Aurora's Heart

Revision: 0.0.0

Credits

- RAIN - AI plugin
- Xiaolianhuastudio - Make Your Fantasy Game - Fantasy Environment Assets (3D Models/Environments/Fantasy)
- SkythianCat Glowing Forest (3D Models/Environments/Fantasy)

Sign-Off

Programmers:	- Inês de Sousa Caldas - Miguel Lucas - Rui Osório
Assets Designers:	- António Maria Lopes - Carina Gonçalves - Marli Barros - Sofia Gouveia
Audio Designers:	- Alonso Torres - Margarida Pessoa

Concept Document

Introduction

Aurora's Heart is a single player RPG game. It's a story about a young girl who finds herself lost in a strange world and no one around seems to recognize her, apart from a strange wolf. The player, who takes the role of the young girl, embarque on a journey to discover about the mysteries lying around and finding what happened to her.

Premise

You, Freya, are a young girl born to mystical powers. One day, you wake up next to a lone mysterious wolf and into a world crumbling to pieces for reasons unknown. No one at your village seems to have any recollection of you or your parents, apart from the strange wolf. You set on a quest to find your parents and the reasons behind this strange events, only accompanied by Hugrel, the wolf. You must decide your interactions with Hugrel, and if you want his help you must gain his trust. Or you can simply rely on your powers to quickly solve the problems you encounter, but beware of the consequences.

Player motivation

The player will be motivated by the rich interaction with Hugrel and the unexpected outcomes that result by it. The quest for finding what happen to Freya parent's and this strange new world is an underlying motivation through the game.

Game Analysis

Aurora's Heart is open world game and as such the player can explore the environment before engaging in the quests.

The player can interact with some elements in the world that are either collectable items or highlighted to indicate that a specific action such as climbing is allowed. The virtual reality, coupled with visually appealing surroundings, ambient sound and behavior-driven sound effect, enhances the immersion and overall experience. In order to unveil the story behind, the player needs to complete the quests, facing enemies with magic powers and mini-puzzles that shall be solved in order to progress, such as collecting items and restore them to the correct place.

Game Description

Genre:	☐ RPG-Adventure	
	☐ Exploration	
Game Elements:	☐ Shooting	
	☐ Collecting Items	
	☐ Combat	
	☐ Climbing	
Game Content:	☐ Drama	
Theme:	☐ Fantasy	
Style:	☐ Real	
Game Sequence:	☐ Hyper-Storylines that the player can influence	
Player:	☐ Single-Player	

Game Reference

Game Taxonomy: ☐ Fictional Game/Narrative

Player Immersion: ☐ Narrative
☐ Physical
☐ Mental

Reference: ☐ Norse Mythology
☐ Celtic Culture
☐ The Last Guardian
☐ Ico

Game Technical

Technical Form: ☐ RPG-Adventure

View: ☐ First person view

Platform: ☐ PC

Language: ☐ C#

Device: ☐ PC
☐ HTC VIVE

Target market

This game is targeted for all ages (recommended over 10 years) and genders, for any audience that likes to immerse themselves in a completely different reality.

Target rating

Although the concept of the game is simple and fun for all ages, some mild violence suggestions would rate the game for everyone over 10 years old (E10+).

Selling Features

Unique gaming concept, with an explorable open-world in VR.

Game Atmosphere

To convey the feeling of the game and of its different elements, a mood board was created.

