



The Gamification of Fjell Fortress

Project handbook

Version 1.3

Dokumentet er basert på Prosjekthåndbok utarbeidet ved NTNU. Revisjon og tilpasninger til bruk ved IDER, DATA - INF utført av Carsten Gunnar Helgesen, Svein - Ivar Lillehaug og Per Christian Engdal. Dokumentet finner også i engelsk utgave.



Revision History

Date	Version	Description	Author
27/01/2022	1.0	First version, written in norwegian	Griffin, Oneal, Simon
03/02/2022	1.1	Translated to english, visually updated and better timesheet	Simon, Griffin, Oneal
22/04/2022	1.2	Third version	Oneal, Simon, Griffin
22/05/2022	1.3	Corrections and better figures	Simon, Griffin, Oneal

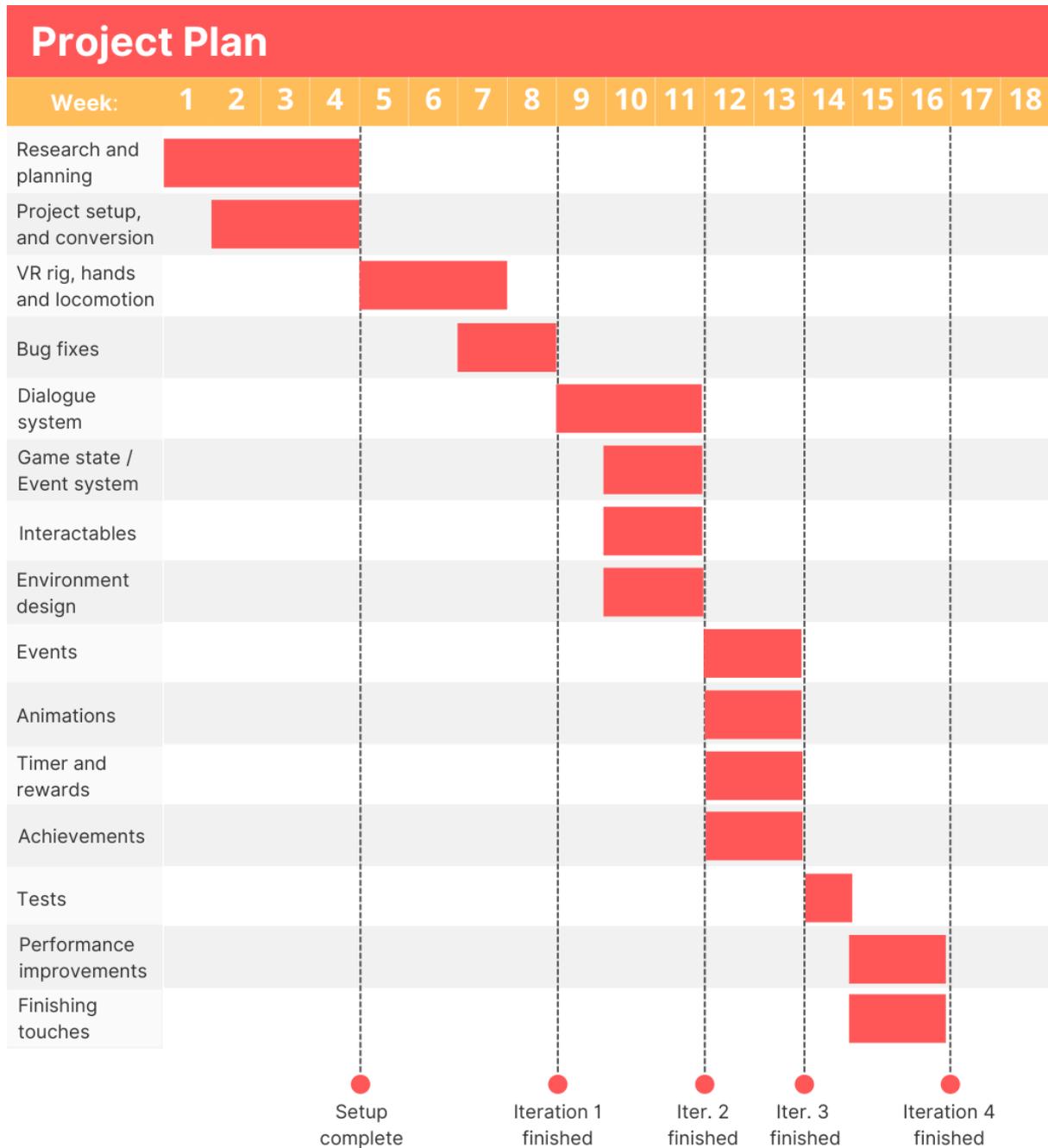


Revision History	2
1. Progress Plan	4
2. Risk Analysis	5
3. Meeting Notices and Report	6
4. Timesheets and status rappers	30
Project Status	36



