

CSC 475: TOPICS IN COMPUTER SCIENCE AND TECHNOLOGY
VR PROJECT
PROJECT REPORT

PLANET SOS

May 7, 2019

Anthony Smith
Cody Rountree
Cole Williamson
University of North Carolina Wilmington

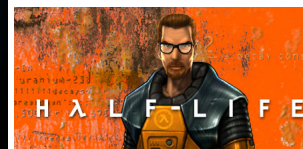
1 Introduction

Planet SOS is a competitive object collection, platformer, escape room VR game in which a player teleports around a large city map collecting objects in order to escape a simulation in which they are trapped. The game is designed to create an intense competitive experience where players can compete for better times on their escape.

2 Background

This section contains info on the various similar products we based our game on:

- Portal: Is a single-player, first-person shooter puzzle game developed and published by Valve Corporation. The gameplay centers around the player using a portal gun to solve various puzzles by teleporting both objects and themselves to desired locations. Pros- Each puzzle in the game seems entirely unique to the next and can be very entertaining. Cons- Some puzzles can be very difficult to resolve for some players.
- Half Life: A first-person shooter that requires the player to perform combat tasks and puzzle solving to advance through the game. The game regularly integrates puzzles, such as navigating a maze of conveyor belts or using nearby boxes to build a small staircase to the next area the player must travel to. Some puzzles involve using the environment to kill an enemy, like turning on a steam valve to spray hot steam at their enemies.
- Garry's Mod: Is a sandbox physics game developed by Facepunch Studios and published by Valve Corporation. In the game you have several different modes in which you can do anything you want. Pros- Every user can pretty much do whatever they want and make several unique maps. Cons - Is not really designed for single player use, gameplay in most modes designed for multiplayer.
- The Legend of Zelda Breath of the Wild: A Video Game series following a young boy Link, who in a majority of the games has to save Princess Zelda or the land of Hyrule. In nearly every game Link must travel to several dungeons and solve various puzzles in order to progress in them and obtain a specific item or ability at the end. Pros - Large scale game with several unique missions and challenging puzzles to encounter within the several dungeons. Cons - None



3 Story Development

- Camera View: First-person
- Storyline
 - Takes place in a abandoned city
 - Character being controlled is stuck in a simulation and must collect orbs to escape
- Player Movement: The player uses the portal gun to teleport anywhere on the map and collect items, by default steamVR allows the player to walk around the environment.
- Audio: The only audio we have at the moment is the sound triggered when the user successfully collects an item or teleports.

4 Storyboard

The main focus point of our game isn't the story, instead we focused on giving the player a quick but somewhat challenging experience in VR using teleportation. Below is the original storyboard for our game. However, as we went down the development process, we had to scrap the story aspect to our game in favor of more interesting gameplay. This was largely due to time constraints.

Training scene	Training Rooms	Cutscene/Time Skip	Beginning	Level 1	
					
Initial dialogue with Grants superior. He is addressed as Lieutenant at this time. His superior guides grant to X amount of rooms for each tool where players can experiment.	These are minimalist box rooms with the type of objects in them that the specific tool would interact with. There can be a simple objective to ensure the players know how the tools work for each one in order for the door to open	After finishing final training room, Grant has a little more dialogue with his superior. From this interaction, we can tell this superior is someone who Grant respects. The superior tells Grant he is looking forward to Grants potential.	Here the player is in a ship heading to alien surface. Meanwhile General Jett is explaining the mission to capture Otto. Jett refers to Grant/Player as Major.	Here the player encounters the first levels. Halfway through the level, they obtain the ancient material splitter, a mysterious weapon that is able to dismantle metal materials.	
Otto Cutscene	Level 2	Final Confrontation	Final Confrontation 2	Final Confrontation 3	Final Confrontation 4
					
After completing Level 1, the players have their first physical encounter with Otto. He questions Grants motives and at one point refers to him as Lieutenant. He berates Grant for being a military dog, traps the player in a cage, and runs further into the ruins	On this level the traps are more dangerous and must be approached with caution. Being hit by a deadly trap resets the player to the beginning of that trap.	The player catches Otto and confronts him. Otto laments the players capabilities, but says they are no match for the one who trained him. After he says that, the player must approach Otto by repelling the stones he throws, and absorb the lasers he shoots.	After reaching him, Grant restrains Otto and obtains the activation code. It is revealed that Otto is actually Grants old superior officer, the General who was thought to be dead.	He explains he was contacted by his home planet Mars when they sent him an SOS message. They stated they learned of military plans to destroy Mars using the Earth Defense System. Right after, there is an explosion and General Jett enters with soldiers.	
Final Confrontation 4	Jett Ending Scene	Otto Ending Scene			
					
Jett praises Grant and demands the Major to give him the cylinder that contains the code. Otto pleads, asking Grant to destroy the code. The player makes a choice here.	The player approaches Jett and hands him the code. Jett praises Grant again and ensures he is safe for a promotion. Jett orders his soldiers to grab Otto, and the player leaves following Jett into the black hallway of the temple.	The player destroys the code with their tool. Jett is furious and orders for their capture. As Jett yells, there is a large explosion above and the screen goes dark. The player wakes up on the ground outside, and sees Otto repairing his ship. Otto turns and states, "Looks like we're both terrorists now". The player approaches Otto and his ship and the screen goes black.			

Create your own at Storyboard That

5 Asset Acquisition and Creation

In this section, you need to address the following items:

- Assets used included a city map in which our entire game is set in. Some additional assets also included scripts we found in order to get some desired functionality.
- Assets we created our self include the Rick and Morty portal gun that is the players main tool used to teleport them to desired locations, the orbs the player collects in order to beat the game, and the pointer connected to the portal gun that shows the player where they will teleport to.

6 WITX

- During WITX we demoed our game to about 15-20 people and got their feedback on what they liked and didn't like and also fixed a few major issues that players were encountering involving the teleportation system.
- Lessons learned include that some of the elderly have a lot of issues with adapting to VR, and that rapid movement in VR can be very disorienting.
- We also learned that it is really difficult to account for what things will go wrong when actual players test the game. Although we tested the game extensively, it was simply different from how the people at WITX chose to play, which revealed bugs we did not know existed. This shows the importance of beta testing in game development.

7 Product Description

- We were able to accomplish getting a teleportation system working and make it so the player can teleport anywhere they desire on the map to collect objects we placed around the map.
- Anthony found the city asset used in the game, made the Rick and Morty gun in Maya, and found some starter code to help with a few things.
- Cody worked a lot on the coding, made the items the player collects, and also added the sound effects that the player hears when they successfully collect an item.
- Cole worked a lot on the coding as well and did some debugging to get things to work as desired.
- Many things we wanted done could not be completed, we originally had a portal gun that worked by shooting 2 different portals that were used to travel between each other, we also had a grapple hook mechanic which enabled the player to fly across the map at varying speeds, and we also had a gravity gun which allowed the player to pick up several different objects from varying distances and place them in any desired location. We made all of these in unity before working on the project with steamVR and we could not convert any of them over which caused us to start over from scratch at the very end resulting in the game we have now.

8 Future Work

Find out how to successfully add the functionality for the game we had originality intended and make an even more enjoyable game.

References

- <https://www.youtube.com/watch?v=cNd7VTOhSFU>