In the Loop Project Proposal

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We are building a web-based application to connect college students with verified housing providers off-campus in an efficient manner. Our software project is solving the domain specific problem of student off-campus housing.

Websites such as Facebook, Reddit, Craigslist, and other messaging boards are common platforms for college students to search for off-campus housing. Colleges try to make this more convenient by creating student groups in which students can communicate with each other. This involves reaching out to multiple students through a long email/message chain to check compatibility and other preferences. Then, verifying the listing which can be difficult to do just from online information. We noticed this lack of organization, efficiency, and safety when it came to college students finding apartment listings online. As students, there is a need for a platform that efficiently provides off-campus housing options for students.

This project is significant because existing platforms like Facebook groups, Reddit and Craigslist that are used to find verifiable off-campus housing or roommates are prone to scams, by both landlords and student subletters. One popular site that we discovered and is used at Rutgers, Places4Students, was created in 2003 & its outdated design and features make it very inefficient to use. Ideally, students should be able to find housing or roommates…

- **quickly** since living situations for students usually change every year/semester
- **efficiently** so that they don't waste time trying to navigate a messy list of properties
- **safely** so that they don't get scammed or put in harm's way.

From this project, we expect to learn how to create a full-stack web application and connect to a MariaDB database. In particular, we will be using a Python backend and a HTML, CSS and Javascript frontend along with various frameworks such as Bootstrap. We would also like to learn how to operate in an agile environment, where we coordinate tasks, communicate consistently, and learn from each other's skills. Our project will solve the problem of students not being able to find housing and/or roommates in a trustworthy, reliable and efficient way. It also allows students and landlords to connect with each other through various features, whether it is booking appointments, filtering and matching roommates by categories, and direct messaging between people on the platform. The expected contributions and achievements for when we finish the project are a web application that is intuitive to navigate & trustworthy to use, backed by an organized, efficient database. Our team also has some members who are better at back-end development than front-end development and vice versa, so another thing each team member wants to achieve is learning more about the area of development they don't have much experience with.

The three roles we plan to include in our project are admin, landlord, and student. The admin role can manage the landlord and student accounts. Admins can also manage housing postings, whether that is creating them, updating them, or removing them. Landlords will be able to create profiles for themselves as well as create, update, and remove personal housing

listings. They can also message students and book appointments to show housing to prospective tenants. Students can create an account/profile using a valid .edu email address. They can fill out and later update a roommate preferences survey as well as create, update, and remove sublet listings, and view available properties. They can filter and search through listings based on their own preferences. Using the roommate preferences survey, students can get matched with potential roommates of similar compatibility. They can message other students who are potential roommates or even landlords to book appointments to see houses. Feature wise, our application will have a standard sign in, sign out and sign up page for landlords and students. Once signed in, a user can access their profile and a property + sublet search page. Property searching is for entire properties (houses/apartments etc) that are available by landlords. This search will include the ability to filter categories, view properties by map/location, and will show nearby colleges to make off campus housing easier to locate for students. Students will also be able to use a sublet search page, which is for students who have a vacancy in their already leased apartment for either the duration of their lease or a small portion of it (e.g. a student studying abroad). The sublet search page will function similarly to that of the property search and will offer filtering (especially for length of sublet), listings on a map, and nearby college campuses. There will also be a separate section to find roommates, whether by using the roommate preference survey or filtering potential roommates by their student type such as international, grad, transfer, etc. Users will also be able to directly message each other within the application. The messaging UI will also let the users visit each other's profile page as well. There are a few constraints that we thought about. As we are going to be setting up the application on the provided virtual machine, it won't be able to scale to a lot of users. Also, since students are using their .edu email addresses to sign up, students in other countries that do not provide .edu domain email addresses won't be able to use the application. Landlord accounts are also not verifiable by us due to the limited security features we can offer in a class setting. This is a web application, which means there may be issues when users try to access it on their mobile devices. Lastly, as there are a lot of text inputs required for most of the features on the application, we will need to do a lot of typing and testing.