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*Te Whare Wananga o te Upoko o te Ika a Maui*



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## **Āwhina Mobile App**

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### **Abstract**

The Āwhina group at Victoria University want a mobile application that helps their members connect and communicate with one another. This proposal discusses what Āwhina want, what the problem with developing the application will be, and how it will be solved and evaluated. The proposed approach is to design the app's User Experience, create a mock-up, and then implement a proof of concept application.

# 1. Introduction

The Āwhina group are looking to build a mobile application that will allow students and staff to communicate and connect with one another. This need was originally filled by the application Slack but Āwhina are now looking for an application specifically for them.

The engineering problem is to find what functionality a mobile app would need to allow Āwhina members to connect with one another, and to design and implement the app. Part of this engineering problem is to find what it means for the Āwhina group to ‘connect’ people. This could be a tool for users to message one another.

To solve this project, I will first talk to some representatives for Āwhina to get Business Objectives. From this I will create a model overview and personas to understand who the types of users will be and what each of their user requirements are. This will involve organising focus groups with students and staff in Āwhina and creating user scenarios. I will look at existing solutions and start designing a mock-up of the application, which will be evaluated by potential users and then modified. Once the final design is approved by Āwhina representatives I will start implementation of the app. Before and during the development of the User Experience I will evaluate similar existing applications such as ‘Discord’ and ‘Slack’ that will impact the development of this project.

To evaluate the design and implementation of the mobile app I will have user feedback at each stage of development. This will involve having users interact with a mock-up of the application to verify if the mock-up meets their user requirements and scenario needs. When a working version of the application is being implemented, evaluation will be carried out again in the same fashion as the mock-up. To evaluate the app against the business requirements it will be approved by Āwhina representatives before design moves from one stage to another, e.g. from personas and user scenarios to mock-up.

Over the course of this project several resource requirements will need to be met. These include access to a mock-up tool such as Balsamiq Wireframes or Adobe XD, software development tools such as Visual Studio Code or Android Studio, and people who will be available to participate in focus groups and testing.

# 2. The Problem

Āwhina has need for a mobile app that will allow their staff and students to communicate to one another. Previously they used the application ‘Slack’ but due to the cost they are now looking for a different application. A mobile app that meets Āwhina’s requirements will help provide support for Māori students and help Āwhina staff know what they can do to improve the students experience. To achieve this the project will be to design and implement a mobile application that allows staff and students to message one another on an individual and group level. To confirm what the business, functional, and user requirements are I will talk to students and staff within Āwhina, and show them my design and implementation as I work through the design and development of the app.

The Āwhina representatives do not have a concrete idea of what the final application will be, so part of the problem for this project is to determine what functionality the application needs. Existing applications may only meet some of the requirements so research will be needed to determine why existing apps are not sufficient or optimal. This research will then be used during the design and implementation stages of the application.

The mobile application to be created will need to have functionality that allows people within Āwhina to create accounts and message one another. These messages can be sent to other individual users or to

groups of users. These groups will be able to be created by users and allow users to be invited to them post creation. Āwhina staff will require tools to be able to manage and moderate the messages and groups within the application. This is so the application will be a safe space and help develop a sense of community and trust. Making the application cross-platform will allow all Āwhina members access.

### **3. Proposed Solution**

The proposed solution is a mobile application that allows users to message one another privately and in group chats. Āwhina staff will have moderation tools to moderate the chats. This application will be available to all Āwhina members.

This project will be carried out in weekly sprints. The weekly schedule (figure 1) displays the goals to be met each week of the project. Later goals such as 'implementation' are loosely defined so that there is enough flexibility to adapt as circumstances change.

In the initial stages of the project, the User Experience of the application will be developed. This will entail doing research on existing applications such as 'Slack' and 'Discord', creating a design description and model, Performing Focus groups, and creating scenarios and persona. The goal of this stage is to develop a better understanding on what Āwhina members want from this project, and how they will interact with the application. At the end of this phase a description of the application, user archetypes and stories, and business requirements will be produced.

The next phase is creating a mock-up of the application. This mock-up will be interactable and serve as a prototype of the final application that allows page traversal, but not storage of user data. User Tests will be performed on this mock-up to evaluate how it meets user expectations and how it can be improved.

