Objective:

Develop your first prototype and devise a test plan for your second. Get customer feedback to improve your prototype.

Instructions:

- ☑ ~~Clearly outline the feedback received from your client on the group concept or detailed design. Specify how the feedback will be used to inform future design choices and improve the solution.~~
- ☑ ~~Develop a prototype which will be used to achieve the objectives your team has set out in the plan created in the last deliverable (i.e. you need to answer the "why", "what" and "when" of prototyping).~~
    1. Remember: a prototype is not normal work on your project, it is something that has a smaller, targeted objective with specific tests and measurable results.
- ☑ ~~A simple analysis of critical components or systems should also be included, based on your current knowledge of engineering science or other knowledge.~~
- ☑ ~~Carefully document your prototyping test plan, analysis and your results (including detailed images of your prototype).~~
- ☐ You must gather feedback and comments on your ideas and prototype from potential clients/users that you have sought out and identified on your own.
- ☐ If applicable, update your target specifications, detailed design and BOM after tests are completed and analyzed.
- ☐ Finally, teams will outline a prototyping test plan based on the template provided in "Lecture 11 – Prototyping Test Plan" to prepare to build the second prototype in the next deliverable.
    1. Typical objectives include: communicating and getting feedback for ideas, verifying feasibility, analyzing critical subsystems or system integration or reducing risk and uncertainty.
    2. You must also define a stopping criteria which will allow you to end the test once you are satisfied that you have achieved your testing objectives.
    3. Be very clear about what you are trying to measure and define an acceptable fidelity based on the objectives of your prototype. See https://en.wiki.makerepo.com/wiki/Professional_development/Design_thinking/Design_for_manufacturing.

Since this will be your team's first prototype, you should focus on creating a basic proof of concept which should be made using materials and components that cost very little (e.g. things found around the house, scraps, etc.). Get creative in order to improve your results.

It is strongly recommended that you start early, as prototyping takes a significant amount of time.

Client Feedback

Attribute	**Feedback**	**Future design adjustment**
60-second long video	Everyone these days is used to much shorter videos (TikTok's, shorts, reels). As a society, we have a much shorter attention span in this day and age.	Video will now be on the shorter end at around 30 seconds
Multiple environments (interior with multiple rooms, exterior)	There are only 4 weeks left to build the project and that amount of atmospheres may be too ambitious.	Cut it down to one room, isolated from the outside (no need for an exterior environment)
Video would end with a delivery drone dropping off package before screen fades to black	Why is the drone delivering the package? Where did it come from? Too convoluted, with many details that are not needed/understood	There will no longer be a drone seen.
The storyline is to take the user through an apartment, videos are playing on TV, and the user is getting cans of food from the kitchen. Details such as lack of food, room in disarray and an exterior	The plot is too convoluted (why is there rubble? Why is there a dual delivery/killer robot? What message do you want to get across with the robot or the walkie-talkie)	Specifically build storyline about facial recognition error in autonomous weapons and the consequences it has on an environment
Audio heard in the environment will be in English	Not everybody's first language is English	English audio will be used as an additional immersive tool. Visual imagery in the form of posters, boarded windows, locked doors, grimy walls, etc. will be adequate in sending the message
Include posters of autonomous weapons stats	Posters need to be very specific to one concise error with the autonomous weapons	Focus on making 2-3 main posters that summarize our main message commandingly
Final message "you are not the target so ban autonomous weapons now"	Well received and liked	Need to simplify storyboard so that the message is still impactful

Critical Component	**Analysis**
Unity Environment	Neat, organized, easy to navigate for user Communicates message effectively
Movement Code	Should be sure that there are no bugs that will cause the system to crash or lag

Prototyping test plan

Test #	**Test Objective (Why)**	**Prototype Test Method (What)**	**Prototype Description (How)**	**Test Date (When)**	**Stopping criteria**	**Progress**
1	Is this product within the specified time limit	Physical, high fidelity prototyping	The length of time it takes to go through our environment will be recorded with a stopwatch	Prototyping test will take 2 hours On November 4th	Video is within 30-45 seconds	
2	Does the product's movement system function	Physical, low fidelity prototyping	Camera movements and character movement within a generic environment	Prototyping test will take 30 minutes, November 4th	User is able to look up, down, left, right and move forward, back, side to side Movement is not laggy	Works well (please see below for movement in a box prototype)
4	User interactivity with environment	Physical low fidelity prototyping	User can see environment clearly Assets are legible and not blurry	Prototyping test will take an hour and be done on November 5th	All writing (on posters) is legible Furniture and assets are recognizable	Works well (posters yet to be added)

