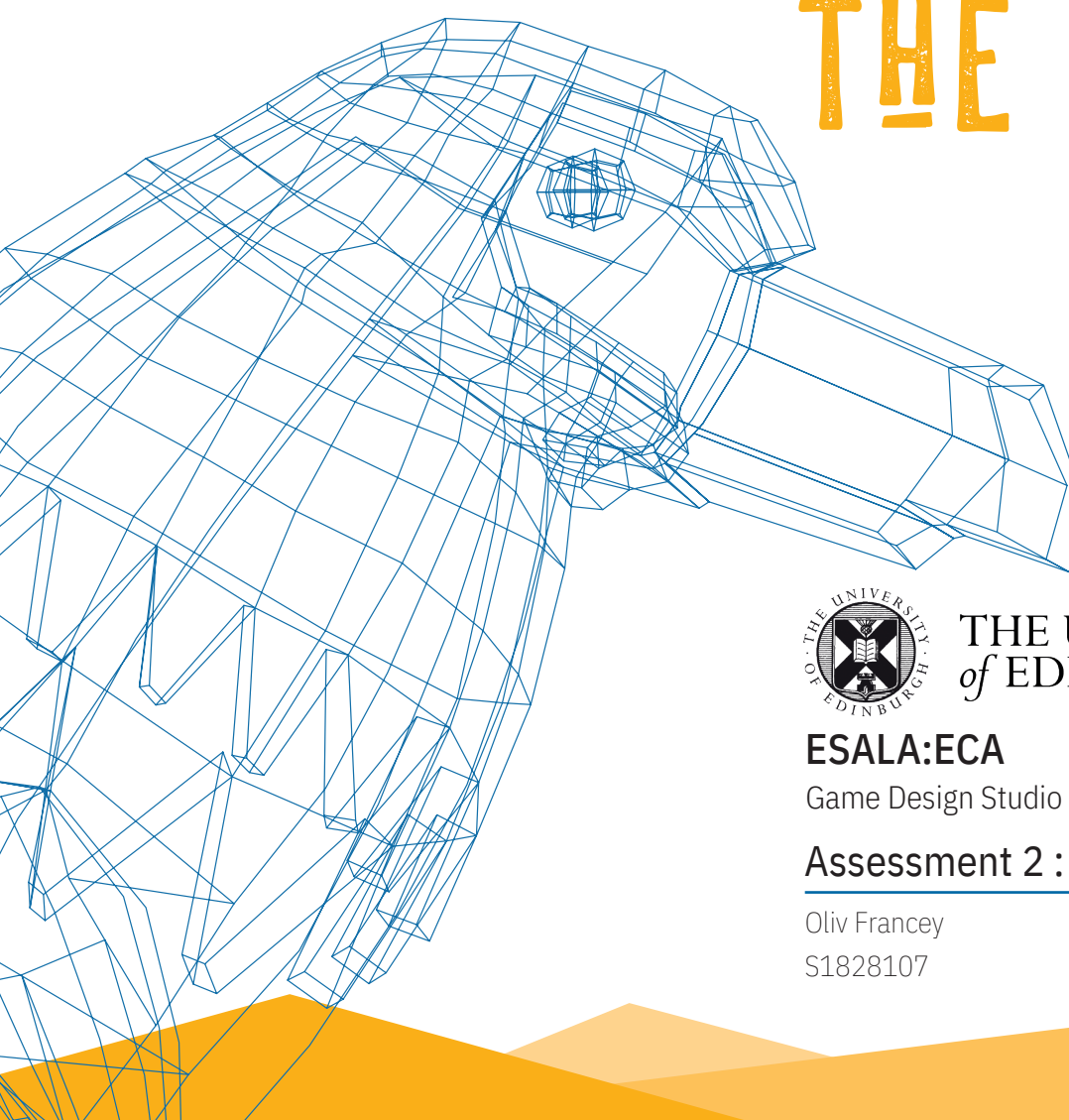


THE RITE OF PASSAGE



THE UNIVERSITY
of EDINBURGH

ESALA:ECA

Game Design Studio ARCH11253

Assessment 2 : Project Report

Oliv Francey

S1828107

The “Rite of Passage” Project

PROJECT

Concept

The project is a “**die and retry walking simulator**” first-person game that takes part in a sand desert inspired by the novels of **Fedran**.

Project management

Due to the “**covid-19**” situation, **2 weeks were added** to our project. This allowed me to devote more time to development. I really **underestimated the time** I needed to develop a **multiplatform game** (Mac-Windows / Oculus Quest). The extra two weeks were very helpful in correcting this. For the rest of the planning, it was surprisingly correct.

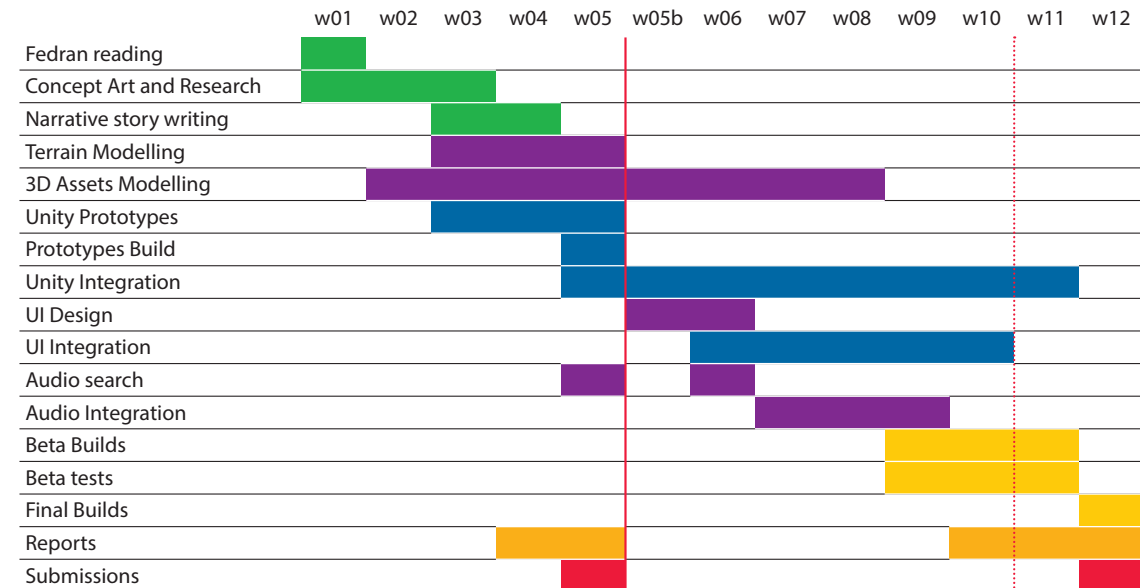


Figure 1: Project Management Gant Chart

NARRATIVE

Into the Mifuno Desert

The game takes place during the **rite of passage of Rutejìmo** [Jìmo], a young fellow from the **Shimusògo clan** seeking to bond a link with **Shimusògo**, the spirit of his clan.

Early in the morning of the fifth day of his rite, Jìmo wakes up in the middle of the **Mifuno desert**. Last night was quite intense. Indeed, Tsubàyo convinced him to make a night reconnaissance, to spy on the camp of a night clan. **It did not end well** and Jìmo fled, losing himself in the nocturnal desert.

Now, Jìmo has only **one goal**, complete his rite by **forging a strong bond with Shimusògo** by **seeking all the stele pieces** and bring them to the temple. After that, he can return to the clan village.

AESTHETICS

I choose to work with **low poly** models for different reasons. First of all, since I am also working on an **Oculus Quest** VR project with a **huge open world**, I have to limit the number of polygons so that the game can be played without lag. Second, I am **fairly new to modelling** and this style seems more suited to my abilities.

