

# THIRTY SEVEN

## Assessment 2 - Group Assignment Report Document

This assignment is presented by the collective efforts of Keaton Ferber, Dean Heighway, Sean Heighway and Nelson Kun. This PDF report represents the work displayed on the website and it is recommended to view the website component due to its interactive nature, however this PDF file can be also enjoyed in the same manner.

Website Link: <https://kdn37.github.io/tools.html>

GitHub Repository Link: <https://github.com/kdn37/kdn37.github.io>

*The best viewing experience would be on desktop or laptop devices, and if viewed on a smart device, it is recommended to use Chrome as the browser - however if Safari on iOS devices is preferred, to navigate each menu just simply touch and hold for a few moments for the drop down menu to appear.*

# THIRTY SEVEN

## Meet the Team

We are the students that form Thirty Seven, collaborating together to present our first group assignment for the second assessment for Introduction to Information Technology at RMIT. We came together on deciding on a team name during our first Teams meeting where the four of us first met together, deciding to choose a name that represented the group we were classed in for this assignment, as it's simple and straight to the point and identifiable.

Click below to read about our team and our story, what got us in Information Technology and how we analyse ourselves in a working environment with other team members. We also compare our ideal jobs to determine the stages we are at and what we need to do in order to get to where we want to be in the future!



Keaton Ferber



Dean Heighway



Sean Heighway

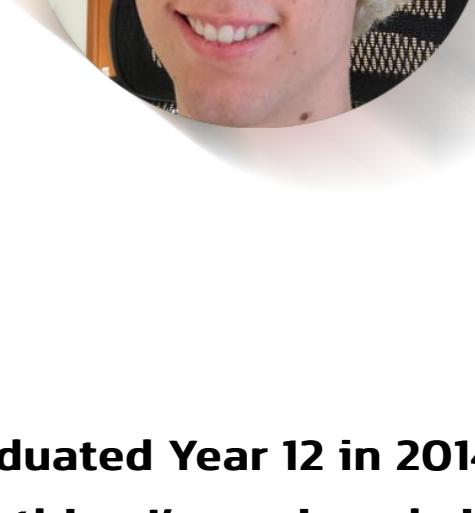


Nelson Kun

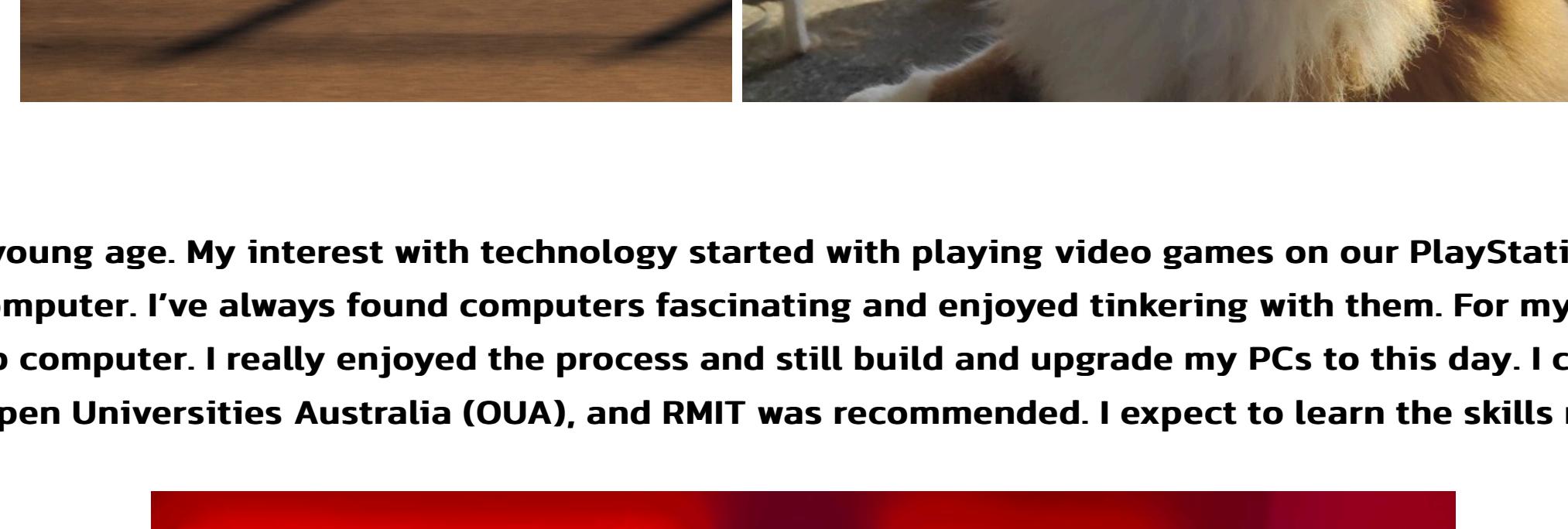
# THIRTY SEVEN

## Keaton Ferber

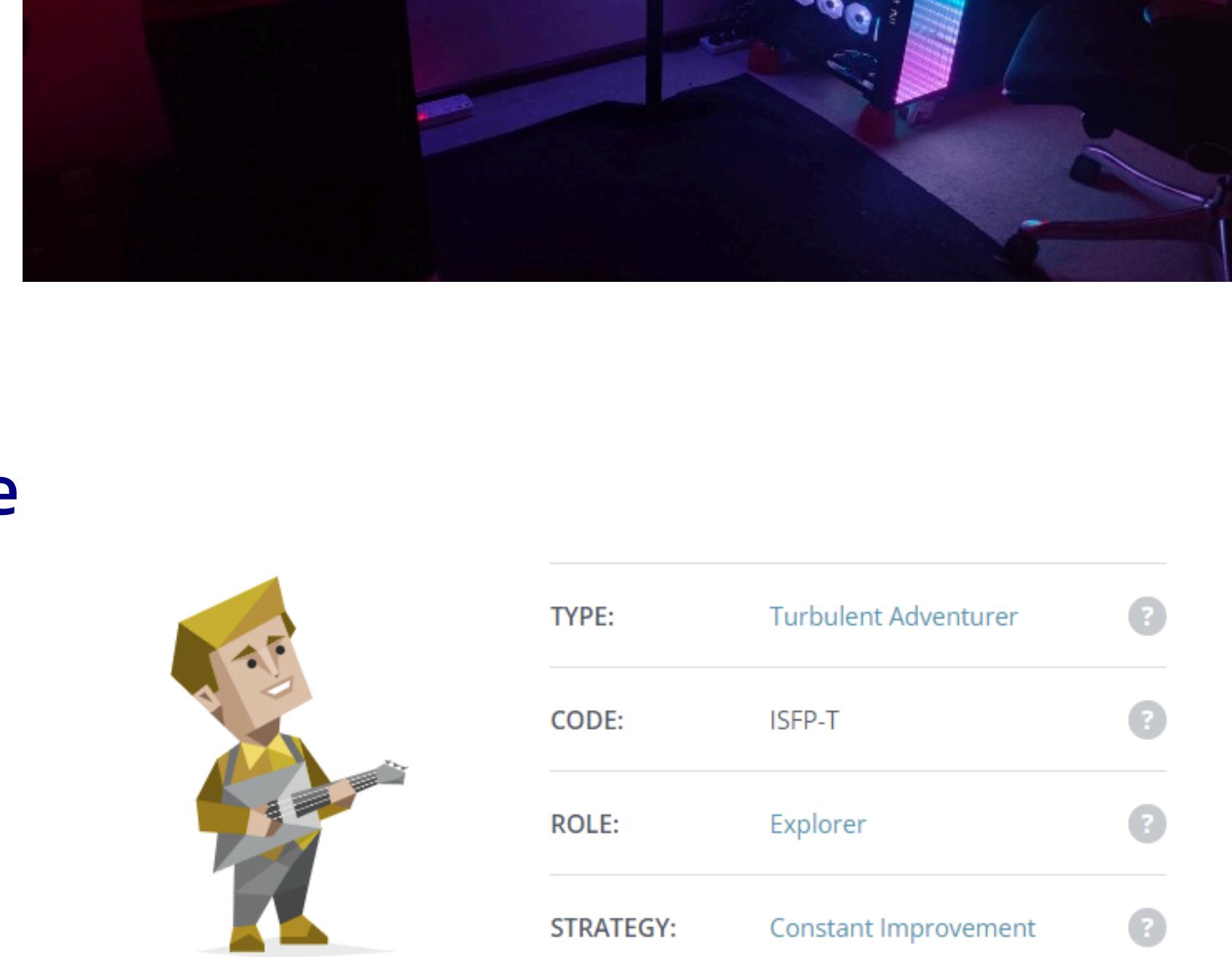
Student ID: s3952394



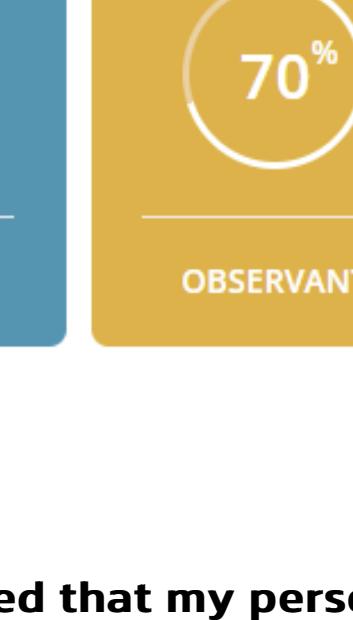
My name is Keaton Ferber, I live in a small town in rural SA. I graduated Year 12 in 2014 and have previously worked as a cellar hand at a local winery for many years. My main hobby is playing video games, its something I've enjoyed since I was very young. I also enjoy watching movies, TV and anime. I'm a huge Star Wars fan and my favourite movie they have released is Star Wars: Revenge of the Sith. My friend got me into watching F1 in 2020 and I've been following avidly since. I root for Ferrari and my favourite driver is Charles Leclerc. I love cats and have a cat named Ezra; he keeps me company.



My interest in IT started at a young age. My interest with technology started with playing video games on our PlayStation 2, but I also spent a lot of time on our family desktop computer. I've always found computers fascinating and enjoyed tinkering with them. For my research project in high school, I built my own desktop computer. I really enjoyed the process and still build and upgrade my PCs to this day. I chose to study at RMIT as I was looking to Study IT through Open Universities Australia (OUA), and RMIT was recommended. I expect to learn the skills required for my chosen career.

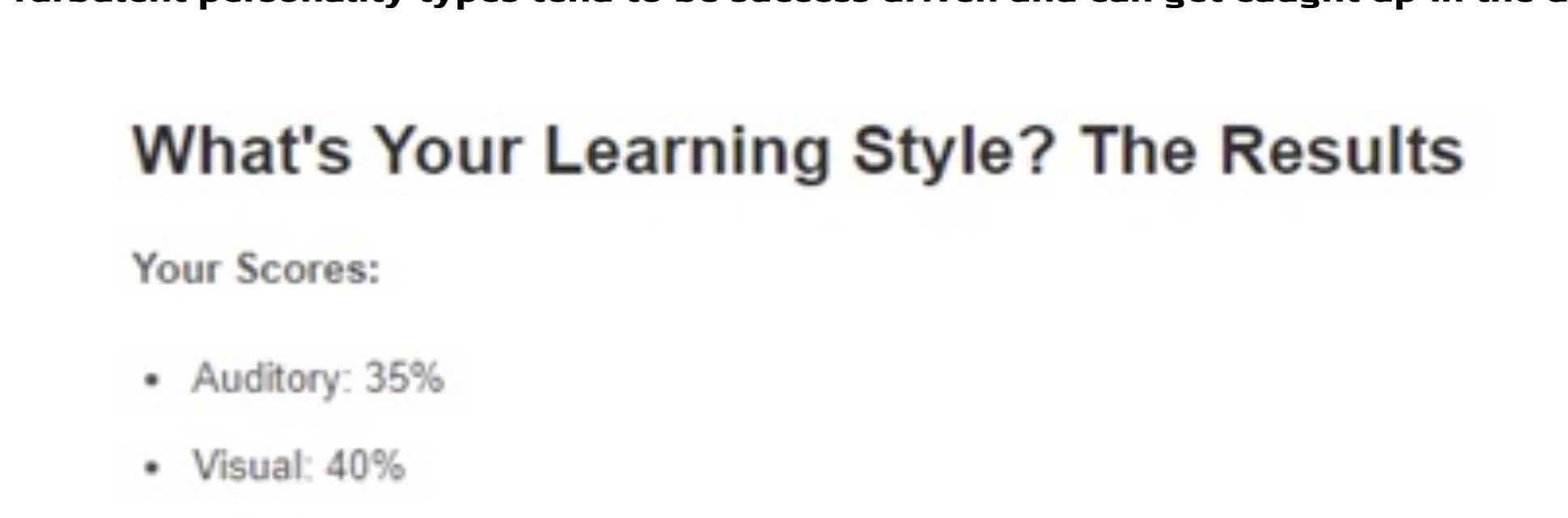


## Personality Profile



TYPE:	Turbulent Adventurer
CODE:	ISFP-T
ROLE:	Explorer
STRATEGY:	Constant Improvement

## Personality Traits



My results for the "16 personalities test" showed that my personality type was a "Turbulent Adventurer". According to the test my 5 dominant traits were, Introverted(I), Observant(S), Feeling(F), Prospecting(P) and Turbulent(-T). Due to having the shared personality traits of Observant and Prospecting I have the role of explorer. As I have the shared trait of Introverted(I) and Turbulent(-T) my strategy is constant improvement. The mostly introverted result is no surprise to me as I've always been an introverted person. I often keep to myself and prefer not to go out too much. Observant personality types tend to focus on what's in front of them, which makes them focused and functional. Feeling personality types tend to be compassionate and follow their emotions. People with the prospecting trait tend to be flexible when dealing with challenges, they tend to adapt to the situation rather than control it. Turbulent personality types tend to be success driven and can get caught up in the details.

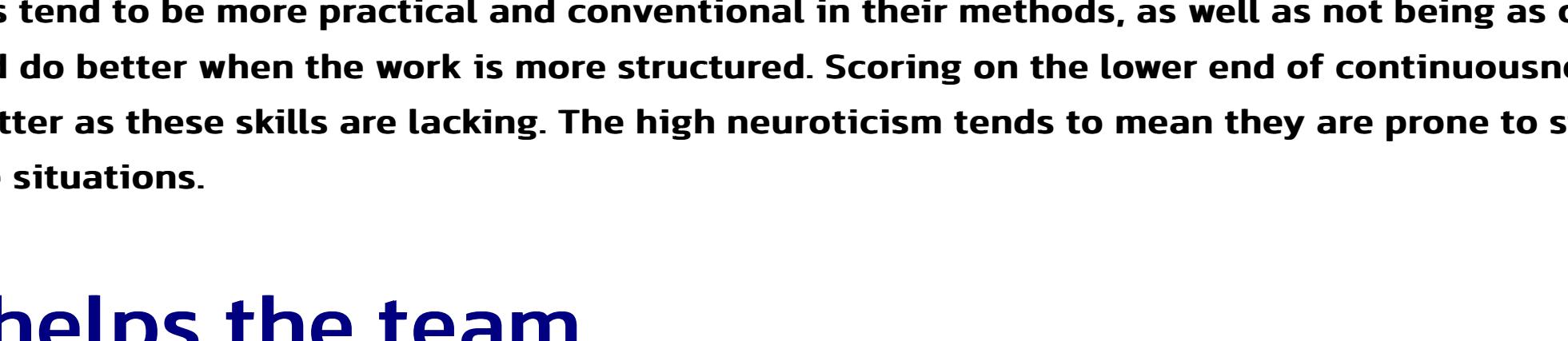
## What's Your Learning Style? The Results

Your Scores:

- Auditory: 35%
- Visual: 40%
- Tactile: 25%

In the "learning style test" my results were 35% Auditory 40% Visual and 25% Tactile. This is a mostly even split with me being slightly biased towards Auditory and Visual learning, and slightly biased against Tactile learning. Some things I can utilise to get the most out of visual learning is avoid distractions when studying and visualise things I hear. For the auditory aspect when reading aloud is important to make sure I remember the information.

