# Team Night Owls

Team Night Owls is a group with a vision of developing a new 2D game called “Ice Scream”. The project consists of 6 talented individuals from across Australia, working hard to release the new anticipated game. The team would like to present everyone with their work so far.

Hermano, K. (2020). *A Night Sky Full of Stars*. Available at: https://www.pexels.com/photo/a-night-sky-full-of-stars-3729213/.

# Contents

# Meet The Team

|  |  |
|---|---|
| Adam Maiorana | Angelo Lapuz |
| RMIT University<br>• ✉ s3912766@student.rmit.edu.au<br>• Student Number: s3912766 | RMIT University<br>• ✉ s3914378@student.rmit.edu.au<br>• Student Number: s3914378 |
| I was born in Shepparton, Victoria and made the move to Melbourne in 2017. My heritage is Italian which has instilled in me a passion for cooking. Some of my hobbies include composing music, gaming, and game dev. I've always been interested in IT from a young age but up until now have never pursued it as a career. I'm hoping my education at RMIT and participation in our group Night Owls project will give me the skills required to pursue IT professionally. | Hello, my name is Angelo Lapuz, I am a student at RMIT and currently studying a Bachelors in Information and Technology. I was born in Australia but come from a Filipino background. I love to play games and find myself playing counter strike a bit too much. I previously studied Nursing but realised it wasn't the field for me. I've always had an interest in IT mainly the programming side which ultimately lead to making the decision to study Information and Technology. |

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| Grace Field | Paul Webster |
| RMIT University<br>• ✉ s3915295@student.rmit.edu.au<br>• Student Number: s3915295 | RMIT University<br>• ✉ s3912889@student.rmit.edu.au<br>• Student Number: s3912889 |
| I was raised in a country town called Boort and moved to Melbourne in 2018 to become a teacher. After promptly dropping out of university, I ended up becoming an estimator in the construction industry. I'm the oldest of eight children, one more kid and our family (parents included) could've been a cricket team! I spend an incredible amount of time singing showtunes from musicals, and my previous 10 years of ballet experience helps me dance along! I don't have a lot of experience in IT, however I'm fascinated by how it affects our daily lives. | I was born in Nowra NSW. I am of English heritage, three of my Grandparents were born in England and moved here after the Second World War the fourth was born in and raised in the Nowra area. My father is also English he was 7 when his parents migrated. I completed Year 12 but have not undertaken any formal education since. I have attained numerous Information Technology (IT) qualifications throughout my working life, however these have mostly lapsed as I am not continuously using the technologies. |


Taylor Thurley

RMIT University

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- Student Number: s3916938


A bit about me, in 2015, I completed my year 12 studies. Where I studied software development, games design/programming, web development, application development and information technology. Which led me to wanting to increase my skills in programming and further my studies information technology. My favourite pastime is working on my 1993 Nissan Skyline R33 GTST project car, that is if I am not relaxing on the lounge with my partner or playing video games and practicing my programming on the computer.

# Group Processes

## How well did your group work together in Assignment 2?

As a group we performed superbly and everyone put in their share of the work, however we came to realise it got a bit rushed and panicky towards the end. We think it was because of the lazy and unclear start we had. We didn't set out a clear timeline or have any assigned roles and tasks quick enough. In saying that we did manage to pull together when we were under immense pressure and stress to meet the deadline. This showed that every member of our group can work extremely well and keep composed when needed.

## Will you be introducing any changes in process for Assignment 3?

The one change we all agree needed to change was, setting out a clear timeline from week one. This means assigning roles and tasks to everyone straight away to give clear direction to the group. Ensuring we didn't have the repeat of pressure and stress when trying to meet the deadlines.

## Career Plans

Compare and contrast the career plans, including ideal jobs, for each person in the group.

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### Adams Comparison Data - XR Developer

| Name | Ideal Job | Common Elements | Differences |
|---|---|---|---|
| Taylor | Cyber Crime Officer | Both require the ability to code and keep up to date with the latest technology. Working within a team environment to complete projects and solve problems within time frames. Both jobs involve identifying possible scenarios that could occur. Both jobs are relatively new in the IT industry and both require exploring with trial and error. | The main differences are based on the overall context of the work. While XR development focuses on recreating real world scenarios for real world application, cyber security creates virtual scenarios that could potentially put our national infrastructure at risk. While creativity is a need for both roles, cybercrime is more focused on identifying vulnerabilities and how to exploit them, while XR development's creative side is more on re-creating the real world through digital art. |
| Grace | Systems Analyst | Both require working with clients to design and produce a product to suit their needs. Being able to identify what systems would be required to get the job done. Creating user and training documentation. | The main difference would be that the system analyst role is building systems for the client to better their day to day operations, whereas this particular XR developer role is building training software that can be used independent of the client's current system. |
| Angelo | Software Engineer | Developing a product to meet the needs and requirements of customers and clients. The need to be proficient in programming languages to develop the applications is needed. Being able to identify issues and improve upon the applications. | The size of the teams we would be working in would be drastically different. For example the graphics or art work would be handled by a different department. |
| Paul | Enterprise Architect | Being able to identify and plan an end goal is something both roles require, even if they are on a vastly different scale. Knowledge of hardware and the ability to identify the constraints of that hardware. | Enterprise architects are focusing on how to improve and develop a strategy for an organisation to progress into the future. |

Career plan comparison

We have all undertaken this course to gather more knowledge and experience with IT in general. While some of us are currently working in the industry, we all understand the benefit of gaining experience to help secure the career we would like to begin.

## Taylors Comparison Data - Cyber Crime Officer

| Name | Ideal Job | Common Elements | Differences |
|---|---|---|---|
| Adam | XR developer | • Ability to code in multiple languages.<br>• Work within team environments.<br>• Problem-solve various issues.<br>• Excellent interpersonal and communication skills.<br>• Ability to make decisions.<br>• Willingness to always learn and adapt.<br>• Attention to detail<br>• Understand various technologies and keep up to date with them. | While similar in many regards the biggest difference between our ideal jobs is one works with virtual reality and the other focuses on real world aspects. |
| Grace | Systems analyst | • Ability to program.<br>• Work within team environments.<br>• Problem-solve various issues.<br>• Excellent interpersonal and communication skills.<br>• Often work outside standard hours.<br>• Willingness to always learn and adapt.<br>• Ability to make decisions.<br>• Attention to detail<br>• Understand various technologies and keep up to date with them. | The difference between our roles is a systems analyst is there to protect the IT systems and develop workflow solutions in the business they work for. Whereas a cyber crime officer is tasked to Investigate cybercrime against the Australian Government, critical infrastructure and systems of national importance, or those that impact on the whole of the Australian economy. |
| Angelo | Software Engineer | • Ability to use multiple coding languages.<br>• Work within team environments.<br>• Problem-solving various issues.<br>• Excellent interpersonal and communication skills. | The difference between our roles is one creates software solutions for business and end users alike. The other protects infrastructure from IT attacks with various software's and hardware. |

| | | | |
|---|---|---|---|
| | | • Willingness to always learn and adapt.<br>• Data analysis.<br>• Attention to detail<br>• Understand various technologies and keep up to date with them. | |
| Paul | Enterprise Architect | • Work within team environments.<br>• Problem-solving various issues.<br>• Excellent interpersonal and communication skills.<br>• Willingness to always learn and adapt.<br>• Understand various technologies and keep up to date with them.<br>• Ability to make decisions | • Enterprise architect focuses on developing business plans to establish technology processes that can be either integrated or eliminated to improve efficiency and reliability of business information.<br>• A cyber crime officer deals with cyber criminals and works to eliminate security attacks against IT infrastructure and systems of importance. |

## Career plan comparison

Everyone's ideal jobs might have different names but each one has a lot of similarities, the differing part being the few speciality skills and the environments in which we will use them as they don't overlap for everyone. However it's clear why we would all be studying a course like this as the skills that do overlap for our ideal jobs can all be obtained and learned through this stream.

