Project Deliverable G – Group 12

Design Criteria and Target Specifications

GNG 1103 - Engineering Design

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Ella Siegner

Zahra Atrakchi

Zhaojie Bao

Mohammad Abu Khater

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1.0 Introduction

While developing a plan and prototyping out virtual reality game as well as exploring information about autonomous weapons our client meetings have given us good insight on which directions to lean in. We were able to present our client with new ideas about our storyline and what scenes were going to be used which they thoroughly liked, and their only concern was that we make sure to keep it doable with the timeline given. We were also told to use our money to better our project which we will try to incorporate with this next prototype. With the prototypes in the next few weeks, we want to focus on getting out scenes completely done sooner than later so that we can include other aspects such as sound and perfecting the game itself.

2.0 Client Meeting Recap

When speaking with our client we had mentioned that our group used this first prototype as an opportunity to learn about unity and think about what types of assets we want to include in our design since none of us have used it before. We also mentioned how in our second meeting they had told us to decide what the exact concern would be with autonomous weapons and to show how humans would adapt with the concerns. We chose to focus on the ethical concern of choosing targets based on sensor data and show how humans would adapt by having metal sheets cover windows to distort light beams. Sandbags are used to for protection as barriers to absorb the impact of projectiles, such as bullets or shrapnel. We used trash and destroyed cars to convey the message that life with these weapons isn't the same normal that we are used to and that chaos

has ensued. We were also told to keep it simple so our main parts of the game will be one strip of a city and inside of a house. Our main goal for this first prototype was to get comfortable with unity and get a general idea of what our game will look like and what areas need to be focused on. Our client was pleased with the direction we were taking and how we had changed our idea to best fit the message that they were going for. They wanted us to make sure we aren't overshooting by having the two different scenes and that we can keep these areas simple.

3.0 Prototype II

3.1 Test Plan

For this prototype we want to focus on perfecting our scenes as well as making sure buildings are solid and that the player can walk through the area with ease. For buildings we want to make them so that the player is not able to walk through them and feels a barrier as if it's a real building. In the house we want our player to be able to easily use the stairs and not go through objects that are in the home. For sound we want to incorporate eerie music and other sounds that evoke fear into the players when they are playing the game.

Narrator Script

After a long day, you are coming out of your house at night to witness all that is left of your city. As usual the robots have spent all day crushing your city Infront of your own eyes. You have gotten used to this lifestyle ever since the robots got out of control all because there weren't enough policies to constraint them. As you walk around the city you will see filthy trash all over the streets and cars crashed and upside down. When you stare at the houses and buildings of your city you notice the metal sheets all the buildings have. As well as the sandbags surrounding houses which have helped many of your neighbor's maintain their house.

3.2 Analysis

Critical Components	Purpose
Audio/Narration/Sound Effects	This component is quite critical. Background noises gets the player into the scene and situation the player is in (it adds to the chaos the city is in). Narration guides the user on what is happening and tells the player what our storyline is.
Metal Sheets	To demonstrate the residence's adaptability and enhance their protection within the building, the metal panel can shield occupants from windows in the event of a robot attack.

