Project Deliverable G

Prototype II and Customer Feedback

GNG 1103 – Engineering Design

Faculty of Engineering – University of Ottawa

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1.0 Introduction:

The objective of this deliverable is to create the second prototype using the feedback we received from our client pitch presentation and user feedback, test results from our first prototype, and the assets from our concept design that are ready to be included. The second prototype will focus on implementing sound and our final assets into the VR environment to develop the functionality of the environment. This prototype will build off of the first prototype, therefore it will be of higher fidelity and comprehensiveness. This deliverable will include our client feedback, images of our prototype, an analysis of our prototype, an analytical model, a detailed plan of how we will test our prototype, and an update of our project plan.

2.0 Client Pitch Presentation Feedback:

During our pitch presentation for Mines Action Canada, we presented our first prototype and gave a brief description of the critical components included in our design. While showing our poster designs in our prototype, the client proposed that we include further explanation of the information on our posters to ensure that the users will understand the messaging. For example, the client suggested that we say what Lethal Autonomous Weapons (LAWs) is on our poster, instead of using its abbreviation. Our client mentioned that we understand the goal for the project, and that our first prototype is a good start to the solution.

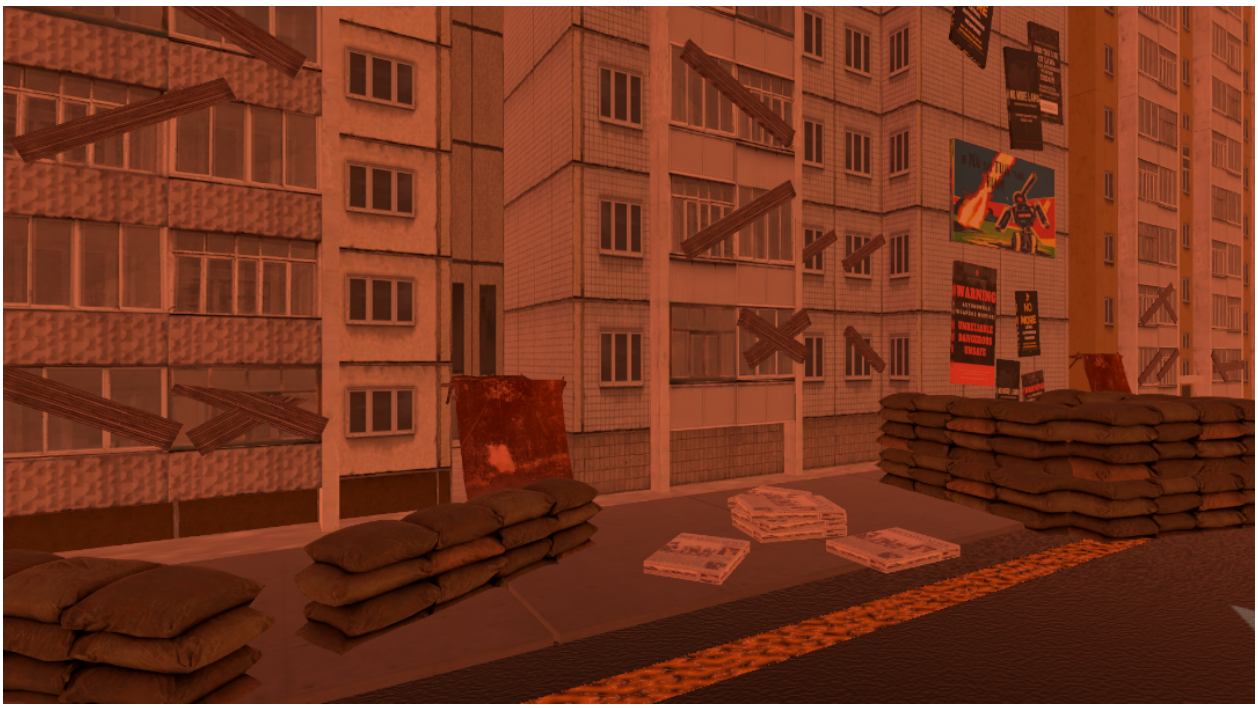
3.0 Prototype:

