Lab 1: Descriptive Paper

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1 Introduction

A bachelor's degree is no longer enough to qualify for entry level career positions. College students are surrounded by other students who want an opportunity to use their skills. Take the following example: a film student wants to make a short film, English majors, theatre students, and others may be able to contribute to this film.

The problem is that students do not always seek each other out. The solution is a service that allows college students who want to create projects to meet students who want opportunities to use their skills. There are a few major problem characteristics worth addressing that are as follows.

Veera Korhonen tracked both high school and college graduates by population percentage from 1960 to 2022; the number of college graduates has continued to increase. This increase in enrollment is shown in Figure 1.
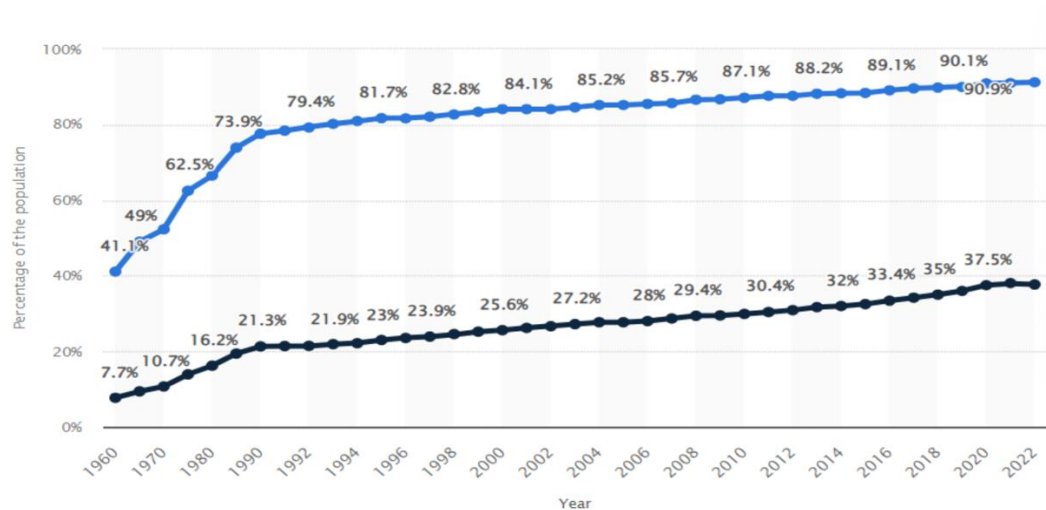
Figure 1: Graph of enrollment increase from 1960 - 2022 (Korhonen, 2023).

A study performed by Sarah Zehr in 2016 showed that 75% of students had some form of internship experience by graduation; another conducted by Kapoor and Gardner-McCune in 2020 highlighted that these numbers are lower. For computer science graduates, only about 40% had landed internships. The distribution of internship participation by household income and gender is highlighted in Figure 2.

Figure 2: Participation in internships by household income and by gender. (Kapoor & Gardner-McCune, 2020).

Verve Search, with Hannah Salton, explored the phenomenon of "experience inflation." Where, as time goes on, employers require more experience for entry level jobs. In the U.S., entry level jobs in several fields are requesting more years of relevant work experience for job listings marketed as "junior level" or "entry level". Figure 3 visualizes these statistics.
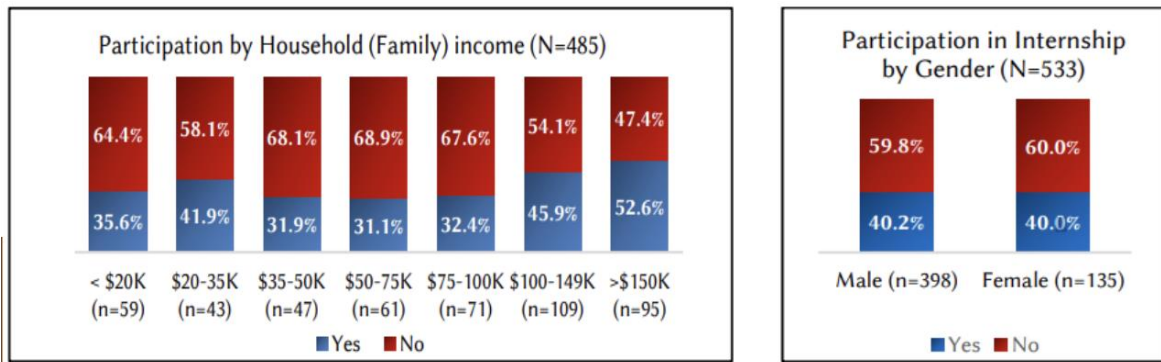

