

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
THE UNIVERSITY OF TEXAS AT ARLINGTON**

**SYSTEM REQUIREMENTS SPECIFICATION
CSE 4316: SENIOR DESIGN I
SPRING 2023**



**VR NURSING TEAM
VR PALLIATIVE CARE**

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REVISION HISTORY

Revision	Date	Author(s)	Description
0.1	3.03.2023	CCP	document creation
0.2	3.20.2023	BB, CC, CCP, NL	complete draft
2.0	05.10.2023	CC, BB, CCP, NL	Update for version 2

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1 PRODUCT CONCEPT

In this segment, the VR Palliative Care is outlined in terms of its objectives, utilization, and target demographic. VR Palliative Care is a nursing simulator that functions through virtual reality technology on the Unreal Engine. It features four scenarios focused on patient care, and allows users to engage with their environment, patients, and families, and complete tasks that enhance their ability to provide optimal patient care. The intended audience for this innovative tool is nursing professionals seeking to enhance their skills and knowledge in the field of palliative care.

1.1 PURPOSE AND USE

The VR Palliative Care system is designed to offer nursing students an opportunity to learn about four specific scenarios that are not typically included in their standard curriculum. These scenarios involve delivering a terminal diagnosis to a patient and their family, gaining access to a patient’s home for hospice release, educating patients and caregivers on proper equipment sterilization and hygiene maintenance, and managing a patient’s body after they pass away. By utilizing virtual reality technology, the VR Palliative Care system allows users to interact with their surroundings and optimize the learning process beyond what traditional computer applications can offer. The XR SDK will ensure that this system is compatible with various headsets, but it will be exclusively tested on the Meta Quest 2. The ultimate goal of this innovative tool is to better equip nursing professionals with the knowledge and skills necessary to provide exceptional care to patients in palliative care settings.

1.2 INTENDED AUDIENCE

The primary target audience for the Palliative Care VR system is nursing students who are studying at the University of Texas at Arlington. Currently, the system will not be accessible to the general public unless the College of Nursing at the University of Texas at Arlington decides to make it available. Palliative Care VR serves as a supplementary instructional tool during the learning process for nursing students, aiming to enhance their knowledge and understanding of palliative care through simulated scenarios. The system offers a unique opportunity for nursing students to acquire hands-on experience in a safe, controlled environment, ultimately preparing them to provide quality care to patients in need.

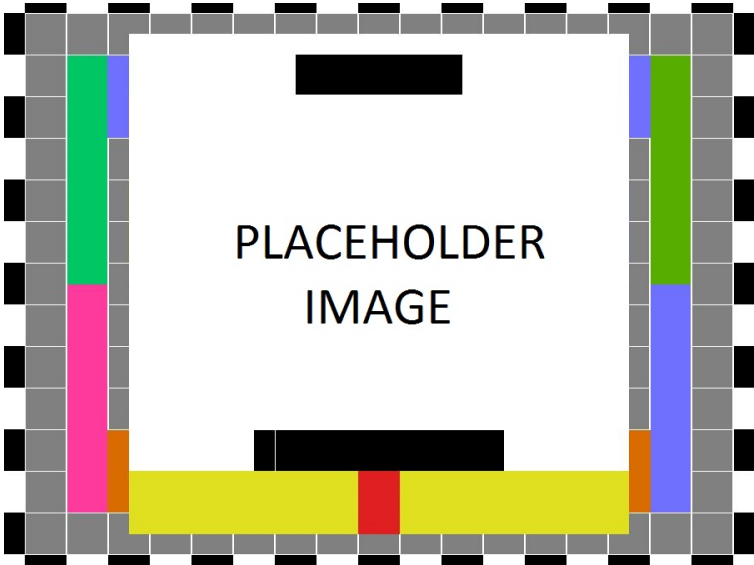


Figure 1: X conceptual drawing

2 PRODUCT DESCRIPTION

This section provides the reader with an overview of educational virtual reality simulator for students within the Nursing department to assess them in operational and postmortem care. The primary operational aspects of the product, from the perspective of end users, maintainers and administrators, are defined here. The key features and functions found in the product, as well as critical user interactions and user interfaces are described in detail.

