COSC2196

INTRO TO INFORMATION TECHNOLOGY

ASSIGNMENT 03

By

Meme Team

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GitHub Repository: https://github.com/IIT-MemeTeam/IIT_Assignment03
GitHub Pages: https://iit-memeteam.github.io/IIT_Assignment03/

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TEAM PROFILE

TEAM STATEMENT

We are a team of 6 guys who simply just love memes, hence the "Meme-Team"! We enjoy talking in "meme language" in various different I.T chats and that's how we found each other. While we understand we occasionally tend to irritate others with the way we talk, this passion for memeing brings us enjoyment and creates team chemistry for us.

Meme-team requirements? Always meme.

GROUP PROCESSES

Meme-Team worked exceptionally well together during Assignment 2. While working on Assignment 2, we had decided to upload all of our work onto GitHub using commits, so we all had easy access to the work everyone completed. This allowed the editors and the ones working on the website to easily access the files to edit and transfer them on the website. In Assignment 2, we had delegated roles to spread out the workload evenly; the positions were decided through the video meetings on Microsoft Teams. Most team members had written down what roles they were delegated and what tasks they had to accomplish.

This all changed in Assignment 3. Instead of using GitHub to upload all of our files, we decided it would be more accessible for everyone if we uploaded everything to Microsoft Teams. Not only did this allow everyone to access the files effortlessly, but it also allowed us to use the Microsoft Office tools available on Teams, so we could edit the files without having to download them to our hard drives. A checklist of tasks was created using Teams "tasks" section with designated due dates, which allowed everyone to see which tasks needed to be completed. If anyone was unable to finish a specific job, then others could assist.

Overall, compared to Assignment 2, we had discovered ways in which we could all remember what needed to be done and finish everything efficiently.

CAREER PLAN COMPARISON

Brent	Application Developer
Leonard	Gameplay Engineer
Lochlann	Cybersecurity Consultant
Michael	Front-End Web Developer
Steven	Software Developer
Thomas	Metagames System Programmer

As seen from the table above, every team member of Meme Team has not changed their ideal job, except for Lochlann, who went from wanting to become a Field Technician to a Cybersecurity Consultant. Everybody in the team has one main goal that is the same; continue and complete studying Bachelor of Information Technologies at RMIT University. Every members ideal jobs requires lots of experience in programming.

Short Term Goals

All the team have similar short-term goals, primarily aiming towards continuing their studies through RMIT University. Every member is seeking to learn more about the different programming languages and concepts within the first year of getting to their goal. They will all also be conducting further research on the skills required for their dream jobs. Both Steven and Thomas will start learning about the program Unity and like Leonard, the game development process. Leonard will start participating in online game building challenges such as 'Ludam Dare' so he can gain a better understanding of his time management skills and his strengths and work towards achieving better team and leadership skills.

Mid Term Goals

There are a few similarities between the mid-term goals. Every member wishes to complete their Bachelor of IT, start searching for jobs in their respective field or similar areas, and further network with people in similar or the same fields. Brent will begin designing apps for his everyday use, further improving his programming and development skills. Leonard will start learning the language of the country he will eventually reside. Thomas will analyse metagames systems complications and formulate practical solutions, and Steven will start learning Unreal Engine.

Long Term Goals

All the members long term goals are vastly different; however, there are still some similarities. We all wish to continue networking with people in our desired industry and push to get a better understanding and further our knowledge in our field. Brent and Lochlann have the same idea of starting their own business. Michael wishes to begin learning Frameworks so he can master Front-End Development. Leonard will eventually apply for grants to produce educational IT projects. Thomas and Steven will start applying for senior positions.

All of the career plans and end goals, although very different, have various similarities. Leonard and Thomas both wish to get into the gaming industry; Leonard as a Gameplay Engineer and Thomas as a Metagames System Programmer, which is vastly different to Michael who wishes to become a Front-End Web Developer. Brent and Steven also have similar dream careers; Brent wishes to become an Application Developer and Steven, a Software Developer. Although Brent wishes to become an Application Developer, he is also aiming towards starting his own business, like Lochlann. However, both companies will be very different. Lochlann will be starting up a company as a Cybersecurity Consultant, and Brents business will be focusing on general IT troubleshooting and maintenance.

More information on each member of Meme Teams career plans can be found below.

THE TEAM

BRENT KIMM

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About Me

I am a 30-year-old male from Melbourne, Australia. I completed VCE in 2008 and have since worked in various roles within the Railway and Civil industries. When I was 5 years old, I received a NES for Christmas with the Super Mario Bros. 1 and 2. From there on, I played a wide array of games before eventually deciding to build my own computer many years later. This is where my interest in the field of Information Technology began...

I am extremely passionate about Football and Basketball, being a major Saints and Celtics fan respectively outside of gaming and computers. I also love fishing, camping, and escaping the hustle and bustle of the city to explore our beautiful country.

Career Plans

Outcome

Study general IT basics right now while looking to develop my coding skills to an extensive level to achieve my ideal career as an Applications Developer .

Short Term (0-1 year)

- Attain at least a pass mark (50%+) minimum in Introduction to Information Technology
- Attain at least a pass mark (50%+) minimum in Introduction to Programming
- Gain as much basic knowledge as possible in a few significant forms of coding; such as Python, Java, HTML, and C++
- Learn more about the minimum skills and requirements it takes to be in Applications development

Mid Term (1-5 years)

- Use spare time to assist friends and family in troubleshooting different IT and programming related issues while learning other problem-solving techniques myself.
- Continue to progress my programming skills to an extensive level
- Develop small applications for personal use to assist with everyday activities, such as my own Item-Finder Application as per my Assignment 1 project.
- Complete a Batchelor of Computer Science at RMIT while still working a full-time occupation

Long Term (> 5 years)

- Once completed a Batchelor of Computer Science, quit my current full-time employment, and search for a low paid traineeship role in the industry.
- Use my spare time to study for a Master's degree in Computer Science
- Apply for a career in a senior position at an Applications Development company
- Start my own small-business in general IT troubleshooting, maintenance, and repairs.

Obstacles

- Having a family of dependents, as well as multiple mortgages means I require a consistent weekly wage, therefore not having the ability to study full time, thus drawing out the career ambitions over a more extended period.
- Not having a big background in programming, a lot of the basics are still very new to me

LEONARD MCDONALD

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About Me

I am a 28 Male Australian. When I was in primary school, I had no idea why my brothers' friend could play NES ROMs on his computer while they wouldn't work on our Macintosh, from this starting point my interest in IT and all its workings would manifest. Classmates in my countryside high school were impressed by the small scripts I could write, and as I moved forward my interest developed my skills in problem solving, video editing, and just enough of everything else to play around with at a beginner level. I'd like to work on game mechanics, design and video editing in my spare time, and I believe that the skills I learn from working with our group 'Meme Team' will benefit me both in the course and my hobbies.

Career Plans

Outcome

Have a developed professional IT portfolio covering multiple fields of gameplay engineering and up to date certifications, using this malleable skillset to start developing my career in the game development industry while living outside of Australia by 2025.

Short Term (0-1 year)

- Continue studying Bachelor of Information Technologies at RMIT choosing electives centralising around programming, software mechanics, and project management.
- Take part in 'game jams' such as Ludam Dare to better understand time management and my initial strengths in dame development. (https://ldjam.com/)
- Study 3D modelling and programming software from professional tutorials from lynda.com, Skillshare, Udemy (to name a few) to develop my interest and solidify my ideal career plan.
- Position myself to develop team-building and leadership skills to overcome my irresolute personality weakness and build the confidence needed for project management.

Mid Term (1-5 years)

- Change or continue my learning from Bachelor of IT to Bachelor of Computer Science
- Learn C/C++ programming language
- Apply for/work with a team that will position me to further develop a gameplay engineer specific skill in either Collision detection, network protocols, multiplatform development, physics engines, AI, or performance & optimisation.
- Learn the language of my destination country (TBD)

Long Term (>5 years)

- Study relevant IT Certifications from 2025 onwards
- Continue my work with a company or team moving into the role of 'expert' gameplay engineer or project management, else apply for this job role while continuing to develop different skills in my current career position.
- Apply for Australian grants to be used for educational IT projects, using the money to hire a team I will direct outside of work hours to continue developing my Australian based job expertise while abroad.
- Network inside my career industry and within Australia's grant system.

Obstacles

- Low self-efficacy
- Discrimination towards myself as a foreigner
- Career pathway jobs need to be chosen efficiently for skill development
- Experience
- Learning capacity

LOCHLANN KEENAN KELLI

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About Me

My nickname is Lo and I live in Queensland with my fiancée. I spend a lot of my free time gaming and chilling out. I used to have a dream of setting up an American styled 50's diner. But this dream got crushed when I realised I do not like working in Hospitality. So, I decided to change my dream to something involving my hobbies; IT. I have been mucking around with computers ever since I was a very young child, I was always getting new technology, breaking it, troubleshooting what I did, and then fixing it all up again.

Career Plans

Outcome

My dream career has changed since Assignment 1 and Assignment 2. I aim to get a career in the cybersecurity field as a Cybersecurity Consultant. I got this motivation after completing the Cybersecurity research task for Assignment 2. While conducting the research, I discovered the importance of keeping yourself safe online and in the real world. I would love to assess and advise people on how they can keep their personal information and data safe.

Short Term Goal (0 – 1 year)

Within the next year, I would like to continue studying Bachelor of Information Technology through RMIT. While attending, I would like to make friends in the IT field and get in contact with people who are already in the field, preferably Cybersecurity Consultants, but also people who would like to get into the area as well.

Mid Term Goal (1 – 5 years)

Within the next five years, I would like to complete my Bachelor of Information Technology and start applying to IT jobs in my area (South-East Queensland). I hope to gain some experience within the Cybersecurity area, to do this I will enquire with companies, friends, and family to see if anyone is willing to give me work experience or to let me shadow a team to see what goes on.

Long Term Goal (>5 years)

My long term goal is to become a Consultant, so I can help companies and individuals to become more cyber safe. I would also like to start my own small company of consultants, and in the future, expand into more fields.

Obstacles

I am not a hugely motivated person; I am pretty good at procrastinating; however, I aim to get over this obstacle so I can motivate myself to get into my ideal job. Currently, in the Sunshine Coast, there are not many options when it comes to a career in IT, this means that I am going to have to branch out and leave Sunshine Coast.

MICHAEL HEANEY

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About Me

Hello there. I'll start with a little about myself I have a background in warehousing and I'm moving to IT for a career change, I am half German and half Australian, I only speak English. My education to date is finishing year 12 in 2005 I studied IT and Multimedia throughout my college life but finishing year 12 I pursued a career in warehousing and driving forklifts. Hobbies I enjoy are four-wheel driving and off-roading with camping overnight in the bush near a river. I also play the guitar and did so in a band for roughly 4 years touring the East Coast of Australia. Other pass times I enjoy playing video games with my 3 children.

