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INFO30008
INTERACTIVE TECHNOLOGY
PROJECT

PRELIMINARY DESIGN CYCLE REPORT

OPPORTUNITY IDENTIFICATION & DIGITAL PROTOYPING

GROUP 7

1

Executive Summary

The inspiration for our proposal came from our experience as a student - there is always something we wish we knew before starting university. After research, we discovered that there is no such digital tool that solves this problem efficiently. Thus, we decided to develop an innovative technology that assists students in their transition into university. To guarantee them a sense of inclusion as well as reassurance before commencing their studies. In the process of researching, we find that it is an “Open, Complex, Dynamic, And Networked” problem situation. (Dorst 2015) All the stakeholders are closely connected together, impacting each other.

The initial step was to identify **the situation of use**, which explains the involved stakeholders and their concerns. Then we visualise it into **rich picture**, showing the concerns of the stakeholders and their relationships, including paradox and shared purposes. After identifying stakeholders and paradoxes, we arranged **interviews** to learn more about the situation. The results of the interviews are recorded as a summary and transcript. After brainstorming and analysing, we finally developed five **design ideas** targeting a different group of users and problems: student communication, information integration, course planning, transition to Melbourne and connection with employable skills. The design ideas are further developed into **prototypes** to create the problem solutions.

2

Situation of Use

As current university students, we all have something we wish we knew before starting university, therefore our study life could be better prepared and planned. This gap is more obvious for students that couldn't get access to information easily, for example, international and regional students. According to Universities Administration Center's 2022 Student Lifestyle Report, 65% of Year 12 students have a major concern about the planning of their future, with an additionally 38% of them concerned about getting into university. (Paino 2022). Based on the interview, most of the international and regional interviewees that are current high school students found it too intensive and difficult to get information from the official university website as well as the internet. Regional students also mentioned the limitation of only being able to get information from the course adviser because of inefficient searches on the internet. (Sart and Aslan, 2022)

Additionally, families and friends of students are an indirect stakeholder group. They might want to know more about the welfare of their loved ones when they commencing a new chapter of life. Non-university educators, for example, high school career teachers, education agencies and educators from other universities, would be another stakeholder group that shares the same purpose as students. When using this app, their primary purpose would all be acquiring information.

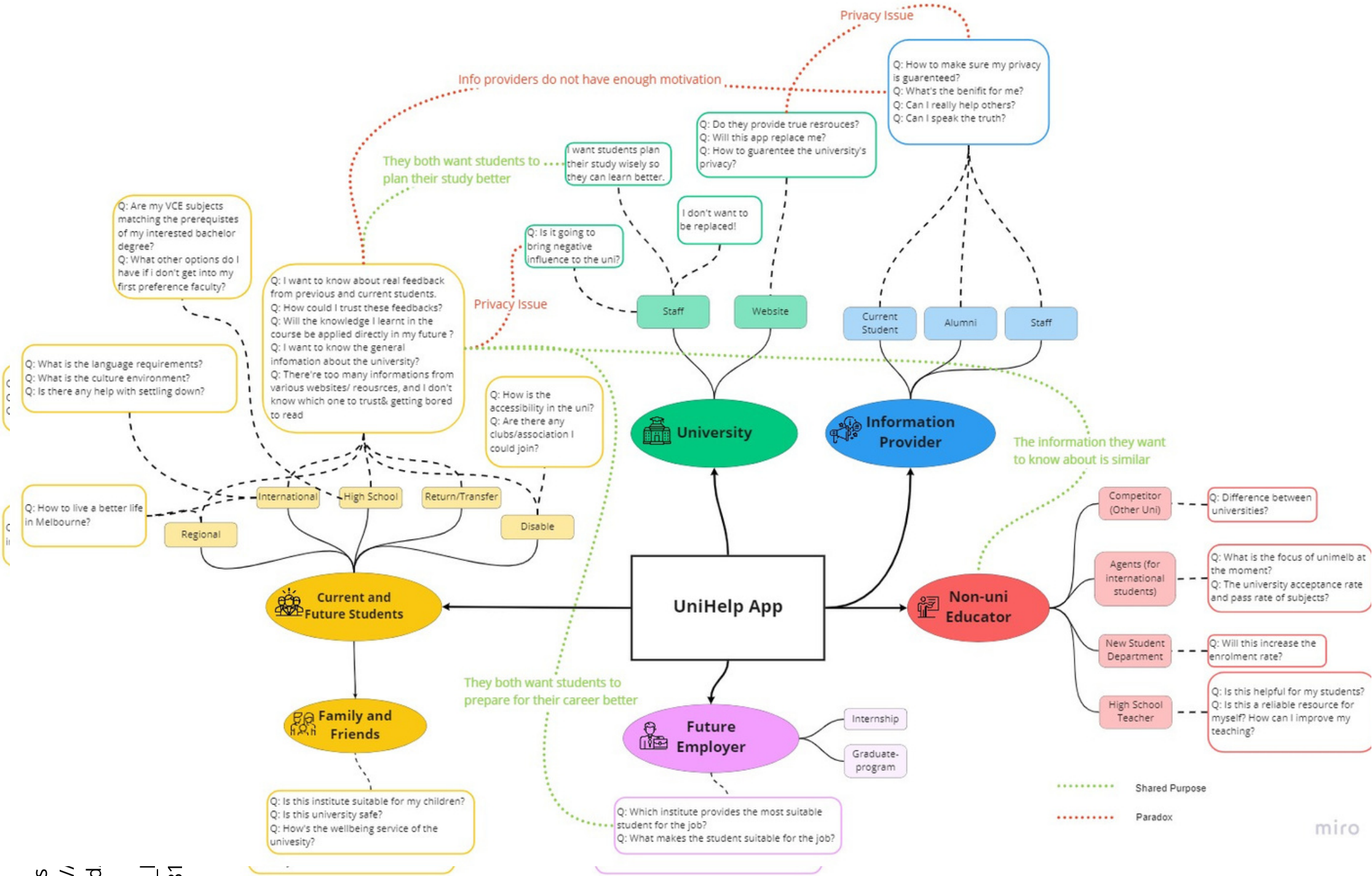
Another major stakeholder is the university since it is the host of education. The university expects students to have better academic performance and employability because these aspects directly impact its ranking and reputation. (University rankings: how do they work and are they important? 2022) However, according to our interview with university staff, they have to be very careful about the information conducted to students, because too detailed information can restrict flexibility in teaching, too personal feedback can cause bias in perception, and a large information platform can be hard to manage. They want to find a better way to conduct education information, which can balance accuracy, confidentiality and usability.

Furthermore, the stakeholder “information provider” is also affected directly by the app. They include students and staff who are willing to provide their university resources and experiences to the UniHelp app. The motivation of students to share their personal experiences could just be their willingness of sharing. Besides, the app would send gifts, such as UniMelb merchandise, to encourage current students to join the app. The uni staff would be willing to provide support as they also want to make improvements to future students’ understanding of the uni so that they might enrol in UniMelb eventually. However, the information providers may have a few concerns, including their privacy issues and the reliability of the information provided. The UniHelp app would also need to consider potential bias and inaccurate information in its comments.

