Project Deliverable B:
Need Identification and Problem Statement GNG 1103 – Engineering

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Section B4, Group B6

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Introduction:

The Ottawa hospital is looking to provide patients with a safe and informative way of understanding their upcoming medical procedure. They would like to upload videos to a VR interface to allow patients to experience their procedure in VR in order to reduce anxiety and fear going into the actual treatment. The following breakdown hopes to highlight the issue as what they hope to receive in terms of a solution.

Question	Customer Statement	Interpreted Need
Typical Uses	Require a platform that can store multiple VR videos and be played in different sequences by the patient or practitioner	Easily accessible application with user-friendly menu and allows them to easily swap videos for other fields to use
	Program needs to be able to play 180 degree stereoscopic footage	Program needs to be able to play 180 degree stereoscopic footage
	Needs a headset that can be used by patient and doctors	Headset's program can be used by client and patient interchangeably
	Be fully accessible to as many patients as possible	Include option for subtitles, age friendly menu options, positioning prompts
	Compatible with the oculus SDK – oculus quest headsets	Hardware: oculus SDK – oculus quest headset

Likes	Bilingual Interface	Bilingual Interface
	Customizable Configuration	Customizable Configuration
	Pause, play, rewind, and forward controls	Pause, play, rewind, and forward controls
Dislikes	Patients are stressed and afraid about what their treatment entails.	Realistic simulation in VR that is not intimidating to use
Suggested Improvements	Doctors are able to add subtitles to the videos being played during patient use	Ability to add subtitles
	Desire to educate the public about how different cancer treatments work	Accessible program that can be shared with patients family/general public

#	Need	Importance
1	Easily accessible application with user-friendly menu and allows them to easily swap videos for other fields to use	5
2	Program needs to be able to play 180 degree stereoscopic footage	5
3	Headset's program can be used by client and patient interchangeably	4
4	Include option for subtitles, age friendly menu options, positioning prompts	4
5	Hardware: oculus SDK – oculus quest headset	5
6	Bilingual Interface	2
7	Customizable Configuration	2
8	Pause, play, rewind, and forward controls	3
9	Realistic simulation in VR that is not intimidating to use	5
10	Ability to add subtitles	3
11	Accessible program that can be shared with patients family/general public	2

Problem Statement:

There is a need for doctors to reduce stress of cancer patients by providing them an introduction to treatment using VR to emulate the experience using 180 degree stereoscopic footage.

Benchmarks:

The current benchmarks include Sick Kids VR tours of treatment facilities, Benioff Hospital's Surgical Theater, Sunnybrook hospital's VR walkthrough of procedures and Stanford Children's Health's walkthrough of procedures.

Conclusion:

The final project should allow doctors in the medical industry to easily and fluidly create virtual simulations (using 180 degree video) that patients can use with a VR headset to experience their upcoming procedure in a safe and comfortable environment. The implementation of this project will make medical process easier for the patients, doctors, and medical staff as a whole, leading to a more financially efficient system and effective procedures.