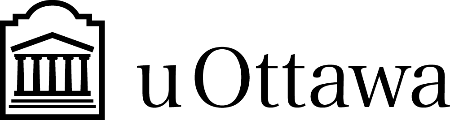
**GNG2101 Report**



**Project Deliverable F: Prototype 2**

Submitted by

Team 4.2 - Immersive VR Experience

| Student Number |  | Name |
| --- | --- | --- |
| 300231269 |  | Brevin Baskaran |
| 300228908 |  | Henry Radar |
| 300126254 |  | Jiachen Wang |
| 300231222 |  | Nicholas Yeung |
| 300231531 |  | Reyaan Trimizi |
| 8737165 |  | Uzair Mohiuddin |

Faculty of Engineering

**Introduction**

In this deliverable, we will discuss our client feedback from client meet 3 and what changes and improvements we need to make to address this feedback. We will also provide our most critical product assumption and will develop a second prototype with the feedback from client meet 3 implemented. We will provide updates and details regarding our current prototype. We will also do testing and analyze our performance and compare these things to our target specifications from deliverable B.

**Client Feedback**

Our client gave us feedback regarding our group not making our users feel empathy towards the person experiencing the language barrier. Currently, our client feels like we are making our users feel sympathy instead of empathy towards the individual with the language barrier. To fix this, we will add an extra scene to our project to ensure that we are expressing empathy in our experience. Furthermore, our Client feels our storyboard does not capture all aspects involved in representing a person. To remedy this, they suggested we capture other aspects of the life of a person that does not only highlight their language barrier, but provides a more holistic representation as a person.

**Critical Product Assumptions**

The most product assumptions for the values of specs in the project are not the most concerning as they involve values such as FPS, load-time, and size of project. These values should be easily achievable for us so long as our software can run properly on the oculus device. In terms of availability for materials we initially looked for assets that may have cost money such as the university lecture hall, but once we started development of the prototypes we realized that it is possible to use practically all free assets, allowing us to save money on the project. The functionality which we are most concerned about would be the one addressed by the client, invoking a feeling of empathy. Our goal is to make an empathetic experience which we hope to achieve through showing both sides of the story and giving the user time to reflect about the situation.

3. Develop a second prototype (or more) which will help you on your way to creating your final product and test the product assumptions along the way.

When developing our second prototype we were in the process of creating a particular scene which would help in developing our final prototype. We divided our product goals for this prototype into three subcategories: desirability, feasibility, and viability. Desirability is how desirable the VR experience is toward the client, and feasibility of our VR experience. The last part of our product assumption is the viability of how far we can go in making a successful project.

**Latest Prototype**

1. The story starts with the professor assigned a group project and indicating that everyone should start looking for group members for their project that they would like to work with.
2. The user is then given the choice to pick if they would like to be the victim or aggressor as part of the story line.
3. If the user picks the victim side of the story line, the scene proceeds to allow the user to ask if they could join the group, but are faced with rejection from the group members due to clear discrimination and the language barrier the user is presented with.
4. The next scene occurs as the user is then asked what they would like to do in this situation, ask to join another group or ask the professor to assign them to a random group.
   1. Scenario 1: If the user picks going to ask another group to join, they are welcomed into the group.
   2. Scenario 2: If the user goes to the professor to get assigned a group, the user is assigned to a group that does not want him there and does not wish to work with him.

Scenario 1:

* The users group realize that he struggles with communication due to a clear language barrier and decide to learn more about him to get a greater understanding at what his strengths and weaknesses are in order to have the most impact possible.
* Leads to a ‘happy ending’ as the user interacts with his group members and works together with them towards a common goal.

Scenario 2:

* The user gets assigned a group that does not want to work with him/her and feel that he would be useless due to the language barrier
* This leads to the user feeling alienated and isolated as the group does not interact with him to achieve their various goals.
* The user is given the option to go and complain to their professor or just sit back and not do anything.
  + Case 1: User complains to professor → Professor allows him to pick his own group and Scenario 1 plays out.
  + Case 2: User sits back and chooses not to do anything about the situation → Storyline Ends.

**Purpose & Function**

The purpose and function of this prototype allow the user to gain firsthand experience and empathy towards a student faced with the difficulties of having a language barrier. It allows the user to empathize with the communication struggles they are faced with especially in a heavy group dynamic environment such as an engineering program in university which requires a lot of communication on each group member's part to be successful. It also lets the user understand how even if a student has a language barrier, it does not mean that they can not contribute to the group as everyone has their own strengths and weaknesses. It allows the user to gain a new perspective and understand that if the group members can learn to interact with them and learn about their strengths and weaknesses alongside how they can benefit the group in their own way, it can create many unique new opportunities for a successful group dynamic.





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**Product Assumptions Testing**

Compared to project deliverable B, we are within the accepted target specification that we set forth in Deliverable B. Since we have developed a prototype, we had the opportunity to use some of our target specifications and to our acceptable values to determine if they were within reason. Moreover, through testing a more complete prototype, we were able to get a more full picture of our target specifications. When analyzing the product assumption testing, we tested how well our prototype worked at this stage in our product development cycle.

| **Target Specifications** | **Device** | **Prototype 2 Testing Value** | **Prototype 1 Testing Value** | **Acceptable Values** | **Reason** |
| --- | --- | --- | --- | --- | --- |
| FPS | Device #1 | 20 FPS | 40 FPS | 30 FPS | Our Team decided to use Unity to produce the VR. Given this, expected FPS is minimum 30 FPS. This meets the marginally acceptable value for the target specifications of our prototype. |
| Device #2 | 15 FPS | 47 FPS |
| Unit Asset Integration | Device #1 | 73% | NA yet | 60% | This product assumption value describes how Unity assets are integrated into Unity 3D. When testing this out we got some warning of assets not integrating properly with our scene |
| Load time | Device #1 | 40 seconds | 39 seconds | 120 Seconds | The Unity Software is expected to take 1 min on the low end for the Load Time. Depending on the VR and RAM, the Load Time can increase to 3-5 min. |
| Device #2 | 32 seconds | 45 seconds |
| VR visualization (XR Tool Manager) | All Device | 80% | NA yet | 70% | This critical product assumption tests how often users can interact with the objects and how accurate the hand movement is |
| Usage Data | Device #1 | 200 MB | 800 MB | 2 GB | Usage time is essential for the game to load on a device and it gives how much user data is used. Since |
| Device #2 | 700 GB | 1 GB |
| Memory size | ALL DEVICES | 1.5 GB | 1.2 GB | 8 GB | The Memory Size is not completely accurate as it was the memory size for the environment for the VR simulation applicable for this prototype as we produced a singular scene. |

**Conclusion**

In this deliverable, we provided an update on our project and prototype and how we will improve our project based on the feedback from client meet three. We also produced prototype two and compared our current project progress and performance with our target specifications from deliverable B.

**Wrike link:** <https://www.wrike.com/workspace.htm?acc=4975842&wr=20#/folder/965918825/tableview?viewId=108819336>