Lastly, employers as a stakeholder group, have to evaluate the student that is applying for the job on whether the individual is suitable for this position. On certain occasions, there might be students that are not as well prepared for the job, which then in turn will also affect the reputation of the institution from which this individual graduated. And the employer ended up using the time to evaluate an individual that is not fitting for the job. This design proposal will then come in to resolve these paradoxes. It provides information for the students on what knowledge and skills are needed for the job. For employers, this app enables only the students that satisfy the requirements to apply for the position, time and effort are therefore saved. At the same time, boosts the reputation of the university in terms of the employability of its students.

3

Rich Picture



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Interview Theme Summary

INFORMATION PROVIDER - STUDENT

Host: Annie Note: Wendy

Based on the feedback given from the information provider, it is confirmed that some students would be willing to share their experiences to future students. They want to use their time in a valuable way to help others. However, there could be some concerns regarding privacy issue. Rewards could be given to students in order to encourage them to participate in the UniHelp app.

UNIVERSITY - STAFF

Host: Annie Note: Xenia

Handbook: Lacks explanation for course structure and imagery information.

Third-party platform: Regulations and moderation. Need professional and constructive commentary.

Information app: Really helpful for staff due to the restrictions of the handbook, the latter very abstract for freedom of adjustment. The app needs to provide correct and unbiased information. But too much information would create a paradox: students want to know more but the university can't provide more because of the flexibility to update the subject.

Student Forum & Chatroom: Moderation and balance between different comments. The close-ended survey creates conversations between multiple perspectives for mutual understanding.

EMPLOYER

Host: Xenia Note: Xenia

This interview is about what characteristics employers look for in graduates and what should students do in school to prepare for work. According to the response from the interviewee, employers are looking for different skills for different positions. Especially, soft skills are often overlooked by university students, like communication, personality, independent thinking, cooperation, how to work professionally, etc. Maybe encourage students to participate in activities like career seminars to improve their soft skills.

STUDENT - INTERNATIONAL

Host: Mingzhe Zhang Note: Xenia

Analysis on how the user finds out information about a certain course provided by the university, also the usability of the existing solution. From the interview we discovered that the current handbook is not an effective solution to the problem that the student is facing.

STUDENT - HIGH SCHOOL

Host: Xenia Note: Mingzhe Zhang

Analysis on how the user finds out information about a certain course provided by the university, the student demonstrated numerous ways of how the individual access the relevant information from and brought up problems regarding the existing solution(handbook).

STUDENT - REGIONAL

Host: Jeremy Note: Annie

Getting users' feedback and advice on the prototype and things to improve. Checking what funtion can be added for rigional students be can more Information in the application.

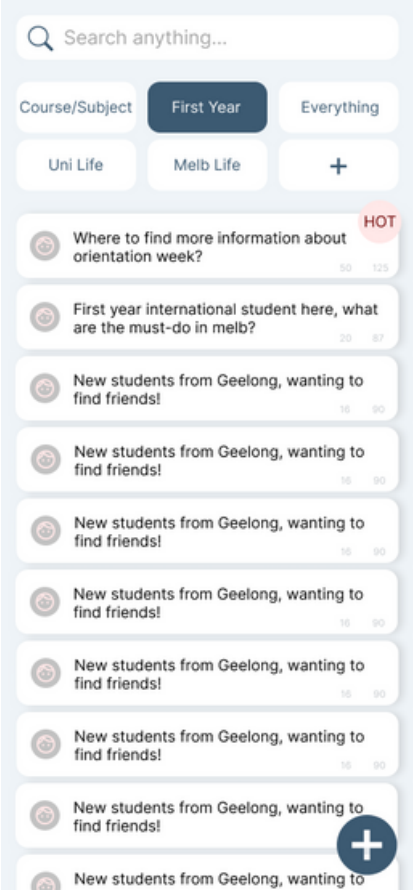
5

Initial Prototype Development

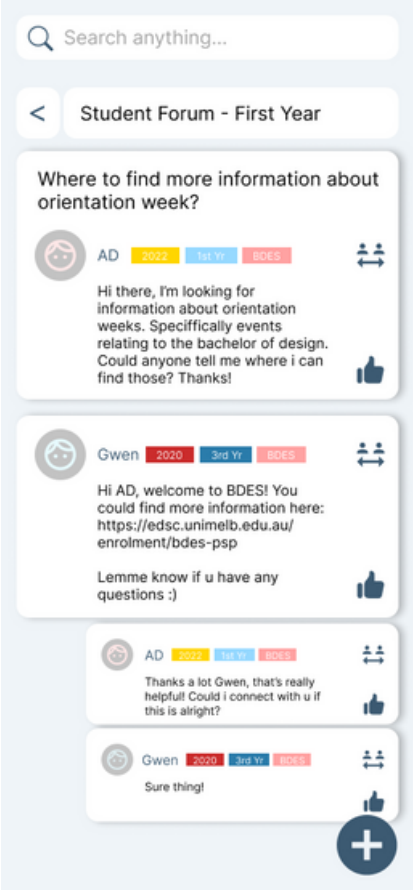
ANNIE - PERSON TO PERSON COMMUNICATION

1. Landing Page: Tag selection

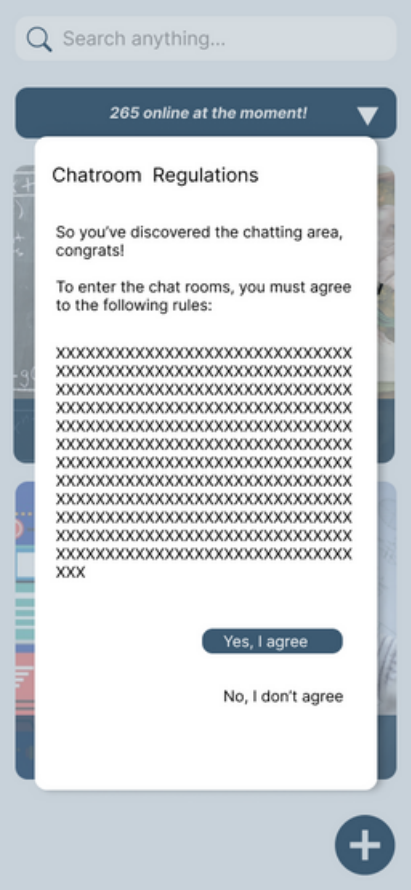
2. Student Forum



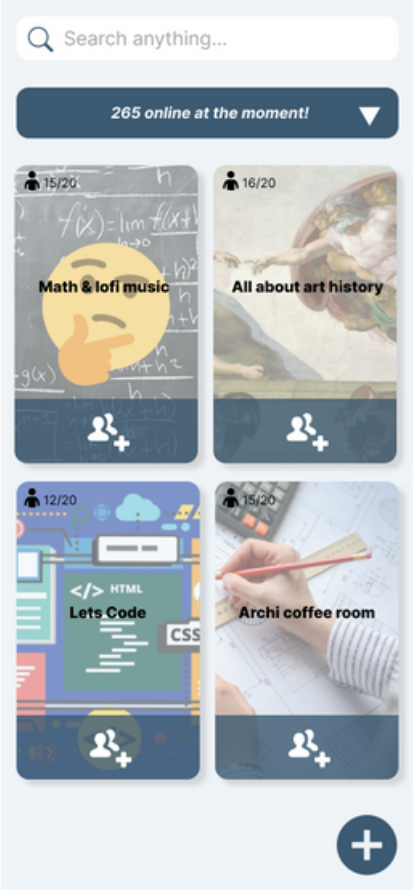
3. Student Forum: Detailed Post with connect function



