Project Deliverable E

Project Plan and Cost Estimate

Team 1

February 25, 2024

Abstract

The document outlines a detailed sketch of our global concept and a schedule for the coming weeks. It dawns on the prototyping stage that ensues and also comprises of a testing agenda on how to carry out tests for our first prototype and improve as time goes by.

Table of contents

1 Introduction

This document will showcase the first diagram of our selected idea using a 2D-sketch and a simple 3D-model. These sketches will be followed by a bill of materials for the project and a color-coded project plan and potential contingency plans. Finally, there is a prototype test plan for the first prototype including justification for the basic testing method.

2 Detailed sketch

Figure (1): This sketch provides a brief concept for our final VR project. It portrays a scene inside a room with four walls and a window shielded by blinds for protection. Within this depiction, a dog is included to symbolize how animals can perceive stress and danger, particularly in the presence of autonomous weapons. Sandbags line the walls as a defensive measure against potential attacks. Additionally, careful posters are strategically placed to warn residents of the room about the real level of danger and to offer guidance on techniques for maintaining silence and minimizing noise. Furthermore, a television screen displays a typical household setting, featuring news broadcasts delivering updates on the dangers posed by autonomous weapons.

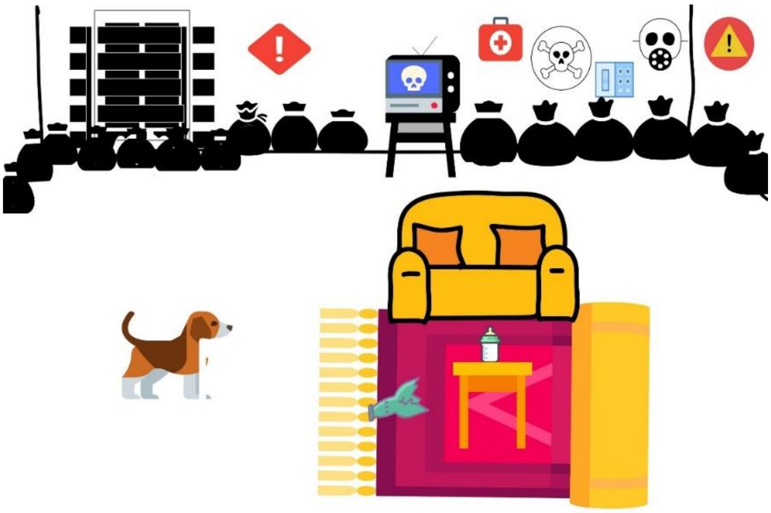
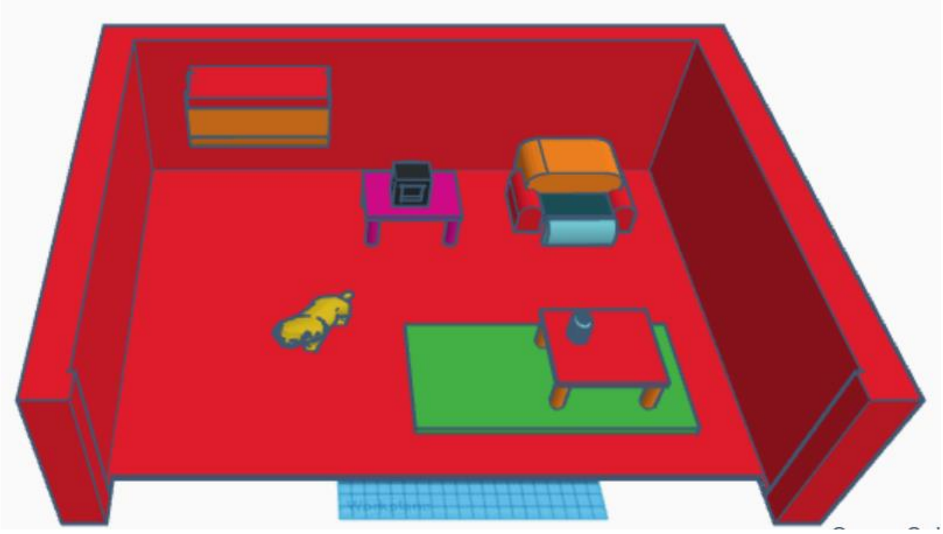


Figure (2): depicts a 3D model of our final VR project. It showcases a simple room with four walls, featuring a window covered by blinds. Additionally, it includes a television displaying news introducing the topic of autonomous weapons (AW).