## The Big Five



The Big 5 personality test takes into account factors in "The Big Five" test I scored High in neuroticism and agreeableness and low in Extraversion, Openness to experience and conscientiousness. I tend to think I get along with almost anyone and my high agreeableness reflects that. High agreeableness also means I care about others and assist when needed. The low score in extraversion correlates to the previously mentioned introvert personality type. People with low openness tend to be more practical and conventional in their methods, as well as not being as creative and imaginative. I struggle with creative work and do better when the work is more structured. Scoring on the lower end of conscientiousness means I need to work on my organization skills and plan better as these skills are lacking. The high neuroticism tends to mean they are prone to stress and anxiety, which I can relate to when in high pressure situations.

## How this info helps the team

My high agreeableness means I will work well in a team due to being highly cooperative. I also believe being empathetic to my teammates will mean I will be able to avoid any conflicts. In a group due to being introverted I will most likely not be the chattiest person and will tend to follow rather than lead a team. Knowing this someone else should be a leader in the group. Due to my lower conscientiousness score it will be best if others handle the organizing side of group work.

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## Dean Heighway

Student ID: s3925053



**My name is Dean Heighway and I'm a 27-year-old born in Australia and of Australian decent, in my lifetime I've only ever spoken English and I've learned beginner levels of Italian. My highest level of education is finishing the HSC and also, I have completed a semester of a Bachelor of Nutrition.**

**I love all sports but have a keen interest in cricket, currently my season has just finished last week as my team lost in the semifinals however, I am enjoying watching the current tour of Australia to Pakistan.**

**My interest in IT stems from a long history of video games and love of computers, ever since I was four years old, I remember playing Warcraft 2 and StarCraft with my dad in his spare time and from then I was hooked in gaming. Over time my love of gaming developed into wanting a further understanding of the ins and outs of computers and the how and why of games; what powers them? How are they built?**

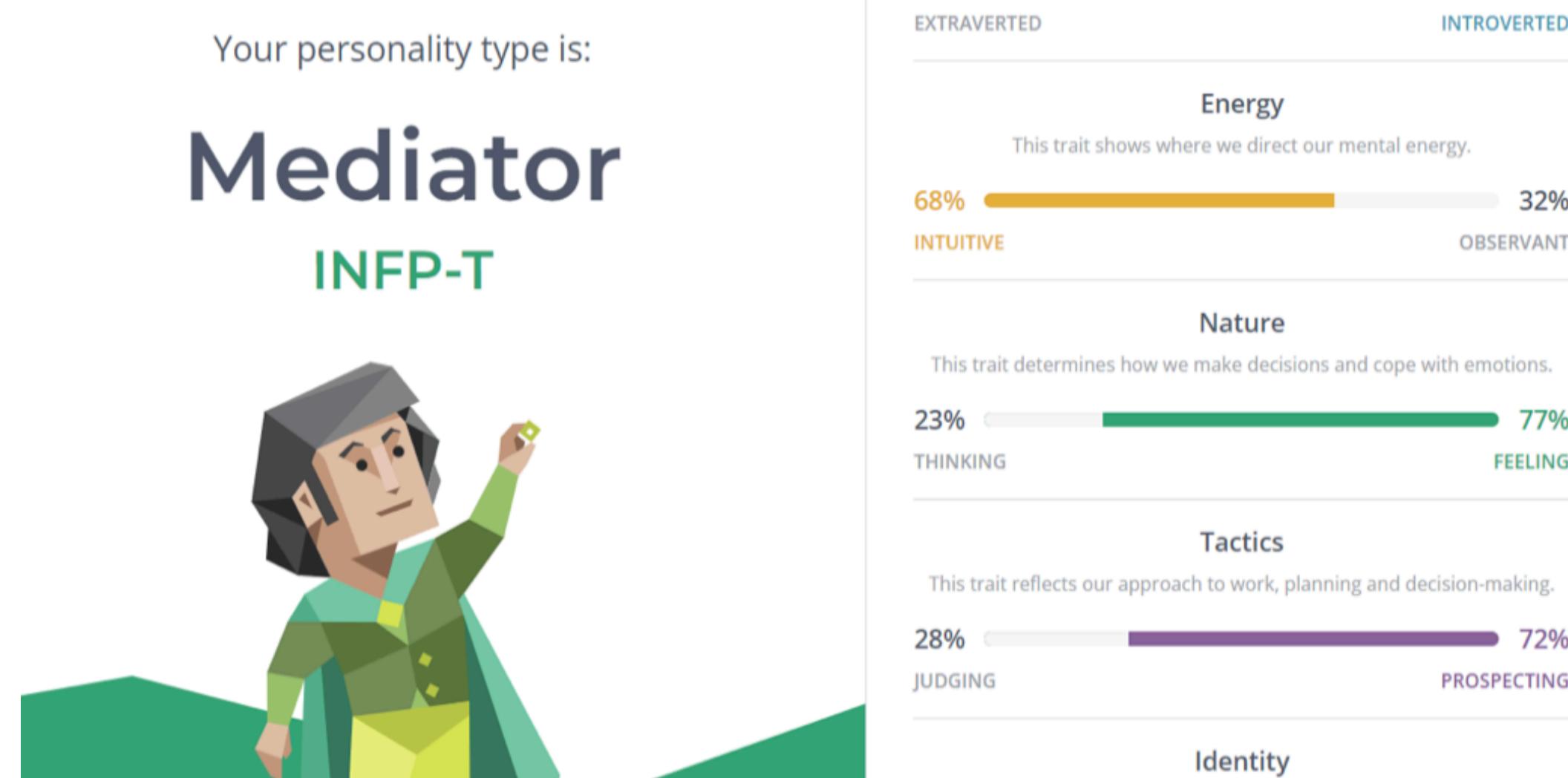
**I have worked for 7 years at Coles where I was developing a career there, starting as a casual for a few years then I moved onto a bakery manager at my first store and then only 6 months later I was promoted to a larger bakery. A year on from that and I was made Dry Goods (Grocery Manager) and was responsible for around 700k in sales per week, after 6 months in that role I decided a career in Coles wasn't for me so I started working towards this course in the meantime.**

**I have very limited IT experience at the moment but it's quickly growing throughout the duration of this course.**

**I choose RMIT for my studies as it is one of the leading IT programs in the country and it also offers the convenience of online study, being someone who works full time I can't attend standard university so I opt for the convenience of online. I expect to obtain a greater understanding of how computers work both internally and externally as well as a deeper understanding and competency of programming languages.**

## Personality Profile

**I completed the online test for MBPT and got the result of INFP this means that I am introverted with an intuitive type of energy with a feeling nature. The tactics that I use are prospecting and the identity is turbulent.**

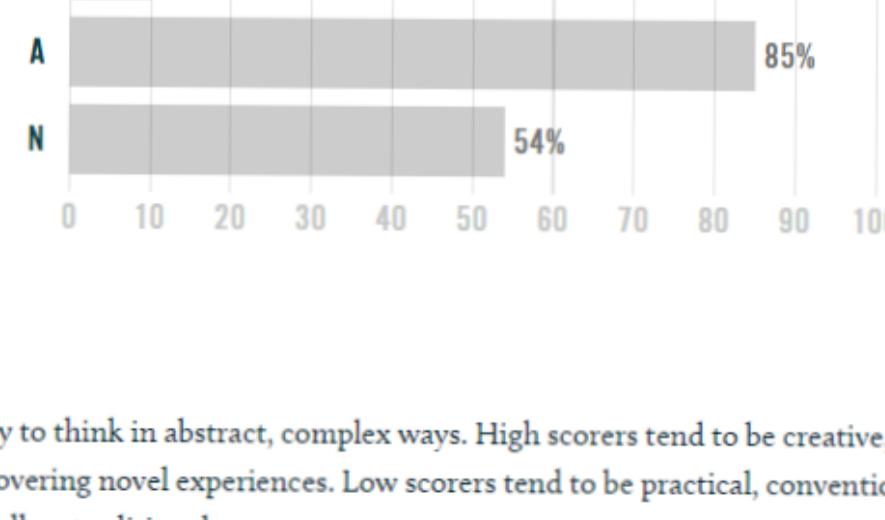


**I then completed a learning style quiz with a very split set of results: Auditory learning was 30%, visual learning was 35% and tactile 35%. From this result I learned that things that would help me the most would be visualizing that I hear, writing down key words ideas or instructions and importantly avoiding distractions during my study time. For the tactile side it suggests hands on learning and taking short sharp bursts of study periods as well as using a computer to reinforce learning through the sense of touch. In a team environment this could potentially clash with someone who takes a more structured approach to work, where they chip away at the work over longer periods of time instead of brief bursts of productivity, this would be overcome just by getting a better understanding of one another and create the understanding that people operate differently.**

**Lastly, I did a big five personality test at truity.com and it measured my personality to be OCEAN: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism.**

### Your Personality Trait Scores

This Big Five assessment measures your scores on five major dimensions of personality: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (sometimes abbreviated OCEAN). Check out your scores on each of the five dimensions in the graph below, then read on to discover what each score means.



#### Openness

Openness describes a person's tendency to think in abstract, complex ways. High scorers tend to be creative, adventurous, and intellectual. They enjoy playing with ideas and discovering novel experiences. Low scorers tend to be practical, conventional, and focused on the concrete. They tend to avoid the unknown and follow traditional ways.

Openness is strongly related to a person's interest in art and culture. People who are high in openness tend to enjoy the arts and seek out unusual, complex forms of self-expression. People who are low in openness are often suspicious of the arts and prefer to focus on more practical pursuits.

#### Conscientiousness

**From these tests I can deduce that I am an empathetic individual who works well as a team and doesn't cause problems or have personality clashes. Within a team environment I believe that this makes me a great asset as I would stay on focus and be able to contribute to the project through my own ideas and contributions as well as being able to bring the best out of others. I think when forming a team to mix with my abilities it would be great to get someone who is very structured with their approach, someone who is a bit more extraverted and more direct with their ideas and the direction they want to take things. I believe that opposites work well together and that is why a person with those attributes would be great alongside me so that we can cover all the bases for a great team.**

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## Sean Heighway

Student ID: s3925054



**My name is Sean Heighway, I'm 27 years old and since graduating high school in 2012 I've been working full time in the hospitality and management sectors. I've always had a keen interest in all things technology whether it be video games or even just the components used to build and run a computer.**

**I come from an all Australian only english speaking family, we are a small but close family who love getting together and celebrating all family milestones and special events throughout the year. As far as my education goes I completed my high school certificate in 2012 and since then have completed a couple of units in a bachelor of nutrition before changing to this IT course to follow my true interests. I love all things cricket and have been playing with the same group of friends for the last 10 years in our local competition and just can't get enough of it whether it be watching the games on tv or playing every saturday in summer.**

**My interest in IT came from a very young age from when I was about 6 years old I remember playing on a very old computer with my dad playing the first Warcraft game that was released and ever since then I've had an enormous interest in video games, how they work and how I can get involved in the creating of games. I would say my primary interest in IT is in the gaming sector of it however since learning about python and how to work and code in python I can say that I find it very interesting and satisfying to write a code and see it come to life!**

**I chose RMIT because one of my friends recommended them to me and after doing some research I see that it has an awesome reputation and can provide me with everything I need to succeed in a career in IT.**

**I expect to learn a lot about IT in particular coding and programming using different languages and how to use that to develop projects such as maybe games and fix real world problems.**

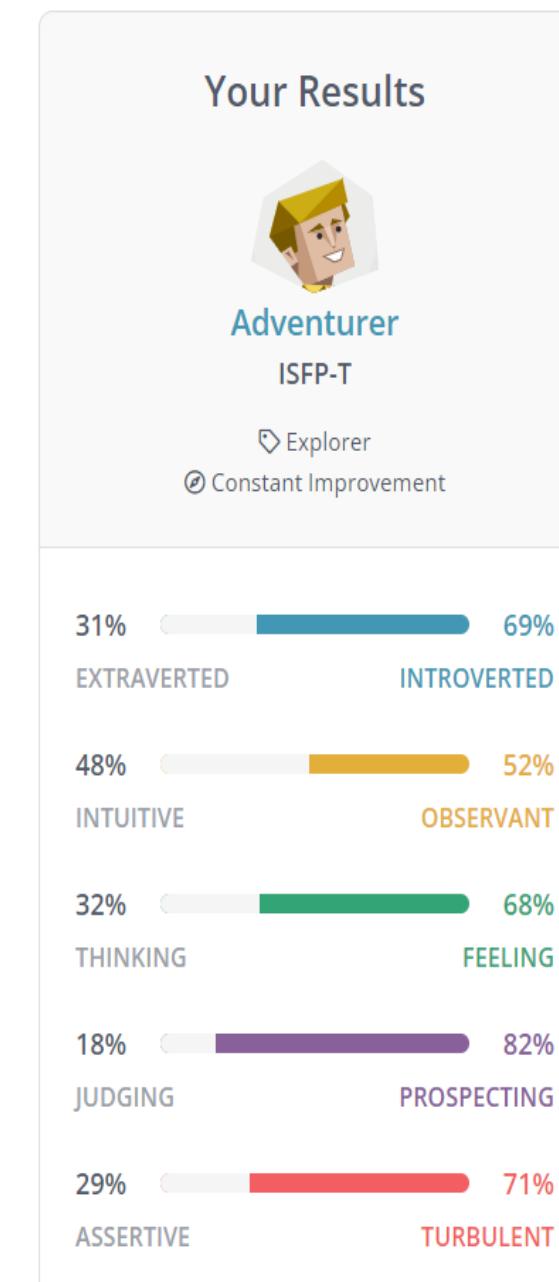
## Personality Profile

### Introduction

*I change during the course of a day. I wake and I'm one person, and when I go to sleep I know for certain I'm somebody else.*

BOB DYLAN

Adventurer personalities are true artists, but not necessarily in the typical sense where they're out painting happy little trees. Often enough though, they are perfectly capable of this. Rather, it's that they use aesthetics, design and even their choices and actions to push the limits of social convention. Adventurers enjoy upsetting traditional expectations with experiments in beauty and behavior – chances are, they've expressed more than once the phrase "Don't box me in!"