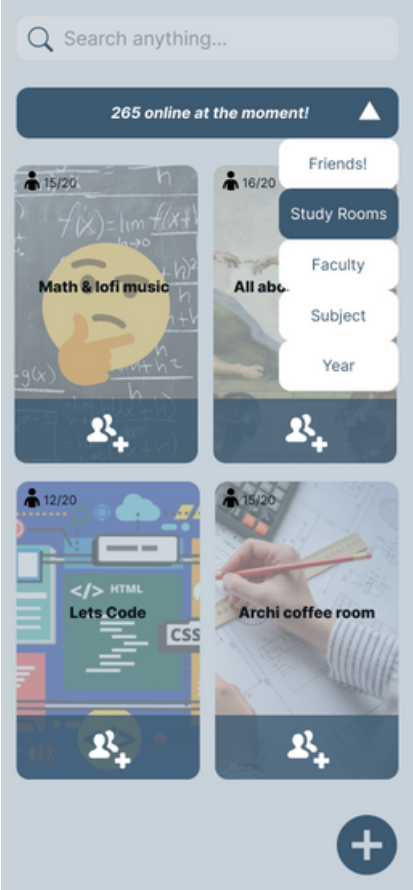
4. Chat room: Regulation upon entering



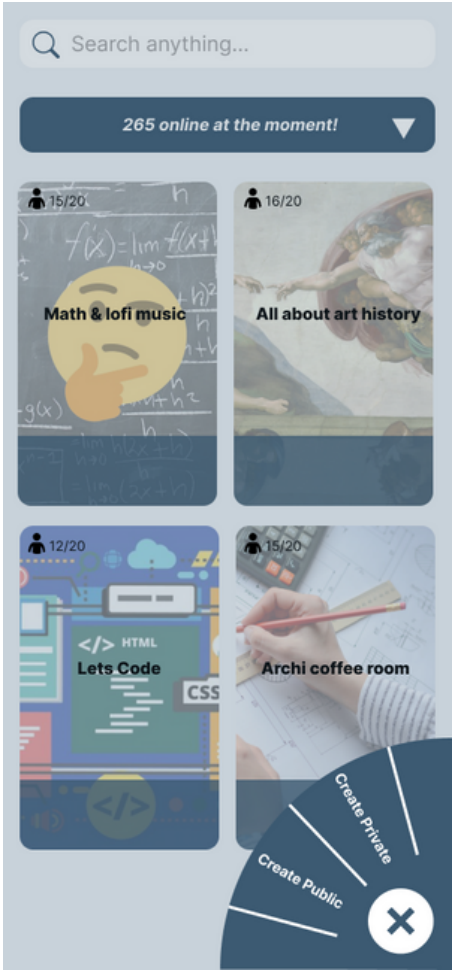
5. Chat room



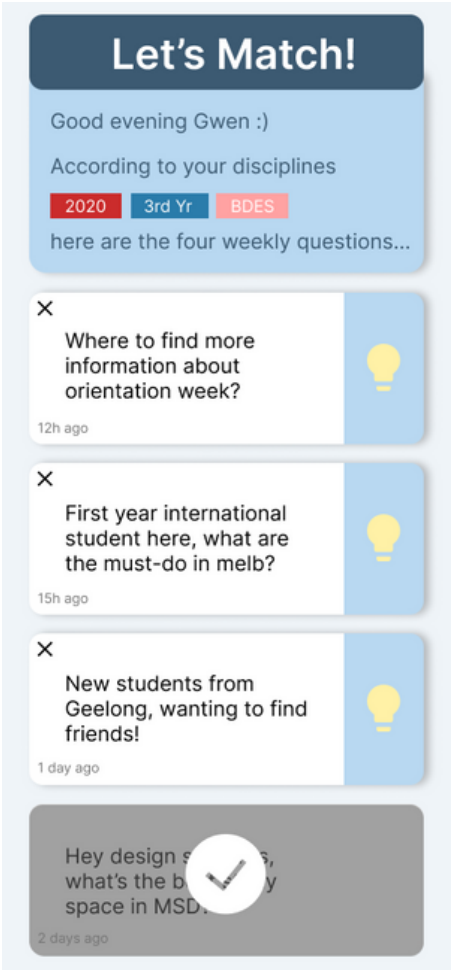
6. Chat room: Categories



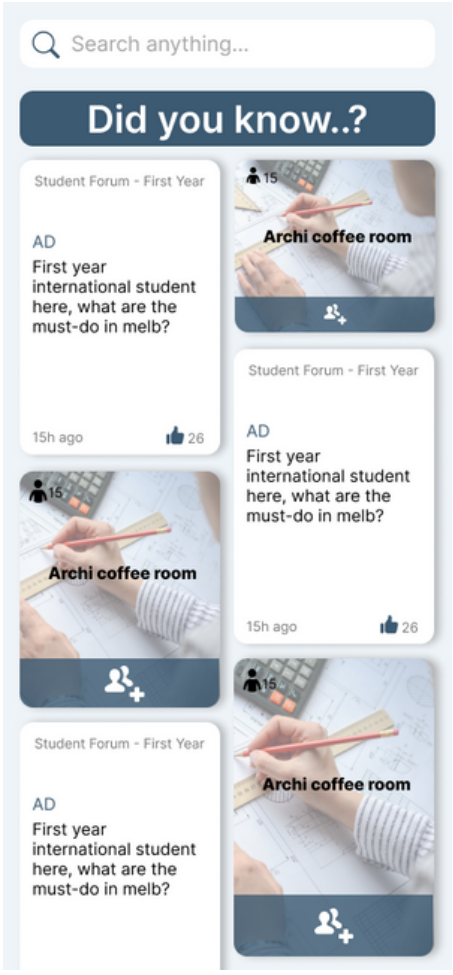
7. Chat room: Add room option



8. Information Provider Weekly Tasks: four posts of the week to answer



9. Personalized Recommendation: Based on tags selected



Person to Person Communication

The purpose of this prototype is to provide current or future students a space to talk to each other freely. Students are encouraged to ask questions, share ideas and experiences with each other. This prototype consists of four main pages: Student forum, chat room, information provider daily tasks, personalized discover page.

