Lab 1- Project Characteristics

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25 September 2024

Draft 3

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1 Introduction

1.1 Background

In 2022, Verve Search and Hannah Salton conducted research on "experience inflation"—a phenomenon in which experience is considered less valuable than it used to be. What "experience inflation" means for jobseekers is that they are expected to have more relevant experience to be considered capable of working in a career field than in the past. As shown in Figure 1, both STEM and non-STEM industries require at least 2 or more years to be considered qualified for the majority of positions.
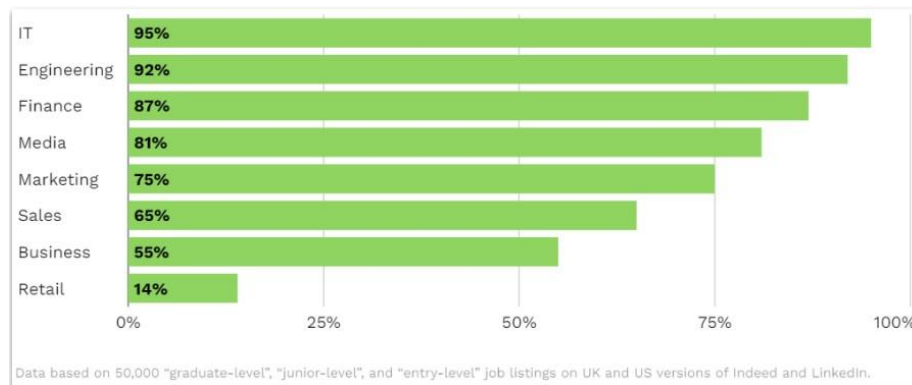
Figure 1: Percentage of jobs, by industry, that required at least two years of experience or more, based on data from LinkedIn and Indeed (Search & Salton, 2022).

Why is this happening? Just decades ago, a person did not need to gain direct experience (which often requires years of work in an adjacent field or strong connections) to enter the work force in their preferred career path. One could instead obtain formal education and use it to prove that they possessed competence in the required skills and had a work ethic unique from other candidates.

The difference between now and then is that the work ethic required to graduate from college is no longer unique. Plenty of people have degrees. And plenty of people have skills. As depicted in Figure 2, Veera Korhonen found in 2023 that the high school graduation rate has increased by around 50%, and the college graduation rate has increased by 40% over the last sixty years.

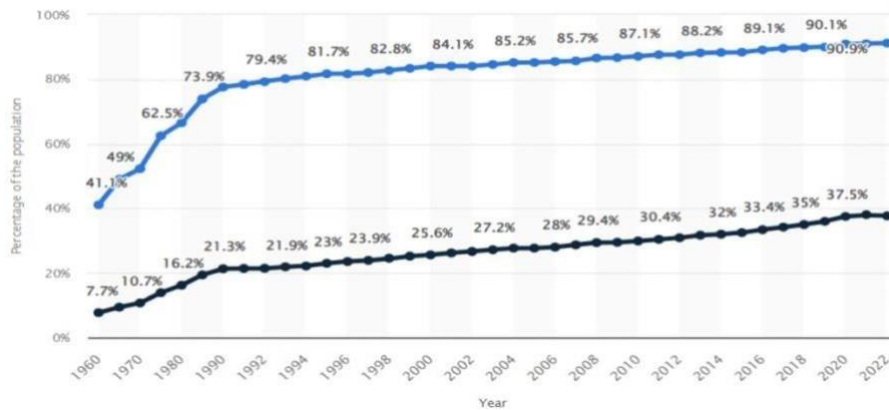*Figure 2: Graph of enrollment increase from 1960-2022 (Korhonen, 2023).*

With such a rapid increase in education attainment level, employers have responded by raising the standard. The presence of more qualified individuals does not create more jobs; an increased number of educated people simply means that employers can afford to be pickier. This is what leads to the plight of "experience inflation" from which so many recent grads suffer.

Humans are adaptable. With the rise of expectations for entry-level positions, students have begun to seek out alternate employment opportunities— internships. Studies by Sarah Zehr (2016) and Kapoor and Gardner-McCune (2020) found varying results for the number of students with internships. Results found by Gardner-McCune and Kapoor can be found in Figure 3. The 48-68% of students who are unable to obtain internships are at a disadvantage; what can they do to show employers that they, too, are prepared, even without formal internship experience?
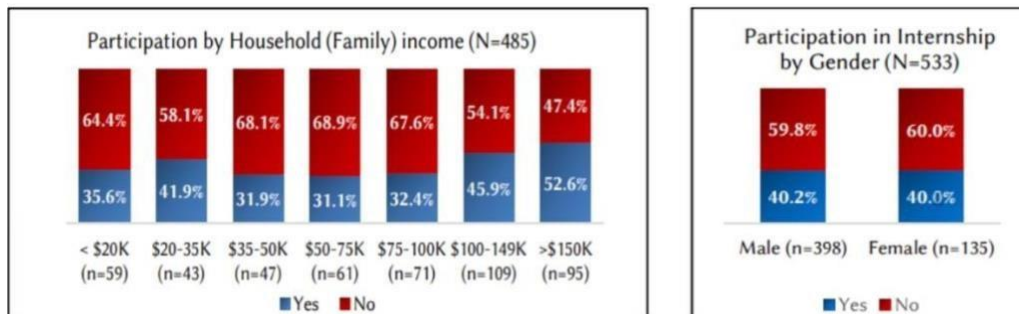

Figure 3: Participation in internships by household income and by gender. (Kapoor & Gardner-McCune, 2020).

1.2   The Power of Projects

College students are in a similar situation— they have worked for years to obtain specialized education. Busy with studies and perhaps working a job that allows them to attend classes simultaneously, they likely lack the time required to make connections in their industry of study. With the high cost of tuition, students may not have the funds to travel and find work. Due to "experience inflation", they may also lack workforce exposure. Fortunately, they are surrounded by others in the same boat.

