uOttawa

University of Ottawa

Faculty of Engineering

GNG11003 – Engineering Design

PD F: Prototyping I and Customer Feedback

Team F3.1

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Introduction

Prototyping is a presentation of some or all parts of a design concept with a useful objective. The objective includes learning, communication, reducing risks and measuring performance. In this deliverable, the objective of the desired project will be presented with the solutions that were set for the design process.

Client feedback

For the second meeting with Professor Hanan, she wanted our team to put more emphasis on the environment and the creation of the experience itself rather than the accessibility aids and language. She urged us to develop the story more, and to develop the characters to enhance the learning experience for the user.

With this feedback, our team is allocating more of our energy into the experience creation rather than the other elements. We updated our design criteria, target specification, and our prototyping plan accordingly. The changes will be highlighted, and the changes made will be found in the upcoming sections.

Prototype Objective:

The objective of prototype I is to inspire users to feel empathy by creating an environment that will help them experience the story as it is happening with them. Therefore, as an initial step it was decided to prioritize the creation of the school's environment as a groundwork of the design project. This is because out of the three scenes for our experience, this is by far the most critical.

Prototyping Test Plan

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 Test duration and planned start date (when and how long)	Test Observations And results
1	Does the character move with the use of toggle stick?	A draft script for GameObject movement. Test by using the hardware (oculus)	The movement of the characters allow users to discover and interact with the environment of the video.	Start: Monday 28th February Test duration: 30 minutes	The character moves with the WASD keys This will later be implemented into a toggle stick
2	Will the character be able to a have a 360 view when moving around the game?	A draft script for GameObject movement. Test by using	Can see 360 by turning around	Start: Monday 28th February Test duration: 30 minutes	The character has a 360-degree view controlled by

		the hardware (oculus)			the mouse. Later will be implemented into VR
3	Will the gameobjects for the environment integrate freely? (new objective)	Assets from unity store transformed and set up as an environment. To test press play on unity.	The objects look like what they intend to be.	Start: Monday, February 28th Test Duration: Ten minutes	So Far the assets we used are able to be used with eachother
4	Are we able to pick up object? (new objective)	A draft script and a game object. Test by interacting with object.	Object will be in game players "hand"	Start: Friday March 11th Test duration: 30 minutes	N/A
5	~~Button for English to French~~ (removed)	~~A draft script for audio and button. Test by clicking button.~~	~~The audio can be chosen to be in English or French depends on the user preference by clicking in setting~~	~~Start: Monday 21st February~~ ~~Test duration: 30 minutes~~	
6	Can we select a button that will start the scene?	A draft script for button. Test by clicking button.	The starting button allows users to start experience the plot that is chosen for the video.	Start: Friday March 11th Test duration: 30 minutes	N/A
7	Can we select the button to end the application?	A draft script for button. Test by clicking button.	Can click quit button to exit	Start: Friday March 11th Test duration: 30 minutes	N/A
8	~~Do text bubbles come up when closed captions are on?~~ (removed)	~~A draft script for button, localization and gui popping up if button is clicked. Test by clicking button.~~	~~The text bubbles will allow users to read the dialogue of the characters.~~	~~N/A~~	
9	Will the scenes be able to transition smoothly?	Transitions from scene to scene	Scripts to make the scenes change when an action happens	Start: Friday March 11th	N/A

				Test duration: 30 minutes	
10	Will NPCs be able to move smoothly?	Animations that give the characters life	Animation function of unity	Start: Monday 28th February Test duration: 30 minutes	The animation are implemented but have no collision with object and infinite duration
11	Will selecting a poster make it zoom in?	A draft script for button, and gui popping up if button is clicked. Test by clicking button.	This option allows users to interact with the posters added to the video by clicking on the posters.	Start: Friday March 11th Test duration: 30 minutes	N/A
12	When clicking one option for dialogue trigger, will a different dialogue from another Character be shown?	A draft script for button, and gui popping up if button is clicked. Test by clicking button.	The response of the characters will depends on the option that the user will choose for the dialogue trigger.dialogue, the other characters will respond	N/A	N/A
13	Will tutorial boxes pop up on screen after we select game	A draft script for button, and gui popping up if button is clicked. Test by clicking button.	The tutorial box helps users go through the steps and actions they need to take in each scene.	Start: Friday March 11th Test duration: 30 minutes	N/A
14	Will interacting with remote (gameobject) turn the TV on?	A draft script for button, and gui popping up if button is clicked. Test by clicking button.	By clicking on the on/off button on the remote, the user will be able to turn on the TV.	N/A	N/A

Prototype Analysis and Results:

In this prototype, we worked on creating the basic environments to see how it would feel to walk around in the and what the user would feel. We started by adding the school assets and making them into a hallway. After we added people to make the hallway look busy. Then we added scripts and animations to move the camera and the people. Our next step was then to debug what we had made and make it all work how we wanted it to. After that scene was working, we created a new scene and started working on the Cage Scene to add a bit of depth to the prototype. The first prototype was to test out unity and see if we could create scenes that we needed to have. Our results are that unity is a good platform to create our experience and inspire empathy.