Career Plans

Outcome

Study a Batchelor's of Information Technology through RMIT University to achieve my ideal career as a Senior Web Developer

Short Term (0-1 year)

- Pass Introduction to Information Technology through RMIT
- Pass Introduction to Programming through RMIT
- Learn the fundamentals of JavaScript, HTML and CSS programming languages
- Begin a Batchelor's of Information Technology degree

Mid Term (1-5 years)

- Complete Batchelor's of Information Technology
- Get an internship as a Junior Web Developer
- Begin development on a portfolio with all previous works on GitHub

Long Term (> 5 years)

- Gain enough experience to advance to a Senior Web Developer
- Be employed as a Front-End Web Developer
- Learn Frameworks such as ReactJS

Obstacles

- Issues learning certain things related to programming
- Not being able to learn different things as fast as I desire

STEVEN HOLMAN

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About Me

I am 32 years old male currently living in Victoria, Australia and am working with Meme Team. Computers has been a passion of mine since I was a child, from growing up watching my brother build a 486 and playing strategy games on it such as Civilization and UFO Enemy Unknown. Programming has since become a passion of mine of which I wish to expand into a future career. My younger self had many hobbies including playing the guitar, music and skateboard but I currently spend most of my current time focusing on computers.

Career Plans

Outcome

Gain experience in IT with expanding my knowledge of programming to achieve my ideal job as a software developer by 2024.

Short Term (0-1 year)

- Continue studying Bachelor of Information Technologies at RMIT while keeping a high average in marks
- Learn more about common programming concepts
- Read more books about programming such as 'Clean Code' by Robert Cecil Martin
- Learn more about using Unity and the game development process

Mid Term (1-5 years)

- Complete Bachelor of Information Technologies at RMIT in 2023
- Apply for jobs in the Melbourne area as a Junior Software Developer
- Research more advanced programming concepts
- Learn C++ programming language
- Network out to people using services such as LinkedIn
- Learn using Unreal Engine

Long Term (> 5 years)

- Continue research of programming concepts, there is always knowledge to gain
- Apply for jobs in a more senior position
- Continue to network with people in the IT and programming fields

Obstacles

- Not knowing many people in the field
- Confidence
- Health issues
- Experience

THOMAS LEWIS

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About Me

I am a male Australian, 20-year-old high school graduate studying at RMIT, I have been gaming as long as I remember with a keen love for Fighters and First-Person Shooters, That developed into a love for computers and furthermore programming for entertainment, hence I am a member of the Meme team who's focus is security & entertainment.

Career Plans

Outcome

Gain experience in IT by expanding my knowledge of programming to achieve my ideal job as a Metagames System Programmer by 2025.

Short Term (0-1 year)

- Continue studying Bachelor of Information Technologies at RMIT while keeping a moderate to high average in marks.
- Learn more about Gaming specific programming concepts.
- Endeavour towards concepts correlated to Specific game titles such as gearbox and respawn entertainment respectively.
- Learn more about using Unity and the game development process for direct insight into more complex system analysis.

Mid Term (1-5 years)

- Complete Bachelor of Information Technologies at RMIT in 2023.
- Apply for jobs in the Melbourne area as a Junior Systems quality assurance.
- Research more relevant to my field programming concepts.
- Learn C++, JavaScript programming language for the past and present of development skillsets and transferable concepts.
- Network out to people using a mix of social platforms to find people of similar interest or opportunity.
- Learn using the development process to draw comparisons and formulate practical solutions to metagames systems complications through analysis.

Long Term (> 5 years)

- Continue research of game-specific program concepts, to maintain relevant knowledge to my role as an active tester of game quality
- Apply for jobs in a more senior position focusing on security of my job and enjoyment relative too expectation
- Continue to network with people in the gaming fields to maintain modern, relevant game mechanics and what's the hot gameplay that users will seek

Obstacles

- Not knowing any people in the field (beyond my classmates and teachers)
- Communication (need to maintain a higher standard of formality)
- Health complications (epilepsy makes prolonged screen usage difficult)
- Experience (relative to modern issues which has minimal documentation)
- Dyslexia (directly hinders my time efficiency from an information input sense)

TOOLS

Link to repository: https://github.com/IIT-MemeTeam/IIT_Assignment03
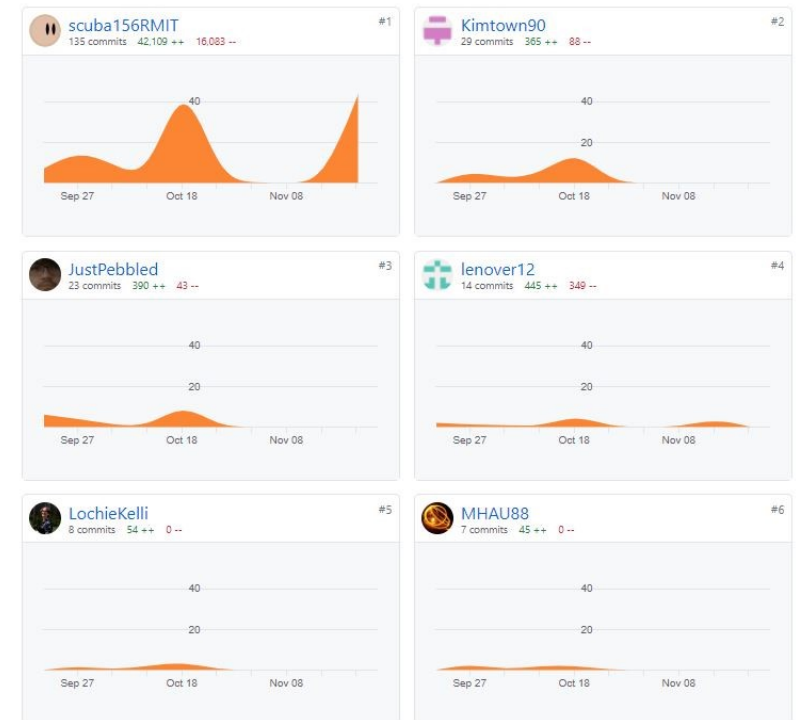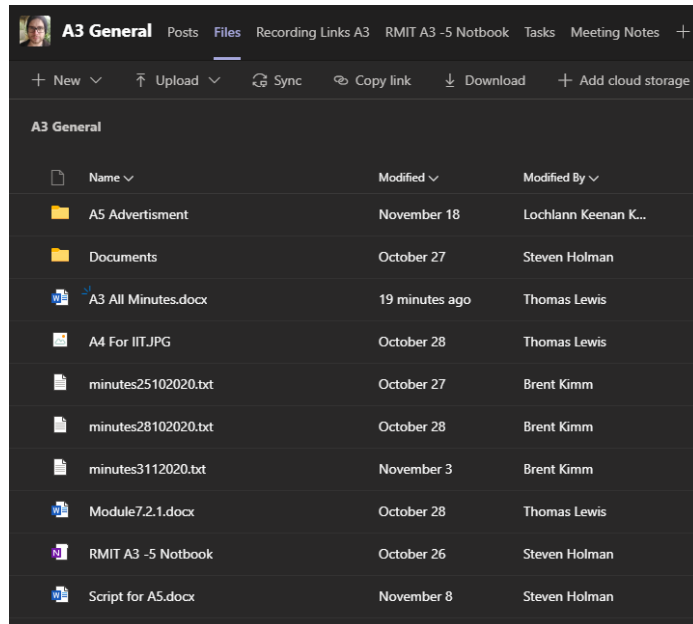Link to page: https://iit-memeteam.github.io/IIT_Assignment03/

Reflection:

The Meme Team's utilization of GitHub is not an accurate representation of the commitment that individuals have made due to the manor in with we have assigned role's in our group little form many of us was recorded contributions through git hub as this is also a presence, we changed to have all information relevant to assignments is to be within teams for both editor's grace and ease of access witch is shown following, as of the way in which we worked git hub itself is not an indication of how the work is distributed upon members of the groups as what we have done is used the files system in teams to have our work produced in word documents as said prior can be seen below, which would then be primarily imported to GitHub by Steve our lead programmer to reduce repository clutter and make more effective use of our tools available to us making assigning tasks and seeing completed work more plausible and cohesive due to consistent formatting that teams inherently pertains and tracks for us.

Sep 20, 2020 – Nov 26, 2020

Contributions: Commits ▾

Contributions to master, excluding merge commits

scuba156RMIT #1
135 commits 42,109 ++ 16,083 --

Kimtown90 #2
29 commits 365 ++ 88 --

JustPebbled #3
23 commits 390 ++ 43 --

lenover12 #4
14 commits 445 ++ 349 --

LochieKelli #5
8 commits 54 ++ 0 --

MHAU88 #6
7 commits 45 ++ 0 --

MS Teams Files
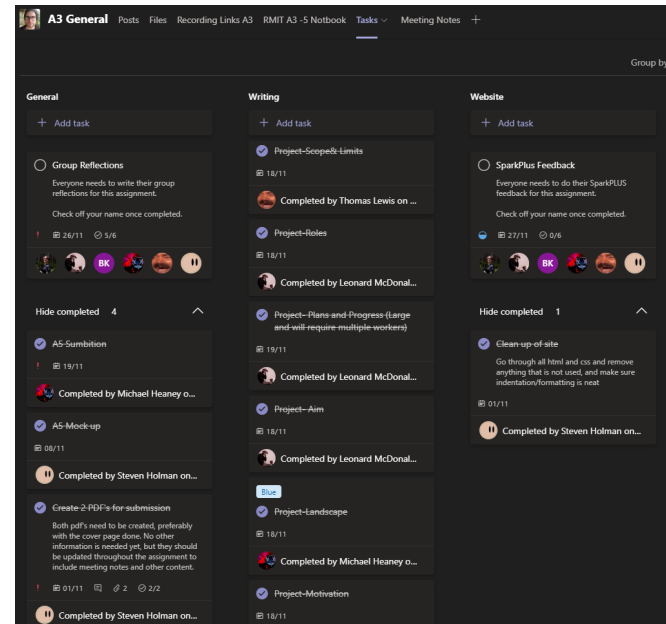
MS Teams Task planner

PROJECT DESCRIPTION

OVERVIEW

TOPIC

Meme-teams purpose in this project is to create a physical and portable social game named after the function of mimicking one another, as the "Mimi-box". This is a spoken game that entices players to speak to it in fun and uniquely interesting ways, because the other players will have to mimic them! Mimi-box is both the game and the controller which is located within a truncated hexagonal prism case built perfectly for heavy use in family settings and even parties.