If seeking formal employment (a traditional entry-level job, an apprenticeship, an internship, or other training positions) does not pan out, students can create projects with each other. Having taken classes together, students will be familiar with each other. They will likely be at similar skill levels, so ability discrepancy should be minimal. And, because students all are at risk of struggling to find work due to the rising expectations for having relevant experience *prior* to working in an entry-level position, all students involved will benefit from working on a project. Aside from the resume and portfolio benefits, collaborating on a project can even improve skills such as initiative, leadership, and public speaking.

1.3   The Problem with Projects

Even though creating experience via group projects instead of applying and waiting for it to be given can help students demonstrate proficiency to employers, students are not involving themselves in projects. Students looking to develop a project, and students looking to join one, face a multitude of problems in starting the collaboration.

Figure 4 contains some of the issues involved in trying to propose a project. The biggest challenge faced by potential project launchers is the search for a skilled person. A person with a project idea must vet everyone they know to determine who would be a good option for joining their project. The person must also take the risk of asking someone who is disinterested in the project. (People often become insecure after rejection, reducing their willingness to reach out to others.)

A person with a project idea, if unable to find enough team members in their immediate circle, must attempt to reach a larger group of people. The internet allows one person to contact many, but online forums often have rules against advertising. For example, forums on the popular website Reddit often have rules prohibiting advertising unless a member has interacted enough on the forum already (what constitutes interacting "enough" is often unclear). Rules like this mean that someone with a project idea may be unable to ask a large group of people to join their project simply because they are not actively social within a certain group. Finally, people often dislike advertising and consider it a form of begging, so a person who is *already* social in a relevant online group must take the risk of upsetting that community by advertising. These potential social consequences can make seeking a team for a project idea difficult.

A student interested in creating a project must compete against projects created by those more established in their careers. Projects run by those that can afford to pay for workers can also leave a student project struggling to gain members.

Finally, a person with a project idea must keep track of multiple sources of potential joiners, as there is no one place for them to post project ideas and wait for responses.
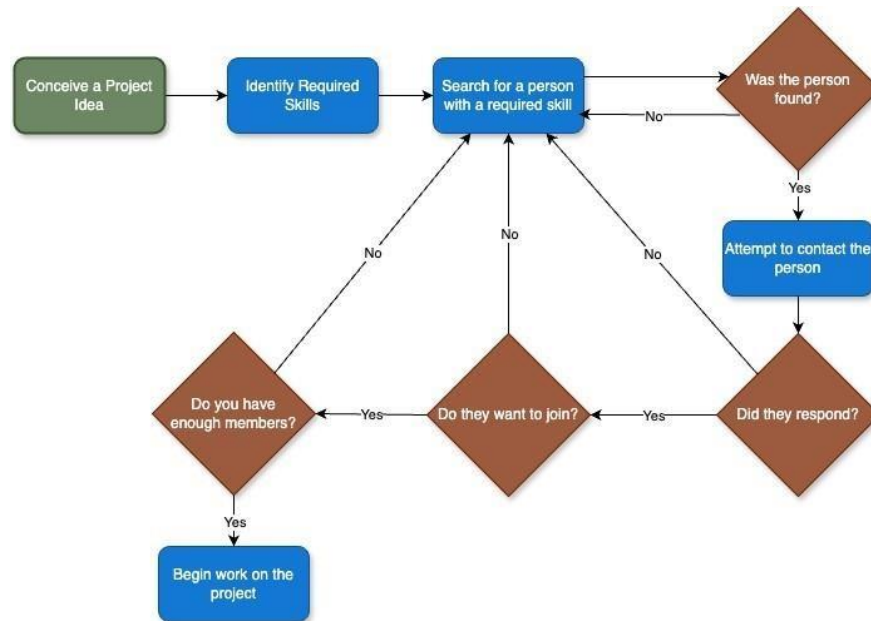

Figure 4: Current process flow for project launchers.

As detailed in Figure 5, students looking for projects to join also face issues, some akin to those faced by those who wish to propose project ideas. Asking about projects to join can also be considered a form of begging, especially if the goal of being added to the project is clearly for furthering employment prospects instead of to help the community for whom the project is built.

Seekers face different insecurities— what if they are ridiculed for asking to join established projects? Student seekers particularly have significantly weaker skills than other project seekers and are stuck competing with those more established— who may not only be more skilled but may also have accolades or other proof of competence, making them prime candidates for projects to hire.

Like those with projects to propose, there is no singular location for finding projects that are seeking members. Even websites that encourage open collaborative work, such as GitHub, are often focused on a particular skill instead of projects that require diverse skills.
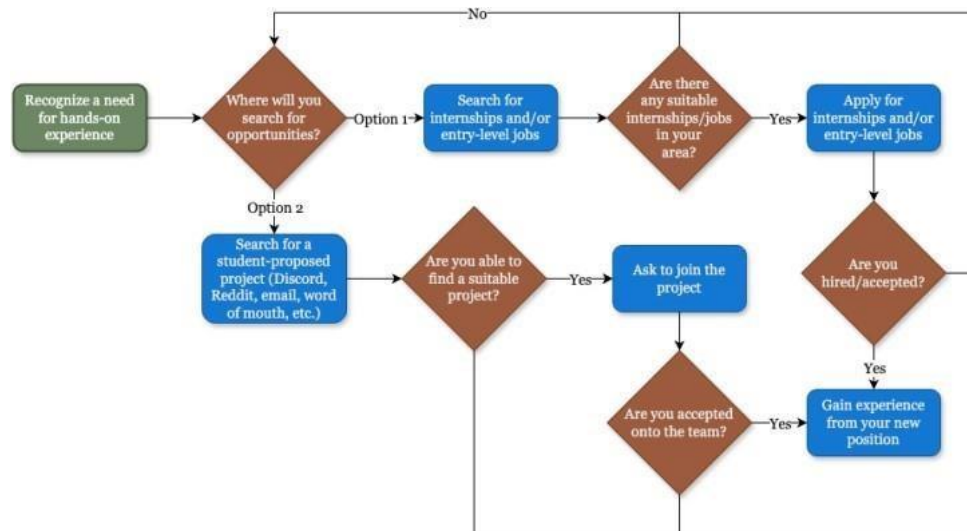
Figure 5: Current process flow for project seekers.