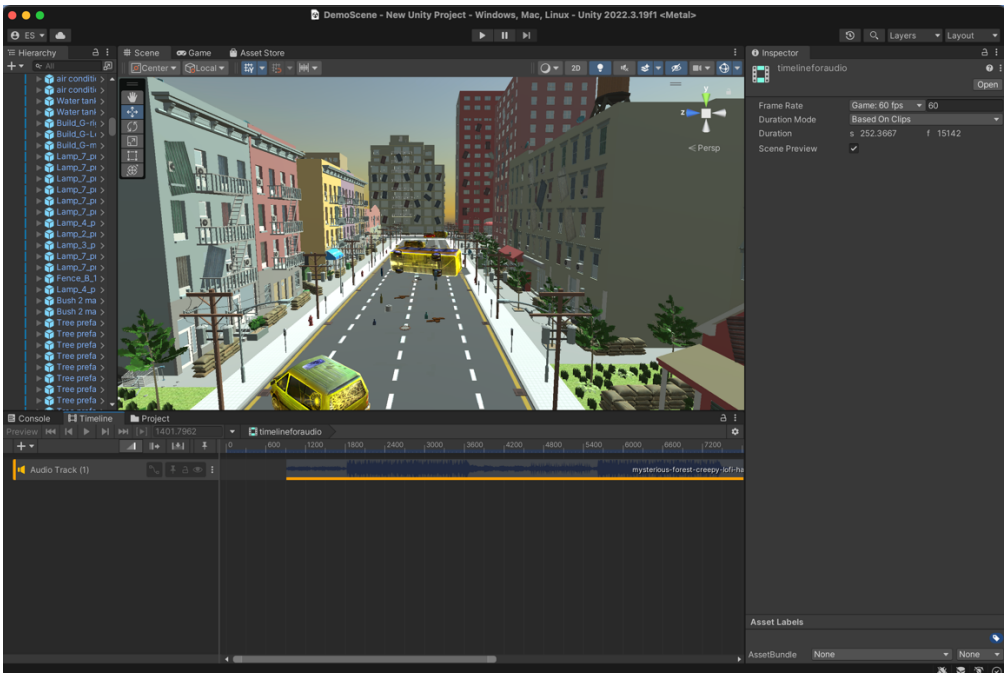
3.3 Results and Images

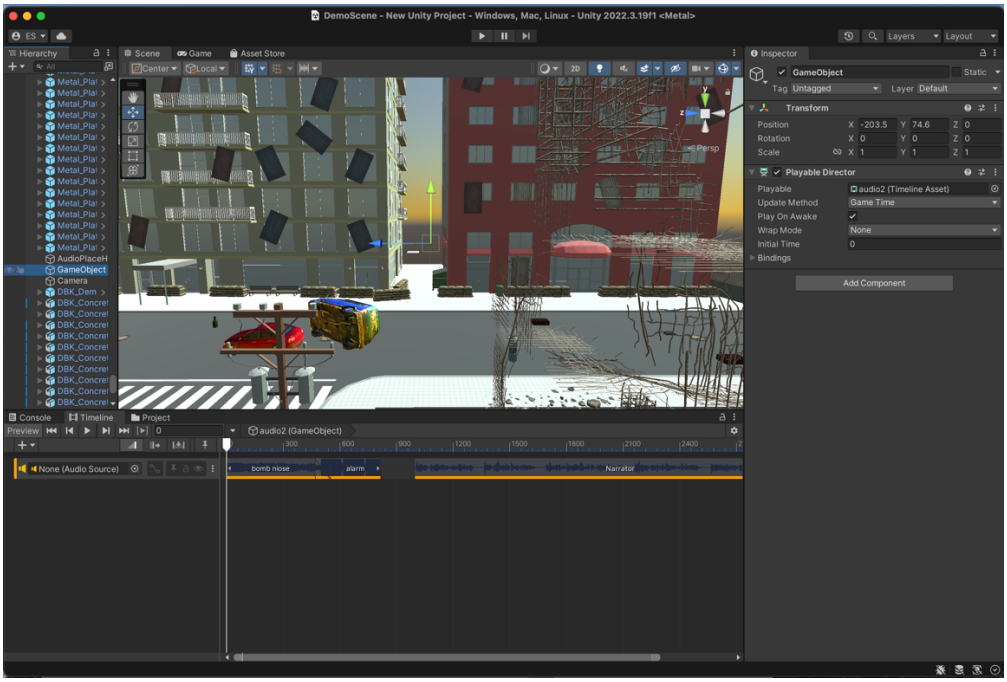
4.0 Experimental Model

For this test, we employed an innovative experimental model, specifically chosen for its superior effectiveness and simplicity in addressing our objectives. The decision to opt for an experimental model was driven by the impracticality of using a numerical or analytical model to assess the timing of sound and background noise accurately. Our model exhibits a commendable level of fidelity, crafted within the same software environment as our intended final product. This alignment enhances the significance of our test results, as the

model faithfully reproduces both the movement and structure of the house, along with the sound, closely mirroring our vision for the ultimate product.

Photos of experimental audio:





5.0 Feedback

"Messy and unwelcoming."

"Make me feel sad"

"The message is clear and easy to understand"

The feedback we received was positive, it shows that the user successfully caught what we wanted.

7.0 Prototype III Test Plan

Test ID	Objective (Why)	Description of test method and materials needed (What)	Description of results to be recorded (How)	Estimated test duration (When)
1	Test audio is clear and working. To make sure on design day it will be working.	Add the audio into unity that player can hear.	The results will be recorded / obtained by having all 3 of us teammates test out the virtual world and check to see while using the headset the audio can be heard and understood well.	March 16 10 minutes
2	Test duration of users play time. To make sure it not over or too under the time limit.	Measure the time when user walking around the city.	If user goes over time cut down path that user walks on so the user has less places to walk through. If user still has a lot of time, we can enlarge the area the player is walking on.	March 16 15 minutes
3	Test users move-ability with headset on. This is so we can	We can design which building that player can enter or walk	If player can walkthrough buildings, then we must change	March 16 10 minutes

	know where the user can enter and go.	through. The user needs to be able to walk out of the building he is already in	settings so user cannot do that. If user can't leave building, must adjust in settings.	

8.0 Conclusion

Following the feedback that was given to us from the client during our client meeting we have made some slight changes to our project, yet we are staying on schedule and within budget. The feedback ensured us having an accurate reflect the intended themes and remains feasible within our set timelines and resources. Moving ahead on our project we will be focusing more on the quality of the audio in the game, also keeping in mind that we stay committed to optimizing our budget.