					Image quality is not blurry	
5	User accessibility ● subtitles, audio	physical, high-fidelity	user can clearly hear game and see audio	To be done week of Nov 5-11	Audio is at least clear to viewer, subtitles optional.	

Feedback on prototype from users

- Can you change which keys are used to move and look around
- Will the user go through walls
- Can the speed be controlled

Prototypes

Movement in a Box Prototype

https://drive.google.com/file/d/1UjM8_uIln27GrLPuucJeW6kott3Klxc0/view?usp=sharing

Poster prototypes

Poster 1
Poster 2
Poster 3
Poster 4 (optional)
Poster 5 (optional)

Room Layout Prototype

https://drive.google.com/file/d/1m3QdgWOLgEOWU-D0RKgpU_U2jmyL9DJS/view?usp=sharing

Updated BOM

PRODUCT NAME	"you are not the target", VR environment PSA	
APPROVED BY		
DATE OF APPROVAL		
PART COUNT	16	
TOTAL COST	~37$	

PART NUMBER	PART NAME	DESCRIPTION	QTY	UNITS		UNIT COST	TOTAL AMOUNT
1	unity software	https://unity.com/success-plans/integrated-success?utm_source=google&utm_medium=cpc&utm_campaign=cc_abm_iss_amer_amer-t1_en_aw_sem-gg_aca_br-pr_2023-05_cc-abm-amer-t1-br_cc3022_ev-br_id:717000001126996 86&utm_content=cc_abm_iss_amer_pu_sem_gg_ev-br_pros_x_npd_cpc_kw_sd_all_x_x_courses_id:587000084863376 62&utm_term=unity%20tutorial%20course&&&&&gad=1&gclid=CjwKCAjwv-2pBhB-EiwAtsQZFPmY5PCIGBarWeAnmJJLqrQl6JwCFGMSb6idsw5rJdAnW1vVTG_vkxoCMUMQAvD_BwE&gclsrc=aw.ds	1			0$ (provided by university of Ottawa)	0$
2	VR headset	(provided by university)	1			0$ (provided)	0$
3	City package	https://youtu.be/cwFmq69m3WA?si=RcCS77Q0C7s7KHW4	1			0	0
4	SFX pack	https://assetstore.unity.com/packages/audio/sound-fx/free-sound-effects-pack-155776	1			0	0
5	nature ambience audio	https://assetstore.unity.com/packages/audio/ambient/nature/nature-essentials-208227	1			0	0
6	dark drone background audio	https://assetstore.unity.com/packages/audio/ambient/free-dark-drones-mystery-sci-fi-ambients-music-pack-233667	1			0	0
7	volumetric lighting	https://github.com/SlightlyMad/VolumetricLights/	1			0	0
8	decals pack	https://assetstore.unity.com/packages/tools/particles-effects/simple-decal-system-13889	1			0	0
		https://assetstore.unity.com/packages/3d/props/house-furniture-pack-88646					
10	Poster Boards	https://www.dollarama.com/en-ca/p-white-bristol-board-sheet/2642616	2			0.63$	1.26$

11	Move Camera code	(given in lab)	1			0$	0$
12	Movement Code	Be able to move right,left,forward,back	1			0$	0$
13	Retro Radio	https://assetstore.unity.com/packages/3d/props/hq-pbr-old-retro-radio-free-180303	1			0$	0$
14	UI creation/radio programming	https://youtu.be/EHKrMWGEZPU?si=kyzux_2GOuPoN1eY	1			0$	0$
		https://assetstore.unity.com/packages/audio/sound-fx/voices/robot-voice-pack-11753#content					
		https://assetstore.unity.com/packages/audio/sound-fx/robot-sounds-sfx-203241					
		TOTAL PARTS	16	**16**		**TOTAL**	1.26$