

# CS 30700: Product Backlog

**Project Name: UniRoom**

**Group 22**

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## **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.

Instead of the archaic methodology of finding a roommate, we will utilize a machine learning algorithm which will assist people in viewing better potential new roommates based on previous selections and user entered data via a questionnaire. 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.

## **Background Information**

### **Audience**

A major problem exists on college campuses where many students, especially incoming freshmen who don't know anyone at their university, have trouble finding a roommate who they get along with and share similar interests with. Currently, it seems that Facebook posts are the primary method for finding potential roommates on college campuses, which seems to be a little outdated. This leaves us with an opportunity to enter the domain of social media, creating a roommate search app that would better suggest potential roommates.

## **Similar Systems**

Facebook is a place to create posts with various personal information and view other posts in search for roommates. The downside is that students must read many posts at random to see if a potential roommate would be a good match since there is no algorithm for providing you with optimal potential roommates.

Tinder has a similar system of swiping to match with someone and a queue for recommending potential matches, but their system is meant for matching with people of the user's sexual preference, and not so much for finding roommates.

Purdue's Roommate Questionnaire is composed of questions to determine compatibility between roommates, but this system automatically pairs you with a roommate without being able to chat and discuss other factors that may affect roommate compatibility.

Roomates.com allows users to use a filtered search to see many housing and roommate options in a given location, but users are generally not in the age range of university students, and the platform isn't specific to college students who need roommates.

Roomsurf allows users to take a quiz to get matched with multiple people to chat with and it is geared towards specific colleges, but this system could still be stressful since users have to choose from many automatic matches to further chat with.

## **Limitations**

Despite Facebook's usefulness for finding roommates, having to read through many posts without any of them geared towards you is a bit cumbersome. Using machine learning, we will be able to provide users with potential roommates that they are very likely to match with.

Although Tinder is useful for certain reasons, there is no focus on roommate matching. Our platform will fix this limitation with our roommate matching queue utilizing machine learning and additional features such as roommate checklists.

Roommates.com and Roomsurf are general to students and adults that are trying to find roommates in a certain location, such as the city or suburban areas. UniRoom focuses on students at Purdue University that are looking for roommates either in a dorm setting or other living spaces around campus. With UniRoom, common coursework, social life, and sleeping habits play a major role in avoiding many of the issues that come with living on campus. Also,

having a Purdue focused roommate app allows users to filter different factors like preferred residence hall or general location on campus.

Often looking for a roommate requires viewing many different users at a time and comparing them all as a group. That can be stressful when trying to make the right decision on a roommate. Our app consists of yes or no decisions on potential roommates that are already recommended to users based on a machine learning algorithm, making the process much simpler. Additionally, any match will only happen if both users intentionally decide that the other seemed like a good fit, taking randomization out of the question. UniRoom also has a tinder-like UI that many students are already familiar with. We want finding a college roommate to feel less like a chore and more like scrolling through social media as usual.

## **Backlog**

### **Functional Backlog**

1. As a user, I would like to be able to create an account so that I can create a profile.
2. As a user, I would like to be able to sign in to my account with a username and password so that I can log in to my profile.
3. As a user, I would like to be able to reset my password through email, so that I can still access my account if I forget my password.
4. As a user, I would like to have security questions so that my account is more secure from users with malintentions.
5. As a user, I would like to be able to sign out of my account so that I can log out of my profile on my device.
6. As a user, I would like to delete my account so that my data is no longer accessible by the system and I can have my user information removed from the database.
7. As a user, I would like to disable my account from searching so that I can temporarily remove it from the list of potential roommates for other users.
8. As a user, I would like to upload pictures of myself to my profile so that other users can see what I look like.
9. As a user, I would like to see what major my potential roommates intend on studying, so that I can see if my potential roommate would also be a good person to study with.

10. As a user, I would like to provide the number of roommates I plan on having so that others can see this information and decide accordingly, and so that I can add other roommates to our chat room.
11. As a user, I would like to be able to fill out a questionnaire so that the site has information to provide me with potential roommates who have similar questionnaire answers (determined by machine learning).
12. As a user, I would like to be able to share my interests with other users so that I can see when my potential roommate and I have things in common.
13. As a user, I would like to choose what parts of my profile other users can see so that I have more control of my public profile.
14. As a user, I would like to view other potential roommate's profiles so that I can decide if we would be a good match.
15. As a user, I would like to see what questions my potential roommates answered the same as me, so that I can see what we have in common.
16. As a user, I would like to see what questions my potential roommates answered opposite to me, so that I can see what may cause conflicts with that potential roommate.
17. As a user, I would like to message potential roommates who I match with so that we can chat more about factors that might play into being good roommates.
18. As a user, I would like to see when my messages have been delivered, so that I know if I need to contact my matches in a different way.
19. As a user, I would like to see when my matches have read my messages, so that I can tell whether they are truly interested in being roommates.
20. As a user, I would like to have a checklist after choosing my roommate so that we can discuss potential items we would bring with us (e.g., TV, futon, microwave).
21. As a user, I would like to be able to remove previous matches I would no longer like to be matched with so that they cannot message me anymore if I no longer feel comfortable/willing to communicate with them.
22. As a user, I would like to be able to view the app's code of conduct so that I can verify that I agree with the site's values.
23. As an admin, I would like to be able to verify that users have read the code of conduct, so that all users on the app are aware of the guidelines in place.

