SWEN303

Assignment 2

AR-Entertain

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Assignment 1 Rework:

Changes Highlighted in Green

Introduction

AR is an exciting new technology with a wide range of applications, with its true potential only recently beginning to be explored. AR is a great potential medium for getting across information in a fun and interactive way that gets users involved in the presentation. Because of this AR is a perfect way to get high-school students informed and excited about potentially studying at Victoria University, giving them a taste of what exactly they could be making through their study. The university has an existing AR advertising program; however, this is focused purely on advertising to potential computer science and engineering students, I believe the AR advertising initiative should be more expansive, advertising to many more study areas.

The university's continued existence needs to have a consistent flow of new students entering study each year. This being the primary revenue stream for the university, as well as the reason for its existence. Because of this, the way advertising is carried out is of vital importance, with its effectiveness likely having a direct connection to the number of students entering programmes. For this reason, advertising should be informative, eye-catching, and consistent. Therefore, the university should move to a fully AR integrated advertising scheme, integrating AR features into all posted advertisement, allowing potential students of all types to engage with the advertising, as well as become informed about their potential study choice. Creating a light-weight app that allows users to scan university advertisements, displaying a unique interactive AR model, as well as providing a link for the user to learn more about the course of study. This also adds a 'uniqueness' to the university's advertising, which will lead to conversation and excitement about the advertisements. This consistency will also reduce confusion that would arise from only some advertisements being AR integrated, as users will know what to expect when interacting with the advertisements.

For these reasons, the main objectives of AR advertising are:

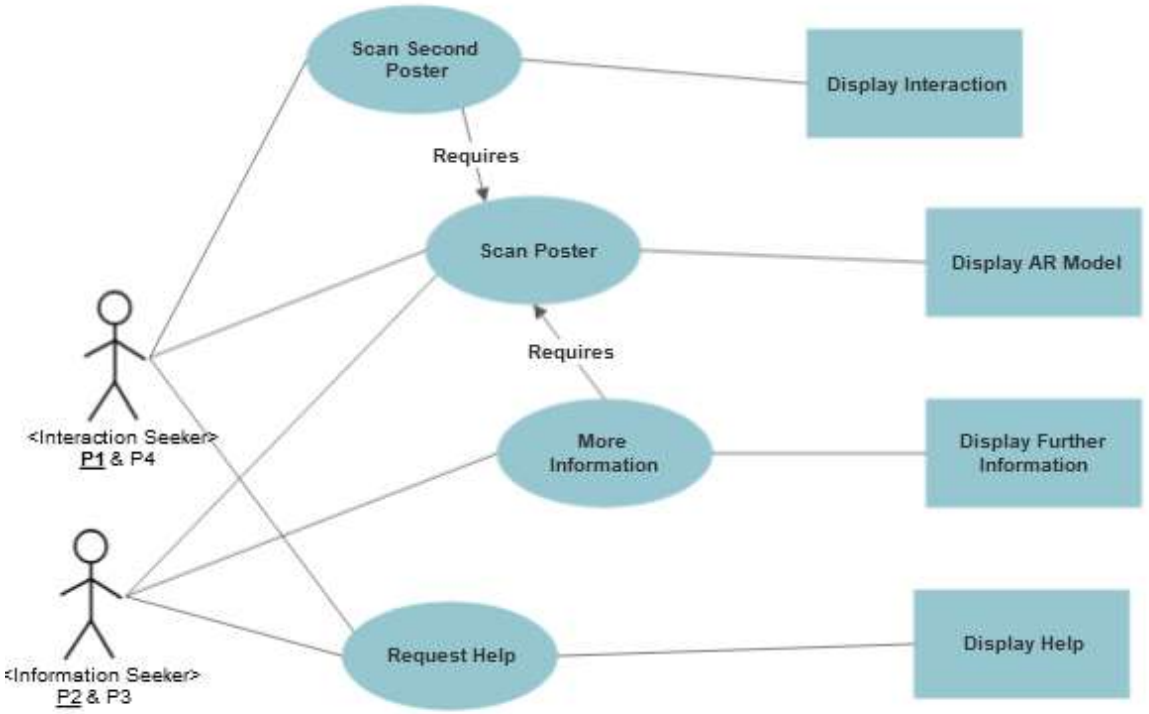
1. Provide clear information about a course of study
2. Provide intractability to get potential students engaged
3. Be eye-catching
4. Be consistent

With advertisement being the primary way to inform and engage potential new students, as well as potentially the first interaction a potential student may have with the university, it plays an extremely important role in creating a good first impression, with more successful advertising leading to a larger number of students, which in turn creates a larger revenue stream for the university. While the creation of the AR solutions will cost the university, having them be created by students will both reduce cost, as well as provide extra encouragement for those viewing them. Once an AR solution is created for a specific 'school' they can also be reused for all other advertisements focusing on the same school.