There is a paradox between students and university that, the latter wants to give information but the former doesn't know what they want. The tags function on the landing page is therefore a solution for students to clarify their future plans in the university. By selecting relevant tags, the system will help them to discover the forum by pushing posts or chat rooms that's most relevant to them. Additionally, it works as an ice-breaker for students to know each other without small talks.

From our interview with a regional student, we understood that they have a concern of wanting more communications regarding university with other people instead of online searching that could be time-consuming. Therefore, the forum and chat room functions are designed to help students, especially those that has never been to Melbourne before to know their peers and share information. By selecting the categories or searching directly, they could receive information efficiently.

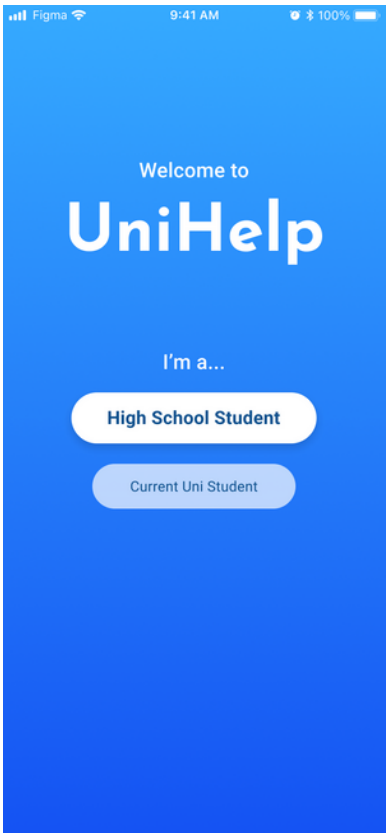
These functions will assist them to demystify the life in Melbourne, ensuring students a sense of inclusion and reassurance before commencing their studies.

In the other hand, the info provider addressed that they would prefer talking about their personal experiences on a platform that's less permanent, so their sharing would not be judged because the "comments can be harsh online" (Participant 5, personal interview, August 2022). The chat room is therefore a solution, where students could come and go freely. This platform also eliminates some prerequisites that existed on other social media like messenger, that a student must know someone prior to join relevant groups created by their peers. Furthermore, for some faculties that lacks an official study group, this function could work as a source of motivation or peer support for students during assessment period. The co-existence of chat room and student forum provides freedom and a choice between public sharing or casual idea exchanging. Risks do exist for this function. Mentioned both by staff from university and information provider, privacy and regulations need to be carefully considered because of the anonymous of internet, that moderations need to exist to maintain a friendly and non-biased environment. The chat room regulation page upon entering is therefore a possible solution.

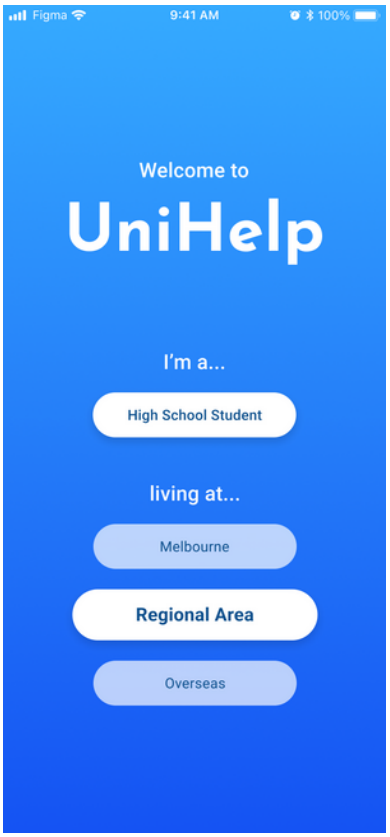
From our interview with a student information provider, we learnt that it is important to maintain an equal position between the students and providers, thus students are more willingly to ask for help. The information provider also emphasized that they would like to make friends with students instead of mentoring them. I therefore designed a “connect system” where the users could get in touch with each other in a mutual-following manner. The equal position is therefore ensured and promoted. The downside is, users might need certain time to get familiar with this function – a tutorial of the app could be a possible solution.

Lastly, there is a paradox between information providers and students. The motivation for the former would be a concern because people tend to receive information rather than providing one. The weekly task page is therefore designed to tackle this problem specifically by allocating a few tasks to each information provider, according to their tags selected. Providers also have freedom to swap tasks. Still, this feature risks a downside of being a daily commitment that might, in the other hand, decrease the passion and inputs from information providers. Since the level of engagement varies between each provider. A careful evaluation on the kinds of rewards an information provider would find valuable need to be done in further research.