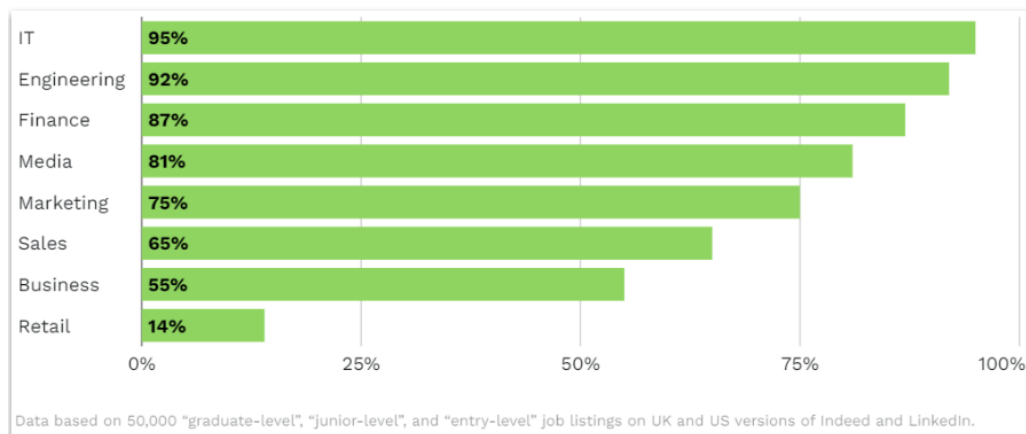*Figure 3: Percentage of jobs, by industry, that required at least two years of experience or more, based on data from LinkedIn and Indeed (Search & Salton, 2022).*

Students who are looking for people to join their project must currently search different platforms to try and find project members. Figure 4 shows this process in a flow chart. They also must seek them out individually and wait for a response.
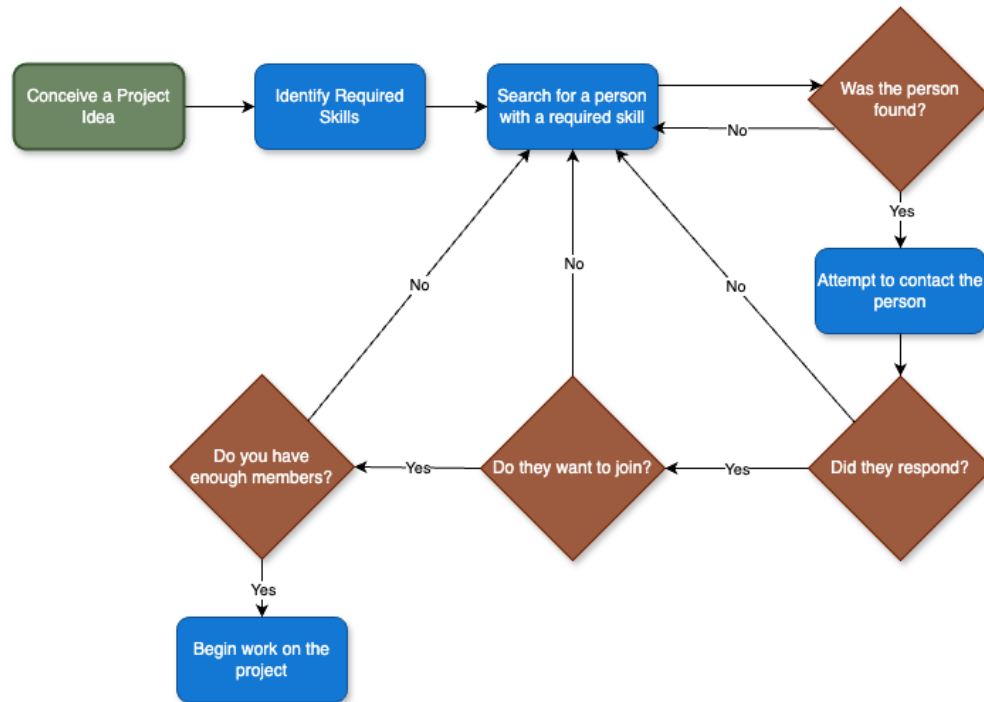
Figure 4: Current process flow for project launchers.

