Assignment 1

OUA Building IT Systems (CPT111)

Study Period 3, 2019

TheNightWatch

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# Section One: What

## Project Name

##### “The Night Watch”

The group name is the same as the project name deliberately. Once the project theme and idea was decided we agreed that the team name also really suited as the project name.

## Project Description

Our proposed product is a single-player game. The theme will be space, set on a space ship, and in addition to the Player Character it will involve three NPCs: an Engineer, a Pilot, and the ship's computer AI. The crew of this ship are alone in deep space, more than ten years from Earth on a mission to locate and destroy unstable planets, collect materials from destroyed planets, and explore uncharted regions. The plot is loosely based on John Carpenter's movie Dark Star.

The game will be 2D game with various puzzles. As the Captain, the Player Character must solve puzzles in order to accomplish tasks and objectives. The main gameplay will be interacting with the console and other crew members.

Other features under consideration are other puzzles and extensions to the story.

## The Team

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| **Paul Andrew Atkins**  [s3779053@student.rmit.edu.au](mailto:s3779053@student.rmit.edu.au)  Trello ID @paulatkins28 | <<picture>> |

I have been using computers since I could read. My father brought me a Walt Disney Basic book when I was approximately 5-6 and my interest grew from there. I enjoy coding as I still find it fascinating to build things with words, to create things with words, to help people with software. "To make the world a better place" (Silicon Valley).

My strong points would be OOP Languages, and whilst only proficient in Java at the moment I am teaching myself Python, JS, C#. I enjoy making systems that are adaptable to different situations (think game engine, CMS).

The challenge I face for this project is to learn GODOT engine and its scripting language which is similar to python, so yes a challenge but a welcomed one.

I see myself contributing what coding knowledge I have next to some of the more experienced, the skills I have using game engines (unity, java). My limited sketching which can be used for low-fi mockups on a kanban board or similar.

I’m excited to get started.

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| **Daniel Peter Burke**  [s3795096@student.rmit.edu.au](mailto:s3795096@student.rmit.edu.au)  Trello ID @danielburke63 | <<picture>> |

First PC was an 8086, in 1986. Had every major model since. Started programming in C when I was 8, x86 assembly at 15, it all went downhill from there.

Currently interested in GPU programming (Vulkan, OpenCL, GL compute), high performance (memory alignment & layout, cache utilisation), threading, and dealing with sadistic levels of fault handling (I think Erlang is cool).

Whittling this down to something we can complete.

Clearly, my art talents will be a big advantage, because MS Paint is the future. THE FUTURE. My professional work is usually gluing random stuff together, so I expect to be running around tying up loose ends.

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| **Paul Stephen McKercher**  [s3791201@student.rmit.edu.au](mailto:s3791201@student.rmit.edu.au)  Trello ID @paulmck3 | <<picture>> |

I am very passionate about the big picture of things. From the concept to the implementation and product. I have always been very comfortable with Hardware (have been building computers since I was 16 circa. 1998).

I am interested in what cutting-edge technology is doing to make our lives easier. I also find programming to be very rewarding when I create a workable practical program. I am new to OO programming but getting more experience every day.

With the two biggest challenges I foresee, one is working with a team who are possibly more comfortable than I am at coding/scripting a product. The other is trying to manage time with the group members and my erratic work schedule.

I feel I can most contribute with ideas and story for the program, also with concepts to improve this. I will also hope to edit/write scripting for the game.

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| **Jeff Reynolds**  [s3775599@student.rmit.edu.au](mailto:s3775599@student.rmit.edu.au)  Trello ID @jeff44979415 | <<picture>> |

I started programming in the 80's as a teenager, worked in IT from 1999 to current, with most of that time in IT projects, payments, finance industry. I've worked in a variety of roles, including product support, business analysis, and project management.

I'm an amateur programmer, with some experience in c++, java, lua, perl, visual basic (and vba), and sql databases. I've also dabbled in graphic design.

My strengths are creativity, writing, general IT knowledge, and industry experience.

My interests are in tech that removes hurdles, as an example things like tap payments. I also like developing products in the gaming and entertainment space. I'm passionate about creating good user experiences as for me this is the most fundamental aspect of a good product.

The challenges for me with this project will be working with an unfamiliar game engine and collaborating with a group on a purely creative project.

My main contributions will be coding and helping out with some project management practices.

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| **Michael James Seymour**  [michael.seymour@student.rmit.edu.au](mailto:michael.seymour@student.rmit.edu.au)  Trello ID @bitsrmit | <<picture>> |

Computers and IT have been the background noise of my life for as long as I can remember but I never looked to it as a serious pursuit until recently, as a means of a career change.