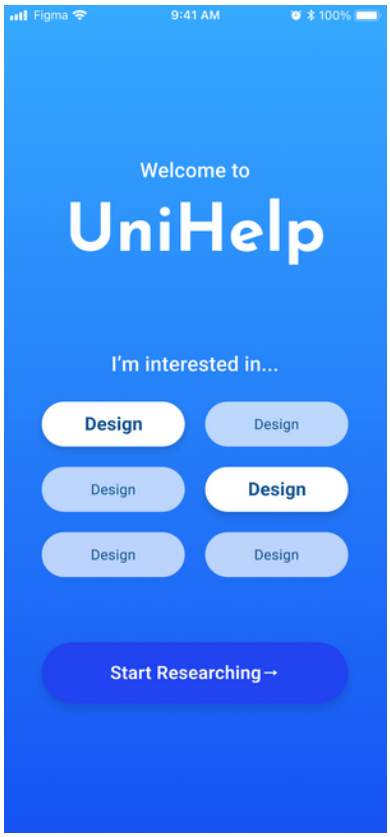
1.1 Preference Selection



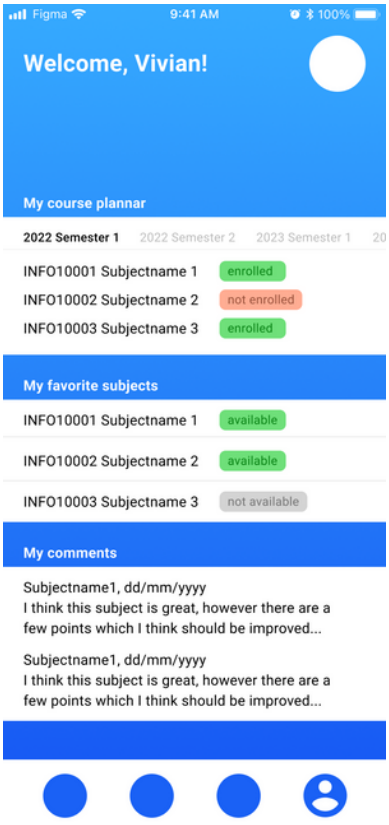
1.2 Preference Selection



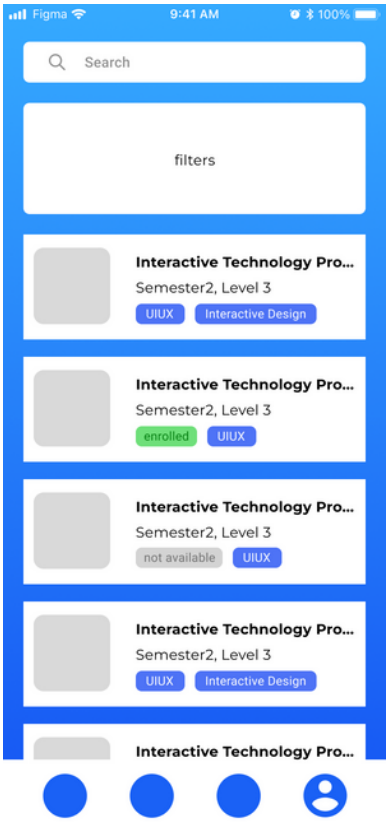
1.3 Preference Selection



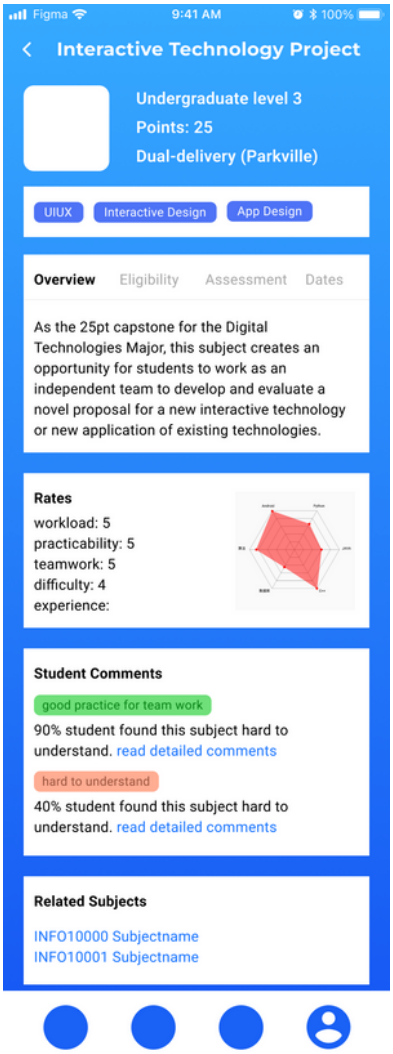
2. Homepage



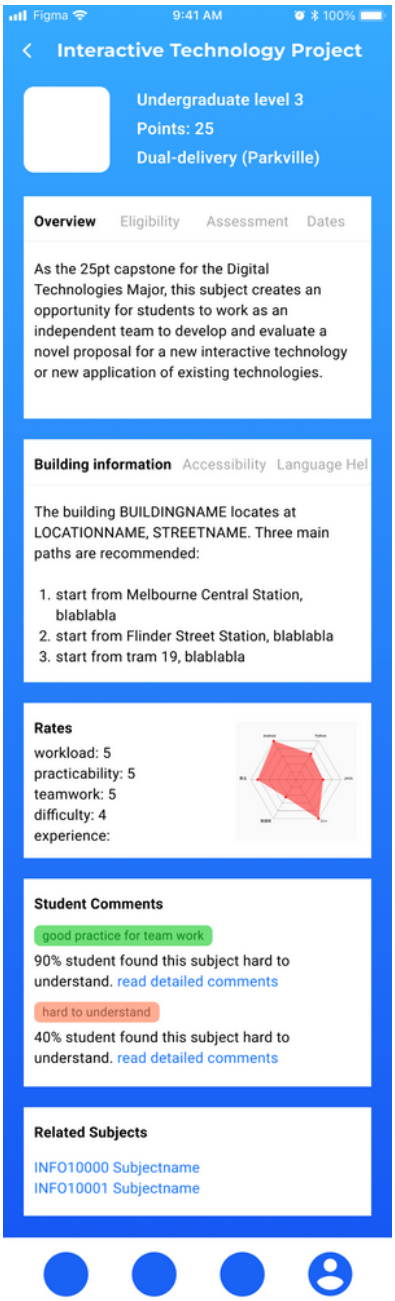
3. Search page



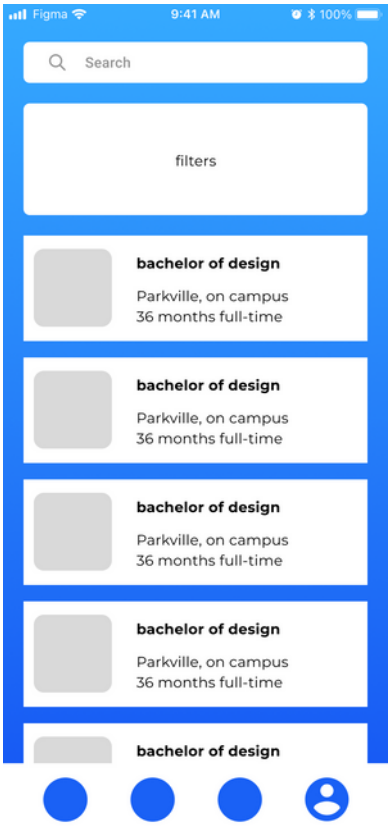
4.1 Subject information page



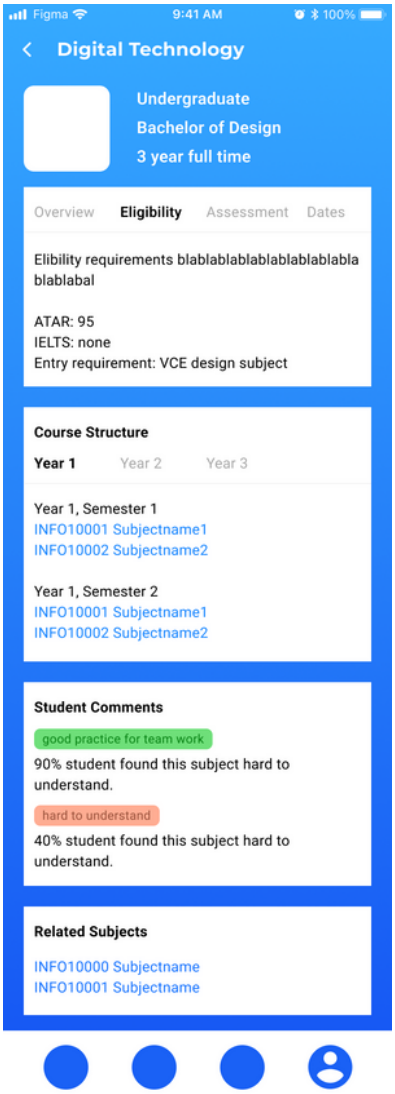
4.1 Subject information page with section to help student with special requirements



5. Course Handbook



6. Course Handbook



Information Integration

My design intends to provide users with detailed university academic information. The app collects, selects and summarizes information based on the official university website and student feedback based on personal experiences.

There are a few paradoxes found in the rich picture which is expected to be solved in my design. The first paradox is discovered between the stakeholders future students and the university. Students want to know detailed information about their university studies. In order to plan their future study properly, they strongly need access to information about courses and subjects, including lecturers, tutors, assessments, course structure, softwares required and such. The current information shown on the university handbook website either lacks explanation or is not accurate. On the other hand, the university might don't want to show this detailed information to non-current students due to confidentiality issues.