The Mimi-box will be designed and achieved by Meme-team members who aim to bring this game to life for people to purchase off of retail shelves across the nation, ultimately to become as recognisable as monopoly.

Aiming for encouraging inclusivity in new social settings and delivering fun gameplay that allows Mimi-box's players to open up, break the ice, and be involved with their peers, and even interact with Mimi-box itself as it guides and talks with the players. Filling the gap in the market on speech focused social games because Meme-team believes that everyone has a unique voice and something to say.

MOTIVATION

Meme-team's motivation behind the Mimi-box stems from the type of product that it is, a "Social game". During the COVID-19 lockdowns each member of Meme-team was impacted in different and various ways, but similarly, team members were unable to travel out of state to visit family and friends, even some unable to travel past 5km. An overall lack of social life sparked the motivation behind this project, social games should be encouraging and inclusive with small chances to leave someone out of the fun, you can see this idea in the gameplay design, interactions and physical device of the Mimi-box. Meme-team wanted to create a product that would be used multiple times, making friends, family, and even strangers laugh. Furthermore, working on this project allows Meme-team members to appeal to future employers with their ability to put together an IT product showcasing multiple skill's clearly by the very design itself. Borrowing from 3D printing, user design, 3D modelling, hardware design, programming, gameplay engineering, audio engineering and additionally business.

LANDSCAPE

There have been many games like the Mimi-box that incorporate voice recognition, using different algorithms to distinguish between pitch, tone, and key vocal notes. These include games like the ever-popular SingStar and the original Furby, which was insanely ahead of its time as the first successfully produced domestically aimed robot. Other party types of games that draw from similar playstyle concepts include Operation and Lightning Reaction. SingStar is probably the most comparable mass-produced product, a karaoke video game published by Sony Computer Entertainment Europe and released on the PlayStation console platforms [1]. Unlike the Mimi-Box, the SingStar is generally played verse the computer where a player is required to sing along with the music to score points [2]. In contrast, the Mimi-Box is more of a head-to-head concept and can utilize any form of entertainment input, such as singing, reciting poems, sentences, or even just abstract sounds and noises.

The early generations of Furby's had state of the art voice recognition for its time. A newly purchased Furby begins speaking in the "Furbish" language before gradually replacing Furbish phrases with English over time[3]. Furby's source code was written in ASM language, which was based around a Sunplus SPC81A microcontroller and a Texas Instruments chipset implementing Linear Predictive Coding, which allowed for voice synthesis[4]. This type of coding picks up on certain aspects of the voice, such as the Glottis, which is the space between the vocal folds, which produces buzz, which is characterized by its loudness and frequency, or pitch. This directly correlates to what we need to produce for speech synthesis for the Mimi-Box[5].

While family games such as Lightning Reaction Reloaded and Operation don't implement any speech recognition or synthesis elements, the turn-based gameplay based around multiple players draws similar concepts to the Mimi-Box. The Mimi-Box looks to replicate the thrilling, fast-paced action that these platforms have.

REFERENCES

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Available at: <https://www.stuff.co.nz/the-press/technology/the-box/gaming/126070/SingStar-is-about-winning-not-singing>
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[Accessed 26 November 2020].

AIMS

The Mimi-box Project's aim is to create a handheld voice operated party game product which will be adopted by retailers to sell on their shelves. The meme team plan on achieving this by creating a prototype device and final product specifications document to appeal to investors for budgeting and manufacturing. The process involves these set goals: creating the base mock-up program code, creating a 3D model of the Mimi-box, and prototype hardware sourcing. Thereafter creating the script and voice recordings of Mimi-box interactions, 3D printing and refining the 3D model exterior and interior ready to be presented, testing the prototype with users from ages 12 to young adult[1]. Using the test results and market research, along with materials, final product hardware, and projected manufacturing costs to create the specification document to obtain funding for the fruition of the shelf ready product, sourcing efficient cost-effective manufacturing through the investors partnership.

Mock-up Programming Code For Demonstration and Testing

The prototype will be made for testing, to the end user it will essentially be the same as the final product. The programming involved in creating the prototype isn't overly complex, Steven Holman of the Meme team using his experience in Java programming will write the mock-up program while holding plans to create the final product with python. When aiming for a prototype, functionality can be reduced to save time, focusing on hardware connectivity, voice input and output, voice comparison, difficulty levels, usability and gameplay flow.

3D Model Object Representation of the Mimi-Box

The Mimi-box is shaped similar to a skewed and stretched hexagonal prism, it's designed to contain five buttons, a microphone and speaker gausses, and a battery pack slot. We are able to create a 3D model prototype of the Mimi-box to match hardware dimensions and design changes, this 3D model is easy to update as the Mimi-box is a simple design. These 3D model changes are likely to occur as we fit the hardware, wiring, waterproofing and shock absorption parts into the interior of the prototype, using 3D modelling technology to save costs on assembling physical components per each updated prototype.

Hardware Sourcing for Prototype

The speaker and microphone of the Mimi-box will be selected for their quality, lifespan, and bulk purchase availability. As the Mimi-box is essentially a spoken game, sound input and output are very important and need to be a focus of the project hardware, furthermore, speakers and microphones used for the prototype will continue through to the final product. The prototype will take advantage of a Raspberry Pi 3B while the final product will require a custom PCB (printed circuit board)[2] to vastly reduce costs, while finding an easy manufactured connection method between the hardware. Lastly the power source for the final product should be easily managed by the user and keep a decent battery charge lifespan[3], while simple button inputs on cords are used for Mimi-box user functionality.

Script and Voice

The main interaction between the users and the game are taken via one button and vocal interaction, Meme team are aiming to create an affinity through these interactions and an entertaining inclusive script. The script is to be built to guide users in gameplay, supply examples or lead users in their thinking, control the flow of the game and game modes, and hype up users creating a fun and straightforward user experience through the Mimi-box's vocal interactions.

3D Printed Mimi-Box

3D printing the Mimi-box prototype using the 3D object designed for the hardware specifications and adding rubber for shock absorption and feet to stand the product. Buttons to be printed separately and slotted into place inside the box, in front of the corded button input hardware.

Testing the Prototype and collecting Data for Investors

The completed prototype of the Mimi-box will be tested with various demographics of users ranging from families to groups of 12 years-old's up to young adults [1]. The data collected from this testing is to be placed into a spreadsheet and represented alongside market research, giving the Meme Team the opportunity to receive an investment or funding that will allow Mimi-box to progress towards manufacturing.

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PLANS AND PROGRESS

As a team, we have created significant artifacts towards a finished product of the Mimi-Box. From Assignment 1, we had different sketches and samples of team member Leonard's representation of the Mimi-Box idea. The illustrations were highly detailed and drawn in grey lead pencils on paper, with around 2 or 3 hours devoted to completing these. The depiction of his sketches began the basis of an objective to create in Assignment 3.

Research then began in Assignment 2, where we had focused on the hardware required for the Mimi-Box. With this groundwork complete, we then had a strong understanding of the physical components and hardware necessary for building a prototype of the Mimi-Box. A Raspberry Pi 3b was the standout choice for the prototype's computer, as it has much support and is simple to use when building a model. Assuming we create a final product, we would then use a custom-built printed circuit board (PCB) to power the Mimi-box. But for now, a Raspberry Pi 3b was used, as it is highly compatible with both Java and Python coding, the primary languages used throughout the creation of this product. The simplicity of Java coding was chosen to begin with, which we then used for the .wav files to represent the model. Although Java coding was used in this instance, if this creation ever does come to fruition, we will then shift to Python coding. Python has more fluidity, consistency, and stability and works far better with a Raspberry Pi. There are also more libraries available for Python, which makes programming far more practical in this sense.

Over the course of Assignment 3, we steadily created a 3d model of the Mimi-Box on Blender, which is a free and open-source 3D creation program. We took samples from the sketches and diagrams of the Mimi-box created in Assignment 1 and added them in Blender with certain features, colours, and styles until the whole team decided on the model to develop. Things such as colours and shades of the Mimi-Box were frequently changed from silver, black, and white to finishing with a gold-ish tone of yellow, which we thought stood out in a party setting. Unlike neutral colours, the goldish style gives off a fun vibe. We also changed the background colour of our 3D creation to a neutral grey.

The contrast of the goldish colour on the grey background makes the Mimi-Box stand out pleasantly. Using Blender has been extremely useful, as we can visualise the Mimi-Box design and adjust the design to our liking. Such as adding LED lights, buttons, a speaker, and a USB-C port.
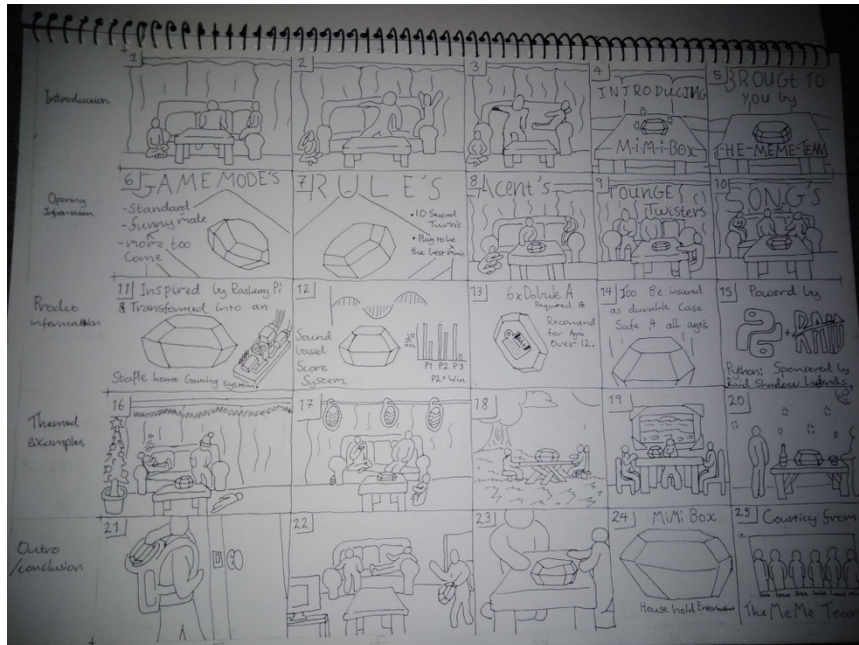
Storyboard (Drawn by Thomas Lewis)

As a part of Assignment 5, we created a written script to advertise our end-product. To do this, a storyboard of scenes was created. The storyboard and script were used by the director, and the actors when filming the advertisement. The storyboard consists of five different scenes with five different representations of what should happen throughout these scenes. The initial five sketches are the introduction to our advertisement. Scenes 6 - 10 on the storyboard, opens with the basis of the Mimi-Box, which includes the types of gameplay and different modes. Sections 11 - 15 of the storyboard comprises product information regarding the Mimi-Box, such as suggested ages, types of batteries required, and the type of programming which powers the Mimi-Box. 16 – 20 on the storyboard illustrates the different occasions and scenarios which the Mimi-Box is perfectly suited to, such as breaking the ice at a party or being used during family gatherings on various holidays. Finally, it finishes with the scenes from 21 - 25, which summarise the simplicity, durability, ease of access, and fun that the Mimi-Box consists of. With the storyboard created, team member Lochlann utilised his three housemates, including himself, to film these scenes.