2.1 FEATURES & FUNCTIONS

The virtual reality educational simulator will utilize an Oculus headset and its two controllers to carry out the control and simulation of the application. As such, within the simulation, it displays a list of tasks needed to complete each scenario as well as evaluate the user's performance based on the task and scenario completion with a grade of passing or failing. The simulation will simulate a clinical and home environment situation, but it will not simulate a multiplayer function and be cross-compatible on other devices that does not work with Unity. In addition, it will not require wired or internet connection to run.

2.2 EXTERNAL INPUTS & OUTPUTS

Name	Description	Use
Headset	Oculus headset to run the application	View application through headset
Controls	Oculus controller	Control movement within the application
Dialogue	Text dialogue provided by non-playable character	Simulate dialogue to complete scenarios

Table 2: External Inputs and Outputs

2.3 PRODUCT INTERFACES

The simulation will provide multiple interfaces. As such, the product will simulate a main menu interface that will allow the user to select a scenario to start with, (Figure 2). The pause menu that permit the user to resume or go back to the start of the main menu, (Figure 3). The dialogue will be present in all interfaces for scenario completion and display a report upon completion for grading, (Figure 4). The controller and headset will be loaded with the selected interface for view and controls.

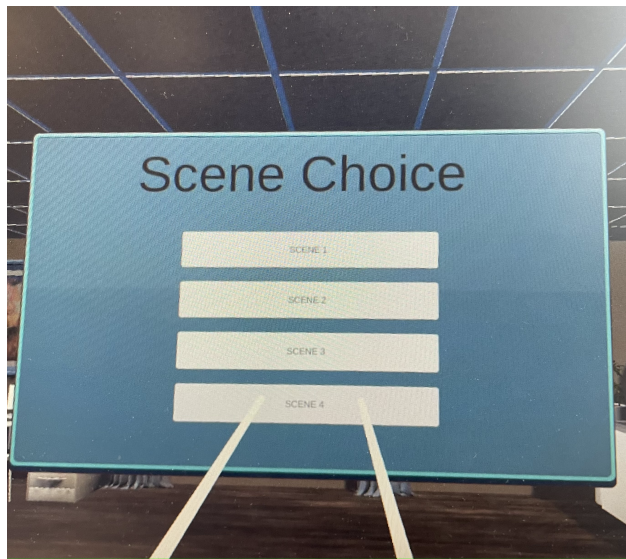


Figure 2: Main Menu



Figure 3: Pause Menu

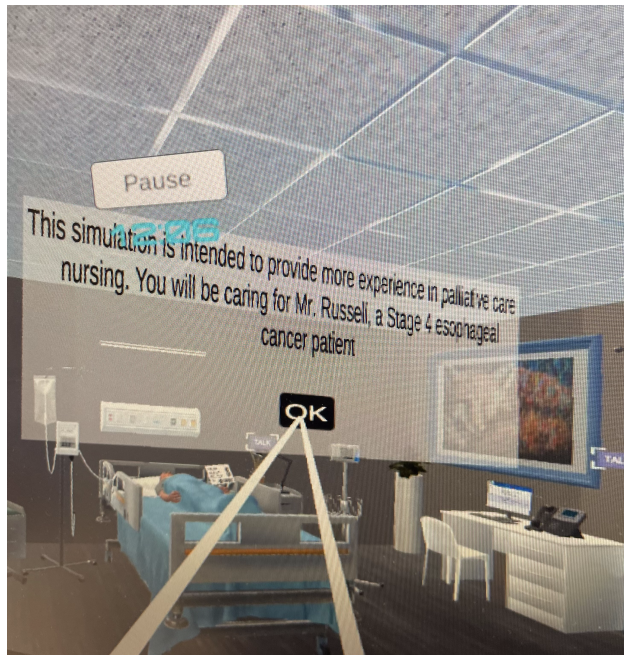


Figure 4: Dialogue

3 CUSTOMER REQUIREMENTS

The Palliative Care VR simulation is an immersive VR simulation for hospice care running on the Meta Quest 2 headset un-tethered. The main objective of the simulation is to teach nursing students and allow them to gain experience in hospice care. The user should be able to have an educational experience while playing through the simulation. The VR Nursing team together with the sponsors, Jennifer Roye and Shawn Gieser, have drafted the following requirements in order to achieve success on this project.