Mood Board

Figure 1 - General Mood of the Game

Figure 2 - Hugrel

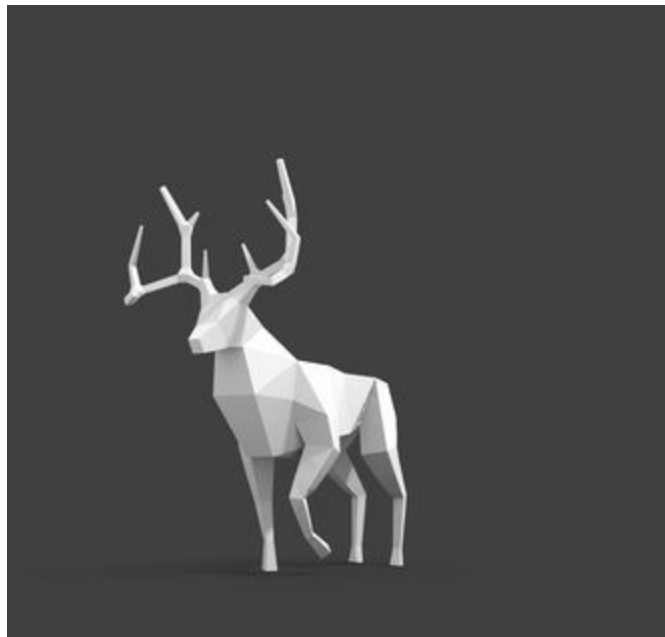
Figure 3 - Leviathan

Figure 4 - Druid

Figure 5 - Holle

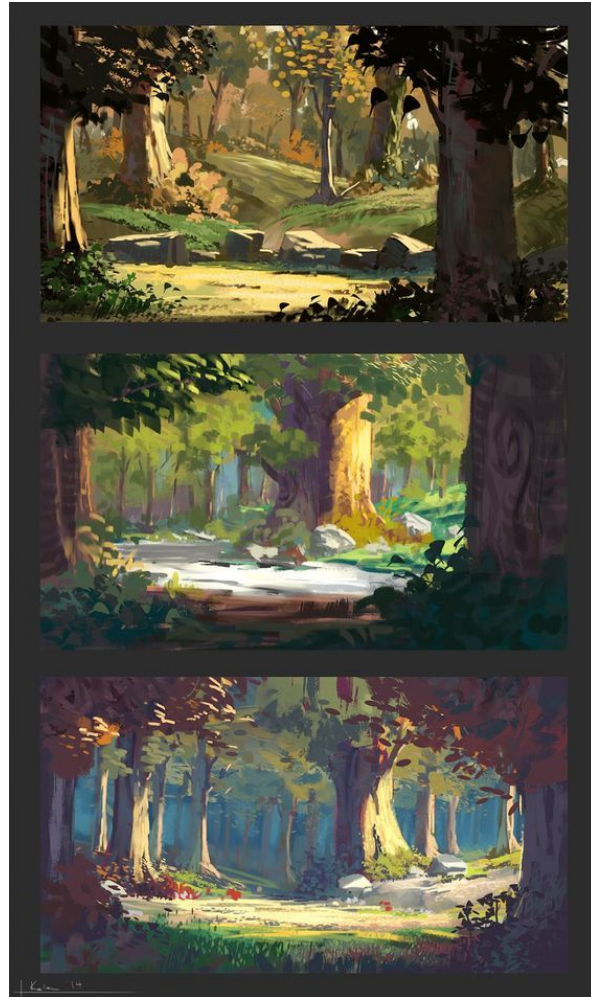Figure 6 - Spirits (Draugr and Fylgja)

Figure 7 - Nighttime

Figure 8 - Forest during the day

Figure 9 - Caves

Figure 10 - Quest mushrooms

Design Document

Game Play

The Goal

☐ **Leviathan Quest**

At the beginning of the game, the player cannot advance past a certain point in the game because there are a few barriers in the bridges blocking the way. The Leviathan can help, but only after the player collects 20 spirits and gives them to him. After the completion of the quest, Leviathan gives the Rune of Verthandi to the player.

☐ **Holle Quest**

To perform the final spell at Yggdrasil, the player must decipher the magical chant. Holle can help you, but first Freya must collect the 4 scrolls that make the song. After the player placed them on the altar at the Temple, Holle will then reconstruct the spell. In the end, Holle will gift the Rune of Urd to the player.

☐ **Druid Quest**

The Rune of Skuld is inside the Druid domains. But he will only grant the player access, if he brings to him 3 mushrooms that he needs for his magic potions.

☐ **Yggdrasil Quest**

After the player collects all the runes and placed them in a sacred place he can then sing the chant to open the portal to the other realms for Freya continue her search for her parents. Beware because the spell needs moonlight in order to work.

Exploring the World

The player can move in order to explore the world. The movement is in 3D and the player can control its velocity. All the world is open to the player exploration, unless its layout prevents the player access.

Fight

The player can fight with enemies through the use of spells. To cast a spell, the player must point the controller in the direction of the enemy and press to cast. The player has at his disposal two spells: the ice spell and the fire spell.

Climb

To reach one of the areas of the map, the player must climb a mountain. Using both controllers, the player must grab the rocks until reaching the top. At the top is one of the quest mushrooms. And a great view!

