Scholasticate

Team 8 - Product Backlog

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Problem Statement:

Many students are forced to work individually on schoolwork around campus because they don't know anyone in their class, and at the moment they need help, many people struggle to break the ice and seek out the help they need from their peers. Scholasticate fixes this problem by using location services to find students nearby who are studying the same topic and bringing these students together for a more productive and collaborative study session.

Background Information:

Domain and Targeted Users

In this era where communication with others is near-effortless, study groups no longer need to be formed in the classroom. Instead, we can take advantage of newer technology like location services and social media to allow students to easily find others nearby to work with while curating their searches to better match what they are looking for in a study partner, including which course they're studying or which course section they're in. We believe this could significantly boost academic cooperation while also helping students to meet new people and make friends in the process.

Comparisons to Other Applications

There are several existing services that help students find people to work with such as the well-known StudyBuddy app or the StudyPal website. StudyPal is a service which is specifically dedicated to helping users find study partners in preparation for standardized tests like the SAT or the MCAT. StudyBuddy is more similar to our idea in that it also uses location services to find people nearby and groups students by the subject they are studying.

Limitations of Existing Solutions

While services like StudyPal and StudyBuddy are useful, we don't believe they offer enough flexibility to truly shine when trying to find somebody to help with schoolwork. StudyPal is specifically geared towards standardized tests and doesn't support general courses. StudyBuddy matches our idea more closely, but it also isn't flexible enough for our purposes. Many courses have several different sections that are each taught by different professors. This means that two students who are taking the same course but are in different sections may have different homework assignments and therefore may not want to work together. In addition, if the user's school is not on StudyBuddy already, then the user cannot easily join.

With Scholasticate, we hope to allow section numbers to be included in the searches so that students can limit their search to students in the same section if so desired. In addition, we

could treat standardized tests as their own courses, with an overall effect of combining the functionality of StudyPal and Studybuddy plus some bonus features like improved messaging systems and search queries to further filter the student pool if so desired. Finally, we hope to allow users to request to add their schools/courses/course sections to the database if they don't exist already so that everyone can easily join, unlike with StudyBuddy.

Requirements:

Functional Requirements
1. As a user, I would like to register for a Scholasticate account.
2. As a user, I would like to login to my Scholasticate account.
3. As a user, I would like to access my Scholasticate account from web browsers on both mobile devices and desktop computers.
4. As a user, I would like to reset my password if necessary.
5. As a user, I would like to delete my account and all my information if desired.
6. As a user, I would like to select which course(s) I'm currently studying.
7. As a user, I would like to edit my user profile's personal information (name, pronouns, profile picture, etc.).
8. As a user, I would like to edit my user profile's academic information (expected graduation date, major, minors, etc.).
9. As a user, I would like to add a small biography to my profile to describe study habits and personality traits.
10. As a user, I would like to set times where I am available and unavailable.
11. As a user, I would like to have my course history saved to my profile to inform other users who may request tutoring assistance.
12. As a user, I would like to update wardrobe information in order to help find other people more seamlessly.
13. As a user, I would like to see a list of users who are currently online.
14. As a user, I would like to manually refresh the location services alongside automatic updates.
15. As a user, I would like to customize the location service's refresh rate.
16. As a user, I would like to select and view individual user profiles within the list.
17. As a user, I would like to see a map displaying everyone's locations.
18. As a user, I would like to be able to zoom in and out on a map.
19. As a user, I would like to select and view individual user profiles as a pop-up window on the map portal.
20. As a user, I would like to see a list of online users sorted by distance.
21. As a user, I would like to send a message to another user.
22. As a user, I would like to screen messages from non-friend users before beginning a direct message chain.
23. As a user, I would like to delete a message chain so that I can't see it anymore.
24. As a user, I would like to friend another user to potentially reconnect during another study session.
25. As a user, I would like to remove users from my friends list.