3.1 MAIN MENU

3.1.1 DESCRIPTION

The simulation will start at the main menu which will include options to select which scenario the user wishes to play through. The main menu will also be have an option for a tutorial so the user knows how to use the controls in order to complete the scenarios efficiently. The main menu will be comprised of five buttons: Tutorial, Scenario 1, Scenario 2, Scenario 3, and Scenario 4.

3.1.2 SOURCE

This requirement was given to the team by the sponsor

3.1.3 CONSTRAINTS

None

3.1.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.1.5 PRIORITY

Critical

3.2 TUTORIAL

3.2.1 DESCRIPTION

The simulation will provide a tutorial that allows the user to practice using the Oculus Quest 2 VR controllers. The tutorial should teach the user to pick up objects, interact with NPCs, move around in the environment and teach the user to use the pause menu. It should also teach the user how certain objects work for example: using the grab button on the computer monitor in scenario 1 changes what is displayed on the monitor.

3.2.2 SOURCE

This requirement was given to the team by the sponsor.

3.2.3 CONSTRAINTS

To save time the tutorial should be concise yet filled with enough knowledge to allow the user to complete the scenarios.

3.2.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.2.5 PRIORITY

High

3.3 VR SICKNESS WARNING

3.3.1 DESCRIPTION

When the simulation begins there will be a warning for all users that alerts the user to potential VR motion sickness due to the use of the VR headset. The user must use the controllers to click a button on the screen to close the message in order to continue to the main menu. This is so the user understands and accepts the risk of motion sickness.

3.3.2 SOURCE

This requirement was given to the team by the sponsor.

3.3.3 CONSTRAINTS

None

3.3.4 STANDARDS

The warnings will be created in accordance to the Meta Quest 2 Health and Safety Manual.

3.3.5 PRIORITY

High

3.4 PAUSE MENU

3.4.1 DESCRIPTION

The simulation will have a pause menu that can be accessed at anytime during any scenario or tutorial. The pause menu will include a clock that accurately displays the time in the real world. In the pause

menu there are also buttons to view controls and exit the scenario. There will also be a button to view extra information that pertains to the specific scenario. For example: in scenario 1, the SBAR for the patient will be displayed in this extra information part of the pause menu.

3.4.2 SOURCE

This requirement was given to the team by the sponsor.

3.4.3 CONSTRAINTS

None

3.4.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.4.5 PRIORITY

Moderate

3.5 SCENARIO 1

3.5.1 DESCRIPTION

The user meets the patient, Benny Russell, for the first time. This scenario takes place in Benny's hospital room. The user should perform a verbal assessment with Benny including the pain scale and using the pain level Benny gives the user, the user should be able to call the doctor and obtain directions on what medication to use. The user will also administer the medication to Benny via an IV and ensure his safety.

3.5.2 SOURCE

This requirement was given to the team by the sponsor.

3.5.3 CONSTRAINTS

None

3.5.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.5.5 PRIORITY

Critical

3.6 SCENARIO 2

3.6.1 DESCRIPTION

The user visits Benny's home while Benny is still in the hospital. The reason for this visit is to determine if the environment is safe for Benny to receive hospice care at his home. At the house the user will meet Benny's wife and examine the house in order to determine how safe the environment is for Benny. After walking through the house, the user will speak to Benny's wife and give her the status on the environment. Once the user leaves, they will be shown a report with all possible safety hazards to show the user what they missed.