Finally, personally, **I always liked the low poly style**, so it seems that it is a good project to integrate this style.

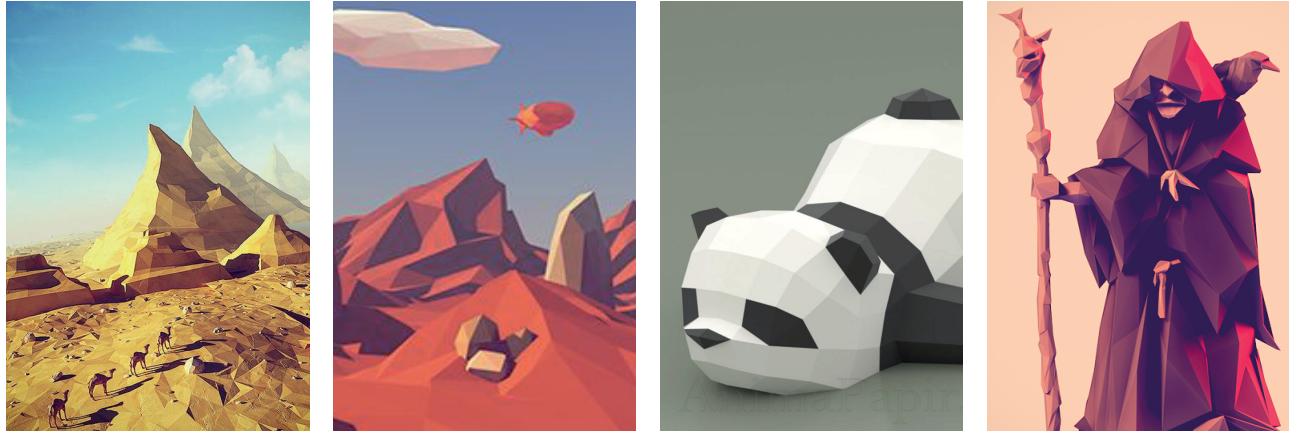


Figure 2: Low poly style moodboard (all images can be seen on the Pinterest board – link in references)



Figure 3: Desert landscape moodboard (all images can be seen on the Pinterest board – link in references)



Figure 4: Desert low poly moodboard (all images can be seen on the Pinterest board – link in references)

Music and sounds

I had **ambient sounds** to make the game more **immersive**. When the player runs near the Dépa or when he goes close to the village, he can hear the **didgeridoo**. I choose the type of sound because it **fits well with the ambience of the game**.

In addition to that, **animal cries** are playing during the day and the night. **Three random methods** (random time, random chance to be played and random sound) are used to **prevent these sounds from seeming repetitive**.

Both music and sounds have been downloaded on **freesound.org** (full list in the ressources).

Almost the **same method** has been used for the **voiceover tips**. Except that these tips are played at a determined moment. They are always played when the player is supposed to ear the tip for **the first time**, but after that he may hear it again randomly.

I use these random methods to **prevent the player from getting bored** by earing always the same tips like in some games like **Shadow of the Tomb Raider** when the player uses his special vision.

Landmarks

Camps are the principal **milestones** for the player, there are many of them in the desert to help him **find his way** and **rest at night**.

I add **ruins**, **giant gears** and **temples** to fill up the desert and hide a few pieces of the stele within them. Only a few models (**less than 40**) were created for the whole game. But by using them **multiple times** with a **different scale and rotation**, I was able to create **very different environments**.

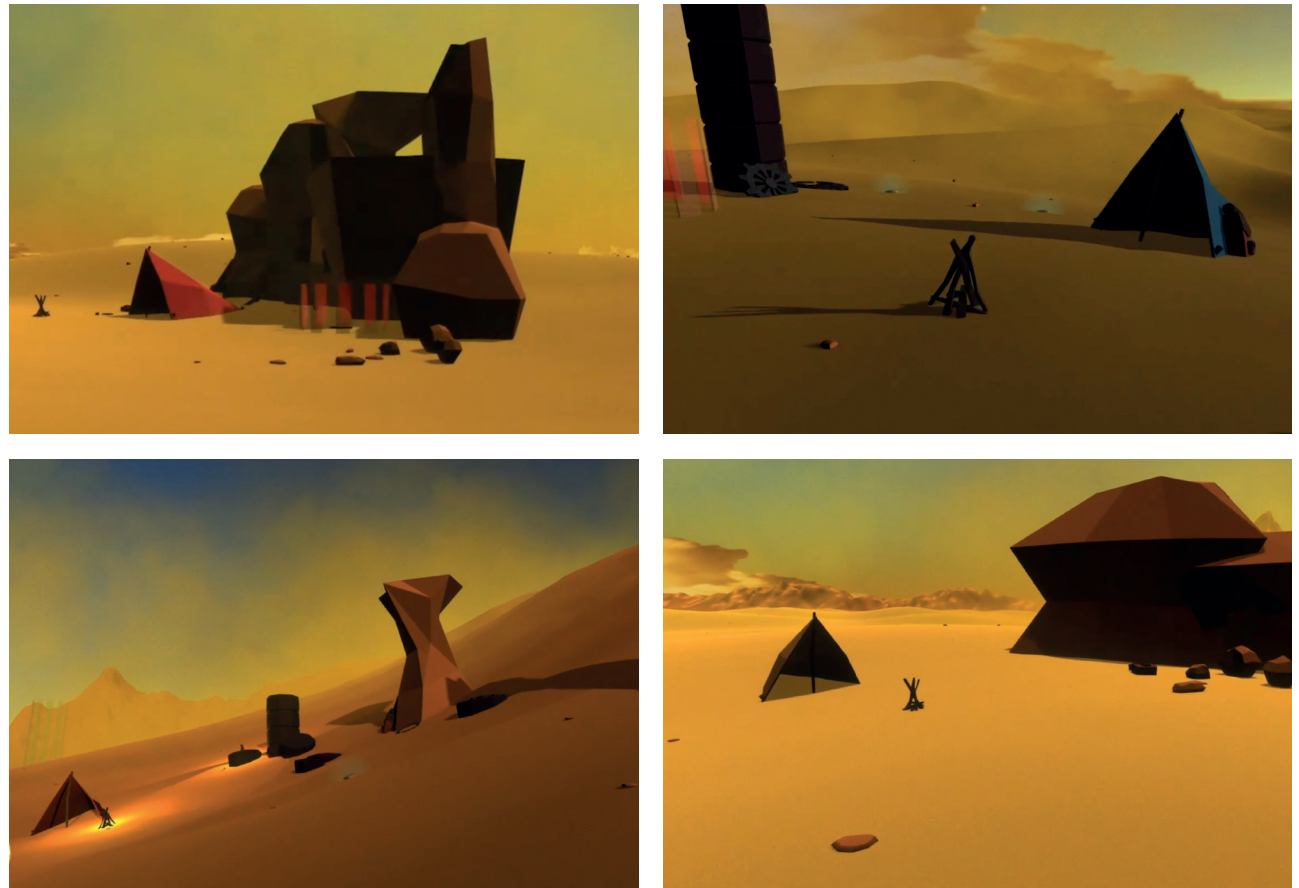


Figure 5: Camps in the desert (in game screenshots)

