University of Ottawa

Faculty of Engineering

GNG1103 – Engineering Design

PD E: Project Plan and Cost Estimate

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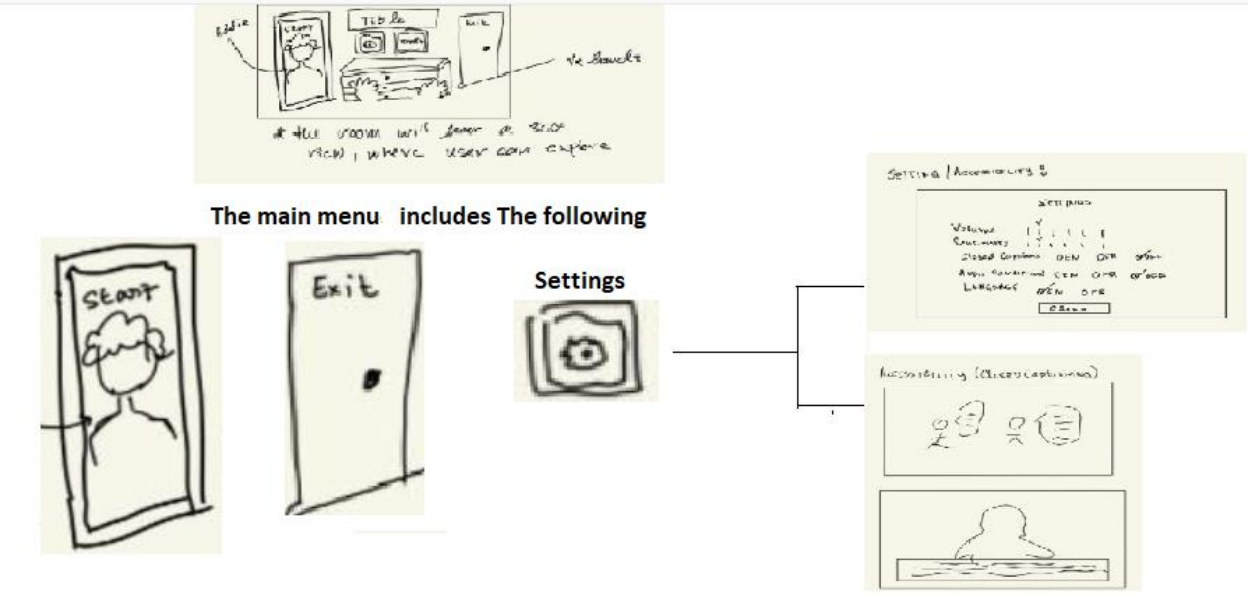
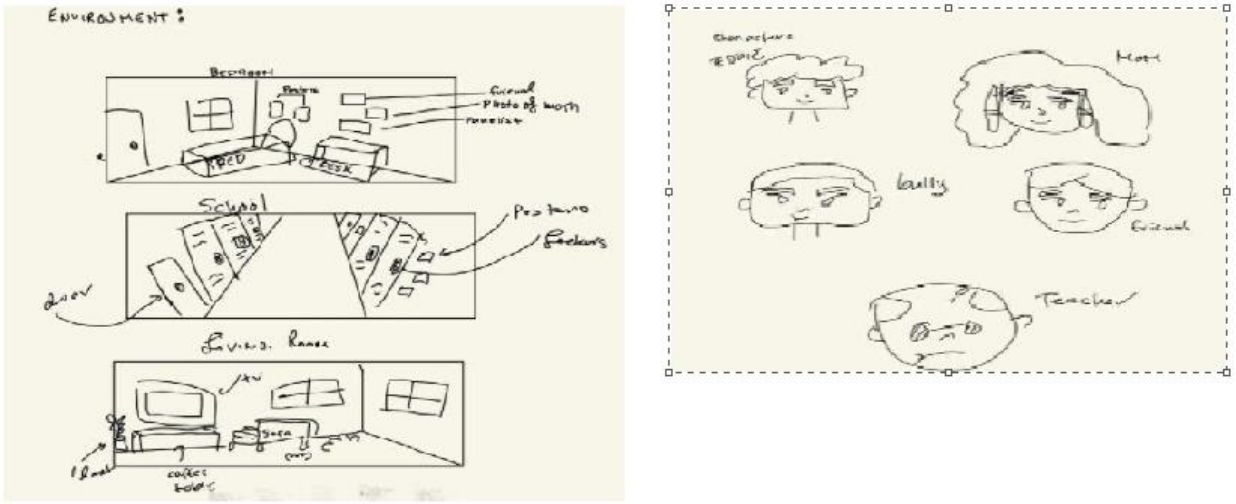
Introduction

Prototype and testing are an important stage in the design process where we plan, estimate and test our prototype. In this deliverable, we will estimate our prototype's cost based on the material and resource that we will use, and our plan to test the functionality of our prototype.