**My results for the myers briggs test gave me the ISFP result, saying that I'm introverted, observant, feeling and prospecting. The strength of the "adventurer" personality type are as follows; charming, sensitive to others, imaginative, passionate, curious and artistic. The weaknesses are; unpredictable, independent, easily stressed, competitive and fluctuating self esteem.**

**My results for the learning styles was that I'm a tactile learner; meaning that I learn by touching and doing things for myself so that I can get a grasp of what needs to be done.**

**I took a creativity test next and scored a 71.59 whereas the average score was 62.87 the graph was skewed more towards paradox and complexity. Paradox meaning I have the ability to both accept and work with statements that are contradictory and Complexity meaning that I have the ability to carry large quantities of information and be able to manipulate and manage the relationships between such information.**

**These tests mean that I'm a creative person that works well and understands the needs of others which would make me an ideal team player whilst also being competitive to help bring out both the best in myself and those in my team. When forming a team to work with I would look for other with similar personality types and natures so that we could gel together well and help each other be the best versions of ourselves as a team and deliver the best results possible. I would also look into not grouping up with people that don't respond well to a competitive nature. I believe the results based on previous experiences at jobs and social events are very valid and can be used to help form good partnerships for group projects.**

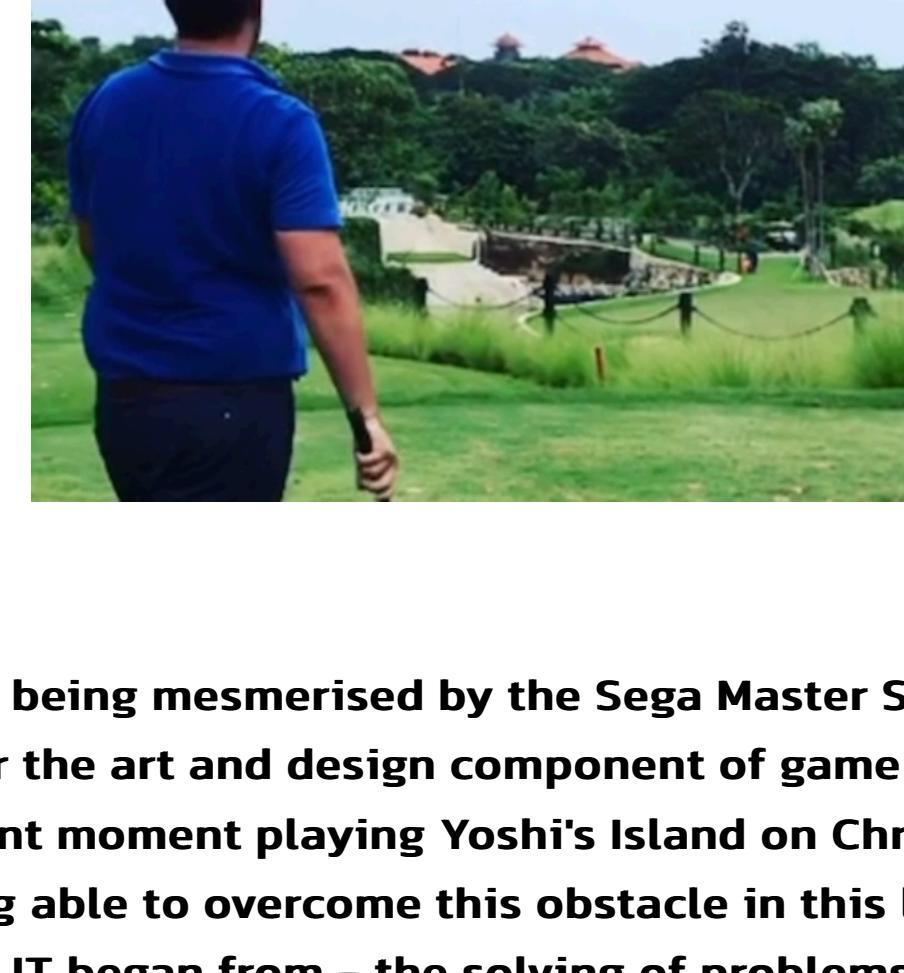
# THIRTY SEVEN

## Nelson Kun

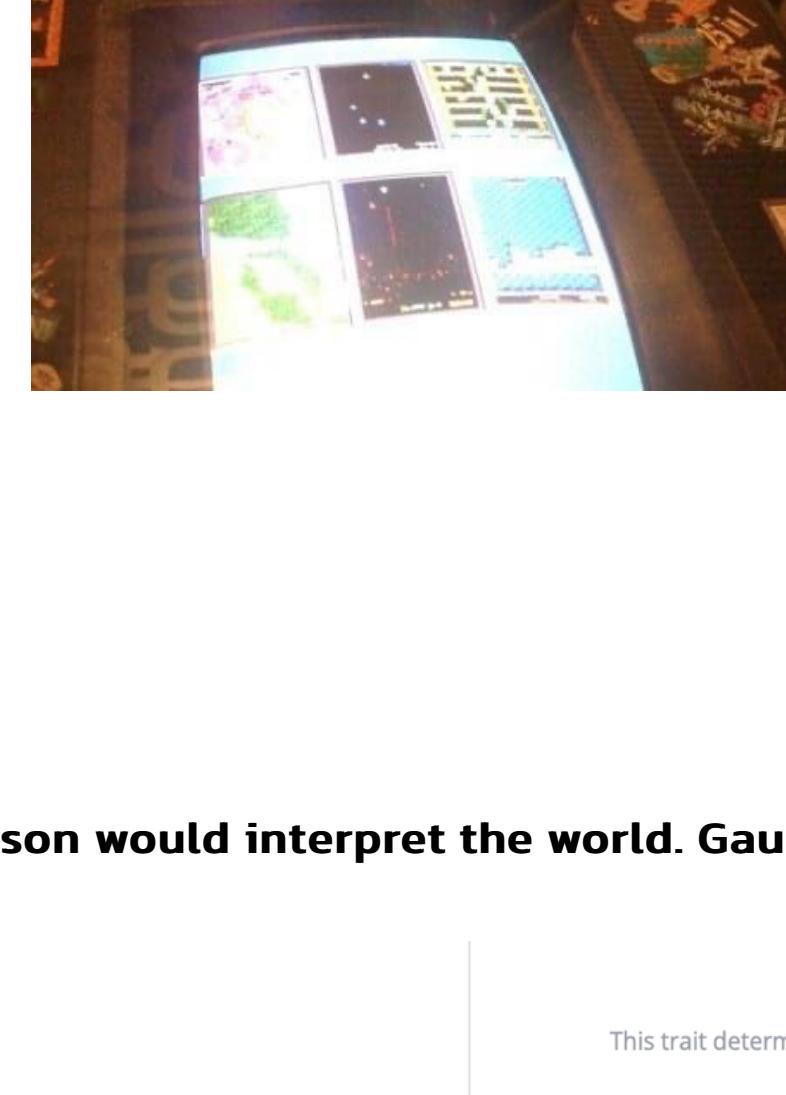
Student ID: s3941193



I'm an enthusiastic and positive individual that strives to do right by other people and also expect the same in return. I enjoy some sports, my hobbies range from playing golf to video games. I've spent the pandemic learning to broaden my culinary skills, developing my digital skills and learn new things and look forward to returning to the tropics, such as Thailand and Fiji. I was born in Melbourne and am descended from European migrants during the First and Second World Wars.

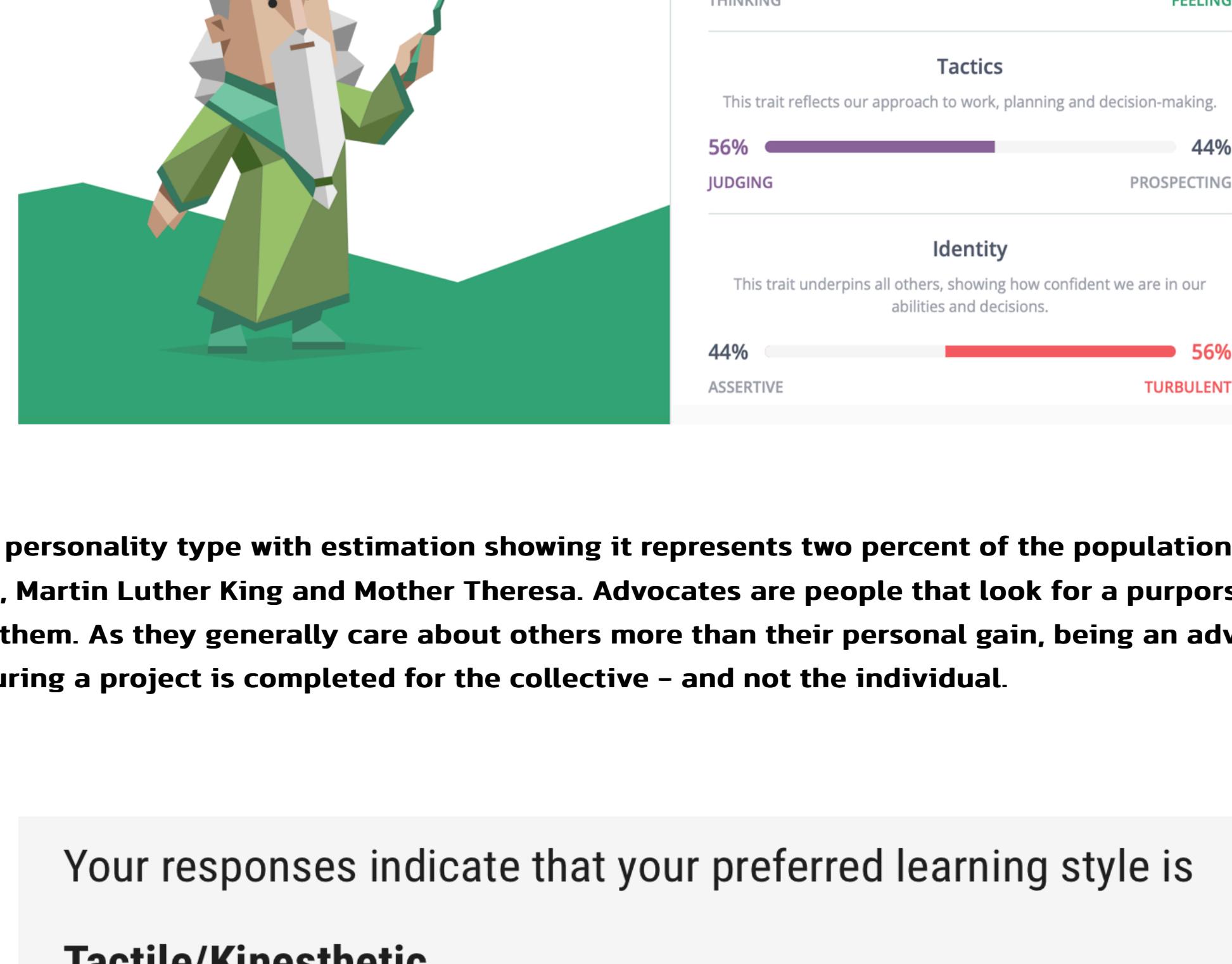


My interest in IT stems from a relatively young age, by being mesmerised by the Sega Master System in the early 90's and exhibiting sensational rage-quitting skills to my parents, and developing a love for the art and design component of game design due to the visual display of Yoshi's Island and Donkey Kong Country 2 on the SNES. I recall a significant moment playing Yoshi's Island on Christmas morning in 1995 and my family and I struggled to proceed from a certain point in the first level and being able to overcome this obstacle in this level holds dear in my memory that will always return me back to that moment and where my real interest in IT began from – the solving of problems. Playing these games beyond what would be reasonable hours of an eight year old, I felt I had discovered my passion which I had never professionally realised yet and strive to follow a path and that is what motivated me to enrol at RMIT and study Information Technology – better late than never!



## Personality Profile

The Myer's Briggs test is an individual analysis how a person would interpret the world. Gauging from these results I'm a relatively balanced individual, classed as an advocate or as "the counselor".



It's regarded as the most rarest personality type with estimation showing it represents two percent of the population, and being linked to notable figures such as Nelson Mandela, Martin Luther King and Mother Theresa. Advocates are people that look for a purpose and have the sense they don't always fit in with those around them. As they generally care about others more than their personal gain, being an advocate is something that would be reliable within a team and ensuring a project is completed for the collective – and not the individual.

Your responses indicate that your preferred learning style is

**Tactile/Kinesthetic**

Being an individual that learns in this method provides a confirmation bias that I am an individual that requires relatively constant stimulation to learn, as I do prefer being hands on, engaged and having the opportunity to demonstrate those learnings. Learners under this style tend to get bored easily and restless and require movement in order to learn, which relates back to the way I learn and practice, as well as an interest in sports and physical activity. Translating this towards a working environment is reflective of the way I conduct myself as I would consider myself very hands on, from actively engaging with clients, mentoring new employees to facilitating projects within the organisation as a project lead.

## Your Personality Trait Scores

This Big Five assessment measures your scores on five major dimensions of personality: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (sometimes abbreviated OCEAN). Check out your scores on each of the five dimensions in the graph below, then read on to discover what each score means.



The Big 5 personality test takes into account factors that form an individual's personality and how they interpret the world. Based on this test, being open and agreeable are the strongest factors in my personality, which makes the working environment cohesive and easy to work with in a team setting. This provides optimal momentum in being able to navigate dynamics that may provide barrier in completing work required and being agreeable provides that further understanding and a sense of altruism which is important in an effective team environment, and relates back to being an advocate under the Myers Brigg's model.

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## Our Ideal Jobs

Entering this unit of study collectively it looks like we have similar passions with motivations stemming from video games, it would be somewhat preconceived to assume that the skillset would have our individual roles be affirmed of high value in any sector of the IT industry, with everyone sharing the requirement of developing a programming skill set, as well as general common sense employability skills such as communicating with others and following managerial direction. Due to the benefit of the foundation core programming skills they are relatively transferable across multiple fields, whether it is video game development or database management, at the center they are essentially – software.

Team Member	Ideal Job	Where We Are	What We Need	How to Get There
Keaton Ferber	Intermediate C++ /Unreal Game Developer	Studying Introduction to Information Technology	<ul style="list-style-type: none"> <li>- Qualification in related field (e.g Computer Science, Software Engineering)</li> <li>- Good programming skills using C++</li> <li>- Good technical skills using unreal engine or other game engines</li> <li>- Experience with source control systems, preferably perforce</li> <li>- Experience working in a team of other programmers</li> </ul>	<ul style="list-style-type: none"> <li>- Complete degree in related field.(Exact degree not yet decided)</li> <li>- Focus of game development electives while studying degree</li> <li>- Gain experience by doing an internship as a game developer</li> </ul>
Dean Heighway	Mid-Senior Encounter Designer	Studying Introduction to Information Technology	<ul style="list-style-type: none"> <li>- Have 3 years of game development experience on a shipped product.</li> <li>- Have two years of content creation experience(encounter design, level design)</li> <li>- Passion for gaming especially MMOs as well as a passion for making games.</li> </ul>	<ul style="list-style-type: none"> <li>- Get a job as a junior developer or intern to gain experience in the field and get the required 3 years of experience in both content creation and game development.</li> <li>- Learn C++ and an understanding of Lua as these are the required languages for the role.</li> <li>- If organised correctly I could be in a role like this within 6-10 years.</li> </ul>
Sean Heighway	Mid-Senior Encounter Designer	Studying Introduction to Information Technology	<ul style="list-style-type: none"> <li>- A minimum of 3 years of game development experience, including midlevel or senior experience on a shipped product.</li> <li>- A minimum of 2 years of content creation experience (encounter design, level design or other)</li> <li>- Excellent written and verbal communication skills</li> <li>- Highly self-motivated and collaborative</li> <li>- Able to work creatively in a demanding team environment</li> <li>- Experience playing through many dungeons or raid encounters</li> <li>- Absolute passion for playing and making computer games</li> </ul>	<ul style="list-style-type: none"> <li>- Enter employment as either contracted employee or an intern at a local organisation such as Big Ant Studios.</li> <li>- Enrol into programs to create a foundation in creating levels, encounters, enlisting in unpaid experience and engaging with the community, such as on 'freegamedev.net'</li> <li>- Demonstrate workplace competencies by maintaining relationships with previous employers.</li> <li>- Develop a small and manageable video game side project either individually or as part of a team</li> </ul>
Nelson Kun	Mid-Senior Unity 3D Developer	Studying Introduction to Information Technology	<ul style="list-style-type: none"> <li>- Have worked on two shipped titles</li> <li>- 3 years minimum full time Unity experience</li> <li>- C# knowledge</li> <li>- Networked game experience</li> <li>- Knowledge of 3D space</li> </ul>	<ul style="list-style-type: none"> <li>- Gaining experience working at a game development company. This can constitute experience working freelance for an online project.</li> <li>- Being part of a company where you work on two game releases. This can be achieved through internship, contractual hire or specialised skill hire.</li> <li>- Supplement skill set by taking part in accredited programs that specialise in Unity development, C# programming, etc.</li> <li>- Complete relevant tertiary level of study, for example - Bachelor of Design (Games) is offered through RMIT, in order to strengthen employability.</li> <li>- Craft and exhibit a state of the art online digital portfolio to showcase artwork, development diaries and briefs of concepts and execution of those concepts to emphasise competencies.</li> </ul>

It is almost certain that the members of Thirty Seven would follow a similar path in order to pursue the ideal positions they are vying for. As it comes to the point of needing to be experienced in relatively complex programming languages, the basis of which learning Python – as being undertaken also at RMIT through Introduction to Programming, forming a foundation as to which the students are able to form the necessary groundwork in that level.