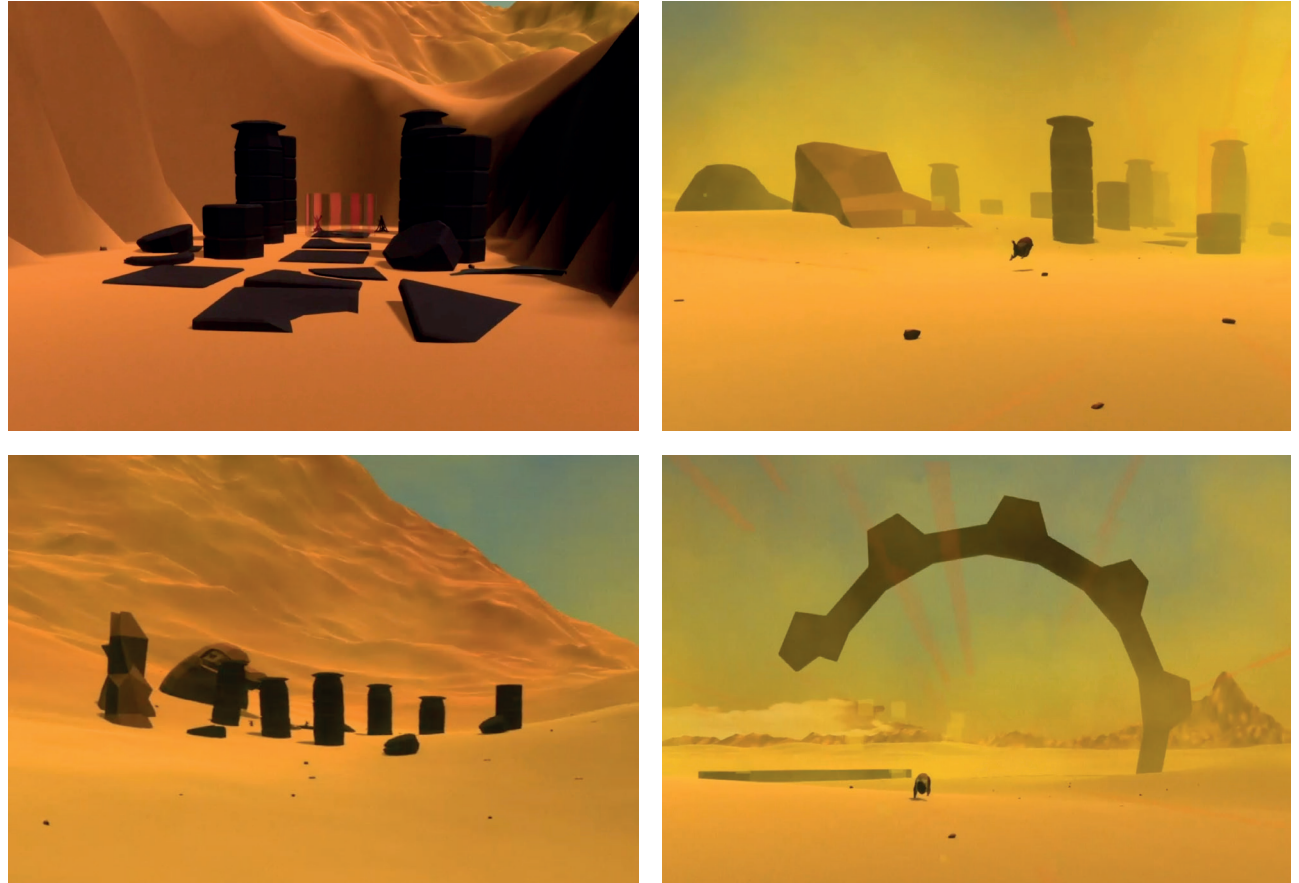


Figure 6: Temples and one of the giant gear (in game screenshots)

Fonts

To remain consistent with the game's graphic design, the **Pine Forest** font was used for the user interface. The **Destroy X** font was used for the numbers.

Pine Forest

A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z

Destroy X

0 1 2 3 4 5 6 7 8 9

Figure 7: Pine Forest and Destroy X fonts

Characters

In the end, the **Dépa is the only character** we meet in the Mifuno desert if we ignore the two guards in front of the village. Initially, the male model was created to be used more.

The Dépa model was used for the Dépa itself and for **two statues** erected in temples. A **second version** of the Dépa has been modelled and used when **it runs** in front of the player.



Figure 8: Dépa model



Figure 9: Male model

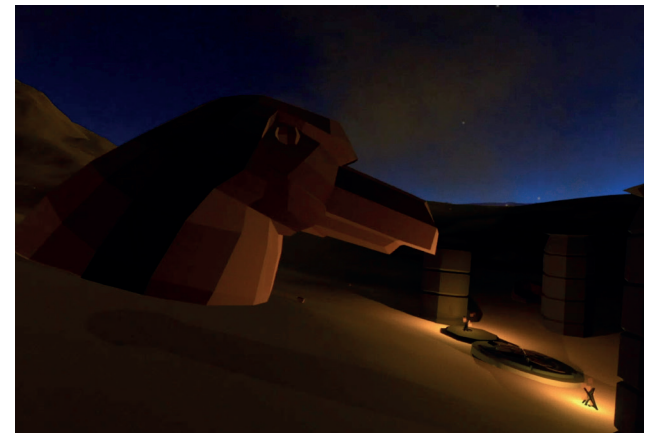


Figure 10: Statue of the Dépa (in game screenshot)

MECHANICS

Rules

Goal

To fulfil his quest Jìmo – the player – will have to **gather 6 pieces of the Shimusògo stele**. To achieve that, he will have to **search into the whole Mifuno desert** following the Dépa.

Once he got all the pieces, he has to **place them on the stele** to seal his link with Shimusògo and after that **go to the village** to end his quest.



Figure 11: Stele piece (in game screenshot)

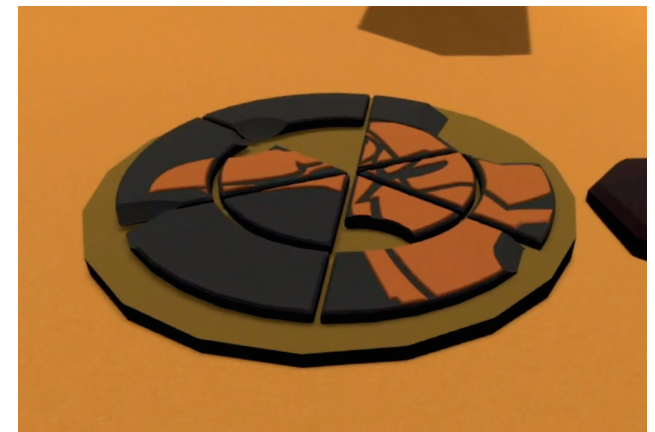


Figure 12: Dépa stele (in game screenshot)

Fatigue management / Die and retry

Since Jìmo will be lost in the desert most of the time, **managing his energy will be vital**.

If the player does not find his destination or if he cannot follow the Dépa, **he will die** in the desert and **restart at the last camp fire** which has the role of **checkpoints**.

Actions

Movements

The movements are at the centre of the game mechanics. The player can move at 3 different speeds: **walk, run, run with the Dépa.**

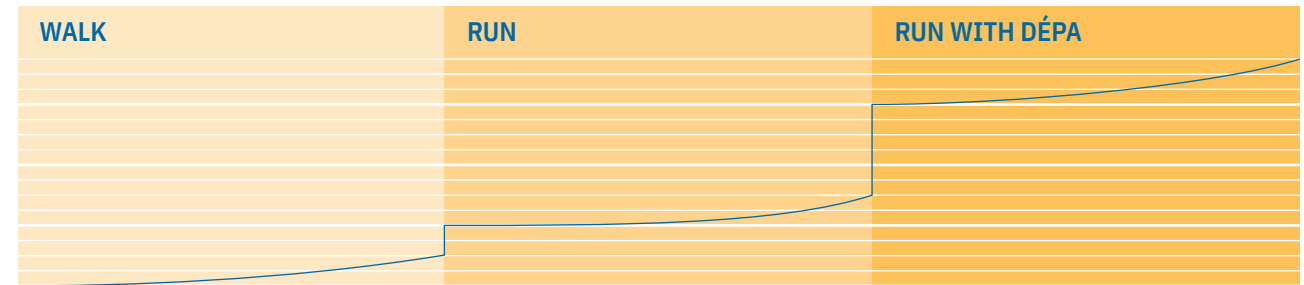


Figure 13: Speed diagram

Interactions

Jìmo can interact with certain **objects or zones** of the desert: **backpacks** and **campfire** at night to restore part of his energy, **pieces of the stele** to recover them and Dépa's pop areas.

