CISC 325:

Hi-Fi Prototype

"Job Journal"

March 27, 2025

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Problem Statement

Searching for a job can be a difficult task, especially if you have recently graduated. User research has indicated a wealth of pain points during the process—from browsing for positions to handling successful applications—summarized via a journey map in Figure 1. Some of these stem from the job boards. Filtering is inadequate, particularly for different types of students; terms like "entry level" are often filled with jobs that require years of experience. Additionally, company and role descriptions can be verbose, highly technical, and therefore unclear, according to job seekers without much experience. Irritation also occurs during an application, with inadequate resume auto-complete functionality, requiring them to re-enter the same information repeatedly. Yet other frustrations arise from the sheer volume of applications these individuals are typically submitting, all disjointed through various company websites, with very little support for the process after an application is sent. The users we spoke to either made spreadsheets or did not keep track of submitted applications, adopting the mindset that employers "email me or they don't." These problems converge, causing those who are least likely to have experience job hunting to be far less successful in their search than they otherwise could. For these job seekers, the immense effort of the job search begins to feel like it is not worthwhile.

Of course, many of these issues, such as poor resume auto-complete, are algorithmic in nature. Thus, the problem we shall focus on is the difficulty managing positions of interest, submitted applications and their statuses, cover letters, resumes, job descriptions, job numbers, as well as any other documentation created during the application process. This issue is both prominent and highly impactful. As previously noted, students and new grads have expressed general discontent with how they are managing their applications. With a poor system, or none at all, they require more time in subsequent sessions to determine if they have already applied to positions and to find suitable cover letters to adapt. There is also more difficulty preparing for interviews because they have lost the original job listing.

The tools that exist currently do not meet these users' needs. Users need this stage of the application process to be quick, painless, and intuitive. It must also be unified; users get discouraged between filtering detail-heavy emails in busy, disorganized inboxes and searching for updates on each company's website. Not to mention, it must also be convenient and easy to use simultaneously with the other activities they are performing when applying to jobs. Finally, they need the job searching process to feel worth their time and, more importantly, take less of their time so that they can apply themselves to other pursuits as well.

On that note, a solution to this pain point is necessary. The cognitive load of the job application process is already quite high, due to the frustrations at other steps along the way. Thus, this one issue, which affects the beginning, middle, and end of the process, is enough to overwhelm the user's cognitive limit. As a result, users get discouraged from wanting to continue their search, since everything seems overwhelming. This leads to missed opportunities and diminished self-esteem. Therefore, reducing the cognitive burden of even just this task can make users feel more confident in themselves and empowered to continue their endeavours, while also having the benefit of shortening the overall process, putting their valuable time to better use.

User Research

After conducting six unstructured interviews with "job seekers," we focused on a subset with significant overlap in characteristics and recruited a few additional participants. Our chosen group consists of 20- to 24-year-olds of any gender—all students, new graduates, or others with less than 3 years of professional experience—who are looking for jobs in technology-related fields. These users have a comfortability with basic computer technologies, using them frequently, but are inexperienced in job search and practice in their fields. They are culturally individualistic, focused on gaining independence, knowledge, and careers of their own, often with minimal support from family.

With this group in mind, users have expressed applying to jobs in a highly variable environment, at times from the quiet comfort of their home, others from noisy common rooms on campus or in coffee shops. To accommodate, our solution shall be hosted as a web application. This is most appropriate considering a typical job application session for our users occurs on a personal computer and supports having multiple workstations and working away from home. In brief, the user should be able to use it no matter their situation. We want the user to be able to pick up the solution and use it anywhere, whether this be in a busy place or a quiet one, so we will strive for a simple, easy solution.

To access our user group, we will host in-person sessions and video calls with participants, taking notes and recording audio and video, where appropriate, to retain their feedback. Video calls have made it possible for us to include users who are not located in Kingston. This is the approach we followed for our two rounds of interviews, which has proven to be effective. On that note, the results of this research have been summarized through two personas, Lucas and Melinda, along with user scenarios for each.

