Project Plan and Cost Estimate

GNG 1103- Engineering Design

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Group 8

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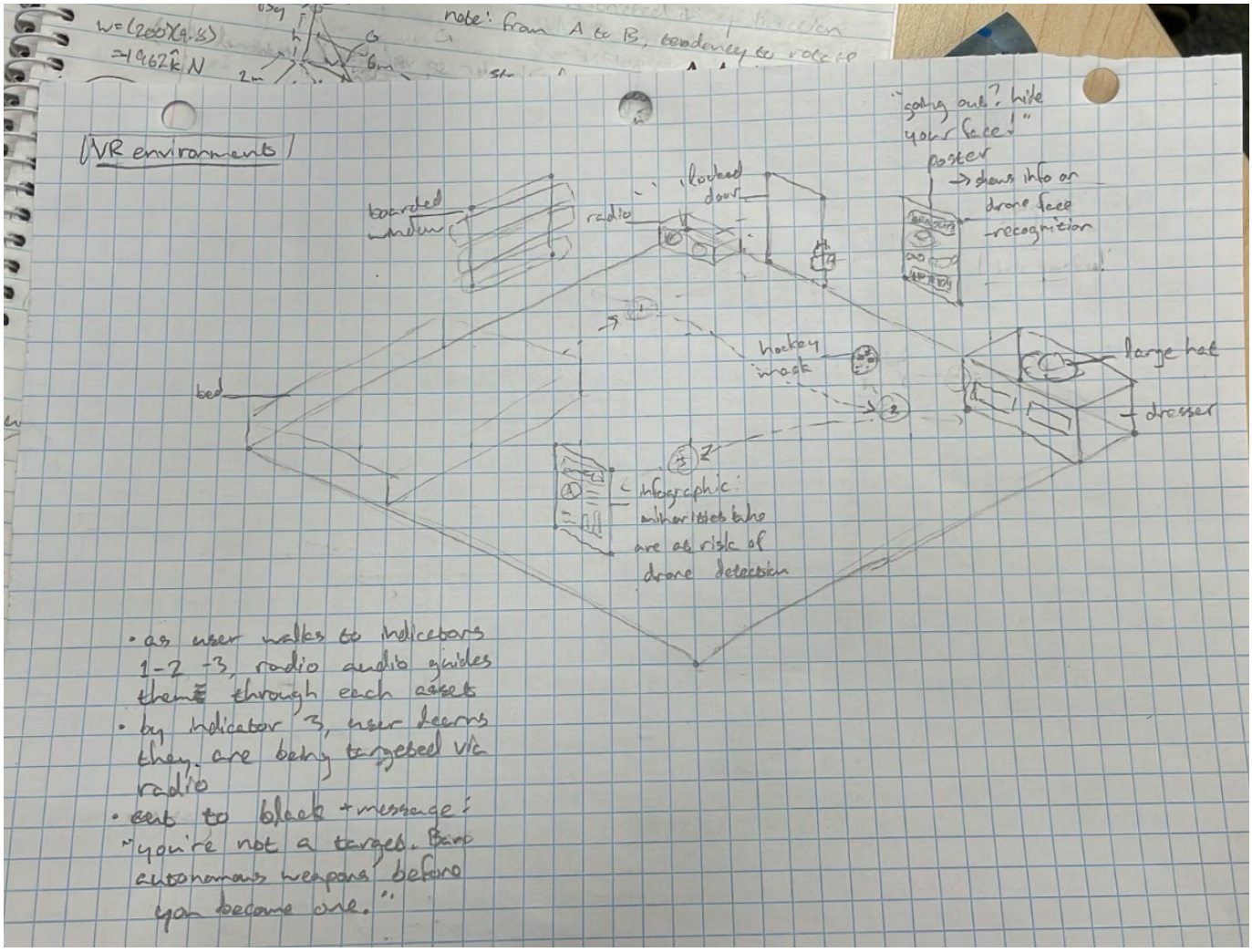
Detailed Design Drawing



In this reality there has been a malfunction with facial recognition systems of the autonomous weapons and all the differences seen in this environment are a result of that.
The User will be in the environment seen above (one room apartment). User will awaken from bed and begin to look around and take in the surroundings. As the user moves around the room an emphasis will be placed on various posters on the wall, some propagandic and others painting the autonomous weapons in a negative light. Further, there will be news reports playing on a TV in the living room. The subject matter of the news reports will align with what the user will be seeing on the walls (specific traits/actions of the autonomous weapons). The user will go about a normal day at home, going to the bathroom, going to the kitchen for food etc. while subtle differences in all these habits in comparison to life without autonomous weapons will be highlighted. The radio will alert the user that their life is threatened by the autonomous weapons and they're seen as a threat due to an issue with the autonomous weapons facial recognition error. The screen will then fade to black with the final message "You're not a target. Ban autonomous weapons before you become one."