Since the player will sometimes have to **wait for the sun to rise or for the night to come**, if he stays in the **rest area of the camp**, he can **speed up time** to prevent him from waiting too long and getting bored.

If you are looking enough in the desert, you can even find an **Easter egg** with which you can interact.

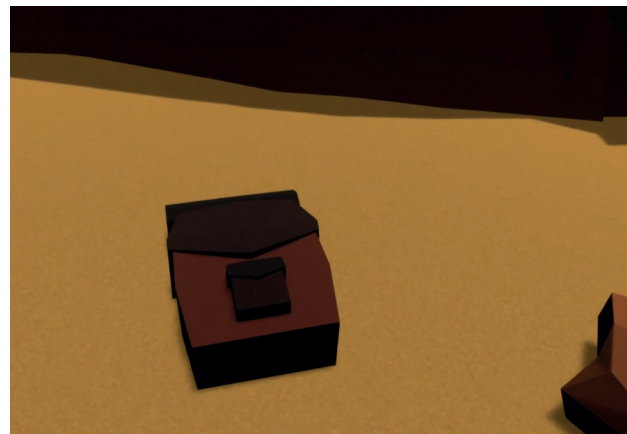


Figure 14: Backpack (in game screenshot)



Figure 15: Campfire (in game screenshot)

Spaces

Map

The game takes place in a part of the **Mifuno desert**. It is a huge open world (4.5 km x 4.5 km) bounded by **mountains to the north and west**. At **east and at south**, the player is blocked by a **strong sandstorm** that kills him in seconds.

At the northwest corner is the **entrance to the village**. Jimo will not be able to get there before completing his quest.

The camps have been installed on the map to allow the creation of **multiple routes** to go from one to another. Thus, the game becomes **non-linear** and the player can **choose his own path** until the end, not to mention that he can choose to **leave these paths**.

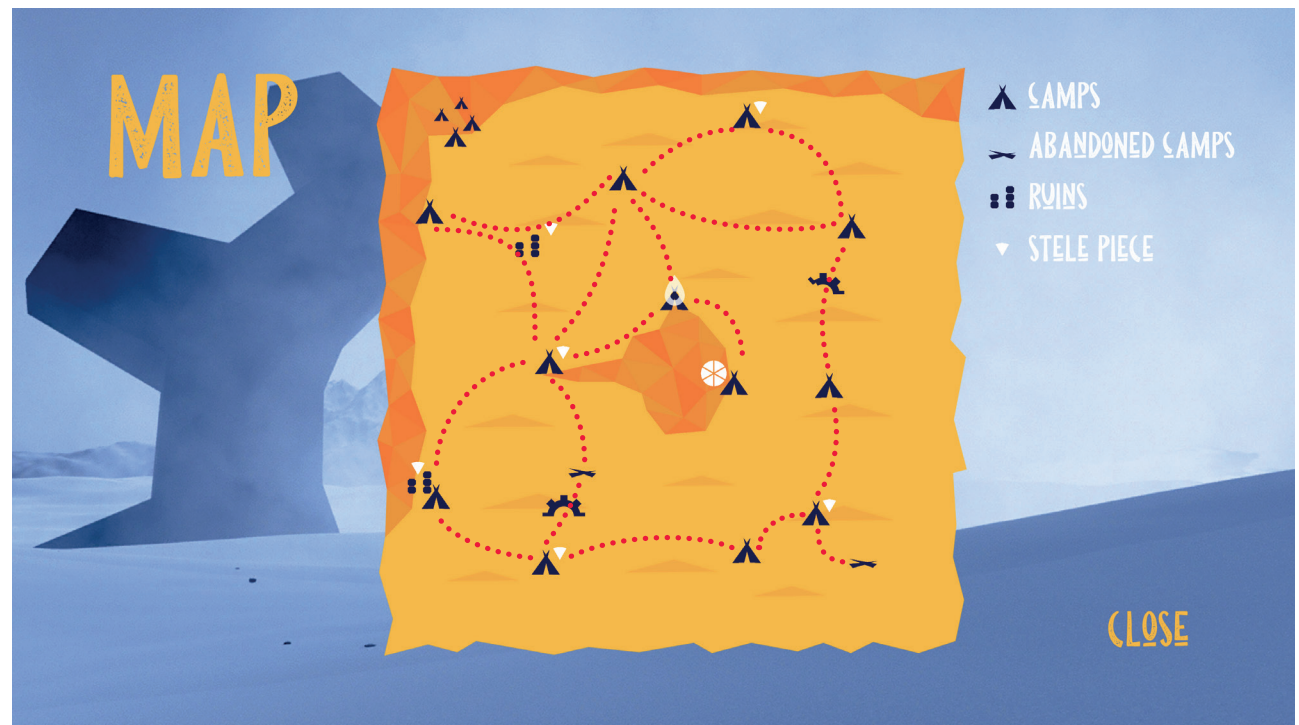


Figure 16: Mifuno Desert map with all connections between camps

Objects

Consciousness

The player ears **Jimo's consciousness** all along the game. This mechanic is used to **help the player** in the game by suggesting him some tips.

A **voiceover** is used to make the experience more **immersive**.



Figure 17: In both *Hellblade Senua's Sacrifice* and *Shadow of the Tomb Raider*, voice-over consciousness helps the player go further in the game or solve puzzles.

UI / HUD

Some **critical information** will be displayed on the HUD: **health, stele pieces state** and **instructions** to perform the various actions (save, pick up pieces, accelerate time).



Figure 18: Mac / Windows HUD (in game screenshot)



Figure 19: Oculus Quest HUD (in game screenshot)

TECHNOLOGY

Play

The game has been built for **three platforms** : **macOS, Windows** and **Oculus Quest** (Android).
To play on macOS or Windows, you just have to double-click on the application.

To run it on the Oculus Quest you must first set your device in **developer's mode** and then **copy the application package** file (.apk) on it with an application such as **SideQuest**.

The following links provide all instructions: <https://sidequestvr.com/#/setup-howto>

Builds

As I develop both versions on the **same Unity project**, some changes have to be made before **making a new build**. Normally these changes are managed by some scripts but they didn't work every time, so it's better to **make the change ourselves**.