3 Bill of Materials

The bill of materials serves the purpose of listing every asset and software that will be needed for the creating of the prototypes and the final product. It consists of three sections: textures, assets, and software. Below a copy of the spreadsheet can be found. Assets marked with an asterisk (*) are only used for prototypes and will not be used in the final product. For example, we will use a pixelated dog until we buy the proper asset. The spreadsheet can also be found together with this document in the submission.

Item	Links	Price
Digital unity textures		
18 high resolution wall textures	https://assetstore.unity.com/packages/2d/textures-materials/brick/18-high-resolution-wall-textures-12567	$ -
Wooden Floor Materials	https://assetstore.unity.com/packages/2d/textures-materials/wood/wooden-floor-materials-150564	$ -
Digital unity assets		
5 animated voxel animals*	https://assetstore.unity.com/packages/3d/characters/animals/5-animated-voxel-animals-145754	$ -
Apartment Kit	https://assetstore.unity.com/packages/3d/environments/apartment-kit-124055	$ -
Ceiling Fan	https://assetstore.unity.com/packages/3d/props/tim-s-assets-old-ceiling-fan-103789	$ -
Free Rug Pack	https://assetstore.unity.com/packages/3d/props/interior/free-rug-pack-118178	$ -
Husky dog	https://assetstore.unity.com/packages/3d/characters/animals/husky-dog-160906	$ 9.99
Mini Pack: Sockets	https://assetstore.unity.com/packages/3d/props/interior/mini-pack-sockets-78039	$ 6.99
Realistic Sandbags	https://assetstore.unity.com/packages/3d/props/exterior/realistic-sandbags-95964	$ -
Steel Window	https://assetstore.unity.com/packages/3d/props/industrial/steel-window-650	$ -
TV set	https://assetstore.unity.com/packages/3d/props/electronics/tv-set-26193	$ -
Applications		
Audacity		$ -
Canva		$ -
GitHub		$ -
Musescore		$ -
Unity		$ -
Visual Studio		$ -
Total		**$ 9.99**
Maximum		$ 50.00
Budget available		$ 40.01

4 Full project plan

Our full project plan serves as a time and project management tool, used to enhance our productivity, highlight the potential tasks and assign them to a team member. Altogether it is used to ensure that the project is on the right track, achievable and possible to engineer before the deadline.

Not Started	On Hold	In Progress	Complete

4.1 Deliverable F

Deliverable F	Prototype I and Customer Feedback

Start Date	26/02/24	End Date	03/03/24	Duration in days	7	Progress	0%

Task ID	Task Description	Assigned to:	Start Date:	End Date:	Duration in days	Status
1)	Project Task Plan	Djuna	2024-02-26	2024-03-05	7	Not Started
2)	Prototyping Test Plan	Miray	2024-02-26	2024-03-01	5	Not Started
3)	Materials Purchase	Ashley	2024-03-02	2024-03-06	5	Not Started
4)	Develop Prototype III	-Tobi -Andi	2024-02-28	2024-03-02	4	Not Started
5)	Test Prototype III	-Girisha -Andi	2024-03-07	2024-03-09	3	Not Started
6)	Gathering customer feedback	-Everyone	2024-03-07	2024-03-08	2	Not Started
7)	Customer Feedback documentation	Miray	2024-02-26	2024-02-29	4	Not Started
8)	After Tests Potential Changes executer	-Toby -Ashley -Girisha	2024-02-26	2024-02-29	4	Not Started
9)	Deliverable writer/editor	-Miray	2024-03-01	2024-03-03	3	Not Started
10)	Prototype IV Test Plan	-Toby	2024-03-04	2024-03-06	3	Not Started
11)	Develop Prototype IV	-Ashley -Andreas -Djuma	2024-03-07	2024-03-08	2	Not Started
12)	Trello Update	-Andy	2024-03-01	2024-03-02	2	Not Started
13)	Submission of deliverable H	-Girisha	2024-03-07	2024-03-08	1	Not Started

4.1.1 Contingency Plan F

No:	Risks	Likelihood of risk occurring	Severity of poor outcome	Risk Manager	Mitigating Action
1)	Unfinished Prototype I	Low	High	Moise	Analyse situation since start of project and modify task plan as necessary by putting on hold other tasks and reassess duration.
2)	Budget Depletion	Low	Medium	Tobi	Concentrating on recycling assets used for previous prototypes and making new purchases only after careful consideration and approval from team and PM.
3)	Prototype finished but no time for testing	Medium	High	Girisha	Testing prototype and documenting feedback regularly, simultaneously as prototype is being developed
4)	Dysfunctional Prototype on deadline	Low	High	Ashley	To assess situation from the start and seek help from PM at any sign of dysfunctionality.
5)	Limited time to gather feedback	Medium	High	Moise	Decrease the number of people who will be giving feedback, a list of the people whose feedback is judged to be more relevant should be made in beforehand.
6)	Limited time to make changes after feedback	Medium	Medium	Andreas	Seek assistance from PM to shift focus on making changes on the most significant feedback only.
7)	No Prototype IV	High	Low	Tobi	Studying the development of Prototype III since the start and listing the pros and cons, feedback from users and difficulties that arose, and preparing a prototype test plan, to be used in case time permits for the creation of a fourth prototype.