In terms of current solutions, while the current implementation of AR with posters for ECS courses achieves some of the set-out goals, I believe these goals can be achieved with far greater effectiveness. For one, expanding this AR integration to include all schools at the university will create a sense of consistency for the advertising, as well as drawing in potential students of all types. As the largest source of new students, graduating high-school students can be expected to have a high level of technical competency regardless of their potential area of study. Further interactivity can also

be added by allowing the various AR models to interact with one other, i.e Scanning a Computer Science poster results in a small 'space invaders' type game, scanning an Architecture poster while viewing the Comp Sci AR model will result in a change of art style to blueprint-like. This will add excitement around the advertising and cause people to actively seek out different posters to see what different interactions could exist. The AR interactive posters would also be made available on the universities website to allow users to experiment and interact with them in their own time.

Model Overview



Presented in this model overview are two persona archetypes, the first, "Interaction Seeker" is an individual more interested in the AR aspect of the app, and the interactions they can discover, more so than finding out information regarding the course of study. That isn't to say that they have no interest in this, rather than interacting with AR is what draws them into interacting with the app, this then leading to seeking out information. This group also represents the two younger personas, **P1** being a student finishing high school, and P4 being an intermediate student.

On the other side, we have "Information Seekers" who, opposite to the Interaction Seekers, have the primary focus of discovering more information regarding the course of study that they have scanned the poster of, with the AR aspect of the app being a way to interface with and access this information. Much like Interaction Seekers, they still very much have the possibility of experimenting with the AR aspects of the app, but it is easy and on-demand access to information that draws them in. This group representing individuals potentially older than the stereotypical university age, **P2** representing a busy single parent trying to help find a university study course for their child. With P3 representing someone with an established career who would like to have a change in career path but is unsure how to achieve this.

While we could also consider individuals with no current intention or interested in attending university, advertising is likely only to have a minimal effect on them, especially if they are already in an established career or have alternate plans, and are therefore likely to be an extremely marginal part of the user base, likely falling into a pre-existing persona if they come to have an interest in attending university.

In terms of techniques used to generate personas, I followed the general technique of finding patterns or groupings within the potential userbase and using these archetypes to create personas to represent groups.[1] However, as we have no specific user research I instead identified groups who may have an interest in information regarding potential university study, working from those who are most likely to result in a potential new student, to least likely. As graduating high school students are the group most likely to move to university study, this was my first area of focus, with both a primary vector (The students themselves) as well as a secondary vector (Their parents/caregivers) From here moving to individuals who are already in established careers and then to younger students who are not yet actively considering study.

Personas

[1] https://uxmastery.com/create-ux-personas/

Sarah (P1):

Sarah is a 17-year-old high school student approaching the end of year 13, she's achieved good grades and knows she wants to go to university to study psychology but isn't sure what university to attend. She hopes to after graduation, move into postgrad and eventually become a clinical psychologist so she can help people, but isn't sure what university would be the best choice for this. She lives in Tauranga with her parents but wants to get to a bigger city and experience life in halls, so she's trying to decide between Victoria and Auckland, with some of her friends attending either. She's tried to do some research online but found the information on all the different universities websites frustrating to find.

She hopes to be able to find information about a university in a way that is easily accessed, clear and concise (The walls of text that most universities present just bore her) and most interesting.

In terms of domain knowledge, Sarah has had previous experience with mobile AR software, both messing around with it with her friends, as well as using it in her high schools computing class. Sarah, due to growing up surrounded by technology, has a lot of experience navigating various apps and websites, and therefore would have no trouble learning a new interface, provided it followed at least some familiar design conventions. She is very confident with technology, and likely would not require a guide to utilize a new app, rather opting to problem solve and intuit her way through.

Janette (P2):

Janette is a 35-year-old single mother of three, her oldest, Jakob, who is 18, has finished high-school a year ago and is currently working full time at a pet store. She can tell her son is bored and frustrated with working at the pet store and wants to help him but isn't sure what she should suggest. He did well in high school and was always a very good writer so she thinks university might be a good choice. However, due to working full time as a journalist and looking after her children, she hasn't had time to do any research into different universities and their courses. Janette and her family live in Wellington, so a Wellington-based university would work best, as her family is not wealthy, however she wants whatever will be best for her child.

