# Professional Practice in IT - Writeup

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## GitHub: <https://github.com/NatanTrosmanGMIT/PPIT_Group_Project>

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## Introduction:

## Myself (G00370308) Natan (G00347770) and Kyle (G00379755) have all been grouped together to create Professional Practice in IT project. The idea and design of the project has been left completely to us as a group. Our supervisor for this project is Martin Hynes. We make contact will our supervisor weekly and bi-weekly with our progress.

## Our Git-Hub repository for our project is linked here:

## <https://github.com/NatanTrosmanGMIT/PPIT_Group_Project>

## A screen cast video is also linked here:

## Our Notions link:

## <https://www.notion.so/ca0c5b63340349d09f5580b37f0fa9a3?v=7bdf7cef38be4889ada0ec8c1eae2fff>

## This document will explain our thinking behind picking the project we did, the technology’s we used, skills we had to use to get the project running, project management and of course problems we had to overcome as a team. This project was our first real look into Professional software practice I the real world. We needed to get an idea and bring it into life using the skills we had accumulated over the past two and a half years studying software development. We knew this project would be our biggest challenge in our college careers. We all held a meeting using Microsoft Teams deciding what kind of project we would do. We were going back and forth we different project ideas that were similar to projects we had done in the past such as database software projects. One of our team members Natan had some experience in game development using a software called Unity Engine, this was an interesting idea for myself and our other team member kyle as we did not have as much experience using unity. We all agreed that we should make a 3D based first person game as this would really put us to the test and be a good challenge for all of us to work as a team and learn as much as we could from each other and how we worked.

## Planning:

We set off planning our project from the ground up, we set up another Microsoft Teams meeting to assign some basic tasks. We discussed what kind of game we would like to make and ran through various 3D game examples. We looked at many games as setting on a game that was a first-person style of player that would run through obstacles coursers increasing on difficulty as the levels increased. We took inspiration from games such as Mirrors Edge, Titanfall and Cluster Trucks. After we had our style of game agreed upon, we decided to look into software’s to help us track our progression of the game and assign different things to go to make sure we were all working together. We tested different ones such as Jira and Trello, but we found Notions to work best for us, we were each able to collaborate and track what we were doing for the project.

Graphical user interface, application

Description automatically generated

Here is an example of how we used Notions to clearly see the progression in the project.

Using Notions we assigned are self’s tasks to do, For example I was assigned to create a respawn script so if the player ever dies he respawns in the correct position and also a visual count down timer the player can see, this would later be used as the score system, for example the quicker you complete the obstacle course the more time would be left on the time and that would be the player score. As Natan had much more experience with this he was assigned with slightly harder tasks such as player movement and a “Grapple gun” the player could use to swing from platform to platform. Kyle was assigned to do a wall-running script to the player could run on angled walls.

## Implementing:

After we started to do our tasks separately, we needed to make sure that that all our induvial scripts and assets all worked together. To make sure of this we would show all the work we have each done in our weekly/bi-weekly meeting using Microsoft teams. It was there we would share our work with each other and make sure it would all work as one when we needed it to.

Graphical user interface, application

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

After we had all sent our work, we would implement it all into one working game and each of us would use that copy to continue working with our new tasks. While we mainly used Microsoft Teams to share our work we realized that in most professional project they would use git hub. We started to use GitHub more regularly to ensure that anyone of our team members or supervisor would have access to our work at any time.

GitHub link:<https://github.com/NatanTrosmanGMIT/PPIT_Group_Project>

**Technology Used:**

the things we had to decide on early on in the project was the technology’s we would use and why to make sure that are game could be developed in the best way. For a game development engine, we put it down to two options Unreal Engine and Unity. We had a good look at each platform and weighted out the pros and cons of each. The Unreal engine had much better graphics and a robust multiplayer framework and particle simulation, but when it came down to it, we were all much more familiar with unity and the learning curve to switch to the Unreal engine would be too time consuming for the project. Also, the resources and access to helpful tips and tutorials for unity was much better than the Unreal engine. For the language we used C# as it was the most familiar to use and would work fine for everything, we needed it to do.

**Requirements for the game:**

For us to be happy with the game we needed the game to have everything the user would expect to be there, we needed the game to feel fluid and to be natural enough that the user would not need that in depth of a tutorial to grasp the concept of the game and how to play and enjoy it.

For this we need to start at the beginning, when the user starts the game what do we want them to see first. We decided on a main menu with a button the start the game, tutorial button, and a view previous high scores, also we would like the player to be able add their name to be easily identified when looking through the high scores.

The player controls will feel natural to the user as it will use the two main peripherals of the PC, the Mouse will be used to direct where the player is looking and where to aim his “Grapple Gun” and the keyboard will the used to move the player forward, back, left, right and jump by pressing either the W,A,S,P keys or the more traditional left, right, up and down arrows.

Audio for this game should allow the player to really immerse themselves into the game itself depending on what level of the game you are playing the audio will make it feel more rushed and intense causing the playing to over think and possible die in the game. As this is a time sensitive game there will also be chimes and tones indicating that you are running out of time to complete the obstacle course.

**Work Breakdown:**

|  |  |  |
| --- | --- | --- |
| Word Done | Description | Done by |
| Design/Word doc | Creating the design document for this project and uploading it to GitHub | Aidan McNea |
| Slideshow presentation | Creating a slide show presentation going into detail about the project | Natan Trosman |
| Game Design | Coming up with a basic concept design of how the game is going to look | Natan Trosman,  Aidan McNea |
| Creating player movement | Making a script for so the player can be moved across a plain using keys on the keyboard | Natan Trosman |
| Camera Movement | Creating a script to follow the player as a FPS and to allow the player to look where the mouse is pointed | Aidan McNea |
| Grapple Gun | Creating a grapple gun script using line renderer to allow the player to grapple to a plane and swing from it | Natan Trosman |
| Gun Rotation | Create a Script that allows the grapple gun to rotate to the grapple point | Natan Trosman |
| Level 1 part 1 Running/Jumping | Creating a basic level to allow the user to learn how to move the player by creating an obstacle course where the player would have to run and jump | Aidan McNea |
| Level 1 part 2 Running/Grappling | Creating a basic level to allow the user to learn how to move the player by creating a obstacle course where the player would have to run and grapple from one platform to another until reaching the end | Natan Trosman |
| Connecting part 2 and part 2 to be one continues level | After we had part one and two of the level complete, we needed them to be made all from the same material and to flow into each to make it feel more natural | Natan Trosman |
| Create respawn script | Create a basic respawn script to attach the player so if they fail to stay on the platform the spawn back to a location that we decide on | Aidan McNea |
| Create countdown points display | Create a basic display of integers counting down from 100 representing the users score | Aidan McNea |

**Score System:**

Aidan made the score system from scratch. We decided to make it a points-based score system that counts down, starting at 1000. We thought about making it a time-based counter, but we liked the idea of the counter going down and ending the level when it hits 0. The way the game is intended to be played is to firstly try out the levels and then try to set the highest score by completing the course quickest. The score counting down seemed like a unique thing to our game and would possibly help it stand out in the marketplace.

**Scoreboard:**

The scoreboard was one of our challenges, purely because it was brand new territory. None of the group members had ever made one. Since Aidan had the knowledge of how the score system was setup, he was given the task of creating the back-end of the scoreboard. While Natan worked on the front-end, adding buttons in the main menu and setting the functions created by Aidan to those buttons. The players score is automatically added to the scoreboard with their chosen name/initials.

**Power ups:**

Add extra 100 seconds back to your score

**Conclusion:**