Lucas: Lucas is a third-year mechanical engineering student. Between school and a part-time job, he hardly has any spare time. He is searching for a co-op term for experience and to fund his education. He needs to track cover letters and job descriptions while monitoring application statuses to be prepared for potential interviews, but he finds it "frustrating that it is split across all the different company websites." As a result of the laborious process, finding the time and motivation to apply is difficult.

Melinda: Melinda graduated from her computer science program one year ago. For the past year, she has been working at a software company at which she had previously interned. Although the experience has been insightful, she does not feel passionate about the work, wanting to try something new. She needs to be able to find and apply to positions without getting discouraged. As it is, she gets overwhelmed, which leads her to contemplate giving up: "It's so hard. My job is fine anyway."

User Scenario 1: Lucas has received an offer for an interview. Excited, he opens his filesystem to find the job description to get a sense of what the interviewers may ask. Frustratingly, he realizes he forgot to save the listing. He tries to retrieve it from his Workday account but has forgotten his login credentials for this company. The listing has been taken down from Indeed, too. At this point, his confidence is low, as he does not know how to prepare for his interview. (See Figure 2.)

User Scenario 2: Melinda arrives home from work tired but decides to look at job postings. Frustrated by the poor filtering, she finally finds an interesting position and starts looking through her files to find a resume she personalized for a similar job. Due to forgetting what she named it, she struggles to find the file but eventually does. Melinda spends the next hour drafting a cover letter and filling out the application. When done, she feels too inconvenienced to save the job description and gives her document an undescriptive name. Suddenly, she wonders if finding a new job is worth the trouble.

Iterative Prototyping

The design process for Job Journal began with careful consideration of the target problem. A brief, cohesive list of features to address it was established: viewing the jobs the user has applied to in a single location, saving new application details, getting notified of deadlines, and resume and cover letter management. These informed the main screens in our rapid prototype (Appendix A): a dashboard, a job page, a series of application input screens, and resume and cover letter storage and editing pages.

Beyond the core functionality required to fulfill the user's needs, key design principles were considered to create a strong design. In an effort to enable transferability and ensure the user does not get stuck, the navigation bar at the top of each page contains quick links to each section, and the logo returns to the home page. The dashboard allows users to quickly view a variety of pertinent information, sorting job information and suggested actions into chunks that respect Miller's law. Throughout the design, the figure-ground effect is used with separate cards laid on top of each page to distinguish buttons and popups. Where input is taken, measures were placed to prevent user error, such as drop-downs containing a set range of pertinent values—the "Duration" field on "Appl. Input 3"—and allow the user to return to correct mistakes—note the "Previous" button on that same series of pages. They also contain a progress bar, splitting the inputs into digestible compartments, leveraging Zeigarnik's effect, and allowing seamless navigation. Furthermore, a number of elements were inserted to create a motivating, low-pressure experience for our user group. On the dashboard, statistics about jobs applied for and saved are shown to incite a sense of accomplishment. The document upload screen in the "Appl. Input" series of pages allows the user to press a star icon to remember their selection in the future, which optimizes operation and creates a game-like impression. Also, all pages use a rounded, modern aesthetic to not be perceived as too formal or serious.

This paper prototype's scope was limited, however. Many interactions, namely input fields, were implemented using tape and other craft materials, but some were excluded. Error checking was not implemented for the sake of keeping the prototype small and quick to develop, but spaces were left under each input field for this purpose in the future. Likewise, notification and profile interactions were not modelled. Moreover, the prototype did not involve colour, and thus issues of visual affordance for inactive buttons and currently selected input fields were reserved for the middle-fidelity prototype.

That said, the rapid prototype was far from perfect. Upon conducting situated interviews with three members of our target group, some glaring issues and oversights were raised. First, the notification system was not intuitive, leaving many users confused as to their purpose. Similarly, the "suggested features" sidebar had no clear purpose for users and was inconsistent in wording with the other pages of the app. Furthermore, users had mixed preferences when faced with our solution, with some concern that the popups caused the information to get lost on the page. Others found application editing tedious as they had to return through the entire upload form. Users also expressed that the app did not cater to the needs that we targeted, saying that more options for job types, among others, were needed. Most of all, users struggled to use the document management features. The design did not enable saving a document in place, nor creating, uploading, or downloading documents from the "Jobs" page. Also, users were not prevented from uploading resumes to the cover letter box and vice versa. Overall, our users were unsatisfied with the prototype, saying that it did not seem worth the effort to switch from their current makeshift application management systems.