3.6.2 SOURCE

This requirement was given to the team by the sponsor.

3.6.3 CONSTRAINTS

None

3.6.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.6.5 PRIORITY

Critical

3.7 SCENARIO 3

3.7.1 DESCRIPTION

The user visits Benny at his home to do assessments. Benny is showing signs of impending death. The user is going to perform a pain assessment, take his temperature and blood pressure, perform suction. The user will also perform a Glasgow-Coma Scale test and relay the results of the examination to his wife.

3.7.2 SOURCE

This requirement was given to the team by the sponsor.

3.7.3 CONSTRAINTS

None

3.7.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.7.5 PRIORITY

Critical

3.8 SCENARIO 4

3.8.1 DESCRIPTION

The user goes to Benny's house after he has passed away. The user will perform post-mortem care and move the body away from the house. The user will also comfort Benny's wife.

3.8.2 SOURCE

This requirement was given to the team by the sponsor.

3.8.3 CONSTRAINTS

Currently the team does not have too much information on this scenario. The team will be following up with the sponsor to learn more. Due to time constraints, the team may not be able to get to this scenario but will try to complete the scenario if possible.

3.8.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.8.5 PRIORITY

Future

3.9 RESULTS SCREEN

3.9.1 DESCRIPTION

After each scenario, the results will be displayed before going back to the main menu or the next scenario. On the display, the number of wrong interactions will be displayed and tallied to give the user an in-depth report on how the user performed during the scenario.

3.9.2 SOURCE

This requirement was given to the team by the sponsor.

3.9.3 CONSTRAINTS

None

3.9.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.9.5 PRIORITY

Low

3.10 DIALOGUE OPTIONS

3.10.1 DESCRIPTION

The user will speak to the patient, a doctor, and the patient's wife using text based choices. In order to advance in the scenarios, the user must choose the correct choice out of various possible dialogue options. When the user chooses an incorrect option, there will be an audible cue so the user understands they chose the wrong option.

3.10.2 SOURCE

This requirement was given to the team by the sponsor.

3.10.3 CONSTRAINTS

None

3.10.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.10.5 PRIORITY

Moderate

3.11 HYGIENE

3.11.1 DESCRIPTION

The simulation will have hygiene mechanics added to each scenario. To include this, each scenario will have a working sink, soap dispenser, and paper towel dispenser. The user will be able to wash

their hands and dry off with paper towels. Hygiene will be included in the report after the scenario is completed.

3.11.2 SOURCE

This requirement was given to the team by the sponsor.

3.11.3 CONSTRAINTS

None

3.11.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.11.5 PRIORITY

Low

3.12 IV ADMINISTRATION

3.12.1 DESCRIPTION

The simulation will have an IV on the patient that can be interacted with. The user will be able to administer medication via the IV by injecting the medication into the IV. This will be done in scenario 1.

3.12.2 SOURCE

This requirement was given to the team by the sponsor.

3.12.3 CONSTRAINTS

None

3.12.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.12.5 PRIORITY

Moderate

3.13 THE GLASGOW-COMA SCALE

3.13.1 DESCRIPTION

The user will be able to perform the Glasgow Coma Scale. The user will assess the patients state of consciousness. The procedure is divided into three parts: eye opening, motor response, and verbal response. The Glasgow-Coma Scale ratings are as follows: Eye Opening:

- 4: Spontaneous - open with blinking at baseline
- 3: To verbal stimuli, command and speech
- 2: To pain only (not to face)
- 1: No response

Verbal Response:

- 5: Oriented response
- 4: Confused conversation, but able to answer questions
- 3: Inappropriate words
- 2: Incomprehensible speech
- 1: No response

Motor Response:

- 6: Obeys commands for movement
- 5: Purposeful movement to painful stimuli
- 4: Withdraws to pain
- 3: Flexion in response to pain
- 2: Extension response in response to pain
- 1: No response

3.13.2 SOURCE

This requirement was given to the team by the sponsor.