## Grace's Comparison Data - Systems Analyst

| Name | Ideal Job | Common Elements | Differences |
|---|---|---|---|
| Adam | XR developer | A Systems Analyst and a Senior XR Developer both work together with clients to identify systems that are required, and develop a product to suit that clients needs. | As a Systems Analyst, you're required to create systems that better the day to day functions of the client, however an XR Developer works to create systems that can be used independently of this. |
| Taylor | Cyber Crime Officer | Both a Systems Analyst and a Cybercrime Officer will need to be able to work within a team and problem solve. Both roles also require the ability to identify potential issues. | A Cybercrime Officer deals more with actual crimes and provides technical support to apprehend cybercriminals. |
| Angelo | Software Engineer | A Software Development Engineer and a Systems Analyst are both required to identify systems that meet the needs of their clients. They both need the ability to identify potential issues and resolve them. | A Systems Analyst works more on improving the systems a client already has in place, while a Software Development Engineer works more on creating new systems. |
| Paul | Enterprise Architect | A Systems Analyst and an Enterprise Architect have a similar focus on using IT to improve a businesses processes. | An Enterprise Architect is more focussed on taking a business's needs and translating that into a service. A Systems Analyst has a greater focus on communicating the business needs to other IT professionals. |

### Career Comparison Plan:

All the team's ideal jobs are different, however each role has the ability to work cohesively within the next. There are many common skills required in all our ideal jobs, such as communication and cooperation within a team, but there are also unique sets of skills that each job requires. Ultimately meaning where some of us lack skills, such as coding in specific languages, another team member can step in a provide the skills for this.

## Angelo's Comparison Data - Software Engineer

| Name | Ideal Job | Common Elements | Differences |
|---|---|---|---|
| Adam | XR developer | The similarities lie in that both jobs require knowledge in various programming languages, some of which are C#, C++, Swift and Javascript. Problem solving skills are also a required skill for both professions as both jobs need to be able to quickly adapt and apply solutions to any problems that may arise. | The difference between both jobs is that an XR developer would be working heavily with a design team to create a visual extension of reality. Whereas a Software Engineer would typically be designing and developing software for a client's needs. |
| Taylor | Cyber Crime Officer | The similarities with a Cyber Crime Officer and a Software Engineer would be having the knowledge to code and the ability to solve problems on the go. Although both roles are in different avenues of IT, they require you to be able to quickly come up with solutions to any problems that may arise. | The key differences between a Cyber Crime Officer and a Software Engineer are in their respective line of work. A Cyber Crime Officer is a professional who prevents malicious attacks against the Australian government, critical infrastructure or any cyber crime that would Affect the Australian economy. Whereas a Software Engineers role is to design and write new software programs and ensure its efficiency. |
| Grace | Systems analyst | A Systems Analyst and Software Developer share similarities in where they both need strong communication skills (written and verbal), able to work in a team environment and attention to detail. Both roles heavily engage with the client to satisfy their requirements. | The difference in the two roles is that a Systems Analyst works with both software and hardware, along with the wider IT system. Their primary role is to evaluate how well the IT systems integrate with a company. Whereas a Software Engineer will be developing the software and programs for a company. |
| Paul | Enterprise Architect | Both an Enterprise Architect and Software Engineer require complex thinking and problem solving for their day-to-day work. Both roles also need to stay updated with the latest IT trends while also possessing fantastic communication skills. | The difference between the two jobs is that a Software Engineer focuses heavily on the programming side of IT whereas an Enterprise Architect is responsible for the maintenance of a company's IT system as a whole. |

### Comparison Plan

Each member of the group has a unique ideal job they wish to pursue in the future, although the jobs are different, they all come under the IT umbrella. Since each of our jobs are unique it is the perfect combination that a team would require for success. We all bring different traits and skills to the table, where one role might lack the other role may compliment.

## Paul's Comparison Data - Enterprise Architect

| Name | Ideal Job | Common Elements | Differences |
|---|---|---|---|
| Adam | XR developer | IT currency and communication is vital in both of these roles. | XR Developers are purely coding while Enterprise Architects are looking at the infrastructure and applications that get and maintain the client requirements. |
| Taylor | Cyber Crime Officer | Both roles need to have an understanding of security protocols and devices. | The cyber crime officer needs to have an attention to detail as the logs generated by IT systems contain large amounts of data. Enterprise Architects are not concerned about the detail and just that the detail is available to the people that need it |
| Grace | Systems analyst | Both of these roles are responsible for understanding what the client wants and then developing the path and technology to attain the desired outcome. | Systems Analysts do coding and debugging to ensure that the applications are meeting client requirements, where enterprise architects are looking at the hardware and applications used in the IT environment |
| Angelo | Software Engineer | Communication skills are essential to both of the these roles. Both roles need to elicit requirements for clients to ensure outcomes meet the business effect. | A Software Engineer is about delivering the product to a company, the Enterprise Architect is looking at how the company can move into the future and what is required to have service delivered end to end. |

### Comparison Plan

While all the roles are slightly different there are only 2 roles that have any concern with the hardware of an IT environment. I actually think that if this group was to work as a team in the real world, they would be able to cover most of the required skills to deliver an end-to-end solution.

# Tools

## Team Night Owls Website:

https://team-night-owls.github.io/Team-Website.io/

## Project IceScream GitHub Repository:

https://github.com/Team-Night-Owls/project_icescream

## Team Night Owls Group Website Repository:

https://github.com/Team-Night-Owls/Team-Website.io

## Trello Board:

https://trello.com/b/mtG0aMUr/assessment-tracker

## Microsoft Teams:

https://teams.microsoft.com/l/team/19%3aST0rVHiFAIrn_LecqXlOWVrExMdeFbD9lQY4xukqlWg1%40thread.tacv2/conversations?groupId=7b226342-e10c-4963-9480-86f29b5cf202&tenantId=d1323671-cdbe-4417-b4d4-bdb24b51316b

As a team we took advantage of the resources out there to help us with our project.

- We used GitHub to add the files needed to upload to our website and project.
- Trello was used to track each member's progress and to see where the group as a whole is with completing the assignment.
- Microsoft teams was our application of choice for communication. Teams was used to conduct meetings and message each other about the assignment.
- We used Google Docs for files that needed collaboration from each member of the team.

