needs of educational communities, StudyConnect is designed to be highly customizable, allowing users to tailor their experience to their specific learning preferences and requirements. Moreover, our platform is built with the highest standards of data security and privacy at its core, ensuring a safe and trusted environment for all users.

Behind StudyConnect is a team of six soon-to-be computer science graduates, each bringing a unique blend of skills, passion, and vision to the project. United by a shared commitment to enhancing educational communication, our team combines technical expertise with a deep understanding of the challenges and opportunities within the educational sector. As a student startup, we are uniquely positioned to empathize with our target audience, ensuring that StudyConnect is not just a product, but a solution.

Investing in StudyConnect means investing in the future of educational communication. With its innovative features, user-centric design, and the passionate team behind it, StudyConnect is poised to become an indispensable tool for educational communities worldwide. As we approach the launching of this platform, we invite investors to join us in shaping the future of campus communication. Together, we can turn the potential of StudyConnect into a reality, setting new benchmarks for what educational platforms can achieve.

Task 2: Personas and User stories

- Greg Newman - Student

- 23-year-old biology major, who goes to San Francisco State University. He has always been interested in biology since he was a child.

- He has a class with Professor Peter Olman and talks to other students in a study group. He primarily uses the application to communicate with others.

- He is always striving to learn more about biology and strives to get his PhD in it.

- He does struggle with the lab portion of the class but is passionate to continue being a biology major. Since all of his classmates use this application it is easy for him to ask questions and get answers from his classmates and professor.

- ID 979439

- Peter Olman - Professor

- He is a 54-year-old Biology Professor at San Francisco State University. He has been a Professor for 20 years.

- He teaches several sections of Biology 202, and one of his students is Greg Newman. He primarily uses the application to respond to students' questions, TA's, graders, and send announcements to the class.

- He has been tenured for many years and plans to continue teaching for the foreseeable future.

- Due to the rapid changes in technology and choices of social platforms, he struggles to keep up with students. Luckily the application he uses is user-friendly, and he can talk to all of his students at once or send announcements.

- ID 034872

- Gabriella Saffron - TA

- 25-year-old TA in Professor Olman's Biology class, who goes to San Francisco State University. She is a grad student working as a TA.

- She works with Professor Peter Olman and grades assignments for his classes. Primarily uses the application to communicate with other grad students and Professor Olman.

- She has always wanted to have a PhD in biology and strives to make her dream a reality.

- As most university students, the work-life balance is a difficult task, luckily the application reduces the stress with its simplicity and intuitive design.

- ID 523870

Task 3: Data Definitions

1) **User Account:** Each user will have a user profile that will contain their personal information and preferences. These accounts will be used by both the students and the faculty to gain access to the platform features and interact with them. There will be a karma point system where good posts will be upvoted and bad posts will be downvoted.

2) **Q&A Forum:** There will be an area in the application where the users will be able to post questions and answers regarding academics and reach out for support.

3) **Discussion Board:** An online bulletin will be available for users to post class notes and updates, share resources, and ask each other for help in their courses.

4) **Messaging System:** A private channel where users will be able to send and receive messages from those within the educational community.

5) **Security Protocol:** The sequence of operations that will ensure privacy and the safety of personal information.

7) **Teacher Role:** Has the ability to create classrooms, make announcements, post questions, post comments, join classroom chat, join private chat.

8) **Student Role:** Has the ability to post questions, post comments, join classroom chat, join private chat.

Task 4: Initial list of functional requirements

1. Users should be able to sign up as a specific role.

2. Users should be able to log in.

3. Users should be able to set their profile including name, pronouns, description, profile picture, and role.

4. Users should be a host or a member.

5. Users should be able to post questions or general posts.

6. Users should be able to respond to posts or questions.

7. Users should be able to start private chats.

8. Users should be able to message in private chats.

9. Hosts should be able to make classrooms.

10. Hosts should be able to send announcements to many members.

11. Members should be able to join many classrooms.

12. Users should be able to gain points from posting good questions or answers.

13. Users should be able respond to posts with insightful reactions.

Task 5: List of non-functional requirements

1. Compatibility: application can be used on several browsers including Google Chrome, Mozilla Firefox, Internet Explorer.

