

SW Engineering CSC648-848-05 Fall 2024

Application Name: **Swamp Study**

Seal Team One Members (Team 01)

Lennart Richter	lrichter@sfsu.edu	Team Lead
Edmund Huang		Front-End Lead
Conrad Choi		Github Master
Julio Reyes		Docs-Editor
Rafael Fabiani		Backend-Lead
Vacant		Database Master

Version Table

Milestone 1	Feb 28, 2024
-------------	--------------

Table of Contents

SW Engineering CSC648-848-05 Fall 2024.....	1
Table of Contents.....	2
Executive Summary.....	5
Use Cases.....	7
Use case 1: Base - need partner.....	7
Use case 2: Notifications.....	9
Use case 3: Availability.....	11
Use case 4: Safety.....	13
Use case 5: Long-Term.....	15
Use case 6: Group matches.....	17
Use case 7: Introverts.....	19
Use case 8: Rating.....	21
Use case 9: Monetization/ Premium.....	23
Use case 10: Reward program.....	25
Use case 11: Alumni.....	27
Use case 12: Forum.....	29
Use case 13: Quality Control.....	31
Data Items and Entities.....	33
User.....	33
Premium user.....	33
Matched Pair.....	33
Introvert.....	33
Blocked user.....	33
Alumni.....	33
Tutor.....	33
Group Cluster.....	33
Profile.....	33
Rating.....	33
Availability.....	33
Proficient Subject.....	33
Challenged Subject.....	34
Forum.....	34
Reward.....	34
Warned User.....	34
Account.....	34
Application.....	34
Call center.....	34
Video call center.....	34
Appointment center.....	34

Functional Requirements.....	35
User Account Management:.....	35
User Profile Management:.....	35
User Interface:.....	35
Matching System:.....	35
Forum:.....	36
Additional Features:.....	36
Non-Functional Requirements.....	37
1. Usability.....	37
2. Reliability.....	37
3. Scalability.....	37
4. Maintainability.....	37
5. Utility.....	37
6. Performance.....	37
7. Privacy.....	37
8. Data Integrity.....	37
9. Security.....	38
10. Storage.....	38
11. Deployment.....	38
12. Coding Standards.....	38
13. Environmental Sustainability.....	38
Competitive Analysis.....	39
Competitive Analysis Table.....	39
Competitive analysis Cont.....	41
Competitive Features Table:.....	42
Summary.....	43
Technical Architecture.....	44
1. Server Host:.....	45
2. Operating System.....	45
3. Database.....	45
4. Web Server.....	45
5. CDN.....	45
6. Server Side Language.....	45
7. Additional Technologies.....	45
8. Note on Technical Architecture Change.....	45
Checklist.....	46
Team Evaluation.....	47
Lennart (Team Lead) 10.....	47
Rafael (Backend Lead) 10.....	47
Edmund (Frontend Lead) 10.....	47
Julio (Docs-Editor) 10.....	48

Conrad (Github-Admin) 10.....	48
-------------------------------	----

Executive Summary

SwampStudy was derived from the minds of 5 Computer Science students facing the same problem. How do you find people to study with in the world of hybrid schooling and diminished social interaction? This can make finding a study partner or even asking a homework-related question seem like a much more daunting task than it otherwise should be. Social interaction is a foundational component in fostering learning by being a means for people to exchange what they know, explore new perspectives, and create a sense of community among the students. SwampStudy can provide a platform for students to exchange information in an open forum and provide a space for meaningful interaction between students. We believe that this can revolutionize how students form partnerships with each other and build tight-knit campus communities.

SwampStudy will look similar to other platforms geared towards social connection. There will be a tab where you can swipe to find potential study partners and another feature will be an open forum for inter-student discussion.

When creating a profile, users can set preferences by tuning the partner finding functionality by tailoring their potential study partners by area of study and course. Some of the things users will be able to tune are the subject/specific class they're interested in, what kind of studying they would like to do, and even how much conversation they want while studying. This way, users can fine-tune and streamline the process of finding compatible study partners that fulfill their needs and studying styles. The Forum section will be broken up into classes. Users can ask questions in each

class's forum based on the classes they take. This enables students to share knowledge even when they don't have the same professor, effectively casting a wider net on the knowledge that students can gain.

Use Cases

Use case 1: Base - need partner

Actors: Sebastian (Student), Potential Match (Student), SwampStudy (Company)

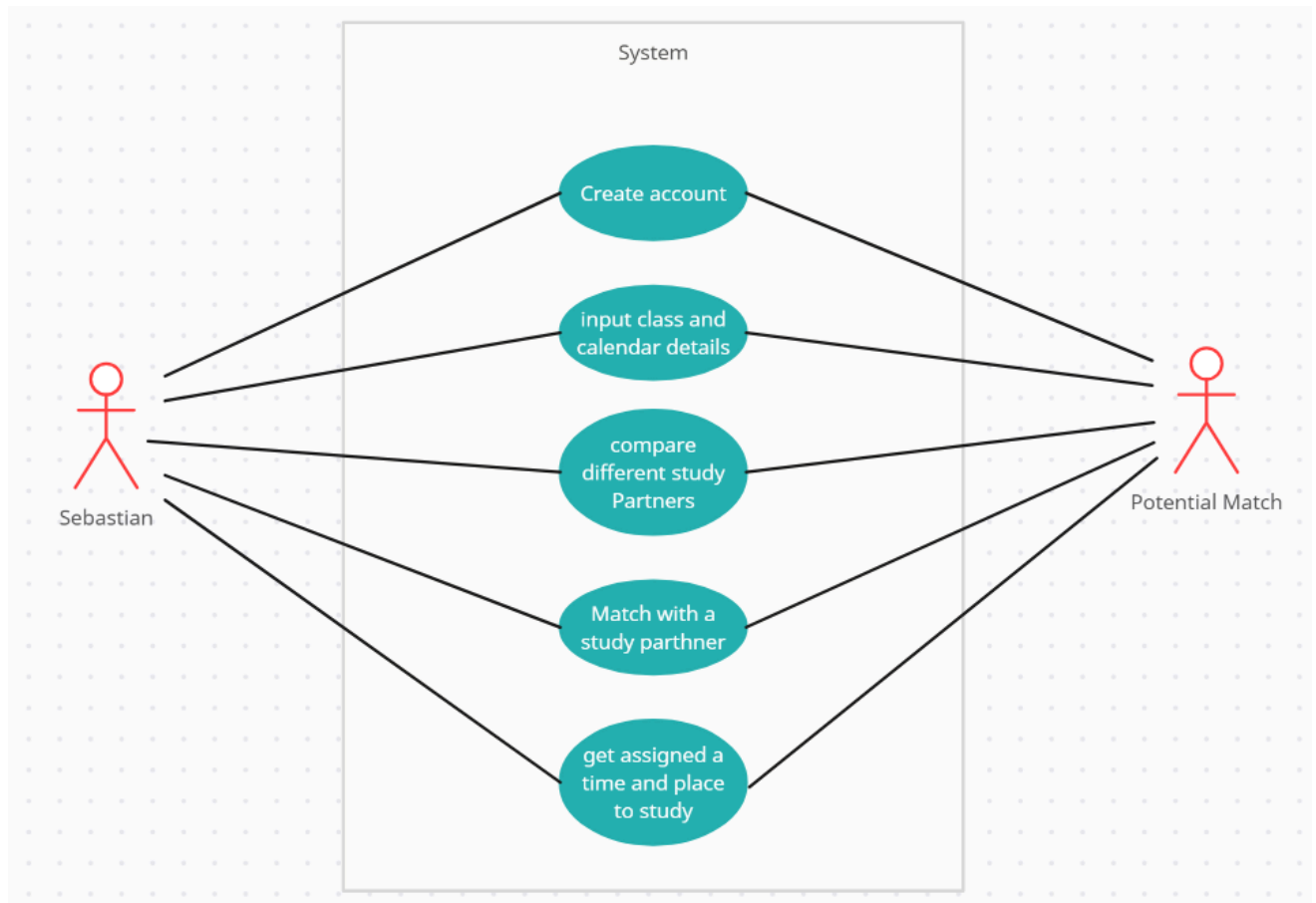
Assumptions:

- Student has access to the internet
- Student has an email

Use Case: Sebastian is a student at SFSU. Midterms are coming up and he's very worried about his grades and stressed about the pressure he'll face during the tests. He wants to find someone to study with, but his class being a lecture, he doesn't have the chance to connect with people and find someone to study with. Sebastian hears about SwampStudy and decides to give it a try. After creating an account and deciding which class he would like a study partner for, he received an array of people studying for the same class or in a similar subject at SFSU. He's relieved to see like-minded people studying the same subject. After swiping on a few people he receives a match. The platform automatically assigns a meeting place and time with a calendar link for him to add. After adding it to his Calendar, Sebastian feels much less worried knowing he has someone to study with now at a determined time. All the stressful parts of finding someone to study with have been taken out of his hands.