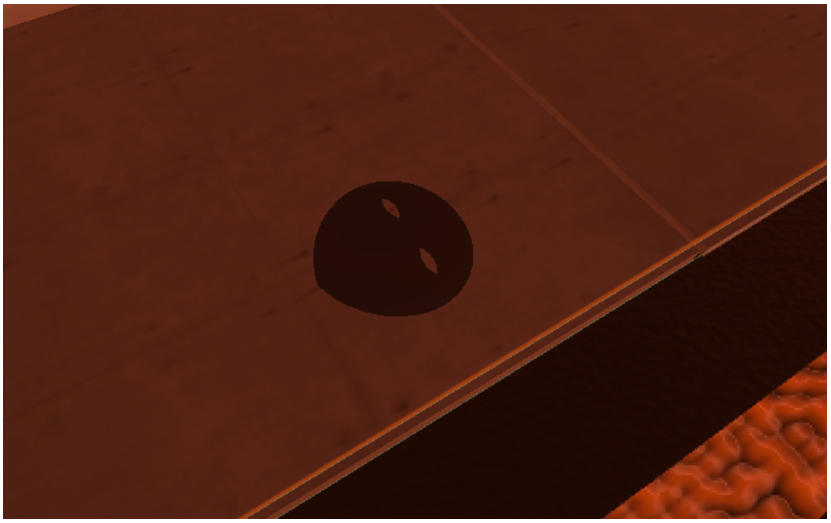
3.1 Prototype objectives

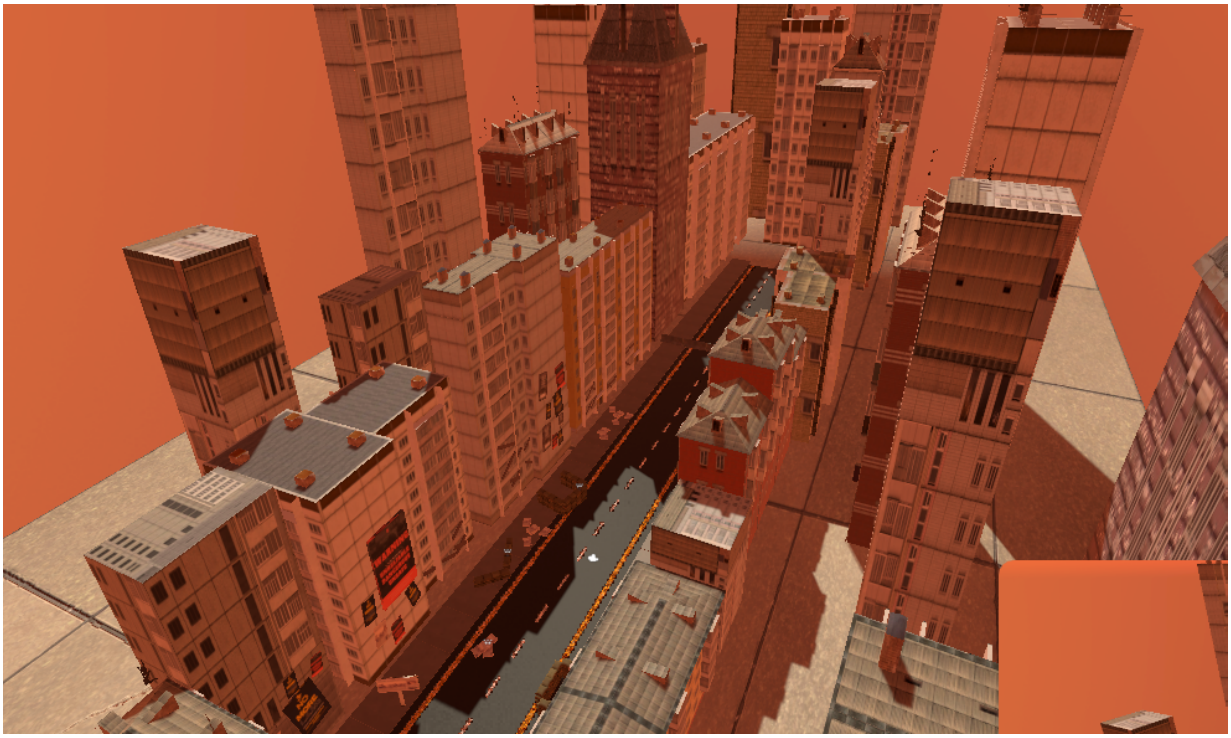
- Add remaining assets
- Add audio
- Assign future tasks
- Determine test plan
- Create an analytical model using MATLAB