Students who are looking for experience can either explore traditional employment opportunities or search for other student organized projects (see Figure 5). If the students search for traditional employment opportunities, they must find suitable internships/jobs in their area, then meet the requirements, apply, and be accepted. If they search for student-created projects, students must use different platforms to attempt to find projects. This required effort is included in both face to face, and online searching. It also includes the risk of facing rejection and can be difficult to find projects.

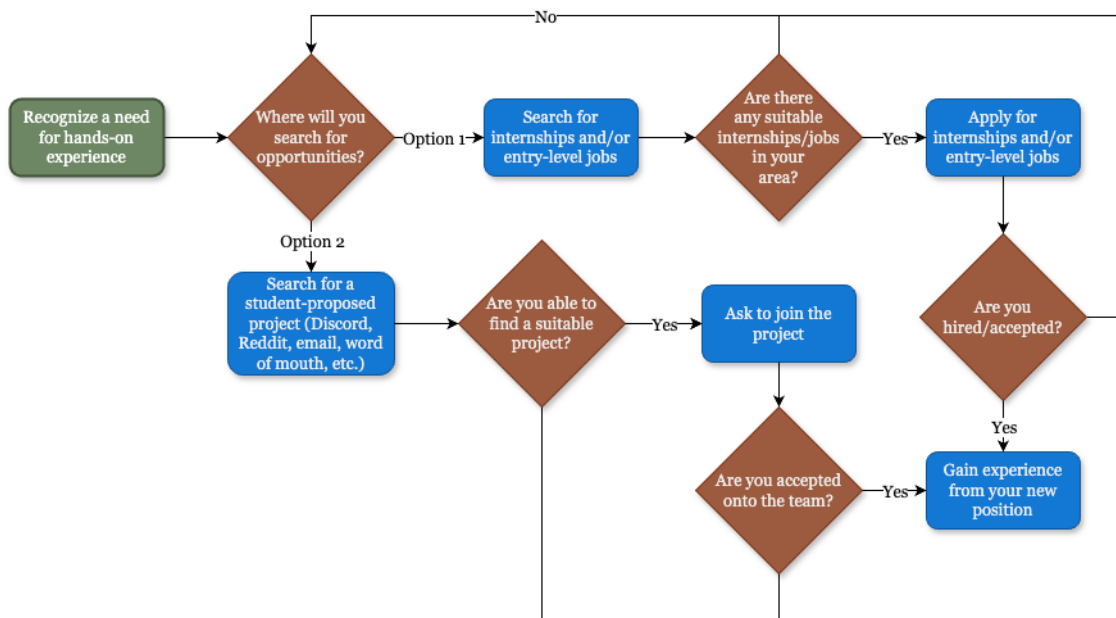*Figure 5: Current process flow for project seekers.*

2 *UConnect* Description

UConnect will be a web application that allows college students to reach out to each other, and work on projects for experience that they can put on their resumes. A project launcher can make a post describing the project they wish to launch, along with needed skills or fields of study for the project. The process of finding members for a project becomes much simpler: the students only need to advertise on one platform. Figure 6 shows the flow of this process.
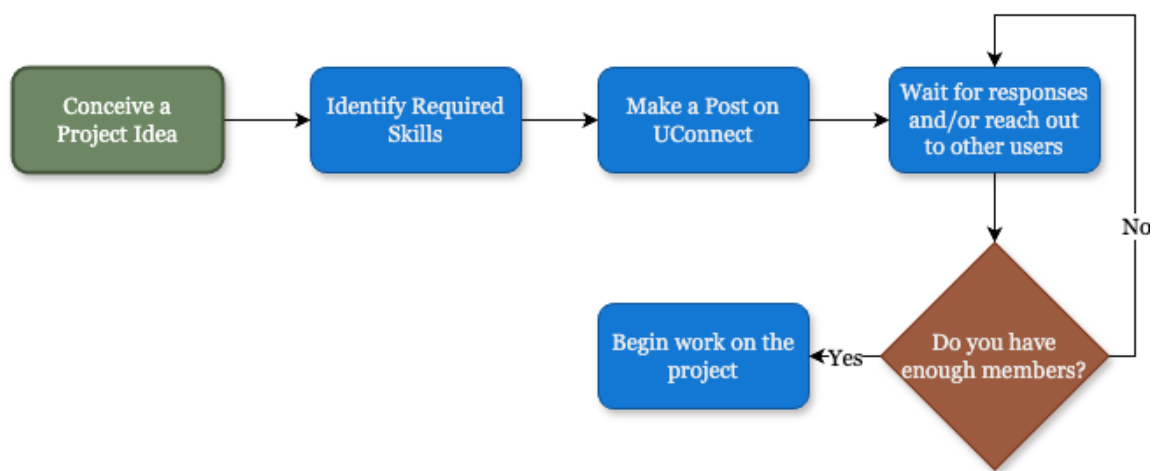

Figure 6: Solution flow of a project launcher.