4.2 Deliverable G

Deliverable G	Prototype II and Customer Feedback

Start Date	04/03/24	End Date	10/03/24	Duration in days	7	Progress	0%

Task ID	Task Description	Assigned to:	Start Date:	End Date:	Duration in days	Status
1)	Project Task Plan	Djuna	2024-03-04	2024-03-10	7	Not Started
2)	Prototyping Test Plan	Andy	2024-03-04	2024-03-08	5	Not Started
3)	Materials Purchase	Tobi	2024-03-07	2024-03-11	5	Not Started

4)	Develop Prototype III	- Girisha -Andy	2024-03-05	2024-03-07	3	Not Started
5)	Test Prototype III	-Ashley -Miray	2024-03-11	2024-03-13	3	Not Started
6)	Gathering customer feedback	-Everyone	2024-03-11	2024-03-12	2	Not Started
7)	Customer Feedback documentation	Andy	2024-03-04	2024-03-07	4	Not Started
8)	After Tests Potential Changes executer	-Toby -Miray -Andy	2024-03-04	2024-03-07	4	Not Started
9)	Deliverable writer/editor	-Ashley	2024-03-08	2024-03-10	3	Not Started
10)	Prototype IV Test Plan	-Djuma	2024-03-10	2024-03-12	2	Not Started
11)	Develop Prototype IV	-Girisha -Mirai -Tobi	2024-03-11	2024-03-12	2	Not Started
12)	Trello Update	-Andy	2024-03-08	2024-03-09	2	Not Started
13)	Submission of deliverable H	-Girisha	2024-03-11	2024-03-12	1	Not Started

4.2.1 Contingency Plan G

No:	Risks	Likelihood of risk occurring	Severity of poor outcome	Risk Manager	Mitigating Action
1)	Unfinished Prototype II	Low	High	Miray	Analyse situation since start of project and modify task plan as necessary by putting on hold other tasks and reassess duration.
2)	Budget Depletion	Low	Medium	Girisha	Concentrating on recycling assets used for previous prototypes and making new purchases only after careful consideration and approval from team and PM.
3)	Prototype finished but no time for testing	Medium	High	Ashley	Testing prototype and documenting feedback regularly, simultaneously as prototype is being developed
4)	Dysfunctional Prototype on deadline	Low	High	Moise	To assess situation from the start and seek help from PM at any sign of dysfunctionality.
5)	Limited time to gather feedback	Medium	High	Andreas	Decrease the number of people who will be giving feedback, a list of the people whose feedback is judged to be more relevant should be made in beforehand.
6)	Limited time to make changes after feedback	Medium	Medium	Tobi	Seek assistance from PM to shift focus on making changes on the most significant feedback only.

7)	No Prototype IV	High	Low	Ashely	Studying the development of Prototype III since the start and listing the pros and cons, feedback from users and difficulties that arose, and preparing a prototype test plan, to be used in case time permits for the creation of a fourth prototype.

4.3 Project Deliverable H

Deliverable H	Prototype III and Customer Feedback

Start Date	11/03/24	End Date	24/03/24	Duration in days	14	Progress	0%

Task ID	Task Description	Assigned to:	Start Date:	End Date:	Duration in days	Status
1)	Project Task Plan	Girisha	11/03/24	12/03/24	2	Not Started
2)	Prototyping Test Plan	Andreas	11/03/24	12/03/24	2	Not Started
3)	Materials Purchase	Ashley	12/03/24	12/03/24	1	Not Started
4)	Develop Prototype III	-Ashley -Andreas	12/03/24	14/03/24	3	Not Started
5)	Test Prototype III	-Ashley -Andreas	15/03/24	24/03/24	10	Not Started
6)	Gathering customer feedback	-Everyone	16/03/24	17/03/24	2	Not Started
7)	Customer Feedback documentation	Tobi	17/03/24	17/03/24	1	Not Started
8)	After Tests Potential Changes executer	-Moise -Miray -Girisha	22/03/24	23/03/24	2	Not Started
9)	Deliverable writer/editor	-Tobi -Moise	20/03/24	24/03/24	5	Not Started
10)	Prototype IV Test Plan	-Andreas	18/03/24	19/03/24	2	Not Started
11)	Develop Prototype IV	-Ashley -Andreas -Miray	20/03/24	23/03/24	4	Not Started
12)	Trello Update	-Girisha	11/03/24	11/03/24	1	Not Started
13)	Submission of deliverable H	-Girisha	24/03/24		0	Not Started