Moving onto the middle-fidelity, these issues had to be addressed, else the solution would be a waste of resources. Hence, we decided to use a disposable prototype created in Microsoft PowerPoint, as it would be fast, low cost, and low commitment (Appendix B). With this iteration, we also aimed to tackle error checking and the choice of font and colour scheme. To focus on this, the notification system would remain mostly unexpanded.

To begin, we handled the mixed feelings of users regarding the visibility of the popups by adding the screen shown in B5 Job View. These are full-screen pages representing all the job information in a less compact manner to increase content visibility. They are accessed by pressing a consistent symbol with how other computer applications represent the “open in new tab” operation. Additionally, a similar page, Figure B4 Job Edit, was inserted in hopes of further optimizing editing saved jobs by skipping the entire job creation form, allowing users to access each field in the same position it is displayed. Some miscellaneous improvements include better use of shadows to enforce the figure-ground effect, improving the affordance of the job and document cards as buttons (see B2 Dashboard). Similarly, a strong shadow overlay was added to the job description popup to distinguish it visually from the background. What’s more, where relevant, call-to-actions are visually disabled in a less saturated colour, acting as negative signifiers for better affordance of actions that users cannot perform. For instance, this is seen with the leftmost “Begin” button on the B7 Create 1 page. As much as possible, this was applied instead of error handling messages. On a different note, a description was added to explain what notifications do when users are registering an application. To be effective, a detailed version is hidden behind an information icon, but a reduced version is permanently displayed as well for a glanceable understanding (B10 Create 4). Furthermore, document processing on all screens was revamped. The separate panels on B11 Create 5 were merged into a single area to upload any kind of document, now accepting more than one. With this change, tags were also added, allowing users to mark documents they’ve attached to an application with descriptors—which could be used to distinguish resumes and cover letters in an informal manner. Alongside, the B12 Documents screen is a merged version of the resume and cover letter view pages. It now features filters similar to the “Jobs” page, allowing users to filter their list of documents by characteristics such as tags. This page also features a “Create Document” button now, at users’ request. Likewise, the document editing page bears a “Save” button to allow saving in place, as users have said they prefer this method of saving.

Based on these changes, user research did show an increased reception to our Job Journal solution. More users felt that they would now deem the benefit of the app significant enough to make the switch, as it is both functional for their needs and pleasing to use and view. That said, many users remained unaware of the subtleties of the sans-serif font, reduced formality, and the calming, cool purple that is reminiscent but distinct from the blue used on many job boards. Still, the prototype was not without flaws. For one, users pointed out that B12 Documents still lacked many of the features they needed, namely uploading documents and downloading them to submit to an employer. Document tags were also sometimes confused for job tags, and better labelling would be helpful. On a related note, some users expressed the desire to indicate what documents are needed for their applications that are “Saved for Later.” Most of all, though, users struggled with the lack of visual response of many features, namely the saving functionality—on both the job application editing and document editing pages.

Finally, as the section below covers, the hi-fi prototype was constructed in Figma and addresses all of these issues. The scope of this final prototype also covered further detailing out interactions and the notification system. In addition, it redesigned certain features based on TA feedback from the low-fidelity prototype—better application of Hick’s law for page B7 Create 1 by using an optional input field for the URL rather than having two separate call-to-actions—as well as to better apply course learning. An example of the latter was to replace page B4 Job Edit, as it violated many design heuristics, like not leaving room for input labels and effectively serving as an “edit mode,” with a shortcut panel to jump to the desired section of the input form.

The final round of user evaluation conducted using the high-fidelity prototype revealed that most users were now very satisfied with the design. They reported it as easy to navigate, learn, and use, as well as complete with all the functionality needed to address their application management concerns. Many stated that such a tool would become their go-to, as they had “very few negative experiences using the application [prototype].”