All these physical artifacts created throughout Assignment 3, lay the foundations of a design principle with practical components installed that can then be manufactured if, or when, desired by our team.

https://youtu.be/tpZ3bAIep-M - (Mimi Box advertisement, previously submitted as part of the Teams Assignment 5.)

Story of the project

The Mimi-Box project started with an idea brought upon during the peak of the COVID-19 Australian lockdowns. In this time of heavily restricted social interactions and low human interaction, Australians sang out in one accord from their animal instinct requirements. They needed some form of a social life back. This was the original process of thought that lead to the project concept of a social party game; humans need to socialise, supply and demand.

This basic conceptual idea of a social game came from Leonard of the Meme-team. Leonard took the concept of a social game and mixed it with his experiences and observations from interactions with the strangers he met on his travels abroad. He noted; This needed to be a social game that anyone can play, mixing strangers and friends ranging from all blends of country and cultures, a social game that encourages inclusivity, a social game that only uses what people already possess; their voice.

Leonard decided it would be a social game that uses the human voice, recording, comparing, and outputting sound. After researching standard DIY hardware to create a graphic representation of the device and designing the base gameplay concept, the creation of Mimi-Box started. Regardless of Leonard's circumstances that brought the Mimi-Box idea to its initial design, Meme-Team had voted to continue working on this project where each team member adopted the Mimi-Box to push this idea to its fullest potential within their capabilities.

Originally thought to be a simple concept with a basic premise, the Mimi-Box's development process has not been immune to standard development pit holes, but it has also seen some great work. One of the key points to any project is the aim, the goal, the expected result at the end of the deadline, Leonard had written Meme-Teams' goals and aims into a document based on the team discussions. Furthermore, creating a timeline of the goal milestones, to be filled out and refined as new information and developments come into the project, Meme-Team decided that these aims, goals, and plans would be defined early in the project but open to change as the Mimi-Box takes shape.
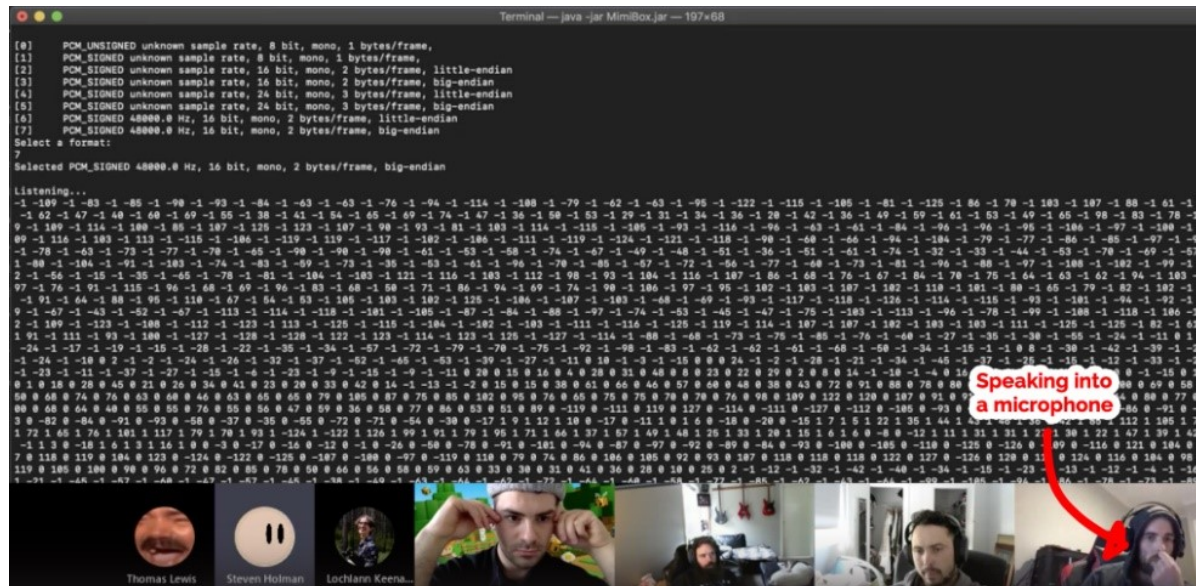
Meeting published on 11/5/2020 by Steven Holman. - Audio input converted into an array of bytes

During the early stages of development, it was essential to build the core game concept. We needed to know for sure the time and effort required for creating the foundation of the game program. This is the audio input, audio conversion, and the resulting .WAV file to be stored for later playback and comparison. With this alone, the Mimi-Box would have its testable bare-bones proof of concept ready to be refined within the planned timeframe into a complete product. On 5th November 2020, the lead programmer Steven of Meme-Team used a GitHub branch of the team's repository to upload and host the compiled java prototype, on the 6th, Steven added to the prototype an observer for Audio output, then on the 7th, Steven added file writing. From Steven's hard work, the foundation was created speedily, demonstrating early on to the other members of Meme-Team an audio input test, converting sound into an array of bytes represented as comma-separated values.

The decision was made to put less work into refining the foundation and lend that time to other sections of the development, allocating the goal further along in the timeframe's timeline to add the use of an FLL library for completing the audio comparison mechanic. Steven's skill set is unique among the team members. The decision was made to spread his department workload into the hypothetical parts of the timeframe this way, which offered Steven more diverse roles.

The next step in the development process was underway, Michael and Thomas started researching more in-depth into the specific hardware needed. Thomas had previously explored and discussed the comparison of audio files and the hardware with Steven. They had decided to move away from spectrograms towards the much faster version of audio comparison, which, as previously stated, uses an FLL library and byte arrays. Michael became familiar with the Raspberry Pi series of chipboard computers and the necessary hardware. He then brought these findings to a group meeting and shared the information on the team's page. Tom using the info gathered, focused on the risks that could be involved in the hardware and device, creating a report. The Mimi-Box's original design was taking advantage of the Raspberry Pi Zero for its low price and market availability, through discussion and the research, Meme-Team made the change from the Raspberry Pi Zero to the Raspberry Pi 3B. This was a significant increase in price for the prototype yet was easily afforded to a hypothetical out of pocket budget as half the team members own similar devices. With this change in hardware, the prototype no longer represented the hardware that would be used for the shelf-ready product, meaning only one Raspberry Pi 3B is required for purchase when presenting the prototype to future investors.

```
-==============================-
  Configure Audio
-==============================-
Current Configuration:
   Input:  Default Audio Device
   Output: Default Audio Device
   Format: PCM_UNSIGNED unknown sample rate, 8 bit, mono, 1 bytes/frame,
```

(Video: https://youtu.be/LhvC-ehKws4 - Code repo: https://github.com/IIT-MemeTeam/Mimibox-prototype)

```
Config Audio (F)ormat
(B)ack
Select an option:
```

This change was necessary. The Raspberry Pi 3B provides the Mimi-Box prototype with the support it requires to represent the final product. Creating a priority in the Meme-Teams goals when later appealing for investor funding, as now the full product will vastly benefit from a custom-built PCB with a broader range of tested hardware from the prototype. Michael was able to find suitable power source options, microphones, and speakers that were not supported on the Raspberry Pi Zero. But it can be built into the design of a custom PCB—creating a considerable cut in projected manufacturing cost, and a boost in ever-important available audio options for input/output quality.

The biggest struggle that came with solidifying our choices in hardware and making hardware changes was regarding compatibility. The questions were not only "which battery source is plausible for battery life? price? size? and availability for customer purchase", but the questions that were now more important were also "what volts/amps will the Raspberry Pi 3B require? how can we increase battery life without affecting the hardware specifications? will this cause overheating?".

Just as the physical Mimi-Box device's hardware and software are essential, the Meme-Team's project cannot succeed without clear direction and strategy to enter the market. Brent led the team discussion related to competition in the marketplace, researching other popular social games using the same gameplay aspects and technical ability, he was able to define the positions these games take in each household. His findings helped refine the aim of the Mimi-Box to a demographic target while filling a gap in the market. This information was considered as Leonard altered the goals and aim, updating them and the previously mentioned final product hardware specifications. Hereafter, Brent created an advertisement script designed for presenting the Mimi-Box to potential investors. Thomas refined this script to create a graphic storyboard adding the visual elements that were later implemented in filming.

With the storyboard and script in tow, Lochlann gathered local actors and directed the advertisement's filming, communicating with the team on this process. Lochlann was able to improvise some scenes to remove/replace the need for material and props that weren't available at the due time. While filming the advertisement, Lochlann was also without a working prototype. To amend the problem that occurred in the first takes of the film, where the actors did now know when to respond, Lochlann used part of the example gameplay script provided by Leonard, to speak as the role of Mimi-Box's audio interaction, allowing the correct timing of the actor's responses. A feature of the storyboard was the Mimi-Box sitting between the actors, lacking a physical prototype, Steve had created a 3D object. He rendered a video output of this object to be keyed into its planned place in the storyboard.

A finer feature of the Mimi-Box object planned within this timeframe was the battery compartment opening mechanism. As it was unneeded for the video, Steve had changed the battery compartment's priority to the button pattern and location. Leo worked the example gameplay script into sections to be recorded. With an attempt at recording, he found his studio microphone to produce low-quality audio and was required to improvise using a smartphone with a pop filter made out of a sock. The audio was recorded, edited, processed, and chopped up. The advertisement video files were shared with Michael through Microsoft Teams and GitHub, who spent his time editing the footage, voice overlay, backing track, 3D object, and text into the advertisement video. When needed, Michael would request additional or a reshoot of footage from Lochlann and an additional voice-over created by Leo as the Mimi-box's prototype voice.

(Example script audio: https://drive.google.com/drive/folders/1y0-S1CM1ouUbpMxNvMRlJ25sCBDDRGic)

Currently, Meme-Team stands: As a team, we have created multiple artifacts, functionality, documentation, experimentation results, advertisements for investors, a 3D model not far off printing, and prototyping code. In terms of project development and how the timeline will hypothetically continue, the next significant steps will be to implement an IFF library, hosting the java program on a raspberry pi with connected hardware, creating the interior of the 3D model, and 3D printing the model.

