EPFL

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

I DON'T WANT TO BE HUMAN ANYMORE

Virtual Reality Project

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Synopsis

You are God. Even better, you are Odin, the God of all Gods, the Omniscient and Almighty Father of human civilisation. Until you are not anymore. One day, you wake up without any powers in Helheim, the deepest island of the Nine Worlds. You need to solve this mystery and even more importantly, you need to regain access to Asgard, the Valley of Gods located at the top of the great Tree Yggdrasil. For this, you will be going from island to island, always climbing a level in Yggdrasil in direction of your home. The path will not be easy as your enemy has put several obstacles to stop you. But you are not human, and the more you climb, the more you regain your divine energy. This energy will help you access a limited god-like mode that can move and manipulate objects in a way that a simple mortal could not even dream of. Welcome to "I don't want to be human anymore", the game where you will regain your entitled powers and that permits you to become who you really are.

Interaction

2.1 LOCOMOTION

Basic Walking: By default locomotion, walking enabled through movement of the left joystick.

Teleportation: Teleportation can be controlled by moving up the right joystick and pointing towards the desired location of teleportation. To help orientation, a marker and a parable-like line helps precising the location. When the joystick is released, the player is teleportated towards the chosen place.

God Mode: When entering god mode (see section 2.6), it is possible to grab the avatar of the player and to place it somewhere else.

2.2 GRABBING

Normal grab: Grabbing of object is enabled by putting handcontroller in the vicinity of the object (with individualised grabbing radius) and pushing on the index trigger and the grip button at the same time. Objects must contain *ObjectAnchor*, which then enables them to become childs of the controller. Release the trigger or the grip button to detach the object from the hand and release the parenting.

Magnetic grab: To retrieve objects from the distance, magnetic grab can be used by first triggering magnetic mode with the first button (A or X) of the respective grabbing hand and then point an appearing red markers towards the object. When the marker is on the object, normal grabbing is enabled. The object will then float towards the player and land in the hand.

2.3 THROW AND HIT

Throwing of objects can be done by grabbing it, making a movement and releasing one of the trigger to release the object. Velocity will then be transfered from the handcontroller to the respective object. Hitting a object with another object or object collision will induce some velocity transfer and will enable movement of the colliding object. These interactions are coded in *ObjectAnchor*, velocities are calculated in *ObjectAnchor* and *HandController*.

2.4 CONTAINER

Box-shaped objects are able to contain other objects by becoming their parent. It is then possible to grab the container while retaining all containing objects. The function is defined in *ObjectAnchor* that recognizes interactions with container-tagged object colliders.

2.5 INTERACTION DEPENDANT OBJECT

Most objects can either interact with the handcontroller, the OVRPlayer or with a tool.

Interactable-like class (like the Lantern, altar or Transformable) are, similarly to ObjectAnchor objects, stored as a list in *HandController* and are set active when the handcontroller is within a certain activation radius, plus a certain individualised interaction (like Y-button push for the lantern or the altar). When "activated" the transformable changes state (like the blob that can go from "alive" to "flattened") and the lantern changes color (from red to green). Additionally, when all the lanterns of a level are activated, the next level is triggered.

On the other hand, **InteractiveItem** class, like the appearing screens in tutorial, depend on interaction with the OVRPlayer. **Tools** such as the Axe and the Lance are able to trigger certain function when interacting with other objects. The Axe can for example break down roots.
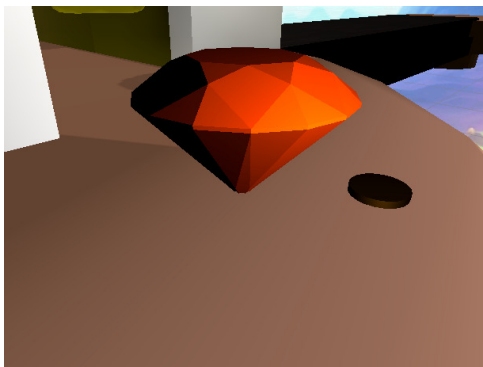
(A) Inactivated red lantern
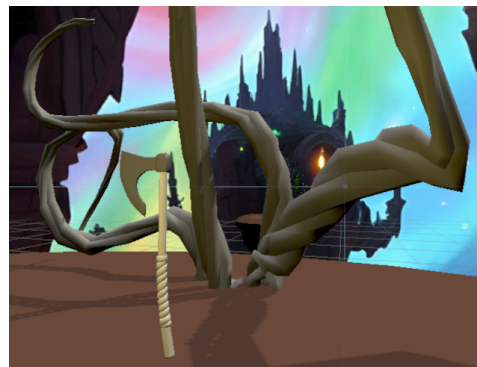
(B) Axe and roots