Hi-Fi Design

The first page a user will encounter when they open the website is the login/signup page (C1 Login). The main goal of these pages was to give users a way of creating accounts while also maintaining consistency with other websites. The login and signup pages use an enclosure of the input fields with proper placeholders and labels to make it clear what the user should be doing, and the login and signup buttons are constrained until the user has added text to each of the boxes. Once the fields are full, the login button lights up as a call to action. If the user inputs do not match, there are clear error messages to get the users back on track. Lastly, seen in the prototype but not Appendix C, these pages kept the taskbar that appears on all other pages, but without the buttons on it. This is so that the user can not click on buttons they shouldn't be able to access yet, but there is still consistency between the login and the following pages. Because this page is simple, it has stayed consistent throughout most evaluations.

Once the user has created an account and logged in, they will be greeted by the dashboard (C2 Dashboard). This page gives the user various assorted pieces of information about their most recent jobs, their job search statistics, and any notifications about jobs they have received. First, the page uses the proximity of the job statistics to make them seem connected. Below the statistics, there is an enclosed set of three similar recent jobs. Each of these has four pieces of information plus the name, keeping them within Miller's law. We previously received user feedback that the recent jobs section was unclear, so we rewrote the labels and used better icons to make it extra clear what each piece of information is. The jobs have a slight shadowing effect to show that they are buttons. When clicked, they will open up a popup menu that contains more information about the job. While there is a lot of information, it is effectively grouped to make it less overwhelming at a glance.

The notification bar on the side shows five items at a time, also using Miller's law, and it can also be scrolled. The law of common fate makes it intuitive and logical. In our mid-fi prototype, we received feedback that our notifications were confusing. To combat this, clear information on the job title, date, and event is stated. These notifications should also create consistency to keep users checking the website. This notification bar can also be accessed on other pages through the bell icon in the top right. Rather than taking up the side of the screen, it shows up as a dropdown below the icon. This is also the case for the profile dropdown that appears when the head logo to the right of the bell is clicked. These were made to be pop-ups to keep the cost for interacting with them low. If users are using one of the core features of the website, they may not want to navigate away from that page to look at notifications or settings, so the popup allows users to stay where they are while checking. In addition, a new page to view the notification settings was added to flesh out the feature. While this page does contain the functional interaction of linking emails, it doubly serves as a resource page for the topic. It contains information popups about both what notifications are and how the linked emails aid in generating them. This improves users' experience, as it is an instance of the UI design heuristic for help—it is easy to find and focused on the task.

Furthermore, the rest of the navigation bar is consistent on each page as well. It allows users to access any of the three main pages from anywhere on the website, making it easier to navigate. It also allows users to access the notifications and profile. The button of the page the user is on is highlighted to make it clear where the user is on the site.

The second main page is the document page, C6 All Docs. First, user feedback indicated there was little point in separating multiple types of documents into different pages. Instead, we decided to merge them into one page and separate the documents using tags. To work alongside this change, we added ways to filter by tags so that it is still possible to find only the types of documents that the user is looking for. We also received feedback that the "edit" and "open" buttons were unclear and unnecessary. Instead, we removed both buttons and made the entire document object a button to maintain consistency with the job cards. When clicked, the document will open up in a text editor that covers the full screen

other than the navigation bar (C7 Doc Edit). This is a change from previous iterations, as feedback was given that being able to scroll through other documents on the left side of the screen was an unnecessary feature. Instead, we chose to merge the two, keeping it full screen but still in the same tab. We also received feedback that the tag system wasn't well implemented. We previously only had the add tags page when adding a document to a job, which made it feel confusing. Instead, we have added the ability to add tags both to the document page and the text editor. Lastly, we expanded the options for creating documents. Notable additions were templates and document upload. A user said that templates would streamline their process, and another wished to be able to upload documents from their device. This same reasoning led to the addition of download buttons on each document card to enable users to submit their documents built on the web page to employers.