1.4   The Ideal Solution

To address the issue of students failing to create their own experience by creating projects with other students, the ideal solution must address the problems faced by students who are inspired to create or join projects.

The ideal solution should be targeted at students. It should remove the obstacle of students competing with those who are more rich, more skilled, or more accomplished. It should consolidate projects so that students can easily search and reach others in one place. It should be focused on projects, so that all who use the tool are confident that they are speaking to people who want to collaborate on projects specifically.

All of this should occur without simplifying the process of forming groups excessively, so that users must develop the confidence to reach out to others and share their ideas on their own.

1.5   Introduction: UConnect

The proposed solution is a tag-centric web application in which students create and search for projects, detailed in posts written by users. All users will be university students (the purchasers of the application will be higher education centers), and posts will be taggable with key words pertaining to the project idea. Users will be able to seek each other out by tag searching as well— users will be able to decorate their profiles with tags of the skills they have to offer. This application will be known as UConnect.

2   Description

2.1   Key Product Features & Capabilities

UConnect users will be able to write and browse posts about projects in need of new members. All posts will be tagged with the skills required for the project as well as the number of team members desired by the project poster. Users will also be able to tag their own profiles with the skills they possess so that they can be recruited directly by users with project ideas. As all users will be higher education students, many problems associated with other methods of gaining project-based experience are mitigated.

UConnect users are organized into two groups— "Project Launchers" and "Project Seekers"— depending on their actions on UConnect. A "Project Launcher" will use UConnect to find students to join a project idea they have. A "Project Seeker" will use UConnect to find projects that they wish to join. A user is not required to select a role in order to use UConnect— these terms are only used to distinguish between the goals and behaviors of different users.
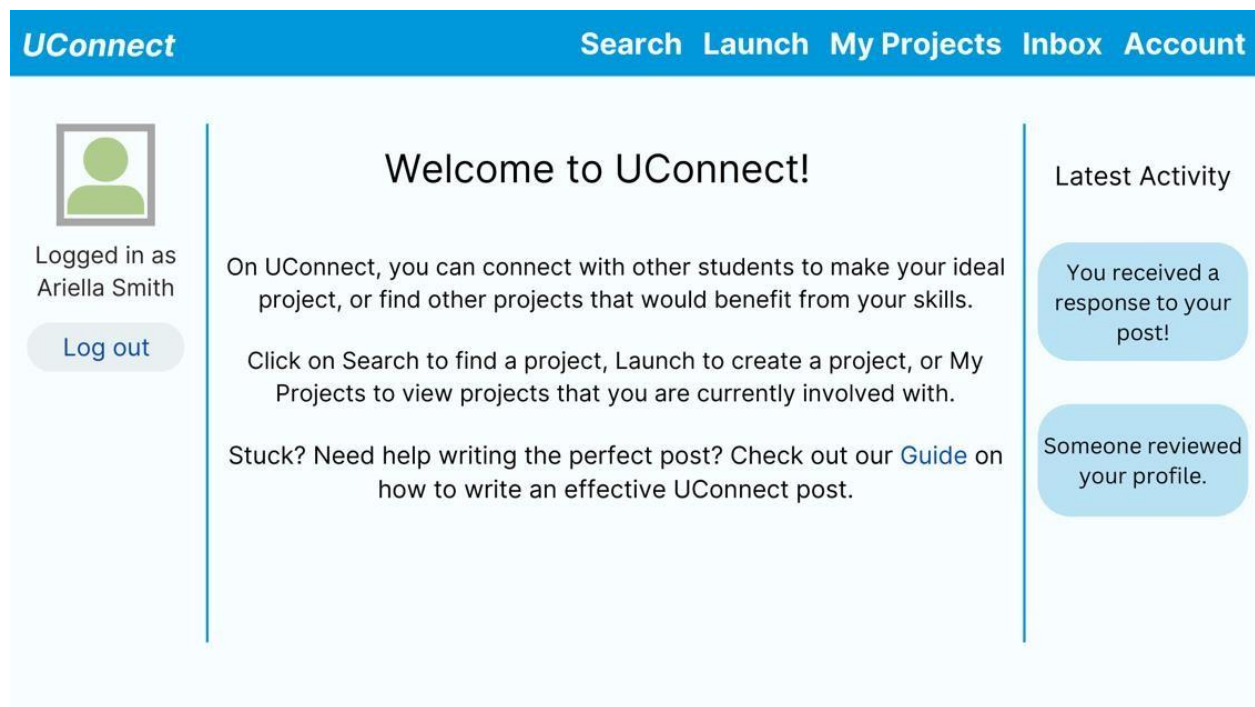
2.2   Welcome and Search Pages

Figure 6: UConnect Mockup— Welcome Page

When a user first logs into UConnect, they will be met with an account page akin to what is displayed in Figure 6. A user will see a navigation bar that includes links to a Search Page (Figure 7), a Launch Page (Figure 9), a My Projects Page (Figure 10), an Inbox (Figure 14), and an Account Page (not yet designed).