# Project Description

## Overview

Concept art. Ice Scream.

Sketch by Adam Maiorana 2021

## Topic

An overview of what you propose to do in your project. Concentrate on the big picture and outcomes, rather than intricate details.

Project “Ice Scream” (working title) is a head-first approach to the exciting and challenging world of game development. Because we are all new to IT this is more of an exploration into game development and what we can expect to find if we were to pursue it as a career. The Idea is to develop IT related skills while beginning production on a project we find fun and entertaining.

The project is focused on developing Adam's project idea into an MVP (minimum viable product). While we will not be able to get it to the MVP stage within the timeframe allocated, we can certainly begin production. Ideally, we want to produce a product that feels fun and engaging while gaining insight into whether the project is worthy of spending time and money on developing further.

## Motivation

What are your motivations for your project? Why is this project important or interesting? How does it fit in with
current IT trends? What would it show to a future employer if you were able to work on this project?

The main motivation behind this project is an interest in developing a game while at the same time developing skills that could be interchangeable within the IT industry. The project will give us the chance to develop skills that are in high demand such as project management and Microsoft C#, along with more general skills like communication, problem solving, organisational skills, teamwork/collaboration etc.

Once an MVP has been developed it would be a fantastic showcase of the team's skills and determination. It would also be a valuable asset to put into our own portfolios to show potential employers.

## Landscape

What similar systems or products are available? What competitors are there? What points of difference are there about your project compared to what exist now?

Gaming is more popular than ever with more and more people taking it up as a hobby. Everyone with a smartphone has access to an endless amount of games on various app stores. There is certainly a market for simple, easy to jump into games.
There are a lot of 2D platformer games available today. The most obvious and iconic being Nintendo's Super Mario, however I can't find anything with a similar premise within the 2D platform. There is a game with the same title, however it is a first-person horror game, and we are using “Ice Scream” as a placeholder right now.

With platforms like itch.io, steam, Nintendo developer’s portal etc. it has become increasingly easier for indie developers to self-publish without the need for large publisher backing. This is exciting for Indie developers and gives them a platform to get their ideas out there.

# Aims

The topic description gives a general overview. However, it is usually helpful to have a specific aim for your project, as well as some smaller goals which will be helpful for achieving your aim. Describe these as best you can. Each project should have a single aim.

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Aim:
Our aim is to development a playable game as a team. So, it will give us all valuable insight into the process and requirements of game development, allowing us to advance our skills as a group and create more games in the future with improved skills.

Goals:
- Develop an MVP (minimum viable product) that can be presented to publishers so that we can try and secure funding for further development.
If we don't secure funding to create more games than our skills will not become well developed.

- Create good "game feel"
Good game feel makes the experience more immersive and enjoyable. By manipulating various parameters such as input and response, we can experiment and explore ways of making the player movement feel more satisfying.

- Develop programming skills.
Learning to program using C# and C++ is beneficial to group members interested in game development as these are the most used programming languages in the industry. Exposure to other languages like JavaScript and SQL can also help with building their skill set. It will also help us collaborate on a project with multiple developers using tools like GitHub.

- Learn interactive development environment (IDE) software and game engines.
If we don't learn how to effectively use (IDE's) like visual studio 2019 and game engines like Unity or Unreal Engine than we will fall behind in the current industry software and our games will suffer as a result.

- Create effective reports and have regular team meetings
We need to make sure we are creating document reports with as much detail as possible because if we don't have a clear plan on what to do than our game could fail to meet deadlines and fail to fulfill the requirements we set out. To accompany this, we need to have regular team meetings to ensure we don't lose sight of progress, and everyone keeps up to date with current development or the project could result in a messy unfinished product.

# Plans and Progress

Here you should give as much detail as you can about what your project will do, and how you will do it. This should also include how far you have got with developing any features or outcomes from your project. Tell us about the “story" of your project – how it began, how it has progressed, and what stage of the plan you are up to. Include any dead-ends you may have followed, decisions made, and changes that have been made to the project plan.

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Project Ice Scream is the result of group member Adam Maiorana’s A1 project idea.

Initially, it started as just an idea for a game but was further developed by Adam during his A1 assessment.
The aim was to begin production on a video game idea to produce a minimum viable product (MVP) that can help secure further development funding.

The narrative behind the game is as follows:

*The game is focused around our main protagonist, an ice cream who was accidentally dropped by the local ice cream man and now needs to make it back to the fridge before he melts. The world is a very hostile place for our poor little ice cream. The hot sun is beaming down towards the earth and is rapidly melting our hero. In order to survive, they must navigate through the environment by conquering increasingly difficult obstacles. They also have to contend with the hungry neighbourhood children and their vicious dogs, who want nothing more than to eat him up. During this journey, they will meet other weird and wonderful characters that could help or hinder our heroes journey back to the safety of the fridge.*
Taken from Adam’s A1

After creating a very basic narrative, Adam began looking into how to bring the idea to life. Initially, the scope of the project was to create the entire MVP within the time frame given. This included the following game mechanics and features:

- Players can move the character in all directions and even jump.
- The character has basic animations.
- Sun follows and damages the player if they are caught in its sun rays.
- At least one complete level design.
- Additional hazards like children and dogs.
- Additional Characters make an appearance.
- Power-ups for the player i.e liquid chocolate helmet (shield) and ice cubes (health)
- Sound effects and music are either created or sourced.
- Background art

This seemed like a reasonable goal at first. As outlined in A1,  we wouldn't be creating a full game, we would just be creating a very small example of it. Prior to researching what's involved in developing an MVP, this seemed very achievable.
However, after researching and developing the idea further, a few glaring obstacles became obvious. Other than a handful of online tutorials, no one in the group has any experience creating a game. It became very clear that the project needed to be scaled back.

After a ton of research and the submission of A2, the scope of the project looks more like this:

- Create a “sandbox” level where we can develop and test features.
- Use primitive objects as placeholders for assets.
- Players can move the character.
- Show concept art.

Unity is still the choice of game engine, due to its popularity within the game dev community and great documentation. It's also a very affordable price of $0.00, up until your game begins taking more than $100,00 of revenue annually.