2.6 GOD MODE

When in God mode, the player becomes much bigger and is able to observe the islands from an external point of view. God mode enables movement of objects that are not accessible to humans, such as bridges, corridors and the avatar of the player. To trigger God mode, players must find an *altar* (see image on the right) and play on the Y button.

God moves: The object moved in God mode must be placed quite precisely in order to make the game work in human mode. As that level of precision (e.g. turning a floor at exactly 90°) is difficult to achieve with regular manual control, objects snap at different pre-chosen position: every 45°for rotations, and every round number for translation.

Gameplay

The game is a puzzle game. The aim is to find and activate all lanterns in order to regain enough divine energy to activate the teletransporter (which is placed on the green island) and get to the next level.

The game starts with a menu page. By clicking on the OPTION button, it is possible to monitor the volume of the background music and to toggle the no-vertigo mode. By clicking on PLAY, it is possible to access one of the three levels, or the tutorial. In order to facilitate the game play, it has been decided to let all of them open, even if they are thought to be played in order. You can access the menu scene by clicking on the Start button on the controller in order to change settings or level. It is to be noted that the levels are then reloaded from begining.

Tutorial: You arrive on an island that will lead you from yellow platform to yellow platform in order to activate screens that will learn you the basic interactions (see chapter 2). After each step, you can activate the lantern next to the yellow platform; when all of them are activated, you are teleported to the first level.

Level 1: You arrive on a new island, next to house. Go to the altar and pass in god mode. Grab you avatar and lower the godly ground to access an island just under the main island, where a gigantic lantern is hidden. Put your avatar on this island, pass in normal mode, activate the lantern and regain your Godly form with the altar. Regrab your avatar and put it on the main island. After this, go inside the building, magnetic grab the lance levitating on the left and use it to move the big stones on the upper right corner. This will reveal the second lantern, that you must activate. Then, grab the feathers on the ground, put them in the box with the others and enter the corridor on the upper left corner: you see a lantern on the ceiling, unreachable. With the help of the altar, pass in god mode: first move the corridor to the upper floor and then rotate it so that the lantern is now on the floor. Repass in human mode, activate the now accessible lantern, take the container and go in the next building. There, you will have a target that you must try to hit with the feather from your container. Once hit, a lantern appears - activate it. Congrats!

You have now activated every lantern of this level. You can exit the building and go through the bridge to the neighbouring island and step onto the teletransporter.

Level 2: You arrive inside of a house. Not far away, a lantern is hidden behind a blob. If you touch the blob before reaching the lantern, you restart the level, learning that you should *not* touch them. When reaching the lantern, you should be able to see a magic axe behind the railing of the next floor. You can magnetic grab it, and then head to the door of the house, where you will need it to cut the roots that block the exit. Once outside, you go to the altar, transform in God to move the bridge in place and to flatten the blob that blocks you on the second island by touching them. You then rebecome human, take the axe with you, go on the second island where a lantern (that was hidden behind the blobs) can be activated, cross the bridge to the third island, break all the roots and access the last lantern. You did it!

