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# Crammer - Study Group Application

## Description of the Project

The software that we plan to develop is a study group finder. It will allow users to look for others for quick study/homework sessions, or create and find continuous long-term study groups. The first time users open the application, they create an account or login using their social media accounts (we plan on first integrating Facebook and Google+). Then, they declare what classes they are taking that quarter.

From then onwards, every time the users open the application, they pick the class that they want to work on and are given two options:

a.      Find a study group

b.      Create a study group

The first option allows the user to find nearby study groups. This information would be location-based and the study group would be related to the class that the initial user is looking for.

If the student cannot find a group (or chooses not to enter an already existing group) he will be able to create his own study group. In order to do this, the user will have to input the time and location at which he is planning to work. Also, he can specify the sort of work he wants to do, be it a problem set, a single problem, or just normal studying and revision. The application allows the user to  make the study group either public or private. That is, either anyone on campus can join or the user can limit the visibility to a specific group of people (e.g. Facebook or Google+ friends).

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After having implemented these basic functions, we have a number of possible extensions. These include:

- **Linking other social media networks**: We plan to start with Facebook and Google+, but would like to add Twitter or LinkedIn.

- **Sending invites**: After creating or joining a study group, the user could then invite specific students to his/her group, sending a push notification to that user's device. Thus, if the user is in great distress to finish a problem set, essay, or project, he could notify the users that would best be able to assist him.

- **Point system**: This would be a karma system where if one user helps another, the app awards points. This would create social pressure for the helped user to help others when they need assistance, as they would have a point value attached to their profile.

- **Calendar synchronization**: We would like to automatically synchronize study groups to calendars. This would allow users to see if they have any upcoming scheduling conflicts and allow them to schedule study groups in advance.

- **Past coursework**: Allowing the app to track course that users have already taken would create a larger pool out of which users could potentially find help. This would be especially powerful when combined with the point system mentioned above.

- **LinkedIn endorsements**: After having been helped on a specific project the user should be able to endorse his helper on that skill on LinkedIn. That creates an additional incentive to help others.

- **Integrating Piazza-API**: Another interesting feature to add would be integrating the unofficial Piazza-API. Allowing students to read posts from piazza would be helpful, as it is possible that their specific question has been answered already. It would accelerate group work even further. If possible, we would also like to add the possibility of posting on piazza yourself. It seems that there is no real API for this at the time, but we will continue looking.

## Need for the Product

Every student is familiar with the pain of having to complete a difficult course or assignment alone. People often need others to either collaborate with or learn from. Current ways to address getting help involve paid tutoring as well as office hours, but the need to have peers to work with is not effectively being addressed by the app marketplace.

This application facilitates and enables student success by fostering an environment of sustained cooperation and relieving students in emergency help situations. Thus, this app not only helps people study, it also reduces stress and creates a better work community. There is no single application that enables all the functionality stated above.

## Potential Audience

Currently, there are 17.5 million students enrolled in colleges in the United States. This app could help all of them, as the level of technical ability to use it would be minimal.

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That is, anyone who uses social media could automatically connect and intuitively use the app.

Furthermore, this app could also be extended to other groups of students such as boarding school students.

## Major Technologies Used

The mobile application will run on iOS devices, principally iPhones. It will be written in the Objective-C and Swift programming languages. For design and implementation purposes, we will be utilizing a number of tools such as Interface Builder and Frameworks.

We will also need to keep a database which will store the users signed up in the system and the classes they are in, along with some other personal information. We plan on keeping a MongoDB database to store this information.

For ease of use we want to allow users to sign up either through their Facebook or Google+ accounts. Thus, some interaction with Facebook and Google+ API will be necessary.

## Resource Requirements

There are a handful of resources necessary in order to develop this project. First, for testing and development purposes, we must figure out a way to have a centralized development iOS device. The reason for this is that not all members of the group currently own iOS devices. Furthermore, having someone's day-to-day phone be the

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main device used for development could significantly bottleneck and hinder development.

We will also look into setting up and maintaining a Google app engine AWS server to hold the aforementioned database.

## Discussion of Competing Products

To explore possible competing products for our market, we systematically consider each of our product's functionalities and evaluate the market segment that these functionalities address:

**A.**     **Creating a study group.**

  o   At its core, this functionality allows users to connect with other students (including their own friends). Therefore, group messaging and group sharing apps are all possible competing products. Examples of these include GroupMe, StudySpace, and Band.

**B.**     **Finding a study group**

  o   As stated in the first section, our product uses location-based data to allow users to find study groups. Consequently, existing location-based messaging apps are possible competing products. Examples of these include MapChat, and Drop.

**C.**     **Resolving Scheduling Conflicts**

  o   As our product is designed to help users with differing availabilities schedule study sessions, apps and services that help resolve scheduling

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conflicts can be potential competitive market segments. Examples of these are Doodle, When Is Good, Time Bridge, and When2Meet

## Value Proposition

The value that our product brings is bundling all the functionalities stated above in *one* cohesive, easy to use platform. Applications exist for each of the functionalities that we are implementing, but they exist in *isolation*. Our product is designed for ease of use and elegance; it brings together the functionalities of competing products in different market segments under one user-friendly product.

## Assessment of Risks

There exist no legal or liability issues with our product. The biggest risk for our team is our minimal iOS programming experience. None of us have completed a project of this scope for iOS. Therefore, we must quickly acclimate to the programming environment, and be willing to switch platforms if the task proves to be too costly in terms of time.

## Potential Approaches

Potential approaches for the problem that we are trying to address include making an application on a different platform (such as web or different mobile OS). We chose to develop for mobile devices because it enables the desired user-experience. The application is for students to find study groups on-the-fly and mobile platforms provide the best avenue for this experience. In addition, some of the features that we wish to

include can only be done with mobile devices. For example, location-based data is necessary for some of the features that we seek to implement.

## Next Steps

The next step in the development process is user-centered design. Now that we have developed the logistical model and need that we are addressing, we must seek to build a product that addresses this need in the best possible way. To accomplish this, we will develop mockups and prototypes for each of the interfaces that our application will implement. Following the design thinking process, we will then test the ease-of-use, intuitiveness, and aesthetic appeal of the mockups with members of our intended audience. Re-iteration is key; our first attempts at interface design will be strengthened by getting feedback from actual users.

Following the test phase we then proceed to build the model for the backend-end technologies that we will use. Again, using the design thinking process will be crucial in building the best model. Once all the high-level abstractions have been tested and have been revised (after user feedback), we will implement the app prototype; user-feedback and testing will be necessary to refine our product.