VR Triwizard Tournament, The Triwizard Maze Edition

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Description

Immerse yourself into the magical world of *Harry Potter and the Goblet of Fire* and explore the riddles of the Triwizard Maze!

Elevator Pitch

VR Triwizard Tournament, The Triwizard Maze Edition is a spin-off recreation of the third task, the Triwizard Maze, that Harry Potter and his fellow champions faced in *Harry Potter and the Goblet of Fire* during the Triwizard Tournament. In this enchanting experience, you'll get the chance to navigate through a maze filled with riddles. Be warned! Mess up once, and you'll be eliminated immediately!!!

In this game, players will be able to move around in a maze, running into riddles blocking the path to the end. If the player is on the right path, they'll run into riddles on their way. The player will have exactly 10 minutes to solve all riddles and make it to the end of the maze.

Inspiration

Our inspiration for the game came from the Sphinx who presented Harry Potter with a riddle in his path to the center of the Triwizard maze.

How we built it

We built the game for use with a Google Daydream using the GoogleVR SDK for Unity. Movement was implemented using a TeleportController and the game includes other aspects such as timers, score-keeping, and raycast layers and masks to prevent illogical teleports.

Challenges we ran into

Our main challenge was figuring out ways to limit the player's movement in a VR world where they move via teleportation, while also making it possible for them to progress relatively quickly through the maze. We did this by limiting teleportation to only ground layers to prevent hopping on top of or over walls.

We also had to come up with an intuitive design for the riddle interludes that would prevent players from bypassing them; we ended up creating walls that block the player from proceeding until they've completed the riddle.

Additionally, we ran into issues with collaboration via GitHub – inadvertently modifying Unity meta files created merge conflicts, and different editor versions led to superfluous information being included in every PR that converted the project versions back and forth. Any changes to our main scene resulted in messy merge conflicts within the .unity file containing that scene's properties. To fix this, we modified our workflow and compartmentalized the pieces that each team member worked on to avoid stepping on each other's work.

Accomplishments that we're proud of

We were able to use what we learned from Barrel Bouncer VR to create our own game from scratch. We used occlusion culling and precomputed baked lighting in our scenes, which we learned from Barrel Bouncer. Limiting teleportation to the ground was a challenge, especially since we didn't have to worry about this in previous projects. The GoogleVR SDK for Unity proved useful, and we used the SDK and our knowledge of Unity layers to implement the teleportation functionality.

What we learned

We learned that collaborating on Unity projects in large teams using GitHub can be difficult, and that creating a game from scratch involves a lot more creativity than following a pre-decided list of instructions. We also learned how to break together the work we needed to do into independent pieces that created a more frictionless workflow when working together on the same project.

What's next for Triwizard Tournament

This project is easily extensible with more riddles, a bigger maze, and different mechanics for scoring and time limits to complete the maze. You could introduce Beginner and Expert modes with different time limits to modify the difficulty of the maze, or have different scenes entirely with more complex mazes and different riddles to increase the replayability of the game.

If we were to spend more time in development, we would also come up with more advanced riddles along the lines of our original plans for the game, which would transport the player to a different scene entirely when they reach a riddle point. This would allow for more in-depth riddles and mini-games that make the game feel more immersive.

Built With
C#, Unity

Github Link
https://github.com/AstroCB/Triwizard-Tournament

Thumbnail image adapted from https://cdn.shopify.com/s/files/1/1308/1515/products/1000x1000_Triwizard_Tournament_1000x.jpg?v=1507823081