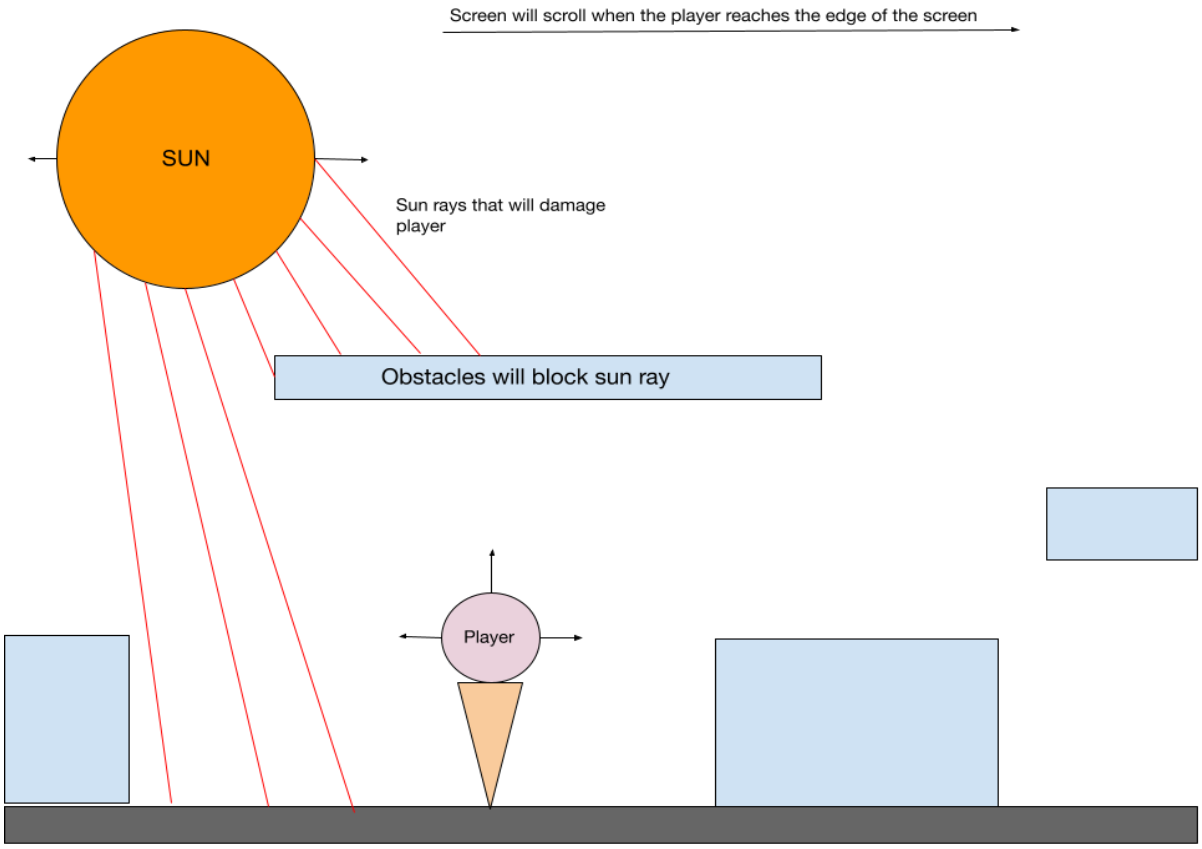
As you can see, the scope of the project is much more within our means. While it would be amazing to implement all of those initial ideas, we now understand how unrealistic that is. We are confident that we can achieve the new goals by the A3 deadline. All of the ideas are still going to be developed and tested, however, this will be a lot further down the line as our skills develop and improve.
Development is due to begin 02/08/2021.

From this point, work on the project has commenced. We decided to record the progress of development in a Developers log.

----------DEVLOG----------

*--UPDATE 29/07/2021--*
Sketch of Sandbox Level Complete.

Adam has created a sketch as the framework for our sandbox level which we will begin developing as of 02/08/21



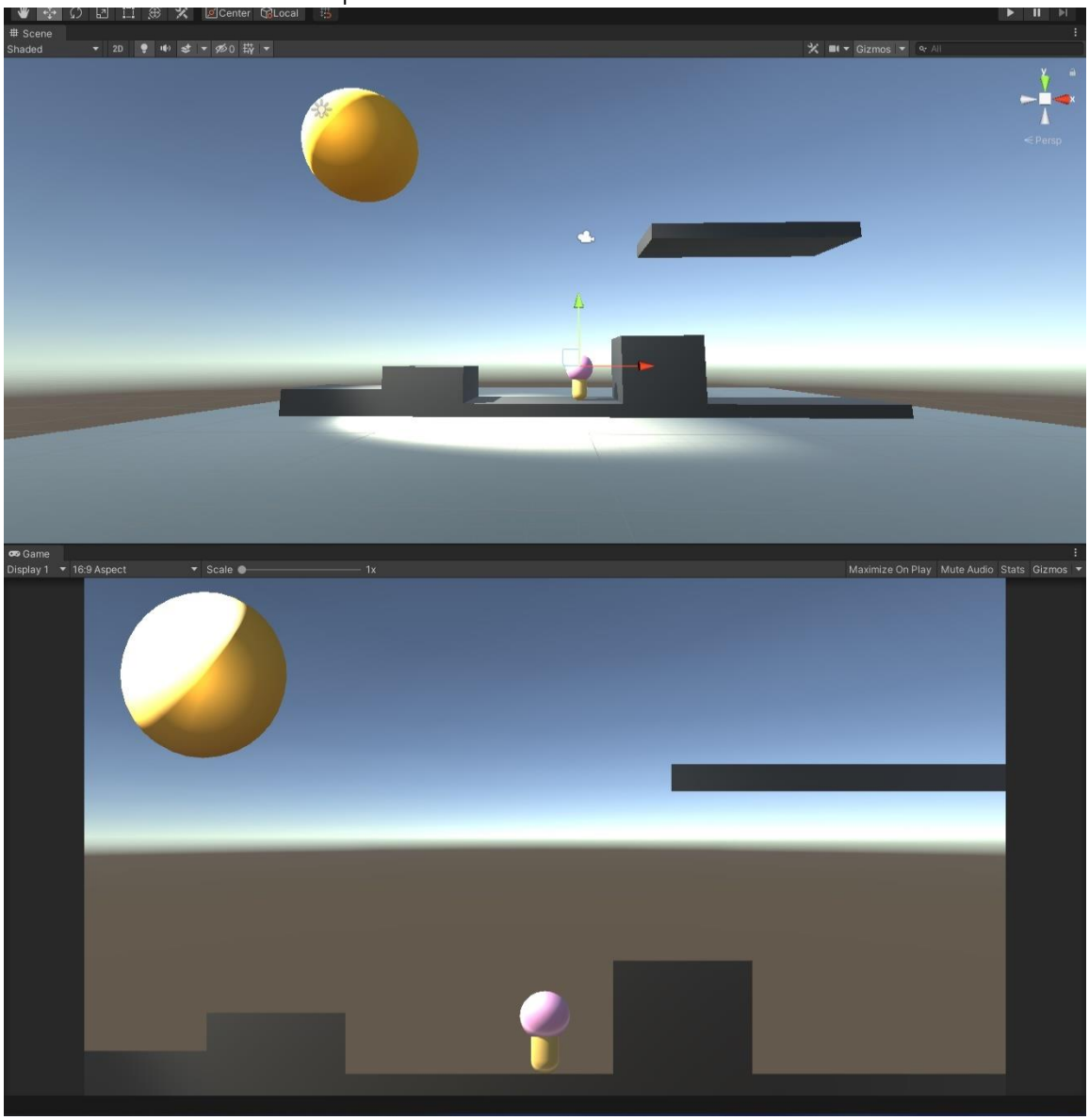

The sketch includes all the elements that we will need to begin developing the sandbox level for testing. It also includes some of the mechanics of the game such as;

- The sun will cast rays that can damage the player.
- Obstacles will protect the player from the rays.
- The arrows indicate the directions the player controller will allow the player to move around the environment.
- Arrows indicate the direction the sun will move in relation to the player's position (This will be programmed in the SunFollow script)
- The screen will scroll to display more of the scene when the player reaches the edge of the screen.