3.13.3 CONSTRAINTS

The Glasgow-Coma Scale will be done by speaking with the patient through text

3.13.4 STANDARDS

- The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2]The simulation will also comply with The Regent’s Rules and Regulations of the University of Texas at Arlington.
- The Glasgow-Coma Scale is done with compliance to the Glasgow-Coma Scale guidelines from the Centers fir Disease Control and Prevention (CDC). [1]

3.13.5 PRIORITY

Moderate

3.14 PATIENT DIVERSITY

3.14.1 DESCRIPTION

The simulation allows for the user to change the patient in the main menu. The simulation should support a change in race, gender, and financial status(i.e. Lower class, middle class, or higher class). When changing the financial status, the tools and house should change to reflect the patients financial status.

3.14.2 SOURCE

This requirement was given to the team by the sponsor.

3.14.3 CONSTRAINTS

The team may not be able start development of this requirement due to time constraints. Since most of the team's budget has already been allotted for other items, there may not be enough money left to buy additional assets for this requirement.

3.14.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

3.14.5 PRIORITY

Future

4 PACKAGING REQUIREMENTS

Since the Palliative Care VR system is an educational software tool intended solely for use within the University of Texas at Arlington, physical packaging requirements are not applicable. The software necessary for operation will be pre-loaded onto the University's servers and accessible via download. The system will be exclusively available for use by nursing students enrolled in the University of Texas at Arlington College of Nursing. There are no hardware components associated with this software tool, and it will not be physically packaged or distributed beyond the University's system.

4.1 PRODUCT SIZE

4.1.1 DESCRIPTION

The final software product cannot exceed the 64 GB storage capacity available on the majority of Meta Quest 2 headsets.

4.1.2 SOURCE

Meta

4.1.3 CONSTRAINTS

The project in its current state contains a significant amount of excess assets and textures that are not being utilized, along with models and textures that have not been optimized for space.

4.1.4 STANDARDS

None

4.1.5 PRIORITY

High

5 PERFORMANCE REQUIREMENTS

Include a header paragraph specific to your product here. Performance requirements address items such as: how fast specific critical operations must complete; how long it takes to start/stop activities; how long the battery must last; maximum time it must take to set up; etc.

5.1 FRAME RATE

5.1.1 DESCRIPTION

The application must remain consistently around 60 frames per second during play time to avoid motion sickness.

5.1.2 SOURCE

<https://developer.oculus.com/resources/publish-quest-req/>

5.1.3 CONSTRAINTS

The application should not experience extended periods of frame rate below the requested refresh rate of the display. Exceptions include when there's a black screen or loading scenes, or when system menu overlays are present.

5.1.4 STANDARDS

Meta VR Store Guidelines

5.1.5 PRIORITY

Medium

5.2 THERMAL

5.2.1 DESCRIPTION

The application should be able to run consecutively for 45 minutes without entering thermal throttling mode.

5.2.2 SOURCE

<https://developer.oculus.com/resources/publish-quest-req/>

5.2.3 CONSTRAINTS

This requirement will depend on the visual optimization of the in-game graphics. This will be complete if the user does not get a prompt from the app that says performance will be degraded or your experience will close because of thermal issues.

5.2.4 STANDARDS

Meta VR Store Guidelines

5.2.5 PRIORITY

Medium

6 SAFETY REQUIREMENTS

Include a header paragraph specific to your product here. Safety requirements might address items specific to your product such as: no exposure to toxic chemicals; lack of sharp edges that could harm a user; no breakable glass in the enclosure; no direct eye exposure to infrared/laser beams; packaging/grounding of electrical connections to avoid shock; etc.

6.1 LABORATORY EQUIPMENT LOCKOUT/TAGOUT (LOTO) PROCEDURES

6.1.1 DESCRIPTION

Any fabrication equipment provided used in the development of the project shall be used in accordance with OSHA standard LOTO procedures. Locks and tags are installed on all equipment items that present use hazards, and ONLY the course instructor or designated teaching assistants may remove a lock. All locks will be immediately replaced once the equipment is no longer in use.