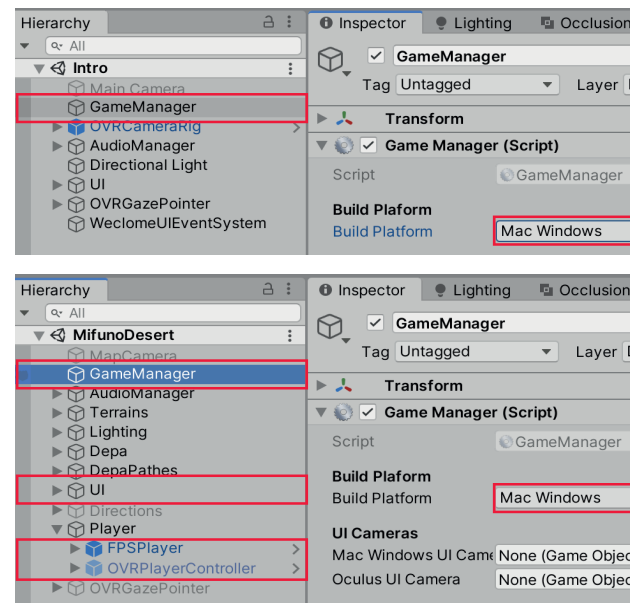


Figure 20: Mac / Windows build settings

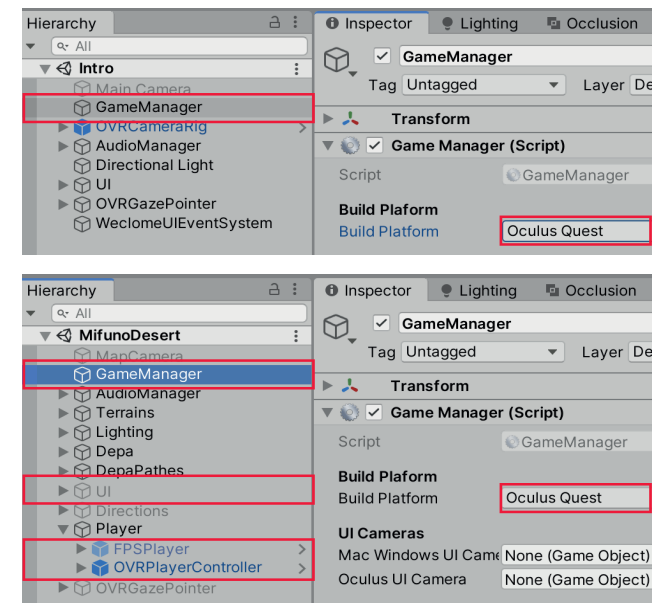


Figure 21: Oculus Quest build settings

Engine

The game is developed using **Unity 2019.3.1f1** and the scripts are coded in **C#**.

Models are created and animated in **Maya 2019.2**.

Word count : 1236

PROJECT LINKS

Screencasts

Game presentation

_ https://media.ed.ac.uk/media/1_p3l7ew8i

Full game Mac/Windows – no comments

_ https://media.ed.ac.uk/media/1_khl3e7un

Full game Oculus Quest – no comments

_ https://media.ed.ac.uk/media/1_kq5484e3

GameJolt

The Rite Of Passage

_ <https://gamejolt.com/games/theRiteOfPassage/474765>

RESSOURCES

Pinterest boards

- _ https://www.pinterest.ch/oliv_tv/gds/desert-low-poly/
- _ https://www.pinterest.ch/oliv_tv/gds/characters/
- _ https://www.pinterest.ch/oliv_tv/gds/desert-landscape/
- _ https://www.pinterest.ch/oliv_tv/gds/desert-village/

Tutorials

- _ <https://www.udemy.com/course/the-ultimate-guide-to-game-development-with-unity/>
- _ <https://www.udemy.com/course/autodesk-maya-3d-animation-course/>
- _ <https://www.udemy.com/course/model-a-low-polygon-character-in-autodesk-maya-2018/>

Bibliography

- _ Moonfire, D. (2020). *Fedran*.
Retrieved from <https://www.fedran.com>
- _ Schell, J. (2018). *The art of game design : a book of lenses* (Third edition. ed.).
Boca Raton: CRC Press.
- _ Sharp, J. (2015). *Works of game : on the aesthetics of games and art*.
Cambridge, Massachusetts: The MIT Press.

Sources

Low poly style moodboard

- _ <https://www.behance.net/gallery/7890183/Power-Giants-lowpoly-paperworld>
- _ <https://www.behance.net/gallery/21337573/Low-Poly-Landscape>
- _ <https://www.etsy.com/listing/692926880/sleeping-panda-papercraft-low-poly-panda>
- _ <https://ilikethesepixels.com/jona-dinges-low-poly-designs/>

Desert landscape moodboard

- _ <https://i.pinimg.com/originals/fc/96/46/fc9646e4c0beaac17c192add0442edad.jpg>
- _ <http://aks.akkasee.com/photos/205037/>
- _ <https://me-lapislazuli.tumblr.com/post/185687773639/dessert>
- _ https://www.huffpost.com/entry/videogames-need-to-become_b_3378642

Desert low poly moodboard

- _ <https://www.behance.net/gallery/43527773/Low-poly-House-in-Desert>
- _ <https://i.pinimg.com/originals/07/43/40/0743400b04c071fc31aaef889127bc75.jpg>
- _ <https://i.pinimg.com/originals/29/c9/95/29c9959b666264e342dc5965693c47d3.png>
- _ <http://www.artnet.com/artists/ed-mell/delicate-arch-XAiMcmUke-j1rOskLqlbmA2>

Consciousness mechanic game references

- _ <https://tomraider.square-enix-games.com/en-us/media/all>
- _ https://www.hellblade.com/portfolio_page/senua-standing/

Sounds

Fire Crackling

– <https://freesound.org/people/kingsrow/sounds/181563/>

Wind noise

– <https://freesound.org/people/jorge0000/sounds/361053/>

Desert ambient loop

– <https://freesound.org/people/Imjeax/sounds/427401/>

Desert wind

– <https://freesound.org/people/josiahsprinkle/sounds/469311/>

Footstep sand

– <https://freesound.org/people/audioninja001/sounds/455062/>

Wolf

– https://freesound.org/people/Hali_Pinson/sounds/404126/

BackPack

– <https://freesound.org/people/steaq/sounds/387232/>

Night ambiance

– <https://freesound.org/people/SkarCreva/sounds/465594/>

Didgeridu

– <https://freesound.org/people/musicbrain/sounds/376583/>

– <https://freesound.org/people/musicbrain/sounds/376580/>

Running wind

– <https://freesound.org/people/MrLindstrom/sounds/135034/>

Crickets

– https://freesound.org/people/RSilveira_88/packs/13698/

Crow

_ <https://freesound.org/people/InspectorJ/sounds/418262/>

Raven

_ <https://freesound.org/people/Bidone/sounds/66763/>

Buzzard & Staled BlackBird

_ <https://freesound.org/people/Benboncan/sounds/69357/>

_ <https://freesound.org/people/Benboncan/sounds/67439/>

Dinosaur

_ <https://freesound.org/people/Robinhood76/sounds/97192/>

Camel

_ <https://freesound.org/people/acclivity/sounds/16932/>

Teleport (deep pop and depop)

