COSC345 Assignment 1

Report for Austin, Dougal, Liam, Shay

Introduction

We are a team of third year Computer Science students tasked with creating a mobile app with the theme of diversity. We kept the idea of diversity in mind in the selection of our team members in an attempt to gather a wide variety of strengths and skills.

The first member of our team is Dougal, who in addition to studying Computer Science is also doing a minor in Statistics. He has a keen interest in problem solving and data analysis, which fit nicely with his studies. Hailing from Wellington he moved away from home to pursue university, with this he was forced to venture outside his comfort zone, this will provide the team with a unique mix of skills and a new level of critical thinking.

The second member of our team is Shay, who is a third year Computer Science student at the University of Otago. Born and raised in Dunedin, Shay has a background in physics with exceptional mathematical and problem solving skills as he enjoys challenging himself with solving the most difficult problems. From working in retail Shay has a great deal of experience working with customers and has perfected his customer service skills. With his set of skills of problem solving, programming, customer experience and insight he provides a solid foundation for the team.

The third member of our team is Austin, who is studying Computer Science as a major and Information Science as a minor, in his third year at the University of Otago. Growing up in Queenstown and Dunedin, Austin has sales experience through working at Noel Leeming, as well as past technology field experience working at Education Perfect, he brings teamwork, sales and management experience to the team. This experience and knowledge will help Austin to think customer, and put himself in the shoes of someone who would be a potential user, as well as providing good problem solving to any tasks and issues that may occur.

The fourth member of our team is Liam, a third year computer science and management student at the University of Otago. Liam's ongoing studies in management brings a unique perspective to the group as it provides insight into working as a functional team to produce high quality results. The combination of computer science knowledge and communication skills should ideally lead to an effective flow of information between the group members.

As a collective, we bring skills in problem solving, management, and programming as our key skills. This diverse collection of skills will allow us to approach potential problems with multiple perspectives which in theory will allow us as a group to excel.
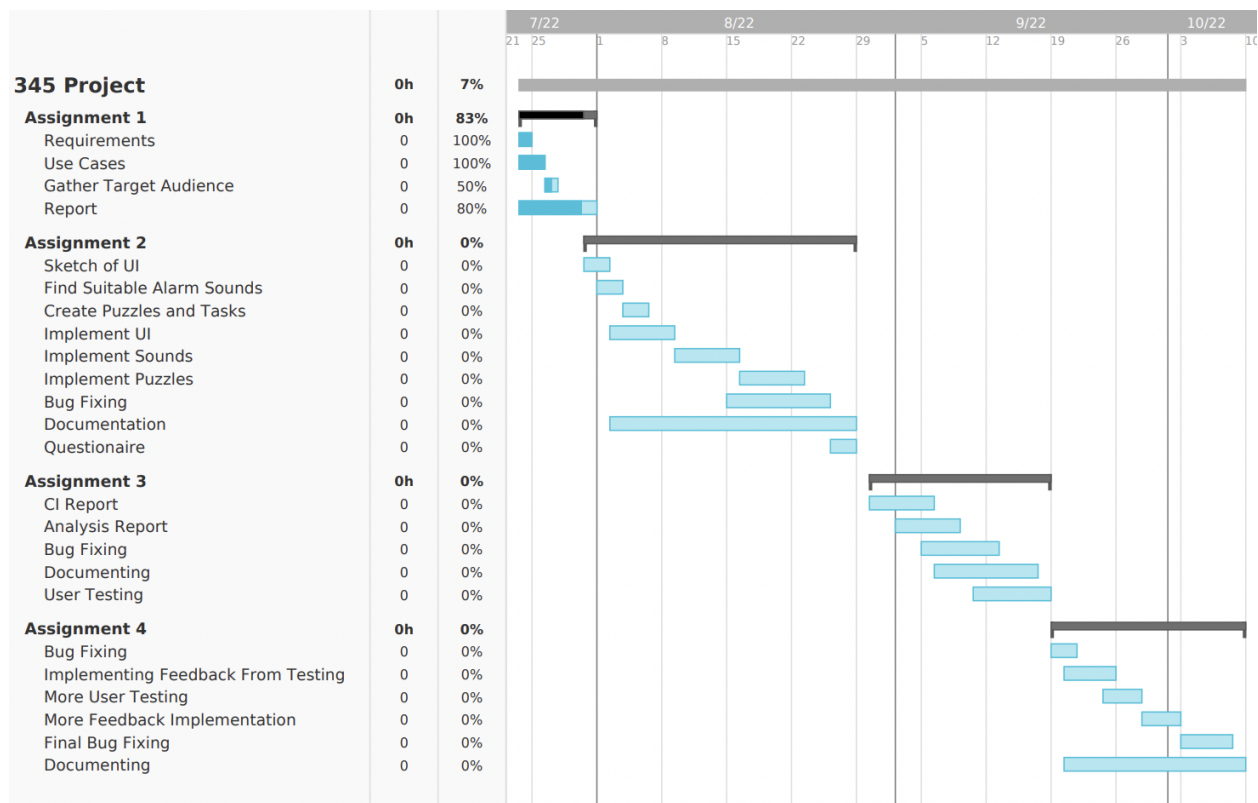
What we are building