Benefits Sebastian received:

- **Time-saving:** He found a partner from his own home
- **Convenience:** Not a lot of his time was spent on finding a partner
- **Online platform:** Bypasses awkwardness of being rejected in person
- **Networking:** Users find new friends



Use case 2: Notifications

Actors: Cynthia (Student), Potential Match (Student), StudySwamp (Company)

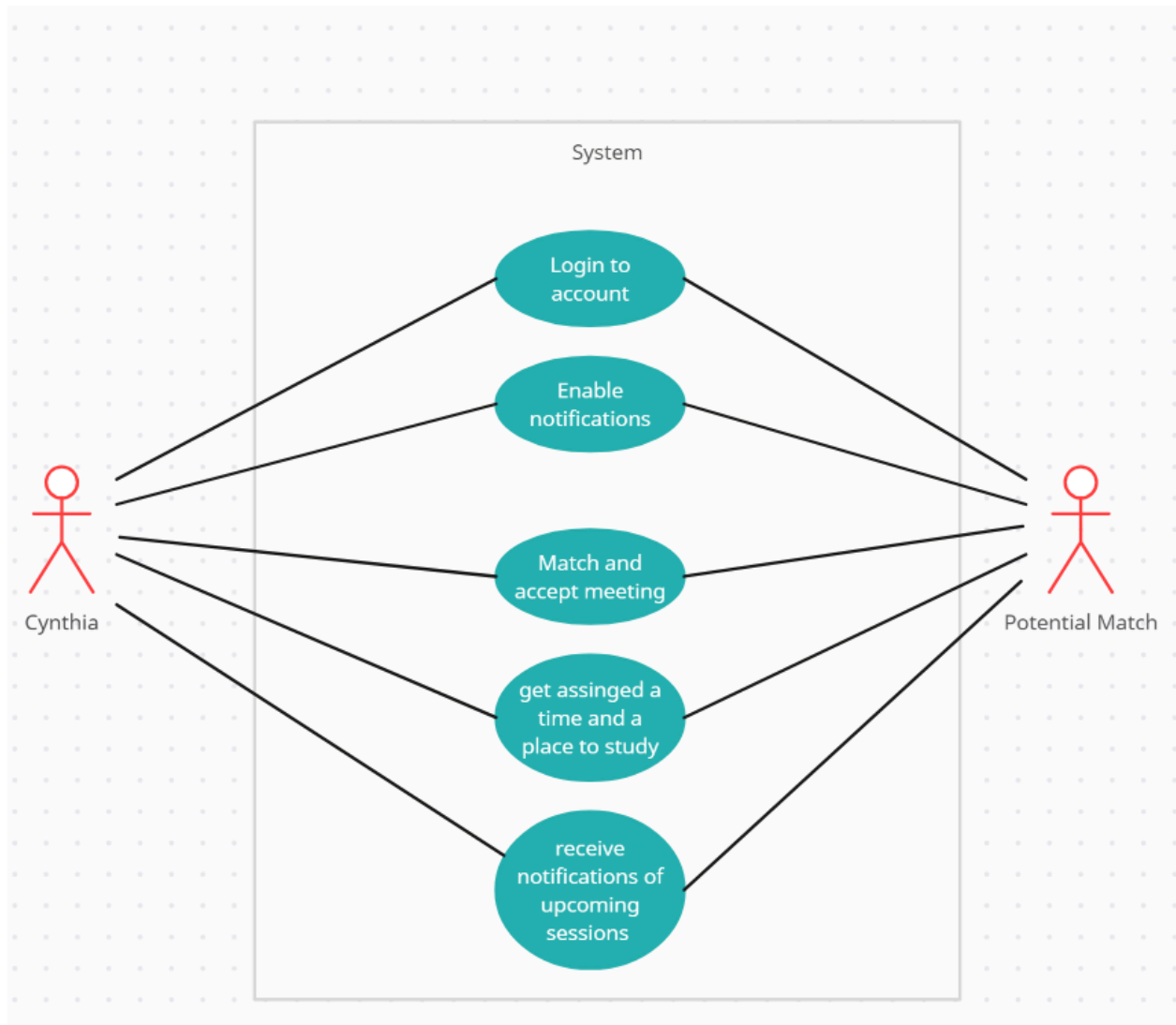
Assumptions:

- Student has a StudySwamp account
- Student has notifications turned on

Use Case: Cynthia is a very forgetful student at SFSU, her grades are suffering as she keeps forgetting deadlines and forgets to put time aside to study. She finally receives a match on the StudySwamp app, and although happy she hopes she doesn't let her partner down as this might be her last chance to pass her classes. Going about her week she finds an email reminding her about the upcoming meeting. She realized that without the notification she would have completely forgotten about it. She is thankful for the feature and makes it to the meeting on time.

Benefits Cynthia received:

- **Reminders:** The system is able to give Cynthia email/text/phone pop-up notifications
- **Peace of mind:** Cynthia's forgetful nature was not a factor anymore



Use case 3: Availability

Actors: Richard (Student), Potential Match (Student), StudySwamp (Company)

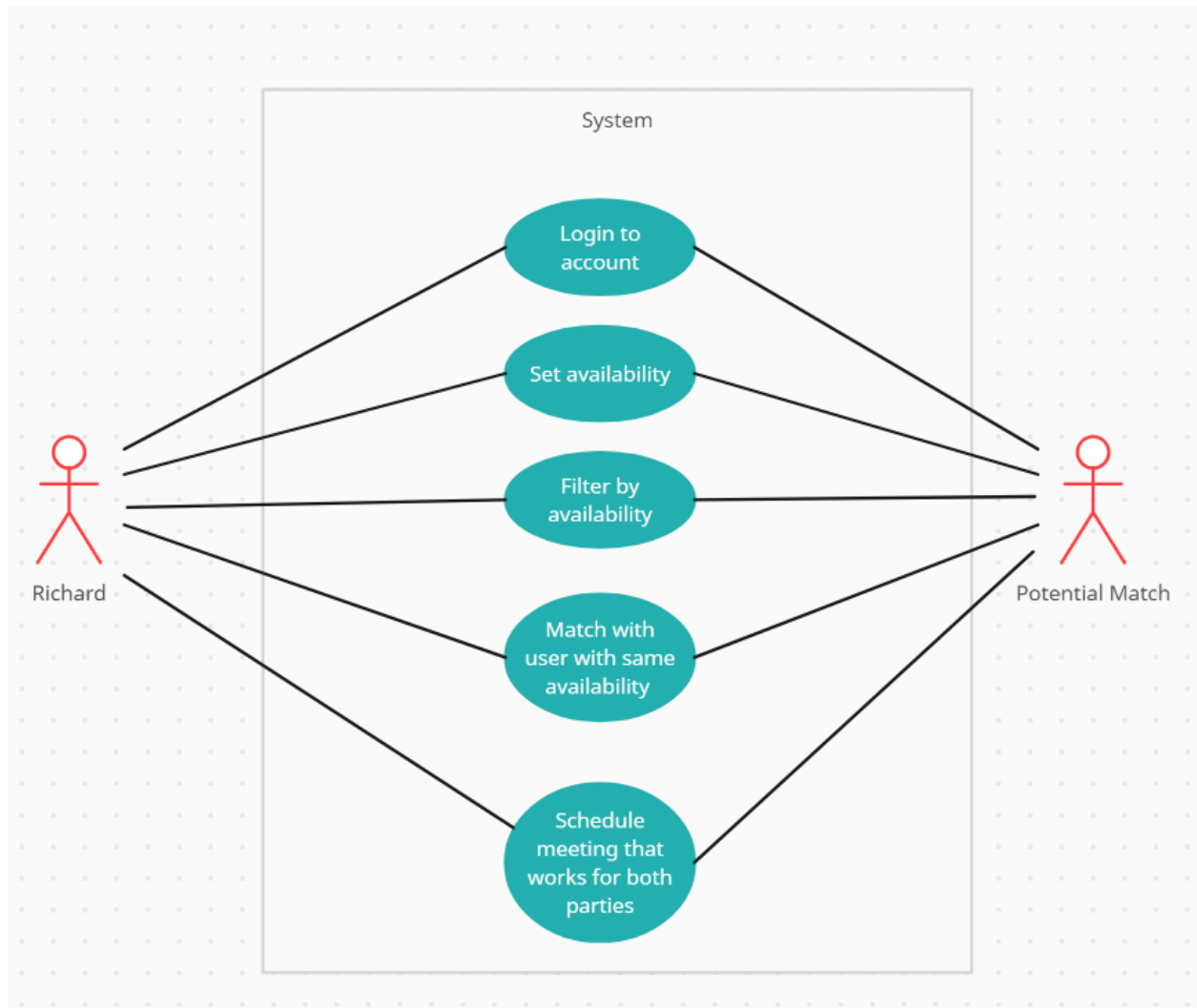
Assumptions:

- Student has a StudySwamp account
- Student sets their availability

Use Case: Richard is a non-traditional student. He has a wife and daughter at home. He is a full-time student and has full-time work. He is drowning in responsibilities and his grades are suffering. He is determined to graduate by any means so he swallows his pride and asks for help, he is referred to use StudySwamp to find someone to help him study. As his schedule is packed he doesn't seem too hopeful. Upon downloading the app he finds that there is a section where he puts out his entire availability. Although the window for his free time is small, the system is able to find a student that matches his free hours. Pleasantly surprised, Richard is able to find a new study partner without sacrificing time away from his work or family.

Benefits Richard received:

- **The system works within his hours:** The system only matches with partners that also have his free time open
- **He maintains family and work balance:** Because he did not have to change his schedule around he was able to continue his prior commitments



Use case 4: Safety

Actors: Melanie (Student), Potential Match (Student), StudySwamp (Company)

Assumptions:

- Matches have video calls available on their device

Use Case: Melanie, a student at SFSU, struggles with maintaining focus while studying alone. She is stressed about finding a compatible study partner due to scheduling conflicts. Upon a friend's recommendation, Melanie discovers StudySwamp. Intrigued, she signs up, completes her profile, and specifies her study preferences. Initially wary about safety, Melanie is reassured by StudySwamp's video call feature, which allows her to meet potential study partners virtually before in-person meetings. After selecting a study partner, Melanie joins a video call to get to know them. Once comfortable, she is automatically assigned a convenient time and place on campus to meet to study. Melanie looks forward to productive study sessions with her new partner.

Benefits Melanie received:

- **Time Savings:** StudySwamp eliminates the need for Melanie to search for a study partner, matching her with someone who shares her study topic and availability.
- **Reduced Stress:** StudySwamp's automated scheduling feature alleviates the stress of coordinating meeting times and places.
- **Enhanced Safety:** Melanie feels secure using StudySwamp's video call feature and vetting process for in-person meetings.



