



## Design Document

Brayden Neal, Joel Guillen, Leena Butt, Nelson Tran

## Executive Summary

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Booth is a mobile app designed to transform the collaborative study experience for college students on campuses everywhere. Our project addresses the need for efficient study space utilization and fosters real-time connections among students on campus. Booth enables users to seamlessly locate and join study sessions, visually identifying study spots through pictures and detailed information shared by peers.

With this app, students will be able to enhance their time studying by choosing study sessions that are custom to what they need most. From the student who wants to study for a test with his/her friends during a gap in their schedule, to the TA who wants to broadcast their skills to the class when they host a study session, this app will be for everyone no matter the educational discipline. This app will have a lot of possible uses, and based on the needs and wants of the students using the app, we can continue to add more features until we have the best collaborative study app for the study community.

## Features

- **Location-based Study Spot Map**

A screen so the user can not only view a list of who is studying on campus but also a visual representation of the campus and where people are studying dictated by icons.

- **Tutor/TA Usability**

A way for TAs and tutors to assign themselves this role in the app, and broadcast their services to whoever can be located in the Discover section.

- **Discover Classmates/Study Partners**

A filter is included in Booth to allow users to find people in their classes or similar majors that they don't know yet. They will have the ability to host these sessions themselves and broadcast them to whoever is interested.

- **Study Session Visibility**

Users will have the option to choose who is allowed to join their booth study session (Friends, classmates, everyone). Their session will be invisible to everyone else on the list and map.

- **Study Habits Analytics**

Based on the data Booth takes on your study habits (longevity, classes, people, etc.), it will create a section that tells you everything about your study habits that will ultimately give you a better studying experience.

## Background Section

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### Idea Space

The purpose of Booth is to provide students with a more effective way to study, connect, and pair with other students in their institution. It addresses the lack of tools available to students to create study sessions that further improve their knowledge in a subject. Booth also provides a more efficient way to pair students with others of similar proficiency for group projects. By providing a more centralized platform, students are able to better connect and collaborate with others as well as better understand the material of their classes.

### Similar Ideas

- **Snapchat**

Snapchat provides a feature where users are able to see the location of their friends on the platform. However, Snapmap is limited to only providing the locations of friends alone and becomes redundant when there are none nearby. In addition, Snapchat is built as a social media platform and provides no methods for users to meet other people. Therefore, it is unlikely to assist a user in finding capable study partners.

- **Discord**

Discord provides users with the ability to join communities of people who share the same interests and goals which provides a more effective way to create connections with one another. The platform provides users the ability to call and text each other as a group or one on one. It is an effective way to host and join study groups and ask questions that other users may know. However, studying in-person can provide a more efficient session as well as create more meaningful connections with peers.

Booth is specifically designed to connect students with one another as well as provide a more efficient way to find study groups nearby. Through the use of data analytics, Booth can suggest suitable partners to users. Contrary to Snapchat and Discord, both of which lack this feature. Additionally, Booth can give suggestions of locations where users can go to when creating a study session.

## Required Technology

- **Flutter**

The Flutter framework will be used to build the app. This framework is used to develop apps across multiple platforms. The goal is for the app to be available to both Android and iOS users. As such, the use of Flutter will help make this achievable.

- **Firebase**

The Firebase Realtime Database will be used to read data from and write data to the app. This is a cloud-hosted database that stores data in a JSON format. It is compatible with Flutter, making it suitable for cross-platform apps. With this database, both Android and iOS users will receive real time updates - eliminating the need to constantly refresh the app.

- **AWS**

AWS will be used to host the app. This is a good option for hosting the app due to AWS's reliability. Additionally, it provides the ability to scale the app up if needed.

## Assets and Engines

We will be creating custom features based on the application's requirements, while also utilizing pre-built components, libraries, and SDKs offered through Flutter, AWS, and Firebase to aid in development. We will also be integrating maps and location services. This will likely be achieved through APIs provided by mapping services like Google Maps.

## **Software/Hardware Requirements**

As we will be developing a mobile application, the only major requirement is for a user to have access to a mobile phone. This could be an Android or IOS-enabled device. Users must also have access to the internet while using the application, as well as grant their permission in order to use location functionality.