Level 3: You arrive in front of a tower with three levels, enter the first floor. If you turn into God, you will remark that there are paintings of trees on each facade, differently coloured. Take the stairs to the second floor. There you will see an image of a tree. Become god and rotate the floor so that you see the same tree in front of you. *Cheat code: turn the first 90° (2 snaps) to the right, the third floor 180° to the right, and the middle 90° to the left.* The second floor will then be illuminated by a green light. When you rebecome human, the lantern will have dropped down in the middle of the room - activate it. Then become a god and swap the first and the third floor and rotate the third floor 90° to the right and then return to human form. Drop down the hole to arrive at the third floor. Now become god and try to point the laser from the third floor toward the floating cristals. *To do so, turn the third floor 90° to the right. Then switch the third floor with the second floor and rotate it by 135° to the right. Finally swap the third floor with the first floor and rotate it by 135° to the right.* When all the cristals are lighted up go back to human form and activate the lantern that should have dropped down. Then drop down throught the hole in the middle of the floor on the last lantern, the lantern of the first floor. Activate it and then become god, take the first floor and swap it with the third floor. Rebecome humain then climb the stairs, you will face an inacessible teleporter and instruction R G B, swap the tower floor such that the red floor is the one above the 2 others, the green floor in between and the blue floor bellow the others 2. Then return to human form, and pass the teleporter. Tada finished :)

Game Design and Sound

4.1 GENERAL AESTHETIC DESIGN

For the design, we wanted to give nordic mythology vibes to the game. For that, we conceived floating islands that would gravitate around Yggdrasil, the giant world tree. This tree is represented in each of the skyboxes, AI generated through Blockade Labs (`https://skybox.blockadelabs.com/`). A low-poly design was chosen to avoid lags in frame updates, for easy manufacturing, and confer a visual identity to the game. Many assets were found on free of right platforms, but some were created or modified with blender: the islands, the blobs and and some building component such as the tower. Nordic items such as the lance and the axes were also introduced to reinforce the mystical feeling.

4.2 MUSIC AND SOUND EFFECTS

A fantasy-inspired calm but enchanting music (from Scott Buckley - "This Too Shall Pass", Creative Commons) was introduced in loop as background to enhance immersion. Additional sound effects were introduced when activating the lanterns, when the roots are breaking down and when flattening the blob, to reward the player for an action that moves the game forward. Sound has also been implemented when all the lanterns are activated and when the player is transported to the next level. A final music rewards the player for finishing the game.

4.3 HAPTIC FEEBACK

Haptic feedback was introduced as a vibration when grabbing an object, or when moving objects in god mode to enhance the illusion of actually holding something - and something *grand* in god mode, whith greater vibrations.

Play Testing and Feedback

We let several people play our game or tutorial and could make several modification after feedback:

At first, magnetic grab mode was triggered only on the left and led to markers on both hands. As players indicated it as counterintuitive, we fixed it by individually activating them on each hand. We also introduced sound effects to confirm the player of a "success" action (with lanterns, roots and blobs). God moves at the begining were indicated as too complex, as they used two different buttons for translation and rotation, with different hand movements. Now, God moves rely on more intuitive grab and move pattern. As God mode induced some kind of vertigo in some participants, a "no-vertigo" mode was introduced as an option in the menu that would create a plane under the feet of God. Additionally, as no teleportation is available in God mode, we were attentive of it not being too cybersick by making the majority of the interaction possible by walking "in real" alone. No player reported any cybersickness in god mode, indicating that only short time is passed in this mode. In general, players were enthusiastic about the general aesthetics of the game, and particularly appreciated to pass in god mode to solve the different riddles.

Contribution

The basic interactions code was split between the three members of the group (Antoine: teleportation and magnetic grab, Jade: Throw and hit, Lena: container and haptic feedback). Antoire was then mainly responsible for coding and thinking about everything related to the god mode, Jade behind the transformable, and Lena the interactable classes. Jade developed and created the main aesthetic design ideas, while Lena worked on story line, sounds and the menu scene. However everything was made in very close collaboration and involved a lot of communication and helping out each other.