1. Progress Plan

Version 1.3





2. Risk Analysis

	Event / Risk	Cause	Probability	Consequence	Risk product	Measures
1	Application will not be used	Game is boring, historically inaccurate or impractical to use	Medium (3)	Medium (3)	9	User testing and regular meetings with employer
2	Outdated technology	New and better technology is taking over	Low (2)	Medium (3)	6	Make sure we use the most up-to-date tools, and avoid using tools with bad support
3	Technical issues	Unforeseen problems with project and assets	Very High (5)	Medium (4)	20	Use the resources available to us for troubleshooting. Factor in time for research and bug fixing when time scheduling
4	Too high absence	Illness, obligatory assignments in other courses and other events	Low (2)	Low (2)	4	Good project management, and options to work from home
5	Multiple people working on same thing, or no one working on a given task	Poor communication and cooperation.	Medium (3)	Medium (3)	9	Actively using our project management tools, like teams, and teamgantt to mark which task you are working on.
6	Project is not finished in time	Too big ambitions, poor time management or inefficient project management	Medium (3)	Very high (5)	15	Using an iterative process to always have a playable version ready. This also allows for early testing



3. Meeting Notices and Report

Subject: *Project meeting*

Tidspunkt/sted: *Wednesday 14.01.2021 10:00, Zoom*

Til stede: *Øyvind, Alexander, Simon, Oneal and Griffin*

Sak 1: Festningens historie

- Bygget av tyskerne for å beskytte Kystlinjen inn til Bergen
- Had a massive cannon, in addition to air defense batteries.

Sak 2: Tidligere arbeid

Terrenget har blitt skannet i et tidligere bachelorprosjekt, i tillegg til dette har de brukt data fra kartverket for å fylle inn hull. Dette har blitt lagt inn i Unity.

De har lagt til modeller som bunkerser, hus, brakker, stener, gjerder, trær og busker. NPCer er lagt til med dialogbokser. Dialogsystemet trenger å endres.

De har lagt til modeller som bunkere, hus, steiner, gjerder, trær og busker. NPCer er lagt til med dialogbokser, men dialog systemet må byttes ut. Du kan vandre rundt og snakke med karakterene som er plassert ut, og etter en stund blir du teleportert ut av brettet.

Sak 3: Prosjektet videre

Prosjektlederen vil at gruppen skal videre implementere gamification til spillet. Dette inkluderer interaktive problemstillinger, slik at spillet føles mer interaktiv og realistisk. Videre vil prosjektlederen at gruppen skal implementere AI slik at verden spilleren i føles dynamisk og interessant. Teksturering og bedre modeller er også et krav når gruppen utvikler spillet videre i prosjektet, mye av festningens teksturer er enkle og ser kjedelig ut. Dette vil også inkludere bedre vegetasjon i terrenget og animasjoner på modellene slik at de ser mer menneskelig ut. Andre gjøremål er også implementasjon av tidspress for brukeren, spilleren kan også få mer tid ved å inspisere historiske objekter rundt festningen.

Sak 4: Assets

Vi kan hente assets og animasjoner fra flere steder som f.eks

- Sketchfab
- Unity Asset Store
- Mixamo

Husk å sjekke lisensen



Dersom det er noe vi virkelig trenger og det koster penger så er det mulig å avtale dette med Øyvind.

Vi kan også få utlevert en iPad Pro når vi er oppe på festningen, og bruke denne til å 3d skanne elementer og implementere disse i Unity.

Sak 5: Tur til festningen

Oppdragsgiveren ønsker at vi skal få en omvisning på festningen. Dette er både for å skjønne hvordan ting ser ut der oppe, men også for å skanne elementer, ta bilder osv.

Annet:

Alexander er utvikler for MedieLab, har god kjennskap til Unity, og er personen vi bør spørre om tekniske spørsmål

Stor frihet i hva vi vil fokusere på, så lenge det jobber mot målet om en bedre spillopplevelse

Ønsker ukentlige møter, og vi jobber i sprints til en viss grad.