Interact with the quest NPCs

To interact with the different NPCs, who are the ones that provide Freya with the quests, the player must see the character in question. If it's visible, the player can click to interact. Depending of the state of the game, the interaction varies.

Open chests

To open the chest and pick up the content inside, the player must crouch down and grab the handle. When grabbing the handle, the player has to mimic the movement of opening in order the chest to open.

Pickup items

The player has at his disposal a various number of items to pickup. To collect this items the player must take the controller to the object and then grab the item.

☐ **Light Orbs**

In order the player to see at night, he can conjure light orbs. In reality, the orbs are the spirits that roam the forest. To catch the spirit lights, the player must first fight them.

☐ **Torch**

Inside the cave the player cannot conjure the light orbs. However he can use pick up a torch at the beginning of the cave. The torch is also powered by the spirit lights.

Game Matrix

Freya: ☐ Main character, is a 9-10 year old girl, who wakes up in a mysterious world, and wants to find out what happened and starts a quest to search for her parents.

Hugrel: ☐ Mystic wolf that accompanies Freya. Is a representation of her soul, and with such, Freya's actions directly influences the wolf's behaviour

Holle: ☐ Magical deer that is present in the temple, and guides Freya into obtaining the Rune of Urd, one of the runes she needs to complete her quest.

Leviathan: ☐ Water dragon, which Freya finds in the beginning of the game, that starts to guide her through the world. The Rune of Verthandi is given to Freya, by Leviathan, after the completion of the first quest.

Druid:	☐ Found in the cave, guides Freya through it, in order to find the of Rune Skuld.
Draugr:	☐ Spirits of the forest, corrupted by the evil within the world, aggressive and will try to attack Freya on sight.
Fylgja:	☐ Spirits of the forest, yet to be corrupted, with a neutral stance towards Freya.
Yggdrasil:	☐ The giant tree of life, in the center of the map. This tree is visible from almost all areas of the map, and is where the final spell is cast, and the game is finished.

Player Definition

Default Status:	☐ HP - 100%
	☐ Mana - 100%
Default Properties	☐ Runes - 0
	☐ Spirits - 0
	☐ Scrolls - 0
	☐ Mushrooms - 0
Actions:	☐ Fight with the spirits, using the Ice or Fire Spells
	☐ Climb
	☐ Interact with the quest NPCs
	☐ Open chests

☐ Pickup items
☐ Revive HP and Hugrel energy near the fountains

Information Status:
☐ HP
☐ Mana
☐ Number of Runes
☐ Number of Scrolls
☐ Number of Spirits
☐ Number of Mushrooms

Winning:
☐ The player can win, after he completes the different quests and places the 3 runes in the final spell location, near Yggdrasil. After the runes are in place, Freya will chant the spell that she learn in the quest of Holle, and opens the portal of Yggdrasil (the spell needs moonlight, so the player must complete the game at night time.)

Losing:
☐ If Hugrel loses all his energy before Freya reaches the fountain
☐ In combat with the Spirits or Guardians

Player Properties

HP: ☐ Hit-points. The amount of life the player has remaining. It's depleted each time the player is attacked by the spirits, and it automatically regains itself over time.

Mana: ☐ The "quantity" of magic present in the player. Each spell cast by the player drains a specific amount of mana, and it automatically regains itself over time.

Player Rewards (Power-ups & Pick-ups)

Spirits: ☐ Each spirit the player kills, adds to the amount of spirits she is carrying. A bad spirit (Draugr) will award less spirits than the good spirit (Fylgja). These spirits are multi-purpose tools. The player can cast out one of this spirits, and it will illuminate the current location, allowing the player to see better in the night, or in closed locations. In the cave, the player can use these spirits to light up the torches. Each torch will continually drain the spirits, and it's light will extinguish if the amount of spirits is 0. They are also needed for the Leviathan Quest.

Scrolls: ☐ Scrolls are hidden throughout the world, usually locked within chests, which the player has to open and retrieve the scrolls from them. There are a total of 4 of them and are used for the Holle Quest. The scrolls are automatically added to the player's inventory once she catches them.

Mushrooms:	☐	Mushrooms are located in the Forest, in the top of cliffs, or in ritual stones. There are a total of 3 of them and are used for the Druid Quest. The mushrooms are automatically added to the player's inventory once she catches them.
Runes:	☐	There are 3 runes hidden in the world, the Rune of Urd, the Rune of Verthandi and the Rune of Skuld. Each rune is obtained in each of the quests. They are used to complete the final spell at the center of the map, next to the Yggdrasil.