Janette wants a way to find the information that matters most in a way that fits into her busy schedule, without having to spend hours clicking through websites.

In terms of Domain Knowledge, Janette has never used an AR-based app before, but uses computers often for work, and feels like she can generally get the hang of new software, provided clear instructions are provided, although much prefers to use familiar apps and websites. Due to this, she often feels overwhelmed when faced with a new app, as she isn't quite sure where to begin. She feels that technology moves too fast to be kept up with, and much prefers apps with simple clear interfaces, and will always use instructions when they're available, finding that they give her a lot more confidence when learning a new app experience, and reduce the feeling of being overwhelmed, giving her a clear foundation to start learning the interface from.

I have ordered the personas this way as young, high-school-aged people are the largest group of new students attending Victoria each year. With their research being the primary source of information/reasons for their choice in university/course of study. And information from others (Especially family) being the second most influencing factor.

Use Cases

In terms of use cases, the primary way of interfacing with the advertisements will be very similar for most personas. However, for the younger personas, P1 and P4, they are more likely to take part in the intractability of the AR environment, trying to find different interactions between the different AR models, focusing more on the spectacle, which will, in turn, get them engaged in the content. In this case, their task/goal is focused more on the enjoyment of the AR interactivity itself, with finding more information being a secondary outcome of this.

While, for the older personas, P2 and P3, the app will be used more to quickly access more information from an advertisement. While the AR model will serve as an interesting spectacle, it will be the ability to quickly access further information right then and there that will be the most useful part of the experience. So, in this case, the task/goal is simply to find out more information about the university/potential course of study.

Therefore, it is important that we make the information as easily accessible as the AR model itself so that for individuals for whom the AR is just a spectacle, it does not hurt their ability to find the information they're looking for.

However, in terms of task prioritization, graduating high-school students themselves are the largest and most important group when it comes to generating new students, and therefore the tasks that target them are of higher priority. Because of this, the spectacle and interactions of the AR should be at the forefront of the design, drawing in potential students and getting them engaged in the experience, which will, in turn, lead them to become interested in the information side. With the access of this information then being the secondary goal of the model.

Scenario: Interact with AR – All Personas

User Intention	System Responsibility
Scan Advertisement	
	Display visual feedback: Error message if failed, AR model if successful
User input	
	Provide feedback to the input

Scenario: Combine AR [**Requires Scanned Poster**] – "Interaction Seekers" – Sarah

User Intention	System Responsibility
Scan Advertisement	
	Display visual feedback: Error message if failed, AR model if successful
Scan Second Advertisement	
	Display visual feedback: Error message if failed, AR model with some feedback regarding interactions between the two AR models

Scenario: Access Information [**Requires Scanned Poster**] **–** "Information Seekers" – Janette

User Intention	System Responsibility
Scan Advertisement	
	Display visual feedback: Error message if failed, AR model if successful
Request more information via input	
	Display further information regarding the course of study

Scenario: Request Help

User Intention	System Responsibility
Request Help	
	Display Help on how to use the app

Scenario: Resize AR

User Intention	System Responsibility
Scan Advertisement	
	Display visual feedback: Error message if failed, AR model if successful
Resize AR object via input	
	Resize AR object in direct relation to user input

Scenario: Move AR

User Intention	System Responsibility
Scan Advertisement	
	Display visual feedback: Error message if failed, AR model if successful
Move AR object via input	
	Transform AR object in relation to user input

Scenario: Return to the main screen

User Intention	System Responsibility
Scan Advertisement	
	Display visual feedback: Error message if failed, AR model if successful
Clear AR and return to main screen	
	Clear AR object, re-open scan UI, provide feedback

User Journeys

Persona: Sarah

Scenario: Interact with AR integrated poster

Expectation: Will be able to view/interact with the AR model

	Phase 1 (Entry)	Phase 2 (During)	Phase 3 (Exit)
Feeling	Curious	Entertained	Excited
Thinking	"I wonder what'll happen?"	"Oh! this is actually really cool!"	"I wonder what'll happen if I scan more!"
Doing	Scanning poster	Interacting with AR	Scanning Second poster

Insight:

If we wish to achieve positive and memorable interactions with the posters, it's important that the AR aspect of them is clear and easily accessible, as well as making sure that the AR models themselves are interactable and interesting. As well as clearly stating that unique interactions can be seen by scanning multiple posters.