Subject: Status meeting

Tidspunkt/sted: Fredag 21.01.2021 kl 12:00 - 13:53, Zoom

Til stede: Ilona, Oneal, Griffin og Simon

Sak 1: Hva skal skje videre til neste møte

Gjennom dialog med Ilona, sier hun at VR opplevelsen er viktig og det er en stor del av læringen med tanke på det pedagogiske delen av prosjektet. Slik at for videre arbeid for gruppen, bør det tekniske delen angående VR utstyret og koden være på plass så fort som mulig slik at gruppen kan fokusere på VR funksjonalitet i prosjektet. Gruppen ble enige, og første prioritet de neste ukene er akkurat dette. Gruppen har også nevnt problemene med VR koden med tanke på at gruppen må endre på Rendering Pipeline fra HDRP til URP slik at Oculus Quest 2 kan bli utnyttet.

Sak 2: Møter og Kommunikasjon

Gruppen og Ilona har blitt enig med at møter skal skje enten på onsdager eller fredager. Ilona har også blitt invitert til Microsoft Teams gruppen slik at hun kan holde seg oppdatert på gruppens fremdriftsplan, noe som gruppen oppdaterer daglig.

Sak 3: Utstyr

Ilona (veileder) skal kontakte Harald Solheim for utlån av VR briller, gruppen vil få videre informasjon om utlån av utstyr neste uke. Gruppen skal også prøve å kontakte Lærings Labben i det nye bygget på HVL, her kan gruppen også låne VR utstyr. Her kan gruppen også låne iPad Pro, slik at man kan skanne objekter ved hjelp av LiDAR. Dette kan hjelpe teksturering av ulike objekter i Unity prosjektet slik at festninger ser mer realistisk ut. Ved å bruke LiDAR, blir det også billigere med tanke på at man trenger ikke å kjøpe modeller på nettet.

Sak 4: Eierforhold til resultatet

Gruppen informerte Ilona at MediaLab/Fjell Festning har full eierforhold til prosjektet ettersom prosjektet er ferdig til sommer.



Subject: Project meeting

Tidspunkt/Sted: Fredag 28.01.22 kl.12:00 - 13:23, Microsoft Teams

Til stede: Øyvind, Simon, Oneal og Griffin

Sak 1: Samarbeid i prosjektgruppen

Gruppen kom fram til at alle har jobbet godt sammen, og alle har god kommunikasjon mellom hverandre. Gruppen har brukt Zoom til å kommunisere med hverandre rundt 2 - 3 ganger i uken for å holde alle oppdatert om nye funksjonaliteter og mulige endringer i prosjektet. Prosjektgruppen bruker også Messenger appen for å kommunisere.

Sak 2: Utvikling av spillet til nå

Utover møte forklarte gruppen at kildekoden som ble utlevert var vanskelig å håndtere. Gruppen fant ut at man måtte bytte ut HDRP (High Definition Render Pipeline) til URP (Universal Render Pipeline), prosessen tar lang tid og noen problemer har oppstått i overgangen. Blant annet klarer ikke vannet og elvene å rendere når spillet blir kjørt fordi lisensen til Assetsene den tidligere bachelor gruppen brukte er ikke oppdatert til dagens versjon. Gruppen informerte også oppdragsgiveren/oppdragslederen at gruppen har byttet ut SteamVR til OpenXR slik at spillet er kompatibel med flere VR headset.

Sak 3: Videre arbeid

- *Se på lyddesign*
 - Vind
 - Fugler
 - Fly som flyr over etter noen minutter
 - Atmosfære
- *Meadow Environment - Dynamic Nature | 3D Vegetation | Unity Asset Store*
 - Få importert de nye assetsene
 - Fikse vannet og elvene
- *Fikse/Se på interaksjon med dialogboksene*
- *Utlån av iPad slik at man kan begynne å bruke LiDAR skanning*
 - Opprette Sketchfab bruker
 - Begynne å skanne objekter slik at gruppen er komfortabel med teknologien



Notice of meeting

Subject: Project meeting

Time/Place: Friday 04.02.22 kl.12:00 - 13:30, Microsoft Teams

Present: Griffin, Oneal, Simon, Øyvind and Alexander

Agenda:

- **Case 1: Lighting**
- **Case 2: Thoughts about the progress plan**
- **Case 3: Discuss the Fjell Festning visit**
- **Case 4: Input on project progress**