6.1.2 SOURCE

CSE Senior Design laboratory policy

6.1.3 CONSTRAINTS

Equipment usage, due to lock removal policies, will be limited to availability of the course instructor and designed teaching assistants.

6.1.4 STANDARDS

Occupational Safety and Health Standards 1910.147 - The control of hazardous energy (lockout/tagout).

6.1.5 PRIORITY

Critical

6.2 ADDRESSING MOTION SICKNESS

6.2.1 DESCRIPTION

VR applications are notorious for causing users nausea when improperly handling motion, and is a major concern for the accessibility of the project. How movement is handled is a primary contributor to whether a VR application induces motion sickness. The best way to make sure movement does not cause motion sickness is to use a teleportation movement scheme. The current iteration of the project uses a control-stick movement scheme that, unfortunately, produces nausea after extended play. To prevent this motion sickness, the project shall switch from control-stick movement to teleportation. Other methods may be applied to further reduce motion sickness if more is necessary.

6.2.2 SOURCE

Braddock(who is extremely prone to motion sickness)

6.2.3 CONSTRAINTS

N/A

6.2.4 STANDARDS

Braddock(who is extremely prone to motion sickness)'s play time before motion sickness is induced. The goal shall be 2.5 hours.

6.2.5 PRIORITY

High

6.3 WARNING TO USER TO CLEAR NEARBY OBSTACLES

6.3.1 DESCRIPTION

When using a VR headset, especially if being used standing, it is very easy to unknowingly move away from the center position. This can cause a hazard if the user has objects that can be knocked or tripped over just outside the bounding box. The user shall be informed to remove all hazards from around themselves to avoid this situation.

6.3.2 SOURCE

Sponsor(s)

6.3.3 CONSTRAINTS

Warning should only show once at the beginning of a play session.

6.3.4 STANDARDS

N/A

6.3.5 PRIORITY

Low

7 MAINTENANCE & SUPPORT REQUIREMENTS

Although this team was chartered to bug-fix and polish the project, based on the current functionality and missing features of the project, we may not be focusing too heavily on either bug-fixing or polishing the project. Our focus will initially be on refactoring the project and filling in the rest of the required features. Then, hopefully, we should have the time to bug-fix and polish the project for release. In the event that we will not be the last team to work on this project, then more comprehensive documentation will be generated so that future teams are not as lost. Other maintenance issues come from equipment maintenance, maintaining a clean space to use the simulation, and performing necessary computer maintenance. These forms of maintenance, however, are the responsibility of the sponsor.

7.1 REFACTORING THE CURRENT PROJECT

7.1.1 DESCRIPTION

Being that a total of six different teams have worked on this project before this one, probably with varying levels of VR and Unity programming skills, the current state of the project is a bit of a mess. It is very difficult, even for an experienced programmer, to understand how the current project is structured. It will be a goal for this team to refactor the project files to a more standard arrangement to help speed up development for this team and for future teams. To help maintain the refactored structure, documentation on how the project is structured shall be provided to future teams.

7.1.2 SOURCE

VR Nursing Team

7.1.3 CONSTRAINTS

By refactor, we do not mean we will scrap the project and start again. Most of the existing scripts and assets are functioning and usable. The only thing we are refactoring is the structure and configuration of Unity project itself.

7.1.4 STANDARDS

There are no applicable standards.

7.1.5 PRIORITY

High

7.2 BUG-FIXING AND POLISH

7.2.1 DESCRIPTION

The team shall keep an active list of bugs noticed during development and testing, and fix them as appropriate.

7.2.2 SOURCE

VR Nursing Team

7.2.3 CONSTRAINTS

The team will begin bug-fixing after the project has been refactored.

7.2.4 STANDARDS

There are no applicable standards.

7.2.5 PRIORITY

Moderate

7.3 CODE DOCUMENTATION

7.3.1 DESCRIPTION

Documentation will be generated so that future teams will have a better understanding of the project. Comments will be added to new code, and to existing scripts to give a summary of what the script does.