We plan on building an app to function as an alarm for users who struggle to properly wake up in the morning and get out of bed. The app will include fully customisable alarms that are quick and easy to set up and edit moments before bed. Options will include interactive and engaging methods for shutting off the alarm. Features planned at this early stage include a memory game, maths questions, a reaction based game, a step counter, and a typing based feature. All features are designed to wake your brain up and start your day off without the mental fog and lethargic movement that comes with more traditional snooze style alarms. The alarm will continue to ring until the task set by the user is completed, whether it's 5 basic maths questions, 2 rounds of a memory game or 5 victories in a reaction based game, as a few examples. Length and difficulty of these features will be fully customisable by the user.

The key to our app is that it is limitless. While on release, there may be a limited amount of alarms and tasks, there is always going to be the possibility for us as developers to include more of these later on. It opens the software up to feedback, which comes back to our target audience as we want to be able to create something that people are going to enjoy using, and be able to engage our users in a way that they are going to want to continue to use our app. We also want the users of our apps to become more efficient in tackling their mornings so we plan on including a checklist feature. This would allow users to tick off their morning tasks as they complete them so they are aware of the time and tasks they still need to complete. We aim to help people become more efficient and successful in the early hours of their day and we believe this feature will be of great use to our target market.

How we are going to build it

We will be building our app using kotlin and will use Android Studio as our IDE. We decided to develop our app on android because android allows us to easily develop an app while ios apps are very limited (You need access to a mac to use xcode). We have made a Gantt chart to help track our progress on the app, it includes tasks we must complete in order to complete each assignment. It is subject to change as the project progresses and evolves but it gives us an idea of what we need to be working on each day and how much time must be allocated to each individual task.

Task	Hours	%
345 Project	**0h**	**7%**
Assignment 1	**0h**	**83%**
Requirements	0	100%
Use Cases	0	100%
Gather Target Audience	0	50%
Report	0	80%
Assignment 2	**0h**	**0%**
Sketch of UI	0	0%
Find Suitable Alarm Sounds	0	0%
Create Puzzles and Tasks	0	0%
Implement UI	0	0%
Implement Sounds	0	0%
Implement Puzzles	0	0%
Bug Fixing	0	0%
Documentation	0	0%
Questionaire	0	0%
Assignment 3	**0h**	**0%**
CI Report	0	0%
Analysis Report	0	0%
Bug Fixing	0	0%
Documenting	0	0%
User Testing	0	0%
Assignment 4	**0h**	**0%**
Bug Fixing	0	0%
Implementing Feedback From Testing	0	0%
More User Testing	0	0%
More Feedback Implementation	0	0%
Final Bug Fixing	0	0%
Documenting	0	0%

We will be splitting up each task into segments to help ourselves track our progress in real time. Using the gantt chart above, we can have a rough estimate of what each major task is going to be for our project, as well as the desired amount of time it will take to implement and achieve each task. There will of course be changes to these tasks along the way, but from a beginning standpoint, this is what we are aiming to achieve in the timespace we have been given.

What already exists & how we will differ

While searching the app store we did find apps which offer similar functionality to what we plan for ours. One such one was *I Can't Wake Up!* developed by Kog Creations[1]. We found this app to have a few advantageous features such as multiple different puzzles with different levels, this means that there is a wide user base which this app appeals to. A major flaw of the app we found was the presence of ads, at the bottom of the home screen there is always an advert. When changing screens an advert often pops up and after use of this app over a few days this got really frustrating. We will strive to build an advertisement free app with the focus being on the consumer. Currently on this app there is no progress after completion of the task, we will have a more rounded app that prompts you to start your day in an effective way. This is totally unique and we haven't seen any other app with this functionality during our market research. What this start to the day looks like is totally customizable and will be diverse based upon the user themselves.

Another app we found was *Alarmy*[2]. Liam uses this app on a daily basis and has extensive experience with it. While being somewhat effective in terms of the wake up tasks (or as Alarmy calls them "missions"), Alarmy struggles in a few key areas that we believe we can improve on.