On the left of the screen, they will be able to see their profile picture, the name of the user who is logged in, and a "Log out" button. The center of the screen will include a welcome message, basic navigation tips, and a link to a guide on creating a strong project post (This guide will most likely include the sample post depicted in Figure 12). On the right, users will be able to see recent activity notifications.

Users will be taken to the Welcome Page by default each time they log in as it contains both information useful to a familiar user (right column) and helpful information for new users/users who have not visited UConnect for some time (center panel).
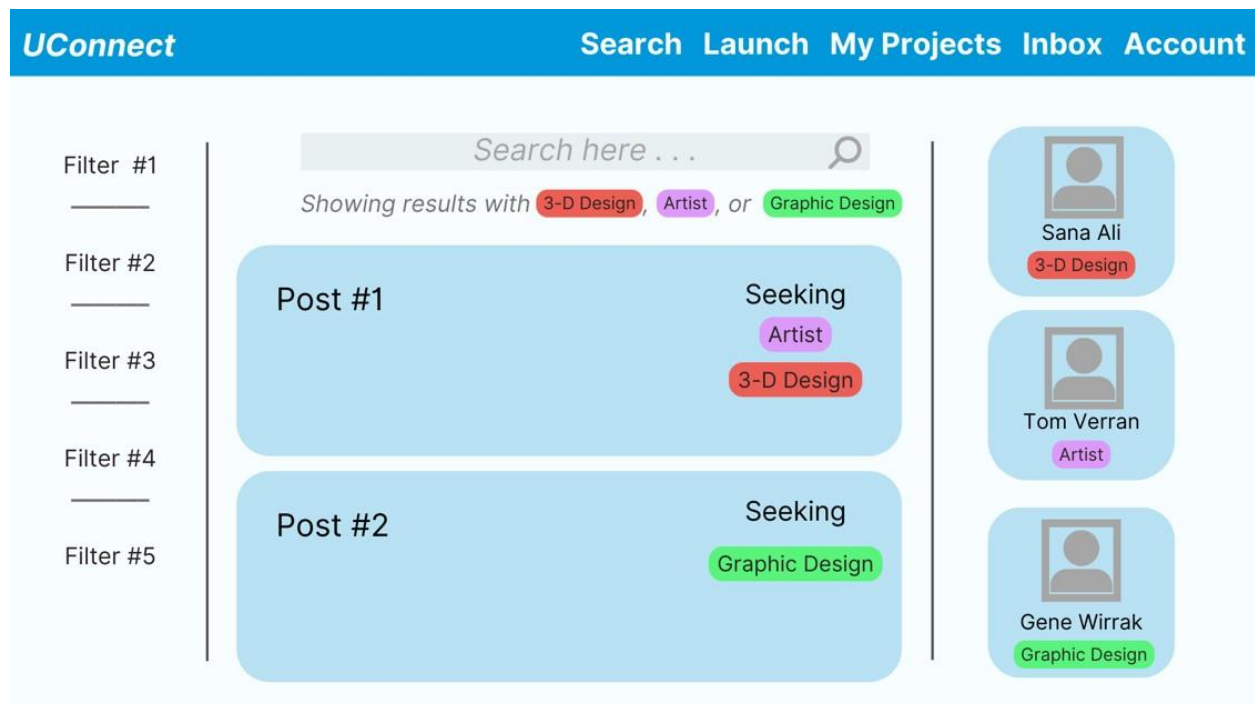

Figure 7: UConnect Mockup— Search

Like the Welcome Page in Figure 6, the UConnect search page depicted in Figure 7 will have three main panels. The left panel will list the 5 most popular filters included in search queries; the intent of this feature is to serve as inspiration for new users who may not know what a typical filter looks like. These filters do not change after a user has performed a search.

In the center is a list of posts. Because this user has searched for the tags "3-D Design",

"Artist", and "Graphic Design", all posts displayed will include at least one of these three filters. Before a search is conducted, project posts are listed in order from newest to oldest.

On the right is a list of user profiles; if a user has run a tag query, all profiles displayed will include at least one of the filters in the query. Before a search occurs, profiles will be displayed randomly.

2.3 Project Launcher Process and Benefits

With UConnect, the process of launching will be streamlined as depicted in Figure 8. After a student develops an idea for a project and identifies the skills they need from others, they no longer need to search various platforms to find a place to post their project idea; UConnect is intended for sharing project ideas and will only include users who are interested in working on projects, so the Project Launcher can be assured that UConnect is an appropriate place to share their idea.

UConnect will not allow the posting of paid projects, meaning that a Project Launcher will never be at a disadvantage because they cannot afford to pay project members what another Project Launcher can. As UConnect will be restricted to higher education students, Launchers will not compete against projects that have existed for several years.