4.3.1 Contingency Plan H

No:	Risks	Likelihood of risk occurring	Severity of poor outcome	Risk Manager	Mitigating Action
1)	Unfinished Prototype III	Low	High	Girisha	Analyse situation since start of project and modify task plan as necessary by putting on hold other tasks and reassess duration.
2)	Budget Depletion	Low	Medium	Ashley	Concentrating on recycling assets used for previous prototypes and making new purchases only after careful consideration and approval from team and PM.
3)	Prototype finished but no time for testing	Medium	High	Moise	Testing prototype and documenting feedback regularly, simultaneously as prototype is being developed
4)	Dysfunctional Prototype on deadline	Low	High	Andreas	To assess situation from the start and seek help from PM at any sign of dysfunctionality.
5)	Limited time to gather feedback	Medium	High	Tobi	Decrease the number of people who will be giving feedback, a list of the people whose feedback is judged to be more relevant should be made in beforehand.
6)	Limited time to make changes after feedback	Medium	Medium	Ashley	Seek assistance from PM to shift focus on making changes on the most significant feedback only.
7)	No Prototype IV	High	Low	Miray	Studying the development of Prototype III since the start and listing the pros and cons, feedback from users and difficulties that arose, and preparing a prototype test plan, to be used in case time permits for the creation of a fourth prototype.

4.4 Deliverable I

Deliverable I	Design Showcase Presentation

Start Date	25/03/24	End Date	04/04/24	Duration in days	10	Progress	0%

Task ID	Task Description	Assigned to	Start	End	Duration in days	Status
1)	Research	Tobi	25/03/24	27/03/24	3	Not Started
2)	PPT Presentation	Girisha	27/03/24	29/03/24	3	Not Started
3)	Rehearsals	-Everyone	30/03/24	02/04/24	4	Not Started
4)	Visual Stimuli for station	-Miray -Moise	27/03/24	30/03/24	4	Not Started
5)	Final Prototype Functionality check	Ashley	01/04/24	03/04/24	3	Not Started
6)	Trello Update	Andreas	25/03/24	26/03/24	2	Not Started
7)	Final Rehearsal	-Everyone	03/04/24		0	Not Started

4.4.1 Contingency Plan I

No:	Risks	Likelihood of risk occurring	Severity of poor outcome	Risk Manager	Mitigating Action
1)	Unfinished Prototype	Low	High	Tobi	Prepare justification document to explain in case prototype is taking much time to be developed.
2)	Absence of a team member on design day	Low	Low	Andreas	Ensure that each team member as access to design day material and the part of each other for the presentation.
3)	Dysfunctional Prototype	Low	High	Ashley	Seek assistance from PM immediately during sign of dysfunctionality and prepare justification document for Design Day.
4)	PowerPoint not functioning	Low	High	Girisha	Have a PDF of presentation ready and allocate enough time for rehearsals.
5)	Limited Time for rehearsals	Low	High	Miray	To be the main speaker in case team members do not have enough time for rehearsals. Responsible to design a flexible oral presentation for each team member.
6)	No Visual Stimuli due to lack of time	Low	Medium	Moise	Set a day well before design day to make some visual stimuli for the station, seek assistance from team and putting some tasks on hold if necessary.

4.5 Deliverable K

Deliverable K	User and Product Manual

Start Date	04/04/24	End Date	08/04/24	Duration in days	4	Progress	0%

Task ID	Task description	Assigned to	Start	End	Duration in days	Status
1	Project manager	Toby	04/04/2024	April 8, 2024	4	Not started
2	Technical Writer	Moise	04/04/2024	April 8,2024	4	Not started
3	Assembly expert	Miray	04/04/2024	April 8,2024	4	Not started
4	User manual specialist	Girisha	04/04/2024	April 8, 2024	4	Not started
5	Maintenance and lessons learned analyst	Ashely	04/04/2024	April 8, 2024	4	Not started
6	Quality assurance and editing	Andy	04/04/2024	April 8, 2024	4	Not started

