Team F12 Autonomous Weapon Action Plan

The Autonomous Weapon Solution

Prepared By:

Maslen Hipps
Siddharth Janghi
Trent Poitras
Trevor Choi

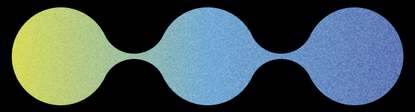
Presented On:

March 30 2023

Empathy

Audience

- Target audience:
  - Parliamentarians
    - generalists: not much knowledge of these issues
    - Need info and public pressure to act
    - Bilingual is best



- Diplomats and government officials
  - Some knowledge maybe but no field experience
  - Need info and courage to make changes

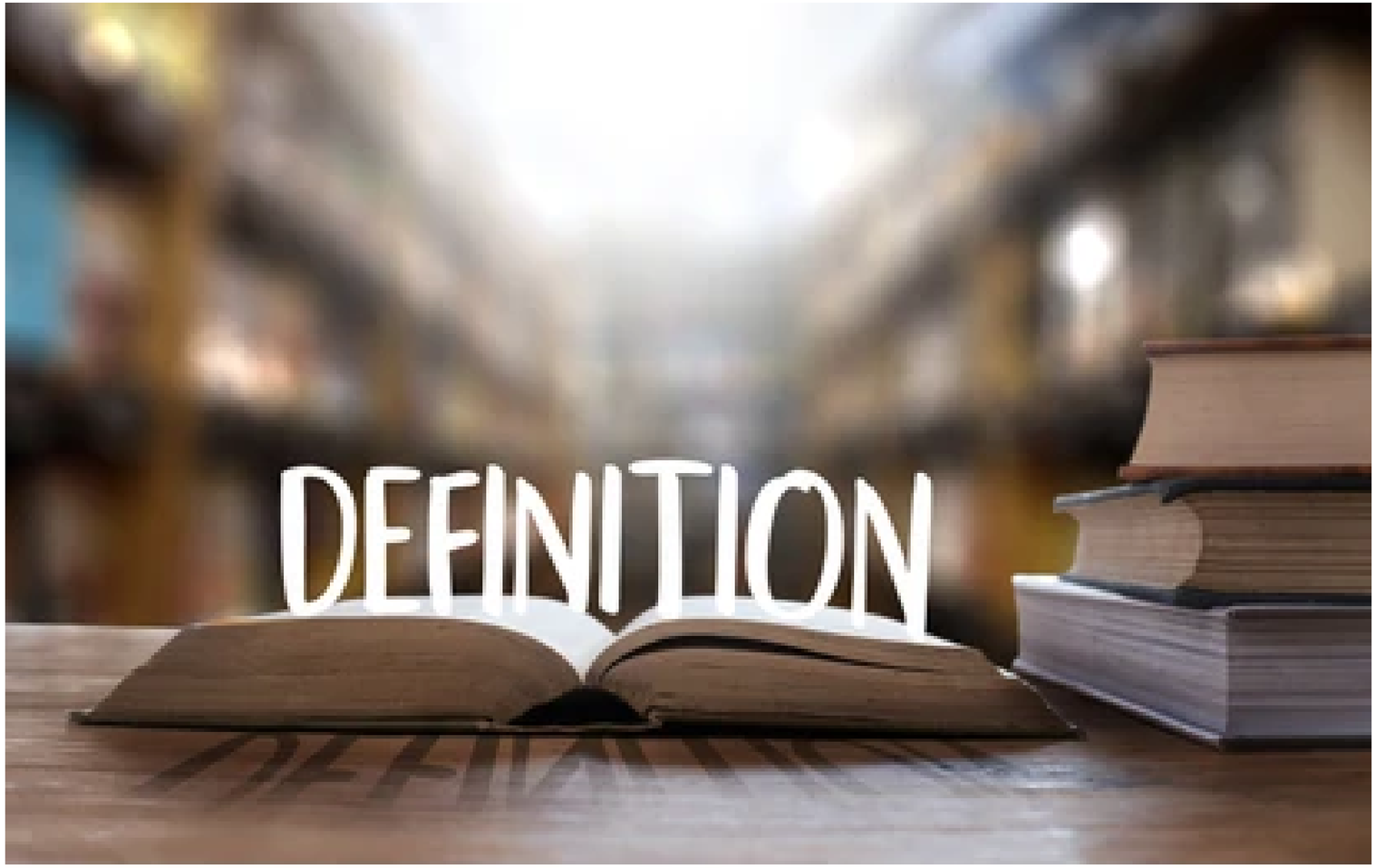
Needs	Design Criteria
Consider health issues such as seizures and epilepsy	- Visual effects (minimize flashes and slow down actions) - Story executions (Do not include jump scare, the first person should not experience death)
Do not call out any specific countries or companies	- Story settings (create a fictional villain)
Violence should not be over the top	- Story plot (do not focus on the description of violence)
Most settings should be effective	- Story settings (where it can actually happens to the users)
Include a personalized story	- Story plot (targets possible personalities in the parliaments)
Including a message encouraging the removal of autonomous weapons can help build a better world, instead of merely telling them to remove it.	Story plot (the removal of autonomous weapons is a collective action) A call to action at the end description of how possibly autonomous weapons could commit war crimes
Time of the experience	- Experience should not be longer than 3-5 minutes.
Bilingual	- Bilingual