_ <https://freesound.org/people/DWOBoyle/sounds/474179/>

Click

_ <https://freesound.org/people/Sheyvan/sounds/494490/>

Image

Clouds

_ <https://pixabay.com/photos/clouds-sky-sky-clouds-blue-2085114/>

Fonts

Pine Forest

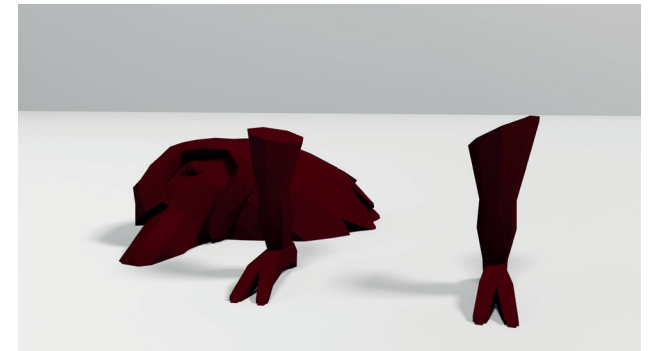
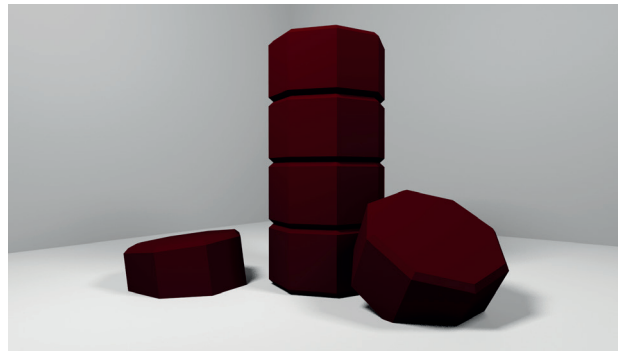
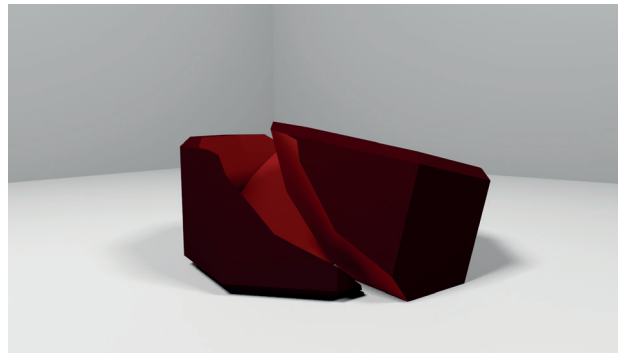
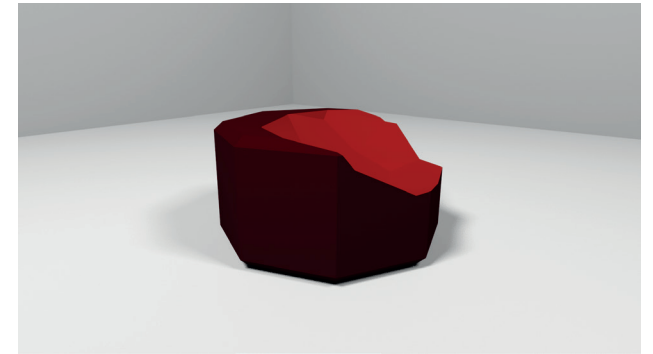
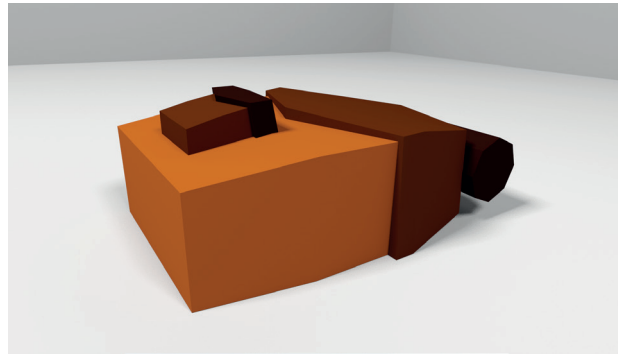
_ <https://www.dafont.com/pine-forest.font>