After making a project post, a Project Launcher will be able to wait passively for enough positive responses to commence the project or take action by reaching out to other users.
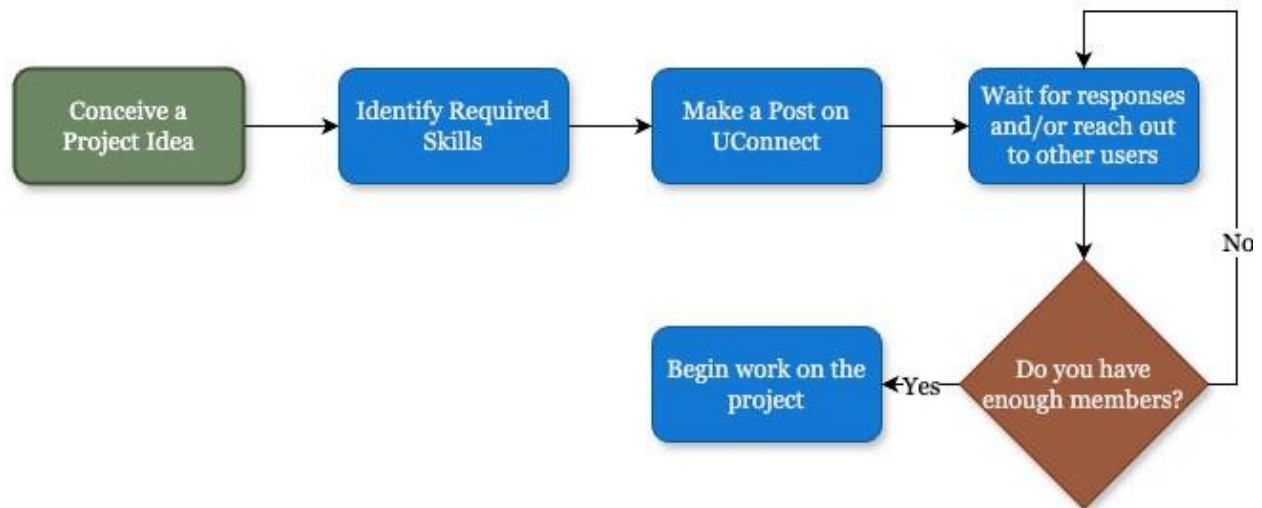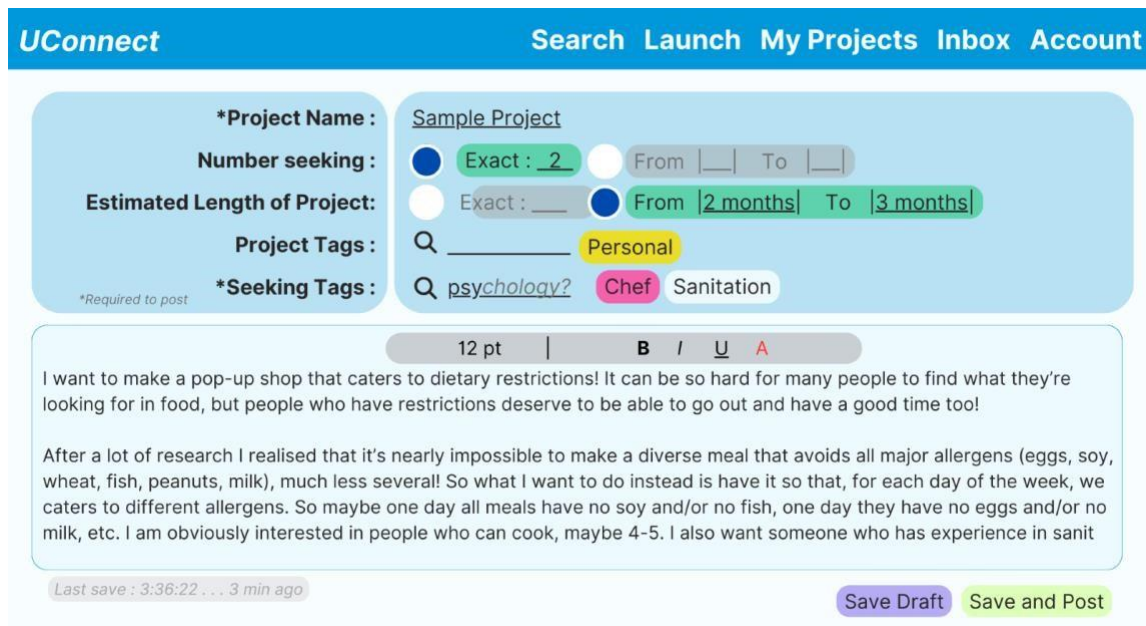

Figure 8: The search process of a "Project Launcher" on UConnect

Figure 9: UConnect Mockup— Launch

To create a post, a user will click on a navigation button titled "Launch". Aside from the project text, the Launcher will be required to enter a project title, the expected number of workers and length of project, and skill tags for the post.

Figure 10: UConnect Mockup— My Projects

A Launcher will be able to view a list of their posted projects by clicking on the navigation button titled "My Projects". Projects will be listed in order from most to least recent. Active projects will be marked as green, archived projects will be gray, and deleted projects will

be red. The number of interested seekers will be shown on the right side next to the name of the project. Launchers will be able to search their projects by name or filter them by included tags.

2.4   Project Seeker Process and Benefits

Project Seekers on UConnect, as depicted in Figure 11, will also enjoy a streamlined process. The presence of a centralized platform will benefit Project Seekers as well as Project Launchers because Seekers will no longer need to search multiple platforms to find projects they can join.

The likelihood of a negative response to outreach is minimal because, once again, users exist on the platform to work together to create experience. As UConnect will be a student platform, Seekers will compete against their peers instead of against those with senior- or midlevel skills.

Despite the potential presence of a wide variety of projects, Project Seekers will have minimal difficulty finding projects suitable for their skillset because they will be able to filter for project posts that request skills that the Seeker possesses. A "Project Seeker" can browse posts to find projects they wish to join. They can reach out to Launchers directly instead of working through convoluted application processes that often are necessary for better-established projects.
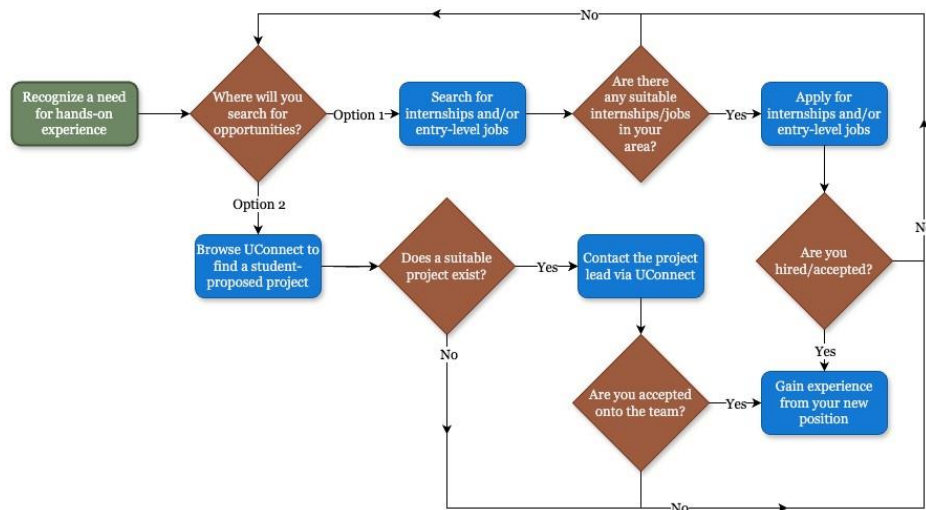