What We Want To Achieve

Mines Action Canada needs a brief, emotional VR experience to highlight the ethical concerns and dangers of autonomous weapons, in order to encourage action to be taken against the use of them.

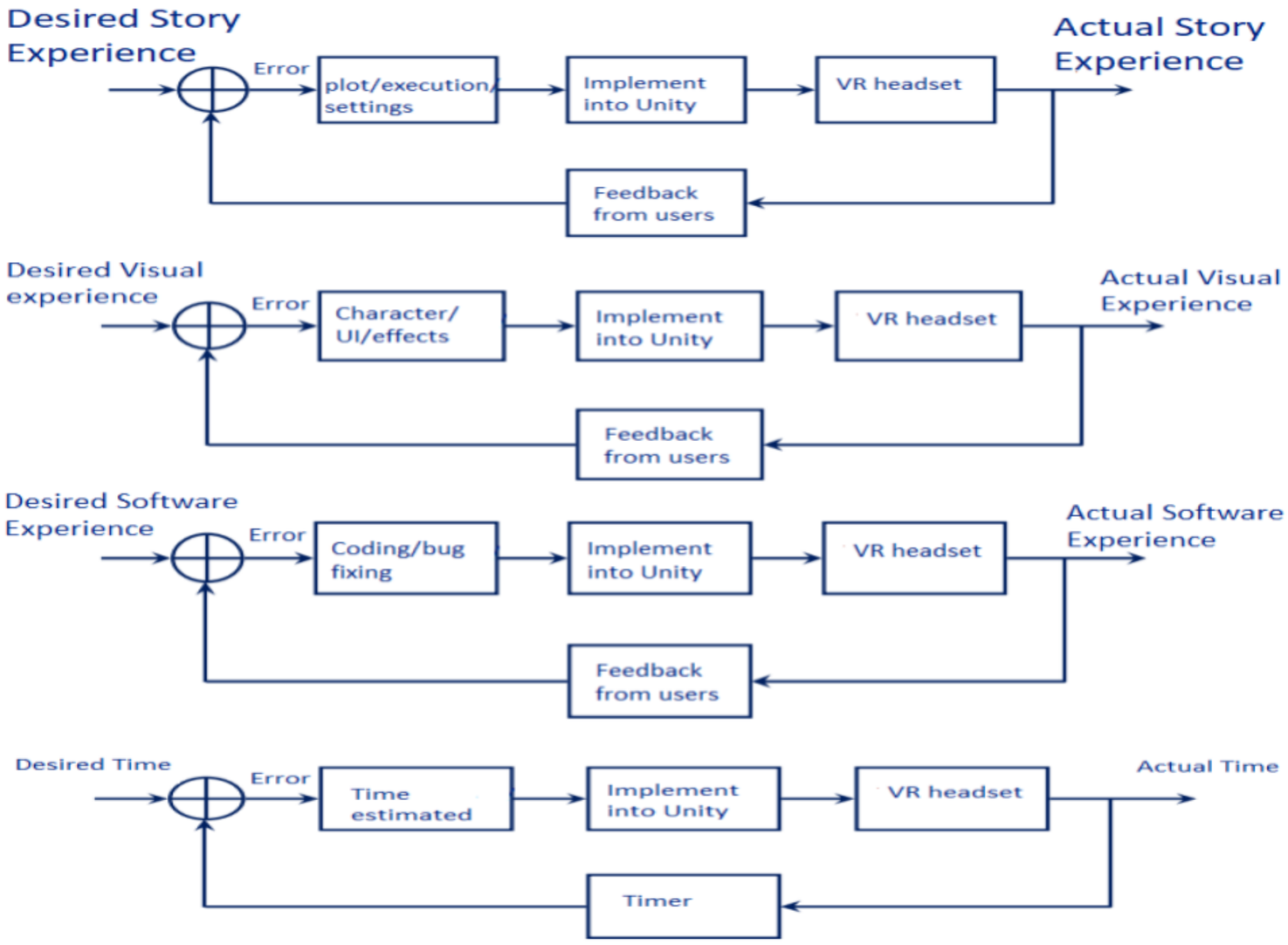
Emphasizing problems of autonomous weapons	Using virtual reality to vividly display the problems associated with autonomous weapons in numerous scenarios
Spread awareness of Mines Action Canada's autonomous weapon goals	Having the storyline connect to any profile of user, allowing for vivid understanding of autonomous weapon drawbacks
Change opinions on autonomous weapons	Influence people, both with power on the matter of autonomous weapon choice, and the public to side against them.

