<u>Assignment 3</u>

Design, UIs

<u>Group: #9</u>

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Task1

Room 1:

Recognize: After entering the room depending on where you look either the ground seem to drops quickly down (if looking upwards) or the avatar/point of view flies quickly up away from the ground. There is no control for the movement, no acceleration or any extra visual cues of movement so it feels very artificial. The purpose of this movement is unclear. From this point of view, the grass on the land looks blurred, while the rocks/mountains are quite good quality. In general, the view is very bright while it is recommended VR should not use bright scenes. For some users the brightness of this and similar scenes started to hurt their eyes.
Explain: We think the blurred grass can be correct due to a long distance; however, one of the members in our team does not like blurred images. Therefore, it can be an issue in this scene. In addition, the automatic movement from the beginning to a higher view can be another issue due to no actions from the users.
Suggest: Either give control over the movement to the player or change the movement method. Consider carefully the quality of images/scenes and give the users a way to control views. Visual or audio cues during movement, smoke, clouds, etc. Make the scene less bright.
Score: 8 or 4

Room 2:

Recognize: There are black borders in front of the view reducing peripheral visibility.
Explain: This frame reduces the horizontal angle of the field of view.
Suggest: Reprogram to remove this frame to make it is more convenient.
Score: 6 or 3

Room 3:

Recognize: there is a static cursor in the middle of the view at a static distance approximately 1 meter away. The cursor could be used as in first person shooter games as to aim of a gun or select in a menu by moving your head, but it is too close and feels unnatural. After pressing a button on the controller to change its mode it turns the pointer to sort of a laser pointer or flashlight projecting the pointer onto the surface which feels more natural but has an maximum range, where it changes back to the original style pointer, but now a long distance away. The scene is again too bright, the sand looks really shiny. Looking further away in this and similar scenes of this assignment there are visible patterns in the grass that look unnatural.
Explain: Laser pointer style feels better, but also has the range problem. Too bright scene. Again it is a bit hard to tell what is the goal in this VR experience as the differences between the modes effects on comfortability are not very large or notable. It would help reviewing the scene if the purpose of the pointer or the whole scene was explained. At certain distance the repeated patterns in the ground texture become annoying looking.

Suggest: Make the scene darker. Prefer the use of the projected cursor. Scatter the ground with random texture patterns to break the repeating similar patterns that do not look natural.
Score: 3 or Static:5, Projected:3

Room 4:

Recognize: a fast moving image approaches the player in a black room and suddenly stopping is really uncomfortable.
Explain: as room 1 this room has an automatic movement (zoom in) without any actions from the users. In addition, the resolution of the image is quite low. Last but not least, the contrast in the room (between the shining image and black room) makes us a little uncomfortable.
Suggest: Let the users a chance to control the movement (zoom in). Consider the quality of the image and also try to reduce the contrast between the background and the image.
Score: 7 or 5

Room 5:

Recognize: the horizon and the whole world is tilted.
Explain: with the tilted horizon, the users also need to lean their head to familiar with the horizon. This makes turning around disorientating as the horizon is different from real life making the difference uncomfortable.
Suggest: In this test view the problem is created by programming the view wrong on purpose, so fix would be just to reprogram it. In general, such a problem would most likely be related to the gyroscope and require a fix or recalibration to it so the horizon is no more tilted in the view. Make the scene darker.
Score: 5 or 3

Room 6:

Recognize: the image covers the view after the first click. Then, another click can move a situation in which the image follows the view from the users.
Explain: always there is a large image trying to cover a part of the view. The relation between the image and the view is not clear, so it is quite uncomfortable. The slowly moving picture can also cause nausea as it covers a large part of the vision making it unclear if the head or the picture is the one moving.
Suggest: it should be better if this image covered the whole of the view or a very small part of the view.
Score: 7 or 3-5

Room 7:

Recognize: The grass moves facing the head of users on the horizontal and the vertical axis. Hence, if the users move their head side to side or up and down, the grass will turn around from

their root to face the player. Moreover, the color of the grass changes after several seconds without any change in the lighting environment.

Explain: The grass should only move with the wind without moving to face the player making a circle when moving the Oculus device. The grass should not move at all or should only rotate on the vertical axis to face the player. The grass should not move at all on the vertical axis. The color can be from the movement of the cloud but it should have some shadows from the movement of the cloud.

Suggest: Reprogram the movement of the grass and also the shadow of the cloud in order to be correct the movement and color of the grass. Make the scene darker.

Score: 5 or 5

Task 2

Think about the design issues from Task 1. Pick one and describe briefly, in one paragraph, why does this issue appear in VR applications, while the same wouldn't be happening or even perceivable in non-VR applications.

Room 7:

The grass follows the head movement in wrong way. There is no such motion tracking in non-VR applications at all so such problems would never happen.

In non-vr applications the view is locked to rotating side to side and up and down making rotational issues with object tracking the view much less severe. The extra rotational axis of VR and the ability to turn the head beyond 90 degrees up or down turning the view upside down makes the rotation issues of the grass even more apparent. While locking the rotation to only the vertical axis in non-VR applications works fine even that could cause issues for VR.