[1] https://play.google.com/store/apps/details?id=com.kog.alarmclock
[2] https://play.google.com/store/apps/details?id=droom.sleepIfUCan

The first major problem is that over half of the more useful features are locked behind a paywall. While most likely being an effective business strategy it doesn't provide the most ideal user experience as it makes it less accessible to certain users. We want our app to be useful and helpful to everybody despite their willingness to upgrade from a free app. This focus on accessibility to all people will help differentiate our app from Alarmy. The other problem Liam has encountered with Alarmy is its poor organisation and sorting of alarms. All alarms go into one big list and activated alarms move to the top while all other alarms are sorted by time. This results in a large confusing list of alarms, some varying by only 10 or 15 minutes. Liam reports he has often created new alarms identical to existing ones simply because he could not find the alarm in his ever growing list of random alarms. In order to improve on this we plan on implementing multiple sort by options including: time, usage and pinned alarms. An in-depth sorting and naming features will allow users to store their alarms exactly where they want so they know exactly where to find them when they go to bed. No one wants to spend 2 - 3 minutes fiddling to set up alarms when they want to go to sleep. This accessibility will increase the functionality and effectiveness of our application when compared to Alarmy.

Target market

We wanted to be able to broaden our target market through making it diverse. By doing this, we have a diverse range of sounds, activities, and colours that we are going to implement into our app, allowing for a larger range of consumers to become fond of it. Through doing this we are not limiting our app to a specific set of people, but bringing in the diversity factor, as we are creating diversity through accessibility and function, allowing someone with disabilities such as dyscalculia, dyslexia and many other learning disabilities, as well as people with colour blindness and the list goes on, be able to use our app without any difficulties. We will be doing this by not limiting the wake up problems to specific things that someone who can't do maths, or someone who cannot read, or someone with bad memory would be unable to achieve. We also hope to implement difficulty levels, so if someone wants to wake up and practice something, they are also able to do this.

While the app will be most useful for users who struggle immensely to get their days started, through accessibility options and customisation we have opened our app up to a large range of uses. Even a user who does not struggle to wake up in the morning may find our brain stimulating alarms an effective way to start their mornings. Our wide variety of stimulating alarms is likely to improve any user's morning routine.
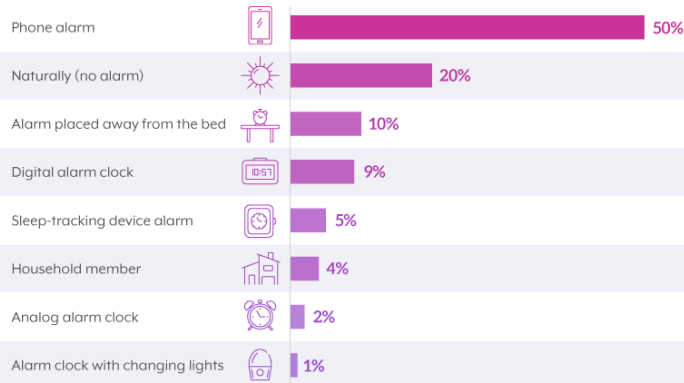
Evidence your target market is interested

Waking Up for Work

(((🔔))) **1 in 5** employees woke up without an alarm during the week.

Wake-Up Methods During the Workweek

Method		Percentage
Phone alarm	📱	50%
Naturally (no alarm)	☀️	20%
Alarm placed away from the bed	⏰	10%
Digital alarm clock	🕐	9%
Sleep-tracking device alarm	⌚	5%
Household member	🏠	4%
Analog alarm clock	⏰	2%
Alarm clock with changing lights	💡	1%

Working **baby boomers** were **twice as likely** as working **millennials** to **wake up naturally.**

Remote workers were **twice as likely** as office employees to **wake up naturally.**

Nearly **1 in 3 people** said their **natural body clock** often wakes them up **before they've gotten their ideal amount of sleep.**

Source: Survey of 2,291 employees

eachnight

A desire for a way to wake up effectively has been around for a long time. Within our group, there was interest expressed through previous apps such as *Alarmy*[2], which had fantastic reviews, however the talk among our group was that it was lacking, due to paywalls and poor organisation, we felt as if we could improve the user experience. We know this idea would be well received by the target market as the evidence is the success of similar apps, however we know that we can improve upon already existing concepts to deliver a better user experience than alternative applications.[4]

As pictured in the survey[3] of over 2,200 employees, 50% of those surveyed use phone alarms. This is a large market that would benefit from an improved alarm app designed to help them start their mornings as effectively as possible. The market for our app already exists, we just need to build an application useful enough to entice users.

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[3] https://eachnight.com/sleep-studies/wake-up-call/
[4] https://forums.androidcentral.com/samsung-galaxy-s8-and-s8-plus/829755-samsung-s8-alarm-snoozes-too-easily.html