A project seeker can browse posts to find projects they wish to join. The project seeker can reach out to launchers. It is worth noting that students can still pursue traditional employment opportunities, and they can become project launchers, or seekers, at any time. Finding student-created projects to join becomes much simpler because students only need to search on one platform. Figure 7 shows the process flow for the project seeker.
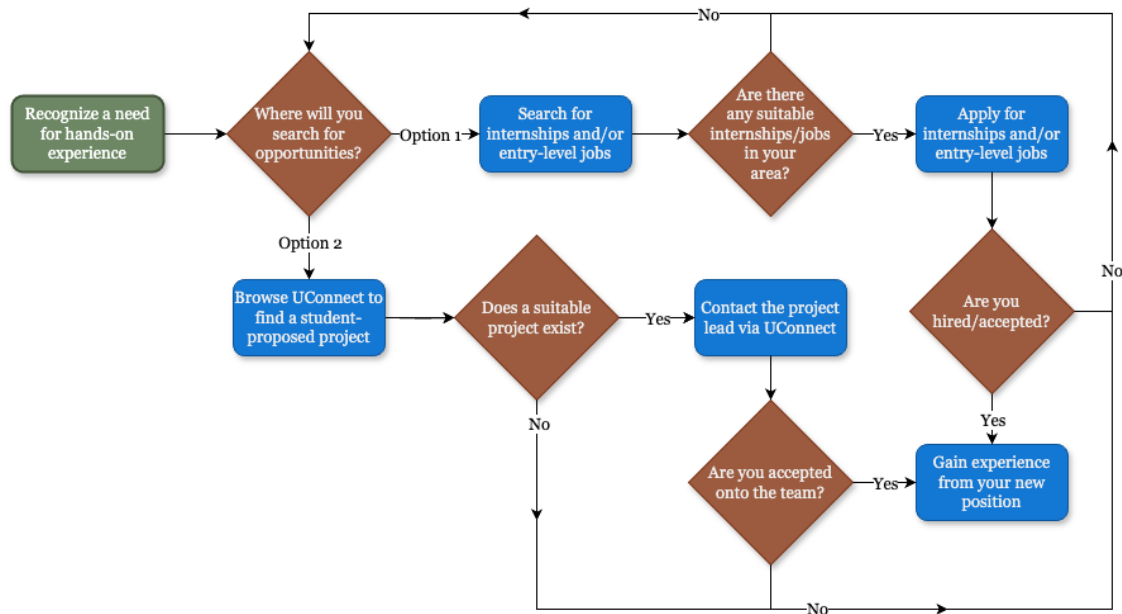

Figure 7: Solution flow of a project seeker.

2.1 Key Product Features and Capabilities

Users can act as project launchers. They can create posts to advertise projects. Project launchers may also browse user profiles, reach out to potential team members to recruit. They may also use the "my projects" page to keep track of current and archived projects. Figures 8-10 show the mockups for these key product features.

Figure 8: A mockup of a project launcher creating a post on UConnect.