*--UPDATE 02/08/21--*
Sandbox Level Progress Report.

Development has begun on the sandbox level in Unity. We will use primitive objects for placeholders as planned. Once the scene is complete we can begin testing.

*--UPDATE 04/08/21--*
The Sandbox Level is Complete.




Player Controller Script
The script for the player controller is being written. We have discovered there are many ways to write a player controller script. We're experimenting with what works best.

The way the player moves around the environment is crucial to creating the kind of game we want. We are aiming for snappy movement. We want the Icecream to respond very quickly to the player's input.

--UPDATE 07/08/21--

Teasers and an Advertisement have been created to help promote the game and cause a bit of buzz around the title. These would be useful for trying to secure funding and give an overall tone to the game and what we are trying to achieve.
I wanted to create vague and intriguing teasers that leave the audience wanting to know more. The teasers are then followed up with the advertisement which explains more of the narrative and theme of the game, along with the basic mechanics.

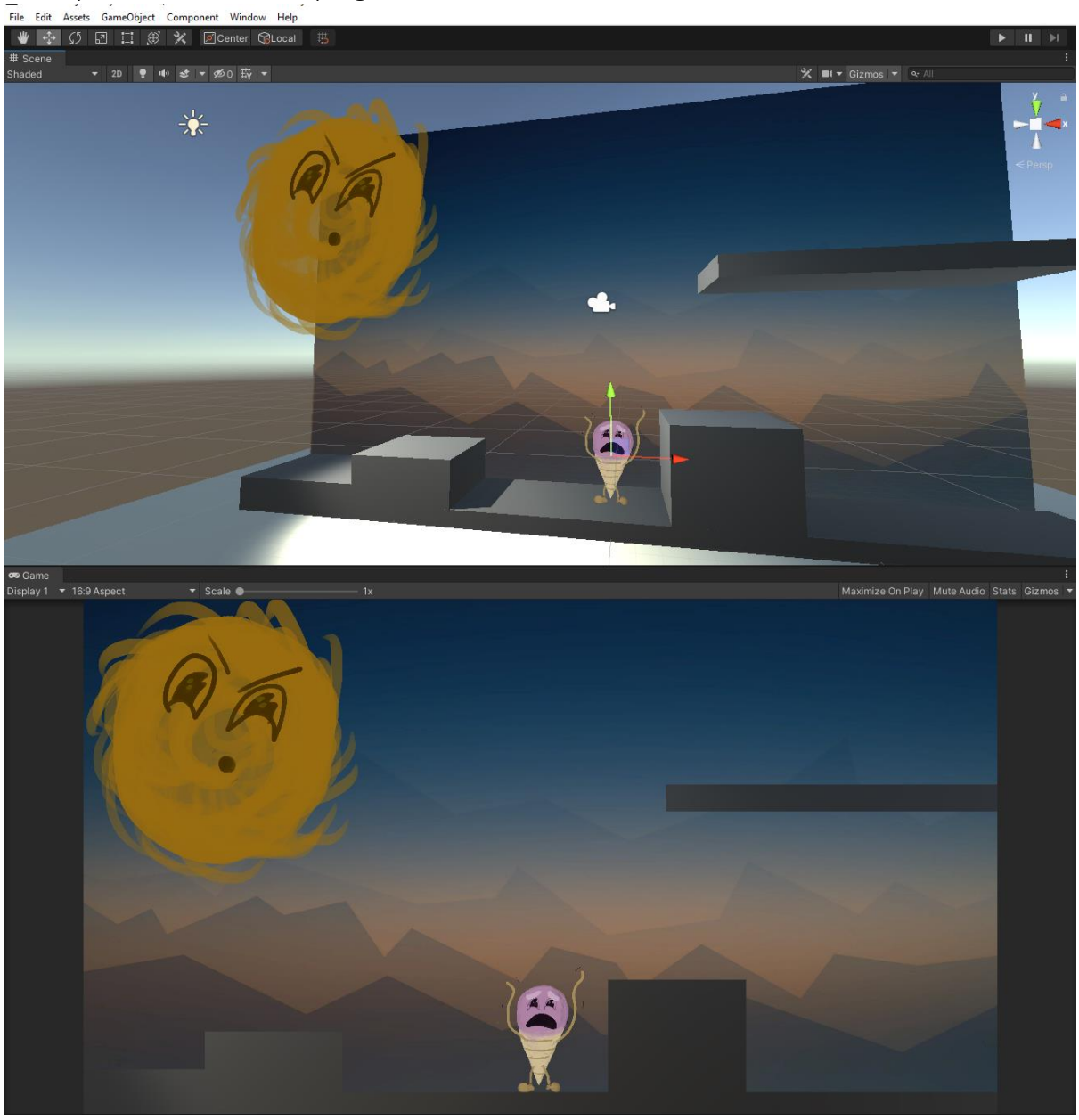
*Teaser 1*
*Group 21 - Project Ice Scream Teaser 1*

*Teaser 2*
*Group 21 - Project Ice scream Teaser 2*

*Advertisement*
*Group 21 - Project Ice scream AD*

*--UPDATE 12/08/21--*

Added some assets to experiment with the art style. During the development of the sandbox level, We wanted to see how the game would look if it was 2.5D, to give the scenes more depth. However, after creating the test background we decided to stick with the initial 2D perspective. The Art style currently being used gives a good idea of the style of art we are hoping to achieve.




*--UPDATE 21/08/2021--*

We have achieved what we set out to do within the time allocated.

- *Create a "sandbox" level where we can develop and test features.*

The development of the sandbox level has been very useful for testing out the player controller. It also gave us a chance to experiment with using a 2.5D perspective for the game.

- *Use primitive objects as placeholders for assets.*

The use of primitive objects was a great way to get us working on the mechanics of the game rather than focusing on the art creation.

- *Players can move the character.*

We have developed a basic player controller script. We are quite happy with our progress however we all agree it still needs a lot of refinement.

- *Show concept art.*

Because we already had some of the concept art available. We thought it would be nice to add these into the project to give the sandbox a bit more life rather than the sterile aesthetic it had previously. The background art of the mountains is a new addition, created by Adam in the Krita paint program. It is being used as a placeholder and was created to experiment with creating 2D backgrounds. While the characters do not animate, it gives us a nicer testing environment to stare at for hours on end.

----------Future Development----------

Below are the plans outlined for future development.

- The character has basic animations.

Time would need to be spent learning how to develop animations for the character sprites. There are quite a lot of resources on youtube that teach you how to do animation.

- Sun follows and damages the player if they are caught in its sun rays.

This is a vital component of the entire game mechanic. We would need to research how to write a script to get the sun to behave the way we would like. Again youtube has several videos on how to achieve this.

- At least one complete level design.

The design of a complete level will showcase the puzzle-like elements of the game. How to navigate through the scene without getting melted by the sun.