26. As a user, I would like to block another user if they are bothering me in some way.
27. As a user, I would like to report another user if they are being inappropriate.
28. As a user, I would like to see a list of all friends who are currently online.
29. As a user, I would like to see a distinction between my friends and other users.
30. As a user, I would like to search for people studying the same course using keywords.
31. As a user, I would like to search for people studying the same course using specific course number information.
32. As a user, I would like to filter nearby students by school.
33. As a user, I would like to filter nearby students by course.
34. As a user, I would like to filter nearby students by course section.
35. As a user, I would like to filter nearby students by my friends list or if I belonged to a shared study group in the past.
36. As a user, I would like to request that a new school be added to the database for later searches.
37. As a user, I would like to request that a new course be added to the database for later searches.
38. As a user, I would like to request that a new course section be added to the database for later searches.
39. As a user, I would like to have the option of publicly displaying active meetups, or study groups, I participate in.
40. As a user, I would like to have the option to display my profile as offline after finding another student to work with.
41. As a user, I would like to see all study groups distinctly marked on the map and list interfaces.
42. As a user, I would like to view the study group profile and the individual profiles of all of the members present.
43. As a user, I would like to request to join an active study group and send direct messages to all current active members.
44. As a user, I would like to receive messages from individuals from shared study groups in a group chat format.
45. As a user, I would like to discern the owner of an active study group.
46. As an owner of a study group, I would like to name the study group and have the name displayed on the user interfaces.
47. As an owner of a study group, I would like to edit a study group "profile" with a similar structure to the user profiles.
48. As an owner of a study group, I would like to create invitations for the group.
49. As an owner of a study group, I would like to restrict the number of members in the group, and remove members if necessary.
50. As an owner of a study group, I would like to have settings to schedule recurring iterations of the same study group at a certain time and location.
51. As an owner of a study group, I would like to transfer ownership of the group to another member.

52. As an owner of a study group, I would like to delete the study group from the system if it is no longer relevant.
53. As a user, I would like to receive pop-up notifications when a message is sent to my profile
54. As a user, I would like to receive pop-up notifications when a new member joins a current study group I participate in.
55. As a user, I would like to receive pop-up notifications when a scheduled study group meeting is about to begin.
56. As a user, I would like to change notifications preferences in my user profile and receive email notifications if desired.

Non-Functional Requirements

Architecture and Performance

We will have a React.js front-end to easily display user profiles as well as all of the online users currently searching for study partners or groups. We will use the JS Geolocation API and a map API to display users' locations, and allow them to search for study partners by proximity. Finally, we will have a Python back-end that will interface with our SQLite database to update and store user information and changes. The database will also store data about the study groups currently in session. Since the front-end and back-end will be separate, we expect that it will be easier to divide the work and handle communication issues between the two ends.

The back-end server should be able to host no less than 1000 active users, while being able to update a user's GPS position to other users at a regular intervals. The front-end interface should be fluid and not stutter on all platforms.

Security

Security will be an important aspect to consider as we build our app, especially due to the fact that our site will heavily revolve around location data. We plan to encrypt this location data so that it is not easily accessible outside our app. We will also put up safeguards to exploits like SQL injection as we design the user account and authentication process. Additionally, since users will often be requesting to add schools and courses to the database, we will have a higher-level admin account that can accept these requests. Users' passwords should be encrypted and their accounts kept safe.

Usability

We plan to offer a clear and easy-to-understand interface that the average person wouldn't have trouble figuring out. Given that this will essentially be an academically-focused social media site, it is imperative that finding other users to study with is simple - this will serve as the centerpiece of our design. Finally, we also want to make sure our website is easily accessible for different screen resolutions and sizes, as most students will likely access our site through their phones for convenience.

Hosting and Deployment

The back-end server will be using Docker for compartmentalization, but the specific host is not yet decided - it could either be a cloud provider like Google Cloud or a traditional server owned by one of our members. Docker will also be used for Continuous Integration allowing for easy rebuilding whenever any code changes are committed to the GitHub repository. The front-end will be deployed as an app for iOS and Android, with a separate web interface for all devices.