Similar to the documents page, we have our jobs page (C3 All Jobs). It is designed very similarly, with the left side hosting the filters and the majority on the right, the list of user job cards. All of the filters and sorts are organized in dropdowns to avoid clutter, reducing the number of options a user has to see at any given time. These are important for users to be able to easily search through all their jobs, or they find themselves back at our original issue of disorganization. The whole filters section is separated from the job cards with a visual line, but also through the law of common fate, since the filters and sorts are a scrollable section that is separate from a similar effect on the list.

In that list, each job card has the job title and four icons symbolizing location, company, pay, and duration of the job. Each of these icons is consistent with external websites, so they are easy to learn and remember. Those pieces of key information are separate from the title, in a darker rectangle, creating a separation between identifying information and details about the job. The whole card itself is a chunk (applying Miller's Law, where information should be in blocks of around 7 pieces) to separate it from other job cards in the list, allowing the law of proximity to signify that each set of information belongs to different jobs the user has created. These cards have remained largely the same since the beginning of our prototyping, but after some user feedback at the mid-fi stage, the job length icon was introduced to replace the notifications signifier, since that information was less valuable to the user.

Another main feature of this page is the Create Job button. This is what facilitates the key service of our site, allowing users to complete the process of adding new jobs to keep track of. The button has been coloured with our call-to-action colour, a deeper, darker purple, employing the Von Restorff effect to signify to users that this button leads to an important action.

Each of those job cards opens up a pop-up that includes that information and any other details added during the job creation process. The pop-up is a low-cost interaction, as it will keep a user on the same page, making sure that the user doesn't have to remember where they were, even if it was a misclick. While low-cost, the pop-up is small, making information more compact and still having some distracting element in the background, even with a darkened overlay to improve isolation. This is where we added the option to open the job in a full screen, in its own tab. Referring to fig C5 Job View, we can see that the page, almost identical to the pop-up, is divided up into five sections of information. This employs Miller's Law, using good chunking alongside the law of proximity, with similar information placed near each other to create a sense of belonging for that group. We can see again here our call-to-action colour on the edit button for the Von Restorff effect, which opens a pop-up that prompts the user which section they wish to edit, which then takes them to the corresponding section in the job creation pages (C8-14). This is the biggest change from the middle-fidelity, and the removal of in-place editing was justified since it still targets the problems users were having with editing but did not require introducing a new system to users and reduced the need to design exhaustive error catches for the page. Engineering for errors was added in other ways, such as for the delete button, which confirms with the user that this is the action they want to take and that it wasn't a slip.

The most fundamental functionality of our site is housed across the job creation pages. These start off on a page that prompts the user to enter a URL for an autofill functionality or to just continue with the process (C8 Create). This is different from our intermediate prototype, where there were two blocks. This change was made to consider Hick's Law more effectively, reducing the number of choices the users had to make on this screen. The whole process consists of four input compartments (C9-14), with a persistent progress bar at the top of the screen, which leverages Zeigarnik's effect, reminding of unfinished tasks, and enables seamless navigation. Across these compartments, all input fields are left-aligned with their titles and field names, are visually consistent with all other inputs on the site, and become highlighted when selected so users know where they are typing. There are no ghost labels, and anything that would need a specific format is replaced with dropdowns or toggles to avoid confusion.