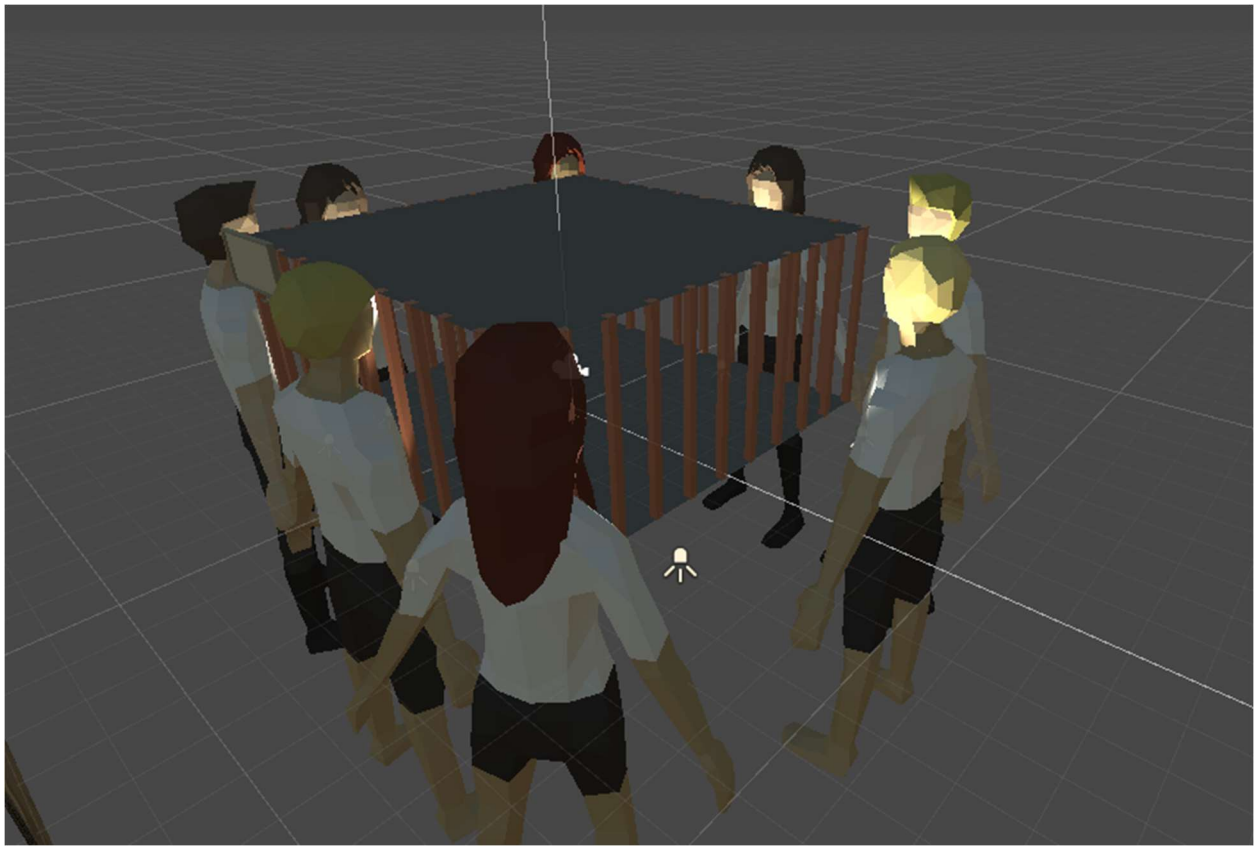

Figure I. Cage Scene

Figure II. School Scene

Analysis of Critical Components and Systems:

Main menu

The main menu is the first visual interface of the game to the user. In the main menu, user see and interact with components of the game such as environment, game object. Main menu will also allow user too set up their setting as well as taking the first look to their character and its background.

Game Objects

The object with which users can interact. This includes people, and objects to interact with. The main characters were chosen to have faces because this will allow the users to experience the story through the facial expressions of the main characters. Game object will respect the law of physics and therefore will be giving the sense of realism.

Scripts

The scripts are to be used to control the movement of the camera and to allow objects to be used for interaction. Script can also be used to plan a conversation between characters.

Camera

The movement of the camera was restricted, so the view will be within the environmental boundaries. The speed of the camera was set to be moving slowly, so when interacting with the environment, the camera does not switch the scenes so fast in a way that the user will not be able to integrate properly.

Environment

The environment was set to be interactive where users will live the experience of the character. For example, it includes interacting with the mirror in the dorm room or reacting with the TV remote in the living room. The reason behind setting the environment to be interactive is that users will be able to experience the story as it is happening in real life and not only move around static objects.

Lighting

This section includes the lightning in the school lobby as well as the shadow of the characters. We won't use realistic lightning such as reflection, motion blur or filter because we want the game to have a cartoon approach.

GUI (buttons and for interactivity)

To be determined later in prototype II.

Conclusion:

The first prototype is mainly focused on the fidelity of the design project and what solution can be proposed to achieve the desired results. Although, in this prototype, simple animations were used, what is important is that users feel ensure and being put in the main character's shoes.

The Wrike screen shot:

https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=xvyDbc7JWGXIl8Ez0jpgUBS9kX0Wokjs%7CIE2DSNZVHA2DELSTGIYA