2. Development Requirement: Data will be stored in Amazon AWS database.

3. Fault Tolerance: shall handle up to 80 people at a time in a classroom

4. Availability: Should always be available, there should only be minimal downtime of 10 minutes per week for maintenance

5. Security: secure against unauthorized users, data breaches. Each user has a role so they can use it correctly.

6. Security: data backups end of every day

7. Performance: messages should be delivered with no more than 30 seconds delay

8. Storage: application shall use no more than 100 MB of storage

9. Storage: each post has a 20 MB reply limit

10. Storage: chat rooms has a 1000 MB data storage before deleting oldest post

11. Usability: the user interface for both teachers and students should be user friendly easy to use, navigate and interact

12. Usability: Will make user interactions easy to use through by collecting users' input

13. Storage: databases allows for upgrades, fixes and new features in the future

14. Security: unauthorized users cannot see private messages

15. Fault Tolerance: should be able to be accessed with internet of ~ 1 Mbps

16. Development Requirement: The master branch shall be consistently maintained to ensure functionality at any time.

Task 6: Competitive analysis

Table of Application Features

	Reddit	Slack	Discord	Canvas	**StudyConnect**
Class Chat		X	X	X	X
Private Chat		X	X	X	X
Q&A chat	X				X
Karma Points	X				X
Insightful Reaction					X

We seek to build StudyConnect as the next great social platform - geared specifically for academics. While current applications like Slack, Discord, and Canvas have class-wide and private chat options, they lack the capability for users to post questions that are easily accessible. Information on these platforms often get lost in the flood of chatter, making it difficult to find anything useful. Reddit attempts to rectify this issue by having users post their questions and allowing upvotes on useful replies, but upvotes are ambiguous - the difference between 50 and 100 upvotes is uncertain. In addition, issues quickly arise when a post gets hundreds of replies and forces users to search for the best answers - a tedious endeavor. StudyConnect solves all these issues by having an intuitive, sleek design with a Q&A system that allows users to post their questions and get useful answers. Our unique 'insightful reaction' system allows users to react to a particular reply as 'Answered' or 'Not Useful', instead of a simple upvote. Building on the core features of today's social platforms, StudyConnect will become the norm of tomorrow.

Task 7: High-level system requirements

- Cloud Server: Amazon AWS

- Operating System: Ubuntu 22.04 Server

- Database: NoSQL (Mongo DB)

- Server Side Language: Node.js

- Web Application Framework: Express

- Front-end technology: React

- Web Server: Nginx

- IDE: VS Code

Task 8: Team

Team Lead: Kao Saephan, Scrum Master: Sean Ibarra Diaz, Back End Lead: Luke Thilgen, Front End Lead: Collins Gichohi, Git-Master: Zacharia Angha, Front Assist: Salvador Avila.

Task 9: Checklist

- Team found a time slot to meet outside of the class

  DONE

- Scrum Master shares meeting minutes with everyone after each meeting.

  DONE

- Github master chosen

  DONE

- Everyone sets up their local development environment from the team's git repo.

  DONE

- Team decided and agreed together on using the listed SW tools and deployment

  server

  DONE

- Team ready and able to use the chosen back/front-end frameworks.

  - For each technology (front/back-end/DB/cloud) , team decides who will

    lead the study of each technology and what will be the specific goal of the

    study within one month from the M1 announcement.

    - Ex : implement DB scheme for main data items by next 2 weeks.

  - If you list a detailed study plan for this, earn extra point!

  DONE

- Team lead ensured that all team members read the final M1 and agree/understand

  it before submission

  DONE