Persona: Janette

Scenario: Access Information

Expectation: Will be able to find further information on study course in poster

	Phase 1 (Entry)	Phase 2 (During)	Phase 3 (Exit)
Feeling	Hesitant	Amazed	Excited
Thinking	"I wonder what this is? Seems a bit complex for me, but I'll give it a go"	"Oh wow! It's amazing how far technology has come!"	"Tom [Son] would love this! I'll have to tell him about it!"
Doing	Scanning Poster	Viewing model	Accessing information

Insight:

Even with the purely information-based scenarios, we still want users to have a fun and memorable experience, so it's important that even if no interaction is taking place, that the AR models are interesting in appearance. It is also vital that the information be accessible, as well as being the information relates to the course of study being visualized/displayed on the poster. For less technologically savvy individuals, it's also vital that the experience be straightforward, with instructions available on the posters, as well as in the app itself.

Reflection

Persona Reflection:

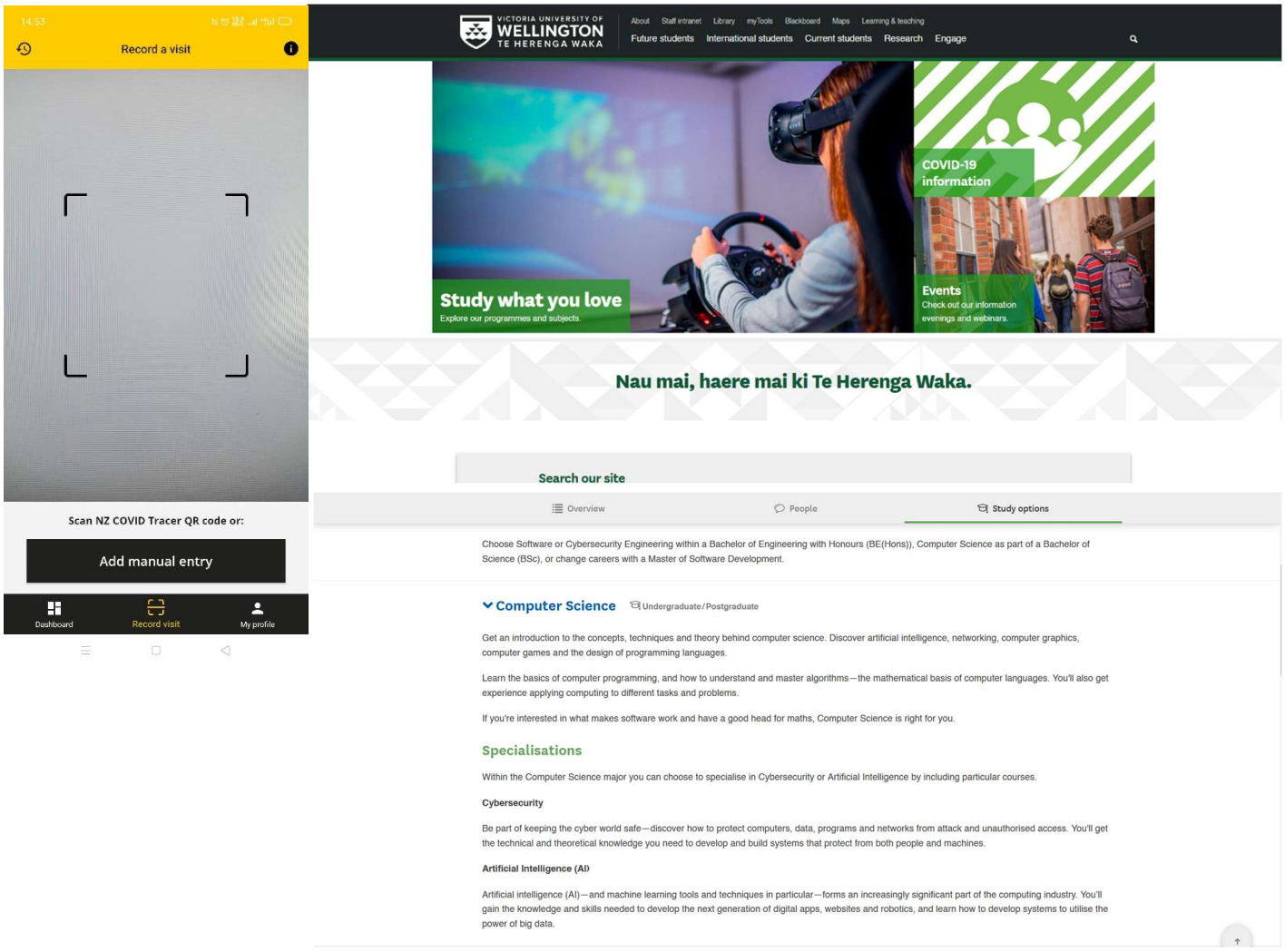
I found the creation of Persona's to be a very interesting process. It was quite tempting to simply come up with idealised users that make the system super easy and nice to design (Which I feel like I may have done a little bit still) rather than users that represent the user base, and its unique needs/desires for a system that they interact with. However, due to the relatively simple purpose of the App, I hope I've managed to cover the primary groups that would have an interest in using an app such as this. In future, I would want to find the time to ask people about what they would want/need out of whatever model I'm designing, as I feel that this would make my personas slightly more representative of the actual user base. I feel like I may also have slightly too much overlap between the personas (Although again, due to the simple nature of the app, I feel this may have been slightly unavoidable, as all users must do some overlapping actions. As well as the slightly limited group of people who would interact with the system) In future, I would ensure I differentiate the personas more to ensure I cover the userbase better. I did however really enjoy creating the personas themselves, coming up with names, pictures, and backgrounds for them.