Use case 5: Long-Term

Actors: Daniel (Student), Emily(Student), StudySwamp (Company)

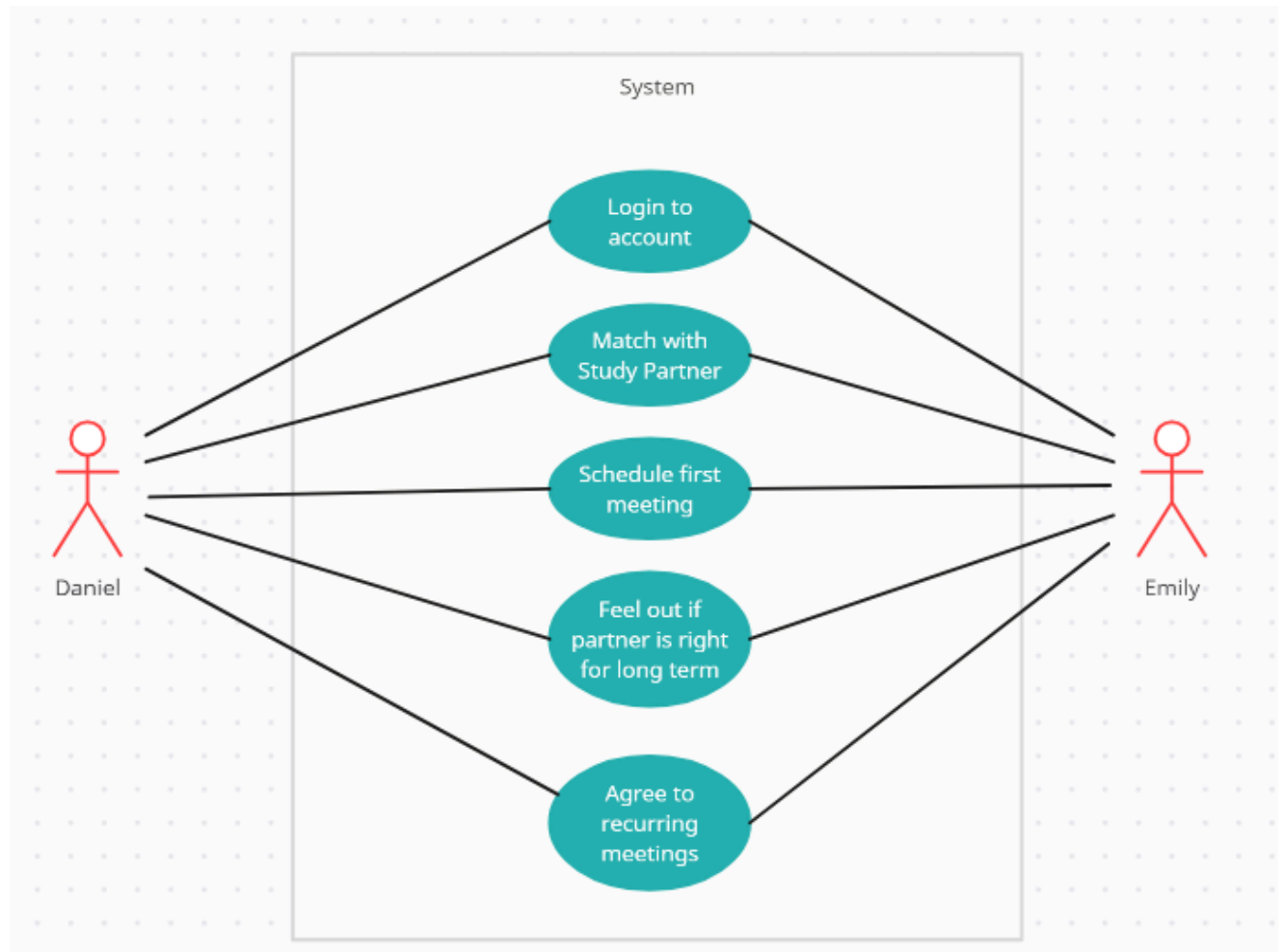
Assumptions:

- StudySwamp requires students to sign up using their student email addresses.
- All participants are students at the same university.

Daniel is a student at SFSU majoring in Computer Science. He is struggling with his Algorithms course. He wishes to find a study partner but he has no time due to his packed schedule. Daniel heard about StudySwamp from a friend and decided to give it a try. He sees a recommendation for a student named Emily, who is also taking Algorithms and has availability that matches his. Daniel and Emily decide to video call to get to know each other before meeting in person. They discuss their study habits, goals for the course, and availability. They find that they have a lot in common and agree to meet up to study together. After the video call, Daniel and Emily use StudySwamp to schedule their study session. StudySwamp suggests a time and place based on their availability and location. They agreed to meet at the campus library on Saturday afternoon. Daniel and Emily meet at the library as scheduled. They find that they work well together and can help each other understand the course material better. At the end of the meeting, the StudySwamp application asks both of them if they would like to schedule their next meeting. Seeing how they got along so well, they decide to continue studying together for the rest of the semester.

Benefits Daniel and Emily received:

- **Time-Saving:** Using StudySwamp, Daniel was able to save time that would be used to find a study buddy traditionally.
- **Safe and Convenient Matching:** StudySwamp's video call feature allowed Daniel and Emily to meet and get to know each other safely and conveniently before meeting in person. This ensured that they were comfortable with their study partner before committing to study together.
- **Ease of Convenience:** Neither had to actively look for a study partner that matches topics and schedules.



Use case 6: Group matches

Actors: Kyle(Student), Ike (Student), Cartman(Student), StudySwamp (Company)

Assumptions:

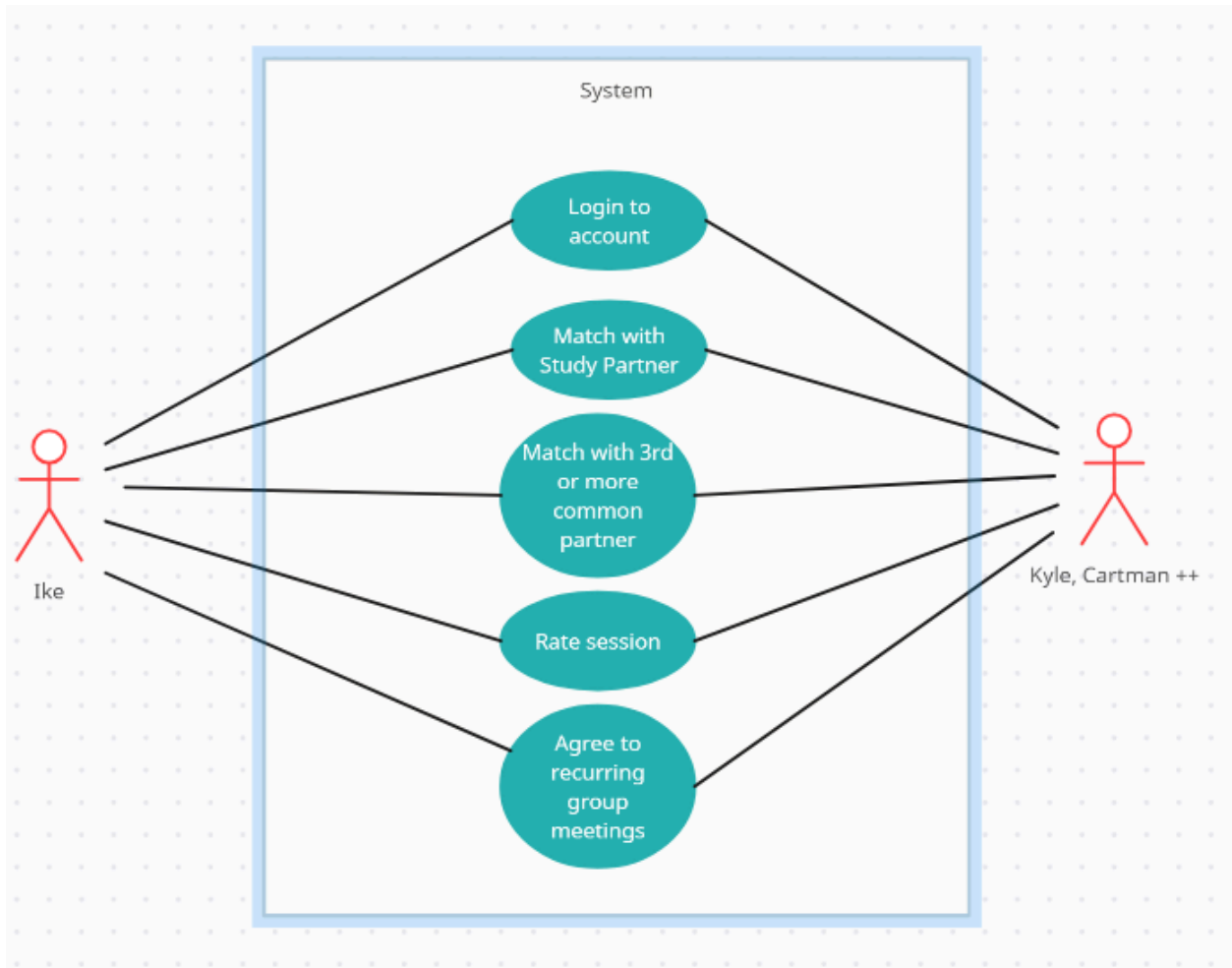
- All students have an active StudySwamp account

Use Case: Kyle is a very outgoing individual. He hates to be alone, and thrives in a social setting. He usually skips studying to go hang with his buddies. Like many other users he tries StudySwamp so that if he has to study, he at least won't have to study alone. He finds the first couple of sessions interesting but not enough to keep him from going out and neglecting his studies. One day looking at the app's settings, he finds that he can opt in to "study groups". Curious by this, he enables it. Later he finds himself matched with 2 people he had previously swiped yes with. He learns that all 3 of them had swiped yes on each other and the system had created a 3-person group with himself, Ike, and Cartman. Before their meeting, a fourth person joins their group. Kyle is excited to attend this meeting. He is able to socialize like he wanted to and learn his class material at the same time.

Benefits Kyle, Ike, and Cartman received:

Social: all group members got to experience a social environment that was still geared toward education

Increased Engagement: this style of studying goes well with these users personalities and allows for more positive engagement.