I've done some online coding courses and proved to myself that I have the ability to sit in one place trying to solve a coding challenge, sometimes for many hours without moving from my seat if that's what it takes. I have experience at writing basic code in Java, Python, C, HTML/CSS, SQL, Godot Game Engine, and to a lesser extent Lua and C++. I simply like coding challenges, regardless of the project theme.

My challenges in the context of the project are my lack of real-world experience in writing professional code, and my lack of real-world group experience. The only groups I have experience with are the groups I've worked with during this degree program.

My main contributions will be in coding, and writing characters & storylines. As I have some previous experience with Godot, I will be an advisor to other team members who will be using this game engine for the first time on this project.

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| **Lee van den Blink**  [s3792973@student.rmit.edu.au](mailto:s3792973@student.rmit.edu.au)  Trello ID @leevandenblink |  |

I’ve always found myself adept at learning software and business IT structures. Working in small RTOs (Registered Training Organisations) gave me opportunity to learn about many areas of IT business structures, such as server administration, security and document management systems. Along with this I’ve worked with a number of student management systems (SMS) and Learning Management Systems (LMS) and have a lot of experience with data analysis and reporting, and I enjoy being able to use data to discover insight into a business. I’ve also always loved video games, and would love to one day be able to contribute to software or game development.

I believe my strengths are being a team player, data analysis and document formatting. I also have a beginner’s level of programming knowledge in Java through completing Intro to Programming and Programming 1. I am extremely interested in further developing my programming skills through learning a game engine, and increasing my overall programming knowledge.

The main challenge for myself in this project is that I’ve never done any game development before, except for developing game concepts, and some basic java applications. So learning what actually goes into making a basic game with code, graphics and sound will be entirely new for me.

I would like to help develop the logical sequencing of the game, and have input into the various systems that work in the background. I want to ensure the various game play loops are logical, and fun. I also think I could assist in formatting work documents for our assignment reports.

## Demonstratable Outcomes

### Minimal Viable Features

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| **Graphics for one room** | *Description*  The main game screen will have enough graphics to represent one room on a space ship. This will serve as the main location where the game will take place. |
| *Validation Testing*  Room to display on screen after starting a new game from the main. To be confirmed in game testing |
| **One Dialogue Puzzle** | Description  A list of dialogue choices the player can choose to respond with when interacting with a NPC. Particular paths in the dialogue choices unlock different actions. |
| Validation Testing  All trees options of the puzzle to be triggered while game testing. |
| **One console mini-game puzzle** | *Description*  A short game that can be triggered while in the game. Contains different game play elements to the main game features and is smaller and more simplistic then the main game. |
| *Validation Testing*  Mini game to be triggered and play tested when game testing. Mini game successfully completes and returns player to main game and what they were doing previously. |
| **A story with one character, one branched path, two endings** | *Description*  The game should tell a story based around the game description and outline the characters and aims of the player character. The story to have two possible endings based on choices the player makes while playing. |
| *Validation Testing*  Game testing to play through all possible branches of the story successfully and reach both endings. |
| **Title screen with menu** | *Description*  Game to open with a title screen and basic menu options. |
| *Validation Testing*  Title screen loads when program is executed. Menu options execute correctly to their required function. |

### Extended Features

The Night Watch currently has 6 extended features:

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| Sound & Music | |
| Description | This is another immersive feature for the player, giving another heuristic to the experience. Music and sound effects to be played when inputs or actions occur in game. |
| Validation Testing | Correct sound and/or music plays while game testing. |
| Sound & Music | *Description*  This is another immersive feature for the player, giving another heuristic to the experience. Music and sound effects to be played when inputs or actions occur in game. |
| *Validation Testing*  Correct sound effects and/or music plays for sound actions while game testing.  Music plays when game loads. |
| Extended story | Description “Additional dialog puzzles and/or console puzzles”  Time permitting we could includes multiple dialog puzzles and lengthen the story |
| Validation Testing  The same as dialogue puzzles in the Main Viable Features. All trees options of the puzzle to be triggered while game testing. |
| Ability to finish the game | Description “A game experience is more successful if you can finish the game, maybe restart it again with different characteristics carried over from the last iteration?” |
| Validation Testing |
| Walking around the bridge of the ship | Description |
| Validation Testing  Ability to walk the player character around the ship while game testing |
| NPC reactions | Description “ NPC characters to react to decision the player character has made”  Eg. If the player character fails a dialogue puzzle, an NPC would say “ |
| Validation Testing  Triggering the reaction event while game testing to confirm the NPC responds when expected. |
| Extra rooms | Description “Having additional rooms for the player character to walk or navigate to, such as engineering or kitchen.” |
|  | Validation Testing  Ability to navigate to other rooms successfully and return to walk the player character around the ship while game testing |

## Project Motivation

Our group is a collection of old school gamers. In the first week of our group formation we came up with a reasonably long list of potential project ideas. Most of these were 2D video game concepts, along with some other ideas for phone applications. At our first meeting we went through the list as a group, throwing around ideas and brainstorming the potential for each one. Factors that went into the decision making process were the difficulty factor, fun factor, and our current experience. It was clear from this initial meeting that the two most popular ideas that generated the biggest discussions for potential were two different 2D game concepts, both of which were in a similar vein of NPC management through dialogue and tasks.