Figure 9: A mockup of a user profile on UConnect.
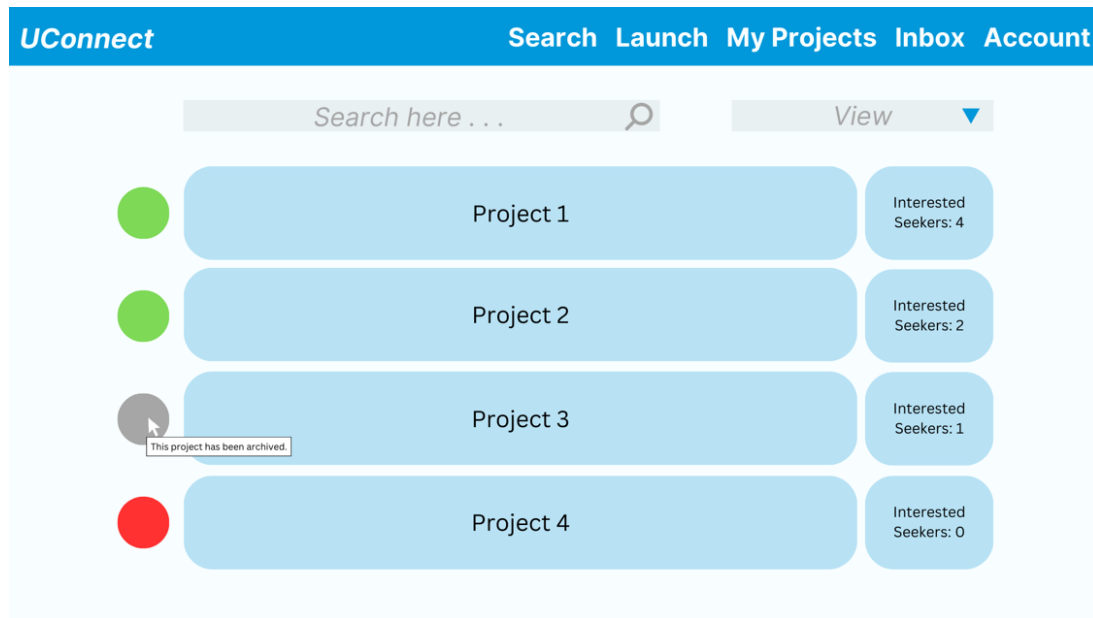
Figure 10: A mockup of the "My Projects" page. An active project is green, an archived project is gray, and a deleted project is red. The number of interested seekers is shown on the right side next to the name of the project.