Use case 7: Introverts

Actors: Taylor (Student), Travis (Student), StudySwamp (Company)

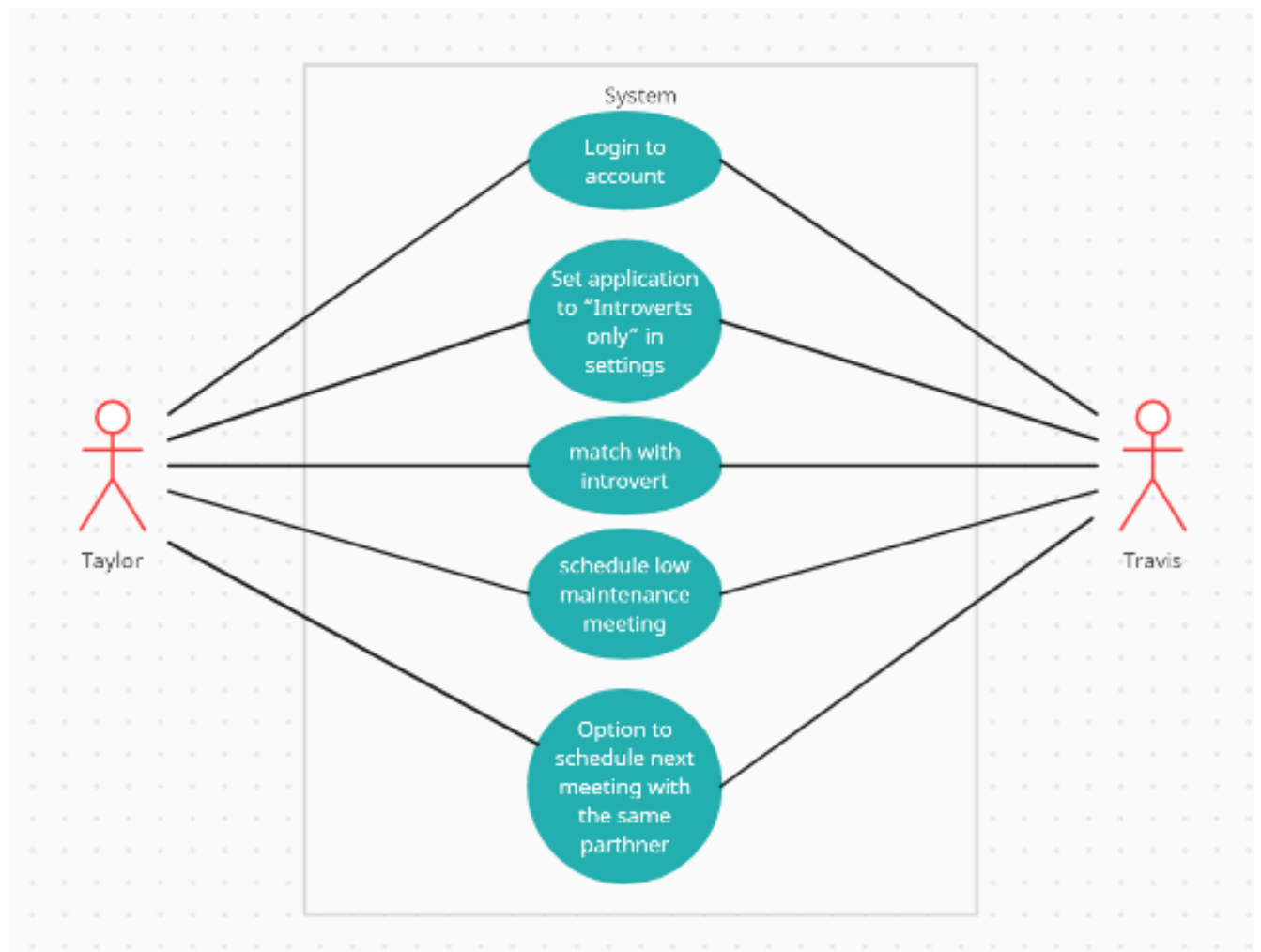
Assumptions:

- All students have an active StudySwamp account

Use Case: Taylor and Travis are both shy individuals. They both want to succeed in college. They are doing ok on their own, but acknowledge that with outside help they could be even better. The problem is they are too shy, they hate having to answer personal questions when meeting new people, so they tend to keep to themselves. With some resistance, they both finally start swiping on the StudySwamp app they had installed. They were getting no matches until they realized they had placed their account settings to “introvert”, they looked it up and the system will only match introverts with other introverts. They were about to switch to the general population when they matched with each other. Meeting up they had a funny story to tell each other and were at ease since they knew already that the other just wanted to primarily focus on studying.

Benefits Taylor and Travis received:

- **Safe space:** Neither Taylor nor Travis felt any pressure to share personal information or other topics that did not correlate to their studies.
- **Common ground:** both users went in knowing each others boundaries and allowed for an easier more relaxed experience.



Use case 8: Rating

Actors: Michelle(Student), Karen(Student), StudySwamp (Company)

Assumptions:

- All students have an active StudySwamp account

Use Case: Michelle is the nicest person at school, she tries to befriend everyone and tries not to take anything personally. She is matched with Karen for their upcoming nursing midterm. Michelle finds Karen to be a complete slob, rude and condescending. Michelle tries to work with her but Karen keeps going into political and racist tangents. Michelle's patience is running very low but is saved by the conclusion of the meeting. Like the Uber app, a rating system pops up asking Michelle how the meeting went. Against her good nature she not only rates Karen 1 star but also sends a report to StudySwamp on everything that happened. StudySwamp thanks her for her feedback and Michelle leaves hoping no one else has to deal with Karen anymore.

Benefits Michelle received:

- **Peace of mind:** By rating Karen low, she will be confident that other students likely will not match with the awful Karen.
- **No Retaliation:** Reports are anonymous and have the option to block users



Use case 9: Monetization/ Premium

Actor: Erika (Student), StudySwamp (Company)

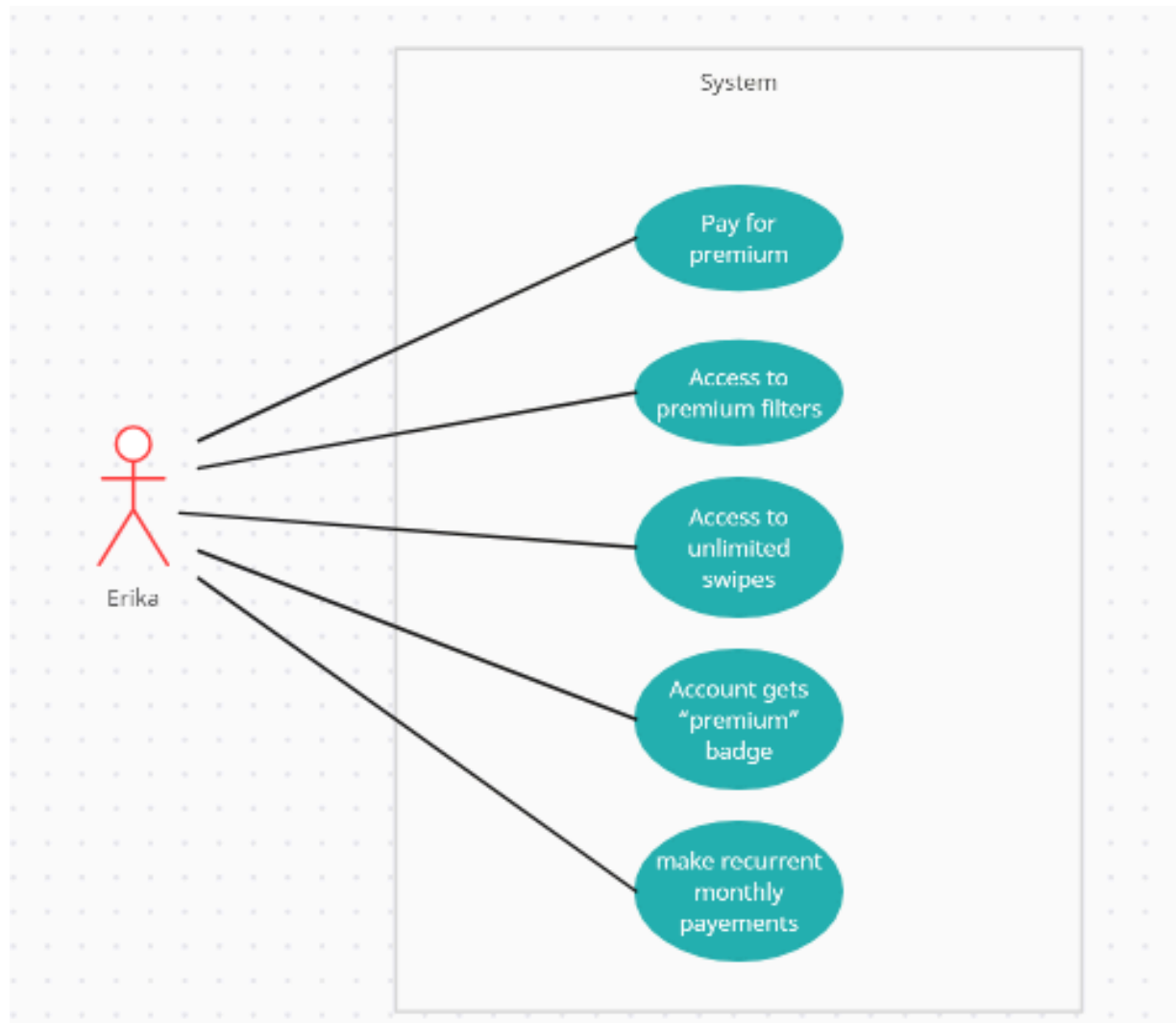
Assumptions:

- Students have StudySwamp installed and working internet access.

Use Case: Erika is deterred from joining a large study group because in the past she ended up having to do most of the work in group settings so she is hesitant to help strangers study if she won't get anything positive back. She downloads the app and is pleasantly surprised to see a GPA filter and a 5-star rating system implemented. These are premium features, she rationalizes this knowing that people with a premium account take studying seriously. The rating system also allowed her to choose someone who wouldn't waste her limited time.