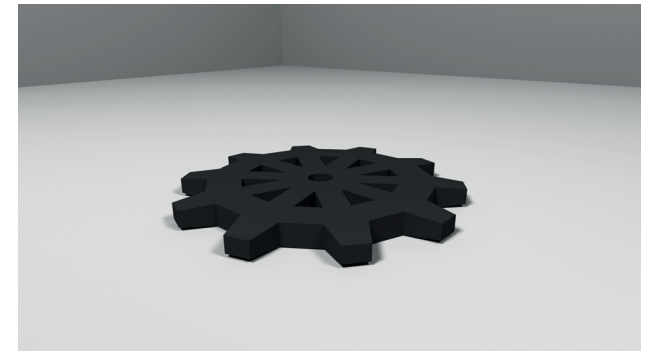
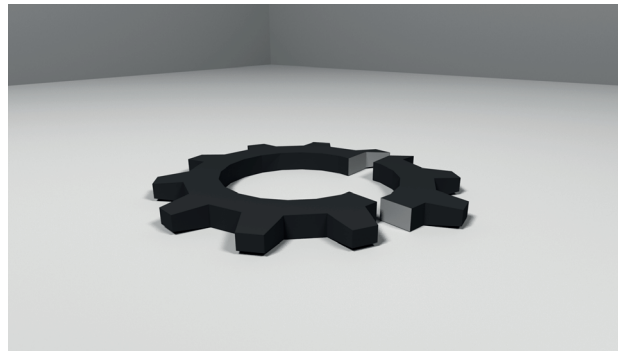
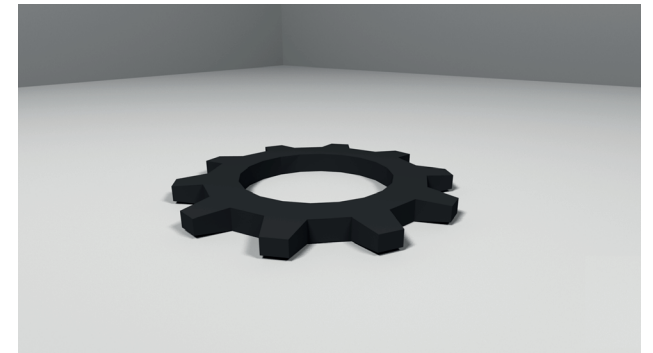
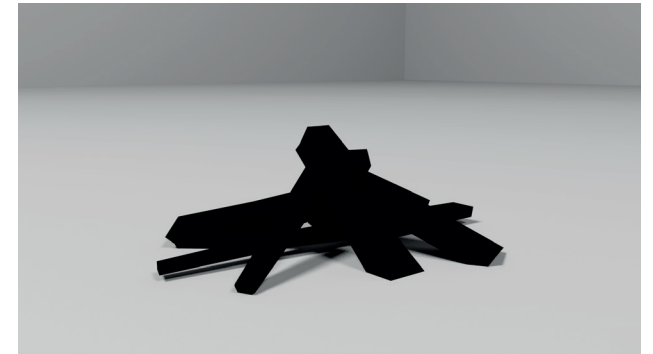
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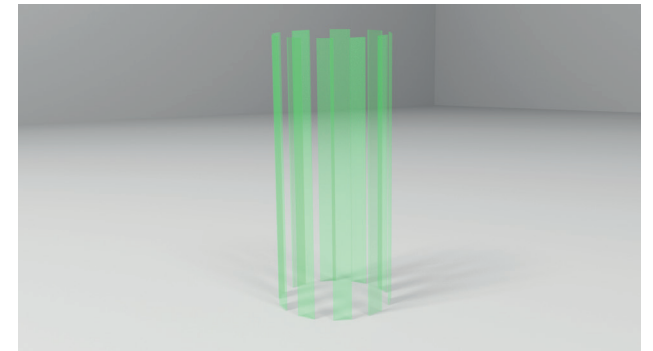
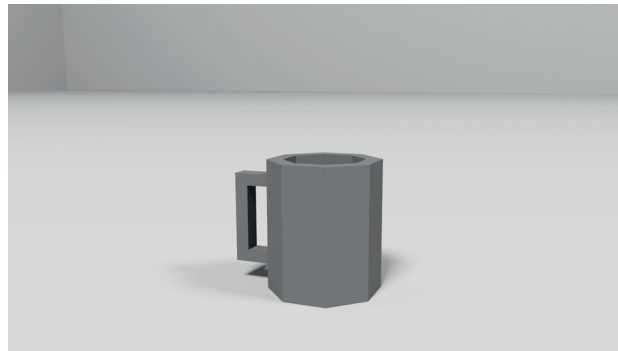
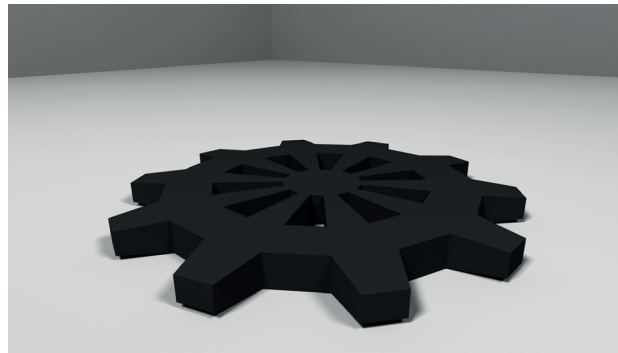
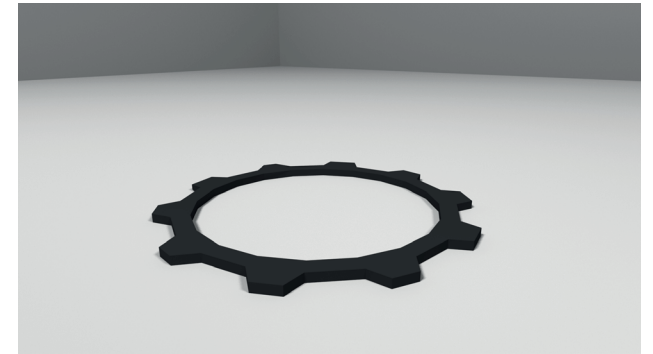
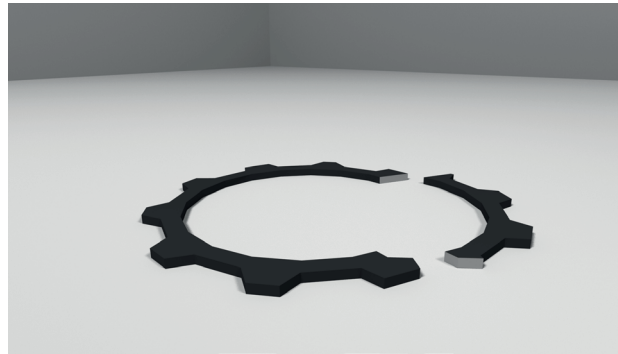
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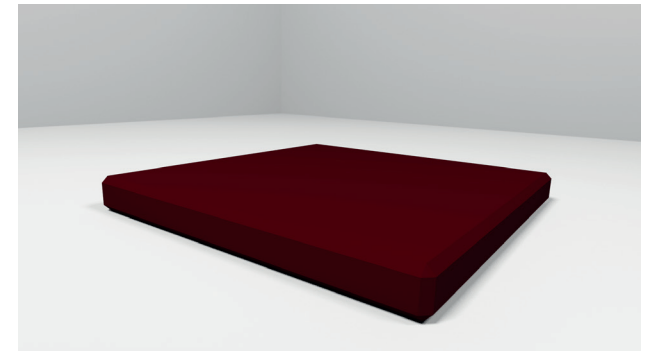
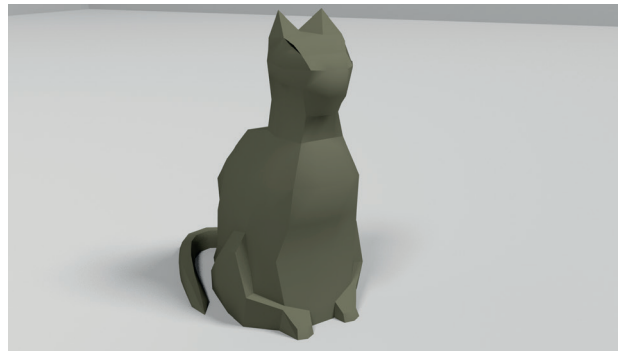
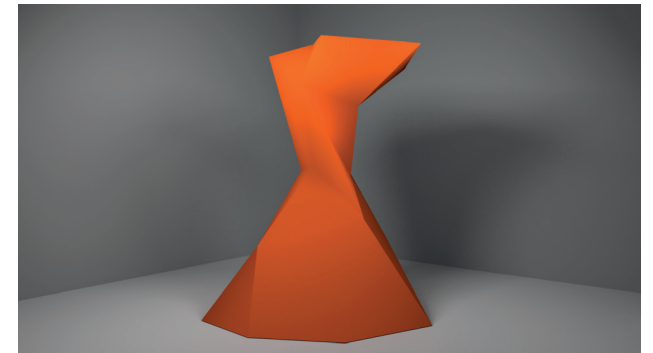
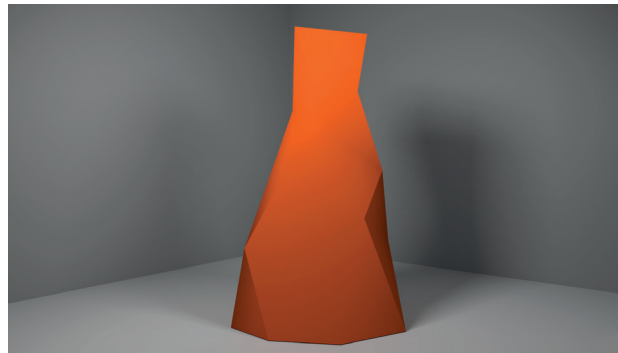
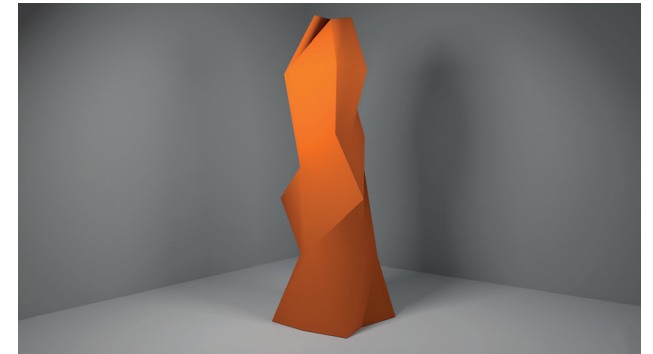
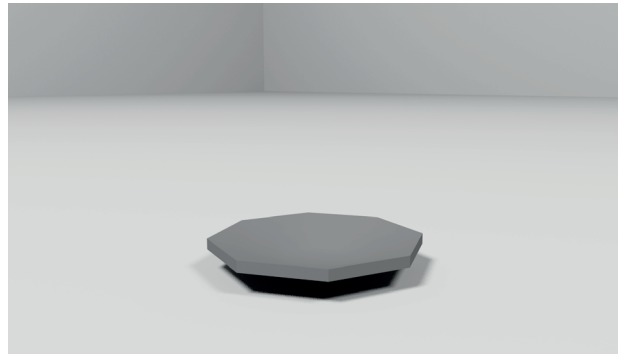
APPENDIX