Assessing the content it can be validated that although the same career goals may align individually, it would be foolish to think that these goals would not change, as technology evolves so do the demands of them. Where competencies in C++/C# programming being of importance in these fields, they are relatively transferable to other sectors of the industry. Just like any industry, experience is something to be gained, whether on an employed or voluntary basis, the route is clear in the form to exhibit to prospective employer. It can also be classed as to how some game studios form independently, as historically there are firms established amongst friends and students in the past, such as Rare and Game Freak.

To determine real strength to a group portfolio, a hypothetical could be that the team of Thirty Seven could form a joint partnership as a means to putting into practice the knowledge gained from studying a Bachelor of Information Technology or relatively similar. It makes sense to use the relationships we have established as an opportunity to work together based on this assignment could be put into an effective form of work where we manufacture a product, legitimising experience and count towards the criteria required for one such position outlined in the table above. Considering that our shared interests with the interest of Information Technology, and a particular drive for video games and skillsets required part of it, it makes sense to be of consideration.

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## Tools

Here the tools that contribute to the planning and presentation of the group assignment for Thirty Seven can be found. This page has the detailing of the group's GitHub repository, a downloadable copy of the group's PDF report, information pertaining to the group's meet ups on Teams, such as the session recordings, the minutes and actions from the agenda's of each meeting can also be found in their corresponding folder. The group's contribution form, GitHub contribution link and references use for our reports are also found here.

- [GitHub Repository](#)
- [Group Website](#)
- [Link to Teams for Thirty Seven](#)

### Meetings>

- 07/04/22 [Agenda](#) | [Recording](#) | [Actions](#)
- 12/04/22 [Agenda](#) | [Recording](#) | [Actions](#)
- 13/04/22 [Agenda](#) | [Recording](#) | [Actions](#)
- 14/04/22 [Agenda](#) | [Recording](#) | [Actions](#)
- 20/04/22 [Agenda](#) | [Recording](#) | [Actions](#)
- 21/04/22 [Agenda](#) | [Recording](#) | [Actions](#)
- [Contribution Form](#)
- [Self & Group Reflection](#)
- [GitHub Contribution](#)
- [Reference List](#)

It is somewhat difficult to really measure by percentage the volume of work done by each member, so it is best to outline the roles and responsibilities of each member, which in a sense reflects a working environment within an organisation regardless.

### Keaton Ferber:

In addition to completing their individual profile, Keaton compiled a report on Mark Zuckerberg, on Cyber Security and researching the extensive skills that would be required for the Project Idea and formed the Skills component.

### Dean Heighway:

As Thirty Seven elected to choose Dean Heighway's project idea from assignment one, it was in the best interest of the group for them to provide the Overview and Motivation of the project idea. They worked with Nelson to design the logo to potentially use for the Project Idea - ShopMate. Dean also provided reports on Machine Learning, Elon Musk and Jeff Bezos. They also provided the summary of their team profile. It was fitting they also developed the Outcome component for the Project Idea.

### Sean Heighway:

Sean was added to Thirty Seven late due to the nature of the structure of the group assignments but contributed at an equivalent level, adding their work to the team profile, reporting on Robotics and on Vitalik Buterin.

### Nelson Kun:

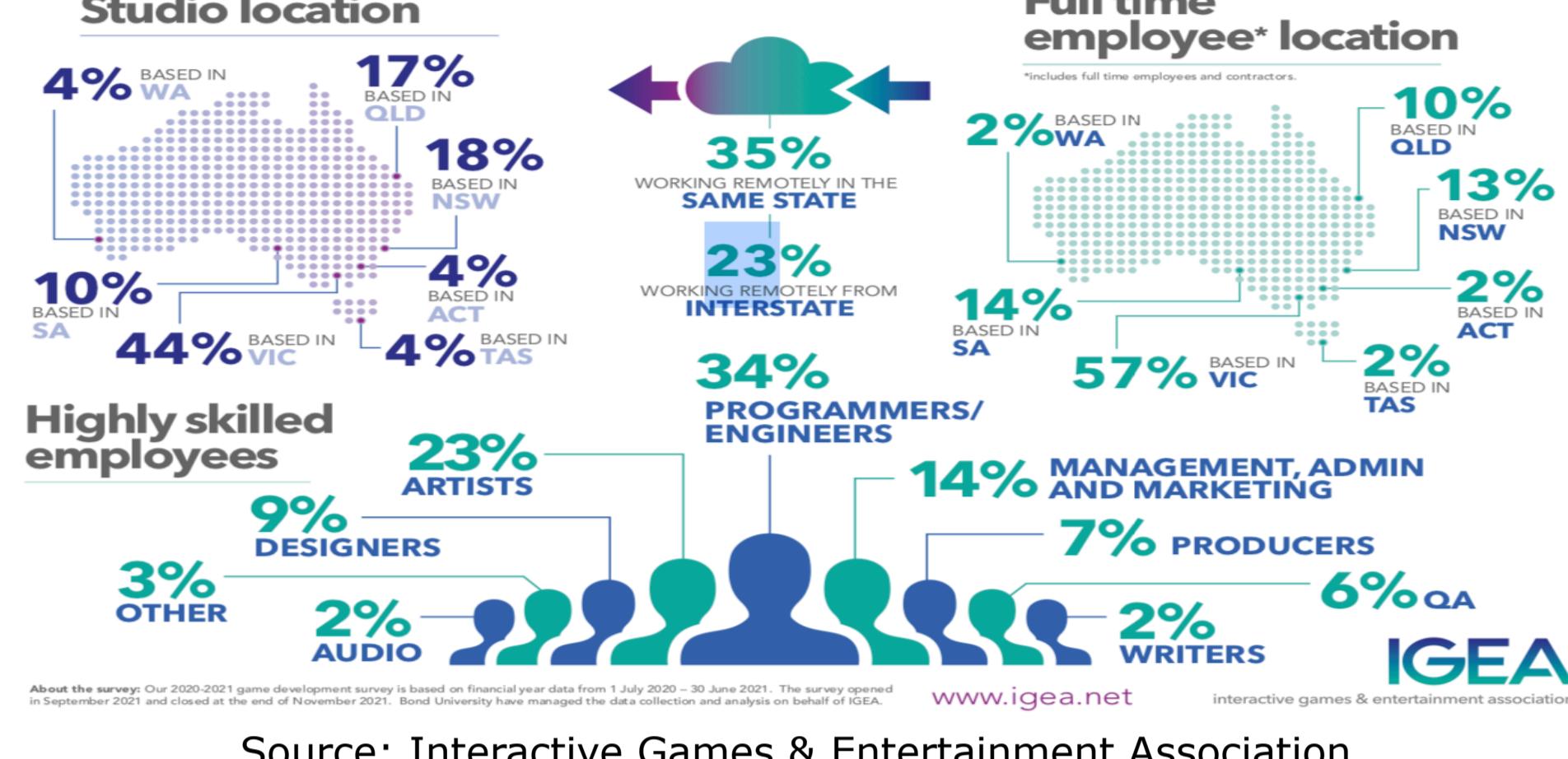
Nelson, in addition to Dean and Keaton was one of the original members of the group and designed the website from the ground up. Time was put into meticulously ensuring the design was consistent on each page, with every link working perfectly and a seamless navigation menu bar. They provided reports on Changpeng Zhao and Blockchain & Cryptocurrencies. They researched the Tools and Technologies to be used for the Project Idea and compiled information relevant to Industry Data.

When working as a team, it is important to work to each others strengths so on that note it is understood that our audit trail on github isn't necessarily the most fair display of what work was done by who. The group has worked well to endeavour what we feel is a positive result through the use of technologies available, such as Teams and Discord for communications. Our meetings show that we had an enlightening dynamic and one that is rare to find even of the most optimal working environments. (Note: Include your MS Teams information, links, meeting recordings, etc. in this section and in the GroupID-MS.PDF)

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## Industry Data

After analysing our individual ideal positions for employment, it can be assessed that uniquely we share similar goals which is driven from our shared passion of video games, because of this we report on industry data that is relevant to game development. According to data by IGEA, programmers and engineers are the highest in demand roles in Australia's gaming industry – representing 34% of the workforce, with artists representing 23%, managers, admin and marketing 14% and the remaining workforce is divided amongst designers, producers, quality assurance, sound design, writers and other skills (IGEA, 2021). Given the nature of the positions that the team of Thirty Seven have aspirations for, outlining competencies and experience in programming, they would fit the mould in the most populous sector of the gaming industry.



Source: Interactive Games & Entertainment Association

261312 Developer Programmer	S	S	S	S	S	S	S	S	Strong
261313 Software Engineer	S	S	S	S	S	S	S	S	Strong

Source: National Skills Commission

According to industry data supplied in the Skills Priority List by the National Skills Commission, software engineers and developer programmers have not only a national shortage at present but a strong demand in the workforce in the future, with the job market outlook to show a 30% increase over the next five years (Seek, undated). The two roles are similar yet different, where a developer and programmer are classed as a more creative force in the workplace, they would focus on one part of the development, whereas software engineers have a wider scope of a development and following principles in engineering. Regardless of the size of the project – programmers, developers, software engineers all share one thing in common and that is writing in one of the many programming languages, be it Python, C++ or Javascript as examples. Developers, programmers and software engineers use skills relevant to writing code, debugging it and providing documentation as to its operation.

## IT Specific Skills

It felt it was best to present the IT specific roles required for a Developer, Programmer and Software Engineer as they have programming part of their core job criteria, in addition to highlighting those roles that translate to each position so it is easier to pinpoint comparisons. This data was sourced from Seek.com.au.

Programmer	Developer	Software Engineer
<ul style="list-style-type: none"> <li>- Software Development</li> <li>- Javascript Programming</li> <li>- SQL Queries</li> <li>- HTML</li> <li>- C# Programming</li> <li>- Python Programming</li> <li>- CNC</li> <li>- Computer Science</li> <li>- Engineering Drawing</li> <li>- Mathematics</li> <li>- CSS</li> </ul>	<ul style="list-style-type: none"> <li>- Java Programming</li> <li>- Javascript Programming</li> <li>- Amazon Web Services</li> <li>- HTML</li> <li>- C# Programming</li> <li>- Python Programming</li> <li>- Node.JS</li> <li>- Computer Science</li> <li>- Microservices</li> <li>- Typescript Programming</li> <li>- Anuglar</li> <li>- API</li> <li>- Git Version Control System</li> <li>- Test Driven Development</li> <li>- DevOps</li> <li>- .Net Core</li> <li>- Microsoft Azure</li> <li>- Rest API</li> <li>- CSS</li> <li>- PHP Programming</li> </ul>	<ul style="list-style-type: none"> <li>- Java Programming</li> <li>- Javascript Programming</li> <li>- Amazon Web Services</li> <li>- C++ Programming</li> <li>- C# Programming</li> <li>- Python Programming</li> <li>- Node.JS</li> <li>- Computer Science</li> <li>- Microservices</li> <li>- Typescript Programming</li> <li>- Anuglar</li> <li>- API</li> <li>- Git Version Control System</li> <li>- Test Driven Development</li> <li>- DevOps</li> <li>- Linux</li> <li>- Microsoft Azure</li> <li>- Rest API</li> <li>- CSS</li> <li>- Kubernetes</li> </ul>

For Programming, there are a set of specific personal skills that employers generally look for, but it can be assumed that these attributes are what talent acquisition managers are searching for when recruiting for developers and software engineers as well. These attributes are numeracy, thoroughness, time management, autonomy, multitasking, teamwork, computer literacy and willingness to learn, and it goes without saying that majority of employers across most industries are searching for these qualities.

Individually we are at a point where those specific skills are absent for those roles, and it's with anticipation those gaps will be filled. However, to counter those shortcomings the team at Thirty Seven can declare with confidence that those personal attributes are characteristics that each member has, given the nature of work they have carried out in their employment history and particularly when it has come to collaborating on this group assignment.

As characterised by the nature of the work carried out to complete this group assignment, it can be reasonable to assume that our ideal jobs in the game development field, either as either a software engineer, developer or programmer, can be conducted effectively remotely. This is evidenced that in these fields, as 58% of employees work remotely and this is partly due to the nature of work performed significantly through the use of computers. Individually there is collective experience where it comes to comparing independent generic skills and specific skills it can be suggested that each member aligns themselves towards their passion and interest, as stated in [Ideal Jobs](#), it would be naive to assume that our exact ideal position would be where we eventuate, but perhaps in the vicinity to the professions explored in this section.

# THIRTY SEVEN

## Day in the life of Jeff Bezos



### Founder of Amazon and Blue Moon.

#### **Q: What kind of work is done by the IT professional?**

Jeff Bezos as a start is a computer engineer however as his career has developed he is no longer in a position where he commits large portions of his time to this endeavor. Jeff Bezos is the founder of Amazon and Blue Moon as well as owning the Washington Post. Amazon is the forefront of e-commerce, the leader in online shopping particular in the US paving the way with its innovative systems and speedy deliveries. Blue Moon is a space travel organization where the goal is to make space travel more affordable for the average person.

#### **Q: What kinds of people does the IT professional interact with? Are they other IT professionals? Clients? Investors? The general public?**

Bezos has stepped back a bit from the CEO level of his companies however he is still the major influence in decisions made by these companies. He interacts with stakeholders and people other high level managerial staff in his businesses to share ideas and bring new concepts to the table. He has a rule for his meetings he describes as the two-pizza rule, this means that meeting should not be so large that two pizzas will not be enough to feed everyone at the meeting. He also wants no power point presentations in meetings, meetings should be an open floor style where everyone involved can share their thoughts and collaborate on things so that all input is heard and taken on board.