Figure 11: The search process of a "Project Seeker" on UConnect

2.5   Reaching Out to Other Users
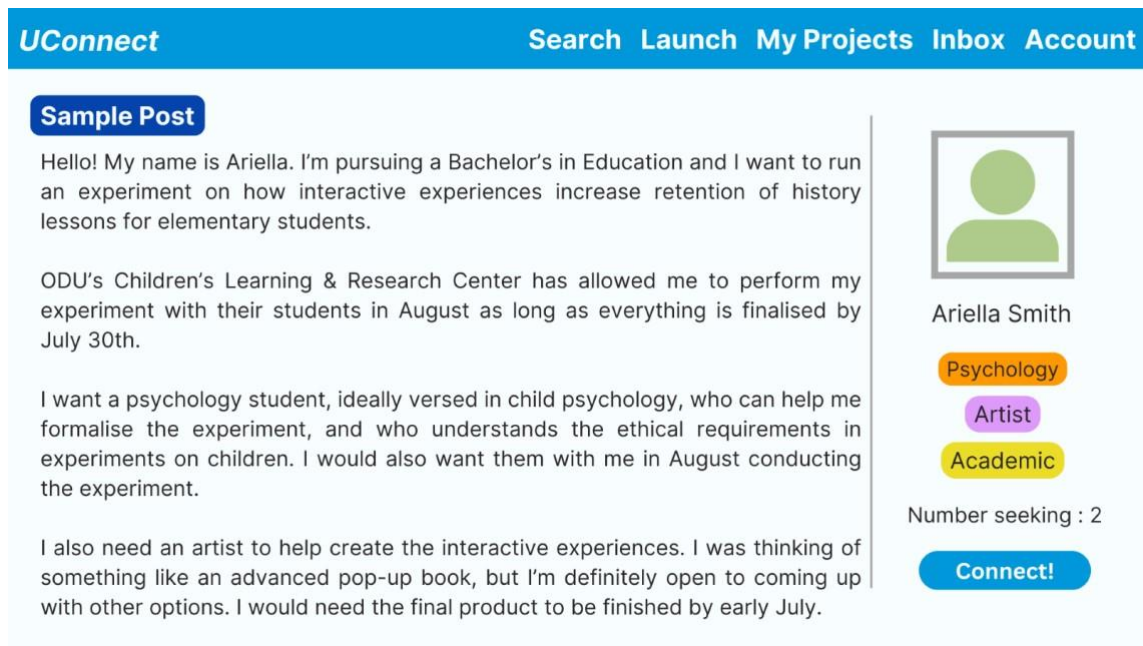
Figure 12: UConnect Mockup— Sample Post

The most common way to reach out to a user will be through a project post, as posts are the focus of UConnect and the primary method via which Project Launchers will share and generate interest in ideas. Project Seekers will reach out to Project Launchers by clicking on a button labelled "Connect!" on the project post in which they are interested.
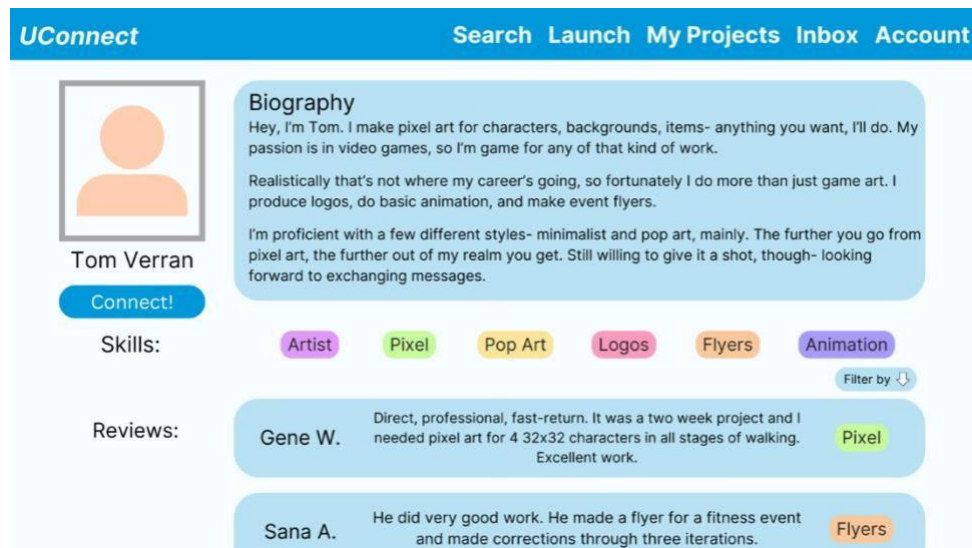

