

## **Project Deliverable F: Group 8**

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## **Abstract**

Group 8 has the following problem statement: Mines Action Canada wants a story-driven video in a VR environment that will convince politicians to ban autonomous weapons, by showing how non-combatants will be affected by these weapons. Previously, Group 8 has come up with a plan for a first prototype: a VR environment with a player that can move and interact with the environment. This was made so that our team would be sure our VR environment could be set up and be stable when using the virtual reality equipment. Prototype 1 showed a stable environment, then we will continue to plan for our second prototype.

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## Introduction

Group 8 has the following problem statement: Mines Action Canada wants a story-driven video in a VR environment that will convince politicians to ban autonomous weapons, by showing how non-combatants will be affected by these weapons. Previously, Group 8 has come up with a plan for a first prototype: a VR environment with a player that can move and interact with the environment. This was made so that our team would be sure our VR environment could be set up and be stable when using the virtual reality equipment. This document will show details of Prototype 1, then we will continue to plan for our second prototype.

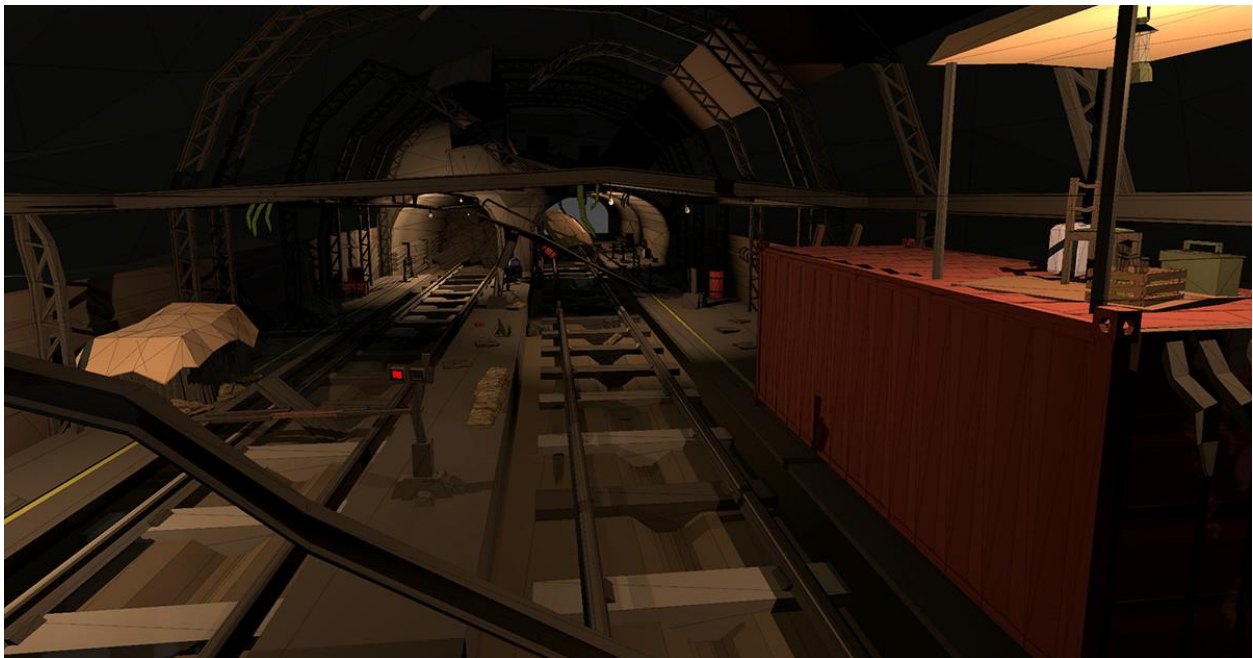
## Prototype 1 - Analysis

The first prototype we made was a VR environment of a metro station with a controllable character. This character should be able to interact with the environment.

We were able to create an environment very easily through a pre-made asset on the Unity Asset Store (Low Poly - Apocalypse Metro Station).

### Figure 1

*Screenshot of Unity environment*



The result was a very stable, aesthetically sufficient environment that could handle a VR character. We were also able to make the character specifically interact with objects inside the world by grabbing objects and triggering UI events with the Oculus controllers. Ultimately, no major bugs or issues were found; however, there were things to improve upon: The environment could still use more detailing, such as a roof, better fog, and better collision detection. The player could have smoother turning (right joystick pan view). We also needed to work on a proper interaction system. These will lead to our plans for the next prototype.

## Prototype 2 - Planning

The second prototype will be made according to everything that was needed to be improved on since the last prototype. It will be checked for stability and major bugs that could decrease quality in our final build. The following is a table for the prototype testing plan.

**Table 1**

### *Prototype 2 testing plan*

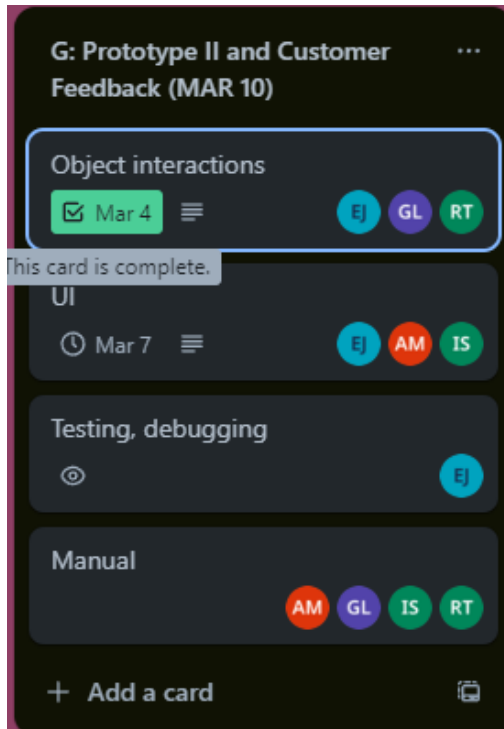
Test ID	Objective (Why)	Test Method (What)	Result recordings (How)	Estimate duration (when)
1	Captions on screen	Optimize settings in Unity to have text show on camera	Will the text clip against outside objects? Will the text be distorted?	Mar 4, 1-2 hrs
2	Interactions with objects	Make objects physically interactive.	Can you pick up an object and view it from any rotation, angle you need?	Mar 4, 1-2 hrs
3	UI events	Interact with an object to trigger a UI event (highlighted, text)	Does the highlighted object bug? Does the event start and stop properly? Can you start a cutscene from a trigger?	Mar 7, 2hrs+
4	Better assets (environment)	Add assets to improve on roof, fog, collisions	Do you clip through major objects (walls, floor)?	Mar 4, 30min

Deadline: March 10<sup>th</sup> (next deliverable)

The following are the responsibilities for the tasks:

**Figure 2**

*Task responsibilities plan (Trello)*



## **Conclusion**

Prototype 1 was a success as it demonstrated a stable VR user experience. However, there were noticeable things that required improvement. Prototype 2 will attack these problems, which are captions, UI events, better environment, and object interactions. The deadline for Prototype 2 is March 10<sup>th</sup>.