ROLES

The work structure surrounding the Mimi-Box is a fundamental concept. We have a designated Lead Developer, Steven, the most talented programmer in our team. The remaining team members pitch in with any necessary coding with the website to help Steven's pressure and workload. Other than Steven, we have no different real designated roles for our team members. This works well for us, as all other team members have good all-around skills and knowledge on various other aspects of I.T, so we have the advantage of being able to assign any task to any team member.

In Week 1, Thomas created all the required Assignment 3 tasks in Microsoft teams. We then delegated each team member tasks to spread the assignment's entire workload evenly amongst the group. Leonard, Michael, and Lochlann all started researching and writing various parts of the progress. At the same time, Brent focused on writing a script for Assignment 5, the first task.

Week 2 was much similar, with Steven studying Python libraries, which was required for the Mimi-Box. Brent finalised the script for Assignment 5 while also researching for an advertisement and demographic of our product. Thomas used Brent's written script for Assignment 5 and began sketches on a storyboard to be submitted along with the script. Michael started to investigate Tools and Technologies related to the Mimi-Box. At the same time, Leonard created the Timeframe document and developed the record for the assigned roles. Lochlann completed his career plan and revised and edited everyone else's submitted to this point.

Week 3 was another research and write week for the team, with Brent completing the Landscape part of the project and finishing his career plan. Lochlann compared everyone's career plans and summarised this in a document that Steven transferred to our website. Thomas completed and integrated the storyboard with the script, ready for filming, for Assignment 5. An urgent team meeting was called to share the workload. Leonard took the initiative to delegate some tasks to himself, which included the Aim of the project.

Due to getting married and going on a short honeymoon, Brent was happily granted leave by the rest of his team members and missed the majority of Week 4. Lochlann used Week 4 to review the draft script that Brent wrote in Week 1 and the Storyboard that Thomas drew in preparation for recording the advertisement for Assignment 5 in Week 5. Thomas focused on completing the Scope and Testing tasks required for submission as a part of Assignment 3. Leonard being an exceptionally skilled writer, began a written script for the Mimi-Box gameplay. Steven focused on developing a prototype of the Mimi-Box in Blender, a program for creating and designing 3D models.

With Week 5 beginning, the Plans and Progress part of the assignment still needed to be written, the three most substantial writers, Lochlann, Leonard, and Brent, all took part in writing this section together as it was a massive workload for just an individual. Steven continued working on the website associated with the Mimi-Box and making changes to team profiles from Assignment 2 to update them with our career plans in Assignment 3. With his roommates and his camera and recording equipment, Lochlann filmed the scenes that were required to submit for Assignment 5. Leonard recorded his vocals for the Mimi-Box video advertisement. Having a strong background in video editing, Michael turned both the scenes Lochlann filmed and vocals Leonard recorded into a short advertising piece that to be submitted. Thomas used this time to continue editing other written reports while also helping Steve with the website's coding.

Week 6 was mostly tidying up and finishing off any written pieces needing to be submitted. Brent took it upon himself to write and summarise this very piece of information regarding our team roles. Lochlann reviewed and edited the Progress and Plans of the Mimi-Box. At the same time, Leonard wrote the Mimi-Box story due to its being his invention and the background of why he created this product. Being a team player, Thomas pitched in and gave everyone any pieces of written information that needed assistance.

From Week 6 onwards, due to RMIT granting an extension on the due date, as a team, we will all use this time to go over all the different categories of Assignment 3 and editing and reference checking anything that requires it. Steven will transfer all this information over to the website, ready for submission. Overall, while our workgroup doesn't have any clearly defined roles assigned over the whole project, we all have excellent all-around knowledge and work ethic to achieve the tasks that need to be completed.

SCOPES AND LIMITS

The project's scope is relative to the considered finalization stage based on time restraints given as well individual commitments that may impede the progress of the outcome. Given the current assignment deadline, as it stands, we have a prototype of our entertainment system that presents the functionality of recording raw audio inputs and said input recorded logged as an actively saved sound file. Along with this is a 3rd-dimensional digital visual representation as designs for the product and place holder for a voice over for the game.

As the scope for a whole development cycle is unfeasible, give our current restrictions, it would be appropriate to assume that the game loop the system requires for basic function may not be presentable and delivered in segments as aforementioned.

These would pertain to the basic game functions such as taking the audio and saving it as a file but will not be yet able to compare these audio files accurately or to an acquitted standard of function that a final output would need, as well as deliverable or a real-world demonstration of our final product would be un-producible. Although many examples of code and hardware needed to function have been explored by multiple Meme-Team members withdrawn and computer-drawn designs and working on a Raspberry Pi recording audio input, which can be seen in the protect testing. Extensive research has also been put towards the absent necessity through the subset tasks proposed by the Mimi-Box. However, this achievement may be unobtainable due to the hypothetical global appeal of the device and vigorous testing that is implied by a global scale production line that is also mentioned in the testing section, an example that could be given in the long term that would not happen without backing from a company or entrepreneur.

As the game is soundly based, it wouldn't be illogical to draw a comparison towards Sony Entertainments Sing-Star[1] in which you try to imitate famous singers in iconic songs although, on January 31, 2020, the company shut down, the proportions of the company speak for themselves and in the case of long-term development would see them as a milestone competitor "Sing-Star series has now sold over 20 million units, Sony has announced.... confirmed 16 million units had been sold across PAL regions alone"[2]. This connects back to the global variation required by the testing and a final production line and would be considered way beyond the scope of current circumstances.

[1] **Playstation.** 2020.
Singstar Celebration. [online]
Available at: <https://www.playstation.com/en-au/games/singstar-celebration-ps4/>
[Accessed 20 November 2020].

[2] **GamesIndustry.biz.** 2020.
Singstar Reaches 20 Million Sales. [online]
Available at: <https://www.gamesindustry.biz/articles/singstar-reaches-20-million-sales>
[Accessed 20 November 2020].

TOOLS AND TECHNOLOGIES

When producing the Mimi Box, a standalone entertainment system, the two aspects to consider are the hardware in use and the software and two subset factors, which are the developmental prototype and then the final device. The primary board for prototyping will be a Raspberry Pi 3 Model B Plus[1] to pertain a relatively accurate representation of size and power delivery due to its "tiny credit card size... Just add a keyboard, mouse, display, power supply, micro SD card with installed Linux"[1], which, as stated, uses the Linux operating system variant Raspbian specifically built for the Pi. This would be ideal due to its distinct flexibility for software development availability, testing comparison, and to transition the development to the final product in the event of crunch time.

The final product itself would be a custom-built PCB with inbuilt required hardware such as speakers, microphone, and a battery kit that would be mounted individually upon the PCB. The prototype will require external attachment placeholders for the mounted peripherals. Our chosen microphone for the prototype is a 'SunFounder USB 2.0 Mini'[2], primarily due to its convenient size and compatibility with the chosen board during development. This is also the idea that followed when selecting the battery pack 'MintyBoost Kit - v3.0'[3]. Although this speaker was more aesthetically pleasing 'Speaker pHAT'[4] while still maintaining size and power efficiency but aiming for a retro style that fits the protects target appeal of returning to home gaming, interpersonal interactions, and away from online.

The software during the development and the final product differ, likewise to the hardware as in current development on the Raspberry Pi 3 B Plus is using Java[5] (Java Development Kit 14[6] and onto 15 depending on development period) and this will be translated into Python (version 3.9) towards the end of the production to reduce the complexity of the library and functions called to the specific requirements of our construed game modes during later program development. Beyond that, the plan is to have the custom PCB built to the program specs' requirements rather than limiting the function of the game based on hardware constraints when producing a final product.

[1] **Pi Australia.** 2020.
Raspberry Pi 3 Model B+. [online]
Available at: <https://raspberry.piaustralia.com.au/collections/raspberry-pi-boards/products/raspberry-pi-3-model-b-plus>
[Accessed 20 November 2020].

[2] **Amazon.com.** 2020.
SunFounder USB 2.0 Mini Microphone [online]
Available at: <https://www.amazon.com/dp/B01KLRBHGM/>
[Accessed 20 November 2020].

[3] **Industries, A.**, 2020.
Mintyboost Kit. [online] Adafruit.com.
Available at: <https://www.adafruit.com/product/14>
[Accessed 20 November 2020].

[4] **Shop.pimoroni.com.** 2020.
Speaker Phat – Pimoroni. [online]
Available at: <https://shop.pimoroni.com/products/speaker-phat>
[Accessed 20 November 2020].

[5] **Oracle.com.** 2020.
Java Software | Oracle. [online]
Available at: <https://www.oracle.com/java/>
[Accessed 20 November 2020].

[6] **Oracle.com.** 2020.
JDK 14 Release Notes, Important Changes, And Information. [online]
Available at: <https://www.oracle.com/java/technologies/javase/14-relnote-issues.html>
[Accessed 20 November 2020].

TESTING

It would not be easy to declare when the Mimi box is a finished product from multiple aspects as many innovations could be made in a series of updates or version releases. And that would propose various expansions upon the available game modes & or similar variations of the way the player must mimic their opponent, such as facial expressions.

In the case for the basis of a prototype the first version of the Mimi box that would be considered a final product, this would most likely entail the base primes of having players be capable of comparing their voice recording to set a score-based system this would be the most accurate demonstration of the product the Meme Team intends.

Yet, having a real-world design and functional program would be the most feasible due to time confinements. Earlier (In plans and progress) there were examples such as the 3D Model, code examples toward what a functional version of our device would require, and example audio output from the product.

Furthermore, multiple aspects would benefit from quality assurance. The most prevalent to mind is the accuracy of the compared matrix of the recorded MEL frequencies, which would directly determine the scale and skill ceiling, this is only trial and error as the game must be within a degree of accuracy that isn't so low the game requires no skill and on the opposite end not too accurate as to be unplayable. This would also include quality assuring the physical durability of the hardware encasement to upfront deliver to our target audience, which would require a broad demographic with diverse dialect to ensure those language variants of the product are quality assured.

This would include most if not all available nationalities to test as well as any age groups as vocal intonation varies due to puberty as well "Linguistic variation, Sociolinguistic Variation, Dialectal Variation, and Linguistic Variables"[1] which comes back to the IPA[2] (International phonetic alphabet) and regional to language variation which would be an example of how our Mimi box fulfils its role as a versatile in-home entertainment device.

[1]   **ThoughtCo. 2020.**
      What Is Linguistic Variation?. [online]
      Available at: <https://www.thoughtco.com/what-is-linguistic-variation-1691242#:~:text=Dialectal%20Variation,difference%20is%20one%20of%20accent.>
      [Accessed 11 November 2020].