- Additional hazards like children and dogs.

To increase the difficulty of the game as the player progresses through the world.

- Additional Characters make an appearance.

Additional characters would be implemented to create more depth to the game's world.
This will require brainstorming ideas for other characters that would fit the game's direction. I.e a sewer rat that pretends to want to help the player but leads him into a trap.

- Power-ups for the player i.e liquid chocolate helmet (shield) and ice cubes (health)

These will be scattered around the world to help the player. These will work by increasing the player's stats or making them more resistant. This will be implemented in scripting.

- Sound effects and music are either created or sourced.

The sound effects are very important in adding weight to the game. This is especially important for the movement and actions carried out by the player. It will also give the game more depth.

- Background art

The game is set in an urban environment so the art will reflect city and suburban infrastructure.

# Roles

It is sometimes useful to define roles for particular participants, such as Lead Developer, or Technical Designer, or User Interface Designer. It is also possible that roles are changed from week to week, depending on what needs to be done next. Have you defined any specific roles for your project? If so, describe and justify these. If not, describe your process and justify why there are no specific roles.

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There are multiple roles that will be required to complete this project.

Programmer: A programmer will be required to write the code and tools for the game. They will also be needed to de-bug and maintain the software for the game.
Designer: A designer will come up with the ideas for the game and then communicate these to the programmers and artists. They will ensure that all aspects of the game are remaining true to the project idea.

Artist: An artist's role is to create the visuals for the game, such as the characters, the obstacles, the textures, and any backgrounds. This is essential in ensuring an excellent visual experience for the user.
Sound Designer / Composer: A sound designer will create all sounds and music for the game. This will give the user an elevated experience because it can add ambiance to the game.

Project Manager: The role of a Project Manager is to set the deadlines for each stage of the project and make sure they are met. They ensure all team members are performing their assigned tasks and getting them done within the appropriate timelines and to a specific standard. This will allow the project to move at a steady pace and ensure each team member is putting on their required work.
Quality Assurance / Tester: A Tester will test the game and report any bugs before the game is officially released. This is essential to ensure that the best version of our game is released.

Writer: The writer will create the storyline and any dialogue required for the game. They will be the one to design characters and create a dialogue that enhances the gaming experience. A writer is needed for our game as it would create a story that the user can follow.

# Scope and Limits

## The following content is in scope of the Project, within the allocated course timeline.

- Creation of a functional level of the game
- One user character with a PlayerController script
- Basic objects and obstacles to navigate through and around the level
- Concept artwork

## The following content is in scope of the Project, post the allocated course timeline

- Creation of sound effects and in-game music
- 10 levels designed with continuous progression and increasing difficulty
- Development of SunFollow and CameraFollow scripts to improve gameplay
- In-game finished artwork
- Detailed objects and obstacles to navigate through and around the levels
- 3 user characters with differing attributes and skills

## The following is outside the scope of the Project

- Additional levels beyond the scope
- Additional user characters
- Game marketing and sales

# Tools and Technologies

What software or other tools are required by the project? Are there any software licenses needed? Is there any hardware needed (beyond a standard laptop or something similar)?

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The software we would use to actually build the game is Unity. The latest version of this is Unity 2020.3.11f1. We will own all right, title and interest in the content created using Unity. However, Unity will have the "licence to collect, access, process, transmit, store, copy, share, display, and use any data or information collected" by Unity "or provided by [us] in connection with [our] use of the services." (Unity, 2021, Intellectual Property Rights, para. 3).
Our team doesn't have a massive amount of experience using Unity. Both Adam and Taylor have beginner skills with using Unity, while Angelo, Paul and Grace have little to no experience with Unity.

In order to write our code in C#, we would use Visual Studio 2019. In order to use this program, each team member will be required to hold a licence with Visual Studio. This will allow each of us to "design, develop, test and demonstrate [our] programs" (Microsoft Visual Studio 2019 Licencing, 2019, User Licencing, para. 1).
In our team, both Adam and Taylor have the most experience using this IDE. Adam has experience writing scripts and installing tools within this software, while Taylor has experience creating websites and even developing his own game using Visual Studio. Angelo, Paul and Grace, are beginners with using Visual Studio.
In order to create the visuals for this game, we would use Krita. The latest version is Krita 4.4.7. In terms of licencing, Krita is licenced under the "GNU General Public Licence (GPL), version 3" (Krita, n.d., Krita's Licence, para. 1). This means we are free to use Krita for any purpose and the artwork we create is our property to be used as we decide.

Adam is the only member of out team who has experience using this software.
Lastly, we will be using GitHub in order to commit all or work for the project. The latest version is GitHub 3.1.5. When using GitHub, you are free to choose a licence, however if we decide not to do so, the default copyright laws will apply. This will mean that we have all rights to our source code. No one can "reproduce, distribute, or create derivative works from [our] work]." (GitHub, n.d., Licensing a repository, para. 2).
All members of our team have experience using GitHub, however there is still a lot more features of GitHub that we all can still learn.
There is no extra hardware required for this project beyond a laptop.

## Bibliography

Unity. (2021). *Unity Terms of Service*. https://unity3d.com/legal/terms-of-service

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Krita. (n.d.). *Krita's License.* https://krita.org/en/about/license/

GitHub. (n.d.). *Licensing a reporistory.* https://docs.github.com/en/github/creating-cloning-and-archiving-repositories/creating-a-repository-on-github/licensing-a-repository

# Testing

How will your test your project? How will you know when you have succeeded? Testing is not something that you should leave until the very end; often it is far more useful to have a quick and dirty “mockup" of a project and then do some (limited) testing, to and out whether you are building the right product. If your project involves user testing, you should describe in your plan how you will find the test users, approximately what number of people you will need, and what background (if any) is required.

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We will do in house testing and select candidates to test our product. We want our candidates to have a range of different gaming experiences from well experienced, casual, and no gaming experience at all. This is to assess if the product is user friendly for our candidates with minimal gaming experience, and to see if the game also brings a challenge to candidates who are well experienced with games.

Each person testing the product will report any bugs and glitches they come across so that the team may be able to fix the problems as quickly as possible. The team will be satisfied until bugs and glitches being reported are at a minimum and when we a proper functioning challenging game.

## Timeframe

In order to develop a plan for further work beyond the end of this course, let us assume that you will have an extra 10 hours per week per person for 10 weeks in addition to this time in order to develop your project. This means that you will have six weeks (Weeks 7 to 12) of the semester to work on your assignment, with a further 10 weeks after that. This means that your plan will be for a total of 15 weeks, with the first 6 being on this assignment.