From the outset of the group formation we knew we were all keen gamers with a long history of experience with the industry dating back to our childhood. It is no surprise that when given the opportunity to create an IT project we were all keen to explore the potential to make a video game. For some of us this will be our first real exposure to the process and what it entails, while some team members have prior experience with game modification and development.

## Project Justification

### Justified workload

### Beyond Current Capabilities

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### Project Risks

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| Team Dynamic Challenge: | The group makes a decision which does not have the support of one or more team members. |
| Likelihood: | Moderate |
| Impact: | Moderate |
| *Mitigation:*   * Any idea which does not have the full support of the group must be discussed in detail to ensure that the dissenting party's position is fully understood by all members of the group. * Team members agree to make an effort to explain their position and reasons for it. They should also outline, or help the group to develop, an alternative approach. * The final outcome and all discussions leading up to it should be documented in the relevant card (e.g. feature card.) | |

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| Team Dynamic Challenge: | Team member goes MIA |
| Likelihood: | Low |
| Impact: | High |
| *Mitigation:*   * The project lead will check in with team members each sprint. * If a team member cannot be contacted over 2 consecutive sprints, no further work will be allocated to them, and the project lead will advise the course co-ordinator. | |

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| Team Dynamic Challenge: | Team members availability varies from week to week, and team members may not have time to complete allocated tasks |
| Likelihood: | Medium |
| Impact: | Moderate |
| *Mitigation:*   * Team members are expected to complete the availability schedule each week. * The project lead will check in with team members mid sprint to confirm if allocated tasks are on track. * Where an issue is identified, tasks may be reallocated to a team member with availability. | |

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| Project Risk: | No digital art specialist within team means that development of assets will take longer. |
| Likelihood: | Almost Certain |
| Impact: | Moderate |
| *Mitigation:*   * Identify features that require art assets as early as practical. * Source assets from public repositories. * Identify gaps where we need to develop our own, with as much lead time as possible to minimise time constraint risk. | |

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| Project Risk: | If team members are unable to skill up within time frame, the ability to deliver specific tasks on time will be impacted. |
| Likelihood: | Medium |
| Impact: | Moderate |
| *Mitigation:*   * Identify team strengths using a skills matrix / bios * Team members are expected to communicate via discord if they need advice. * Team members will communicate mid sprint if they think they are unable to complete a task. * Where an issue is identified, assistance will be provided by a team member with strength in the particular area. | |

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| Project Risk: | Team members may think of additional features during development, the delivery of which may impact the delivery of, or conflict with, other features. |
| Likelihood: | High |
| Impact: | Moderate |
| *Mitigation:*   * Additional features can only be added to the project backlog, unless deemed critical/urgent by the consensus of the group. * Features can only be added to the sprint backlog with the consensus of the group. The ideal place for this to happen is during the weekly team meeting, with exceptions made on a case by case basis. | |

# Section 2: How

## Resources and Tools

### [Godot](https://godotengine.org/)

##### "The game engine you waited for."

<https://godotengine.org/download/osx>

Godot provides a huge set of common tools, so you can just focus on making your game without reinventing the wheel.

Godot is an open-sourced game engine with a python-like scripting language.

Godot is completely free and open-source under the very permissive MIT license. No strings attached, no royalties, nothing. Your game is yours, down to the last line of engine code.

Godot has been defined as the engine we will be using to create this project. This decision was based on the nature of Godot being open-sourced and completely free. It has heaps of online support and tutorials and will be a benefit to all involved to learn a new skill. Only **Michael Seymour** has prior experience with this, so there will be a steep learning curve for the most of us but the consensus is that it is a welcomed challenge.

**Version: 3.1.1-stable**

*Alternatives:*

* [Unity3D](https://unity.com/)
* [Unreal Engine](https://www.unrealengine.com/en-US/)

### [GitHub](https://ww.github.com/)

##### "Built for Developers"

GitHub is a development platform inspired by the way you work. From open source to business, you can host and review code, manage projects,and build software alongside 40 million developers.

We have decided on using GitHub as our CVS platform as we are all familar with it and are comfortable with using it.

All students have the GitHub Pro account provided by the GitHub Education Pack.