Scenario Reflection:

I also found scenario creation interesting. As the app has rather limited interactions, I felt like I had to be missing something, as I created so few use cases (I still feel like I've missed something) but these remained the only primary interactions I could think of, no matter how many times I walked myself through the different paths an individual could take. Through the process of creating them, I realised I was unsure about how to integrate a use-case that required another to have been completed, which I researched, but found no conclusive answer on, so I've implemented this in what seemed like the most logical way. I also realised that I had to keep the information in the use cases simple, as on my first attempt I was trying to cram far too much information into them, which left them bloated and difficult to parse. So, in future I'll try to make sure that they're simple from the start, I can always add more information if I need to.

Assignment 2

Inspirations



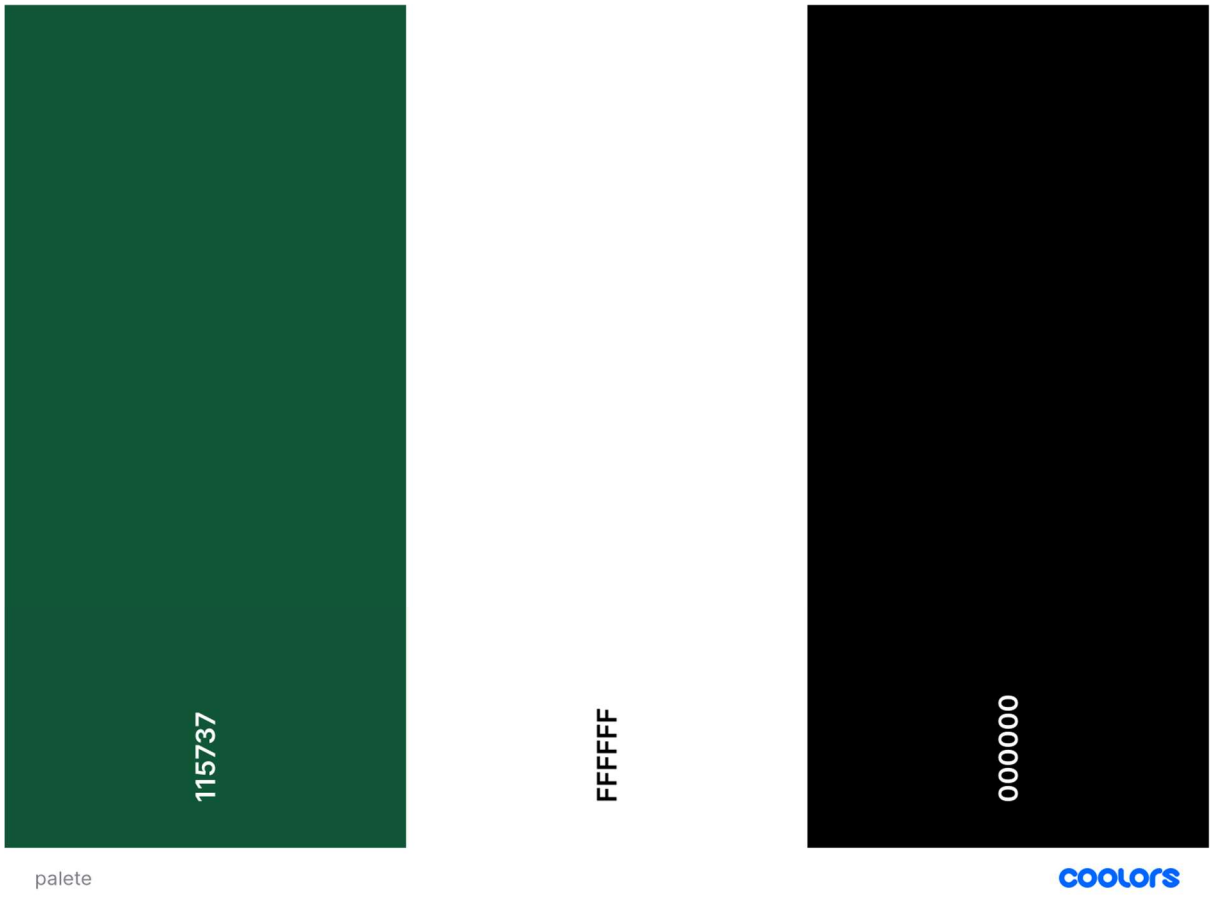
In terms of major inspirations, my design was influenced in large part by the New Zealand Covid Tracer App, as well as the University website. The Covid Tracer App acted as an example of how current mobile design conventions are integrated, as well as one possible way of creating an app surrounding the scanning of QR codes. The design conventions here are especially significant as the majority of the New Zealand population has had at least some level of interaction with the Covid App and is therefore likely familiar with the interface. So, by modelling by interface off the Covid tracer app, I create some immediate familiarity and remove some of the barriers that a user may face with an unfamiliar interface. This is especially important when we consider that AR is a relatively new technology, and therefore unfamiliar for most, so by having this baked in familiarity, it can be more approachable for those with no previous AR experience.