The final phase of this project is the implementation of the mobile application. By the end of this phase a working proof of concept will be created. During this implementation phase User Testing will occur to evaluate the app and provide information on how it can be improved. Two sessions of User Testing will occur with enough time after each test so that the improvements discussed with participants can be implemented.

The technology planned to be used for the implementation is the Ionic React framework. This framework will allow the final application to be cross platform, to reach all potential users. Ionic React comes with many customisable components that will accelerate design and implementation of the app. A benefit of using Ionic React instead of React Native is Ionic React apps are web apps. This means it can be developed inside a browser like Chrome, where React Native will require an emulator or physical phone. This is useful to this project as good hardware to run an emulator or a physical phone will not be required during development.

### **4. Evaluating your Solution**

During the design stages of the User Experience, Focus Groups will be held with Āwhina members to determine what their goals and requirements for the project are. These Focus Groups will be recorded and used to evaluate the user stories, persona, and prototype.

This project will undergo evaluation during the stages of design and implementation. While creating the User Experience, mock-ups of the app will be sent to representatives of Āwhina to compare it against

their business requirements. Additionally, the mock-up will undergo User Testing where participants will be given a series of tasks to achieve within the mock-up and questions for them to answer.

After User Experience development, the application will undergo evaluation during its implementation. When core functionalities of the application have been completed such as creating groups and messaging others, it will undergo User Testing. The implementation phase will involve 2 User Testing exercises to ensure the application is thoroughly evaluated.

## **5. Ethics and Resourcing**

Design, implementation, and evaluation of this project can be completed using free software in a virtual or in-person environment. Access and resource requirements are of no concern to this project.

### **5.1. Ethics**

There are several ethical considerations with the design, implementation, and evaluation of this project. Because this application is predominantly a messaging platform, it has the potential to contain user's private data or sensitive information. However, this project is to build a proof of concept, which will not need to use real data to be tested and developed. People will not be asked to store their personal information.

Another ethical consideration is how User Testing and Focus Groups will be conducted. Participants will not be required to give identifying or sensitive information, and their participation and results are entirely anonymous and confidential. A room at Kelburn Campus will be booked to conduct evaluation in.

Because this project is a messaging application, it provides users with a platform to say whatever they want to other users. To prevent the spreading of hate speech and cyberbullying, Āwhina staff members will be given tools to moderate the application so it can be a safe space for all users.

### **5.2. Safety**

The risk profile of this project is minor.

The safety risks involved with project are Occupational Overuse Syndrome (OOS), poor posture, poor workplace management, and Coronavirus. OOS and poor posture are caused by poor work patterns. Observing breaks during the project's development and physical exercises such as stretches can prevent and limit the effects of OOS and bad posture.

This project can be completed entirely remotely as meetings and user tests can be held virtually, and design implementation and implementation can be completed at home. If participants in this project become sick, they will alert the others and observe contact tracing and testing.

### **5.3. Budget**

The final budget for this project has not been determined, but Āwhina will provide a koha for participants in Focus Groups and User Testing.

The design and implementation software used for this project are free, and no hardware will be purchased.

### **5.4. Space and Access**

Evaluation will be conducted within one of the lab rooms at Kelburn campus of Victoria University. If Covid-19 causes a higher lockdown level, then evaluations will be conducted virtually via zoom.

Work on this project will be completed at Kelburn campus or at home and does not require access to restricted areas.

Appendix

Week		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32				
Documentation	Project proposal	Project proposal																																			
	Ethics Approval				Ethics Approval																																
	Reading							Readings																													
	Preliminary Report										Preliminary report																										
	Final Report draft																			Final report draft																	
	Project snapshot																															Project snapshot					
	Final Report																																		Final Report		
Design	Model Overview				model Overview						Organise Focus group for User and Business requirement verification																										
	User Stories										User stories																										
	Persona										Persona																										
	Design Description										Design Description																										
	Mockup													Create Mockup			Modify mockup																				
	Mockup testing													Organise Mockup User testing																							
	Implementation							Setup									Create application page / core function						More implimentation														
Implementation	User Evaluation																			Testing									Testing								
	Polishing																															Polishing					