Benefits Erika received:

- **Confidence:** She is confident that the partner she picks will be equally as devoted as her and she won't be left with the bulk of the work to herself.
- **Visibility:** Easy to find premium users with a sticker/badge on their profile.
- **Pay to win:** With the premium badge, Erika has unlimited swipes and is able to filter out his matches further than the basic package. She is able to match with the smartest people in the app who know what they are learning.



Use case 10: Reward program

Actor: Brook (Student), Steve (Student), StudySwamp (Company)

Assumptions:

- Students have StudySwamp installed and working internet access.

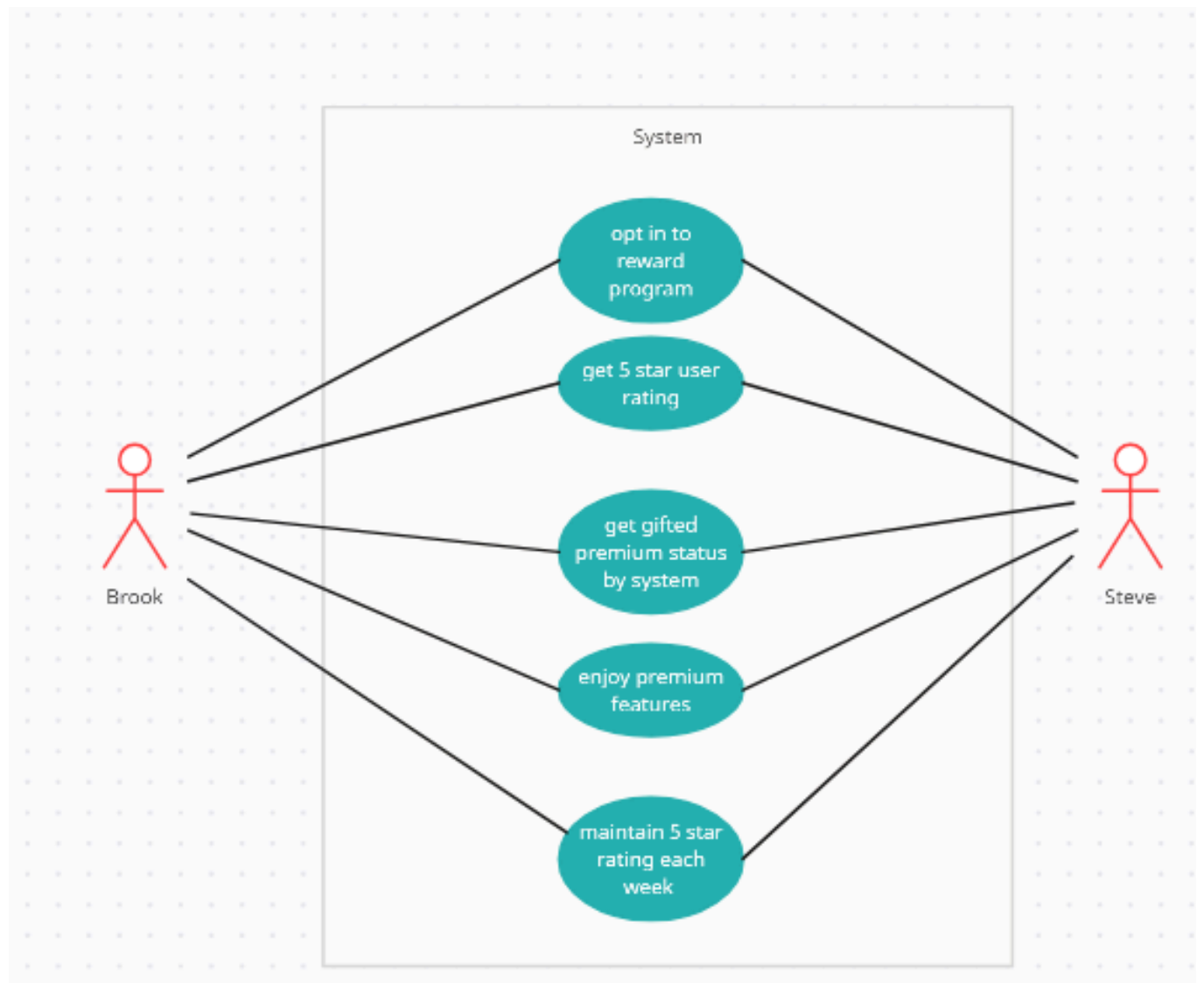
Use Case: Brook is an existing user, she downloaded the app because she needed serious help in math. Every user she has matched with so far has let her down by not showing up or goofing off. She has heard great things about the premium filters, and how those users tend to be more serious and take the appointments seriously, but Brook doesn't have any available income to spend. Although she can't afford the premium subscription, she finds that StudySwamp offers a workaround. She finds that with a high enough rating, the system will reward users with a free membership (contingent on keeping the rating up). She is proficient at science and so devotes herself to making her rating go up through that subject. Once her rating is high enough, she uses her premium filter and gets a match in math which is potentially better for her needs.

Benefits Brook and Steve received:

- **Premium for free:** They do not have to spend real money, but still enjoy the app's full potential.

Benefits StudySwamp received:

- **Quality Users:** Brook becomes a top-tier user in science. Steve becomes a top-tier user in math. What they bring in science and math is worth more for our user base than the premium fee.



Use case 11: Alumni

Actors: Vihn (Alumni), users (Students), StudySwamp (Company)

Assumptions:

- Vihn is a graduate student
- Vihn has experience beneficial to current student body
- Vihn has a StudySwamp account from when he went to school

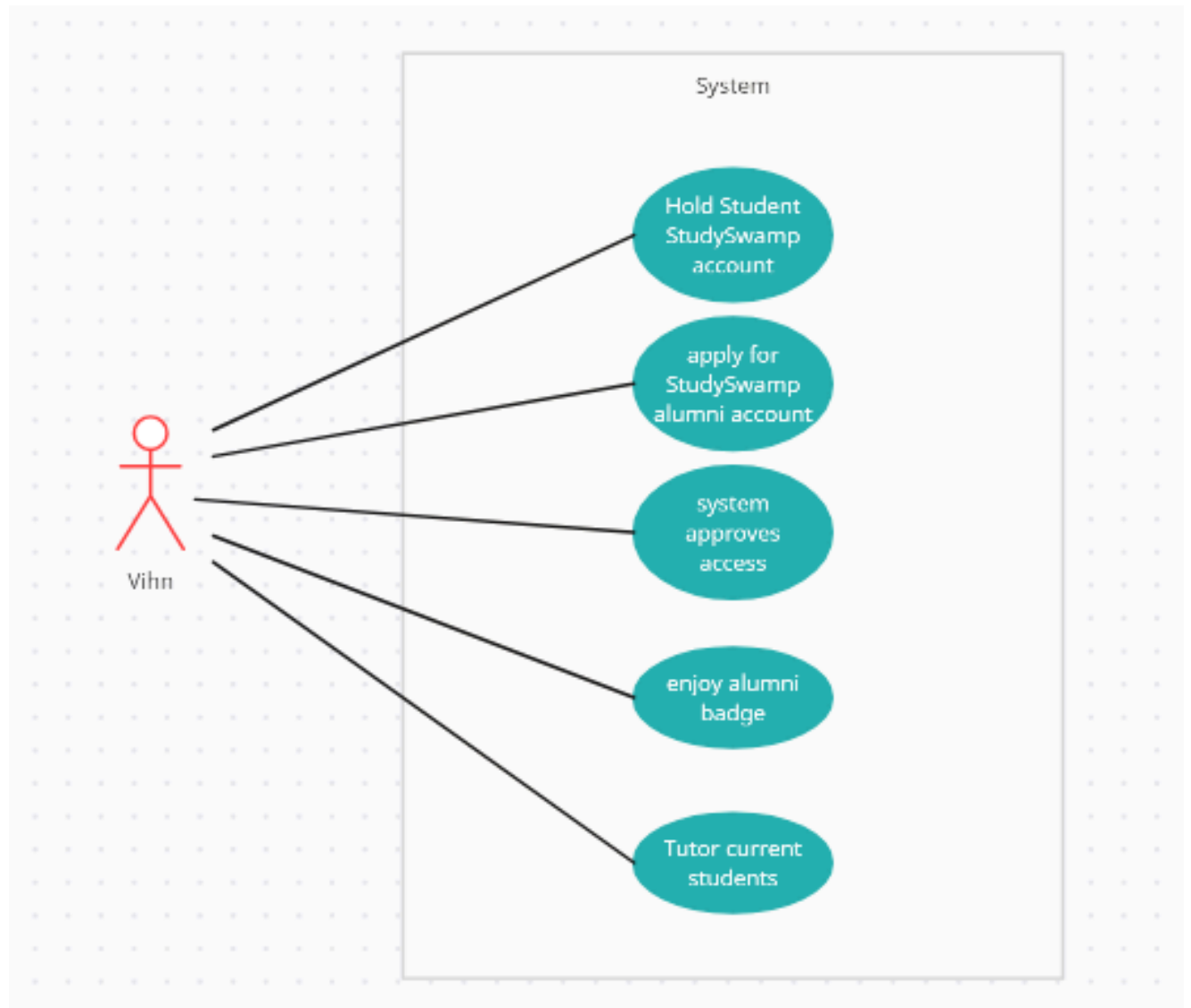
Use Case: Vihn is a very talented professional who graduated and decided to return to San Francisco State University for graduate school. Vihn now has work experience along with his degree and would like to help other undergraduates who are majoring in the same field he did. Vihn signs up for StudySwamp to meet potential students he can help. He finds Trip, Will, and Mary all looking for study partners for courses he did well in. StudySwamp is able to connect him with those students whom Vihn is able to help with homework and tutor. The tutoring helps Vihn reinforce the material he learned as an undergraduate.

Benefits Vihn received:

- **Reinforces his knowledge:** Being a tutor will also help Vihn

Benefits Students received:

- **Real-world insight:** Current students will be able to take in Vihn's real-world experience in their field
- **Building a community:** as students graduate, they may want to also become tutors like Vihn, and keep other generations coming back.
- **Networking:** making friends with people in the business is never a bad thing, it can lead to opportunities.