#### **Q: Where does the IT professional spend most of their time?**

Bezos believes in a very balanced work-life scheduling spending a very even split between family and work. His thoughts behind his time commitment to work is wanting complete mental clarity to make the best decisions possible. He describes his roles as a CEO is to make a very small amount of very important decisions and in order to optimize this, he needs complete mental clarity and as much productivity as possible while working. He values time at home with his family and his sleep as much as his time at work and believes that this is the key to his success in his field.

#### **Q: What aspect of their position is most challenging?**

Bezos has described the most challenging part of his work finding himself in the right mental state to make sharp accurate decisions, he believes that if you aren't mentally sharp, your decision making can be influenced to things that you don't want or aren't going to be successful which is why he employs the idea that he needs a minimum of eight hours sleep and will try to do his most mentally challenging tasks in the morning around 10am when he is most sharp. The other window where he believes is the peak of his productivity is early evening and he will also do a lot of his work during this productive period.

# THIRTY SEVEN

## Day in the life of Vitalik Buterin



### Co-Founder of Ethereum.

#### **Q: What kind of work is done by the IT professional?**

Vitalik Buterin is the man behind the cryptocurrency "Ethereum". He is responsible for the smart contract capabilities of Ethereum and the applications of DeFi and more. In 2013 Buterin dropped out of college and started working on the white paper to develop Ethereum.

#### **Q: What kinds of people does the IT professional interact with? Are they other IT professionals? Clients? Investors? The general public?**

The people that they interact with are in fact other IT professionals which came together to form "the fellowship of the ring" to help create Ethereum one of these people was Charles Hoskinson who was a math genius joined in 2013 to help Buterin create Ethereum but his time on the project only lasted a few months because of his poor relationship with the other founders, Hoskinson later went on to be the founder of the Cardano blockchain. Another notable person that Buterin worked with was Gavin Wood who is a computer scientist that joined the project as an Ethereum coder in 2014 and made the first test network for Ethereum. The rest of the developers are; Joe Lubin, Anthony Di Iorio, Mihai Alisie, Jeffrey Wilcke, and Amir Chetrit all of which also have a background in IT.

#### **Q: Where does the IT professional spend most of their time?**

Vitalik spends most of his time travelling and being a "digital nomad" working from many different locations but mainly in the North America region of the world, however he mentions how much he loved living in Singapore also and that Berlin also makes the top of his list of favourite places in which he has lived.

#### **Q: What aspect of their position is most challenging?**

Vitalik mentions that the challenges he faces are those that every cryptocurrencies face and he specifically mentions the following, Building unique human identities on the blockchain, Post-quantum cryptography, creating decentralized governance mechanisms, defending proof-of-stake networks and the oracle problem.

# THIRTY SEVEN

## Day in the life of Elon Musk



**CEO of Tesla, Space X.**

**Q: What kind of work is done by the IT professional?**

Elon Musk is one of the most successful entrepreneurs in the world, he is the CEO of Tesla and Space X working primarily in the development of artificial intelligence (AI). His workweek is reported to be 8-100 hours per week split between his two main companies. He is known as an extremely ambitious man with a primary goal of colonizing mars through his work with SpaceX.

**Q: What kinds of people does the IT professional interact with? Are they other IT professionals? Clients? Investors? The general public?**

Elon is one of the busiest people in the world, his meeting schedule is extremely time consuming and hectic, meeting with people from all aspects of life on a daily basis. He communicates heavily with his teams to try and make sure that his vision for his products is kept to his standard as he is still at heart an engineer and wants his products made the way he designed it. As well as heavy communication with his team Musk also spends a lot of his meetings interacting with stakeholders in his company as well as a lot of his team communicating his vision and goals to the public. Overall, Musk is an extremely dedicated and focused individual who once starts work on a project he is passionate on cannot control himself from devoting all of his time to the project.

**Q: Where does the IT professional spend most of their time?**

Most of Musk's time is spent in three different spots, the first is meetings. Musk spends a large amount of time in meetings so much so that he has organized the structure of his meetings implementing a set of rules to be followed, the first rule is to keep meetings to a small number of people in order to keep productivity. The second rule he has is that if you don't have anything to contribute to the meeting then leave. This rule is not meant as a disrespect it is just simply in place so that if you have nothing to offer to the meeting you are wasting your own time and others in the meeting, he would rather that time be spent more productively. Another portion of his time is spent designing and engineering new products as well as developing new features for his existing products. Musk is still an engineer at a base level and as his companies are his own, he wants to ensure that the products produce the same vision that he has in mind when developing the products. Musk devotes a fair portion of his time to the development of his products. Finally, almost every day he works Musk likes to spend around an hour at the end of the day on the factory floor to make sure production is running efficiently and to handle any problems that may be arising. As well as this he likes to oversee production to find any efficiencies that could be implemented to smooth out the process.

**Q: What aspect of their position is most challenging?**

Musk is an extremely public figure, publicly noted as one of the wealthiest people in the world. His goals and ambitions are well known by all and one of the challenges that arise when this happens is everything he does is under the microscope. Due to his heavy workload a lot would assume that the hours he puts into his work is the challenge however Musk is quite the opposite of this stating that when he is passionate about a project, he finds it easy to lose himself in it and spend freakish amounts of time on a certain project in a small amount of time.

# THIRTY SEVEN

## Day in the life of Changpeng Zhao



### CEO of Binance.

Changpeng Zhao, is the founder of and runs Binance, one of the worlds most popular Crypto Currency trading platforms in the world. He is an active social media influencer, predominately on Twitter and is regarded as a centric figure in the blockchain and crypto currency industry.

Part of his view as CEO, and the key driver of blockchain and cryptocurrencies is the decentralised aspect of the industry – is that there is a need for a centralised exchange, which is what Binance is. His belief is because there needs to be a way for the flow of money towards a cryptocurrency by means of using traditional currency, alas fiat.

Given the nature of the workplace has evolved, particularly due to COVID his belief is that productive and meaningful work can be done not necessarily at an office or a company's headquarters but remotely from home or anywhere in the world.

#### **Q: What kind of work is done by the IT professional?**

Changpeng wakes up knowing that the day will be different to the last but that it won't be boring to the least. He commences his day of work by checking his phone for messages from fellow employees and schedules according to any agendas that may be required to be set, in doing so it's important in his role as CEO to be adaptive. Although a CEO, he will still provide a level of customer service. There was a time he would limit his audience to LinkedIn where it came to providing an update to the customer base, but as time has marched on it became more of a necessity to be transparent on social media such as Twitter as those in the crypto sphere would consider them to be an influencer. Ensuring their day is effectively spent running the organisation they would schedule no more than three meetings during the day, where a meeting would run for 15-, 30- or 45-minute intervals. As a CEO he always finds the value of continuous learning, whether being a language or a new facet to understand.

#### **Q: What kinds of people does the IT professional interact with? Are they other IT professionals? Clients? Investors? The general public?**

As part of their role as CEO, Changpeng interacts with a broad spectrum of individuals in not just within their organisation but the macro environment as well. From engaging with customers on Twitter to the President of El Salvador, Nayib Bukele – who has been a prominent figure in championing for legitimising Bitcoin as legal tender and driving adoption globally, Changpeng maintains consistent messaging about the importance of decentralised finance.

#### **Q: Where does the IT professional spend most of their time?**

As COVID came into being and a pandemic been declared, the norm of working from home has become more prevalent, as it's demonstrated that effective work can be done remotely. Binance has multiple offices located worldwide, but Changpeng likes the idea of being able to work from anywhere, as they find the accessibility of Airbnb and Uber to explore new cities and help further expand the company and decentralised finance's reach.

#### **Q: What aspect of their position is most challenging?**

The challenging part of their role operating a popular cryptocurrency exchange is catering to the expectations of their community – as the frequent request to listing a certain project holds the prospective customer's motive to make a significant financial gain whereas Binance's core values are about the quality of the project, and given the volume of projects and tokens that are created, only 0.01% of projects actually end up being listed on the exchange, on top of the challenges with catering to the interests of its customers, more serious challenges face Changpeng Zhao and Binance are regulations. The definition of what whether cryptocurrencies can be determined as a security by the SEC has really hampered the industry in a scope to really class it as what some call a ponzi scheme, and to move away from that stigma. Considering that anyone can mint a token on the Binance Smart Chain damages the legitimacy of any project and it asks the question if it's because of this reputation of "less than desirable coins" being easily accessible and created on its network, does this damage its seriousness of an institution?

# THIRTY SEVEN

## Day in the life of Mark Zuckerberg



### CEO of Meta Platforms.

#### **Q: What kind of work is done by the IT professional?**

Mark Zuckerberg is the chairman, CEO and controlling shareholder of Meta Platforms. He co-founded the company formally known as Facebook Inc in 2004. As the CEO of Meta Platforms, he is responsible for setting the overall direction and production strategy for the company. Mark also says even when he's not working he spends most of his time thinking of ways to improve their platform.

#### **Q: What kinds of people does the IT professional interact with? Are they other IT professionals? Clients? Investors? The general public?**

As the CEO of Meta Mark interacts with a variety of people. He interacts with many employees of Meta. He also has meetings with potential investors of Meta Platforms. As the head of a social media company, he is a public figure. He works with his social media team to interact with the general public on social media. Mark has met with many high-profile people, he has had meetings with the Pope, President of the United States, Vin Diesel and the French President.

#### **Q: Where does the IT professional spend most of their time?**

Unlike most CEOs of big tech companies Mark seems to have a healthy work life balance. He starts his day at 8am and the first thing he does in the morning is checks Facebook, Facebook messenger and what's app. His morning routine consists of either going for a run or working out. He says he tries to do this at least week times a week. Mark says he only works 50-60 traditional hours at Facebook. However, he also says, "I spend most of my time thinking about how to connect the world and serve our community better, but a lot of that time isn't in our office or meeting with people or doing what you'd call real work.". His schedule varies greatly when he is traveling, whether it to meet the Pope or the President of the United States. Between all this mark still finds time to spend with his family.

#### **Q: What aspect of their position is most challenging?**

The rebrand from Facebook to meta has been challenging for Mark and the company. A whistle blower who was a former Product Manager at Facebook expressed concerns that there may be a repeat of previous mis use of Facebook users' data. She has express concerns that Facebook users don't really have a choice on whether Facebook can or can't spy on you, you just must trust them. A big challenge ahead of meta is whether or not they can gain the trust of the public regarding their upcoming metaverse technology, and all the encompassing data that is required to power it.

# THIRTY SEVEN

## Blockchain & CryptoCurrencies



### What does it do?

The blockchain is what has come to be referred to as a distributed ledger technology, which allows a sharing of digital data that has been replicated and validated around the globe. Simply put, the blockchain is a technology that is a database that has no central authority of ownership, being a completely decentralised platform where algorithms are calculated and validated by either single or multiple processor units, to ensure a record has not been changed or hacked and is authentically unique. It is viewed as a digital ledger for transactions carried out by many cryptocurrencies, which are a form of digital currency used in place of traditional forms of currency. Cryptocurrencies are generally viewed as a highly speculative, high risk investment and has had the stigma associated with online black markets and criminal organisations since Bitcoin's inception, which its initial release was early 2009.

As time progresses, more transactions are carried out on the blockchain, requiring more complex algorithms to be computed by a network of systems, creating what is called a hash to ensure the data being input into the blockchain isn't fraudulent - however this process is more casually known as mining. Mining cryptocurrencies require computing power that would traditionally be provided by individual users, but as the processing requirements become more complicated to validate the transactions to the blockchain, the work has become partitioned to numerous contributors, where adding one transaction to the blockchain would reward the operator with hypothetically 25 Bitcoins back in 2009, those 25 would therefore be divided upon more users that contribute to adding that transaction to the blockchain if it were done today, this is partly due to the nature of how many Bitcoin's are in circulation, the power required to validate the transaction and how many miners there are.

Where blockchain and cryptocurrencies go in the future is anyone's guess, as the scalability in projects that are available to consumers have exploded due to the increased interest of the technology – and this is partly due to the financial reward and not what the technology offers. There are paired utilities that when Bitcoin came into being wasn't realised even recently in 2017 when non-fungible tokens, also known as NFTs, arrived onto the scene. The first prominent NFT project that came to life were the CryptoPunks on the Ethereum blockchain. It was designed to celebrate the punk rock lifestyle, as a collection of ten thousand images that shared a similar design style but they were all unique and can be easily described as a digital collectible, and in sense is where evidence of physical assets can be stored, such as a certificate of title of a property or something as basic as a receipt for buying a cup of coffee. It's been hypothesised that there will be a time where the traditional stock market will be succeeded by a blockchain stock market, where the authentication of transactions with buying, selling would negate the need of having a central authority brokering buy and sell orders, as was seen when Robinhood, a centalised brokerage platform, stopped buy and sell orders of the shares for GameStop early last year, prompting an outcry and embarrassing public ridicule of Wall St.

The way blockchain, cryptocurrencies and NFTs are processed today may be different in a decade's time. As the way we generally view computers would be referred to as classic computing, where a task is carried out in what we perceive as a reasonable timeframe on the most current and up to date graphics card, quantum computing may make those tasks complete where no time has passed or negate the need for such tasks to be done in the first place. The beautiful thing about this technology is that its intended use is to provide a truly autonomous, decentralised form of doing business, where there are no outside interference that have ulterior financial motives and the way that is ought to be achieved can't be determined based on the way technology evolves at any pace.

### What is the likely impact?

Just like digital disruption began with the dot com boom, with small businesses dying out because they didn't have a website, the same could be said for businesses that don't adopt to the blockchain. As more and more adoption occurs, there will be more people looking to spend their cryptocurrency and the benefit of blockchain technology provides impeccable record keeping (Brown, 2022). It can be argued that cryptocurrencies and blockchain will affect any person that deals with buying and selling and that doesn't leave anyone out globally.

If goods and services were priced on the current denomination of 1 Bitcoin = \$53,176 AUD whereas one month ago it was priced at \$51,829, I would have more buying power than I would 30 days ago. Does this take into account current issues faced with the global economy, such as inflation and the flow on effects of the international and national supply chain, would those be priced in the price of the Bitcoin I would spend at Coles? Or would it be how we treat traditional currency conversion alas from AUD to USD, where the buying power differs in low amounts of cents but add up as the value goes higher. These are still questions being asked, even where it comes to the SEC in the United States have an infamous court case against Ripple and to determine whether their cryptocurrency platform is classed a security. Hypothetically, if the world economy was dominated by a single cryptocurrency, such as Bitcoin, a truly decentralised trading economy would be of benefit to society as issues such as inflation could be a thing of the past (Huang, 2020). Its disruption will cause the traditional banking sector to change as adoption grows.

As mining cryptocurrencies increase, the resources required for providing state of the art infrastructure will affect other indsutries, as we have seen with the semiconductor shortage, also in part due to the covid 19 pandemic, where computer parts have been produced more in frequency and taken more of those resources, away from industries such as automotive with the production of contemporary vehicles, the gaming industry with PS5, Xbox series S/X.

Depending on the use Ethereum gas fees, bitcoin gas fees, transactions taking long and sometimes fail. For Ethereum there are layer 2 solutions such as Polygon Matic and technology such as Loopring that park the transaction, in a sense what can be determined as a zero knowledge blockchain authentication allowing the transactions on the Ethereum network not to cost hundreds of dollars but a fraction and not require the power consumption that would normally be needed.