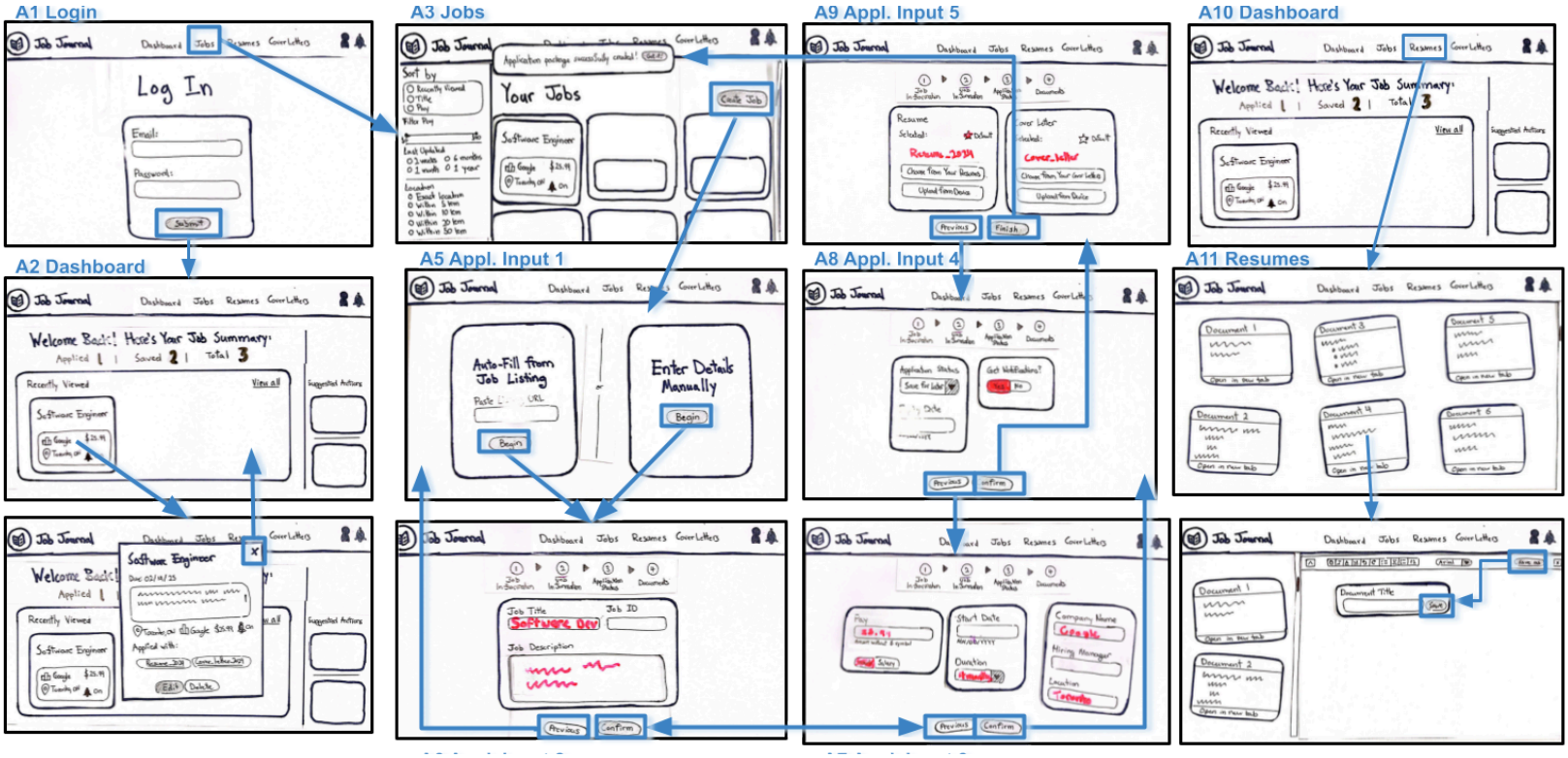
The first compartment is titled Basics (C9 Basics), where we will see Miller's Law being used as it is across our site to group together input fields, reducing the amount of small bits of information the user has to intake and process. This, and the following compartments, request the same information as from our mid-fi, and no major design changes were made. There are two buttons at the bottom of the screen that are consistent until the fourth and final compartment, labelled Previous and Confirmed. At any point, the previous button can be pressed to go back to change information that may have been entered incorrectly in an attempt to engineer for errors. The confirm button cannot be pressed until all the required fields are entered (signified by the asterisk and corresponding subtitles) and is greyed out until available to provide visual affordance. When it is not greyed out, the button has our call-to-action colour, utilizing the Von Restorff effect to let the user know that this is the default next step to take.

The Details compartment (C10 Details) has three chunks of input fields, and we see dropdowns and toggles here, as mentioned earlier. This allows the user to simply select an option, rather than requiring them to type something in each box, and it imposes format restrictions without relying on the user to get them right. An example of this is the Start Month dropdown, which shows a calendar for the user to simply click the month and year they wish. Each dropdown never has more than six choices and creates a standard across the site that will help the user familiarize themselves with the jobs.