Report

Subject: Project meeting

Time/Place: Friday 04.02.22 kl.12:00 - 13:05, Microsoft Teams

Present: Griffin, Oneal, Simon, Øyvind and Alexander

- Case 1: Lighting
 - The group presented the new ingame lighting and asked if it was acceptable to change it or if the group should leave it alone. The project leader (Øyvind) said that changes could be made if the group was confident enough that the game would look good/better.
- Case 2: Thoughts about the progress plan
 - The project group wanted to create a better project plan since the plan is too cluttered and unorganized. Øyvind thought it was great that the group has spent some time creating a thorough plan for the next coming weeks.
- Case 3: Discussing the Fjell Festning visit
 - Øyvind and the group agreed upon meeting beforehand on Thursday (before the visit on Friday) such that everyone can confirm that no one is sick or unwell before the visit.
- Case 4: Input on project progress



- The group informed Øyvind and Alexander that some progress has been made. For example more research around URP and lighting, VR implementation such as movement, footstep audio and VR hands and understanding the technology behind the Oculus Quest 2. LiDAR scanning has also been experimented with, which will help the group import photorealistic textures into the game. However, the group is still considering the possibility of not using LiDAR scanning since it can be time consuming.



Subject: Status meeting

Time/Place: Friday 04.02.22 kl.15:00 - 16:00, Grupperom HVL

Present: Griffin, Simon and Ilona (internal supervisor)

Vision document - Corrections

Introduction

- The report must be about the product
- It can be used to sell the product
- Here, the group can talk about the benefits and motivation behind the project
- The introduction must be informative and easy to read. The reader can be anyone and they must understand it no matter who you are.

Summary, problem and product

- We can say there is a finished mobile version
- Right now, there is no good VR solution
- A successful solution is a solution that can be used in teaching, and create a good user experience
- The project isn't for Fjell Fortress, we can say it is for the museum, schools or people who are particularly interested in the game
- They wish to convey a story, and to present an empathetic experience of how the fortress was in 1945

Stakeholders and users

- The stakeholders are the last people to test the product
- People like Alexander and Ilona are not stakeholders
- Who needs the product? Can be the museum/Medielab, if they intend to use it in a study

User environment

- Where are the users located (do they have access to a computer?), as well as technical requirements
- Users are students and teachers. Possibly visitors at the museum



Alternatives to our product

- We can refer to other projects aimed for teaching
- We can see which game elements other research projects have used to gamify their game

The products functional characteristics

- This part should include what the player can do, not what the player can't do
- For example, moving around, talk to NPCs, interacting with objects or inspect objects

References

- It is natural in a bachelor report to refer to other bachelor reports
- Other scientific projects concerning gamification, scanning, etc.
- Mobile version report

Gantt Diagram

- For example three iterations of game development
- Testing for every iteration
- Must have the product ready for user testing in good time before the report is handed in.
- User testing must be booked well before the report is finished

The Bachelor Thesis

- We should write a small summary about what the previous bachelor groups have done
- Write a little bit about the mobile version, and our projects roll compared to it.

About the meetings

- Next meeting in 2 weeks
- Meetings on fridays (maybe mondays), the same time schedule for all meetings



Notice of meeting

Subject: Project meeting

Time/Place: Friday 18.02.22 kl.13:00 - 14:00, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

Agenda:

- **Case 1: Project progress**
- **Case 2: Group teamwork**
- **Case 3: Models**

Report

Subject: Project meeting

Time/Place: Friday 18.02.22 kl.13:00 - 14:04, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

- **Case 1: Project progress**

The group introduced the new problems the group have encountered the past two weeks with the Øyvind and Alexander. The main issue is that gameplay/gamification implementation has not been prioritized as much as the group wishes. There are several problems with the project's build and compilation errors are a recurring complication. The group wants to finish these problems before gamification of the game begins.

- **Case 2: Group teamwork**

Teamwork in the group is working fine. Tasks are assigned to different members in the group such that everyone is not working on the same task. For now this is working fine, perhaps after the project is completed (has no errors), the group can introduce a new work technique.

- **Case 3: Models**



Øyvind showed the group a couple of new german bunker models that the group can use in the project. Øyvind introduced the idea of walking in a bunker, maybe the player can find items or information when exploring the bunkers. Alexander also showed the group Substance Painter from Adobe. It's a texturing software for 3D models and 2D surfaces. Alexander and Øyvind offered us a small course if needed.