Use case 12: Forum

Actor: Geronimo (Student), StudySwamp (Company)

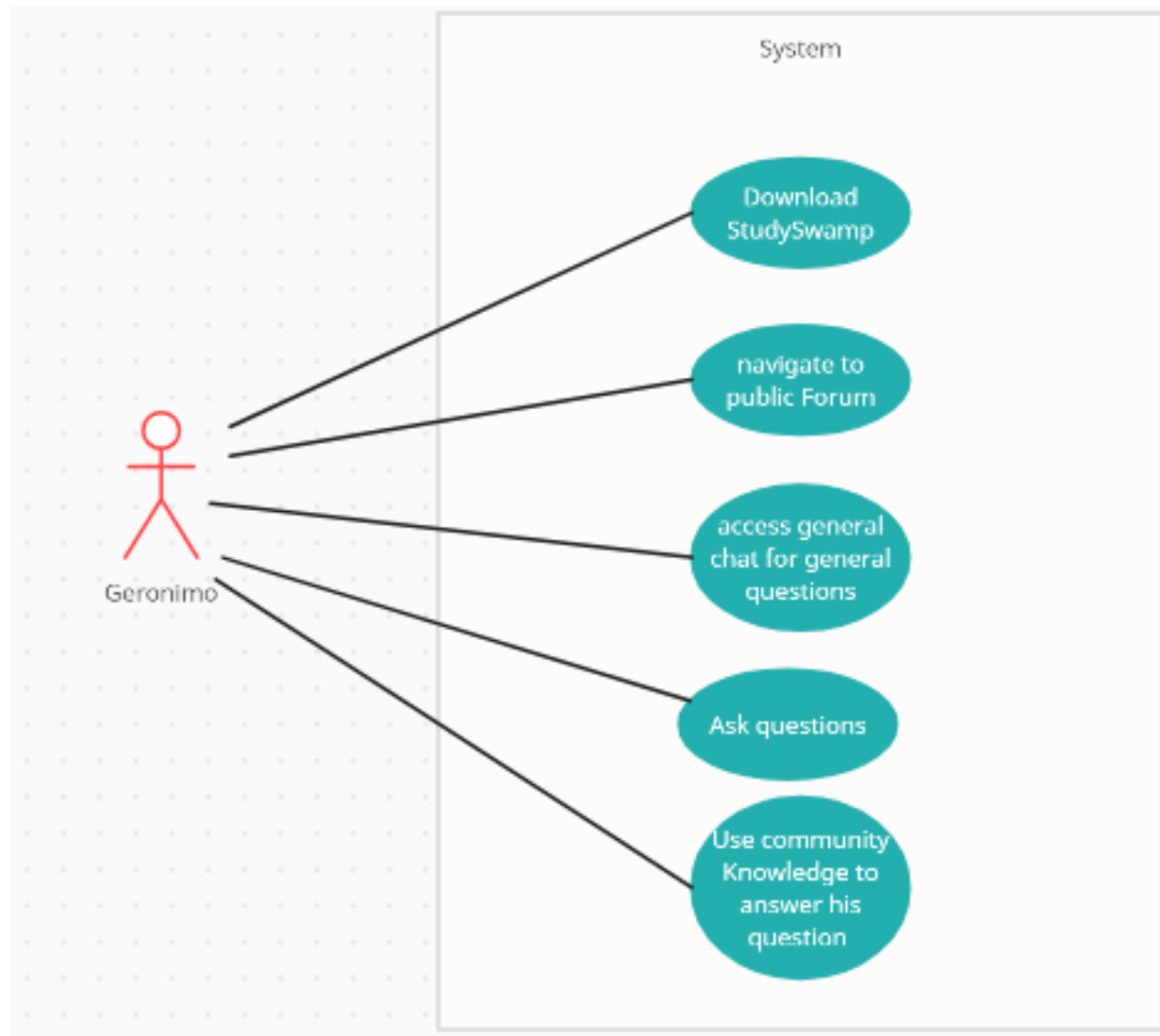
Assumptions:

- Students have StudySwamp installed and working internet access.

Use Case: Geronimo needs to know where to get the previous year's class textbook for one of his math classes, it is so obscure that Google is no help, he tried asking around but no one seems to know. He doesn't have any friends who took that course previously. He asked around other forums but had no luck until someone mentioned that StudySwamp had a general forum as well. He had heard of the app, but he only thought it was for matching with a study partner. He checked it out and found that since subjects were also categorized by class, not just subject he was able to narrow down where to ask.

Benefits Geronimo received:

- **Ease of use:** he was able to access the forum without needing to go through the matching portion that did not apply to him
- **Collective Knowledge:** the forum gives users access to various points of view, and different information.



Use case 13: Quality Control

Actor: Stephanie (Student), StudySwamp (Company)

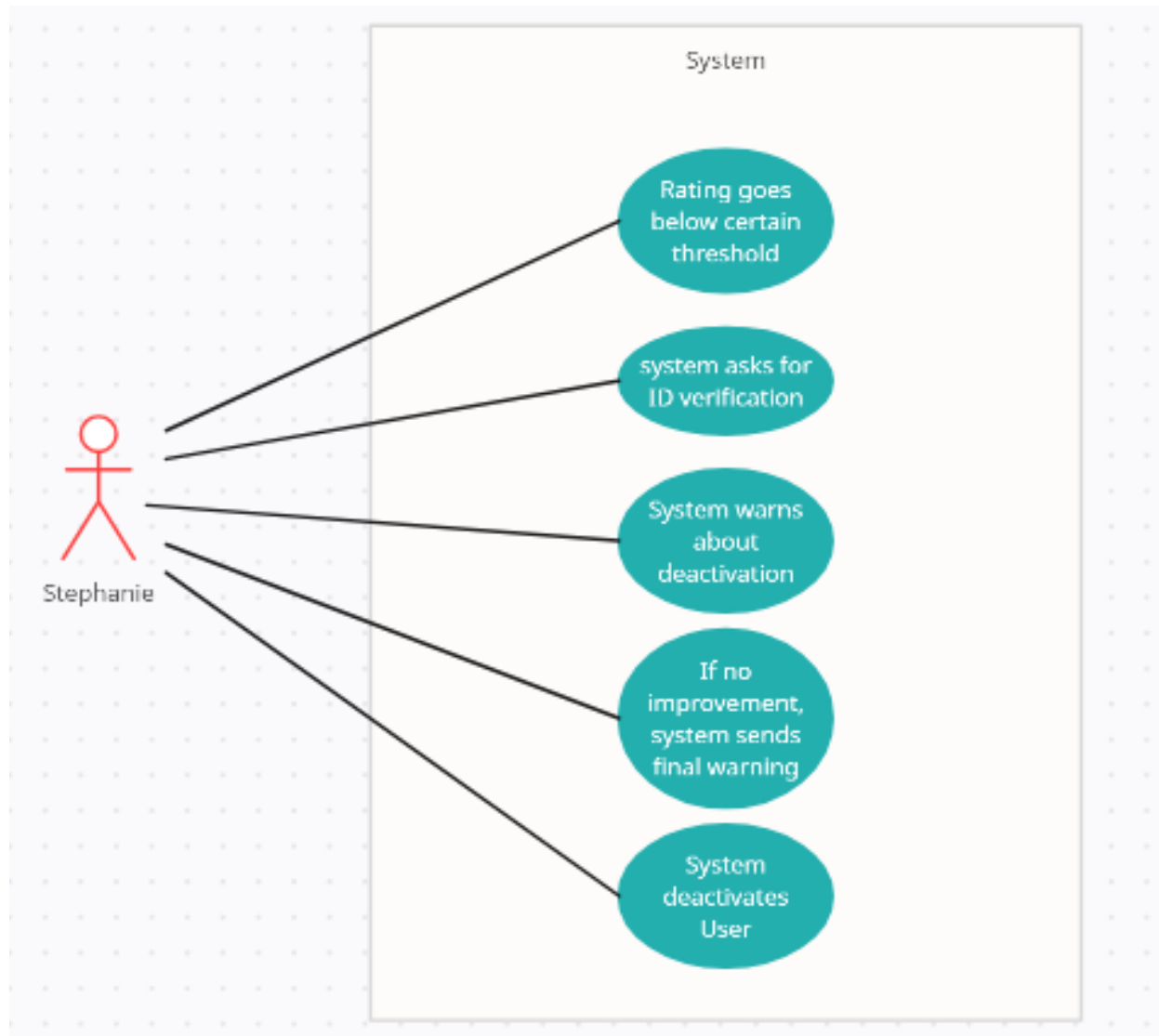
Assumptions:

- Students have StudySwamp installed and working internet access.

Use case: Stephanie is a jokester, and she likes to mess with people. She has been using StudySwamp successfully for a year now, getting her English grades up. One day she was bored and decided to start matching with people with Physics majors, she had no intention of showing up or if she did she would waste their time. Naturally, her rating began to go down. Once she was done goofing off she tried to schedule a legitimate English session but got a pop-up asking for her school ID for verification purposes. She thought it was weird but once she verified herself she got a message saying that her account was close to being deactivated due to low ratings. Realizing that she needed help in English she could not afford to lose her account, and so from then on she never played her pranks on the app again.

Benefits Stephanie received:

- **Verification:** Verify the user is a current student or alumni
- **Return her focus:** The threat of deactivation changed the way Stephanie used the app



Data Items and Entities

User

A register user is a user that has created and verified an account

Premium user

A premium user is a user that has purchased the premium package.

Matched Pair

A matched pair is a set of 2 or users that have both swipe “yes” to each other.

Introvert

An introvert is a user that has been selected to only match with other introvert users.

Blocked user

A blocked user is a user that has been reported and blocked by another user.

Alumni

An alumni is a user that can prove they attended SFSU and graduated. Allowed to moderate individual or group sessions. Is allowed in Forum.

Tutor

A tutor is a user that has a high user rating, and opted in to become a tutor, allowed to moderate forum.