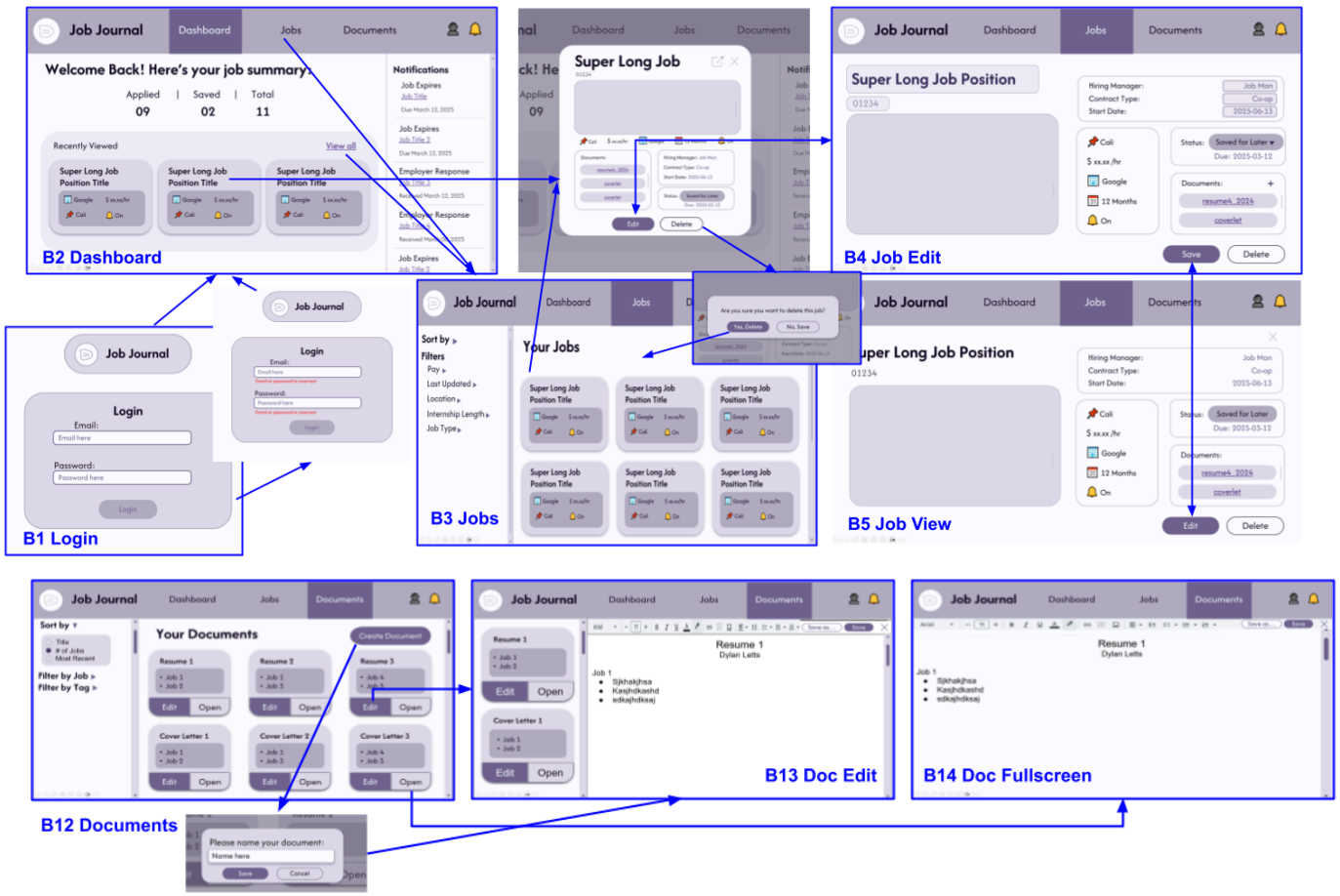
The third compartment, Status, as shown in C11 Status A, is again largely the same as the previous two compartments. We see another use of visual affordance here: when the user changes their application status from Saved for Later to Applied, a new input field appears for the application due date (C12 Status B). In the second chunk, there is a notification toggle, which now has help buttons unlike the mid-fi, which facilitates the prevention of errors and creates a more informed user experience. This feature was added after some users were confused about the purpose of the notification toggle.

