CareVR

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Background

The sponsor and customer for this project is the Department of Nursing at the University of Texas at Arlington. The points of contact for the department are RaeAnna Jeffers and Jennifer Roye along with Dr. Shawn Gieser who is acting as a foreman for the project. One area that the Department of Nursing is lacking is hands on experience for nursing students working with hospice patients. This is an area of nursing that is challenging to work in, and by having experience prior to graduating, nursing students will be much more prepared for their careers. Gaining experience will not only help the nurses manage hospice care in a more positive manner, but it will also make them more effective for easing the patient to their end. It can be very difficult to witness an individual on their last legs, and so by training in a realistic environment, the nurse will be better prepared for managing the emotions and outcomes involved. A VR simulation will allow nurses to gain valuable experience working with hospice patients. The simulation will expose students to elderly individuals and how to manage their environment. It will also enable students to witness issues that could potentially come up in a real situation in an immersive training session. Since the simulation will be three-dimensional, it will provide a more realistic training for students than any current 2-dimensional implementations.

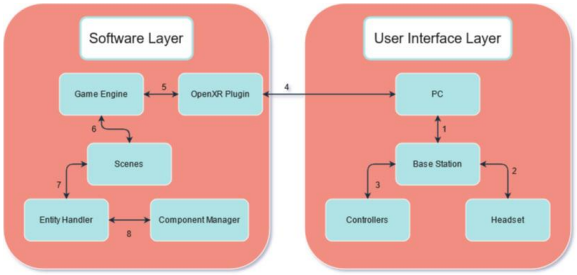
Objectives

Our team was tasked with combining all previously developed scenarios into one cohesive project.

As part of the objective above we also designed a menu which allows the user to switch between the different VR scenarios

In addition to that we integrated openxr which allows the user to run the project universally across all VR equipment

System Design

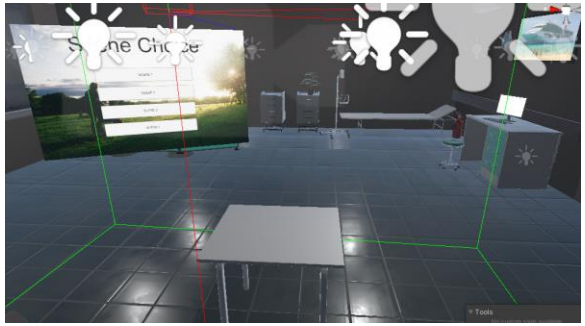


The system overview of our project consists of two high level layers. These layers include the user interface layer as well as the software layer. The user interface layer is made up of the systems which enable the user to input data to affect the virtual reality environment and receive feedback on what those effects are. The software layer handles what occurs in the virtual reality environment, including how user input affects it, and processes how it should be updated. It then sends the updated environment back to the user through the PC.

Key Requirements

- Merge all previous projects into one unified project
- The Virtual Reality tool shall remain in compliance with the Texas Administrative Code Title 22, Part11, Chapter 215. The Virtual Reality tool shall remain in compliance with The Regents Rules and Regulations of the University of Texas at Arlington.
- Integrate OpenXR into the project
- Convert scripts to be compatible with OpenXR
- Fix minor bugs in scenario 1
- Simulation in scenario 1 verifies that student completes all proper steps in the treatment of the patient and evaluates said treatment using a point system.
- Set the foundation for the next team to work on the second scenario.
- Create main menu/pause menu

Demo Screenshots



Future Work

- Finish up Scenarios 3 and 4
- Fix remaining bugs from all scenes
- Get an app ready to deploy