Team 12 - {Project Backlog}

Intern Housing Search

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Problem Statement

New interns often find it a daunting task to find places to stay if they refuse corporate housing. Our team aims to unify and simplify the process of finding a roommate(s) and searching for housing together by using relevant information to allow a user to network with potential roommates and find the perfect place to stay together. Our idea is based on the fact that interns usually have hard preferences on travel time and rent and would like to room with people with similar preferences.

Background Info

Audience

Housing search for interns who refuse corporate housing can be difficult, especially in big cities where the rent often far exceeds what intern is prepared to pay. As a result, they are required to go through a tedious search for both roommates and houses/apartments for rent. As such our platform aims to solve this by creating an platform for verified interns to network with each other and form housing groups. After forming a group, the users should be able to view house/apartment listings together and save ideal ones in a shared list.

Similar Platforms and Limitations

While there are several platforms to help interns solve these issues, in most cases they are divided between a roommate search (Roomiematch, Roomster) or a housing search (Airbnb, CampusRent). This can cause issues, because several housing searches end up in automatically assigned roommates which leaves potential for a damaging roommate relationship over the entire course of an internship. In the other case, finding housing with a roommate who you have matched with can be an issue because of the availability and nuances in actually renting a property. Those sites that address both (internhousing.com) tend to be either unpolished or lack certain key elements of roommate searching and housing searching. For example, one only includes the ability to find potential roommates, but not communicate with them and search for housing with them, instead of being able to communicate and search with them together.

As such our main goal and key differentiator is to completely unify the 2 processes so that the entire roommate search, housing search, and communication can be done in the single web application.

Functional Requirements

1. As a company, I would like to be able to create a general company profile
2. As a company, I would like to be able to have a separate chat for each company location
3. As a company, I would like to be able to create a moderator account for company moderators
4. As a company, I would like to be able to send an email invite link to an intern.
5. As a company, I would like to be able to keep a master list of invited interns.
6. As a company, I would like to be able to remove interns from the company when the intern's time at the company is over
7. As a company, I would like to be able to have all of the company location's interns in a single general chat room.
8. As a company moderator, I would like to be able to control the flow of the company chat
9. As a company moderator, I would like to be able to control who can post and talk in the company chat
10. As a user, I would like the user interface to be simple and intuitive.
11. As a user, I would like to be able to reset my password if I forget it.
12. As a user, I would like to be able to report another user for acting inappropriately in chat
13. As a user, I would like the website to be responsive and snappy.
14. As an user, I would like to have a back to top button on every page.
15. As an intern, I would like to be able to sign up for Pear using the email invite link.
16. As an intern, I would like to create my profile with relevant information about myself.
17. As an intern, I would like to include my preferences for an apartment.
18. As a intern, I would like to update my preferences about my housing as and when needed.
19. As an intern, I would like to login and update my profile settings.
20. As an intern, I would like to chose the number of roommates I would like to live with.
21. As an intern, I would like to be able to form a housing group.
22. As an intern, I would like to only see house listings near the company.
23. As an intern, I would like to see house listings in my price range.
24. As an intern, I would like to see distance from the company for each house listing.
25. As an intern, I would like to be able to join multiple chat rooms based on my preferences.
26. As an intern, I would like to get notifications about house listings I have selected.
27. As an intern, I would like to see how many people want to book the same place as me
28. As an intern, I would like to get notifications about people leaving my housing group.
29. As an intern, I would like to have a choice to upload a profile picture.
30. As an intern, I would like to include links to other social media sites like Twitter and Facebook.
31. As an intern, I would like to be able to send private messages to other interns.
32. As an intern, I would like to view images of houses\apartments that I am interested in.
33. As an intern, I would like to know the approximate locations of all for sale houses\apartments.
34. As an intern, I would like to filter houses/apartments according to my criteria.

35. If time allows, I would like to get suggestions for housing based on my housing preferences.
36. As an intern, I would like to have links that directly target rental properties.
37. As an intern, I would like to delete my account.
38. If time allows, I would like to be able to read reviews of places that I am looking to stay at.
39. If time allows, I would like to be able to write and review places where I have previously stayed.
40. If time allows, I would like to keep my profile through different internships.
41. If time allows, I would like to be able to hide all posts by another user.

Non-Functional Requirements

Databases

We will use databases to store information. The database will contain all the personal information of every intern. There will also be other databases to store the information of companies, list of chat rooms and the users in them, and list of houses. The database should be able to handle about 10,000 people, 1,000 companies and all their details. This information will be used to match interns as potential roommates and segregate them into multiple chat rooms. A chat room should be able to handle a maximum of 100 users at once. When a user returns, the chat history is pulled up for them from the database in which it is stored.

Security

Security would be a crucial factor for Pair, as we are storing a lot of confidential information. All messages would be end-to-end encrypted to prevent “MITM” (Man In The Middle) hacking. All API calls need to be authenticated before they’re made. All data that ever enters or leaves (basically all data channels) need to be encrypted. The entire database will be encrypted and no one, except the server and the user, will have access to that information, to prevent things like SQL injection. Also, we have to make sure that no data gets mixed up while being transmitted. If time allows, the server should have at least have a firewall and security, should be able to handle DDOS attacks.

Speed and Performance

The latency for chat rooms should not be high. We will make a single call to the server caching up messages for a couple of seconds to reduce server calls to ensure low latency even with bad connection speeds. We will ensure that the server can handle multiple calls at once. Also, we would use polling to get new messages (or long polling or websockets if time allows). Loading of webpages should be less than 500 ms (assuming a good internet connection). Loading and setup of chat rooms should be quick (less than 5 - 10 seconds). The server should be able to handle about 10,000 ‘events’ in the span of a few seconds without crashing. It should be able to handle a 1,000 logged in users at once.

Usability

The user interface should be easy to navigate and easy enough to use for the average user. Due to the number of features, it is essential that the user interface is well designed. Updating your profile information should be quick and easy. The website frontend should also be responsive and accessible on all screen sizes and resolutions, as well as on all the major browsers.

Hosting & Deployment

Our front and back end will be separated such that they can be deployed and maintained separately. Once we are far along enough in development, we will make a decision on where to deploy the backend server for testing (somewhere such as DigitalOcean, AWS, or Heroku). The front end can then be hosted as a free GitHub Pages website.

Scope

Our database and server should be able to handle all the interns in a given city. We will first implement our idea for interns in San Francisco. If time allows, we will expand our platform to provide housing for interns in other cities. We will contact companies that offer internships in the cities we expand to regarding the use of our platform.