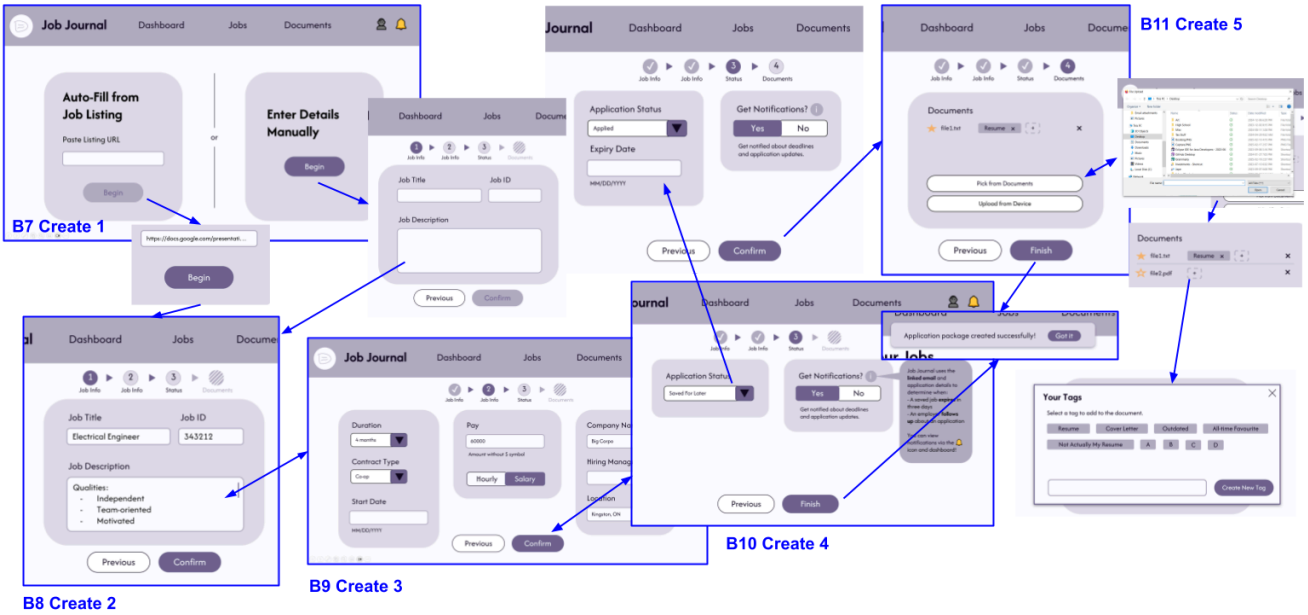
Finally, with two possible screens, the fourth and final compartment is dependent on the user's choice in the Status compartment, in a continued effort to restrict affordances and actions. If the user has selected Applied, the site will direct them to a page to upload documents, seen in figure C14 Docs B. Documents can be uploaded from the user's computer, or from their document collection that exists on the site, making it faster each time they want to reuse an old document. These documents can also be sorted with tags, where the user can create their own sorting system based on what they think is important. This allows for the optimization of operation that is accurately tuned in to user's needs, showing them the resumes and cover letters that they want to see first. Related, the star icon next to each document line also optimizes operation by allowing the user to mark a document as their default, which will then automatically populate in future job creations. Alternatively, if Saved For Later is chosen, the user is directed to a separate page (C13 Docs A) where they are prompted to use those same tags to signify which type of documents will be needed when they decide to apply. This reduces memorization and reduces the back and forth between sites, targeting our original problem statement.

Appendix A: Low-Fi Prototype



Appendix B: Mi-fi Prototype





Appendix C: Hi-fi Prototype

https://www.figma.com/proto/ezbJvZY9OlSEWEEaJc0kzS/Job-Journal-(G45)?node-id=196-617&starting-point-node-id=196%3A617&t=ZKqcT44wNr3DvijC-1