User Interface (UI)

The UI is presented in the form of a pop-up menu, in the left controller of the player. If the player rotates his controller so that it is facing outwards, the UI will fade in, giving details about the current status of the player.

Figure 11 - Player's UI

As seen in the example above, the UI shows the current number of spirits, mushrooms, scrolls, runes and the player's current health and mana, shown in the form of slider, and of number.

Heads up Display (HUD)

As the player wanders in the world, several objects can be picked up. To aid the player, each time a controller is over an object that can be picked up, this object is highlighted in a different color.

Figure 12 - Rock that can be grabbed, highlighted

Player View

The player view is first-person. The player controls the camera with the movement of the headset from HTC VIVE. To walk around the level, the player must use the respective command from the controllers.

Figure 13 - View of the player inside the caves.

Artificial Intelligence (AI)

The elements with artificial intelligence are as follows:

- **Hugrel:** Escorts Freya along the world. In the beginning, runs away towards Leviathan and howls to call Freya. Asks Freya for food, if Freya doesn't gives him food (spirits) the relationship between them begins to sour. Helps Freya fighting the spirits and the guardians. If Freya fights the Fylgja spirits, it also compromises her relationship with Hugrel. Freya must from time to time go the a fountain to regenerate the mystical energy of Hugrel. If the energy runs out, Freya loses the game, and the next time, Hugrel is antagonistic towards Freya. The energy level of Hugrel also controls the environment. The lower the energy, the the greater the difficulty to explore the world. In the cave, there is a banquet that cannot be disturbed, as per warning of the Druid. However, Hugrel jumps on top of the table, awakening the guardians.

If at that time Hugrel is friends with Freya he stays to help her, otherwise runs away.

☐ **Spirits:** Placed in the forest, they wander around the limits of the forest, while trying to detect the player. If the player enters the field of view, Freya is detected and the spirits enter the alert state. When in this state, the spirits look for a place around the player, if none is available, they give up and begin wander around again. If there is a spot open, they occupy that place in the circle and wait until the number of spirits currently attacking is less than the maximum to perform the attacking action itself, consisting in spell being casted.

☐ **Guardians:** Placed in the cave, they have a similar mindset to spirits. Nonetheless they do not wander in the cave and remain in position until detecting the player. Once the player is detected, they are less prone to loss the player sight and remain in the alert state. Another difference to spirits is the attacking action performed itself, consisting in getting close to player and swing the sword towards player body.

☐ **Leviathan:** Awaits for the first interaction with the player. After, it follows a path along the river, stopping every few seconds to look around. The player can only interact with Leviathan when he stops.

☐ **Holle:** Awaits for the player to place all the four scrolls on top of the altar. When the player interacts with Holle after all the scrolls are in place, Holle calculates the route to go to the altar, avoiding the player. Arriving at the altar, performs a magic spell to realign the scrolls.