[2]   **Internationalphoneticassociation.org.** 2020.
      Full IPA Chart | International Phonetic Association. [online]
      Available at: <https://www.internationalphoneticassociation.org/content/full-ipa-chart>
      [Accessed 11 November 2020].

TIMEFRAME

	Michael Heaney	Steven Holman	Lochlann Keenan Kelli	Brent Kimm	Thomas Lewis	Leonard McDonald
Week 1 (Research & Organising)	**Research: (Documentation)** Tools and technologies general	**Research: (Programming)** Python & python libraries compared to java & java libraries. **Organisation:** Setting up GitHub repository. Setting up Microsoft Teams.	**Draft: (Documentation)** Project progress document template drafted	**Draft: (Video/Artefact)** Worked on script for advertisement **Research:** Data backup and security, sharing information in teams meeting to team members.	**Organisation: (Documentation)** Creating assignable Tasks in Microsoft Teams representing all expected project work.	**Research: (Documentation)** Project milestones, documentation, and reports for ongoing project development.
Week 2 (Initial Drafting)	**Research/Draft: (Documentation)** Tools and technologies: Deciding between which Raspberry Pi model to use, power supply & discussing user experience addressing power supply.	**Draft: (Programming)** Writing Java program code for the Mimi-box prototype: microphone input, conversion audio to byte array, saving as file. **Organisation: (Artefact)** Uploaded java program code to GitHub repository	**Organisation/Editing: (Documentation)** Defined team career pathway plans Communicated with Leo on job roles.	**Research: (Video)** Product pitches, advertisement marketing, our approach to selling the product **Editing: (Video)** Finalised script	**Draft: (Artefact)** Storyboard pencil drawing of Mimi-box advertisement video from Brents draft script	**Organisation: (Documentation)** Created the Timeframe document (to be updated weekly) Created the weekly job roles document (to be updated weekly)

Week 3 (Final Research)	Research/Draft: (Documentation) Tools and technologies: Mimi-box case material Editing: (Documentation) Tools and technologies	Organisation: (Website) Transferring data and information to the website Research/Draft: (Artefact) Blender created 3D model of the Mimi-box	Finalising: (Documentation) Career pathway plans Organisation: (Website) Career pathway plans implemented into the website Research: (Documentation) Project progress document	Research: (Documentation) Landscape and marketability of physical social games. Market Mimi-box targets. Finalising: (Documentation) Landscape of the Mimi-box	Editing/finalising: (Video) Completing advertisement storyboard, edited and divided script for video recording Draft/Finalising: (Documentation) Project testing document created	Draft/Finalising: (Documentation) Aim of the Mimi-box project & the projects goals Research/Draft: (Documentation) Topic document, Story of Mimi-box for project progress.
Week 4 (Major Artefact Drafting)	Research: (Video) Advertisement editing styles, royalty free music. Organising: (Video) Setting up Premier Pro & Video encoding settings.	Editing: (Artefact) Large progress on Mimi-box 3D model object (buttons, power supply casing, detail) Editing: (Artefact/Website) 3D model object added to website with added ability to move Mimi-box perspective.	Organising/Finalising: (Video) Acquiring props for advertisement scenes, changing and finalising video script to suit location/props. Preparing advertisement video to be filmed: camera set up, scheduling with actors.	On leave (Marriage) (Honeymoon)	Draft/Finalising: (Documentation) Completed scope and testing, Completed risks documentation Research: (Documentation) researching other documentation required for subsequent week's work.	Draft/Finalising: (Documentation/Artefact) Created gameplay script for vocal & interaction part of Mimi-box game Organising: (Video/Artefact) Set up studio microphone for recording gameplay script.

Week 5 (Video Completion / Website work)	Editing: (Video)	Finalising: (Artefact)	Draft/Finalising: (Video)	Editing: (Documentation)	Finalising: (Documentation)	Editing/Finalising: (Video)
	Advertisement video creation, communicated with Lochlann & Leo for new footage and voiceover, continued editing. Mimi-box 3D object render received from Steve keyed and overlayed into footage.	3D model changes added via new user design **(Video)** rendered 3D model video output for advertisement. **Editing: (Website)** Updating profiles, website design, web 3D-model render updated & interactivity added **Editing: (Documentation)** Guiding team members in questions.	Recorded footage for the advertisement, created additional footage and acting performances as requested by Michael.	Made addition to plans and progress documentation. Editing and adding onto draft documents in Microsoft Teams.	Tools and technology **Draft/Finalising: (Documentation)** Project scopes and limits document created and completed. Added group reflection draft **Editing: (Website)** Refining HTML and CSS webpage code.	Recorded voice over vocals for the video advertisement, created additional voice over upon request from Michael. **Draft/Finalising: (Video/Artefact)** Audio recording for gameplay script noise reduction, chopping up. **Finalising: (Documentation)** completing aim document amending data from discussions and research.
Week 6 (Documentation finalisation)	**Editing/Finalising: (Video)** Early week finalisation of advertisement video after making team observation revisions. Uploading of advertisement in HD as unlisted YouTube video. **Editing: (website)** Found images and pictures for use in the website to represent different sections and break up the text and whitespace of each page. Adding in-line references on documentation.	**Edit/Finalisation: (Website/Documentation)** Transfer all information posted in Microsoft Teams into the website, format data added to website into HTML. Editing small sections of the team submitted documents while moving them into an official PDF and the Website. Hyperlink in-line references. **Finalised: (Documentation)** Review documentation and request additional tasks for team members. **Programming: (Documentation/Artefact)** Wrote up coding section to represent the Mimi-box code in a document Adding in-line references on documentation.	**Editing/Finalised: (Documentation)** Heavy editing to various documents, edited the plans and process of Mimi-box, adding information that was missing, formatted into a formal document, edited the team roles document after Brent had written it up. Adding in-line references on documentation.	**Editing/Finalised: (Documentation)** Reviewed team roles dot-points & re-wrote into eligible document representation of the data. Wrote part of plans and progress. Created refined completed team roles document Wrote up team reflection, edited individual team reflections and other documents. Adding in-line references on documentation.	**Editing: (website)** Found images and pictures to use for the various sections of the website to represent the pages and data as icons. **Editing/Finalised: (Documentation)** Wrote up the Tools document and represented the GitHub and Microsoft Teams information with screenshots. Adding in-line references on documentation.	**Finalising: (Documentation)** Completed and edited the story of the Mimi-box development process in plans and process document. **Editing/Finalising: (Documentation)** Editing current timeframe document table & adding weeks 7 through 15. Editing Topic, job roles. Adding in-line references on documentation.

Week 7 (Market Research) (Prototype assembly)	**Assembly: (Artefact)** Acquire/purchase Mimi-box prototype hardware: Raspberry pi 3b + battery from Lochlann, purchasing USB microphone, speaker, button receivers, pHAT CB, batteries. Assemble Mimi-box hardware ready for software installation and encasing.	**Editing/Finalising: (Programming)** Implement IFF libraries for audio file comparison in Java prototype **Assembly: (Programming)** Update Mimi-box Java program and create repository link	**Assembly: (Artefact)** Pass own Raspberry pi 3b onto Michael **Research/Finalising: (Market)** Study demographic of teenagers, creating customer segment dataset for advertising Mimi-box to teenagers, finding a problem Mimi-box solves for teenagers.	**Assembly: (Artefact)** Using the Mimi-box model, 3D-print the model to be the prototype case. Pass Mimi-box case onto Michael **Research/Finalising: (Market)** Study demographic of Young adult party groups, creating customer segment dataset for advertising Mimi-box to YA during parties, finding a problem Mimi-box solves for party situations.	**Research/Finalising: (Market)** Study demographic of families, creating customer segment dataset for advertising Mimi-box to family situations, finding a problem Mimi-box solves for families.	**Organisation: (Market)** Set-up meetings with investors and boardgame/social-game developer businesses for week 12. **Organisation: (Market/Documentation)** Organise prototype gameplay testing schedule with friends, family, institute, local boardgame café, house party. Asking additional questions: how much would you pay for this? When would you use this?
Week 8 (Prototype Testing) (Market report)	**Assembly: (Artefact)** Install raspberry pi OS and Java runtime environment, pull and install Mimi-box prototype program from Steve's link Encase Hardware into Mimi-box case from Brent **Documentation/Testing: (Artefact)** Test Mimi-box prototype running code, test battery life. (brief stress test) Meet and deliver Mimi-box to Leo for market testing.	**Research: (Programming)** Research Python programming for the finalised product. **Editing: (Programming)** Start recreating/converting Java programming code into Python.	**Editing: (Artefact/Documentation)** Work on Mimi-box gameplay script creating large variety of possible vocal interactions between Mimi-box and players, documenting data in a spreadsheet database. Creating three different possible Mimi-box interaction sound libraries scripts.	**Draft: (Market/Documentation)** Research similar products purchase results and report on them related to Mimi-box potential in the market, using products as examples that are produced by the investors whom Meme-team will have a meeting. Represent the hole in the market Mimi-box will fill.	**Draft: (Market)** Based off research of customer segment datasets, create a spreadsheet document for holding Mimi-box gameplay test data. Pass spreadsheet onto Leo. Create questions sheet and document for people being tested to sign. **Research: (Documentation/Artefact)** Research hardware required to represent the final product, creating report.	**Organisation: (Market/Documentation)** Receive spreadsheet from Tom Meet locally with Michael for testing prototype with different people according to schedule. **Draft: (Market/Documentation)** Record data from testing into spreadsheet separated into three demographics