Defintition



shutterstock.com · 1161600556

Desires and Subsystems

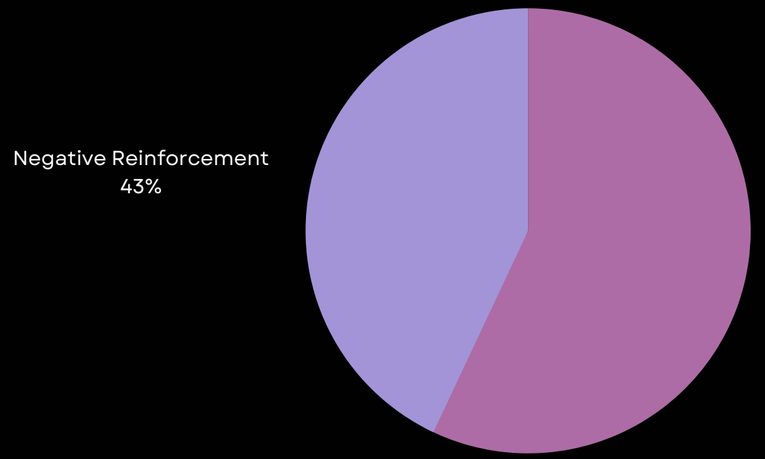


Objective Comparisons

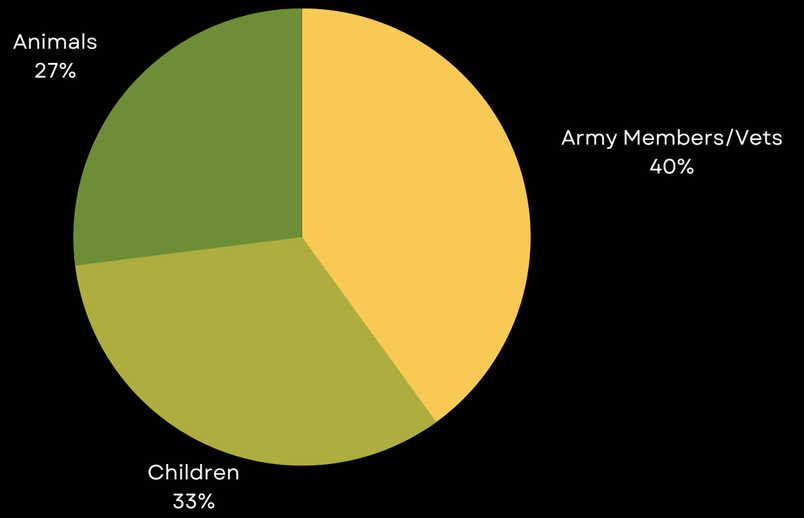
- Other organizations use similar methods
- How are they successful?
- Compare these methods to others you know

Feedback Research

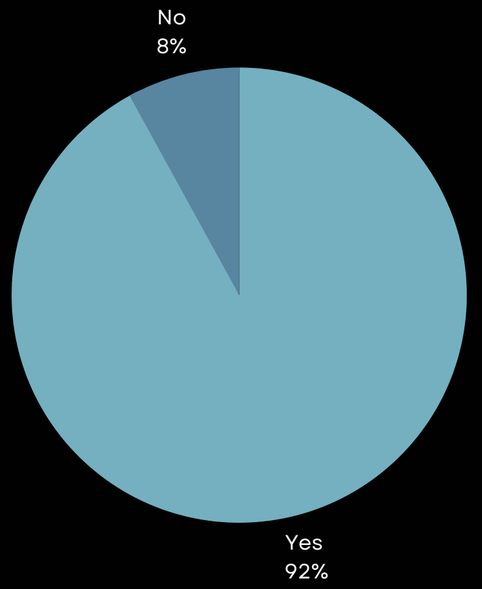
Positive vs Negative Reinforcement :