While the University is used more to inform the aesthetics of the design. As I wanted to ensure that the app would be highly consistent with the University's brand and formatting conventions, to achieve a familiar and approachable appearance that would integrate the app with the University. Allowing

individuals even glancing at the app, to be able to easily associate it with the university. To achieve this, I made sure to draw highly from the University's colour scheme, as well as integrating outright branding such as logos. I furthered these visuals by also making sure that I used the same Typefaces as the university, as well as attempting the translate the web-based layout, to a similar mobile-based version, to ensure that my design was consistent in as many ways as possible.

Making the app approachable and recognisable especially important when we consider that some of our personas are individuals who may have no previous experience with AR apps or the University in general. So, by making the design accessible and consistent, I hope to reduce any barriers to entry as much as possible.

Palette



In terms of colour selection, I opted for an extremely simple colour palette to achieve a look consistent with the ideals set out in my inspiration selection. Staying true to the Covid tracer apps design, the limited colour selection allows for both simplicity and recognisability, in keeping with design conventions. As well as making the content the focus of the experience, rather than overwhelming the user with a wide variety of colours. My primary, unifying colour selection is the University's green (Taken directly from the website) which furthers my second design goal of maintaining a high level of consistency with the university's branding and aesthetics. The use of this colour creates a potential immediate familiarity, if the user has previous experience with the university, as well as allowing an immediate and clear connection with the university. This, on top of the layout and design choices, clearly show the user that the app is directly connected to the university.