7.3.2 SOURCE

VR Nursing Team

7.3.3 CONSTRAINTS

We will not be retroactively commenting other team's lines of code (other than the summary for the script). Commenting every past line of code would be excessive and ultimately unnecessary.

7.3.4 STANDARDS

There are no applicable standards.

7.3.5 PRIORITY

Low

7.4 VERSION CONTROL

7.4.1 DESCRIPTION

The project will maintain a Plastic SCM repository for version control. The repository will contain the project in its entirety, as Plastic works exceptionally well with Unity projects. The repository will not be publicly available, as this project is for university use only.

7.4.2 SOURCE

Sponsor

7.4.3 CONSTRAINTS

To be investigated.

7.4.4 STANDARDS

There are no applicable standards.

7.4.5 PRIORITY

Critical

8 OTHER REQUIREMENTS

The simulation will require other needs to be met as noted below: Operating System compatibility, Unity version, and headset portability.

8.1 OPERATING SYSTEM COMPATIBILITY

8.1.1 DESCRIPTION

The simulation will not be developed any other operating system that are not Windows 10 as it will be developed for Windows 10.

8.1.2 SOURCE

Team

8.1.3 CONSTRAINTS

None

8.1.4 STANDARDS

Windows 10

8.1.5 PRIORITY

High

8.2 UNITY VERSION

8.2.1 DESCRIPTION

The version of Unity used in developing the simulation must be the latest stable release for compatibility of the current application unity version.

8.2.2 SOURCE

Team

8.2.3 CONSTRAINTS

None

8.2.4 STANDARDS

Unity 2020

8.2.5 PRIORITY

High

8.3 HEADSET PORTABILITY

8.3.1 DESCRIPTION

The simulation must be able to run not tethered to the computer, and solely run by the headset itself.

8.3.2 SOURCE

Team

8.3.3 CONSTRAINTS

Team

8.3.4 STANDARDS

None

8.3.5 PRIORITY

Low

9 FUTURE ITEMS

In this last section, you will reiterate all requirements that are listed as priority 5. This is repetitive, but necessary as a concise statement of features/functions that were considered/discussed and documented herein, but will NOT be addressed in the prototype version of the product due to constraints of budget, time, skills, technology, feasibility analysis, etc. Use the following format for this section.

9.1 SCENARIO 4

9.1.1 DESCRIPTION

The user goes to Benny's(The patient) house after he has passed away. The user will perform post-mortem care and move the body away from the house. The user will also comfort Benny's wife.

9.1.2 SOURCE

This requirement was given to the team by the sponsor.

9.1.3 CONSTRAINTS

Currently the team does not have too much information on this scenario. The team will be following up with the sponsor to learn more. Due to time constraints, the team may not be able to get to this scenario but will try to complete the scenario if possible.

9.1.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

9.1.5 PRIORITY

Future

9.2 PATIENT DIVERSITY

9.2.1 DESCRIPTION

The simulation allows for the user to change the patient in the main menu. The simulation should support a change in race, gender, and financial status(i.e. Lower class, middle class, or higher class). When changing the financial status, the tools and house should change to reflect the patients financial status.

9.2.2 SOURCE

This requirement was given to the team by the sponsor.

9.2.3 CONSTRAINTS

The team may not be able start development of this requirement due to time constraints. Since most of the team's budget has already been allotted for other items, there may not be enough money left to buy additional assets for this requirement.

9.2.4 STANDARDS

The Palliative Care VR simulation needs to comply with Texas Administrative Code(TAC) Title 22, Part 11, Chapter 215. [2] The simulation will also comply with The Regent's Rules and Regulations of the University of Texas at Arlington.

9.2.5 PRIORITY

Future

REFERENCES

- [1] CDC. Glasgow Coma Scale. 2022.
- [2] State of Texas. *Texas Administrative Code: Title 22- Examining Boards*. Thomson Reuters, 1st edition, 2019.