# CS 30700: Project Charter

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## 1 Problem Statement

Currently, the options for finding a roommate at Purdue are to use Facebook or to have Purdue select a roommate for you based on a brief survey. We find that these options are a weak methodology of matching you with a like minded roommate who you must find a way to get along with for an entire year.

We will utilize a machine learning algorithm which will assist people in viewing better potential new roommates based on previous selections. With a more modern and college-student friendly platform of a tinder-esque UI, students can enjoy going through potential roommates in search for a match.

## 2 Project Objectives

There are two primary objectives of our project:

- Create an iOS mobile application utilizing the tech stacks of javascript and the react framework that functions similarly to Tinder in terms of user experience. As a user, you will be able to "swipe" to like or dislike other user profiles (where mutual likes result in a match) with the goal being to find user profiles you find appealing in terms of potential roommates. To achieve this, we plan on allowing users to fill their profiles with relevant information about themselves, personality, interests, and other things such as furniture they could bring.

- In addition to the users seeing this info on others' profiles, we plan on having a rudimentary machine learning algorithm working behind the scenes to alter the queue of profiles being shown to each user, with the goal being to show profiles which will have a greater probability of receiving a like.

## 3 Stakeholders

Our relevant stakeholders include:

- Purdue University
- Other universities (for potential expansion)

- Purdue Students (looking for a roommate)
- Residential Assistants

## 4 Deliverables

The project has been broken down into the following deliverable application and features:

- Our project will yield a mobile iOS application that matches roommates better. The main feature will be the ability to swipe through potential roommates in a queue to either ignore them or attempt to match as compatible roommates.

  - The queue will use machine learning elements to track the way a user will swipe on other potential roommates in the queue. By learning which way the user swipes on different individuals the application can recommend compatible roommates better.

  - There will also be the ability to filter roommates in the queue by elements such as whether they are living on or off campus, gender, year in college, major, number of roommates they are searching for, and more.

- Once matched, users can message one another with the goal of being able to determine if they would be compatible as roommates.

- If a user is searching for multiple roommates, and matches with other individuals that have mutual matches, users will have the ability to create a group message between the mutual matches. The group message rooms will be limited to 4 users max, and all roommates must have matched with one another.

- Once a user has found roommates, they can click a button removing them from another user's queue, this will also unlock more features to communicate with their new roommates.


The platforms and frameworks we plan on using include the following:

- React
- JavaScript
- HTML
- CSS
- Firebase
- Python