Users can also act as project seekers. They will be able to create personal profiles to describe their skillset, browse posts from project launchers, and message users about their projects. Figures 11-13 show the mockups for these key features.
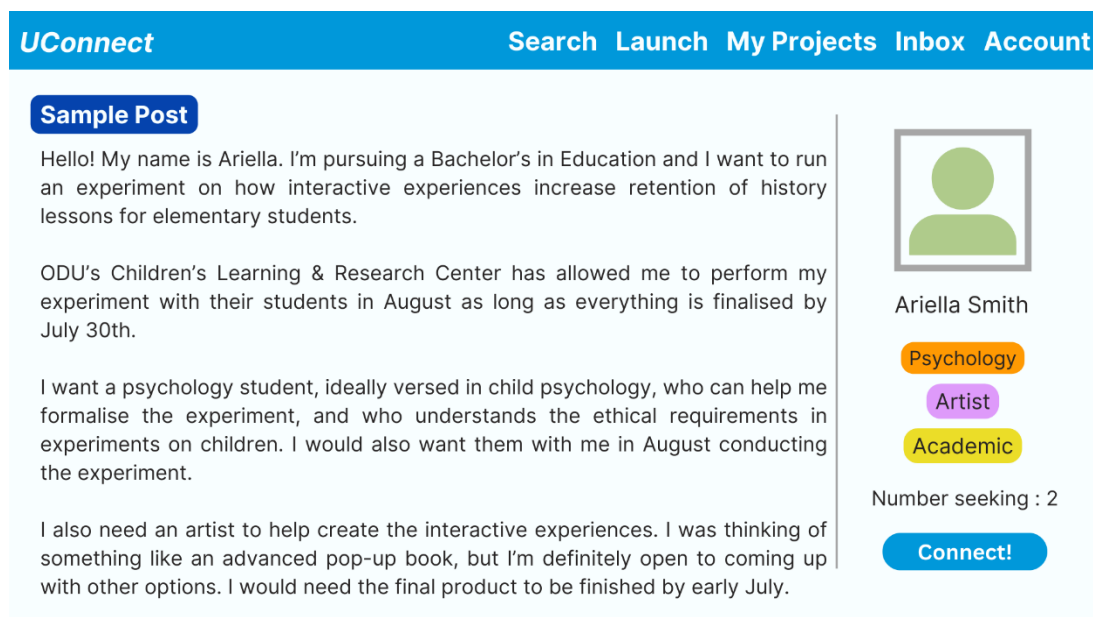
Figure 11: A mockup of a post, from the perspective of a project seeker, on UConnect.
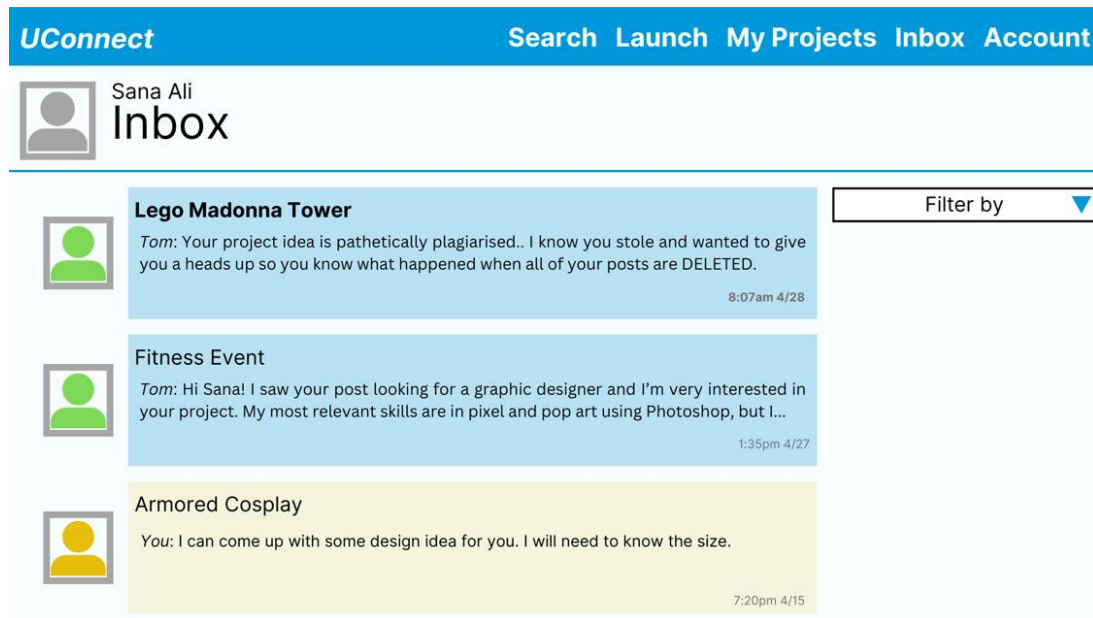
Figure 12: A mockup of a user inbox. A blue message box shows a project the user launched. A yellow message box shows a project the user joined. A new message has a bolded subject line.
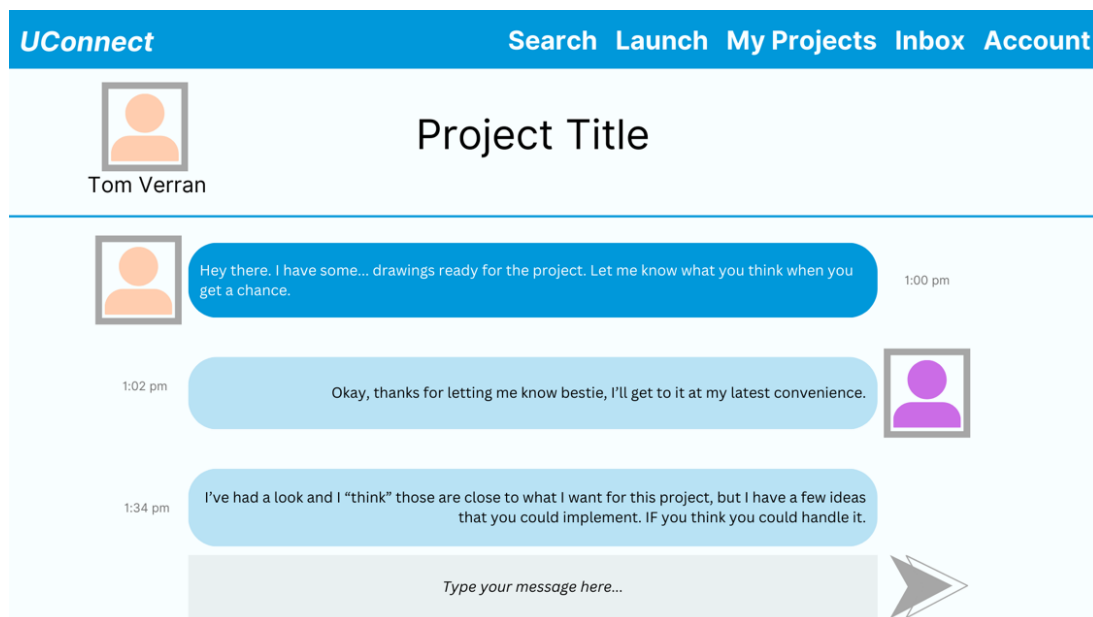
Figure 13: A mockup of two users, a project launcher and project seeker, messaging. The title of the related project is at the top of the message. The recipient is dark blue; the sender is light blue.