24. As a user, I would like to be able to report an account that violates the user code of conduct so that the violation can be handled appropriately.
25. As a user, I would like to be able to view the app's privacy policy so that I know how my personal information is being handled.
26. As a user, I would like to be able to request my personal information to be removed from the app so that my personally identifiable information remains private and secure.
27. As a user, I would like to edit my account, so that my questionnaire and account data can always be an accurate representation of my current self.
28. As a user, I would like to read a FAQ section in regards to roommate selection and the UniRoom app so that I can have frequent questions answered.
29. As an admin, I would like to be able to verify users accounts so that I can ensure no inappropriate content will be posted on the site.
30. As an admin, I would like to be able to ban reported accounts by email so that I can remove bad users from the site.
31. As an admin, I would like to verify that users have consented to our privacy policy when creating an account so that we comply with privacy laws in the United States.
32. As a user, I would like to be able to see the instagram profile of potential matches, so that I can get a better idea of what kind of person they are and what they like to do.
33. As a user, I would like to have control of which social media accounts my potential roommates can see, so that I can keep my information private if I want to.
34. As a user, I would like to be able to control the range in which my app searches for roommates, so that I can avoid people who are too far away from me popping up on my feed.
35. As a user, I would like to see where other users are from so that I can decide if carpooling or moving in together would make things more convenient.
36. As a user I would like to be able to set the acceptable age range in which the app will search for potential roommates so that I can avoid people whose age is not desirable for me.
37. As a user, I would like to see if my potential roommates are vaccinated for COVID-19 so that I can factor health into my decision.

38. As a user, I would like to be able to show my potential roommates if I am vaccinated for COVID-19, so that they can feel more comfortable in matching with me if they are concerned about contracting the virus.
39. As a user, I would like to have easy access to links for websites and hotlines, so that I can better inquire for help and report users that are displaying fraudulent information.
40. As a user, I would like to have a UI that focuses on personality traits that matter to being compatible roommates, so that other users don't immediately judge compatibility based on appearance.
41. As a user, I would like to see which residence halls or apartment complexes that my potential roommates prefer, so that I know if we can easily come to a decision where to live.
42. As a user, I would like to be able to choose between a light or dark mode so that I can change the lighting on my phone to better match my surroundings.
43. As a user I want to be able to delete the app so that it does not take up space on my device once I no longer need it.
44. As an admin, I would like to have a password strength checker upon user password creation, so that we can ensure users' accounts are not easily accessible (hackable) by bad actors.
45. As an admin, I would like to receive a periodic email status update summarizing user registration data and roommate match data so that I can see data about my users (if time allows).
46. As a user, I would like my app to have a light mode and a dark mode, so that it matches my iOS settings (if time allows).
47. As a user, I would like to import my data from other social media to display on my account so that other users can learn more about me (if time allows).

### **Non-Functional Backlog**

1. As a user, I would like to see another potential roommate in under 1 second so that I can quickly move to the next roommate I would like to consider.
2. As a user, I would like to see another potential roommate based on a machine learning model so that the best potential roommates are provided to me.

3. As a user, I want my private data to be secure and confidential so that no bad actors can access my account.
4. As a user, I would like the app to appear clean and organized, so that I do not get confused as to where features are.
5. As a user, I would like to be able to login within 1 minute after entering my username and password, so that I am logged in quickly and efficiently.
6. As a user, I would like to have my messages sent in under 10 seconds so that I can communicate efficiently with potential roommates.
7. As an admin, I would like to be able to host multiple users on the app at once, so that there is a better chance of users matching with compatible roommates.
8. As an admin, I would like to be able to efficiently trace errors with the program so that I can go back and fix them.
9. As a user, I want the application to be available and work 90% of the time I try to use it so that I don't seek an alternate service.
10. As a developer, I would like other coders to adhere to coding standards and documentation so that I can more easily work with them and understand their code to develop our application.
11. As an admin, I would like users to have the option to report satisfaction data for different parts of the app, so that specific features can be tweaked by the development team.
12. As a user, I desire to be able to access the mobile app through iOS, so that accessing the software is convenient for Apple users.
13. As an admin, I would like to scale to other universities, so that more users can find roommates through our app (if time allows).
14. As a user, I desire to be able to access the mobile app through android so that accessing the software is convenient for Android users (if time allows).