### How will this affect you?

The way blockchain and cryptocurrencies would affect my everyday life is not just how I would transact for goods and services, but it would affect my friends, family and essentially anyone that deals with money – everyone! If Bitcoin prices were stable or if the price fluctuated in a matter of my net worth diminishing 50% over a matter of days given the volatility of cryptocurrency – where does that put me as a consumer, an investor and as a business operator? Given the way transaction fees fluctuate when the network is busy validating transactions, would I buy paying \$100 gas fees on a \$5 cup of coffee at the local bakery?

If the existing supply issues continue in regards to the shortage of semiconductor chips, this would affect my circumstance in upgrading necessary goods when the time comes. Such an example being if I needed to replace or update my car, given the shortage on new vehicles in the automotive supply chain would I have to wait up to 12 months for stock to become available, or would I need to dig deeper into my pockets and buy a pre-owned vehicle where resale has increased significantly, resulting in parting with more money than I would like to.

I still feel the cryptocurrency is in its infancy but that change relatively quickly once the adoption grows, gas fees are resolved with zero knowledge parking and the supply chain efficiency returns to pre-pandemic levels.

# THIRTY SEVEN

## Cyber Security



### What does it do?

Cybersecurity is technologies, processes and practices that protect against digital attacks. Cyber security is what protects our computers, servers, devices, electronics from malicious attacks. (Kaspersky.com.au, 2019) Cyber security is a broad term but can be divided into the following categories.

#### Information security

Information security (InfoSec) is a broad term within cyber security that refers to the processes and practices used to protect data. It is the process of protecting data from unauthorized access, modification, disruption, or destruction. There are types if infosec are Application security, Cloud security, encryption, incident response, vulnerability management and disaster recovery. (Cisco, n.d.)

#### Application security

Application security is technology and processes that protect applications against threats such as unauthorized access and modification. The main types of application security are

#### Authentication

Authentication is the process of ensuring that who is accessing the application is who they say they are. This is done many ways including requiring the user to logon with a username and password, two factor authentication and biometric authentication. Authorisation – Once a user is authenticated authorisations to the app can be granted. These can vary upon what level of access is desired within the app. This can be done by checking the credentials of the user against a list of authorised users. Encryption – To keep data safe it is encrypted. This means it is secured using mathematical techniques and is only accessible to those who have the key. Logging – Data logging leaves a record that can be called upon in the event there is suspicious activity or even a security breach. Testing – Testing the above processes and controls ensures they are working, and the app is secure. (VMware, 2021)

#### Cloud Security

Cloud security are the technologies, processes, controls, and policies that protect cloud-based infrastructure, data, and systems. These are used to protect data on the cloud, comply with regulations, ensure privacy for customers, and sets authentication rules. (Forcepoint, 2019)

#### Network Security

Network security is a term that describes the technologies, devices, and processes that protect networks. There are typically three distinct types on controls in place to protect networks. Physical controls, which are in place to prevent physical access to a network. This is in the form of restricted access, biometric authentication, and locks. Technical security controls protect all data whether it be stored in the network or in transit in or out. Administrative network security controls are the policies and processes that determine how users are authenticated and access they have to the network. Types of network security include:

**Network access control:** NAC are policies and protocols that determine who can access what on the network.

**Antivirus and Anti-malware software:** Software that protects against a wide spectrum of malicious software.

**Firewall protection:** Firewalls are a barrier between untrusted external networks and the trusted internal network.

**Virtual private networks:** VPNs allow a protected network connection when using public networks. They encrypt data and hide your IP.

#### Incident Response

Incident response is the system in place that monitors for suspicious behaviour. To help minimise damage of a breach, there should be an incident response plan to contain the threat and restore systems. (Cisco, n.d.)

#### Vulnerability Management

Vulnerability management is process of scanning your environment for potential weak points and prioritises them based on the risk. Keeping on top of any weak points in the system is vital and can protect against disastrous breaches. (Cisco, n.d.)

#### Operational Security

Operational Security (OPSEC) is a risk management and security process that identifies critical information and determines the process required to protect it. The five steps of OPSEC are:

1. Identify critical information.
2. Analyse threats.
3. Analyse vulnerabilities.
4. Assess risks.
5. Apply appropriate countermeasures.

Best practices of OPSEC are:

**Change-management process-** Ensures there are change management process in place for employees to comply with when changes are made to the network  
**Restrict Device Access-** Only essential employees should have access to networks, and the network should have authentication.  
**Implement leave privileged access-** Most employees of a business should have the minimum required access they can have and still do their job.  
**Deploy dual control-** The teams responsible for security and corporate networks should be separate to negate any conflict of interest.  
**Implement automation-** Where possible automation should be implemented to reduces the risk of human errors.  
**Craft disaster recovery plan -** There should be a plan in place for the event of a breach, this ensures the impact of the breach can be minimised.

(What is OPSEC (operational security)? - Definition from WhatIs.com, 2020)

End user education is the practice of teaching end users about cyber-attacks. It is not only about educating the end user on what cyber-attacks are, but also teaching them the skills required and equipping them the tools to protect themselves. (TAV Technologies, n.d.)

Cybersecurity is an ever-evolving technology as it must constantly improve and adapt to the new threats of cyber-attacks. Cyber security will be created for the demands of the time. We are likely to see new technologies to accommodate the security risk of the substantial number of remote workers created by the covid-19 pandemic. With the expansion of the Internet of things (IoT) there are now more cyber attack surfaces than ever. There will have to be new securities to counteract the potential cyber attack threat. Ransomware is not a new threat, but its prominence is expected to rise. Ransomware is becoming increasingly sophisticated and thus so cyber security that defends against it. With the rise increasing adoption of cloud services, they are more than ever a prime target for cyber criminals. The drastic implications of a security breach of a cloud server means the technology protecting it must stay ahead of the cyber criminals. (Kaspersky, 2019)

With the sheer scale of a cyber security operation, organisations are looking to technology developments in artificial intelligence (AI) and machine learning to refine their infrastructure. AI already has been vital in automating current cyber security systems, natural language processing, automatic threat detection and face detection. AI is also now being used by cyber criminals to develop advance malware that can bypass the current cyber security systems. The use of AI in cyber security is still relatively new, they will be further implemented and optimised over the upcoming years. (Kaspersky, 2019)

### What is the likely impact?

How cyber security develops will impact everyone in the modern world. It will impact the security of everyone, from huge mega corporations to small business to the individuals of the general population. How cyber security develops will determine how the constant battle between cyber security and cyber criminals will play out.

How the cyber security sector works is likely to change and evolve around the advancements in artificial intelligence and machine learning. The current uses of AI currently in cyber security are underdeveloped as the technology is still new. As cyber security companies and cyber criminals both farther develop and use AI it will likely to fundamentally change the approach to cyber security.

Companies who rely on cyber security to protect their business are going to be the most affected by the developments in cyber security. The cost of a successful cyber attack on a business is significant and can have long lasting ramifications. A company who has fallen to a cyber attack will lost trust of consumers in their capability to protect their data. The general population also has the potential to be affected by the future of cyber security. Successful cyber-attacks against individuals in the general population can lead to significant financial loss, stolen data, and data loss. Compared to companies it is a lot harder for an individual to recover from a cyber-attack.

As the industry is ever evolving, the innovative technologies and security systems will replace the old. Artificial intelligence and machine learning will make a lot of old technologies obsolete; it will streamline previously labour-intensive tasks. There will still be a huge demand for skilled workers in the cyber security sector in the upcoming years. The constantly evolving industry will need skilled workers if it wants to keep up with cyber criminals.

### How will this affect you?

In my daily life if the technology powering cyber security is adequate and does its job, it should not affect me. I would continue to live my life normally without having to worry about the technology that protect me. If any point of the cyber security that protects me and my data failed the ramifications could be disastrous. Consequences could range from my data getting stolen, financial loss or my devices being held hostage by ransomware. My family and friends will be affected nearly identically to me. However, some of the more elderly family members and friends who are already more susceptible to cyber-attacks, could become ever more so.

# THIRTY SEVEN

## Machine Learning



### What does it do?

Machine learning is a form of artificial intelligence, it makes it so that programs or applications become more accurate over time at predicting outcomes without specifically being programmed for this. The way this works is that algorithms are used to interpret historical data as input and predict values.

Machine learning is important as in today's society there is an ever-growing volume of data and with access to this data and having a system to process this data becoming cheaper and more powerful along with how affordable data storage is. These all mean that how quickly data is processed and analyzed is forever improving and machines are able to get faster more accurate results, no matter how large the volume of data is. Organizations use machine learning to identify ways to make profit or to analyze unknown risks.

As far as what can be accomplished with machine learning today some examples are in the financial services industry, banks are using machine learning to help identify insights in data as well as to prevent fraud. Data mining is a key component of machine learning and it is also used to identify high risk clients and also determine signs of fraud.

In the Health-Care system, machine learning is being used in real time, to monitor a patient's health. This is done through wearable machines and sensors. These machines assess patterns and major issues which can lead to more accurate diagnoses and treatments.

The government uses machine learning for things such as cyber threats. Through machine learning it is becoming faster than ever to find threats and defend against them resulting in safer cyber-security. Another example of machine learning in the government is to analyze and predict traffic congestion, a study from 2016 compared the predictive value of a machine to the actual traffic trends and it predicted over the 90% accuracy range resulting in the government having the knowledge of when and where to implement road improvements and traffic control measures to ease congestion.

In the sector websites are able to analyze a customer's buying history to create a personalized shopping experience. The result of this is things such as targeted adds for items that you may have searched or have previously bought and are on target to where you would typically repurchase this item as well as to notification of items that you have looked at or purchased going on sale.

The machine learning industry in 2019 was valued at around \$8.4 billion, by 2027 this is estimated to grow to around \$117 billion by 2027, some technology that is being heavily invested in over the next few years are things such as quantum computing.

Quantum computing allows simultaneous multi-state operations which result in faster processing of data. In 2019 Google's quantum processor in 200 seconds, this task would have taken the world fastest super computer over 10,000 years to complete.

Quantum machine learning will improve data analysis as well as have better insights. These performances will enhance businesses abilities to obtain faster more accurate results. As it stands there is currently no commercially ready quantum computer available however, it is being heavily invested in and funded. It is estimated that in the next few years this technology will be available.

Automated machine learning is continuously evolving with the speed and processing power of computers continuing to grow, over the next few years machine learning is expected to be more available to any kind of business as well as being able to predict trends and analyze patterns in data faster and far more accurately.

### What is the likely impact?

As discussed in shorter detail above machine learning will heavily impact day to day life of almost every single industry in the world, there is no doubt about it machine learning is going to shape the future. The impact that machine learning is going to have will wildly vary from things such as medical diagnosis and treatments of patients all the way to agricultural benefits from things such as analyzing weather patterns and trends and implementing measures to shield crops from the effects of the weather.

There is no doubt about it machine learning will shape the future, the impacts of it will affect many, if not managed the development of this technology problem it will cause a massive divide between the rich and poor making many lower-class jobs redundant for example there is a robot being developed by Tesla which is being described as "capable of doing all the jobs humans don't want to do", in other words replacing all menial jobs, things such as customer service, stocking shelves even tasks such as farming vegetables as an example. This technology is a few years away but with 10-15 years of development into this technology the possibilities are endless.

The outlook for the future with machine learning is definitely one of ease, the idea of having technology to do all our tasks for us sounds amazing, however the ability to monetize these robots is a scary thought thus creating further expanding the rich vs poor divide. If the technological advancements are managed in a structured way as to benefit society to its fullest this technology will undoubtedly be one of the greatest things for our civilization, so long as it is developed in a way that it is to service the needs of people and bring convenience and ease to our everyday lives.

### How will this affect you?

Machine learning over the next 3-5 years will bring a great level of convenience and ease to everyday lives. Things such as medical diagnosis and treatment will become much more direct and accurate, we will have more information than ever at our fingertips, governments will be able to extrapolate data from trends on numerous things like the aforementioned traffic, deployment of emergency service and even health and welfare.

As far as the elder generation goes, the grandparents or even older parents it can be assumed that this is the extent of how machine learning will impact their lives; however, the impact on the younger generation, those being born today is uncertain with major corporations using machine learning to generate the time it takes to complete a task and also determine things like cost cutting, with the development of technology to replace the everyday tasks it's possible to say that part-time jobs as a teenager may no longer exist.

For the current younger generation this technology presents great opportunity. Opportunity to cash in on the development of this technology as well as to learn a vital skill in the understanding of how it works as well as to contribute to the development of machine learning. It will also impact every day activities as we have seen with the tesla auto pilot mode of a car things such as driving to work are likely to be replaced by being driven to work by auto-pilot.

To summarize machine learning is a great technology that is going to be monumental to the future, it doesn't come without concerns and issues but if handled correctly in its development it will make for amazing quality of life improvements and assistance in every day activities.

# THIRTY SEVEN

## Robotics



### What does it do?

Robotics is where science, engineering and technology all meet up. The idea of robotics is to replicate human tasks and actions and replace menial human jobs, such as factory work and manufacturing just for a start. As technology advances what is considered robotics is suspect to change. For example in 2005, 90% of all robots were found in automotive factories assembling cars, whereas in today's robotics they are used to explore harsh environments, assisting with healthcare and more. While the robotics world is ever-growing there are some characteristics that remain constant and that is that all robots consist of some sort of mechanical construction, they need components that control power and machinery usually with electricity. The most common purpose of robotics is to assist in the automotive industry to perform tasks that would be considered simple and repetitive and also quite dangerous. Robotics in basically just high-end automated factory tooling.

First and foremost, the primary goal of robotics is to make life easier for humans and save us from putting ourselves in danger by doing dangerous tasks that could be completed using robotics. Another use of robotics is that they can be sent into space and gather research and information on places like the moon and mars. The first robot was actually sent into space in 1957, it was known as sputnik 1. The second space robot was Mariner 2 and 4 which occurred in 1962 which Mariner 2 was used to do a flyby of Venus and Mariner 4 was the first to take proximal photos of Mars. In 1975 NASA commenced their 'viking project' where they launched two robots into space, Viking 1 and 2. The purpose of these robots were to photograph and survey Mars' surface and also deploy landers onto the planet in order to collect data with the purpose of helping scientists find out if life already existed on Mars. Fast forward to more recent times and the Canadian Space association uses a robotic arm to install and replace equipment such as cameras and heavy batteries used on their space station. The robot is referred to as "Dextre" and it has hands designed to be able to grip both bulky and fragile equipment alike.

Stationary robots are robots that are bolted to some kind of surface and are not at all mobile, they are usually just a robotic arm that are designed to do tasks such that require precision and repetition such as picking, assembling, welding and more. Articulated robot arms are flexible with their movement and can be powerful meaning that they can lift heavy items compared with other types of robot arms the articulated robot arm is most comparable with the human arms because it has 6 axes or joints. Articulated robots are used mainly for tasks such as pick and place, spot welding, the joints make the articulated robot arms an excellent choice for the automotive manufacturing as they have access to harder to reach places. Autonomous mobile robots are a rapid growing segment of the industrial robot market. Wheeled carts are typically used for transporting goods in warehouses. They are typically equipped with sensors and computing power with electric motors that let them move around a factory and create an internal map of it. Recent advances in technology enable a robotic arm to be added to the wheeled cart which in turn lets the cart do all the work in picking and replace the need for a person working there altogether.

Another use of robots is drones, the use case for drones are endless, they can be used for deliveries, photography, film, recording measurements of things and many more. Amazon are already working on implementing drones for their deliveries of goods and groceries. Underwater robots are used by police to film and search the bottom of bodies of water for evidence of crime scenes that involve water. Furthermore they can be used for exploration of the deeper parts of the ocean that humans aren't physically capable of because of their ability to resist the water pressure and not needing to be able to breathe underwater.