4.5.1 Contingency Plan K

No.	Risk	Likelihood of risk occurring	Severity of poor outcome	Risk manager	Mitigating Action
1	Delays in material procurement	Low	Medium	Andy	Establish relationships with alternative suppliers, maintain a buffer in the project timeline, and have a backup plan for critical materials
2	Technical challenge during assembly	Low	Medium	Toby	ensure all team members are well-trained and have access to resources for problem-solving during assembly challenges.
3	Changes in project scope	Medium	Medium	Girisha	Document any changes formally, assess their impact on the project timeline, and communicate adjustments to all team members promptly.
4	Unavailability of team members	Low	Low	Ashley	Maintain a shared calendar to track team members' availability and plan tasks accordingly.
5	External factors affecting make repo access	Low	Medium	Moise	Explore alternative version control systems, maintain a local backup of critical files, and stay informed about MakeRepo's status and updates.
6	Client related risk	Medium	High	Miray	Document all communication with the client and seek formal approvals for any changes to avoid misunderstandings

5 Prototype Test Plan

Tests one through five are rather technical tests to check how well put together the VR environment is. Tests six through eight are comprehensive tests that determine how users interact with the VR environment in order to determine the time needed to go through it and to collect feedback and possibly different ideas. The cost of all tests is zero. Starting time for all tests is during prototype one.

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 (When)***	***Stopping criterion***
1	Analyse critical subsystem: Wall/Ceiling/Floor	Analytical, Specific	Subsystem aligns properly or it does not Room size	20 mins	Satisfies design scale
2	Verify feasibility: Window/blinds	Analytical, Specific	Window size, light shining	10 mins	Satisfies design scale
3	Analyse subsystem: Furniture	Analytical, Specific	Positioning, size	10 mins	Satisfies design scale
4	Analyse subsystem: Posters	Analytical, Specific	Positioning, Size	10 mins	Satisfies design scale
5	Analyse critical subsystem: Dog	Analytical, Specific	Positioning, Size	10 mins	Satisfies design scale
6	Verify feasibility: Length and Learning curve	Physical, Comprehensive	Length for walkthrough, easy to use, emotional impact	20 mins	2-3 times and until length is 1 minute
7	Communicating and Getting Feedback: Friends	Physical, Comprehensive	Feedback/ideas Improvement suggestions	20 mins	2-3 times
8	Communicating and Getting Feedback: TA	Physical, Comprehensive	Feedback/ideas Improvement suggestions	20 mins	Until suggestions implemented

5.1 Justification

1. Analytical: We don’t have to hit play and we can analyse it with the inspector to verify coordinates, angles, and visually inspect it in our model view. It is specific because we don’t look at all subsystems. We will see if the walls/ceiling/floor align realistically or have gaps and modify them accordingly. Further, we will check the size of the room.
2. Analytical: Look at it in our scene construction. Specific: Only window on wall. Check light and shadows/transparency. We will check for the window size and check how it interacts with lights/shadows.
3. Analytical: Loot at it in our scene constriction. Specific: Only look at furniture on floor. We will analyse the positioning of the furniture relative to the room. Furniture includes tables, rug, TV.

4. Analytical: Loot at it in our scene constriction. Specific: Only look at posters with respect to the wall. Test whether its size is fitting and its position. Readjust if necessary.
5. Analytical: Loot at it in our scene constriction. Specific: Only look at dog with respect to the room. Test whether its size is fitting and its position. The real dog will cost $10, for now we will use a free asset for the prototype.
6. Physical: Run in play mode, let other people try it. Comprehensive: All subsystems involved. Other people will test our VR environment and we will measure how long it takes them to explore everything, how easy it is to use, the learning curve, etc. Then we can improve the environment to make it more user friendly.
7. Physical: Run in play mode, let other people try it. Comprehensive: All subsystems involved. Other people will test our VR environment for us to receive feedback on it, ideas for suggestions, see the emotional impact and hear their thoughts on it.
8. Physical: Run in play mode. Comprehensive: Shows all critical elements. We will show the prototype to the TA for feedback.

6 Conclusion

In conclusion, this document emphasizes on the critical importance of meticulous planning and coordination for the successful execution of our project. The visual representation of our solution concept, provided by Miray and Tobi, serves as a comprehensive guide, encompassing all necessary components and their interactions. The careful preparation of the bill of materials by Andreas ensures efficiency within reasonable cost constraints. The full project plan acts as a robust tool for time and project management, emphasizing achievable objectives for each team member. Deliverables, accompanied by backup plans, reflect our proactive approach to problem-solving. Andreas’s strategic test plan anticipates both user-interaction and technical testing phases, demonstrating our commitment to a flexible strategy. As we approach Deliverable I, task assignments and backup plans are strategically outlined, ensuring seamless integration of various elements. In essence, this document showcases a well-structured plan, characterized by clear communication, attention to detail, and proactive risk management, setting the stage for a successful project outcome driven by the dedication and collaborative spirit of the team.