*Alternatives*

* [BitBucket](https://bitbucket.org/product/)

### Art Resources

**Art providers**

* [Open Game Art](https://opengameart.org/)
* [Open Pixel Project](http://www.openpixelproject.com/)
* [Game Art Partners](https://gameartpartners.com/)
* [Itch.io](https://itch.io/)
* Or make our own (time consuming, needs talent)

**Sound providers**

* [FreeSound](https://freesound.org/)
* [SoundBible](http://soundbible.com/royalty-free-sounds-1.html)
* [ZapSplat](https://www.zapsplat.com/sound-effect-category/game-sounds/)
* Or make our own (time consuming, needs talent)

## Collaborative Workspaces

The entire team is on board with our current workspaces. The team is flexible and open to change. It is possible that as we progress into the later weeks of the project, we may shift or add to our team workspaces.

Currently, we use Discord for daily (sometimes hourly) communication via text chat. All team members are responsible and check on any relevant information or conversation. The team has to juggle very different work hours, so the text chat of Discord is very useful for more casual communication. The main channel which is shared with our Mentor Sarah, can be found at <https://discord.gg/HTHJVf>.

We have a Github repository for our game files and scripts. We expect this will be the easiest way to collaborate on our game. It is located at: <https://github.com/S3795096/BITS>.

For our live meetings, which at this stage happens on Sunday evenings due to our availabilities, we meet on Teams. This allows us to screen share and go through Trello and Assignment documents together.

Trello is new to some of our group members, but for others, they are very comfortable with it. The board is monitored by our Mentor Sarah and we have started to get into a comfortable rhythm with cards (tasks) allocated to the different members in the group. We aim to have results to show before we meet each Sunday evening. The board can be found at [TheNightWatch](https://trello.com/b/uPaoonfq/thenightwatch).

## Communication Expectations

**Communication tools:**

* Discord channel (chat and voice chat for meetings)
* MS Teams (online meetings including screen sharing)
* Trello
* Availability schedule (to coordinate meetings)

Majority of communication is via discord chat, and all team members are typically present and active on this on a daily basis. This is an effective tool for the team as reading through the history of comments that occurred since last contact is well supported by the application, and allows everyone to catch up on any conversations that occurred while offline, which then can then add their own comment to if needed.

Is it expected that if team members will be unavailable or have other commitments that will limit their availability, that this is communicated to the rest of the team via Discord with as much advance warning as possible.

Online meetings are going to be held once a week, and the team has created an availability scheduled to assist with finding a suitable time that suits everyone. The team is made up of people with widely varying job hours, along with a range of other commitments. A concerted effort will be made to make meetings at the best time for everyone, and if someone is unable to attend minutes will be taken and the other team members will assist them in catching up on any major developments they may have missed. It is expected that team members attend 80% of team meetings. Each meeting will review the previous weeks tasks as a group, discuss and make decisions as a group, and agree on the specific tasks for the week ahead.

All tasks for the project will be set up on Trello. The project backlog swimlane lists all the major areas of the project in the pipeline. Tasks for the active week will be listed on the Sprint backlog swimlane, and move through the various Group - Doing, Review, Done lanes for the week. Ideally team members will self-select their tasks, however the project may also require some tasks to be allocated mid-week to ensure required areas of the project are being worked on. This will also be supported with regular communication on Discord around Trello board card updates and task progress.

All team members are assumed they will meet the deadlines of their allocated task/s for the week, however if there are any issues or concerns about meeting this deadline, open and frequent communication via discord should be sufficient warning for the team to be able to work around and troubleshoot any constraints. It is understood that everyone’s schedule and other commitments will adjust, and the aim is to support others when you can, and support will be freely given by others when it is required.

**Expected Group Response time**

Within 48 hours unless lack of availability has been flagged.

**Team Meetings**

When: Sunday (weekly)

Time: 8.30pm - 10pm

Where: Discord and Teams

Communication Expectations

* The project lead will check in with team members each sprint.
* If a team member cannot be contacted over 2 consecutive sprints, no further work will be allocated to them, and the project lead will advise the course co-ordinator.

## Decision Making Process

**Disagreements**

Any idea or approach which does not have the full support of the group must be discussed in detail to ensure that the dissenting party's position is fully understood by all members of the group.

Team members agree to make an effort to explain their position and reasons for it. They should also outline, or help the group to develop, an alternative approach.

The final outcome and all discussions leading up to it should be documented in the relevant card (e.g. feature card.)

**Feature decisions**

Additional features can only be added to the project backlog, unless deemed critical/urgent by the consensus of the group.

Features can only be added to the sprint backlog with the consensus of the group. This to happen is during the weekly team meeting, with exceptions made on a case by case basis where urgency is critical.

# Section 3: When

The linked Trello card should include:

● A descriptive title

● A planned start and due date

● The estimated time required to complete the task

● A precise description of the task that is to be completed with any necessary contextual information.

● A description of the artefact the task will produce.

● Who is responsible for managing the task to completion.