The second paradox is identified from the conflicts between the information provider and the university. The information providers and the university might provide different truth to future students. The information provider would rate and comment on subjects based on personal experiences, which might include bias or inaccurate description that is strongly emotional. However, the university would like to gaurantee the objectivity and reliability of each comment on their courses/subjects. It becomes a problem for future student when there are contrasts between the experiences provided by students and the description provided by the school.

In order to solve these paradoxes, my design focus on providing comprehensive information while holding balance between official and unofficial comments, allowing the users to access multi-perspective resources and decide which one to trust in. Besides, in order to decline the subjectivity of comments based on personal experiences and to improve the reliability of student comments, the comment section would only provide uses with tags and phrases that describe the courses/subjects, without showing detailed comments written based on personal experiences.

Four main pages are included in the app.
The preference selection page allows the app to identify which group of stakeholders in the rich picture the user belongs to. By confirming their identity, the app could then provide a more personalized experience, pushing recommended/ popular subjects to the target user groups, thus helping them to discover more studying options.

The homepage allows users to check their study plan, allowing users to conveniently access courses/subjects they are interested in.

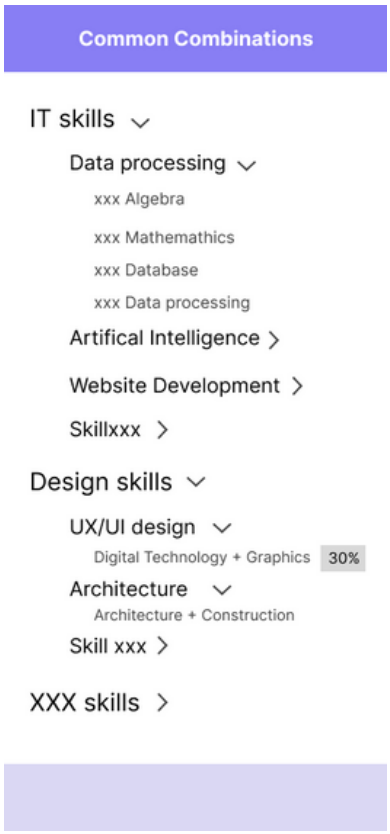
The courses/subjects listing page is designed for users to search and browse.

The information page for each course/subject displays resourses collected from university website and student comments. Basic information, including subject level, availability time and delivery modes are shown in the first section accompanied by a “portrait” of the subject. The second section provides details about the course/subjecs quoting from the university handbook. The third section lists tags that collects phrases/words that appears in student comments at high frequencies. The fourth section helps students to discover relevant subjects. By combining and balancing official and personal informations, the app allows users to have a comprehensive understanding of their courses/subjects, thus helping them to make study decisions wisely.

The app also take students with special requirements into consideration.

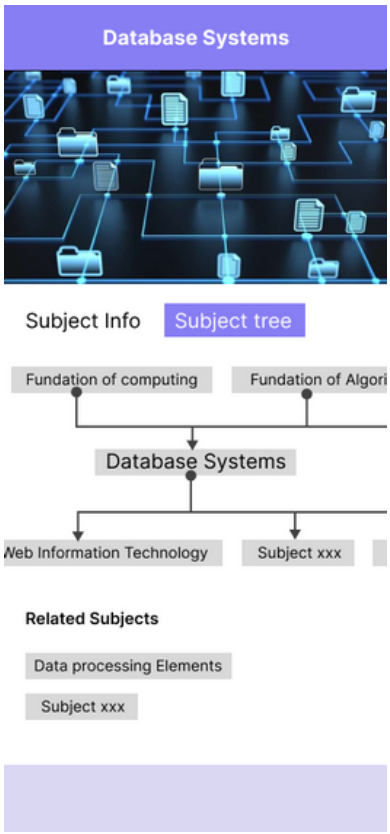
1. Subject web

2. Recommend subject combination



3. Study planner

4. Subject prerequisite tree



Course Planning

When we had interviews with some future students of the university, we discovered that future university students are interested in selecting electives and breadth that can support their majors. Additionally, they place a high emphasis on the courses' applicability, demonstrating their strong desire for their university education to be as beneficial to their future careers as feasible. I therefore developed a concept to assist students in making course selections based on the connections between subjects, and how they might enhance their practical abilities.

The first page is a web showing the connection between subjects. Majors that are similar locate close to each other; the color of the subjects indicated their topic, while the interdisciplinary subjects utilize a color that is in between the topics. The relation subjects are represented by thin lines. This page mostly serves the purpose of letting students browse, learn, and get a general sense of the subject landscape. I found it challenging to rigorously link the subjects according to particular principles because it would be overly cumbersome and practically impossible.

One interviewee's stated that the information in the university handbook is too ambiguous and lengthy, which supports the reason I do this. Therefore, I believe this form is a useful approach to illustrate the relationship between subjects.

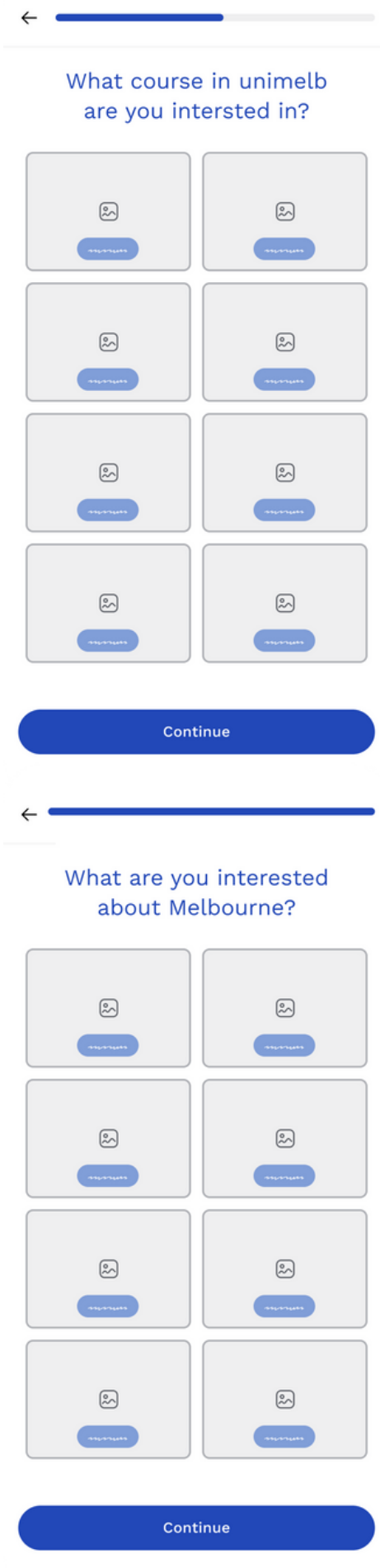
The second page is to recommend useful subject combinations or course plans for students based on career-driven skills. Employers want to hire students who have advanced abilities in particular fields, but it can be difficult for students to determine what kind of talents they need to gain when they don't have access to the industry. Thus, it would be advantageous for both students and businesses if students could focus on developing certain talents rather than picking subjects at random without considering how they will benefit them. Users can click and expand the skill groups and lists on this page to see what combination will benefit them the most with particular tasks. The percentage of students choosing this combination can be shown to make it more trustworthy.