The Story

Freya, a young girl born to mystical powers, wakes up next to a lone mysterious wolf and into a world crumbling to pieces for reasons unknown. She doesn't have any recollection of what happen to her and her parents, and the graveyard where she woke up seems cold and scary. Suddenly, the strange wolf starts to howl, turns around and begins to run towards the exit, as if he wants Freya to follow him. After a moment of hesitation, and not wanting to be alone in such a dreary place, she follows him. In the distance, next to the big wolf, a majestic creature emerges from the water. "A dragon!" - said Freya in surprise. Leviathan, is it's name. Leviathan is an ancient sea dragon of fine bearing and wise voice. Leviathan reassures her and promises to help her in her quest for the search of her parents. The sage dragon gives prudent advice to Freya so she can survive in the mysterious world of Midgard. To dismay of Freya, Leviathan senses that her parents aren't in the present realm, so she must travel through the portal inside the roots of Yggdrasil to reach the other realms. Unfortunately, the portal has been closed for the past few decades and the runes necessary to fuel the portal are missing. Leviathan heard rumors that one of the runes is lost in the caves of Heimdall. Freya says her goodbyes to Leviathan and embarks in the quest for the runes accompanied by the lone wolf Hugrel, because they will bring her the ultimate truth she seeks.
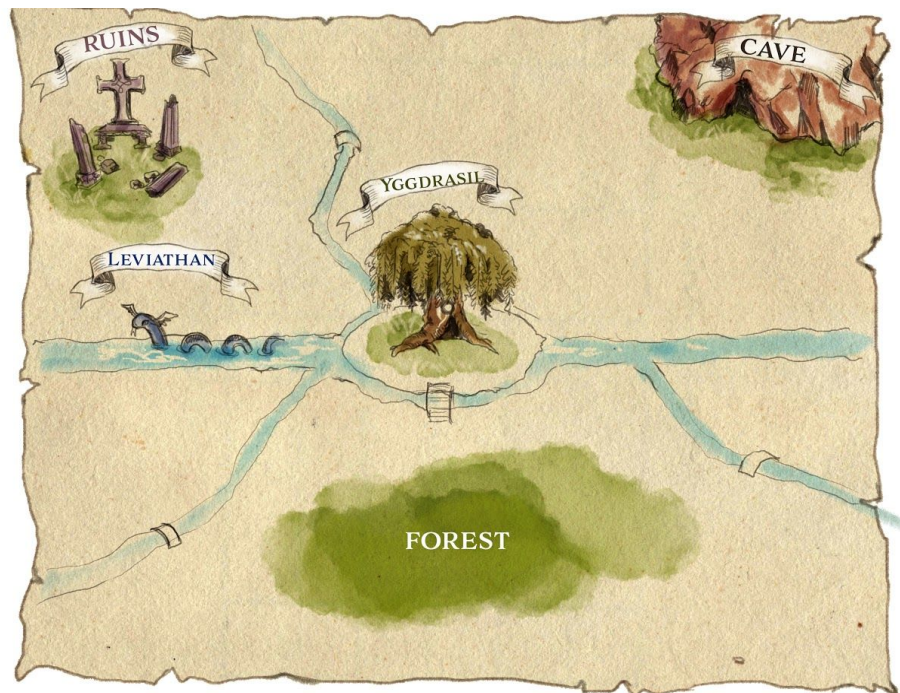
Concept Art

Figure 14 - Brand Logo

Figure 15 - First Sketch of the Forest Map

Figure 16 - Yggdrasil Sketch

Figure 17 - Study of the Mood for the Forest

Hugrel: This character is a wolf and the companion of Freya. The name Hugrel comes from Hugr (soul/inner self) + Hel (Norse Goddess of the Dead and the Underworld), the animal form of Freya's spirit. His two colours are based on this two concepts. The wolf is a symbol that it is strongly associated with danger and destruction, making it the symbol of the warrior on one hand, and that of the devil on the other. Therefore we chose the wolf to symbolize the journey Freya has ahead of her and the demons she has to fight in order to come to terms with her fate.

Figure 18 - Hugrel Model

Holle: A mythical creature and guardian of the temple. As a spiritual character, it's made of light and has an ethereal body. It has a form of a deer. Based on the Germanic Goddess of Death and Renewal, Weaver of Fate and Fortune.

Figure 19 - Holle Model

Leviathan: The hebrew version of Jörmungandr, an ancient sea monster. Represents the cycle of life. As the first character Freya encounters, we wanted to symbolize the inevitability of fate, as Thor and the Midgard Serpent are destined to slay each other.