Figure 13: UConnect Mockup— Sample Profile

The second way to reach out to another user is via profile. This method will typically be taken by Project Launchers who wish to take a more active role in adding members to their project, but this method is also good for users who would like to develop a project but are hesitant to make a post.
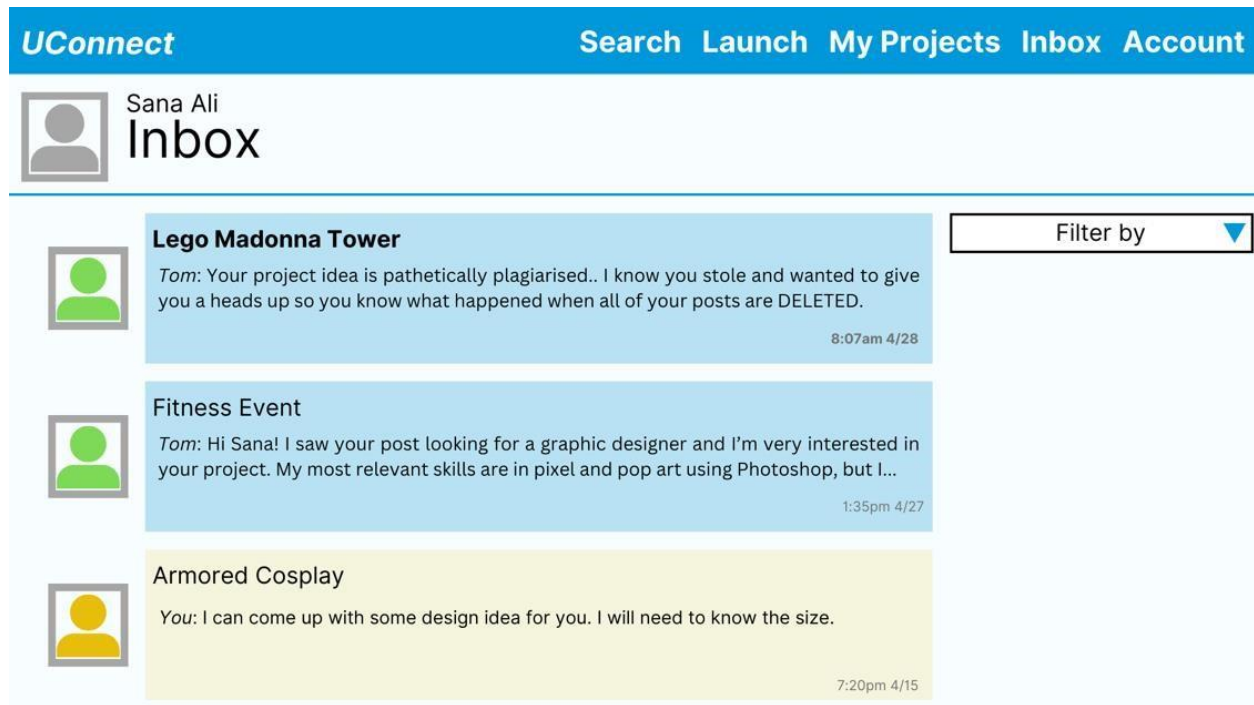
2.6   Inbox and Messages

Figure 14: UConnect Mockup— Inbox

Unlike message threads in most social media inboxes, a UConnect user's conversations will not be separated by the user they are messaging. Instead, a user's inbox will be sorted by *project*. This inbox system allows two users to be able to discuss multiple projects without having messages for all projects in one conversation thread.

Each message thread, consequently, will be labelled by the project name— that is, the name of the post through which the first message in a conversation was sent. (The project line will be labelled "Direct" for conversation threads started through a user profile.) Conversation threads for projects by the user will be marked differently than projects by another user (In the Inbox mockup in Figure 14, threads for the user's project are yellow, while threads for another user's project are blue. This may be subject to change in the prototype.) New messages will have a bolded subject line.

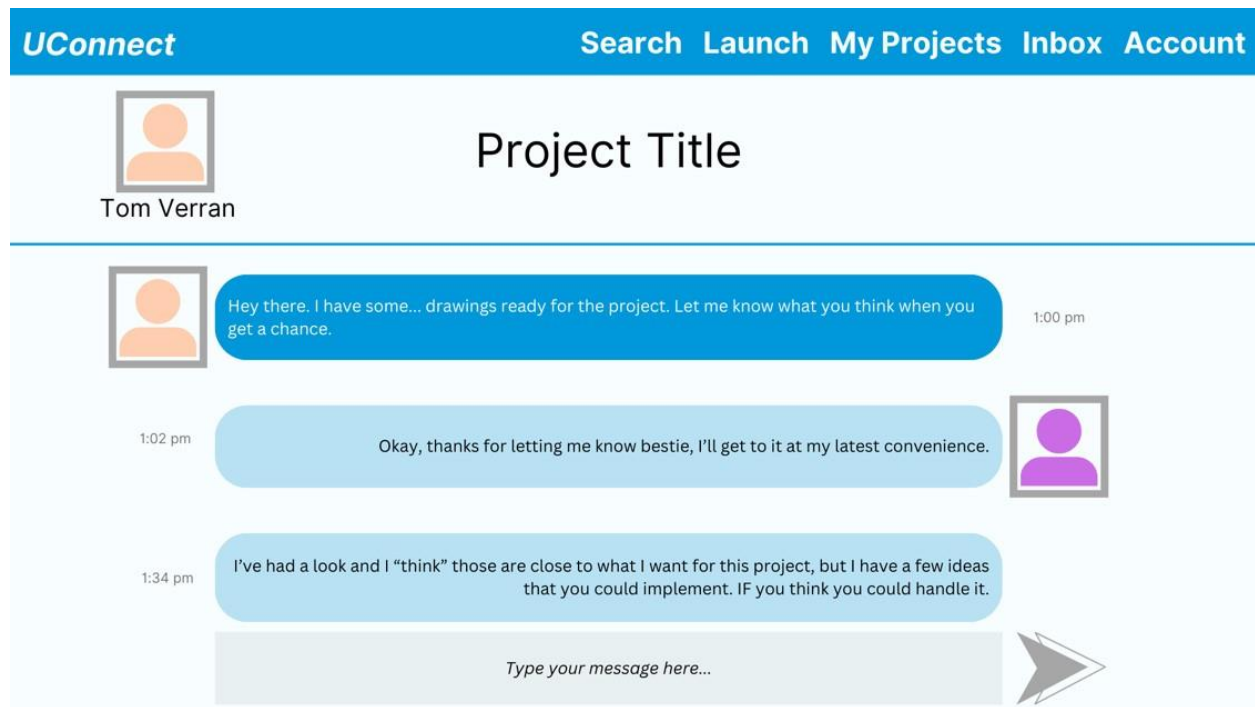A message thread will never contain more or less than two (2) users.