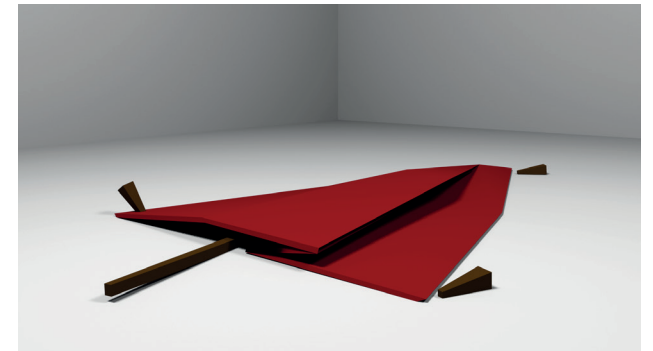
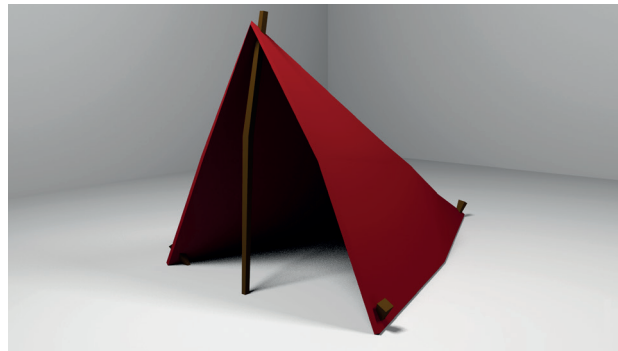
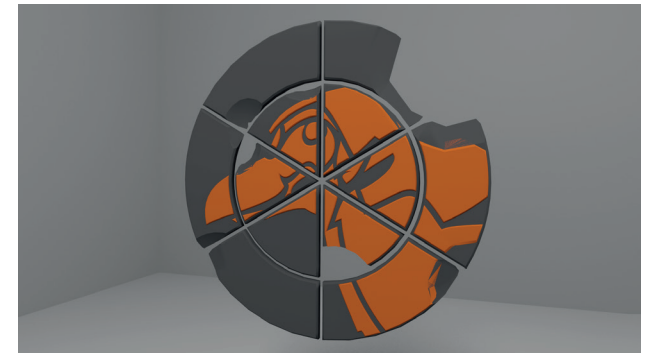
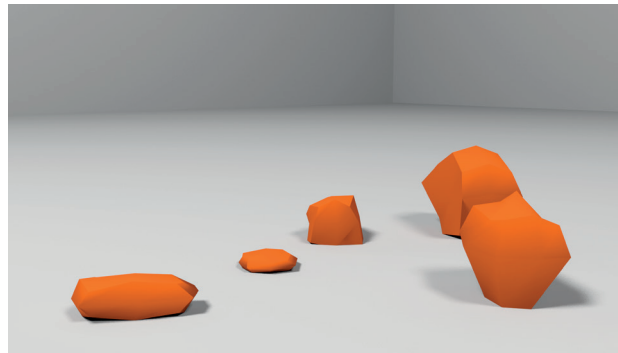
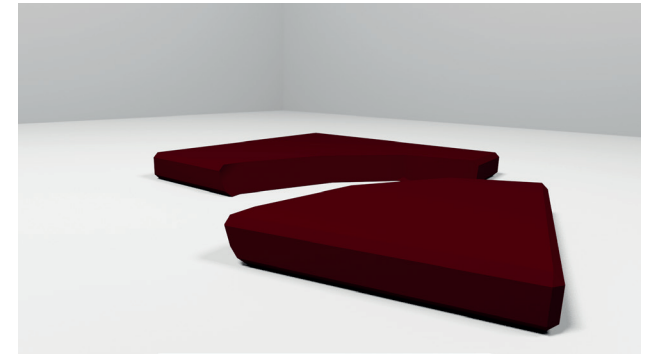
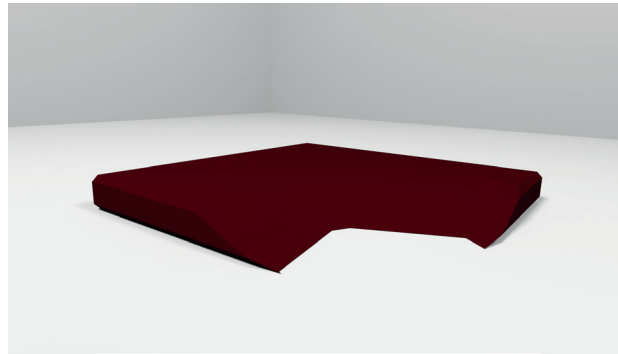
Models











APPENDIX

Scripts

Depa / Depa.cs

Make the Dépa pop in / out

- _ Play audio
- _ Activate running particle system
- _ Play feathers particle system

Make the Dépa run on the paths

- _ Calculate right direction on the path
- _ Detect if the Dépa is at destinations

Make the Dépa look at the player when he's not close

Calculate the distance between the Dépa and the player

Adjust the Dépa Speed according to the distance between him and the player

Depa / DepaPath.cs

Manage the paths that follow the Dépa

Landmarks / InteractiveItems.cs

Manage all types of interactive items and zones

- _ backpacks
- _ campfires
- _ start path zones
- _ stele pieces
- _ stele
- _ misc. audio events
- _ camp rest zones
- _ end game zone
- _ decorative fires
- _ the village
- _ extinguished fires
- _ add icons to map
- _ close zone of the village
- _ Easter egg

Manage player inputs

- _ Mac/Windows and Oculus Quest

Display information on the HUD

Perform the appropriate action

- _ save game
- _ accelerate time
- _ play appropriate sound
- _ activate camp fires
- _ activate Dépa paths
- _ manage stele pieces
- _ add icons to map
- _ manage death and win

Landmarks / SandStorm.cs

Manage the different sandstorms on the map

- _ Change the color according to the time of day
- _ Change the intensity according to the terrain parameters
- _ Rotate the storm regarding to the rotation of the player
- _ Activate the stormy sandstorm at the edge of the map
- _ Change the volume of the ambient wind sound

Landmarks / TerrainAmbiance.cs

Store the storm intensity of each terrain

Lighting / DayNightCycle.cs

Manage the sun, the moon, the stars and the skybox

- _ Change the color of the skybox according to the time of day
- _ Change the used directional light to be the sun or the moon
- _ Display the stars during the night
- _ Change the cloud sprites at the bounds of the desert

Lighting / NightLights.cs

Manage all lights in the different landmarks of the desert

- _ Lit up camp fires that are activated
- _ Lit up the glowing stones
- _ Make the flame crackling
- _ Make the glowing stones vibrate

Player / HideTiles.cs

Manage the visibility terrain tiles

- _ Hide the tiles that are far from the player
- _ Detect on which tile the player is
- _ Detect on which tile the Dépa is

Player / Player.cs

Manage every aspect of the player

- _ The movement speed
 - _ Walking
 - _ Running
 - _ Running with Dépa
- _ The energy loss and gain
 - _ When running
 - _ During the night
 - _ In the storm
- _ Play footstep and running sounds
- _ The death of the player
- _ Play footsteps sound for Oculus Quest

UI / UIButtonHoverManager.cs

Manage the hover of the UI buttons

UI / UIInGameManager.cs

Manage the HUD in game

- _ Display and manage the player energy UI
- _ Display and manage the pieces of stele UI
- _ Display action panels
- _ Manage debug on screen

UI / UIWelcomeManager.cs

Manage the UI in the introduction scene and the pause menu during the game

- _ Manage all UI panels
 - _ E13 panel
 - _ Preference
 - _ Controls
 - _ Tips
 - _ Confirmation
 - _ Death
 - _ Win
 - _ Map
- _ Change button states
- _ Manage sliders
- _ Display map icons
- _ Move and rotate the player icon on the map

XmlManager / *.cs

Manage all xml files

- _ Config file
- _ Save file
- _ Default settings values

AudioManager.cs

Manage all sonic aspect of the game

- _ Update the volume of the different audio sources
- _ Play tips according to their random chance to play
- _ Play randomly day and night sounds
- _ Play, fade in, fade out methods

GameInManager.cs

Manage all variables when the game start and send them to the GameManager.cs

GameManager.cs

Manage all general aspect of the game

- _ Change many settings regarding the build platform
- _ Manage in game time
 - _ Hour duration
 - _ Dawn time
 - _ Dusk time
- _ The pause
- _ The intro of the game
- _ The speed of the game
- _ All public methods between code files

Singleton.cs

Prevent the game manager from being destroyed between the scenes