Group Cluster

A group match cluster is a set of three or more users that opted in to group matches. All matches swiped “yes” to each other.

Profile

A profile is a public display of a user’s information, such as availability, subject and many more.

Rating

A rating is a number that correlates to how many thumbs up/ thumbs down a user gets from their peers upon completing a study session.

Availability

Availability is the times available a user can attend a study session.

Proficient Subject

A proficient subject is the user's best subject they know, used for tutoring or study sessions.

Challenged Subject

A challenged subject is the user's worst subject, used for tutoring or study sessions.

Forum

A forum is a public general chat platform all users can use.

Reward

A reward is given to exceptional users with high ratings, and will allow free premium status.

Warned User

A warned user is a user that has been reported by others, the system will keep track and remove the user if necessary.

Account

An account will hold a user's personal information and preferences.

Application

The application holds all the components and necessary data for the user to interact with and engage with the platform.

Call center

A call center is a system that allows users to communicate with their voice in real time.

Video call center

A video call center is a system that allows users to communicate virtually face to face.

Appointment center

An appointment center will create appointments for matched users to meet using their availability.

Functional Requirements

User Account Management:

1. A user shall be able to create an account.
2. A user shall have only one account.
3. An Account shall have 10 likes per day.
4. An Account shall have one email associated with it.
5. An account shall have 1 super like per day.
6. An account is allowed to log in from only one device at a time.

User Profile Management:

7. A user shall be able to view other users' profiles in the system.
8. A user shall be able to set their availability.
9. A user shall be able to establish their profile.
10. A user shall be able to set a filter for their study partner preference.
11. A user shall be able to accept or decline study partner invitations.
12. A user shall be able to video call with their study partner.
13. A Profile shall be owned and edited by one and only one user.
14. A Profile shall be allowed one picture of the owner.
15. A profile shall allow one picture of the user's proof of their GPA.
16. A profile shall be allowed a short biography.
17. A profile shall be allowed to be invisible when not wanting to study.
18. A profile shall have many subject attributes.

User Interface:

19. The interface shall allow users to swipe right or left on potential study partners.
20. The interface shall allow a user to navigate through a potential partner's profile.
21. The interface shall allow a user to access/edit their account.
22. The interface shall allow a user to access/edit their profile.
23. The interface shall allow a user to access/edit their preferences.

Matching System:

24. The system shall highlight common attributes users have with each other.
25. The system shall notify users when they have a match.
26. The system shall send notifications to the user's device.

- 27. A set of users shall become matched if they both like each other.
- 28. A user shall be allowed to match with many partners.
- 29. Two matched users shall be able to connect with each other.
- 30. Two matched partners shall tell the system the date of their first meeting.
- 31. A user shall be able to rate their study partner after their meeting.
- 32. A high rating shall gift users one free super like.
- 33. A high rating shall make the user more visible.
- 34. The system shall show a user their ideal match.

Forum:

- 35. The Forum shall allow one main question per thread.
- 36. The Forum shall allow as many answers until the question is marked done.
- 37. The Forum shall allow each class its section.
- 38. The Forum shall allow users to post in their class forum.
- 39. The Forum shall allow many questions.
- 40. Only students who are in or have passed the class can ask or answer questions.
- 41. A professor profile shall only have access to the forum.
- 42. A professor shall be allowed to answer questions in the forum.
- 43. A professor shall be allowed to mark questions for removal in the forum.
- 44. A user shall be able to ask many questions in the forum.
- 45. A user shall be able to answer many questions in the forum.
- 46. A user shall be able to receive stars for their answers in the forum.
- 47. A user shall be able to give 2 stars per day.

Additional Features:

- 48. A matched pair shall be able to unmatched.
- 49. A matched pair shall be able to choose whether they want to meet in person or online.
- 50. An Appointment shall be automatically created for a matched pair.
- 51. A Zoom meeting shall be automatically created for a matched pair.
- 52. A profile shall be marked student or professor.
- 53. A user shall be able to block a user from seeing them.
- 54. A user shall be able to flag another user for review.

Non-Functional Requirements

1. Usability

- 1.1. The U.I. will be designed to be as intuitive as possible allowing use from all technical backgrounds.
- 1.2. The Application shall be compatible with web browsers, and mobile devices
- 1.3. The Application shall conduct surveys on features that could improve usability
- 1.4. The Application U.I. shall be streamlined and responsive

2. Reliability

- 2.1. The application shall achieve 90% uptime
- 2.2. The Application shall minimize the occurrence of bugs and crashes

3. Scalability

- 3.1. The System shall be containerized allowing for simple scaling
- 3.2. The System shall automatically provision resources to handle fluctuating demand

4. Maintainability

- 4.1. The Application shall be formed in a manner that supports hot fixes to minimize downtime
- 4.2. The Restoration period shall be less than 24 hours
- 4.3. The Application shall be able to update and upgrade without downtime

5. Utility

- 5.1. The site shall support concurrent usage by many users with negligible performance reduction
- 5.2. The System shall scale to accommodate a growing user base
- 5.3. The System shall support Firefox version 123.0
- 5.4. The System shall support Google Chrome Version 122.0.6261.70

6. Performance

- 6.1. The site shall load in less than 7 seconds on a wireless connection with a speed of 350Mbps.

7. Privacy

- 7.1. Users shall have access to privacy settings
- 7.2. Users shall be able to hide their profile
- 7.3. Users shall be able to view the privacy agreement
- 7.4. The Platform shall treat customer data as sensitive

8. Data Integrity

- 8.1. The Application shall ensure that all billable data is accurate
- 8.2. The Application shall

9. Security

- 9.1. The Application shall encrypt sensitive user data
- 9.2. The Application shall comply with regional data safety regulations
- 9.3. Payment Information shall be routes through a trusted third party service provider using state of the art security measures

10. Storage

- 10.1. The Application shall assign 10MB of Memory per table
- 10.2. The Application shall make automatic backups to prevent data loss

11. Deployment

- 11.1. The Application shall use github integrations to build the Docker container
- 11.2. The Cloud instance shall automatically transition to the newest version of the application when available

12. Coding Standards

- 12.1. The Team shall use the same styling for all written code
- 12.2. The Team shall use spaces for indentation
- 12.3. The Team shall write thorough documentation and comments
- 12.4. The Team shall own the codebase and act responsibly
- 12.5. The Team shall write tests that ensure a good working product

13. Environmental Sustainability

- 13.1. The Application shall use as few resources as needed
- 13.2. The Application shall work with responsible service providers
- 13.3. The Application shall minimize its footprint and make continuous efforts to improve further on sustainability

Competitive Analysis

Competitive Analysis Table

Company/app	Chegg Study	Studypal.co	MoocLab	Study Together
Strengths	<p>24hr study support</p> <p>Expert or Student answers</p> <p>UI is straightforward.</p> <p>Very large user base.</p> <p>Other amenities are offered</p> <p>Very large amounts of questions were answered.</p> <p>Tutoring sessions</p>	<p>Searches for people or professionals on the criteria near the user's area</p> <p>Worldwide access</p> <p>Helpful for major tests like BAR exam GMAT, LSAT etc.</p>	<p>It is a free website</p> <p>Worldwide: anyone around the world can access</p> <p>Many groups to join</p> <p>Many forums for many different topics</p> <p>There are a lot of forums for different topics</p>	<p>Free</p> <p>World wide access</p> <p>24-hour access to study rooms</p> <p>Can make your own or have friends join in.</p> <p>Tools to help studying such as timers, goals, and customizable backgrounds</p> <p>Discord community to ask questions and such</p> <p>Direct messaging to people in the study group</p>
Weakness	<p>Incorrect Answers</p> <p>Terrible Customer Service</p> <p>Difficult to cancel a subscription</p>	<p>Reports of crashing.</p> <p>Very little to no interaction on social media.</p>	<p>The entire website is a forum board.</p> <p>You either look for users or advertise yourself to make a study group.</p> <p>Mostly online</p> <p>Making an in-person meeting will be difficult</p>	<p>It is online only.</p> <p>You have to form your own study groups.</p> <p>Promotes procrastination.</p> <p>The main use is the discord voice channels to study so if someone enters there will be a discord notification noise</p> <p>Reports of people looking at other people who have cams on</p>
Pricing	<p>Chegg study is \$12.96 per month only access to homework solutions.</p> <p>Chegg study pack is \$19.95 per month and comes with</p>	<p>Free to make an account, but it costs \$5 per month for direct messaging features \$10 for 3 months Premium is \$10</p>	<p>free</p>	<p>Free</p>

	homework solutions, quiz and exam help, expert proofreading, plagiarism detection, and math help	per month		
Social media	Facebook, X, Instagram	Facebook, Instagram, LinkedIn	X, LinkedIn, Facebook	Facebook, LinkedIn, Instagram, TikTok Discord
Onboarding	<p>Account Creation is super simple and only takes 3 clicks.</p> <p>Automatic creation with Apple, Facebook, or Google accounts. Without using them it took just an email and password.</p> <p>There is no free access to Chegg study</p>	<p>3 clicks for account creation. Can automatically create an account with Google or LinkedIn.</p> <p>Upon creating an account, email verification is required</p>	<p>The UX is slightly worse than Chegg or Studypal.</p> <p>The UX To access a forums board to find study partners is worse because it takes 5-6 clicks and I went to the wrong page labeled “find a study buddy” when the correct page to find a new study partner was “Study Buddy Members”</p>	<p>Making an account is easy but it can only be joined with a preexisting social media account like Discord, Facebook, X, Unidays and a Google account</p>

Competitive analysis Cont.

