Virtual Reality

2018/2019 - Fall Semestre
MEIC-A / MEIC-T

Project 2 - VR Interaction

Group #	***13***
Student 1	*Gonçalo Louro, 78982*
Student 2	*Jakub Syrek, 91872*
Student 3	*Ricardo Fonseca, 90862*

Indicate software versions
Unity 3D: Unity 2018.2.9f1
GVR SDK for Unity: GoogleVRForUnity_1.170.0.unitypackage
JDK: jdk 1.8.0_111
Target API level: Level 24, iOS 12

Describe the main goal of this project and how the assigned tasks were performed. Always refer to (i) GameObjects and assets that were used; (ii) the scene graph; (iii) computer graphic techniques required to complete the tasks; and, if any, (iv) mention each encountered issue.

The main goal of this project was to add some level of interactivity to the scene created in the previous assignment by adding a minimap, providing control over character using head movement and adding a spear that player can grab to defeat the monster at the end of the labyrinth.

For the minimap task we added an additional camera to the Player object. The camera follows the player and is located beyond, pointing to the ground, high enough to display a part of labyrinth with our monster. Next, we placed the raw image from the camera as an UI element using Render Texture and Canvas object. We set the projection to orthographic and added a pointer by adding red sphere only visible by minimap camera around the player. At the and we added an external border to the minimap to make it more pleasant for an eye.

For the camera control, we added the **VR_Look_Walk** script to the player, this script detects the movement of the player's head and moves him forward or backward depending on the angle measured relatively to the horizon.

For the gaze-input task, we added a **GvrReticlePointer** to the player's main camera. We adjusted it's parameters and added an empty **gameObject VRHand**, that represents the position where the spear will be placed when grabbed, we also added an image on top of a Cube GameObject to better represent our reticle. In order to grab the spear, we added the **VR_Stare_and_Grab** script to it. Then, we disabled the script so it only runs when the players comes close to it and stares at the spear for 2 seconds. We added an **Event Trigger** so it enables the script when the reticle pointer enters the spear collider and resets the timer when the player stops staring at the spear.

For the final task, we enabled fire particle system that is simulating attack of the dragon. When the collider is triggered we also enable stabbing movement of the spear that add the feeling of a real charge. To achieve that, we added a "force" to the spear with the direction of the reticle pointer. After a 10 hits (each hit takes 10 points out of 100 health points of the monster), the creature is finally defeated.

Repository:

https://github.com/rpsfonseca/VRCourse

MD5:

MD5 (Project2-G13.zip) = 74ced9a59ecce0fb3955ffe243501d89