Deliverable H: Feedback & prototype III

GNG 1103 Team Change

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1. Introduction

The third and final prototype should be the closest to what. It allowed us to solidify them. After 2 prototypes we really understood what worked and what didn't. We also took into consideration all the comments and feedback we received. In this deliverable we will be presenting how our team has been able to make alterations to our second prototype and test plan. As well as how we evolved it to help us achieve our goals.

2. Prototype 2 Feedback

The focus of Prototype 2 was to begin working with the elevator asset, the Unity platform and the HTC VIVE equipment. Evidently Prototype 2 is more technically intensive than Prototype 1 which focused on the storyboarding element and whether the concept was effective in encouraging a user to feel empathetic towards the woman of colour who experiences gender discrimination in the scenario. For prototype 2, it was essential that we were able to begin implementing our concept and story into Unity and ensure that the assets and code are functional when viewed with the HTC VIVE equipment. After this base was established with Prototype 2, we will focus on more aesthetic elements and polishing our project.

A critical element of Prototype 2 was the elevator asset. We selected the elevator to be the space in which our scenario would take place because it is a neutral and realistic space for the user. Furthermore, using an elevator eliminates any need to create and implement multiple backgrounds into our different scenes which saves our group both time and money and allows us to concentrate on creating an experience that teaches the user empathy in an effective manner.

We explored the elevator functionality by purchasing the asset, opening the asset in Unity, adding the relevant camera and light and testing it with the VR headset. Furthermore, the aesthetics of the elevator were tested through seeing the asset in the HTC VIVE headset.

Another critical component of Prototype 2 was the code for the scene switching button. The code was written and run to verify functionality. The code was implemented in Unity along with the button and respective scenes. Next, the button was tested using the VR headset and controllers to verify that the user was able to select a choice with the VR equipment and be immersed into the correct scene.

The testing of the button and scene switching code confirmed that the scene switching code is functional; however, the use of the button with the HTC VIVE equipment revealed that it was difficult for the user to read the text accompanying the button. To

remediate this issue, we focused on changing the aesthetics of the text and the button, to make the experience more aesthetically pleasing for the user.

Overall, Prototype 2 was a successful start to our work in Unity and with the HTC VIVE equipment. We were able to build a base for our simulation, by testing out the main background (elevator asset) and creating the scenes, as well as functional buttons and code for scene switching. This skeleton we have created will serve as a base to which we can add our character assets, dialogue text as well as audio in our upcoming prototypes.

3. Analysis of Critical Components

This prototype focuses on specific critical components such as avatar functionality, avatar animations, and selects button aesthetic upgrades. The avatar functionality includes whether the avatars are able to be successfully implemented into the game, the avatar animations include basic animations of the selected avatars using animations from the Unity Asset Store, and the button aesthetic upgrades include the implementation of new font that can be easily seen by users while playing the game.
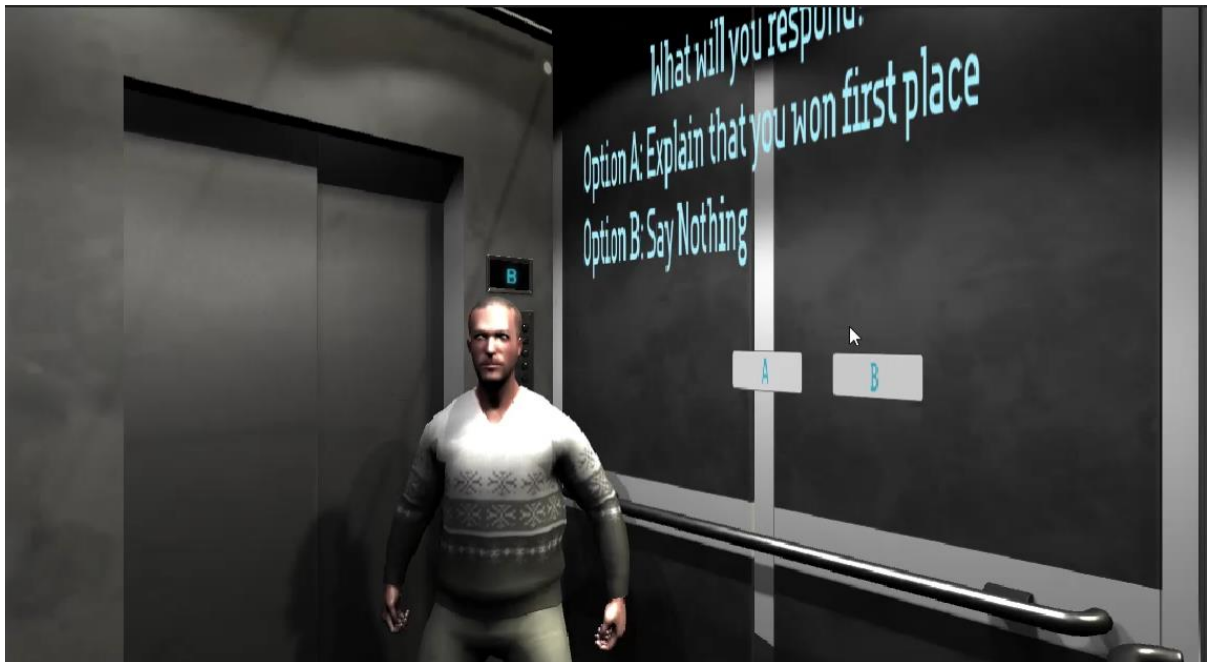

