Mental Health Therapy VR Simulator User Manual:

The simulation starts by placing the user in the main menu scene in which there are two options: 1) Exposure Therapy and 2) Stress Relief.

Use the controllers to point to the desired button and click.

- If “Stress Relief” is clicked, the scene changes to the Relaxing Environments Menu scene, which is another menu scene in which the user can pick the relaxing environment he/she wants to be immersed in, or the user can click on the exit button to go back to the main menu scene.

  The user is presented with 5 options: “Beach”, “Dawn”, “Dusk”, “Starry Night Sky”, and “Mountains”. If the user clicks on any of the buttons, the scene changes to the chosen option. Each of the 5 scenes has another menu of sounds the user can choose from to hear soothing sounds that add to the relaxing experience and an exit button to return to the Relaxing Environments Menu scene.

  The sounds menu has 5 options: “Fire Crackling & Rain Sounds", “White Noise”, “Red Noise”, “Gentle Beach Waves”, and “Guided Meditation”. Click on the desired sound to hear. If multiple sounds are clicked, they will play simultaneously to increase customizability and relaxation.

  The user can walk around the scene while listening to their chosen soothing sound to enhance his/her relaxation.

- If “Exposure Therapy” is clicked, the scene changes to the Exposure Therapy Menu scene, which is another menu scene in which the user can pick the phobia he/she wants to overcome in the simulation, or the user can click on the exit button to go back to the main menu scene. The user is presented with 2 options: “Acrophobia” and “Arachnophobia”.

  If the user clicks on “Acrophobia”, the scene changes to the acrophobia scene in which the user spawns on top of a cliff, under which is water. If the user faces their fear and jumps off the cliff into the water, the user respawns on a higher cliff, the size of the cliff decreases, and the wind sounds increase to intensify the experience. The user must face their fear and jump off the cliff to move to the next level of intensity. The user is also presented with the exit button to go back to the Exposure Therapy Menu scene.

If the user clicks on “Arachnophobia”, the scene changes to the arachnophobia scene in which the user spawns in a room in the middle of a giant chess board. If the user clicks on the “A” button on the right controller, spiders will fall from the ceiling until the user presses “A” again. The spiders will follow the user wherever he/she goes to encourage the user to face their fear. If the user presses the “B” button on the right controller, the spiders will increase in size. If the user presses on “X” on the left controller, the spiders’ speed increases. A maximum of 400 spiders can spawn in the arachnophobia scene. The user also has the exit button option to go back to the Exposure Therapy Menu scene.

Problems and Challenges:

- Building and running errors: The project did not run successfully whenever the player settings were not right. For example, the color space under “Other Settings” must be set to “Linear” rather than “Gamma” because linear requires fewer calculations to be done as the color shift between one shade and another is sharp rather than smooth. If gamma were picked, more calculations would be required, which overloaded Oculus and caused a failed build and run. Other compilation errors were because of syntax and logical errors in the C# script like missing a semicolon or having the spiders’ size decrease instead of increase because of an incorrect multiplication factor. We also faced errors in imported assets not being compatible with the Meta Quest 2 headset (such as a water texture in HDRP) which caused building and running to also fail.
- Linking problems: When a C# script was written for a specific purpose, improper linking between the script and the relevant game objects in the scenes resulted in the program not behaving as expected because it was missing necessary linking.
- Data loss: Deletion of audio sources and sometimes terrains when zipping the project then unzipping it in another teammates computer was a common problem.
- Some challenges faced were getting used to a new work environment with new rules and a new coding language. Also, time management and weekly work to ensure that the project was finished in the limited given time frame was challenging.
- If we were to do it all over again, we would have started earlier in the semester by working with unity to get familiar with the new environment and to get a headstart. Also, we would have researched more into the potential projects that can be implemented in unity to make a more interesting project with better future use.

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