Project Deliverable H: Prototype III GNG1103 – Engineering Design

Design Faculty of Engineering – University of Ottawa

Section B4, Group B6

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Abstract

The following deliverable outlines the testing procedure in prototype III which is due for November 21st. Prototype III was a focused prototype, with a high level of fidelity. Prototype III is essentially the final product. The objective of this implementation was to refine the core functionality of the prototype and to add a English/French version in Unity. The tests were successful and feedback was received from the client.

Introduction

The Ottawa Hospital is looking to provide a VR system for cancer patients. The objective of the project is to create a safe and informative environment for patients for their upcoming medical procedure. The hospital will upload videos to an interface to allow patients to experience their upcoming medical procedure. The objective of the project is to build a program which allows the client to build and run VR simulations. The purpose of the final project is to reduce anxiety and fear while increasing knowledge of a patients procedure.

In order to build a fluent and functional program for this project, the different functionalities must be tested. Without testing the prototype, issues can occur when in use. These issues can be: bugs in the program, broken functionality (such as buttons not doing the proper task), and difficulty of use. The general objective of this prototype is to reduce the risk of issues with the program, become familiar with the building process of a VR program with Unity, as well as receiving general feedback on the direction of the project from the client.

Related Work

For the project, the OCULUS SDK and HTC VIVE will be used. These two headsets are virtual reality (VR) headsets. VR headsets are used to create a "virtual world" where the user is able to view a 360 degree rotatable canvas that is responsive to movements. The project will be developed through UNITY (v2019.2.9f1). Unity is a game engine that is used to create VR games with C#. The final program will run through the games launcher STEAM VR.

Testing Objectives

The general objective of the testing for prototype III is to refine the program's fluidity, test with a VR headset, and implement a French/English version of the program. Feedback on the direction of the project from the client will also be noted after prototype III is completed. The menu application will be tested to see if it functions correctly and fluently, while navigating to the French/English version. The VR player will be tested to see if it functions fluently and with a VR headset. The results of this prototype will be used to reevaluate the final product and current functionality of the app. The criteria for a successful test is if the VR player works fluidly and that there are no issues concerning French/English Version of the menu.

Testing

The prototype is a focused prototype because it focuses on two specific parts of the prototype (VR player and the french version of the program). The table 1.1 lists the testing and results of prototype III. The tests will be conducted incrementally as the functionality of the program is built out. The final tests will be run on a built version of the program through Unity and run on the computer and with HTC VIVE headset. The program will run and the functionality will be tested by the user. The functionality will be evaluated one at a time and noted if it was successful or not.

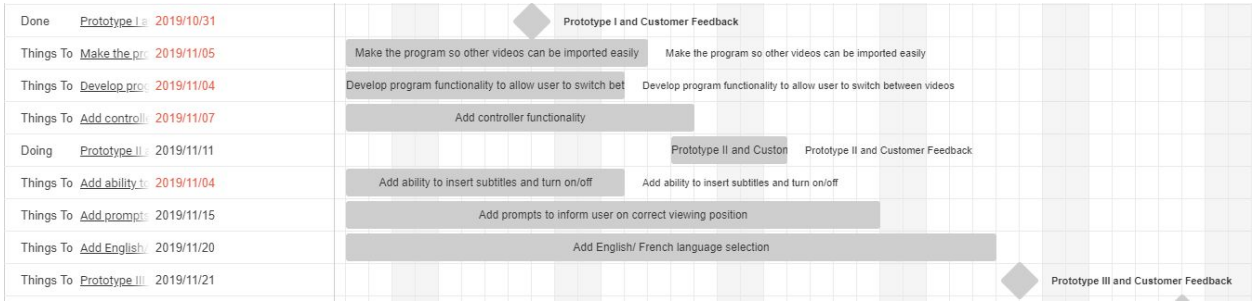
Table 1.1: Prototype Tests

Test	Desired Result
Open Application and Navigate French Side of Application	Application is easily navigated, all french
Test French Button	Goes to French Menu

Timeline

The testing and refinement of the video player will occur until November 25th. Once the program is fully completed, then it can be translated into the french version. The testing will last until November 21th because it will be done incrementally. The final test on the prototype, before the feedback is received, will occur on November 21th where a 30 minute testing phase will take place. The testing is dependent upon if the functionality of the program is built out by the 21th, if it is not complete, many functions cannot be tested.

Figure 1.1: Gantt Chart



Results

Table 1.2: Test Results

Test	Desired Result	Result
Open Application and Navigate French Side of Application	Application is easily navigated, all french	French version implemented, fluent navigation
Test French Button	Goes to French Menu	Goes to French Menu

Feedback

Prototype III was tested with family members. Family members have a low level of knowledge in the medical field and were able to easily navigate and use the program. Prototype III has a high level of fidelity and is essentially the final product so it is good news that it was used efficiently and effectively.