Crux R3 Task

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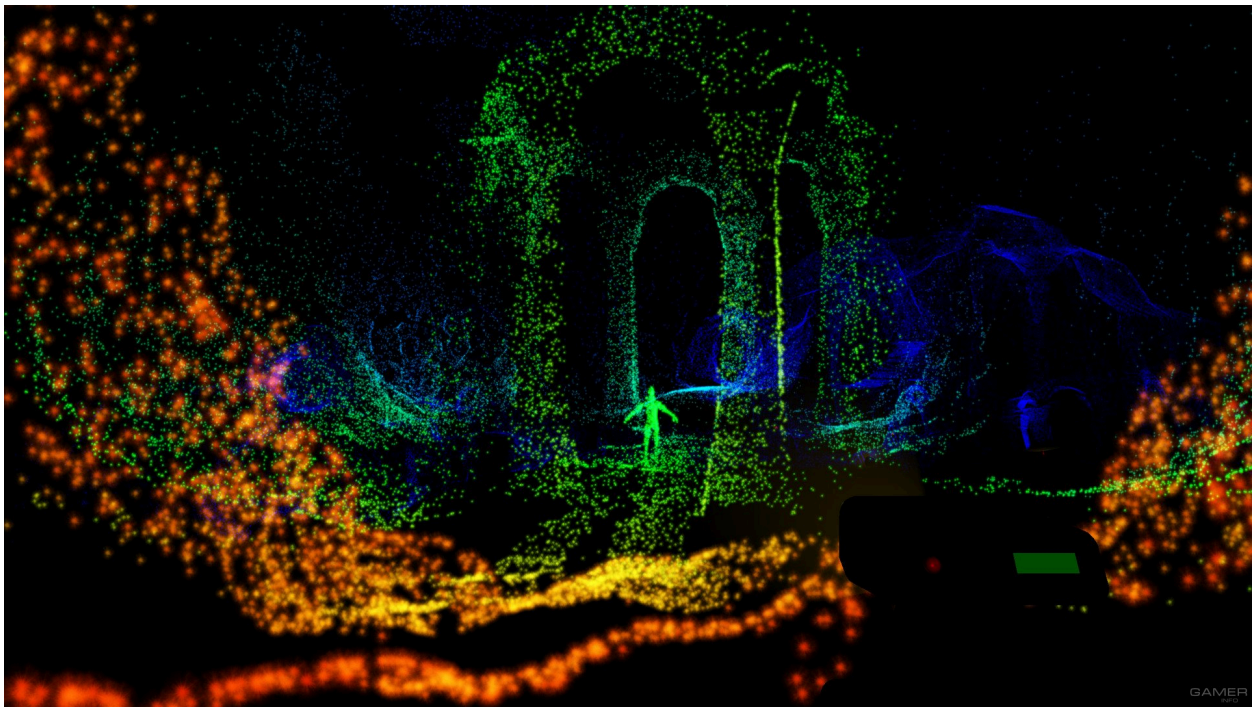
Duration:

14 days

Introduction

Creating a 3D lidar based dungeon escape game using Godot.



[1]

Gameplay loop

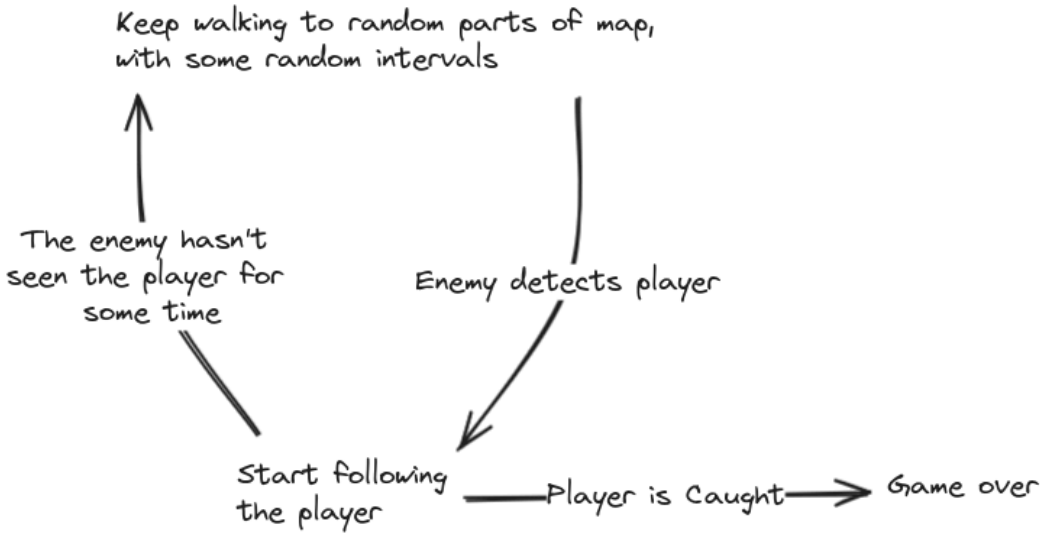
1. The player starts at one end of the ‘dungeon’.
2. There must be enemies that ‘hunt’ for the player, which should show up as a contrasting colour with respect to surroundings when hit with the lidar.
3. The goal of the player is to reach the other end of the dungeon without getting ‘caught’ by the enemies or falling into traps.

[1] A shot from the game Scanner Sombre

Instructions

The following features are required.

1. The world on loading must be completely black as the lidar hasn't been shot yet.
2. The player must have a 'scanner' gun, which shoots lidar and that's what shows the general shape of the walls. The scanner gun should randomly put lidar points in the FOV of the camera.
3. The levels must be procedurally generated.
4. The enemies should have the following navigation system:



5. The goal should be visible on the lidar (probably a flag shaped object).
6. The traps could range from trap doors, to chasms, stuff that the player has to detect using their lidar.
7. The game should have a main menu and a death screen.

Brownie Points[2]

1. Adding a gradient to the lidar for better conveying their distance
2. Adaptive music
3. Add a lifetime to the lidar particles, so that they disappear after some time, thus increasing performance (also increasing difficulty in some way).
4. Different types of lidar scanners.
5. Add camera effects like camera focal length to make closer objects blurrier, allowing better conveying of distance.
6. Checkpoints.

[2] Brownie points are meant to be the cherry on the top, in the end the main focus is still on the points given in Instructions.

Evaluation Criteria

1. **Functionality:** Completeness and correctness of the implemented features.
2. **Code Quality:** Cleanliness and readability of the code.
3. **User Interface:** Usability and design of the UI.
4. **Performance:** Efficiency of image processing operations.

Submission Guidelines

1. Use git to record your progress throughout the induction process and use conventional commits.
2. Code quality (conciseness, modularity, error handling, etc.) and documentation (minimum required for someone to understand the project/tasks and how to run it/contribute to it) will also be evaluated.
3. Even if you can't complete your task, make sure what you submit is complete in itself (i.e., I should be able to run and test whatever you have done.)
4. Any commits after the deadline will be ignored.
5. Feel free to use the internet, but obviously, do not plagiarise.
6. Once done with your tasks, write a post on the CRUx community forum and reply to your Round 3 task email with the link to your GitHub repo. The email and post are essential; do not skip them. The post is for future applicants and the GB to check out your projects. Follow a similar pattern to those who posted from previous inductions.
7. If you have any doubts at any point or want to request some extension in the deadline for valid reasons, feel free to contact any of your task setter(s).

Task Setter: ADARSH DAS