The third page demonstrates the relationship between subjects' prerequisites. Since it is hard to depict all the subjects in a single diagram, I choose to create one diagram that is centered on a single subject and include it on the subject detail page (see Siwen's design idea). This diagram would save effort of students checking the relationship on handbook, which requires them to open numerous pages and make a lot comparison. It also recommends the related subjects behind the subject tree.

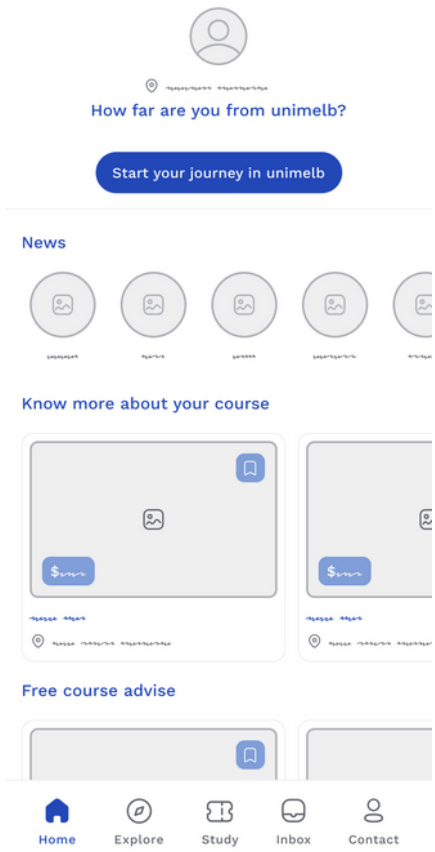
The last page allows students to plan their subjects in the app. When they are learning about the subjects, they can add subjects they like to planner, and view their study plan easily. The current university system is not well-organized enough, and this new design can give students a better picture of their studies.

JEREMY - MELBOURNE TRANSITION

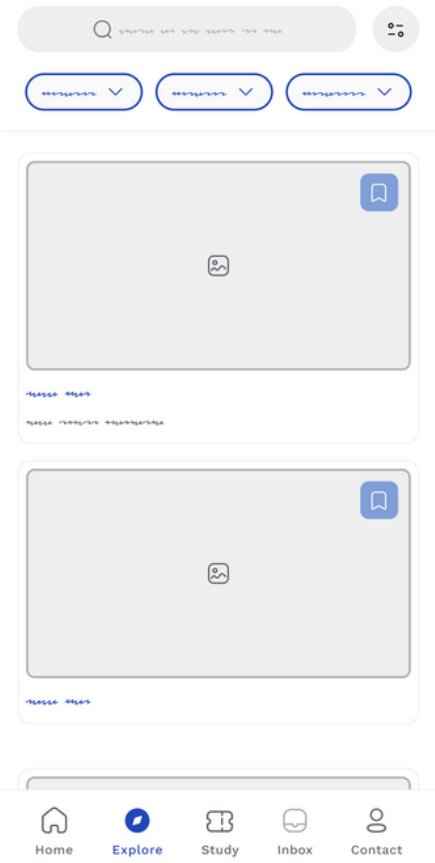
Student Preference



News home page



Study explore Page



Transition to Melbourne

Based on this month's interview with the Regional, International and High School student, I feel more and more about the importance of developing an application that combines Melbourne life and school life in one application.

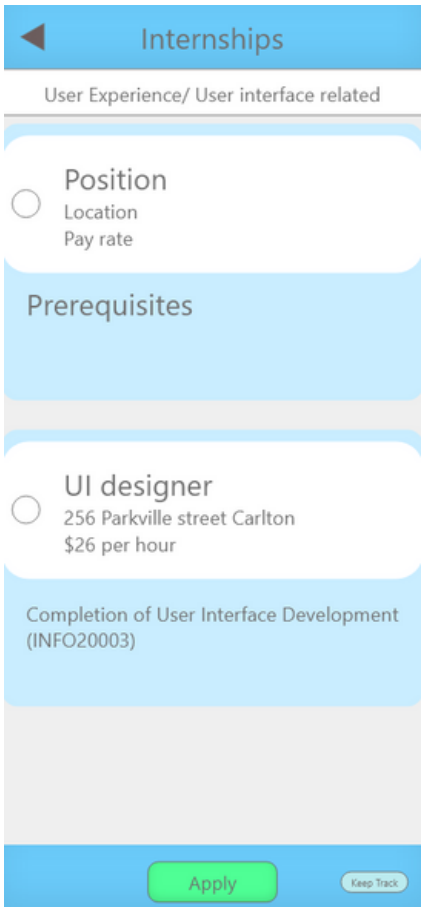
For the regional students, the only source of information about Melbourne University is through the uneven news on the internet and from the course planner advisor of the school.

International students have a lot to adjust to in terms of cultural differences, differences in living habits and language differences. High School students are more interested in knowing the grades and subject requirements needed to get into a university and the social life of the school.

In general, they know very little about a day or a week of college life. In college life where study and entertainment and socializing and job hunting are going on at the same time, their access to such information is still very fragmented.

In my application, I first conduct a preference survey for users. Students choose what they are interested in at university, which subjects they are interested in, and which activities and places they are interested in during their life in Melbourne. For example, in one of our interviews, Jeff likes to study commence at the University of Melbourne and likes to go to concerts in the city. Then he will choose them in the selection at the beginning of the application, and then there will be related news and information for their reference in the push on the home page.

The main function of this software is divided into 5 small parts. First is the home page, which has a lot of news and information pushed to the user's preferences. The second is the Explore Melbourne interface, which includes all the aspects of life outside of school in Melbourne, including where to go, what's going on, and what student clubs are organizing. Then there is our school study area with summaries of your major-related courses and information about things like our idea two and idea three. The penultimate one is our inbox function, which is like our idea One where you can communicate with uni students. The last one is our contact function, which stores all the contact information that students need, including social and government contacts and emergency assistance at school. For example, utility bill payment, emergency assistance, counselling, tuition payment, application for documents, etc.