Figure 20 - Leviathan Model

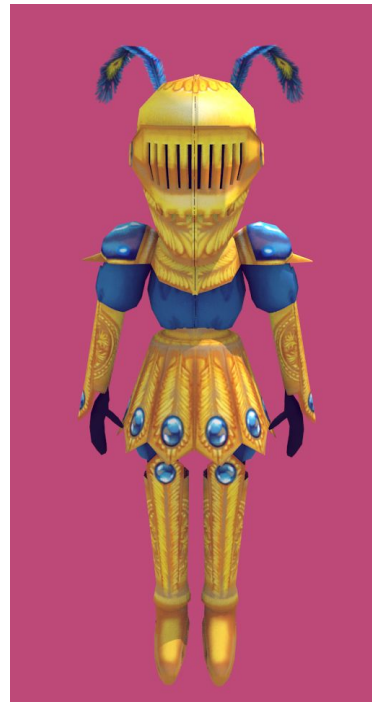Figure 21 - Spirits/Druid Model
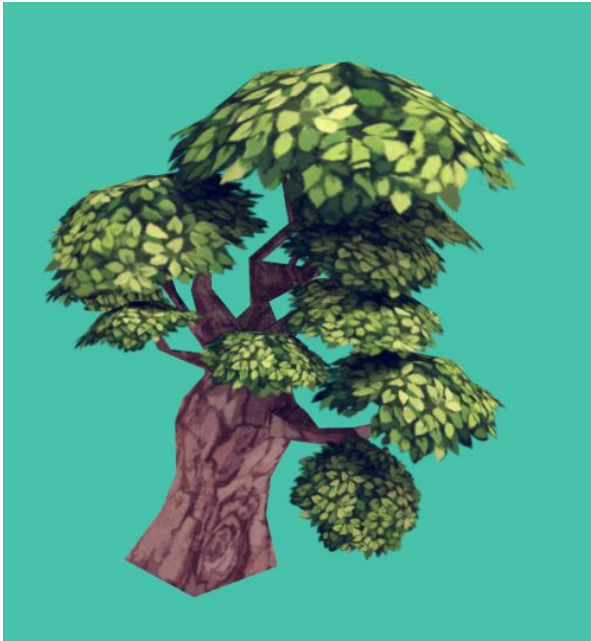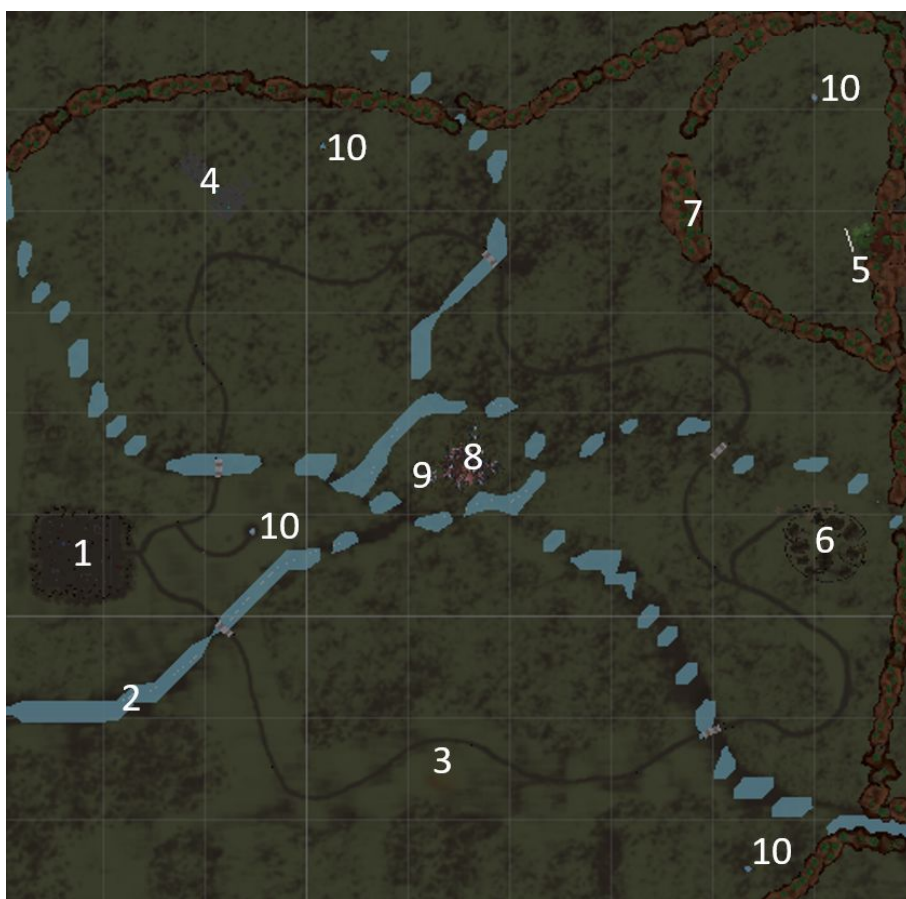(different skins)

Figure 22 - Guardian Model

Figure 23 - Oak Model

Figure 24 - Pine Model

Level Design

Figure 25 - Forest Level

1 - Graveyard
2 - Leviathan (initial location)
3 - Forest of the spirits
4 - Temple
5 - Cave Entrance
6 - Town
7 - Climb mountain
8 - Yggdrasil
9 - Runes Spell
10 - Fountains