Detailed design drawing





Bill of Materials

Table 1: The assets and their cost that will be used for the project.

Asset	Cost	Link
Low Poly Cartoon House	$ 9.99	https://assetstore.unity.com/packages/3d/props/interior/low-poly-cartoon-house-interiors-167425
School Assets	$ 0	https://assetstore.unity.com/packages/3d/environments/school-assets-146253
Adiar	$4.99	https://assetstore.unity.com/packages/3d/characters/humanoids/humans/adiar-lowpoly-character-125079
Distant lands	$0	https://assetstore.unity.com/packages/3d/characters/distant-lands-free-characters-178123
Lean Localization	$0	https://assetstore.unity.com/packages/tools/localization/lean-localization-28504
VR Teleport	$8	https://assetstore.unity.com/packages/3d/characters/easy-vr-teleporter-79170
Total:	$22.98	

Table 1 shows the estimated cost of the assets that will be used in the project design. However, since this will not be the final and the needed assets, there will probably be a need to add or remove some assets based on the test that will be done during the prototype stages.

List of Materials

- VR headset - Oculus
- Tutorials
    - How To Add Support For Multiple Languages In Unity: https://www.youtube.com/watch?v=lku7f4KNFEo
    - How to Make a VR Game WITHOUT a VR Headset: https://www.youtube.com/watch?v=UlqdHrfXppo
    - How to add audio: https://learn.unity.com/tutorial/working-with-audio-components-2019-3#5f8fa3cbedbc2a3787f7d35d

Project Risks and Contingency Plan

For many projects that includes creating prototypes, risks are involved, and they could be detrimental to the results of a venture. To ensure this does not occur, the design team must formulate contingency plans for each risk to prevent the worst-case scenario. In this section, we highlight the risks that comes with our VR experience and how we are going to prevent it.

First, the experience's performance is at risk. There is a possibility that our project will not perform as a teaching tool for empathy. In that case, we will invest our remaining time to refine and review our work (scripts, environment, etc.) to ensure that the project remains as a teaching tool. That way it can be ensured that the experience does not fail to fulfill its criteria or objectives.

Second, the functionality of the game objects is at risk. This is because we are very new to VR and unity. When planning the scenes, a lot of the functionality is about the interactivity of the object, character movement sounds, and dialogue. This could easily be fixed by following the Prototyping Test Plan found below.

Lastly, the time crunch is one of the biggest risks for this project. There may be a possibility that we won't even finish it by design day. To ensure this does not happen we must do our tasks diligently and communicate progress with the team.

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)
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 21st February Test duration: 30 minutes
2	Can we switch the language of the game from English to French in a click of a button?	A draft script for localization and button. Test by clicking button.	Languages are evidently switched by clicking in setting	Start: Monday 7th March Test duration: 30 minutes
3	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 the hardware (oculus)	Can see 360 by turning around	Start: Monday 21st February Test duration: 30 minutes
4	Can we switch audio from English to French in a click of a button?	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 7st March Test duration: 30 minutes
5	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	Start: Monday 21st February

			plot that is chosen for the video.	Test duration: 30 minutes
6	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: Monday 21st February Test duration: 30 minutes
7	Do text bubbles come up when closed captions are on?	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.	Start: Monday 7th March Test duration: 30 minutes
8	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: Monday 21st February Test duration: 30 minutes
9	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 depend on the option that the user will choose for the dialogue trigger.	Start: Monday 21st February Test duration: 30 minutes
10	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: Monday 7th March Test duration: 30 minutes
11	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.	Start: Monday 21st February Test duration: 30 minutes

Conclusion

In conclusion, since our prototype's cost is limited to $50 budget, it was ensured that the chosen assets cost did not exceed the budget. Also, the testing criteria and method were estimated based on our conceptual design, but some changes might occur on the planed methods based on the test stages.

Wrike screen shot