Figure 1. Avatar #1 and Upgraded Buttons in Elevator

Figure 2. Avatar #2 in Elevator, Animated to be Angry

Figure 3. Avatar #1 Animated to be Threatening

4. Prototype 3 Test Plan and Target Specifications

Table 1. Prototype Test Plan 3

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 (What)
1	Verify that the avatars function within the Unity game	Implement the avatars into the unity game and ensure that they are compatible assets	Can the avatar be implemented into the game effectively? Results: YES/NO Impact: If the avatars cannot be implemented, new avatars must be added in order to begin animation	30 minute expected duration Start March 15th
2	Verify that avatar expression and movement animations work properly	The test shall be carried out using Unity software. Here we would check the degree of responsiveness of the avatar to each scene, that is, how the avatar displays or changes expression.	Accuracy of the avatar movements and expression? Results: YES/NO Impact: If the objectives are not attained, more testing must be done to fix this error.	3 hour expected duration Start March 15th

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3	Update button with new font and aesthetic so that it is easier to be used by the user.	In the Unity software, once button and font has been updated it will again be tested by clicking the button to change scenes as well as attempting to read the font.	Can font be read properly on the screen by the user? Results: YES/NO Impact: If the dialogue isn't explicit, more testing and modification must be done to fix and ameliorate it.	2 hour expected duration Start March 17th

Table 2. Updated Prototype 3 Target Specifications

Criteria	Measurement	Wanted Value	Acceptable Range
Avatar Functionality	Yes/No	Yes	Yes
Avatar Animation	Yes/No	Yes	Yes
Button Text Aesthetic	Yes/No	Yes	Yes

5. Test Analysis and Results

5.1 Avatar Functionality

The avatar functionality within Unity was tested by the team through importing the asset into the game. Team members determined that the avatars were functional and could be successfully implemented into the game, falling within the "Yes" wanted and acceptable

range. One identified issue was that there were no people of colour available as assets through the Unity store, which was an unfortunate issue that clearly shows the lack of diversity within the gaming community at times. To combat this issue, we were able to modify our asset and change what the woman avatar looked like, which will be available in the final model of our game.

5.2 Avatar Animation

The avatar animation was tested within Unity through the addition of a free asset entitled "Basic Movements" to our avatars. Team members determined that avatars could be animated through any additional free animation from the Unity Asset Store after the basic motion was added in the animation portion of the asset within the Unity game. When the game was played, avatars demonstrated the movements we applied to them with no issue and therefore fell within the "Yes" wanted and acceptable range of the target specifications. No further issues were noted and the team is happy with the applied animations.

5.3 Button Text Aesthetic

A new free font entitled "MK Easy Text Lite" was used through the Unity Asset store in order to allow for users to read the text more clearly. In addition to this, smaller square buttons were also implemented to allow the user to have more space within the elevator. Team members were able to clearly read the text and switch from one scene to another with the buttons and it was determined that this upgrade fell within the "Yes" wanted and acceptable range of the target specifications.

5.5 Overall Results

The avatars, avatar animations, and upgraded buttons were found to be wholly effective within the Unity game. In the future, audio and final scene change tweaks will be applied to allow for a fully immersive experience for the user.

6. Comprehensive Prototype Results and Future Tweaks

The third and final prototype was a comprehensive analysis of the game used for empathy development at this time. All three prototypes played a pivotal role in the development of the final product. Prototype one was a useful way to test the story and the overall empathy derivation from the product. Prototype two explored the switching of scenes to allow the user to completely immerse them in the experience. Prototype three explored the addition of the characters and therefore the last big piece of the game itself. Before our product can be deemed complete, the last and final piece of the game will be to include audio to fully immerse the user. At this time our team has the script and audio prepared and will soon add this final tweak to the product. Overall, prototype three combines every prototype into a comprehensive prototype that is extremely close to the final product.

7. Conclusion

Prototype III is made to finally finalise our project. By adding the final touches and finishing the third prototype to present on design day. His primary goal of the project is to be able to deliver what the client had asked for. We've already have our ideas set in stone. Taking everything into account the assets helped us visualise more how the game will end up looking in the end. In conclusion modifying the second prototype by fixing up some issues and adding our last touches.