1 - Cave Entrance
2 - Druid Cave
3 - Scroll location
4 - Rune of Skuld Location

Figure 26 - Caves Level

Audio & Sound F/X

▽ Main menu theme music
▽ Choose menu option sounds
▽ Ambient sounds for day, night, village and cave
▽ Different musics for the forest and the cave, with variations for each zone
▽ Forest and cave footsteps
▽ Ice and fire magic spell sounds
▽ Walking and danger sounds
▽ Sounds for proximity of mushrooms, fountains, bridges, lamps, temple, cave, climbing spot
▽ River sound
▽ Torch fire and torch drop sound
▽ Freya, Leviathan, Druid and Holle speaking sounds
▽ Final spell sound, and Freya's chant

∇ Grabbing rocks and rocks falling sound
∇ Open lock, open chest and grabbing scroll sound
∇ Enemies dying and shooting sounds

How To Play

The game uses the HTC Vive controllers and headset for input. The HTC Vive headset controls the direction the player is facing. The left and right controllers play different parts in the game mechanics. In the image below, options C and D are common to both controllers, while A and B are different.
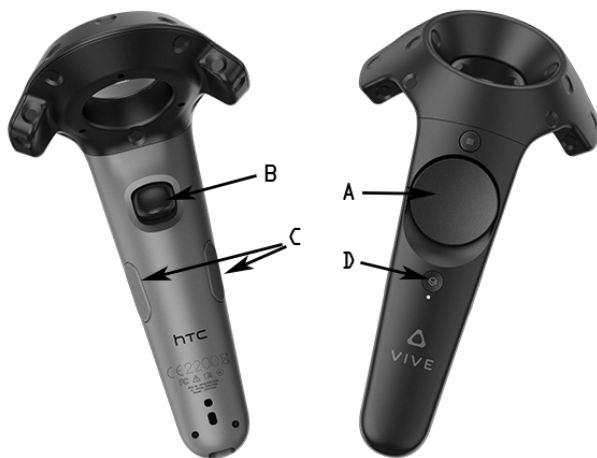

Fig. 25 - HTC Vive controllers

Right Controller:
∇ **A:** Touching the touchpad moves the player in the direction he is looking. The speed of movement is controlled by the distance of the touch to the center of the touchpad - the longer the distance, the higher the speed. The maximum speed was kept relatively low to avoid motion sickness of the player. The player can also press the touchpad for sprinting.
∇ **B:** Fires the selected spell in the direction the controller is facing.

Left Controller:
∇ **A:** Touching the touchpad brings up a radial menu in the controller itself. This menu serves for choosing which spell the player wants to equip. Sliding the finger to the wanted option will highlight it, while pressing the touchpad in that position will select it
∇ **B:** Lets go of a spirit a few meters in front of the controller position, illuminating the surrounding area.

Common controls:
∇ **C:** Grabs an object, if the controller is close enough of it. All objects needs this button to be constantly held if the player wants to keep grabbing something, with

the only exception being the torch, which attaches to the controller, and is only let down when the player presses the button again.

▽ **D:** Brings the SteamVR application menu.

As stated in the section **User Interface (UI)**, the left controller has also attached a pop-up menu, which appears as the player rotates the controller around $90°$ to $270°$ in order to the controller's vertical axis.

In addition to this controls, the player can also move physically, in his own room, and the movement will be translated to the game itself, making it useful for small distances. There are also areas where the player may have to jump, stretch, or crouch in order to reach certain items or destinations. Multiple combinations of gestures may also be needed, for example, for opening a chest, or for climbing a mountain.

The player's own height directly affects the game, as players with different heights may have slightly different perspectives of each scenario. The game was built to be a challenging exercise for a person averaging 1,70m to 1,80m, although people with different heights can, of course, enjoy the game.

Left-handed players can just switch the controllers for the same experience.

System Requirements

PC Requirements to run HTC Vive:
▽ **GPU:** GeForce GTX 970 or AMD Radeon R9 290 or better
▽ **CPU:** Intel Core i5 4590 or AMD FX 8350 or greater
▽ **RAM:** 4GB or more
▽ **Video port:** HDMI 1.4, DisplayPort 1.2, or better
▽ **USB port:** 1 USB 2.0 or faster port
▽ **Operating system:** Windows 7 SP1 or newer (no Mac or Linux distribution is able to run HTC Vive)