Week 9	**Draft/Editing: (Market/Documentation)** Document hardware and battery life test results into a report. **Research: (Artefact)** Some of the prototype's hardware is similar to the final product, if needed search for alternatives based off test.	**Editing: (Programming)** Continue to write the Mimi-box Python code **Editing/Finalising: (Artefact)** Finalise 3D design on Mimi-box prototype and better fitting compartments for hardware in preparation for presenting Mimi-box in week 12	**Editing/Finalise: (Artefact/Documentation)** Segment the scripts into Teenager, Family, and Party segmented customer datasets. **Assembly: (Artefact)** Purchase professional voice acting and rights to use audio from a voice actor/actress (sites like fiverr.com)	**Research: (Artefact)** Research and purchase additional casing insulation and waterproofing. Search techniques on installing these additions. Keep this material for the next prototype	**Research: (Market)** Research manufacturing standards and the margin of costs in our chosen hardware material. Research transporting and storage of materials.	**Editing: (Market/Documentation)** More testing and recording of prototype according to schedule **Organisation:** Message team members with a proposed plan for a meet up time prior to week 12 investment meetings.
Week 10	**Research: (Documentation)** Search articles and industry forums on custom printed circuit boards. Compare these functionalities between Raspberry pi 3b, (focus on stress test results (i.e. battery life and overheating)	**Editing: (Programming)** Continue to write the Mimi-box Python code **Editing: (Programming)** Add professional voice acting and script to prototype, replacing Leo's test Audio.	**Draft: (Documentation)** Write up the script into a report to represent the possible outcomes of gameplay. Each tree of possible roads and outcomes should be represented (i.e. players not interacting with the game, causing it to go into idle mode)	**Assembly: (Artefact)** 3D print the Mimi-box updated model as a revised prototype case. Add additional waterproofing and insulation to prototype case. Pass Mimi-box case onto Leo.	**Research: (market)** Research manufacturing parts, installation of software, and soldering. **Draft: (Documentation)** Create a hardware costs document of week 9 and 10's research results	**Finalising: (Documentation)** Present the data from testing the prototype into a report using the tested individual's documents showing their answers to our questions. Reporting on statistics of how many people said they would buy it, for what price, and other market testing research.
Week 11 (Compiling reports) (Meeting preparation)	**Official Report:** How the prototype functioned in stress tests (Example of expected results for final product stress test). Hardware of the Mimi-box.	**Official Report:** Individual reports on Java and Python Mimi-box programming code with explanations on how it works.	**Official Report:** Script of voice acting material and example gameplay tree outcomes. Graph showing possible tree outcomes, sections highlighted	**Official Report:** Similar products purchased and the Market, expected market for social game industry and the percentage of buyers over the years.	**Official Report:** Document breaking down example margin of costs regarding hardware material, manufacturing, assembly.	**Official Report:** Mimi-box test results detailing information represented into customer segmented demographics, showing appeal of product.

Week 12 (investors meetings)	Dress up in business attire and join together to present Mimi-box to potential investors and businesses from the scheduled meetings. Spend the week going to scheduled Investors meetings, presenting the Mimi-box to these businesses and Investors, with our reports finalised from week 11: hardware estimated cost margin report (appealing to businesses with their own manufacturing means), market testing data report covering three customer segmentations (appealing to businesses who have experience branding to one or multiple of these demographics), voice acting script and the multiple gameplay paths it covers, the programming of the game and how we compare audio and change settings, market research and competition (showing why Mimi-box can succeed) and showing the video advertisement showcasing the early prototype idea. **Secure an investor or second meeting.** **Discuss product price.** **Discuss percentage of business ownership and profit distribution.**					
Week 13 (preparation for manufacturing)	(Assuming an investment) **Pricing: (Market)** Contact with multiple creators of custom printed circuit boards Compare prices and availability.	**Editing: (Programming)** Continue to write the Mimi-box Python code. Adding or changing functionality based on test results and/or industry professional investor opinion	(Assuming an investment) **Organisation/Pricing: (Market/Artefact)** Writers and voice actors scouted for various accents. Paid for their work from investment funding (as speaking is the main focus: Mimi-box requires humour and energetic interactions from the product)	(Assuming an investment) **Organisation/Pricing: (Market)** Contacting with shopping centres and game shops to discuss contracts and potential to place Mimi-box product in their establishment.	(Assuming an investment) **Pricing: (Market)** Communicating with manufacturers to compare assembly line costs. Discussing proposed contracts with Mimi-box's brand owners.	(Assuming an investment) **Research/Editing: (Documentation/Market)** Brand is created with ownership divided among Meme-team members and investor (likely case). The image of a brand is starting research to be brought to the team for discussion.

Week 14	**Pricing: (Market)** Continue contact and comparisons, create a short list of potential PCB creators and discuss with Steven on the requirements. **Testing: (Artefact)** Test a similar PCB provided by PCB creator. Discussing brand with co-owners	**Finalising: (Programming)** Completing the program code **Research/Editing: (Documentation/Market)** Researching brands similar to Mimi-box (name subject to change) to develop the brand research. Discussing brand with co-owners	**Organisation: (Artefact)** Planning on localisation across popular countries, professional hired translators translate the script and re-write sections to fit the countries pop-culture and address the cultural differences. Discussing brand with co-owners	**Pricing: (Market)** Continue contact and talk about contracts, finding the smartest deal with businesses adopting our product, (exclusively sell in one business for a better profit margin, or don't sell exclusive and reach more customers) Discussing brand with co-owners	**Pricing: (Market)** Continue discussing proposed contracts with manufacturers, finding the most beneficial manufacturer and developing a contract to be signed with the brand co-owners. Discussing brand with co-owners	**Research: (Market)** Multiple test aesthetics' of the Mimi-Box brand art, Colour, packaging art, font, mature or child-like? (depending on the test data and demographic(s) chosen). Completed into a document to be represented to team. **(Finalising: Market)** Discussing brand with co-owners **Finalising: (Market)** Branding chosen, art style and design principles decided on. Artist scouted and hired to create brand art for packaging and advertisement.
Week 15	**Finalising: (Market)** Report on and have co-owners sign as a business for the contract with PCB manufacturer.	**Finalising: (Programming)** Additional material (i.e. voice acting, language selection, and narrative pathways) added to product.	**Pricing: (Artefact)** Add major language as localisation, hiring voice actors in these languages to record lines.	**Finalising: (Market)** Report on and have co-owners sign as a business contracts to sell the product in stores or online.	**Finalising: (Market)** Report on and have co-owners sign as a business a contract with a manufacturer.	**Finalising: (Market)** Sending brand artwork to be printed onto packaging for the product
Week 16	**Finalising: (Market)** Organise the PCB manufacturing, send manufactured PCB with program installed to product manufacturer.	**Finalising: (Programming)** Additional material (i.e. language) added to product. **Finalising: (Market)** Send program to be installed into custom PCB.	**Research: (Artefact)** Research additional countries that the brand could branch out the product to.	**Finalising: (Market)** Set up sales plans and date of first shipments Set up transportation to businesses warehouses.	**Finalising: (Market)** Organise to start manufacturing the product, packaging, and sent to rental warehouse storage.	**Finalising: (Market)** Print box art is forwarded to manufacturing assembly line for packaging the product.

RISKS

The Mimi box development as an idea was more complex than originally thought of, considering implementing basic components such as the power source and code format were often reconsidered throughout the process.

A primary concern of the entertainment device is the power consumption and therefore resulting in a lack of gameplay time with our prototype arose in which multiple options are viable but "All products covered by energy efficiency regulations must meet certain requirements before they can be supplied or sold in Australia or New Zealand."[1]. This makes it so we must comply with a standard of modern efficiency before convenience, which could dramatically impact the product output if prototype power consumption relative to product power usage differs significantly.

Furthermore, currently, the software is recording inputs from raw Hz into .WAV files, which can be seen in the project testing section, which is a great step in the correct direction. Beyond this, comparing the files and having a score-based system set around said comparisons to be the end goal as a functioning game mode which may be easier with Python, rather than java, the latter being the one the team has chosen for the prototyping phase, which could cause minor disparagement in how code will function in the final product. It is a delicate risk due to the amount of variation the game itself must entail to be a global product that will need vigorous quality assurance for various dialects, which could be problematic due to production time constraints, again leading toward an unfavourable unit quality on launch simply due to a large amount of variation that "differences between the speech of men and women, different social classes, and differences between age groups. People will identify some of these features as marking the 'best' or most 'beautiful' form of the language, other features will be considered nonstandard or undesirable,"[2].

A consideration that would have to be taken by region as the product is sound orientated and the inherent functional quality as well as sale output. This would be riskily undertaken the less testing given a particular language or dialect variation and a considerable aspect to assess at a case-by-case basis as to reduce the impact on our Mimi's key trait of broad appeal and its most fragile asset.

In terms of hardware, the casing would be mostly "Acrylonitrile butadiene styrene, more commonly known as ABS plastic. It is relatively inexpensive and lightweight, with a density of 1.08 grams per cubic centimetre"[3] for sustained durability and cost efficiency, which in itself brings a cooling risk based on ambient temperature and runtime. The power implementation manor will vary how we will have the batteries or power cable connected and protected. We would require an airtight seal or case cover on the exterior to make the product more waterproof. That would raise the risk for temperature and device handling limitations and should have terms and conditions to the situation where hardware or software insufficiency is in the fault of design, manufacture, or user actions and assessed through testing. It may require fail-safe measures as seen in the original Xbox 360's red ring of death[4], which displayed the type of fault and severity of damage by the number and placement of red bars in the ring. Something like this for various functional issues would reduce risk to company image and allow us to offer repair or a supplementary service in return for product fault on our behalf, delicate implementation of insurance cover and user warranty to compensate for inevitable faults at any level of production or consumer use.

Original XBOX 360 Light Codes

The front of the XBOX 360 video game console has a 'Ring of Light' - A circle of 4 bi-color LEDs, with a green power indicator LED in the center. This is used to indicate what state the console is in, and allows the user to diagnose faults with the console. Each of the LED 'quadrants' has a number: 1 is upper left, 2 is upper right, 3 is lower left, and 4 is lower right. The position of the numbered quadrants stays the same whether the console is placed horizontally or vertically.

Powered On

The central power LED is illuminated green when the console is switched on on and operating normally. The number of quadrants lit indicates how many controllers are connected.

Hardware Failure

When a hardware component fails, Q4 will flash red. Usually, a two digit error code is displayed on the connected display (such as E74).

Overheating

When the temperature of the console reaches an unusually high level, the console will shut off the CPU and GPU. The fans will run at full speed while Q1 and Q3 flash, until the console has cooled sufficiently.

General Hardware Failure

When a failure of one or more hardware components occurs, Q1, Q3, & Q4 flash red. Unlike the one light error, there is no error code displayed on the connected display.

AV Cable Error

When the AV Cable is not detected, due to not being plugged in or due to a serious error, all four quadrants will flash red. This error code is not displayed on consoles with an HDMI connection.

Xbox 360 Error codes[5]

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GROUP PROCESSES AND COMMUNICATION

Meme-Team is expected to have a meeting at least twice a week. The two days in the week which are decided are Sunday at 4 pm AEDT and Wednesday at noon AEDT. If a team member cannot attend one or more of these meetings, it is expected of them to notify the group at least one day in advance. In order for no team members to miss what was said in the meetings, they are to be recorded and the minutes written down. Meme-Team primarily communicates through different social media; both Microsoft Teams and Discord are used to communicate. Teams is to be used for more professional conversations and meetings, while Discord is to be used for more casual discussions regarding the project.

If a team member is not able to complete tasks due to personal reasons, the other team members will pick up where they left off, until they can come back to complete their task. However, everybody in Meme-Team produces quality work and picks up tasks to make up for the loss of time.