3.2 Prototype Images

New roads and sidewalks	
More wooden planks, stacks of newspapers, added tarps, masks on the ground	


WARNING



Background buildings	
Barricades and warning signs	
Audio	Will be shown in presentation

3.3 Analysis of Critical Components

Critical Components	Purpose
Sidewalks and new roads	Enhances the realism of the environment.
Barricades	Gives the illusion that the map is bigger, but restricts user movement to the scene.
Tarp	Illustrates the presence of homelessness in a city.
New signs/posters	To have a variety of posters/signs.
Audio	Creates a sense of urgency and a tense atmosphere.
Background buildings	Enhances the realism of the environment.
Masks	Shows the user another protective measure that people needed to implement into their lives due to the autonomous robots

5.0 User Feedback:

1. "It is simple, but I feel sad when looking at it"
2. "It's very red, the tones of the background give a very chaotic vibe and it shows a state of alarm"
3. "The audio makes the environment more realistic, because you aren't just seeing the chaos but also hearing it"
4. "The environment being trashed and there being posters scattered everywhere makes it more realistic. It is an environment I wouldn't like to be in"
5. "The message being conveyed is very easy to understand. It is a very interactive environment as well (the functional newspaper)"
6. "It's giving apocalyptic vibes"
7. "How would you get the user to know to interact with certain objects or get context with what's going on?"

We can deduce from feedback 1-6 that the atmosphere of the scene reflects an emotional and eerie ambiance. It also meets our standards of realism as the testers seem to be satisfied with the new audio and scenery. Since this is our goal, we will stick to this same atmosphere in future deliverables. From feedback 7, we deduced that the user needs to be given more instruction and context to properly understand our VR environment. This will be improved on in the next prototype where we focus on user intractability and usability. Some ideas include an introduction scene and glowing objects that prompt the user to interact.

6.0 Prototyping Test Plan - Prototype III:

Test ID	Test Objective (Why)	Description of Prototype used and of Basic Test Method (What)	Description of Results to be Recorded and how these results will be used (How)	Estimated duration of test
1	Determining if audio is properly activated by user interaction (radio).	Add different audios and play the Unity game to check if the audio is playing/can be heard by the user.	Results will be recorded as either "success," if audio is playing as intended, or "failure," if audio is not playing.	Approximately 10-30 mins Date: Nov 17-24 th To be done by: Rohan
2	Determining movement quality of assets (fire, smoke, etc.).	Place the fire in a unity game, go into gamemode, see if they function as anticipated.	Results will be recorded as either "success," if there are not any glitches or mishaps in the mobile props, or "failure," if props are not acting as they are intended to.	Tested. Works fine.
3	Determining if the user can move properly (Ex. walking on the ground, not floating).	Go into gamemode and test if the keys associated with movement actually move the user where intended.	The result here will either be a success or a failure. Each key associated with movement will have to go through this trial.	Approximately 10-30 mins Date: Nov 17-24th To be done by: Hannah
4	Determining if the user can look around with a 360° view.	Add the scripts and play the Unity game. Use the arrow keys to check if the 360° camera works.	Results will be recorded as either "success," if the 360° camera works as intended, or "failure," if it does not. If failure occurs, we will	Tested. Yes they can. To be done by: Marho

