

Virtual Labyrinth Runner

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Motivation and Background

This project would be interesting from a VR perspective because it is an exploration game that tests people's sense of direction with an changing environment. We want to make this game because it is a different take on solving a maze while being fully immersed in the virtual reality. One game that is similar to what we want to do is Mea Culpa for Oculus Rift and Dreadhalls (using Oculus Rift).

Description

The purpose of this game is to explore and get to the end of a maze changes its configuration over time. The maze will be a 3D space, explore-able by the user and split in different sections. Each section of the maze requires the player to get the item to solve that section. Once the player gets the item, the section they are currently in will change configuration and then they must solve that section again with their new item and make it to the next section. Each section of the maze will be generated using a recursive algorithm with fixed entrance and exit points. There will be other interactions for the player as they go through the maze such as player progression, collectables, and traps set to stop them. Player progression would be permanent upgrades to the character that would help them navigate the maze better, such as a double jump. Also, the user will be able to unlock various tools to help navigate the maze. These tools would range from helping to disarm traps to shooting a tool at a wall which changes something in the maze. Some upgrades and unlocks can be purchased with collectable coins found by running through the maze. There will also be a map that shows the user's current position in the maze at certain checkpoints. We will likely take both keyboard and Xbox controller inputs. If needed, we will find a software library for textures and assets.

Example Flow of Gameplay

1. Enter Section 1 of the maze
2. Unlock Double Jump from Section 1
3. Once Double Jump unlocked, Section 1 changes configuration
4. Use Double Jump to solve new configuration for Section 1
5. Enter Section 2 of the maze
6. Repeat with new unlocks for multiple sections

7. Enter last section of maze
8. Unlock tool for last section
9. Last section configuration changes
10. Complete and exit the maze

Deliverables

At the end of the project, we will have a fully functioning game that allows the player to navigate our shifting maze and to “win” by getting to the center of the maze.

Human Factors

We plan for the experience to have an intense, engaging, and immersive feeling to it. While the user will not be uncomfortable, this game certainly isn't meant to be relaxing. We won't go out of our way to break any of the comfort guidelines because we want our game to be enjoyable. We will definitely have to follow Oculus Best Practices for motion, user input, and navigation since our game is mostly navigation based.

To make the experience more comfortable for the user, we will turn the camera at fixed angles, like in the Windlands demo, as opposed to free turning with the joystick. Also, to prevent vection, we will move pieces of the maze that you are not currently looking at. If we move a part of the maze that the user is currently looking at, it will only be small movements (like adding/removing a single wall that is of adequate distance away from the user to maintain other reference objects). Furthermore, we will have non-uniform textures so that character movement is clear to the user.

Milestones

- Generate a maze – March 30, 2016
- Randomly changing maze configuration – April 10, 2016
- Interactions with player/avatar (winning the game, traps, collectables) – April 20, 2016
- Player Progression System – April 30, 2016