Emotional Reaction With Weapons :

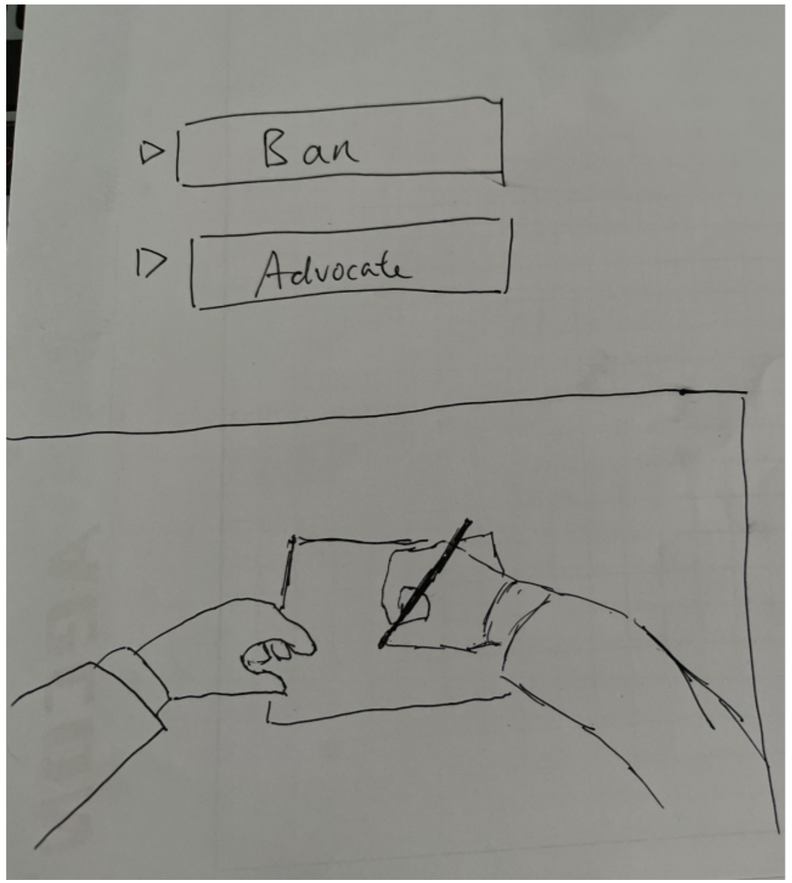


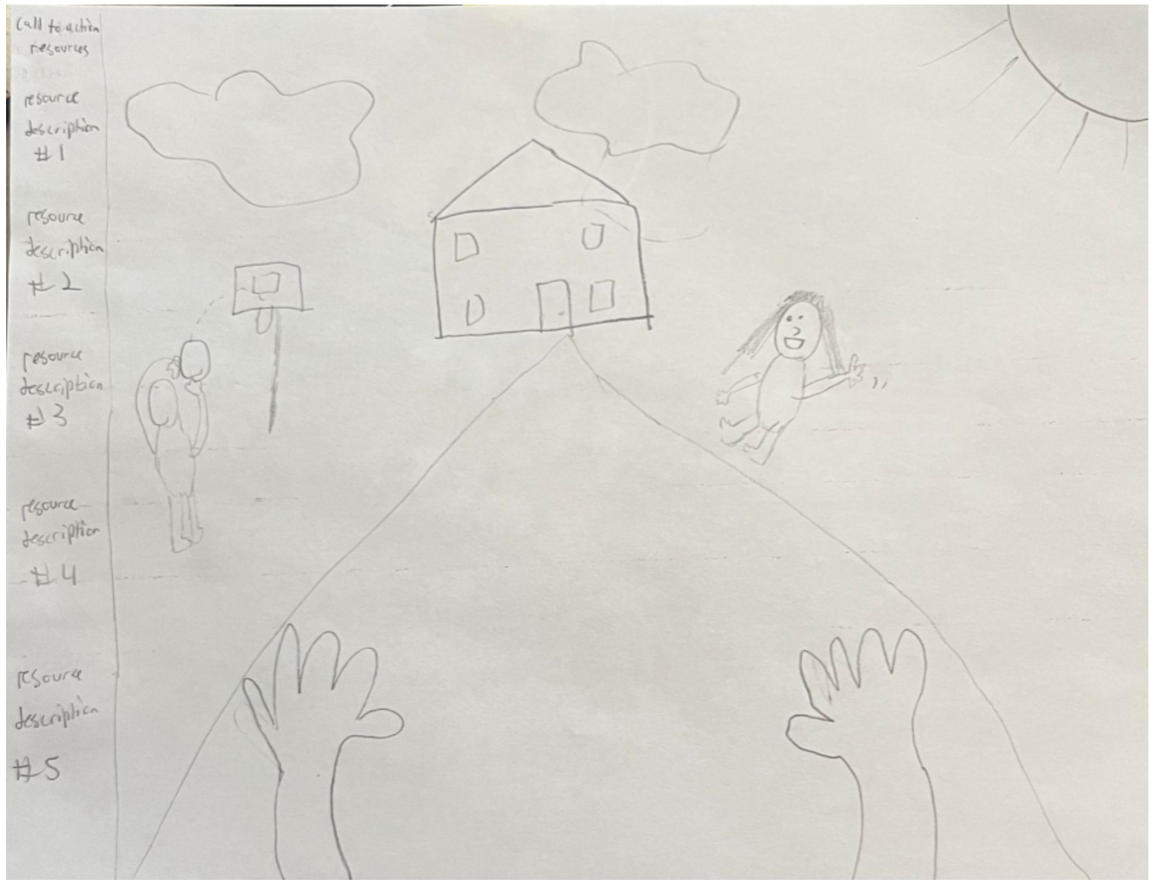
Choice Reaction vs Given Reaction :