			check the script for any errors.	
5	Determining if all assets are compatible in a single VR environment	Place buildings/props/audio on the plane and play the Unity game. Search for any defects.	If any defects are found, the appropriate action will be taken (e.g replacing a glitching wall or removing a triggering/deafening audio).	Test as you add Assets to the VR environment.
6	Determining if the combination of assets will run properly by the computer	Export the game and play the game. Check if the game is functional and if the user is able to interact/use all functions as intended.	If the game is not working as intended, assess the issues through appropriate troubleshooting methods.	Date of testing is dependent on Test ID 1, 2, 3, 4, and 5. Estimated time to fix the issues is dependent on the specific issue. To be done by: Jon and Kwab
7	Testing the user response (emotion)	Gather a set of testers who have varying qualities (ages, ethnicity, backgrounds), observe their emotions and reactions to the scene, ask them how they are feeling	Recorded while observing the users, notes will be taken per tester on a note app or on paper, results will be used to understand if the proper emotions were evoked (fear, sadness, desire to take action)	Approximately 10-30 minutes per user, Date: November 17-24th To be done by: Jeanine
8	Usability testing (functionality)	Gather a set of testers who have varying qualities (ages, ethnicity, backgrounds) observe how they move around in the simulation and what they interact with.	Recorded while observing the users, notes will be taken per tester, results will be used to understand if the users can easily move around, look around, if they	Approximately 10 mins, per user Date: November 17-24th To be done by: Jeanine and Marho

			interact with the desired assets.	

7.0 Project Plan:

7.1 Task List

Status	Task	Person
Coding		
DONE	Interactable newspapers and posters	Kwab and Jon
Background Scene		
DONE	Fix roads + add sidewalks	Jeanine
DONE	Background buildings	Jeanine
Other Assets		
DONE	Make assets solid (buildings and platforms)	Jon
DONE	Adding more billboards (higher)	Jeanine
DONE	Redesign posters + new posters	Rohan
DONE	Make billboard posters (landscape)	Jon
DONE	Tents and tarps	Jeanine
DONE	Add more wood on windows	Jeanine
DONE	Add Radio asset into unity	Jon
DONE	Add more fire/particles	Jeanine
DONE	Add barricades	Jeanine
Sounds		
IN PROGRESS	Bomb noises and ambiance	Jon
DONE	Radio Broadcast	Jon and Kwab
DOC		
DONE	Introduction	Hannah

DONE	Prototype Screenshots	Jeanine
IN PROGRESS	Prototype analysis	Rohan
DONE	Client Feedback	Hannah
DONE	User Feedback	Marho
DONE	Prototyping Test Plan	Marho
DONE	Conclusion	Marho
DONE	Wrike	Marho
IN PROGRESS	Presentation	Hannah

8.0 Conclusion:

Using feedback gotten in the last deliverable and from the clients we have made some slight but significant changes to the project. The clients had stressed if using abbreviations we should be sure to state the meaning prior. Due to that we have made changes to some of our posters that had abbreviations by adding the full meaning of the abbreviations on the posters. The buildings and roads have been perfected to our liking and made solid(i.e you can't pass through the buildings now). The radio broadcast has been successfully added to unity in both English and French. There is still some work that needs to be done but we believe that we will be able to complete the project with the timeline we have. We have been able to successfully complete all the important tasks allocated in this deliverable.

9.0 Wrike Snapshot:

https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=DJKvOqFPsKztmwgw0inNVUlFto8PALqO%7CIE2DSNZVHA2DELSTGIYA