### What is the likely impact?

The impact of robotics to our society is to improve the quality of life and safety in the workforce by eliminating the need for humans to perform dangerous jobs such as bearing heavy loads handling dangerous or toxic substances. The use of robotics in manufacturing has and will continue to save lives of many workers in the industry, it also cuts costs for the businesses and saves time. However, there can also be interpreted with negative implications by the advancement of robotics it will obviously remove the need for humans to complete certain simple jobs and has already and will continue to cause a loss of jobs as the advancement of the technology progresses.

Benefits are limitless for research and knowledge purposes when it comes to sending robots into space, helping answer age old questions of whether other planets could be hospitable to humans and potentially create an alternative place for us to live without putting anyone at risk because all the dangerous work is currently being done with robots. As stated the most likely negative impacts will be that there will be a huge job loss in the physical labor side of factory work and production work however it's likely that there will be a need for more engineers and scientists to help further develop the knowledge and maintenance of these robotics. .

### How will this affect you?

The way that robotics would affect me in my everyday whether it be 5, 10 or 20 years down the track is that it would just all together create a more convenient lifestyle as technology advances. I would never need to worry about working in a hazardous environment again because robotics would allow robots to do this instead of me. It would overall create a more efficient and productive workplace in factories and warehouses as unlike people robots don't need to take breaks, sleep or eat and can work 7 days straight without breaking for food or sleep. While robotics has been around for a while it's still got a long way to go and in my opinion the possibilities of where the industry can do are limitless and literally to the sky and beyond.

# THIRTY SEVEN

## Project Overview



### Introduction

Shop Mate is going to be designed to be a multipurpose shopping and nutritional app created to ease people into things such as shopping, keeping track of your inventory in your kitchen, suggested recipes based off your ingredients and even nutritional tracking for macronutrients.

### Shopping List

The first feature that the Shop Mate team plan to implement is a basic shopping list, just simply adding products that you need to a list and storing it for later use when you go shopping. Later revisions of this feature will update to possibly include integration into online ordering at Coles or Woolworths, so with the click of a button you can add to cart what you have on your list for an online shop.



Proposed grocery network to be part of the ShopMate ecosystem.

### Recipe & Kitchen Inventory

Down the track we plan to implement a feature that will let you manually add your kitchen inventory so that you can know what you have available for cooking and what you need to order. This feature works hand in hand with the recipe function which will, based off of available ingredients and a pre-selected meal provide the user with a list of recipes available for cooking. Taking this a step further once you have ticked off that you are cooking a given recipe, it will then remove the ingredients from your inventory and provide the user with an option to add what you run out of to the 'Shopping List' feature. The user will be able to save their favorite meals for easy access and whether or not you have the required ingredients for the recipe.

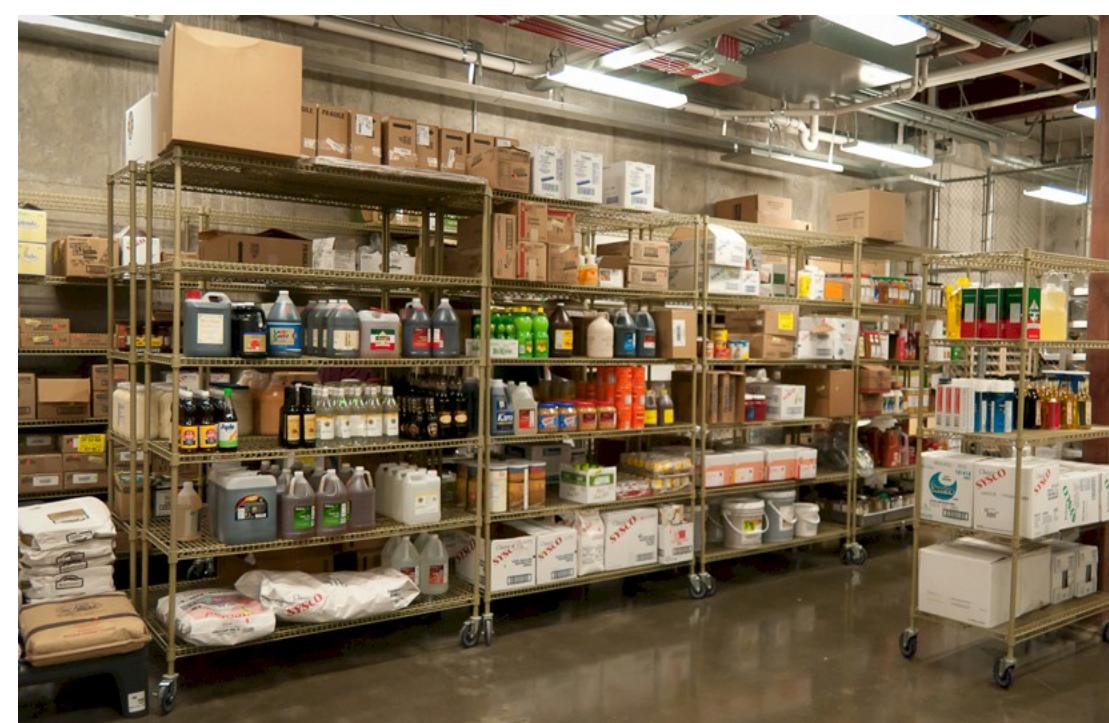
A later revision of this feature will add compatibility for perishable items such as chicken and milk that will register the day that you receive these items and provide notifications to the user after a certain time period based on the item to remind you to use it or that it may have expired. This feature would be fully customizable by the user allowing them to set custom date ranges for certain products for example you could set raw chicken for a 4-7-day range.

### Nutritional Tracking

Another feature that the team is planning to implement is nutritional tracking for macro nutrients. With the items stored based off of information stored in our databases or based off the inventory that was ordered from the supermarkets our app will be able to calculate the macro nutrients in the meal and store it on your daily macronutrient tracker. A feature that will be added to this function is to set goals for weight-loss or muscle gain and various other options to provide an estimate of required macros.

### Business+ Feature

The final feature that we plan to implement in our roadmap is the Business+ feature, a premium feature for businesses where it liaises with providers providing information on what a restaurant is running low on and ping notifications via email or some form of preferred communication like a smart ordering system. This feature would be advantageous for businesses to manage what ingredients and recipes are performing well and which are underperforming to trim their menu or even market the more successful products better.



Source: Rapids Wholesale

# THIRTY SEVEN

## The Motivation



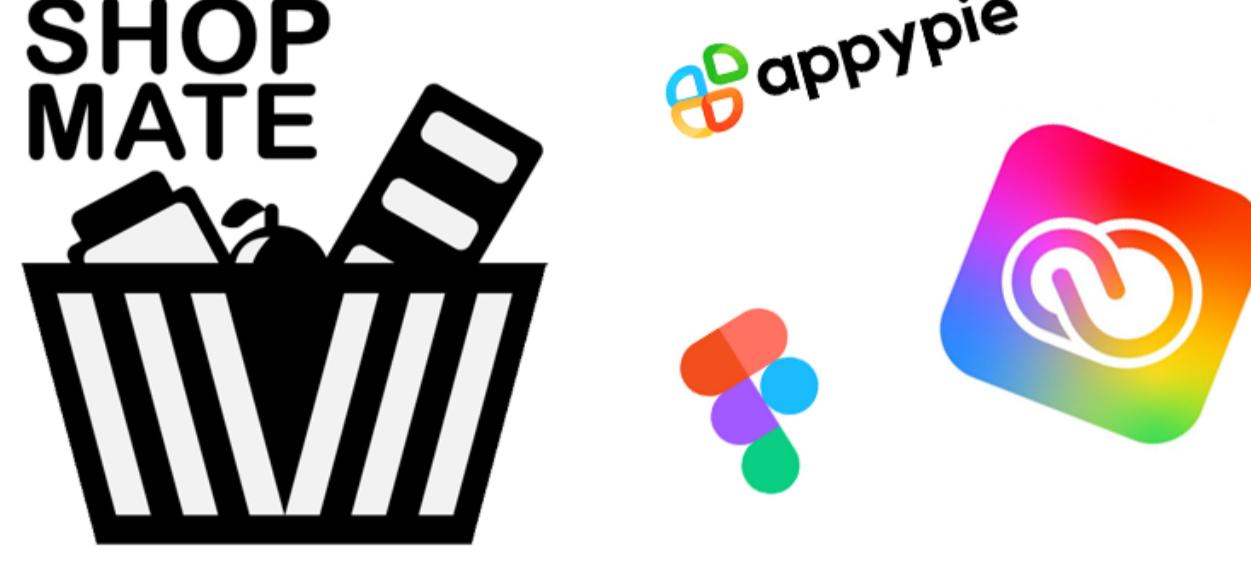
The motivation behind our project Shop Mate is the idea of having a whole collection of amazing features at your fingertips. Inspiration was drawn from the MyFitnessPal as well as ideas drawn from the convenience of online shopping. The amount of times where I'm stuck for ideas for dinner and can't think of anything to make and wish that I had an app that would tell me what I can make with the ingredients that I have in the house. This is where the idea sparked for Shop Mate, an app where I could just put in the ingredients that I have in the kitchen and then I get a list of recipes available for food that I have.

The app obviously is a high demand task that will require multiple revisions however with phase 1 of the app coming in the form of a simple shopping list. Having an interest in nutrition through a brief period of study as well as an interest in fitness, I'm fascinated by the idea of tracking macronutrients and the idea of having an app that brings the convenience of online shopping together with a stored database of available products with their given macro nutrients is a huge motivator for the app too.



# THIRTY SEVEN

## Tools & Tech



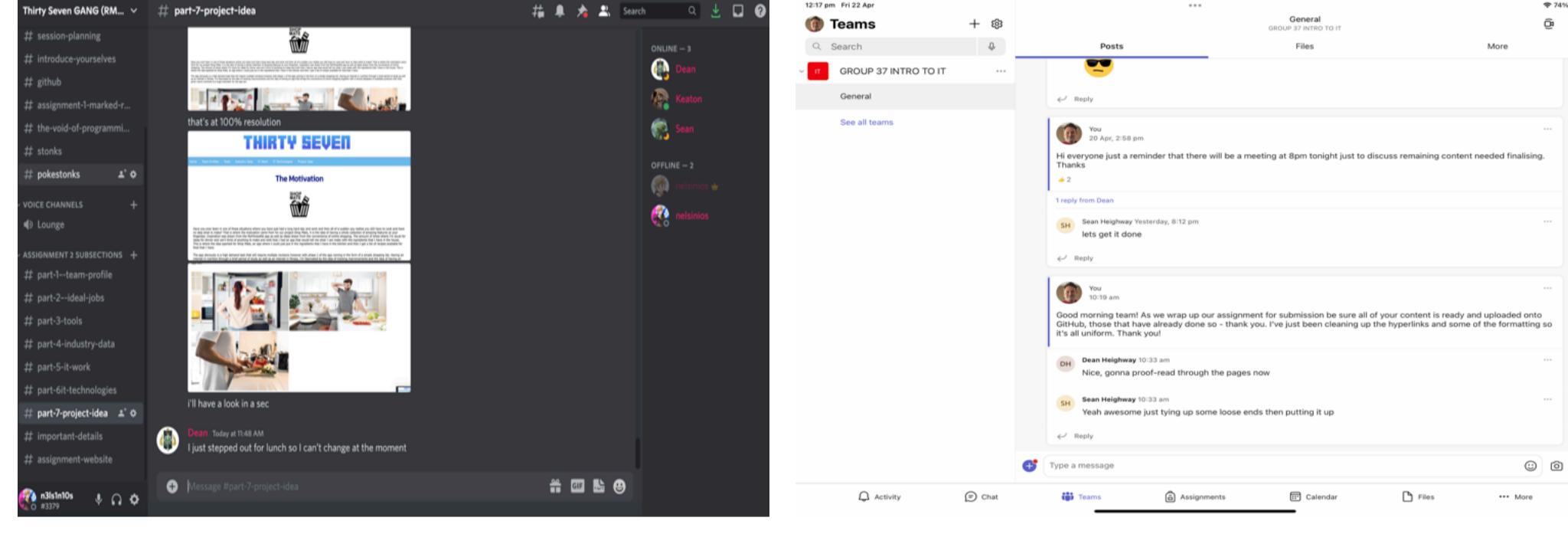
### Initial Stages

The tools required to develop the proposed project can vary depending on the requirements the application requires, from the initial concept to the final development, and successive releases.

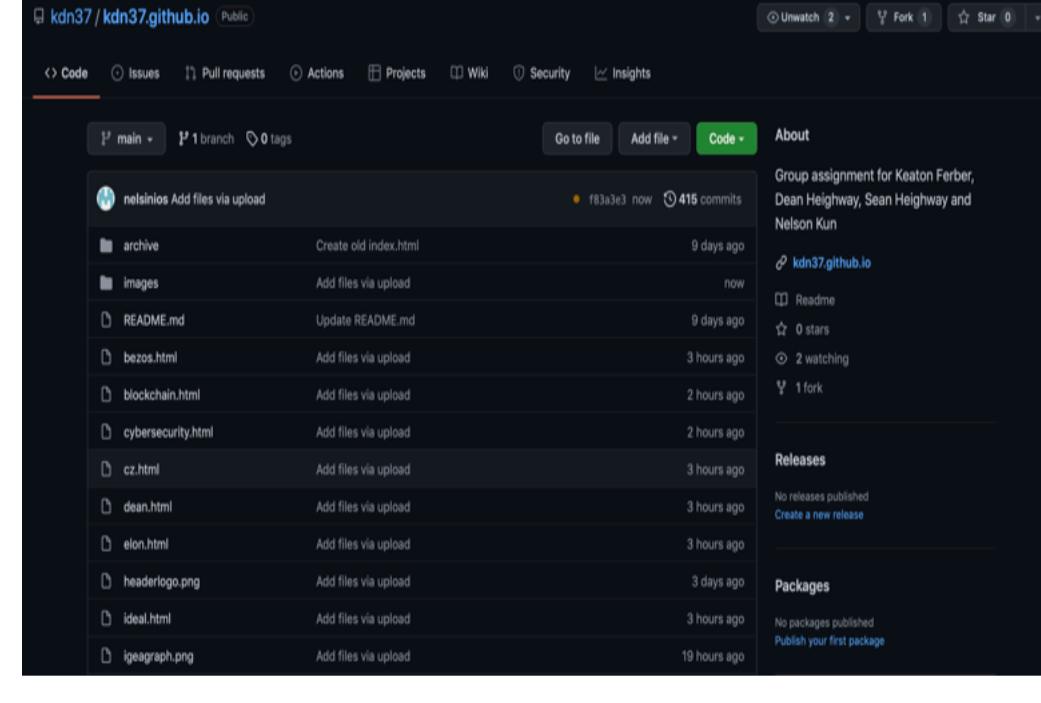
For this initial step, concepts of a mock-up display will be presented to articulate to the prospective audience how the application would look, with the design to be further refined in the next assignment. Using programs such as Adobe Photoshop and Illustrator to demonstrate clean visual concepts for the team to discuss how the layout would work and what would be easy for any consumer to use. This will also be translated onto a website as the intention is not to restrict the use of an application to just smart device users – but anyone with a computer, since everyone has the need for food intake.