Users will also have access to a tagging system. Examples of tags include "graphic design", "psychology", "academic", "short-term" etc. Tags are implemented to describe general areas of expertise/skill or characteristics. The key feature of tags is to highlight skills attributed to individuals via their profile, or to underline needed skills to finish a project via the project tags.

Searching for posts is a major characteristic of tags, and a key feature of UConnect. Users can use the home page to navigate through UConnect as shown in Figure 14. Users will utilize search queries to find relevant projects and/or other users (i.e. potential team members). This is shown in figure 15. Users can use various filters, or search by tags and/or keywords. UConnect is not a matchmaking service, it cannot match students to other students on its own because it lacks any algorithm to do so.

Users can leave reviews on profiles of other users that they have worked with. Reviews are an important asset for project launchers when picking candidates for a project.
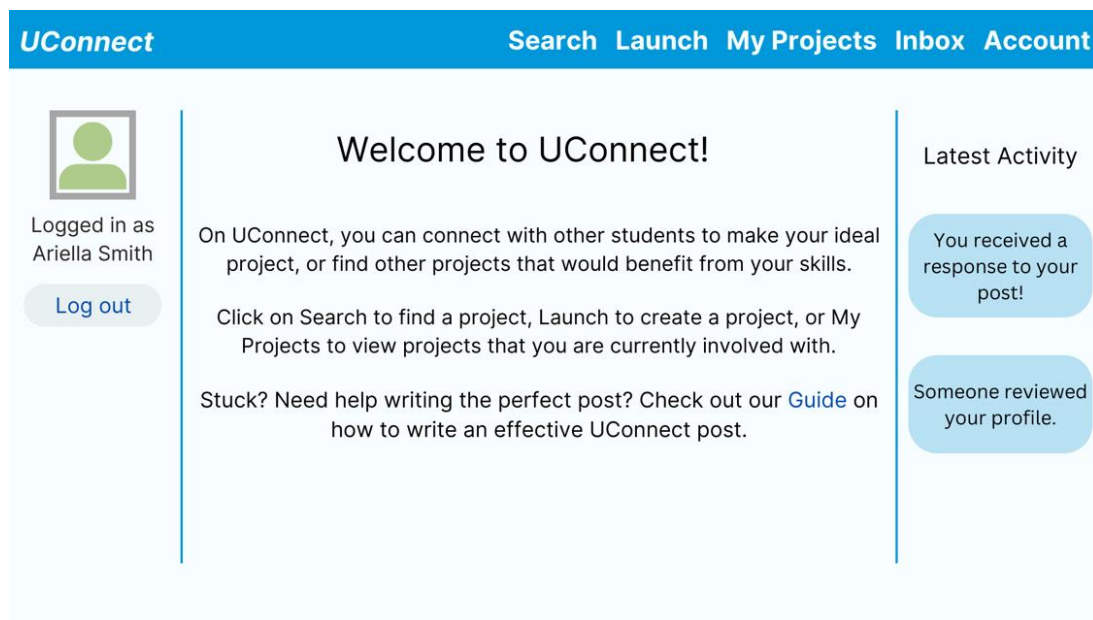
Figure 14: A mockup of the UConnect homepage after a user has logged on.
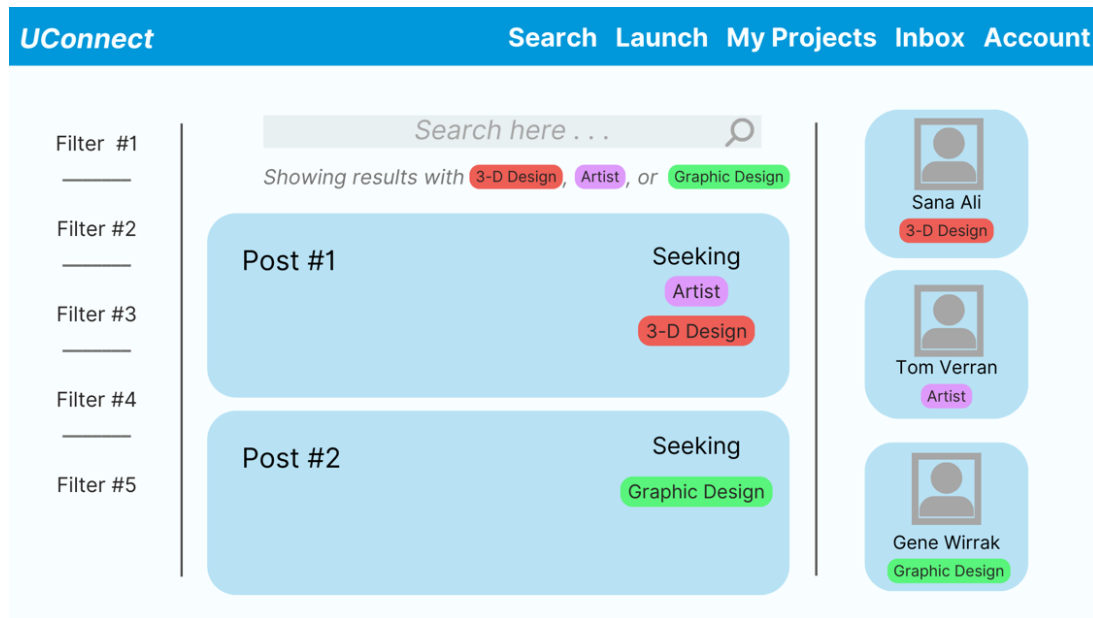
Figure 15: A mockup of UConnect's search page, after making a search for the tags "3-D Design", "Artist", and "Graphic Design"