SKILLS AND JOBS

PROGRAMMER

We look to employ a programmer to ease our current programmers' pressure whilst bringing new and innovative ideas to our company. The potential candidate will have exceptional knowledge and background in coding while displaying the ability to work in a team environment. They will be part of a team responsible for writing new code for upcoming models of the Mimi-Box and building and editing any code for our related web pages.[1]

Qualification requirements:

- Minimum of a Bachelor's Degree in Computer Science with a Certificate IV in Programming.[2]

Skill requirements and key responsibilities:

- Write new codes for upcoming models while also maintaining, debugging, and troubleshooting our current systems.
- Coding skills, preferably with HTML for our website and Python for our company's signature product, the Mimi-Box.
- Must have a strong team focus and work with minimal supervision
- Excellent organisational and documentation skills

QUALITY ASSURANCE OFFICER

Mimi-Box will look to employ a Quality Assurance Officer who will be responsible for monitoring and recording quality assurance procedures with our product, particularly any faults that may arise, and ensuring standards are upheld. The Quality Assurance Officer will also be required to test any upcoming products and detect any faults.[3]

Qualification requirements:

- A minimum of a Bachelor's Degree in Engineering.[4]
- A Bachelor's Degree in Business Management highly preferrable

Skill requirements:

- Ensures that the final product meet's desired standards.
- Responsible for the development and implementation of inspection activities, the detection and resolution of problems, and the delivery of satisfactory outcomes.
- Testing our product to find potential faults, bugs, or glitches that may have occurred from factory programming before release.
- Excellent verbal and written communication skills

PUBLIC RELATIONS & MEDIA MANAGER

The Public Relations and Media Manager will be responsible for the Mimi-Box's media strategy, planning and launch preparations, integrated marketing initiatives, and social media updates and announcements. The successful candidate will also be responsible for any press releases and writing speeches or be a potential spokesperson for the company.[5]

Qualification requirements:

- Bachelor's of Media and Communication with a Major in Public Relations.[6]
- Certificate IV in Marketing and Communication.

Skill requirements:

- Monitoring the public and media's opinion of our company
- Writing and editing scripts for press releases, speeches, and pieces on our social media and website.
- Excellent writer with impeccable attention to detail

MARKETING CONSULTANT

A Marketing Consultant will be employed to support the sales and marketing teams, to provide our business with timely and efficient customer service while projecting a professional image for our business. They will also seek to find investors for the Mimi-Box and targeting an audience of potential buyers.[7]

Qualification requirements:

- A Bachelor's Degree in Marketing or Business Management[8]

Skill requirements:

- Seek prospective investors and potential buyers of our product
- Advertising skills to help promote our product.
- Identify any weak areas or problems within our company
- Identify where any opportunities exist to expand or capitalize on within our company

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GROUP REFLECTION

OVERVIEW

As a team, we felt that the Meme-Team was in a much stronger position for Assignment 3 than we were for Assignment 2, as we already knew each other's strengths and weaknesses from this period. By utilizing Microsoft Teams and creating a task checklist at the beginning of assignment 3, we were better equipped to delegate the tasks that needed to be completed, sharing the workload evenly over the whole team. Team organisation was an area we struggled with previously throughout assignment 2. Over the course of these assignments, we have formed a strong bond, which has created morale and lead to a boost in team chemistry. This created enjoyment for us and wanting to complete work, rather than feeling like a chore as some assignments are.

Although we were great at delegating work and sticking to our checklist of tasks, we still had some tasks left to the last minute. This could be improved upon with better organization, such as putting deadlines on individual tasks, which would lead to more fluidity, and less of a last-minute rush to try and complete them. Our log minutes throughout meetings in Assignment 3 were not as great as in Assignment 2, thus making it difficult to find information and keynotes from specific meetings. Keeping a high quality and organized log of minutes from meetings and any timestamps on crucial moments in these meetings would have saved time by not having to backtrack through recordings to remember any missed information.

As a group, we were surprised that we had been working together over the whole time, and not once was there a fight or verbal altercation. There were disagreements at certain times, as all teams have, but we always managed to smooth things over and come up with an ultimatum that would suit everyone, which we think is the key to having success in a group setting. It was also surprising to us that there was still to learn in this assignment from a team management perspective.

We have been lucky that our group dynamic in a team setting has been remarkably cohesive, built upon by sharing common interests and getting along well. We have learned that team members have lives outside of study and working around these personal commitments can be challenging but crucial to building strong chemistry and achieving the goals set from the beginning. As a team, we are proud of what we have been able to accomplish with our Mimi-Box. We have all worked hard to create a product that we are passionate about, while still maintaining a level of fun that is required for potential future endeavours.

INDIVIDUAL

BRENT KIMM

Over the course of Assignment 3, the Meme-Team did well at creating a system of tasks needing to be completed for submission and delegated them evenly to spread the workload evenly amongst all 6 team members. This is a big contrast from Assignment 2, where the bulk of the work, mostly coding based, revolved around a few people. In contrast, others did not have as much input as they would have desired. Although the workload was shared evenly overall, Steven was still responsible for most of the project's programming side, much the same as assignment 2. As we advance, the rest of the Meme-Team members, including myself, could brush up on our coding skills and take some pressure off Steven, releasing him to do various other tasks.

For me personally, I found it surprising just how much knowledge my team members had on computer hardware in general. They already knew exactly what hardware components were required for the Mimi-Box to function, just because they all have great knowledge in computer building before beginning this course with RMIT. This was quite the opposite for me personally, as I had to research thoroughly to understand what they were talking about. It was good to soak in all this knowledge they already had and learn from the things they discussed.

Over the course of Assignment 3, I learned that there will always be a team member who is weak in a certain area in a team environment, whether this is programming, research, or writing. Personally, I feel I am getting better at writing, to the point where I like to help others who are not as strong in this area and proofread and edit their work when required. Likewise, coding is my weakness, and I am happy to learn and take advice and constructive criticism from team members such as Steven and Thomas as much as I can.

LEONARD MCDONALD

Meme-team performed well together for these assignments, every team member fell into their tasks within their personally available time, producing results quickly allowing for reflection and updating or working on a task slowly until completion. Meme-team prepared well with researching the assignment rubric and breaking down every part of the assignment document which allowed even distribution of the workload. There were no issues with job roles as each member used the task system in Microsoft teams to allocate themselves work to their strengths, all of us offering to help others at different points in the assignment.

Some tasks were small and much easier to complete, but this didn't stop some of us from leaving them to the last minute. Unfortunately, a couple of these unprioritized tasks had an adverse effect on the other tasks as they would contain information that would have been useful in specific moments. Tasks that provide information, meetings minutes for searching meeting logs, video editing material, all of these could benefit from a better understanding of the timeless they incur when left last minute.

I was surprised by the group members reflections on their spark plus reviews to each other, each member mentioning about their peers' feedback towards their behaviour in passing, then making active choices to consider it. I have learnt that team chemistry is important to how the team functions, with everyone willing to work hard when they feel respected and are as friends.

LOCHLANN KEENAN KELLI

Meme-Team had a significant understanding of what was needed to get done for Assignment 3 and 5. Once again, we all worked very well together. Within the first week, there wasn't a lot done by me as I felt like I didn't have a role. But every other team member pulled their weight. By the second week, we had created tasks for everyone to complete by a specific date which made it a lot easier. This allowed us to keep on track. However, a few due dates for tasks were delayed as some of our group had events happening in their personal lives which were unavoidable.

I feel as though we did a fantastic job; however, I would have liked to contribute more to the tasks which were created in Teams. Brent did a tremendous job with completing his tasks considering he was M.I.A for one week for his wedding, Thomas and Michael did a great job researching everything. Steven once again has produced a quality looking website, and Leonard had made quality written content.

MICHAEL HEANEY

The Meme Team as a group moving from assignment two (2) worked out each other's strengths and weaknesses that we had not be able to work out in the short time before assignment two (2) and played the team members to the strengths. We had more meetings as a team than we did prior to assignment three (3) in turn this kept each member on track to meet deadlines and the ability to bounce ideas around fast then in a text-based chat system like Microsoft Teams[tm]. or Discord[tm].

I personally found the way the team felt more of a cohesive unit then when we were working on assignment two (2). We achieved more as a unit then we did prior, knowing each other's strengths. Having the multiple meetings each week kept us all on track to make deadlines possible and in turn getting more work done, if one member was struggling or had outside influenced issues another member was willing and ready to pick up that task to achieve the desired deadline. Having the desired deadlines has allowed a buffer and grace time for the members having strengths in spelling and editing side of the work more time to make the information flow much more consistently and making the pages flow more professionally. As a team we had some issues with some design flaws showing up, in the meetings we overcome these with a quick chat in a live meeting on Microsoft Teams[tm] to come to a solution. The team meetings have helped me not be so quiet and sit in the corner and come out of my shell and talk to people more, I believe this has helped me with my goal of Front-End Web Developer. I have had some flaws point out and I am working on them and for this team and this course, I am thankful.

STEVEN HOLMAN

Overall, the Meme Team performed well, just like last assignment. We have created a friendship amongst the team and still have conversations that go on past our regular meeting schedule. People were happy to put their hand up to take on tasks that were laid out and asked the team relevant questions or for help when required.

Most meetings were productive, with high attendance from everyone. Last time meetings could get a little side-tracked, but they were more focused this time around. We did use a task planner to organise what needed to be done and give deadlines for each task, but some were started late, including my own, which could be improved in the future.

I was still surprised at the team growth that occurred during this time, and thoroughly enjoyed getting to know each and every member of the team. And while I learnt last time how hard it is to organise a team, I was also surprised and how much I still had to learn in regard to team management. It's a difficult task to get everything working right, but it pays off when it does.

THOMAS LEWIS

The Meme Team as of working toward Assignment 3 became heavily focused on formal structure and setting earlier deadlines on tasks with a dedicated section allowing delegation and tracking of work done by members and found great constructive feedback towards my own mannerisms whilst maintaining our playful domineer and focusing on the important work and have been able to reflect upon how I interact with groups and work towards a more constructive and focused individual.

I found it amazing that we could collectively agree upon what our weaknesses were in the previous assessment and gravitate directly to practical solutions such as allowing time for editors prior too submission and focusing on presentation and references through the processes of construction in assignment 3 rather than in hindsight and pre-emptively create more functional representation as a reflection of our work as its created, through this assignment I was able to more confidently rely on my group as of the established trust in the quality of produced work and joyfully communicate issues and come too solid solutions which I feel as individual was a past struggle and a great personal learning curve towards my ideal job (Meta Game System Programmer) in which team dynamics as well adaptive problem solving are essential which is one aspect I need to greatly focus towards and am thankful for my group work for highlighting.