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# Project Timeline

| | |
|---|---|
| **Week 1 12/07-18/07** | • *Trello board set up with all the tasks required to complete the assignment,*<br>• *Establish a plan on how to approach the assignment.* |
| **Week 2 19/07-25/07** | |

| | |
|---|---|
| | • *All tasks have been discussed and brainstormed*<br>• *All tasks have been assigned to group members*<br><br>*Adam:*<br>*(Project Description) Overview*<br>*(Project Description) Detailed Description Part 1 of 9 'Aims'*<br>*(Project Description) Detailed Description Part 2 of 9 'Plans and Progress'*<br>*(Project Description) Detailed Description Part 7 of 9 'Timeframe'*<br>*Presentation*<br><br>*Taylor:*<br>*(Project Description) Detailed Description Part 1 of 9 'Aims'*<br>*(Project Description) Detailed Description Part 8 of 9 'Risks'*<br>*Have a group reflection on the processes. (Will we be introducing any changes in process.)*<br><br>*Grace:*<br>*Create final pdf reports for uploading*<br>*(Project Description) Detailed Description Part 3 of 9 'Roles'*<br>*(Project Description) Detailed Description Part 5 of 9 'Tools and Technologies'*<br><br>*Angelo:*<br>*Create final pdf reports for uploading*<br>*Complete the Team profile*<br>*(Project Description) Detailed Description Part 6 of 9 'Testing'*<br>*(Project Description) Detailed Description Part 9 of 9 'Group processes and communications'*<br><br>*Paul:*<br>*Skills and Jobs*<br>*(Project Description) Detailed Description Part 4 of 9 'Scope and Limits'*<br><br>• *Start brainstorming Ideas for A5 - presentation* |
| **Week 3 26/07-01/08** | • *Begin production of project Ice Scream*<br>• *Start building a sandbox level*<br>• *Start writing a PlayerController script.*<br>• *Create a draft for the presentation A5* |
| **Week 4 02/08-08/08** | • *Review group members' written work - give feedback.* |

| | |
|---|---|
| | • *Review player controllers - give feedback.*<br>• *Progress report* |
| **Week 5 09/08-15/08** | • *Finalise all drafts*<br>• *Start compiling written work into a PDF report and website.*<br>• *Angelo - (Project Description) 'Group processes and communications' completed.*<br>• *Taylor - Completed the (Project Description) Detailed Description Part 8 of 9 'Risks'*<br>• *Taylor - Completed the (Project Description) Detailed Description Part 1 of 9 'Aims'*<br>• *Grace - (Project Description) Detailed Description Part 3 of 9 'Roles' completed.* |
| **Week 6 16/02-22/08** | *Adam - A5 Presentation complete.*<br>*Teasers 1 & 2 along with the advertisement.*<br>*Adam - (Project Description) Overview complete.*<br>*Paul - (Project Description) Detailed Description Part 4 of 9 'Scope and Limits' completed*<br>*Angelo - (Project Description) Detailed Description Part 9 of 9 'Group processes and communications'*<br>*Grace - (Project Description) Detailed Description Part 5 of 9 'Tools and Technologies' completed.*<br>*Grace - Finished final pdf reports for uploading.* |

## ----------Additional 10 Weeks----------

Below is an outline of what we would like to achieved if we had another 10 weeks to work on the project. This is very much a guide as we are new to game development and are basing the timeline on what research we have done so far. At this point in the project, we have faced challenges that we were not excepting, below is our best representation of how we think it might unfold.

| | |
|---|---|
| **Week 7** | • Begin writing SunFollow script.<br>• Begin drafting level design<br>• Begin working on character animations for the ice cream and sun |
| **Week 8** | • Begin artwork for children, dogs, items, backgrounds<br>• Begin writing EnemyAI script |

| | |
|---|---|
| **Week 9** | • Start creating or sourcing music and sound FX<br>• Progress report on SunFollow script<br>• Progress report on level design<br>• Progress report on animations |
| **Week 10** | • Begin level design<br>• Begin working on animations for the other sprites<br>• Progress report on artwork for children, dogs, items, backgrounds<br>• Progress report on EnemyAI script<br>• Start implementing sound FX |
| **Week 11** | • Start developing scripts for power-ups i.e liquid chocolate helmet (shield) and ice cubes (health) |
| **Week 12** | • Begin work on the game's narrative<br>• Additional character design<br>• Progress report level design<br>• Progress report on animations for the other sprites |
| **Week 13** | • Get friends and family to test how the player controller feels. Discuss results |
| **Week 14 to 16** | • Start production on the MVP scene. |

# Risks

What risks can you identify for your project? There will always be some generic risks (such as computers breaking down the night before a deadline, health and family issues, and institutional changes).

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We have the general risks most game development projects do, like computers breaking down and people becoming sick. But we have identified some more specific risks and how to overcome these such as:

- Poor compatibility with different computer systems.

  We can focus on a major platform to develop the  game to and release future editions for the others.

- Losing our development progress.

  We will have end of night backups to an offsite service and on the development computers.

- Our computer systems are not strong enough for video game development.

  Research similar games to ours and measure their system requirements to what we believe ours would measure as.

- Our game becomes too demanding on general user computers thus making it hardly playable.

  Prior to release we will test it on numerous systems and if we see a need for improvements, we can apply updates.

- A similar game gets released before ours and lowers possible sales and enjoyment.

  Not much we can do if this happens, but we can look at their game and see different aspects we could potentially add to our game.

- It becomes too costly to develop.

  We could try crowd funding or do an early release at a cheap cost to gain some crowd attention and funds.

- We could run into issues getting a distributor wanting to distribute our game because they don't think it worth it.

  We could look at doing the distribution ourselves on our own site.

- The group doesn't agree on development aspects for the game.

  We can implement voting strategies or look at crowd input.

- The development software has new updates requiring to much time to learn.

  We can agree on sticking with a version of the IDE we all know and if the project leader believes any future IDE updates are worth learning we can hold group learning sessions.

- The game is a flop and doesn't work come release date.

  This is every game developer's nightmare, but you work on creating updates that people want and hopefully players will come back and give it another go.

- Someone leaves the team before development is complete.

  Have regular team meetings to keep track of everyone's progress in case someone leaves we will at least know where they were up to.

- Testers are biased towards our genre of games, and we don't get true feedback.

  We can outsource different testers from different areas to make sure it is a bias review.

- Unforeseen obstacles because it's the team's first time developing a video game together.

  Tackle these obstacles in the team's meetings and learn as we develop.

## Group processes and communications

Communication between group members is arguably the most important aspect of your project. Past experience has shown that communication breakdowns between group members is the most common cause of project failures, so it is vital that you specify at the outset the means and expected frequency of communication between group members. How will your group communicate? How often will meetings take place? Will these be face-to-face, or using technologies such as Skype? Or Facebook? Or email? Or text? Or ... ?? What will you do if you have a group member who does not respond to communications?

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As a group, we have all agreed to communicate through Microsoft teams. This platform will be the main tool where we will message each other and have our meetings through video call every Friday and Sunday. If a member is not able to attend, we adjust the meeting time when everyone is available. If that is not possible, we keep whoever is absent up to date via message through Microsoft teams and post a link in our chat to the recording of the meeting.

Along with using Microsoft teams we are also using the platform Trello. Team members can view the Trello board to keep track of the groups progress and notify each other of their current stage till the next meeting.

# Skills and Jobs

Let us suppose that a group of venture capitalists hears about your project and is so impressed that they wish to fund you to develop it further for say six months. You will be the manager of a team of 4 people to deliver the project outcomes. What position description would be appropriate?