2.2 Major Components (Hardware/Software)

Django will be used for web development due to its security and versatility. This makes it optimal for both first time back-end developers and senior developers alike. PostgreSQL will be used for database management because it provides flexible data management and integrity. OAuth will be used for user authentication to provide a final layer of security and student information privacy.

Figure 16: Major Functional Component Diagram for UConnect

3 Identification of Case Study

UConnect's direct users are students actively enrolled in a college, university, or other institution of higher education. UConnect's services benefit those who are looking for meaningful work or major related experience that could aid them in the future. These benefits could be helping them get ahead in the work force, bec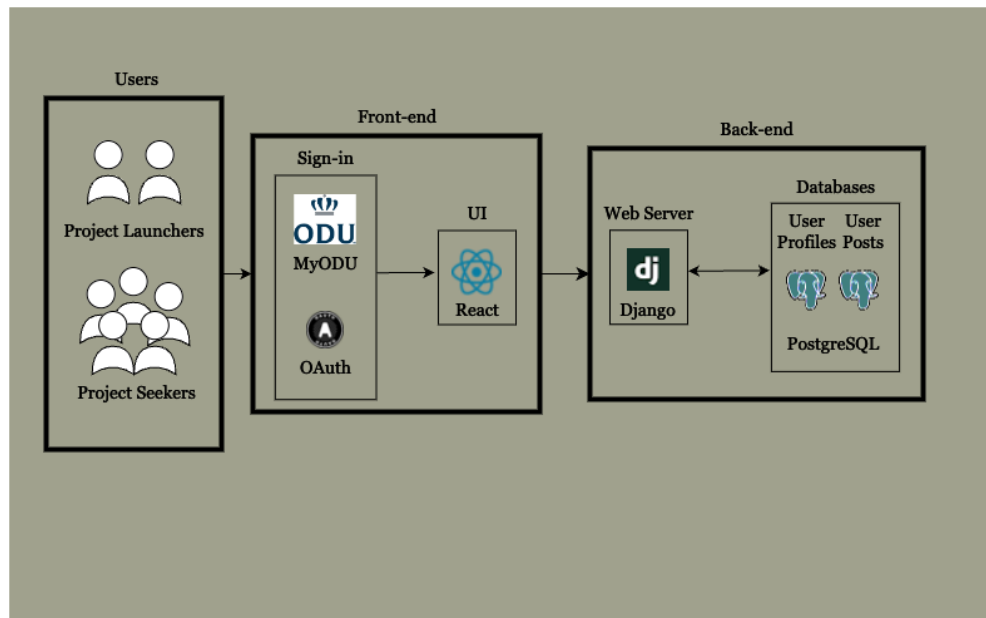ome more familiar with a concept within their major, or build upon their resume. Students who already have methods of obtaining these benefits are less likely to need UConnect but are still able to use it to gain more experience, socialize with other students, indulge in hobbies, or simply help on others' projects.

UConnect's customers are university administrators. Choosing to implement UConnect into your institution's resources would grant the students access to it, thus providing them with simpler methods of posting project ideas and finding people to work with on such projects. Administrators are recommended to inform their students about UConnect as it will not create the projects and assign students to them automatically.

4 Glossary

Project Launcher: User who has a project they are interested in recruiting students to work on

Project Seeker: User who is interested in using their skills to contribute to a project

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