Internships
User Experience/ User interface related
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Pay rate
Prerequisites
UI designer
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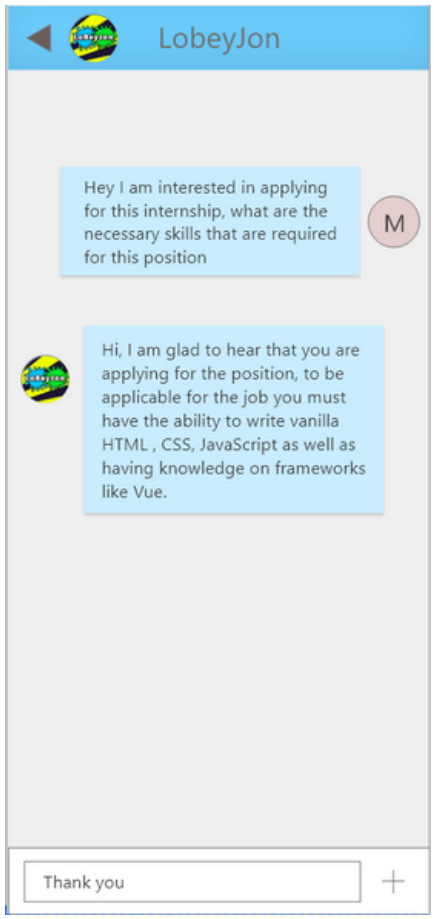
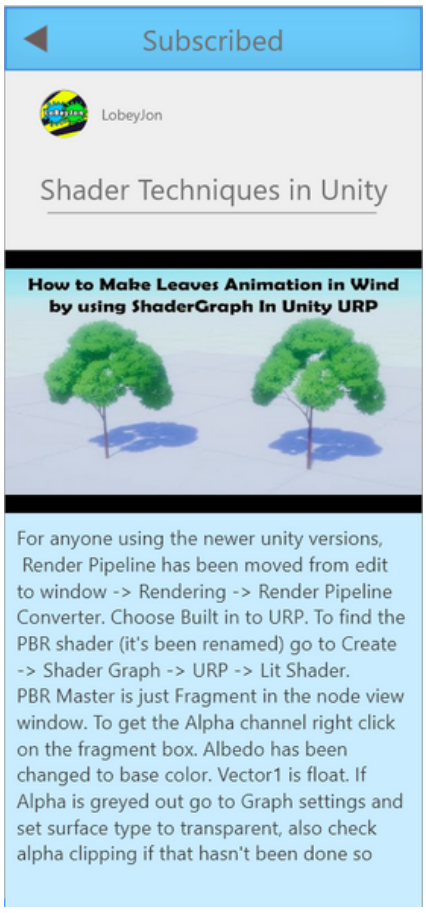
$26 per hour
Completion of User Interface Development (INFO20003)
Apply
Keep Track


LobeyJon
Hey I am interested in applying for this internship, what are the necessary skills that are required for this position
M
Hi, I am glad to hear that you are applying for the position, to be applicable for the job you must have the ability to write vanilla HTML , CSS, JavaScript as well as having knowledge on frameworks like Vue.
Thank you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LobeyJon
Shader Techniques in Unity
How to Make Leaves Animation in Wind by using ShaderGraph In Unity URP
For anyone using the newer unity versions, Render Pipeline has been moved from edit to window -> Rendering -> Render Pipeline Converter. Choose Built in to URP. To find the PBR shader (it's been renamed) go to Create -> Shader Graph -> URP -> Lit Shader.
PBR Master is just Fragment in the node view window. To get the Alpha channel right click on the fragment box. Albedo has been changed to base color. Vector1 is float. If Alpha is greyed out go to Graph settings and set surface type to transparent, also check alpha clipping if that hasn't been done so

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Student Employbility

The idea is that through giving students exposure to the relevant knowledge that is needed in the industry will improve their employability as by learning this knowledge they can be better prepared for the job market. Also this application will provide the students with an opportunity to communicate directly with the employers to know what is specifically needed to attain the job.

From the rich picture we have found out that the three stakeholders: University, student as well as the employers share a common interest. That is to have the students excel in their studies in their respective fields. While this is primarily in the interest of the student, this relation also benefits the other two stakeholders in some ways as well. The university will gain a reputation for producing excellent individuals through their study programs, while the employers will have skilled individuals up for hire which will strengthen their companies.

Through this application, the students will be granted a very clear understanding of what skills and assets are required by the industry and thus giving them a clear direction and goal of which they can work on and prepare for the workforce ahead.

With the application constantly providing feeds of the newest information in the industry, the students can be kept up to date with the industry standards which in turn will make them stand out from other graduates who are not as well informed.

(Job Market): Through this function the students are able to see what programmes and positions are available at the moment which they can view and apply at realtime. By participating in internship the students will become more experienced and by having the chance to practice what they have learnt in the university.

Professional skills news feed: While the university educates its students with a large portion of skills required by the industry. However, there is still a percentage of the techniques that require the student to explore on their own, as well as the trend that is currently popular within the industry. The application will be able to provide news feed on these kinds of information to the students, so that they are aware of what is going on in the industry as well as what other skills are required and demanded in the field.

(Direct communication)
Students are able to communicate directly with the employers that are hiring for the position regarding the details of the job. By creating a platform for the two parties of employment to communicate more effectively this will definitely benefit the student. However, while this does great good to the students the employers are paying the cost of manpower and time to answer these enquiries.

However, there is a paradox between the employers and the university is that the courses in the university are constantly changing and sharing this information with the employers might have privacy and copyright issues from the university.

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Conclusion of Future Design Direction

NEXT STEPS...

Until now, according to our research and analysis, we developed five design ideas: student communication, information integration, subject planning, transition to Melbourne, and connection with employable skills. These design ideas focus on different target groups and solve different concerns, including critical paradoxes discovered between different stakeholders.

For the next design cycle, we plan to focus on a narrower target group of users, only involving current and future students, universities and information providers since the main paradoxes and shared purposes happened between these three stakeholder groups. We intend to conduct a few more interviews and introduce expert evaluations in order to make deeper research into each group in the next design cycle to solve the questions raised during interviews.

As for future design development, we see multiple directions because there are some connections between our design ideas while they differ from each other in multiple disciplines. We aim to integrate them together into a coherent system without causing the outcome to be too general, and possibly explore more unique and creative solutions as the final product. The first direction would be combining idea one (communication) and four (Melbourne life) together to create a thorough and abundant student community, where they can freely share their opinion, and connect to and help each other. Idea two (information) and three (subject planning) can be combined easily as well, since they all serve the same function of integrating information and providing recommendations to students, serving as a study planning tool that is efficient and convenient. It would also be possible to take some idea from idea five (employability), like labelling subjects with practical skills they provide, so students can understand and search for subjects easier.

From our iterative cycle of interviewing, researching and designing, we also found it to be worth considering to integrate information integration and student community together, so that the different forms of information can complement each other, creating a conversation between different voices and therefore helping students to form a more comprehensive understanding of their future plans in their study and life. A few functions will be introduced in order to build connections between information and community pages. For example, students will be able to “enrol” themselves into subjects on the subject information page, while they will be automatically added to the subject discussion board on the student community page. The users could find information on courses/subjects, and update their study situation while getting connections with other students, killing two birds with one stone.

Besides, we would like to further develop functions that would improve the usability of students with special requirements. For example, students with disabilities will see sections introducing information regarding school building accessibility, while regional and international students who lack knowledge about Melbourne transportation and campus structure would be guided using school guidance and other functions. Specific user needs would be carefully collected during the next cycle of prototype interviews.