Figure 15: UConnect Mockup— Messages

In a message thread (depicted in Figure 15), both message partners will have their profiles displayed— the name of the student a user is messaging will be displayed as well. Prominently displayed will be the title of the project through which the message chain was started (or "Direct" in the case of a message chain started via user profile). Messages from one user will be marked differently than messages from the other user— as in the Inbox in Figure 14, the color differences in this mockup may be subject to change in the prototype.

2.7   Major Functional Components— Hardware and Software

It is expected that UConnect will be developed with Django, PostgreSQL, and OAuth. OAuth is used for account authentication. It is generic; UConnect will be usable even if universities use different email providers. Django is a web framework that includes common features that UConnect will use, including messaging. PostgreSQL will be used as it is a relational database, and UConnect user and post data will be structured. React will be used to create UConnect's user interface. The way these components fit together is depicted in Figure 16.
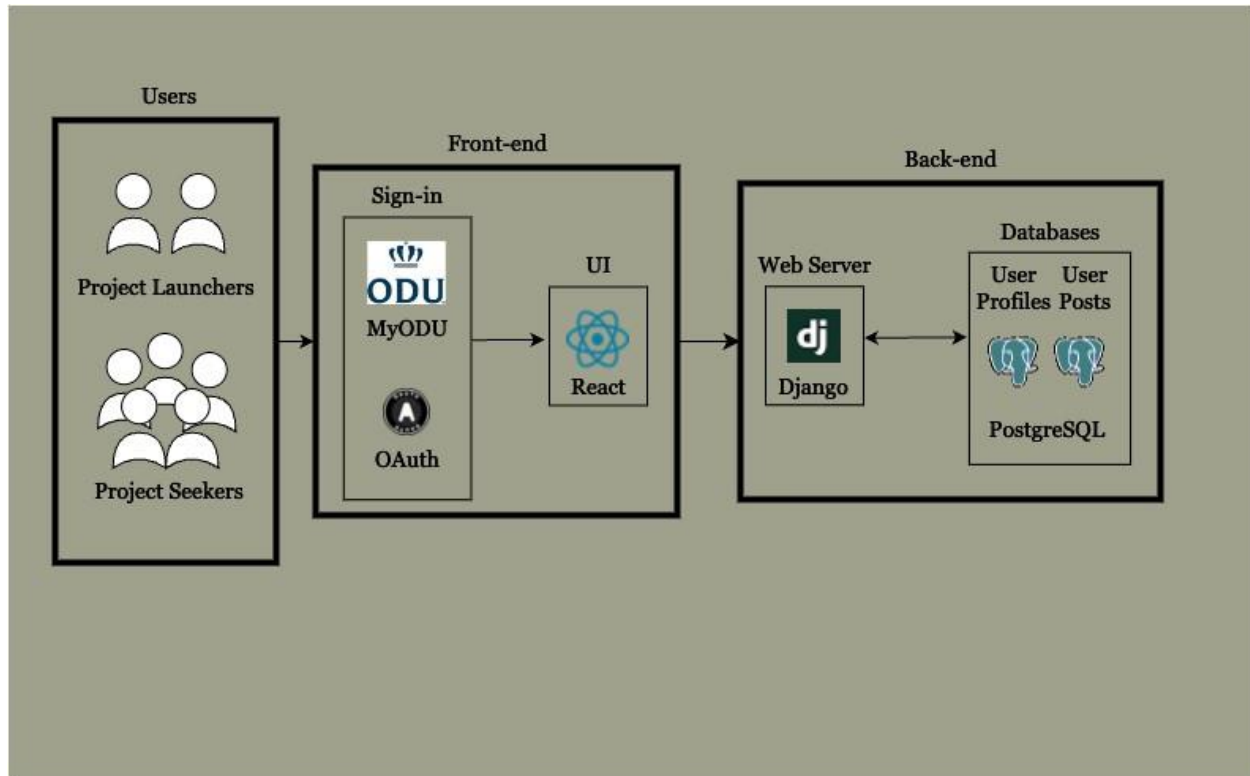
Figure 16: Major Functional Components

3   Users of UConnect

UConnect will be used by students at higher education institutions such as trade schools and universities, as they are facing the challenges involved in entering a workforce plagued by "experience inflation". UConnect will be most useful for students who lack industry connections, work experience, and funds— features that facilitate the process of job and project searching.

UConnect is only helpful with a large user base, but many students will be unwilling to pay for another subscription, particularly one for a tool that has not yet been proven. Instead, UConnect will be purchased by higher education institution administrators, who will have the funds required to purchase UConnect subscriptions in bulk. Despite higher education administrators not using UConnect themselves, they will still benefit from its use by students. The ability to access UConnect would make attending a school more tempting. Because UConnect would be sold to institutions, students on the platform would only be working with other students at the same education center, so all products produced could be credited to the institution from which the students originated. Finally, administrators would be able to view the common filter tags, which could influence the goals of the institution's curricula.

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