Deliverable F

GNG 1103-B
Submitted by: Group 4

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1 Introduction

The first prototype plays an important role in the conception of the final product. It allows us to translate our vision and ideas into something concrete. This prototype gives us an idea of what will resemble the finished project and allows us to see and fix the mistakes and make improvements. Initially, the prototype will display a basic interactive user interface, this will lay out the basic design and logistics of the final product and over the course of the next few deliverables, the aesthetics, and graphical content will be added.

2 Purpose of the Test

The purpose of this test is to see where changes should be made. It shows us what can be improved to get a better result. We will get to see if there are materials that should be modified, any assets that should be bought or gave up, codes that should be added. Testing the prototype in the Unity platform shows the interaction of the interface as the user would see it when they wear the VR headset. Continuously testing the interface under various conditions reveals its weak points and constraints for improvements. It will permit us to see where more time should be consecrated and where less investment is required. In addition, the conception of the prototype will allow us to receive feedback whether it's positive or not. Having a completed prototype I will allow us to easily convey the idea to the client and instructors, so the respective feedback can be taken into consideration.

3 Dependencies of the Test

The result of the test have to meet all the minimum requirements. For example, the client wants to use this product on VR device and the product must be compatible with VR device.

The test needs to be done before building the second prototype, thus, further improvement can be made. Also, the test should be done before the next meeting with the client, we can communicate the result with the client and seek feedback.

4 Testing Method

Testing that the functions of the prototype and observing if there are any logic or syntax errors. Each function in the prototype was checked if it is functioning and the output is the same as we expected.

5 Design Concept

The first prototype is designed based on those of the basic concepts from the Deliverable D-Conceptual design, in order to run properly to meet the minimum requirements from the client.

1. The user is able to interact with the UI so they can navigate from one scene to another, allowing them to interchange between the different videos.
2. The menu of the prototype now basically have a monochrome background with some basic commands on it, and interactive buttons.
3. The C# script for the video player is completed and needs to be embedded into Unity as a scene.

6 Prototype I

The following displays the output of each scene in the interface, as this is the first prototype, the interface includes a basic format of the final product, where all the C# scripts are attached at their simplest form, and would only require slight modifications throughout the prototyping stage. Aesthetically, the modifications made the main menu, is that when the user hovers their cursor over the button, the colour of the box changes slightly, and when they proceed to click the button, the colour of the button changes again.The first interaction with the user allows the user to choose the test that they would like to view the stereoscopic video for, and then the individual buttons link to the six other scenes/links which in prototype two would efficiently play the videos. The following are the screenshots of the interface.

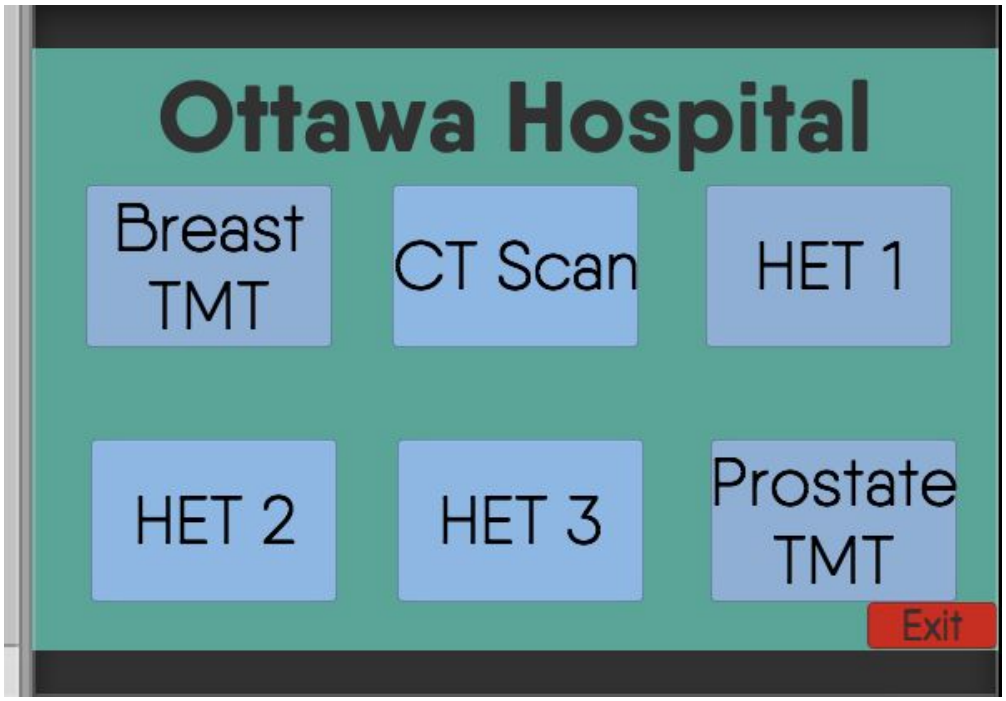

Figure 1: Basic UI Main Menu that displays the links for each video

Figure 2: Scene that shows the back interactive button that takes the user to the previous page

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using UnityEngine.UI;
using UnityEngine.Video;

public class BreastTMTVideo : MonoBehaviour
{
    public RawImage rawImage;
    public VideoPlayer videoPlayer;
    public AudioSource audioSource;

    // Start is called before the first frame update
    void Start()
    {
        StartCoroutine(PlayVideo());
    }

    IEnumerator PlayVideo()
    {
        videoPlayer.Prepare();
        WaitForSeconds waitForSeconds = new WaitForSeconds(1);
        while (!videoPlayer.isPrepared)
        {
            yield return waitForSeconds;
            break;
        }
        rawImage.texture = videoPlayer.texture;
        videoPlayer.Play();
        audioSource.Play();
    }
}

```

Figure 3: C# Script that plays a video to a video player designed in Unity (Construction of script is a part of prototype 1 and implementation of script is apart of prototype 2)

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using UnityEngine.SceneManagement;
using UnityEngine.UI;

public class BreastTMTButton : MonoBehaviour
{
    // Start is called before the first frame update
    void Start()
    {

    }

    // Update is called once per frame
    void Update()
    {

    }
    public void BreastTMT (string BreastTMTVideo)
    {
        SceneManager.LoadScene("BreastTMT", LoadSceneMode.Single);
    }
}
```

Figure 4: C# script that allows the buttons on the main menu to interact with corresponding sub-system

7 Conclusion

We did multiple tests on the functions of the first prototype and the test result of the first prototype is acceptable and the functions of the prototype do meet all the client's basic requirements. For example, the basic user interface menu, the basic project code, and some of the interactive buttons are available now. The next step we plan to do, is to design the second prototype based on the first prototype, so the basic functions of the second may continue using the basic functions from the first one, but without those existing minor problems. Also, we are going to provide more useful functions to fulfill client's demands. Such as, users can control the video through the remotor while they are watching, A French version of interface, and graphical user content. All those functions will be available on the second prototype.

8 Customer Feedback

We explained most of design concepts to the Client and the client suggested we should focus on the basic functions of an interface for now, try to have a functional prototype prior to the Deliverable F due date, and once the least viable solution has been achieved, the aesthetics and additional functionalities can be implemented.