Ideation

Design Sketches





Risk Assessment

Risk	Probability	Impact	Contingency Plan
Team members not completing tasks	Low	High	Members should inform the other members as soon as possible so they can finish the remaining tasks in time.
Data lost	Low	Very High	We should backup our codes and files on Google Drives and Github in case of accidental data lost.
Members not focusing on task	Moderate	Moderate	We should keep everyone on track and set up due dates for small tasks.
Conflict	Low	Moderate	We should keep our opinions objective and productive, as well as integrating the others' ideas when resolving conflicts.
Lack of technical capabilities	High	High	Ask the TA for assistance as well as searching for online tutorials for the specific topics.

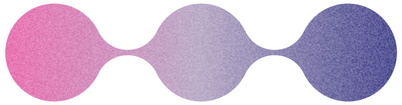
Bill of Materials

Asset	Cost
Parliament Environment	$47.29
Destroyed City	Free
Comrade Character	27.02
Autonomous Robot	20.27

Prototyping

Process Prototyping

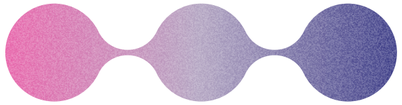
Prototype 1



```
sing UnityEngine;
sing UnityEngine.UI;
sing System.Collections;

ublic class YesNoGame : MonoBehaviour

    public Text questionText;
    public Text scoreText;
    public int totalQuestions = 3;
    private int currentQuestion = 0;
    private int score = 0;

    void Start()
    {
        // Set the initial question
        SetQuestion("Do you like virtual reality?");
    }

void SetQuestion(string question)
{
    // Display the question text
```

```
// Move to the next question
currentQuestion++;
if (currentQuestion < totalQuestions)
{
    // Ask the next question
    if (Random.Range(0f, 1f) > 0.5f)
    {
        SetQuestion("Do you think virtual reality will change the world?");
    }
    else
    {
        SetQuestion("Is virtual reality just a passing fad?");
    }
}
else
{
            // Game over, display the final score
            questionText.text = "Game Over!";
            scoreText.text = "Final Score: " + score;
        }
    }
```

Prototype 1

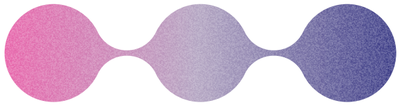


Test ID	Test Objective(why)	Description of Prototype(what)	Results to be Recorded and Use(how)	Test Duration and Date(when)
1	Determine emotional reactions to different events	Survey giving audience different scenarios and ranking them by most to least emotionally reactive	Ranking system and calculating average rank to determine the best situations to use in the project	03/04/20231 day
2	Allow for the user to only progress after choosing to keep the human involved	Create a break effect in code when the user picks to remove the human	If the code breaks and resets the event upon a “bad” user decision and progresses upon a “good” choice then the code works	03/05/20233 days
3	Create the desired visual experience for the user	Desired Unity pack setup and world creation	When all desired packs are installed and controllable and set up, test is complete	03/08/20231 day
4	Allow for a high quality picture for the experience	Embed Unity design packs into code	If a basic created code affects the desired components in a unity display then test is a success	03/09/20234 days
5	Allow for direct user involvement	Create the ability to allow for the user to manually make decisions in the experience between clicking or walking a certain way	If the user can manually make decisions in the VR experience, the test is complete	03/14/20234 days