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## The Company

Night Owl Entertainment is an exciting and growing company focused on creating captivating and enthralling games.
The Company is seeking to fill vacancies for an Art Director, Senior Game Programmer, UI/UX Designer and a DevQA Manager. We are looking for self-motivated people who enjoy the complexities and trade-offs of working in a multidiscipline creative environment. If you love making games and making them with other amazing people, then we want to meet you.
The positions are based in Melbourne, however remote work is available.

## The Roles

### Art Director

#### Key Responsibilities

- Managing and providing leadership for the Artists, Animators & Sound Designers for the creation for games
- Working with the Game Designer & other stakeholders to ensure the game's visual concept aligns with the product strategy and that the art package support the context of the gameplay & game functionality
- Working with the Artists to define and supervise the games visual direction and internal development standards
- Maintaining an art production process and workflow that ensures the art direction add considerable value to the finished product
- Ensuring the timely and reliable delivery of all art assets within schedule and budget considerations

### Skills/Requirements

- Degree in Graphic Design, Animation or equivalent work experience
- 5+ years' experience in a related field, gaming industry experience essential
- Skills with Photoshop and Illustrator
- After Effects and Alienbrain experience is a plus
- Experience in proactively developing a team of artist, including mentoring, suggesting educational opportunities and generally advocating professional development
- Experience with Agile Development methodology, preferably Scrum
- Comprehension of how to design art for various themes and platforms

### Desirable Qualities

- Have excellent communication and organisational skills, with the ability to talk to non-technical audiences
- Have advanced knowledge of gaming products and an understanding of emerging industry products and competitors
- Can take and give constructive feedback
- Multi-skill across numerous projects in a fast-paced ever-changing environment
- Be self-motivated and proactive to get results

## Senior Game Programmer

### Key Responsibilities

- Developing frameworks and tools to meet team and designer requirements
- Designing architectural solutions
- Prototyping reference implementations
- Ensuring scalability and reliability through effective code that supports existing and future functionality
- Reviewing code and setting policy for code quality
- Mentoring and proactively developing the team, suggesting educational opportunities and generally advocating professional development
- Ensuring the timely and reliable delivery of all programming assets within schedule and budget considerations

### Skills/Requirements

- 10+ years' experience C# (or comparable language), gaming industry experience essential
- 2 years' experience Unity
- Experience writing Unity tools
- Experience with Agile Development methodology, preferably Scrum
- Experience in DevOps and automated builds

- Strong game maths fundamentals
- Strong gameplay coding experience
- A command over entity-component and object-oriented programming
- Shader programming experience in Cg/HLSL or equivalent
- Experience optimising for framerate and memory improvements
- Proficiency in other languages: C/C++, Java or JavaScript would be beneficial

### Desirable Qualities

- Have excellent communication and organisational skills, with the ability to talk to non-technical audiences
- Enjoy problem solving and get excited by a challenge. You enjoy whiteboarding ideas to come up with simple, elegant solutions
- Enjoy a fast paced and collaborative workplace, partnering with all facets of game design throughout the company
- Knowledge and understanding of JavaScript, HTML5, CSS3 and the Adobe Suite
- Be self-motivated and proactive to get results

## UI/UX Designer

### Key Responsibilities

- Craft simple, innovative and engaging solutions to complex scenarios
- Thinking & workshopping strategically about how to build/improve the user experience
- Turn conceptual and abstract thinking into tangible product design solutions
- Help maintain the high-quality design standards we set as a team
- Collaborate with fellow designers to ensure consistency and quality across the product
- Document designs & specifications effectively so solutions are easy to follow and comprehend

### Skills/Requirements

- 3+ years' experience in UI/UX development, gaming industry experience essential
- 2+ years' experience of XAML and WPF
- 2+ years' experience C# (or comparable language) and Unity
- Experience with Agile Development methodology, preferably Scrum
- Experience with wire-framing and prototyping

### Desirable Qualities

- Have excellent communication and organisational skills, with the ability to talk to non-technical audiences
- Enjoy problem solving and get excited by a challenge. You enjoy whiteboarding ideas to come up with simple, elegant solutions
- Enjoy a fast paced and collaborative workplace, partnering with all facets of game design throughout the company
- Knowledge and understanding of JavaScript, HTML5, CSS3 and the Adobe Suite
- Be self-motivated and proactive to get results

## DevQA Manager

### Key Responsibilities

- Managing and providing leadership for all aspects of testing and development of gaming products
- Identifying game issues early to reduce the number of bugs being generated by the external QA team
- Executing tests according to a test plan and performing regression of known issues to verify solution
- Providing feedback to the Development team on how to reduce recurring issues
- Narrowing down the probable cause or steps of hard to reproduce issues
- Researching complex issues identified by the external QA team to expedite resolution
- Maintaining hardware and software in the test laboratory

### Skills/Requirements

- Associate or Bachelor's Degree in CS, Multimedia, Game Dev or related field or equivalent industry experience
- 5+ years' experience in QA or testing, gaming industry experience essential
- Ability to analyse and identify root cause for problems
- Experience with Agile Development methodology, preferably Scrum
- Experience in hardware and software management
- Attention to detail

Desirable Qualities

- Have excellent communication and organisational skills, with the ability to talk to non-technical audiences
- Have experience generating bug reports and test plans
- Enjoy a fast paced and collaborative workplace, partnering with all facets of game design throughout the company
- Previous experience using Bugzilla and/or Jira
- Be self-motivated and proactive to get results

Candidates must be Australian residents with a valid work visa or equivalent.

Only Shortlisted candidates will be contacted.

# Group Reflection

Towards the end of the assignment period, you should reflect as a group on how well you think you have performed in this assignment. You should include whatever evidence you may have about the groups processes (such as commit trails from GitHub, or project meeting minutes)

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## Adam Maiorana

We were able to reflect on how we worked during A2 and implement the changes needed to improve how we work as a team. The most noticeable improvement was the organisation we were able to maintain due to the tasks being discussed and assigned early on in the project. This gave everyone a clear goal and allowed them to focus on their tasks without distraction. I would like to improve my skills as a leader. A few times during the project, I felt unsure how to approach certain aspects of the project. As a group, I was so impressed with how everyone worked. The only improvement I would like to see is a better method for collaborating within Unity. The built-in collaboration tool caused game-breaking problems and made it hard to share our work. This is more a criticism of Unity. Overall, I've learnt planning is vital to getting anything done within a group. If the tasks are left open and unassigned, they won't get done.

## Angelo Lapuz

For assignment 3 everything went a lot smoother than the previous assignment. From the start each member knew exactly what they had to do and the optimal timeframe of when to complete each task. Our communication was even better than assignment 2 and tracking our progress through Trello made it even easier.

I can't really think of what we could improve on as a group because we improved on everything that we lacked from assignment 2 and brought it to assignment 3. The only improvement would be to communicate more throughout the week. What surprised me the most was how easily we managed to improve on last assignments flaws and immediately felt the work was much easier after improving on them. One thing I have learned about groups is that every member works efficiently when there is a clear-cut direction and an achievable timeline that is being pointed out.