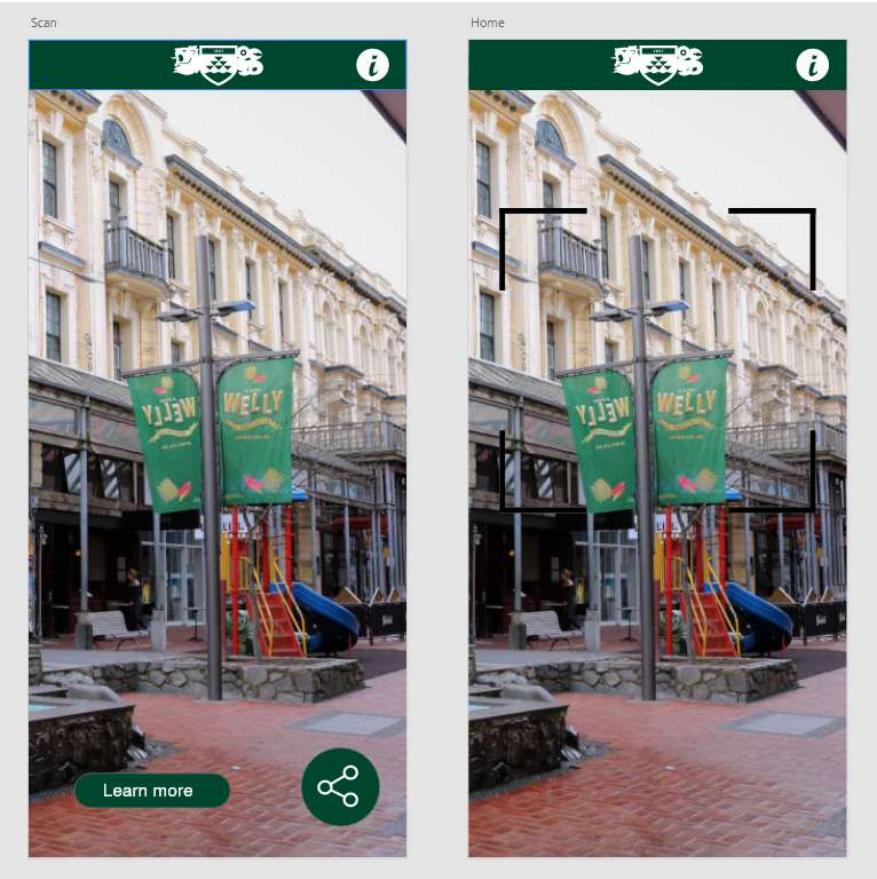
Design

In terms of general design, my primary focus was to make the app approachable, easy to parse, and consistent (Both in a meta sense and to the university) To achieve this, I first spent some time studying the design conventions for a mobile app. Such as using symbols highly familiar to anyone who has used a mobile app, as well as consistency in layout. This is most clear in the top and bottom bars.

As the bottom bar acts as the primary input centre for the system, I wanted the app to provide two forms of information for what a particular button does. Utilising both universally recognisable symbols, as well as text indicating the function. However, to minimise clutter, I have opted to represent functions on the top bar purely symbolically. As I believe both symbols are highly recognisable on their own. This design was again also inspired heavily by the Covid Tracer app, making it more recognisable straight away. I believe this makes the interface approachable and immediately easy to navigate due to the baked-in familiarity.

Design Iterations

First Iteration:

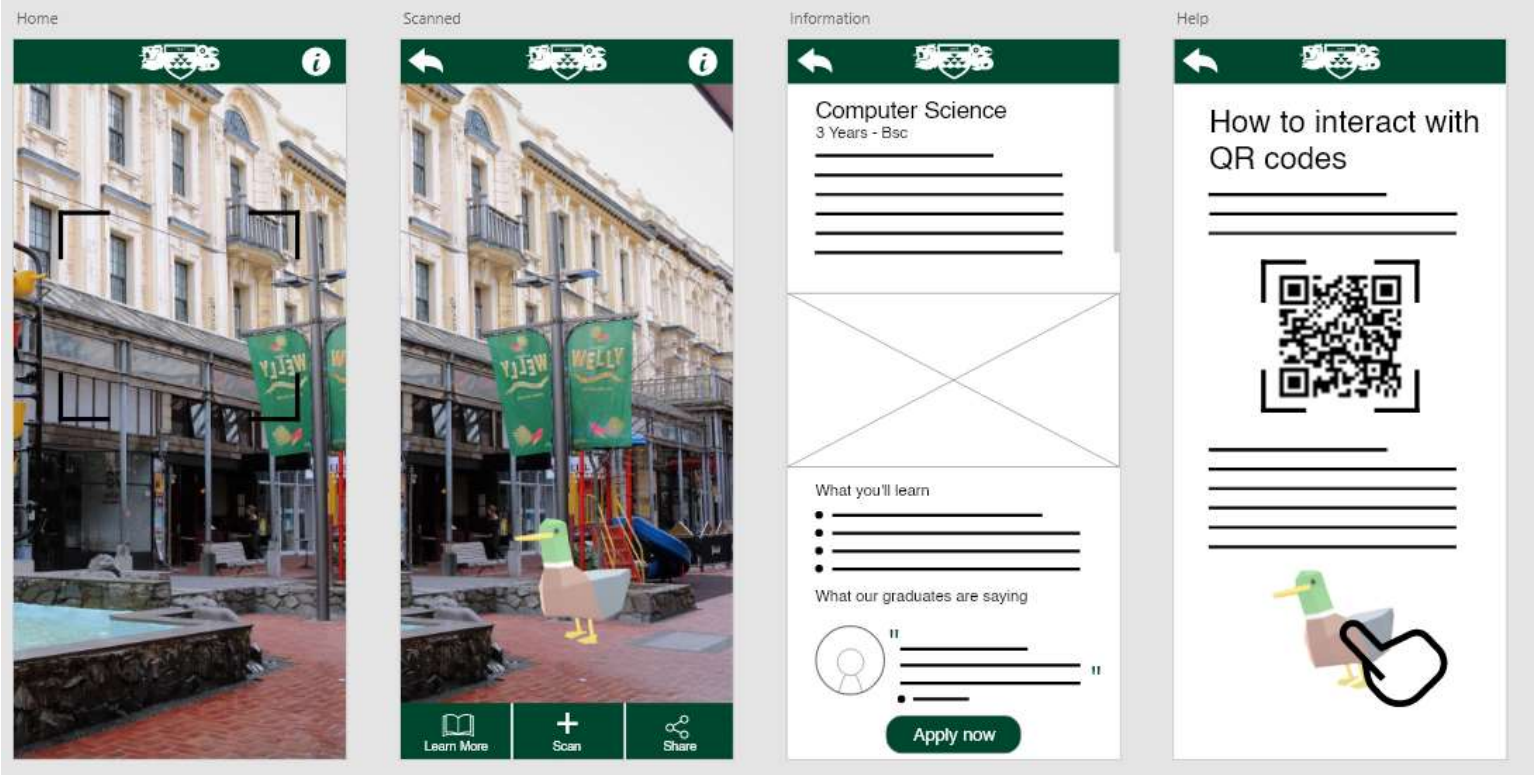


My first design iteration followed a goal of creating the least amount of interface clutter, to not confuse the user. However, I found that this overall didn't have the type of look I wanted to achieve, and also realised that it did not make it clear that a user could scan a second QR code while having one scanned.

Second iteration:

My second iteration of the Scanned UI is quite close to my final design, however, I was considering having a “Drawer” that could be opened from the side of the screen, which would have had further ways of interacting with the AR object. However, I felt that this was finicky to access and also easy to miss, while also not being clear before opening what exactly it did. I felt that this would only be confusing for potential users, complicating their experience unnecessarily.

Final Iteration:



Having streamlined the UI, I felt that this iteration best represented my goals for the design. I believe that the App is highly approachable, with familiar, simple, and consistent UI. With a presentation style, for both the UI and information being displayed, that is clean and highly consistent with the university's style.

For the information page, I opted to focus on a layout heavily inspired by how the university lays out course information on the website, hopefully maintaining consistency and meaning users will be able to transfer some of their interface knowledge from one to the other.

I followed a similar plan for the Help page, aiming to present the information necessary to use the app as clearly and concisely as possible, as those who require the help page (Primarily the older persona archetype) are more likely to have a lower level of technological literacy. For this reason, I have integrated diagrams into the text, to translate between text instructions and actual interaction with the app less frustrating.

Resulting in an app that meshes cleanly with other media created by the university, while achieving its goals of being approachable, entertaining, and informative.

Reflection:

Overall, I found the design process extremely enjoyable, with tinkering with designs and deciding what works for the design goals and what doesn't. I found trying to balance aesthetics and clean design challenging, as part of me wanted to purely focus on creating the best-looking design possible, however, over-designing could have resulted in an app that's very complicated to read. In terms of compromises, I decided fairly on that the three-button bar at the bottom of the screen was the way to go for the main interface, due to its familiarity and ease of use. However, I also wanted to add further UI and interactivity with the AR objects (As seen with the 'drawer' that I was considering adding) With functions such as spawning addition objects that the AR object would interact with, or perhaps changing the aesthetics. However, I couldn't find a way to integrate this that meshed with the current design, without resulting in a UI that I felt would only confuse some people. (Especially the older personas, who may become overwhelmed with a large number of buttons) While limiting this interaction was a hard decision to make, I feel like it was best for the experience of the app, reducing clutter, while still maintaining the core functions needed. In future, I would perhaps spend more time researching how exactly this idea could be integrated in a way that doesn't add potential confusion to users who aren't highly tech literate. But, because one of the primary goals of the design was for an app easy to use for less tech-literate people, I felt that removing this feature was for the best.

However, I suppose there is the potential that this change will reduce the engagement of those who are highly tech literature and engaged with the AR content, as with less interactivity, they are potentially less likely to spend as much time with the app. Maybe resulting in a change that harms one group in favour of another. However, I feel that the design I have proposed still engages both groups to a high enough extent, without alienating either to the extent that it fails in its design goals.