Prototype 2

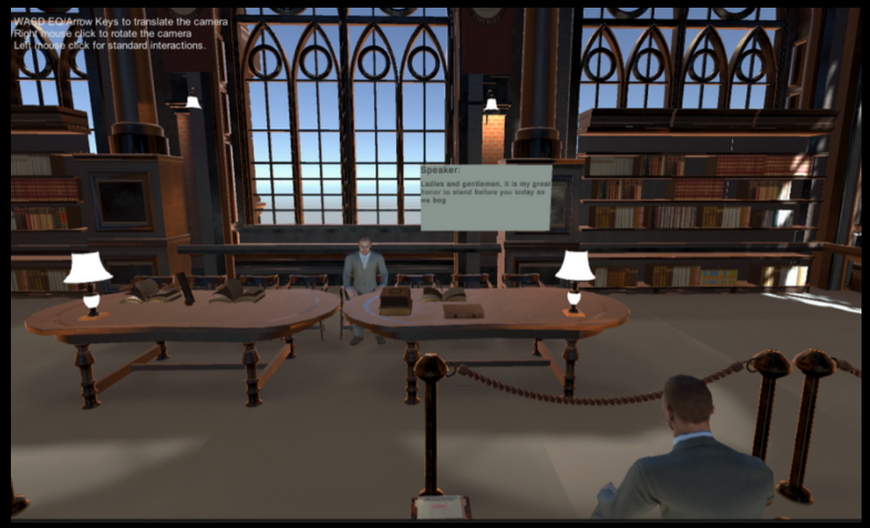

```
using UnityEngine;
using UnityEngine.UI;
using System.Collections;

public class HumanInvolvementGame : MonoBehaviour
{
    public GameObject openingScene;
    public GameObject firstQuestionScene;
    public GameObject secondQuestionScene;
    public GameObject thirdQuestionScene;
    public Text questionText;
    public int totalQuestions = 3;
    private int currentQuestion = 0;
    private bool lastAnswer = true; // true = keep the human involved, false = take the human out
    private float decisionTimer = 15f; // time limit for each decision
    private bool isTimerRunning = false;

    void Start()
    {
        // Show the opening scene and hide the question scenes
        openingScene.SetActive(true);
        firstQuestionScene.SetActive(false);
        secondQuestionScene.SetActive(false);
        thirdQuestionScene.SetActive(false);
    }

    void SetQuestion(string question)
    {
        // Display the question text
        questionText.text = question;

        // Start the decision timer
        decisionTimer = 15f;
        isTimerRunning = true;
    }

    void Update()
    {
        // Check if the decision timer is running
        if (isTimerRunning)
        {
            // Decrement the timer

    // UI Button event handlers
```

Prototype 2



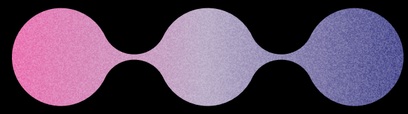
Test ID	Test Objective (why)	Description of Prototype (what)	Results to be recorded and use (how)	Test duration and date (when)
1	Allow to user to follow through the scripts we have created	Code that will change to a different scene after the user answers a prompt	The code should cut to a negative scene if the user makes a “bad” choice when prompted, and a neutral/positive scene if the user makes a “good” choice	3/14/2023(1 day)
2	Create an emotionally engaging script/storyline.	A story that will resonate with the audience and inspire change.	A survey will be conducted where our script will be read by people of all kinds of backgrounds to gauge how emotionally relatable it is.	3/15/2023(2 days)
3	Make sure nothing is targeting a specific religion or country and be completely fictional	Settings that are relatable to the users while not targeting anyone (be completely fictional) so that we are not making enemies out of this product.	Proofread the script and examine all the assets and settings for anything that may be in any way related to any real world religions and/or countries.	3/17/2023(1 day)
4	An easy to use UI layout for the users	Everything needs to be completely labelled and focus on the ease of use of the product. Instructions need to be clear for the users to follow.	Ask TA/team members to try out the experience from the start and see what we can improve on.	3/18/2023(1 day)
5	Able to run on a VR headset	Make sure that the code and the experience is compatible with VR headsets.	Test it on campus.	3/24/2023(1 day)During the lab time