Company	Discord	Canvas
Strengths	<p>Fast and responsive</p> <p>Relatively easy to make a discord channel</p> <p>Voice channels are high quality for free</p> <p>Easy to connect with others</p> <p>Direct messaging</p> <p>Easy to use text channels</p> <p>Sign in scanning QR code with the phone app if it's already signed in.</p>	<p>Already established with colleges</p> <p>Makes accounts for students</p> <p>Flexible to work with all departments.</p> <p>Available list of all the users in your course.</p> <p>Tons of features.</p>
Weaknesses	<p>Difficult for people who are new or not tech savvy</p> <p>There's a learning curve for fully utilizing</p> <p>Settings can be overwhelming</p>	<p>Not many students use the tools provided by Canvas</p> <p>Discussion forms are rarely used and sometimes looked down on in certain majors.</p>
Pricing	<p>Free for general usage. \$2.99 per month for the basic package for larger uploads and special emoji usage. \$9.99 per month for larger uploads higher quality video streaming and customizable discord profiles</p>	<p>Free for students</p>
Social media	<p>X, Instagram</p>	<p>Instagram X</p>
Onboard experience	<p>Discord website is simple to create an account it takes just 2 total clicks from the home screen.</p>	<p>Creating a Canvas account is premade by the school.</p>

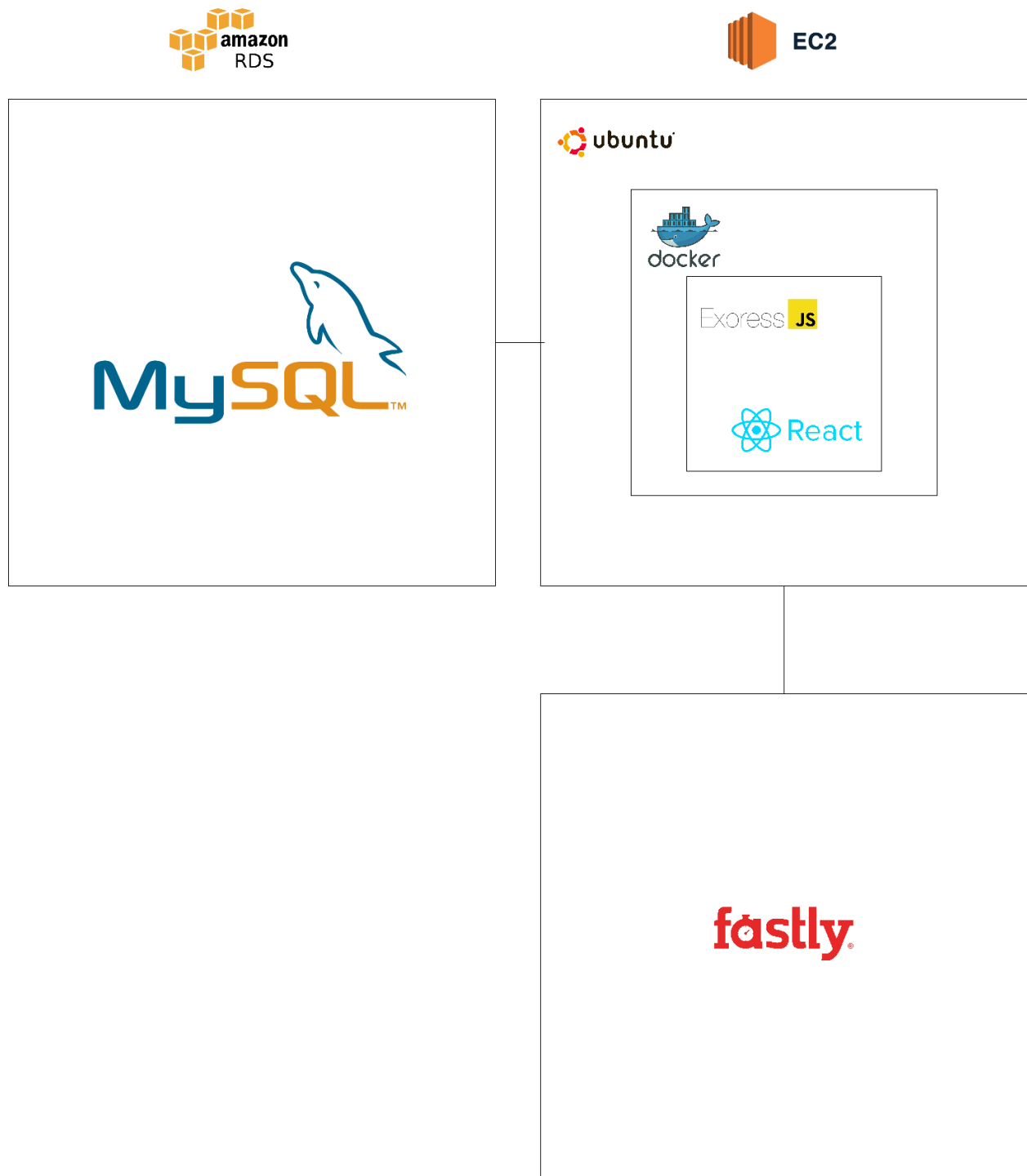
Competitive Features Table:

Features/ Company	Chegg Study	StudyPal	MoocLab	Study Together	Discord	Canvas	StudySwamp
Forums	-	-	++	-	+	+	++
Peer-to-peer questions and answers	++	+	+	+	+	+	++
Expert answer questions	++	+	-	+	-	+	++
Automatically schedule a study group.	-	-	-	-	-	-	++
Unique matching system	-	++	-	-	-	-	++
Enhanced profile feature	-	+	+	-	+	+	+
Academic integrity integration	-	-	-	-	-	+	+
Unique reward system for questions answers and study sessions	+	-	-	++	-	-	++

Summary

StudySwamp distinguishes itself with a suite of features designed to enhance the learning experience: our forums offer a more focused and secure environment than those on MoocLab, Discord, or Canvas by exclusively allowing access to students and professors from the same course, effectively preventing misinformation from external sources. Our unique matching system surpasses StudyPal by facilitating more personalized connections, matching students by courses, majors, and availability for more relevant and effective study partnerships. Furthermore, we enhance user comfort and safety beyond what is available on Discord, StudyTogether, or StudyPal with a swipe feature that enables students to easily manage their interactions, ensuring a secure and comfortable environment for all. By surpassing Chegg Study, StudySwamp provides a reliable platform for forming study groups, engaging in accurate forums, and receiving expert answers directly from professors, thereby minimizing the risk of incorrect information. To add to our already groundbreaking application, we are developing an application feature that will automatically schedule meetings on Zoom or in-person based on the users' preference as soon as two users approve of each other, streamlining group study. Here at StudySwamp, your present is your future success.

Technical Architecture



1. Server Host:
 - 1.1. AWS EC2 t2.micro-Instance 1vCPU 1GB RAM
2. Operating System
 - 2.1. Ubuntu 22.04
3. Database
 - 3.1. AWS RDS db.t3.micro 2vCPU 1GB RAM
 - 3.2. MySQL 8.0.35
4. Web Server
 - 4.1. Docker Container
5. CDN
 - 5.1. Fastly CDN
 - 5.2. SSL Cert: GlobalSign Atlas R3 DV TLS CA 2023 Q4 (Fastly Provided)
6. Server Side Language
 - 6.1. JavaScript
7. Additional Technologies
 - 7.1. Web Framework: React
 - 7.2. Backend Framework: Express.js
 - 7.3. IDE: Visual Studio Code
 - 7.4. Browsers: Mozilla Firefox 123.0
 - 7.5. Browsers: Google Chrome 122.0.6261.70
8. Note on Technical Architecture Change
 - 8.1. In our initial draft of the project, we intended to use Let's Encrypt Certbot to obtain an SSL certificate. After careful deliberation, we decided to change that and use a CDN service to provide faster delivery of our application and to provide an SSL certificate.

Checklist

- ☒ ~~Meeting Outside of Class~~
- ☒ ~~Github Master chosen~~
- ☒ ~~Decided on SW tools and Server Provider~~
- ☒ ~~Ready to use chosen Front/Back end frameworks and ready to learn~~
- ☒ ~~Team Lead Made sure everyone read M1 and agrees~~
- ☒ ~~Github Organized as outlined in class~~

Team Evaluation

Lennart (Team Lead) 10

Checkpoint 1

1. Created the Documents
2. Wrote the Executive Summary
3. Wrote 2 Use Cases and Diagrams
4. Reviewed and Reworked the non-functional requirements
5. Reviewed the whole document
6. Participated on Discord and in team meetings
7. Submitted all work on time

Checkpoint 2

1. Created the AWS EC2 Instance
2. Created the AWS RDS Instance
3. Wrote and deployed the throw-away
4. Wrote About Me Page
5. Wrote Documentation

Rafael (Backend Lead) 10

Checkpoint 1

1. Wrote 2 Use Cases
2. Reviewed the Executive Summary
3. Participated on Discord and team meetings
4. Active voice in deciding the architecture
5. Participating actively in Discord and in team meetings
6. Submitted all work on time

Checkpoint 2

1. Wrote About Me Page
2. Refactored the React app to use better architecture
3. Refactored the About Me Page to be simpler
4. Implemented Styling on the About Me Page
5. Set the precedent for good coding practices by researching the best methods

Edmund (Frontend Lead) 10

Checkpoint 1

1. Wrote 2 Use Cases
2. Conducted a Survey to determine requirements and use cases
3. Evaluated survey results and shared summary with the group
4. Functional Requirements
5. Reviewing Competitive Analysis
6. Participating actively in Discord and in team meetings

7. Revised the docs to correct grammar
 8. Submitted all work on time
- Checkpoint 2
1. Wrote About Me Page

Julio (Docs-Editor) 10

- Checkpoint 1
1. Wrote 2 Use Cases
 2. Reviewed Use Cases and added more
 3. Standardized the diagrams for the Use Cases
 4. Wrote Non-Functional Requirements
 5. Iteratively Edited the Document
 6. Proofed the final document
 7. Participated actively on Discord and in team meetings
 8. Wrote and sent the meeting notes in the Discord
 9. Submitted all work on time
- Checkpoint 2
1. Wrote About Me Page

Conrad (Github-Admin) 10

- Checkpoint 1
1. Wrote 2 Use Cases
 2. Wrote the Competitive Analysis
 3. Conducted a survey to determine requirements
 4. Summarized and presented survey results
 5. Reviewed Functional Requirements
 6. Participated actively on Discord and in team meetings
 7. Submitted all work on time
- Checkpoint 2
1. Wrote About Me Page