# PID

## Introduction to the project

The intended project involves creating a Virtual Reality game made using Unity3D, intended for use with the HTC Vive HMD (Head mounted display).

Although I do not have an intended client at present, I believe there are many potential clients for my product. Small innovative indie games can often end up on digital distribution platforms such as Steam after being noticed by online communities such as Steam Greenlight. In this case the intended client any person interested in pc gaming, particularly those who are interested in small-scale, innovative games.

# Background / Motivation + Business Case

The primary reason I am undertaking this project is to further my skills in Game Design, asset creation/3D modelling and C# programming. In addition, carrying out a project of this scale from start to finish will give me invaluable experience in utilizing software development processes/methodologies.

In terms of a Business case, consumers might purchase my product because they are interested in small indie games with a low-price tag. Another potential reason is that currently the VR games industry is not yet saturated, and small games have more of a chance of being noticed and bought.

# Project Objectives

1. To complete a requirements plan specifying the core features of the game, and any additional features that will be included if time allows.
2. To complete the Unity3D game in line with the specified requirements.

# Initial Scope

**What will definitely do -**

1. The proposed game / product will feature
   1. A puzzle based game
   2. Ability to pick up and interact with objects using the VR controllers/wands
   3. At least 20 short puzzle based levels
   4. A variety of 3D modelled assets (at least 15) to give a consistent art style whilst providing an engaging environment.
   5. A variety of hand recorded sounds (at least 10), to make the environment more immersive

**What I think I am likely to achieve –**

I feel confident that I can achieve all the above.

**What I would really like if I had the time –**

I would very much like to include some polished looking animation and particle effects to give it that professional feel. I would also like a well built ‘game assistant’. A scripted character or voice which helps the player along and is triggered into saying certain lines etc.

**What it won’t do –**

It won’t feature any multiplayer functionality at all. Multiplayer VR is currently just not an easy task to get right.

**Platform**

The project will be for PC Windows only, as it using the HTC Vive.

# Resources and dependencies

The project is critically dependent upon:

* My HTC Vive VR headset remaining in a working state.
* My VR-ready PC components e.g. gpu remaining in a working state.

# Method of approach

The software development process I will adopt will be a scaled down version of XP (‘Extreme Programming’). This will involve -

1. Keeping a spreadsheet of required features, prioritized.

2. Define acceptance criteria (what done looks like).

3. Define specific engineering tasks to get done.

4. Time-box each session

5. Utilise effective versioning

6. Frequently reprioritize my spreadsheet appropriately.

The technologies I will be using include -

1. Unity 3D

2. Mono-develop (simple scripting software provided with Unity 3D. Using C#.

3. Blender (3D modelling software)

**Why Unity3D?**

I am using Unity3D as it is a high level tool with built in support (currently in the form of a plug-in), for the HTC Vive. The only other viable alternative for my project would have been Unreal Engine, so I made a call and chose Unity3D. I chose this because it feels more intuitive and can do everything I need to do for the project.

# Project Plan

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| --- | --- | --- | --- |
| **Stage** | **Expected Start Date** | **Expected Completion Date** | **Products/Deliverables** |
| 1. Initiation |  | 30th Dec | PID |
| 1. Investigation and outline requirements | 25th Jan | 1st Feb | Outline requirement / features of the game. Core + additional. |
| 1. Initial high level design | 2nd Feb | 10th Feb | Get high level features in place. Solidify the base structure of the game. |
| 1. Increment1 | 11th Feb | 25th Feb | Increment requirements and design.  Choose features from requirements to complete this increment, complete them. |
| 1. Increment2 | 26th Feb | 12th March | Increment requirements and design.  Choose features from requirements to complete this increment, complete them. |
| 1. Increment3 | 13th March | 27th March | Increment requirements and design.  Choose features from requirements to complete this increment, complete them. |
| 1. Increment4 (Easter Vacation) | 3rd April | 21 April | Increment requirements and design.  Choose features from requirements to complete this increment, complete them. |
| 1. Assemble and complete final report | 22nd April | 5 May | PRC0304 Report |

# Control Plan

The following PRINCE2 control techniques will be employed:

1. Highlight reports as dictated by the PRCO304 module – brief review of the stage - whether the stage’s objectives, deliverables and timescales were met , and to make sure the appropriate action is taken if not. This will ensure regular feedback on the project is obtained and the project stays on track.

2. Review meetings with project supervisor as dictated by the PRCO304 module; additional ad-hoc meetings as are necessary

# Communication Plan

Review meetings will be held with the supervisor in line with the Control plan. Further ad-hoc communications will take place as needed. There are no real stake holders involved. This guarantees constant feedback on the project’s progression. Meeting records will be documented to make sure everything discussed is recorded. If the project goes off track then meetings may increase, and vice versa.

# Initial Risk List

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| --- | --- |
| Risk | Management strategy |
| VR Headset breaks. | I would either attempt to get my hands on another headset, or attempt to change the game into a non-vr interaction game. |
| Schedule Overrun | An exception plan will be developed and approved by the project supervisor. |
| Difficulty learning/using the development technologies | I have already reached the point of a basic prototype, so this is a very low risk |
| Technology failure | Backups using Git will be taken frequently. |
| Overy optimistic deliverables | Again, unlikely due to the fact that I already have a prototype working, but nevertheless possible. In this case I would have to re-evaluate the requirements and deliverables and update the project as necessary. |

# Initial quality plan

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| --- | --- |
| Quality Check | Strategy |
| Requirements | Requirements will be iteratively checked to ensure they are still feasible, correct and up-to-date. |
| Design validation | The design will be checked against requirements as the project goes forward. |
| Project Deliverables | Validate the deliverables throughout the project to ensure all deliverables are still realistic. |

# Legal, ethical, social and/or professional issues

As I am creating a game (with no mature content), this will not be a huge topic, but nevertheless must be considered. I will consider this in my final report.