Prototype 3


WASD,EQ/Arrow Keys to translate the camera
Right mouse click to rotate the camera
Left mouse click for standard interactions.
Speaker:

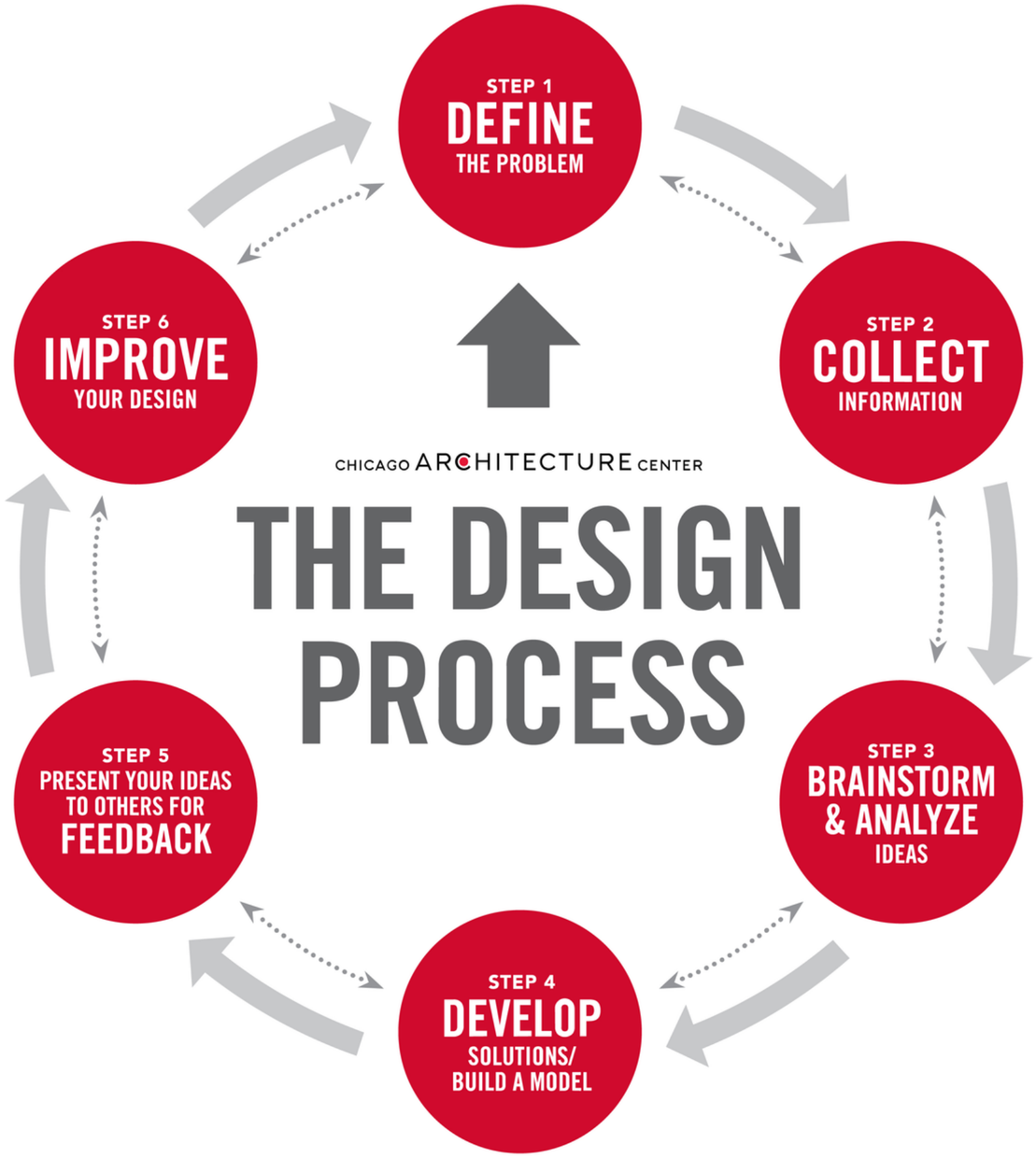

2D Debug

Prototype 3



Test ID	Test Objective (why)	Description of Prototype (what)	Results to be recorded and use (how)	Test duration and date (when)
1	Apply the exact decided on script to unity	Use the successful storylines created and tested with peers and apply them in unity to function with the VR headset	The story should be visible and easy to follow in the VR headset	3/22/2023(2 days)
2	User tests	User tests from random people to ensure simplicity of use for all users	A survey will be conducted where users use our VR settings and rank the ease of use	3/24/2023(1 days)
3	Apply assets all together to transition from story to story	Create a flowing sequential series of stories that transition from one to another naturally	The team will run through our experience, if there are no transition issues then this is deemed successful	3/25/2023(1 day)
4	Functional title and final page	Create functional and visually appealing title and final pages	When these pages are tested and function properly then this is successful	3/26/2023(1 day)