### Proposed Development

The proposal is to expand on the roadmap outlined in the outcome, creating smaller manageable milestones in order the team of Thirty Seven to craft a project that can be feasibly created in the restricted amount of time. Using tools for online communications like Teams for our meetings and formal updates, Discord for impromptu notes and informal updates and GitHub for updating the group's repository.

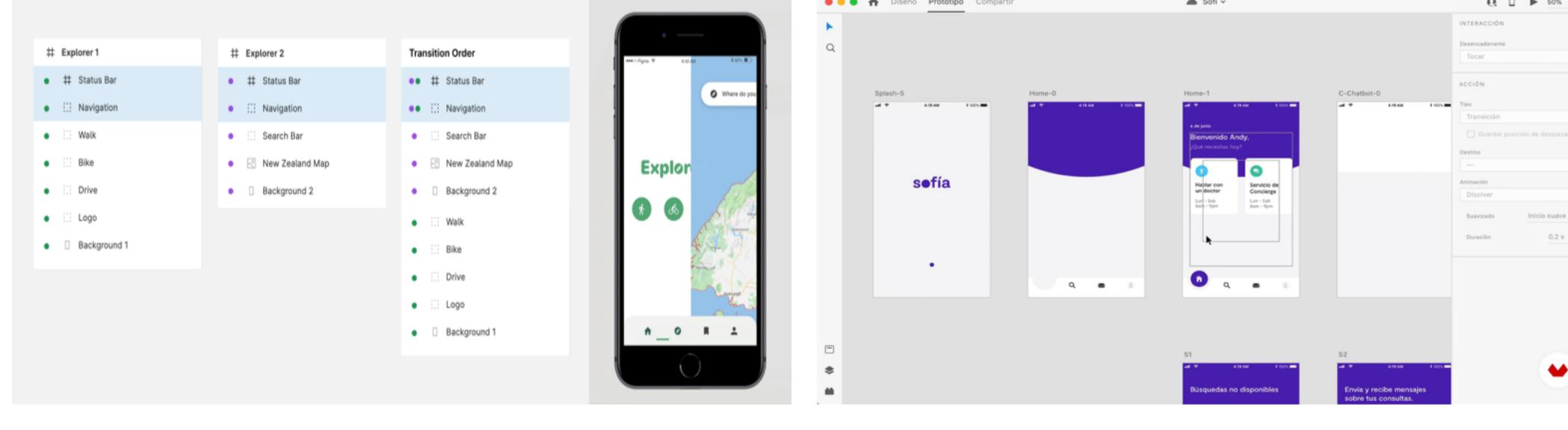


Communication tools used by Thirty Seven.



Thirty Seven's repository on GitHub.

Secondly is to explore the further use of an app builder. Now the need of building an app would only need to suit the purpose for presenting the proposal of its utility, but also to finesse with a working prototype as it will demonstrate the teams understanding of how app development begins and continues forward. After some research, there has been debate whether to use a free-to-build generic app builder such as AppyPie, a prototype producer such as Figma or the use of Adobe Creative Suite, such as the use of Adobe Photoshop, Illustrator and Adobe XD in order to ensure the user interface of the mobile application is workable.



Examples of the mockups that can be designed for the app.

As this website was built with the use of Adobe Dreamweaver, it would be of note that ShopMate's website display will also be created and modified using these same applications. If it came to be a scenario of last resort in demonstration, producing a video presentation with the use of Adobe Premiere Pro or After Effects may be of consideration. However, this does not exclude the possibility of combining the use of all technologies mentioned to craft the ShopMate application.

### Feasibility and Expectations

Lastly, as the project is a website and UI based experienced it is to be expected that these will be the programs used to bring our vision to life, but given this is the first application any of us have come to the experience of creating, it would be expected that there will be amendments to our strategy when it comes to the final assignment – but it is not to say that given our level of commitment to this project and where we align ourselves for our ideal positions, it would be wise to consider longer term production of this application beyond Introduction to Information Technology, strengthening and building our portfolio.

# THIRTY SEVEN

## The Skills



Creating the Shopmate application(app) will require proficient skills in all aspects of mobile development. Most importantly programming skills will be essential to create the app, whether it be JavaScript, C++ or C#. These programming languages will be used to write the code to create the app.



Source: Seek & Getty Images.

To create Shopmate will require us to have skills in User Interface (UI) design. We will need to be able to create an intuitive and functional User interface for the app. The UI will also need to be aesthetically pleasing and simple for mass appeal.

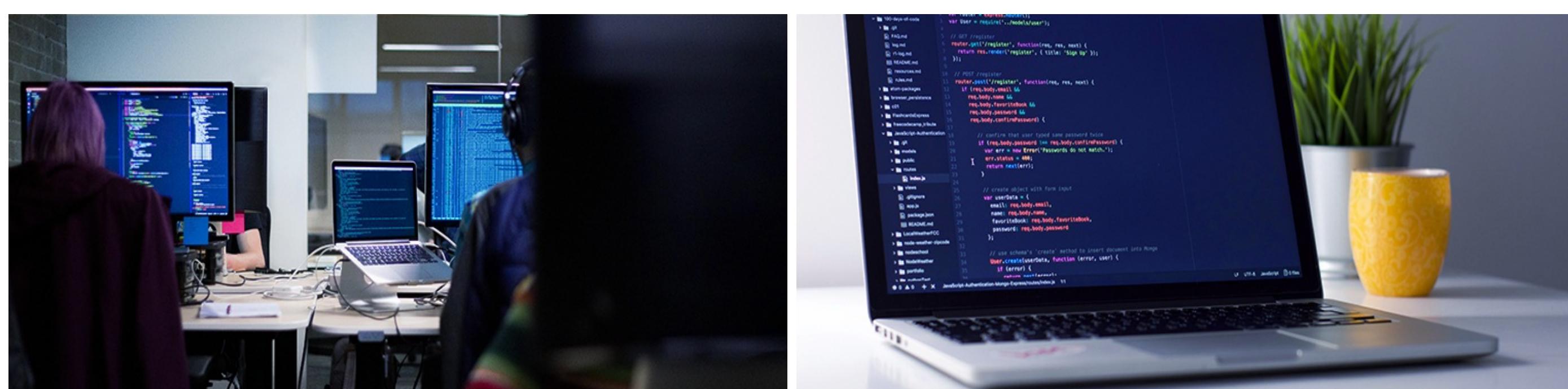
The image displays a mood board and a color palette. The mood board, titled 'Mood-Board', features a grid of various UI designs, a pair of glasses, a blue pencil, and a small blue car. The color palette, titled 'UI Design System - 1', includes sections for Primary Colour (Azure - Blue, #5680F9), Secondary Colour (#4C36DD), Success Colour (#5680F9), and Failure Colour (#5680F9). It also lists the hex codes for each color.

Primary Colour	Secondary Colour
Azure - Blue #5680F9	#4C36DD
Success Colour	Failure Colour
#5680F9	#5680F9

Using moodboards and colour palettes it gives the skilled worker the themed expectations.

Due to the nature of Shopmate databases are vital to the concept of the app. Extensive database management skills and knowledge will be required. The app must be able to store all the ingredients available in the house, as well as details such as amount and expiry date. It must also be able to access a database of recipes which it can recommend to the user based on ingredients they have or will buy at a supermarket. As the app pertains to accessing databases of supermarkets such as Woolworths or Coles, it must either be able to import their database for items or pull the data another way. This could be done by pulling the information off their website.

Cyber security skills will be needed to keep the app secure. This is important as the app will store data on the user, as well as potentially payment info. Having an understanding on how to make an app secure and prevent attacks is essential for us to create a safe app.



Source: Seek

# THIRTY SEVEN

## The Outcome



# SHOP MATE

01

Create and launch the shopping list feature

02

Build the recipe database and add the kitchen inventory function.

03

Start background work for perishable feature.

04

Finalize the perishable feature and add the nutritional information and online shopping feature.

Add the premium feature Business+ and demo it with local business' for feedback and exposure.

Shop Mate is constantly being polished and improved for a better user experience.

The main outcome that the team is hoping to accomplish with Shop Mate is to have a functioning app containing all the features mentioned in the flow chart above. Our team is aware of time constraints for assignment 3 and realize that features won't be available come the submission of assignment 3. With that in mind we are hoping to have a user interface prepared and a basic shopping list app ready for use by the time the assignment is due. We will be including a demo on our GitHub website with a sample of what the app will look like for desktop/laptops. We will be attempting to develop the app using a tool such as appypie to create our app.

Given the tools available for smaller developers being able to build applications with programs like Adobe XD, it will be in the best interest of the group's likelihood to have a product feasibly produced in the restrictive timeframe. Because of this, it is possible that time limitations may render what Thirty Seven is able to produce in lieu of what we desire to. However that is not to remove the notion of the product, its utility and feasibility.

On a long-term schedule, we would like to continue to develop the project and the outlined roadmap above is the schedule that we would like to follow. As beginners in the IT space, we are aware that these things will take time and a lot of effort which is why it has been spaced out in a manner so that we can achieve these targets without taking on too much workload at any given time.

# THIRTY SEVEN

## Mock Up

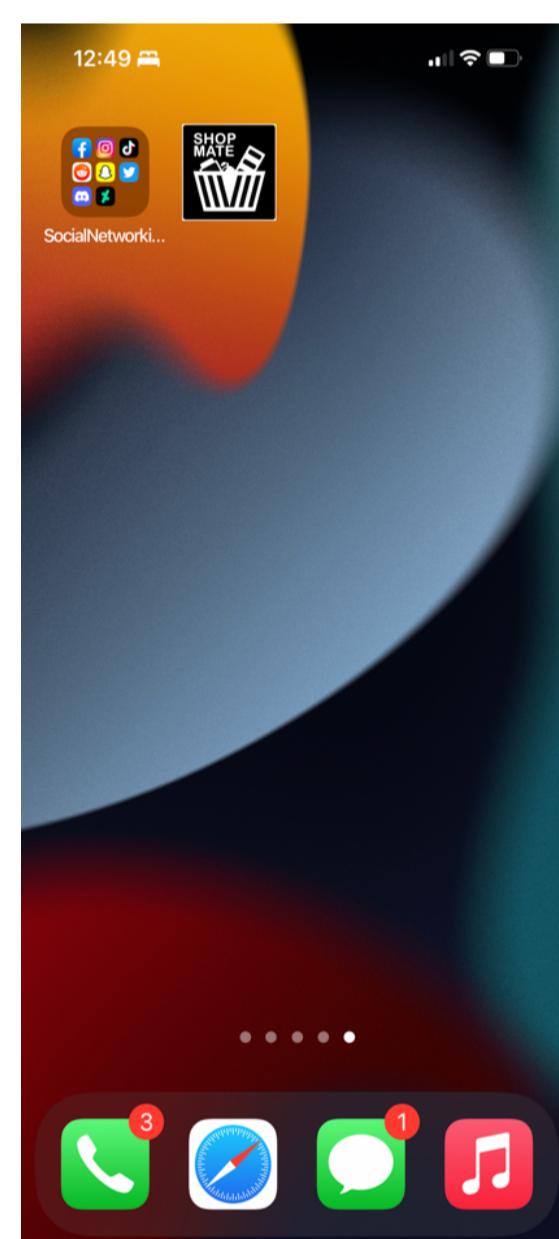


### Initial Stages

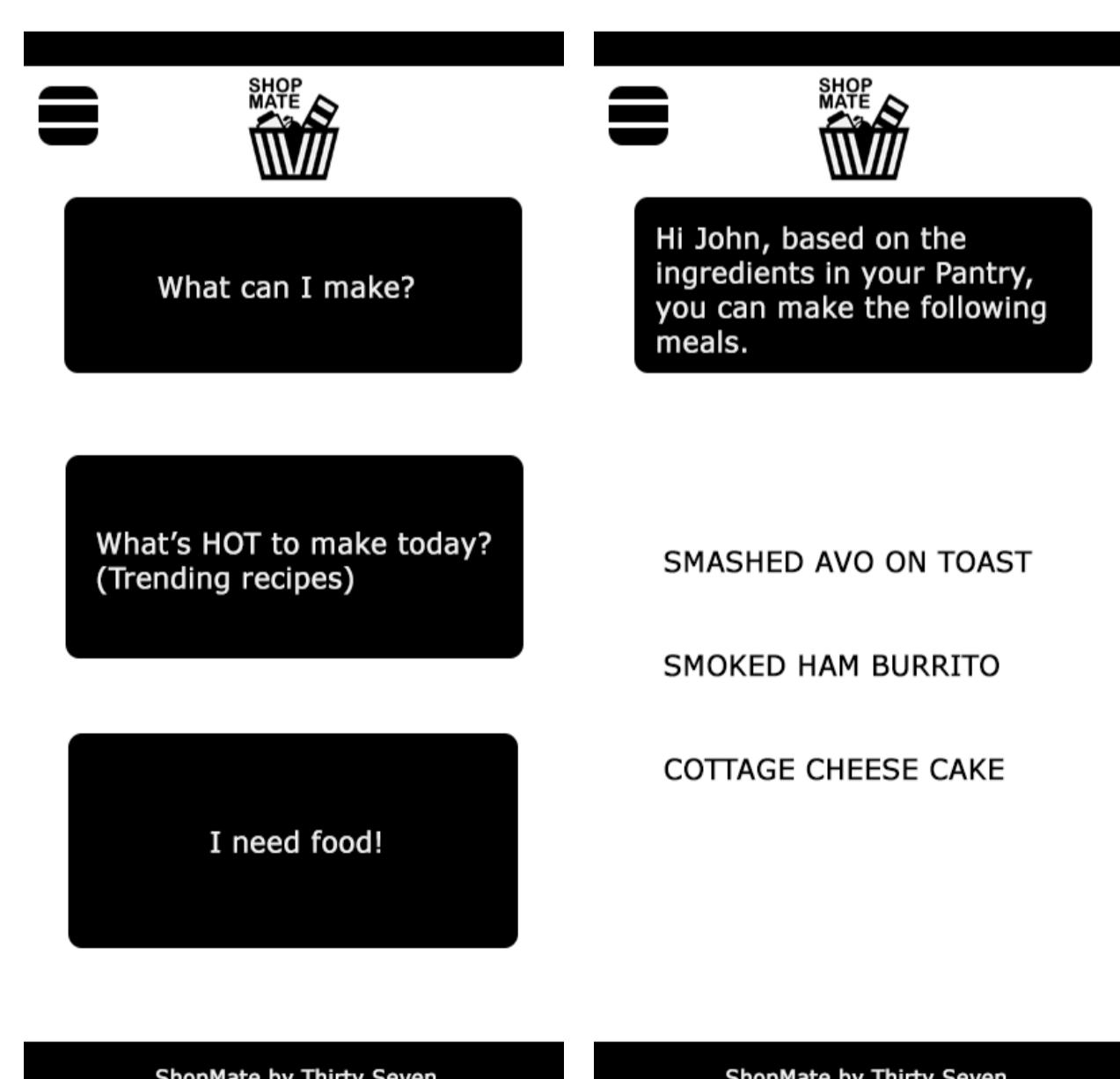
We felt it best to present a basic mock up to articulate where the project's concept currently rests visually. The intentions of the product have been outlined in the project's Overview, Motivation, Tools and the Technologies to be used, the Skills required and what the project's Outcome aims to achieve.



The app icon generated for the mock up display.



How the app icon would look on the home menu screen on iOS devices.



Simple and straightforward mockup display of the home menu giving options to the user.