BILL OF MATERIALS

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	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_acq_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:5870000848633766 2&utm_term=unity%20tutorial%20course&&&&&gad=1&gclid=CjwKCAjwv-2pBhB-EiwAtsQZFPmY5PCIGBarWeAnmJJLqrQl6JwCFGMSb6idsw5rJdAnW1vVTG_vkxoCMUMQAvD_BwE&gclsrc=aw.ds	1	1		0$ (provided by university of Ottawa)	0$
2	VR headset	(provided by university)	1	1		0$ (provided)	0$
3	City package	https://youtu.be/cwFmq69m3WA?si=RcCS77Q0C7s7KHW4	1	1		0	0
4	SFX pack	https://assetstore.unity.com/packages/audio/sound-fx/free-sound-effects-pack-155776	1	1		0	0
5	nature ambience audio	https://assetstore.unity.com/packages/audio/ambient/nature/nature-essentials-208227	1	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	1		0	0
7	volumetric lighting	https://github.com/SlightlyMad/VolumetricLights/	1	1		0	0
8	decals pack	https://assetstore.unity.com/packages/tools/particles-effects/simple-decal-system-13889	1	1		0	0
9	home furniture pack	https://assetstore.unity.com/packages/3d/props/house-furniture-pack-88646	1	1		20$	20$
10	Poster Boards	https://www.dollarama.com/en-ca/p-white-bristol-board-sheet/2642616	1	2		0.63$	1.26$
11	Move Camera code	(given in lab)	1	1		0$	0$
12	Movement Code	Be able to move right,left,forward,back	1	1		0$	0$
13	Retro Radio	https://assetstore.unity.com/packages/3d/props/hq-pbr-old-retro-radio-free-180303	1	1		0$	0$
14	UI creation/radio programming	https://youtu.be/EHKrMWGEZPU?si=kyzux_2GOuPoN1eY	1	1		0$	0$
15	Robot Voices	https://assetstore.unity.com/packages/audio/sound-fx/voices/robot-voice-pack-11753#content	1	1		4.99$	4.99$
16	Robot Sounds SFX	https://assetstore.unity.com/packages/audio/sound-fx/robot-sounds-sfx-203241	1	1		9.99$	9.99$
		TOTAL PARTS		**16**		**TOTAL**	~37$

List of equipment

Software

- Blender 3.6 (3D modeling/rendering)

    - completely free, easy to use, lots of tutorial videos
- Unity 3D Template Editor 2022.3.11f1
    - tutorial playlist for VR here: https://www.youtube.com/watch?v=HhtTtvBF5bI&list=PLpEoiloH-4eP-OKItF8XNJ8y8e1asOJud&index=3&t=1s
- Code-related:
    - camera movement code and player movement code
        - https://gist.github.com/gunderson/d7f096bd07874f31671306318019d996 (WASD movement and control camera with mouse–modify for VR)
    - Audio
        - Unity Scripting API–AudioSource class

Hardware

- PC
    - In which all software is compatible and installed
    - Enough storage for all assets and softwares
- Keyboard
- Mouse
- VR headset
    - Provided by university of Ottawa
- Stopwatch
    - Timing purposes in prototype testing stage

List of project risks

1. Not being able to meet deadlines because of busy schedules
    a. **Risk:** Each of us has a heavy course load that requires our time and attention just as much as this class does. The biggest project risk is that we will become overwhelmed with the amount of work we have to do this semester and then we will miss our deadlines for our deliverables and prototypes.
    b. **Solution:** We will devise a plan to split up the workload among everyone in the group so that there are tasks we can complete independently when we have the free time. We also plan on keeping an open line of communication throughout the next few weeks up until design day so that each group member is aware of the progress we are making on the project. This way we will know well in advance if we are completing enough work to get our prototypes and deliverables in on time. If it comes to the case where we have not been doing enough work then we will schedule a meeting and redistribute tasks and even work on them together to ensure that we will meet our deadlines.
2. Going over budget

   a. **Risk:** We only have a budget of $50 for this project, we have our best intentions to make our final project have good graphics and a good storyline which can be expensive in terms of software and assets being used.
   b. **Solution:** We are researching and comparing prices of different softwares and assets we might like to use in our project to use the most affordable option. We also have a bill of materials showing which assets and software we would like to use for our project, how much they cost, and what our total expenditures are for this project. This bill of materials will be our guideline for exactly what we can use on our project to stay on budget.
3. Not knowing certain skills necessary for developing our final prototype
   a. **Risk:** A lot of us have never used applications like Unity or the other software options for this final project so the development of our final prototype will come with difficulties and learning curves. We might not know how to use certain features that we want to incorporate into our final design which will use up our limited time trying to figure out how to use those features.
   b. **Solution:** We have received our first round of feedback from our client and they highlighted that the key to completing this project for our deadline is to keep our storyline simple. From that feedback we have refined our vision and storyline for the project to make it as simple as possible (not only in terms of storyline but simple to develop). This way we do not have to go down a rabbit role researching how to do difficult codes for what we want to produce. We also have resources of people around us who know how to use the software like Unity better than we do, so if we run into a wall there are resources to help us quickly learn and solve any roadblocks we come into.

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 and duration and planned start date (When)
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
2	Does the product's movement system function	Physical, low fidelity prototyping	Camera movements and character movement within	Prototyping test will take 30 minutes, November 4th

			a generic environment	
3	Does the product's environment interact with the user	Physical, medium fidelity prototyping	Character collisions against assets in the scene	Prototyping test will take 3_ hours, November 4th_
4				

Ideas:

- **Megan:** I think we need to find people who can test the simulation in terms of graphics (more like technical testing to see if the simulation is too glitchy or if they understand what they have to do next) as well as people who can test the simulation for emotionality and how well our audience will respond to it.
    - Do we know anyone who could fall into either of those categories?