Design


STEP 1
DEFINE
THE PROBLEM
STEP 2
COLLECT
INFORMATION
STEP 3
BRAINSTORM
& ANALYZE
IDEAS
STEP 4
DEVELOP
SOLUTIONS/
BUILD A MODEL
STEP 5
PRESENT YOUR IDEAS
TO OTHERS FOR
FEEDBACK
STEP 6
IMPROVE
YOUR DESIGN
CHICAGO ARCHITECTURE CENTER
THE DESIGN
PROCESS

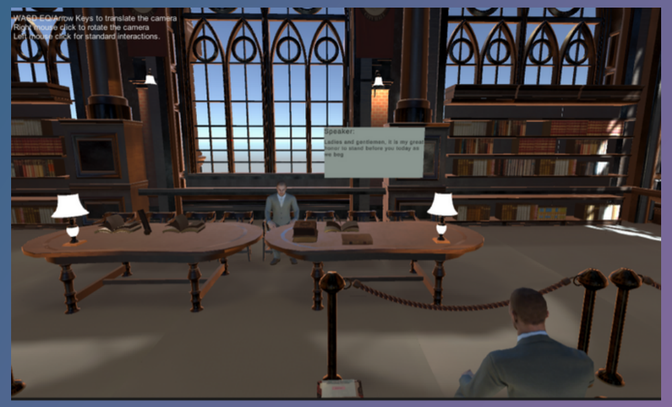
How Mines Action Canada Will Inovate Advocation

INNOVATIVE AND IMPORTANT	IMPORTANT AND COMFORTABLE
Not creating a yes or no experience Experienced based on user choice Immersive emotional experience	Emotionally engaging Easily comprehended Clear objective Loud, accessible, joinable fight

MINES ACTION CANADA

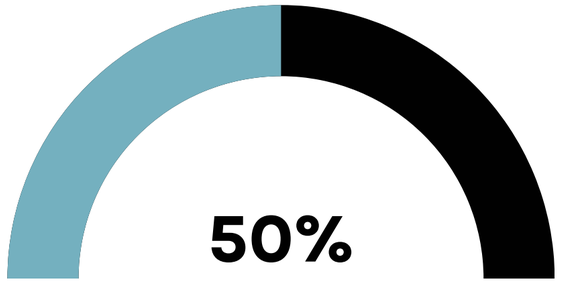
Your Experience

What will you be seeing?



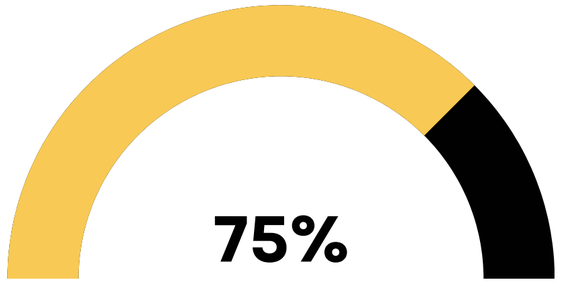
Start Of Experience

- Start Page
- Voting Scene



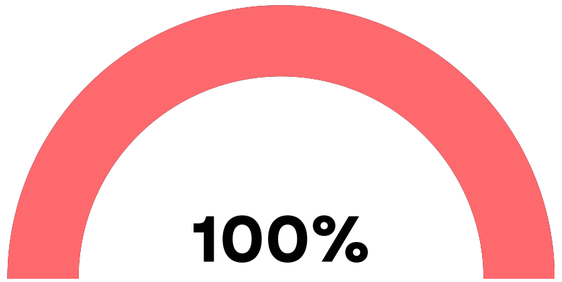
First Weapon Encounter

- Brought to Military Scenario
- User Choice
- Run Through



Optional Experience

- User Choice Triggers Second Experience
- Run Through



End Of Experience

- Brought Back to Vote
- Experience Vote