Fjell Festning Museum Visit - 11.2.22, kl 10:00 - 14:00

Part 1 - Information inside the kafe

The group was introduced to Vagleik (museum director) and met Øyvind for the first time after a month of Microsoft Teams meetings. Vagleik gave the group an informative introduction to the Fortress and the history behind it. The project group was also given a map and a book for further use throughout the project development. This will help when texturing and adding models into the scene in a later stage of development.

Part 2 - Inside the cannon

Vagleik and the group then entered the cannon for a small tour of the tunnels beneath. Some areas like the ammunition rooms were shown and the main tunnel that connects to the outside of the fortress. This is where the Germans transported ammunition into the facility by rail. Photo scanners were taken such that the group has a reference of how the texturing and layout looks like. The doors were also scanned, these can later be used in the main game.

Part 3 - Walk around the fortress

Around 12:00, Vagleik, Øyvind and the group took a tour around the fortress. The image below shows the route that was taken. Øyvind stopped at multiple locations around the fortress to show where the different characters will stand and what can be added around these areas.





Subject: Status meeting

Time/Place: Friday 04.03.22 kl.13:00 - 14:00, Grupperom HVL

Present: Griffin, Simon, ONeal and Ilona (internal supervisor)

Introduction

- What is the value of VR technology → in the Introduction
- What is the reason for VR? Higher experience, fun, interesting
 - More engagement in applications
 - This is the reason why Medielab is creating a VR solution of the mobile game → Explain
- The gamification part does not exist in todays product
 - Makes it more attractive
 - Explain that the project has been under development before we took part in the project

- Here you can also write about the 2D mobile game

Summary of problem

- 2D map with 3D objects (2.5D)
- Use VR Problems in the Introduction motivation part.

Summary of product

- Make a commercial → 20 sec video, a little teaser.

Users

- Engagement, experience, education, fun, etc.
 - Make questions from the words above for the testing bit

Evaluations

- Here we can write about the first iteration of improvements, and tests, etc. And then perhaps another iteration after a second version of tests.
- Test with Øyvind, teachers (friend of Øyvinds), læringslab.
- The prototype must have tests, set up the test and plan it.
- Takes about 2 days, and then you're pretty good.
- Do it in April.



- The game may take an hour to play, so maybe make a small demo
- Ilona and Tor can test the product, Tor likes writing articles!

Alternatives to our project

- Alternatives to our project don't have to be Norwegian.
- The product is a virtual reality game, have a sentence here where you write that.

Requirement Documentation

- Requirements exist in the vision document as well



Notice of meeting

Subject: Project meeting

Time/Place: Friday 11.03.22 kl.14:00 - 15:00, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

Agenda:

- **Case 1: Project progress**
- **Case 2: Models and animations**
- **Case 3: New features**

Report

Subject: Project meeting

Time/Place: Friday 11.03.22 kl.14:00 - 15:00, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

- Have a look at the weapons in the game, hence the invasion of Ukraine. Maybe we can add the weapons, but they have no function?
- Take away the photoscanned model under the canon
 - Prioritize a bunker, Øyvind wants us to be able to enter a bunker
- Germans can walk around the compound, but need a guard around them
 - Maybe animate a dog or a cat?
- Use blender to remodel the bunkers, and use the bunkers as a reference
 - This will result in better performance and we can also write about this in the end rapport
- Find some good audio for the ambient sound.
 - Dog barking
 - Wind
 - People talking etc.
- Animate a plane, make it go by once every 20 min or something maybe
 - Or just trigger it one time so that the environment is more dynamic
- Animate the main characters, maybe their doing something before the interaction



- Have a map of the fortress, a sketch of the area. Maybe the player can put it in their inventory.



Notice of meeting

Subject: Project meeting

Time/Place: Friday 18.03.22 kl.13:00 - 14:00, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

Agenda:

- **Case 1: Design**
- **Case 2: Discuss models and 3D scanned objects**
- **Case 3: Event System**

Report

Subject: Project meeting

Time/Place: Friday 18.03.22 kl.13:00 - 14:00, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

- Alexander explains how we can implement the map. We may need to convert the 3D surroundings to GPS coordinates and place them on the map
- Create new models in blender, we have now patient papers, and Wagners papers
- Alexander explains how you can connect a map with the VR player, but we agreed that we should drop it
- Drunk guard by the tunell, now you can walk through without any problem since the guard is drunk
- Drunk guards shooting at the range, Øyvind liked it, you will also be able to shoot cans and gain a time reward
- Add houses near the canon, add more fences (double fences)
- The canon has a net with camo, maybe we can do the same?
- The truck with August didn't explode? Maybe it was the generator? The truck that falls over is dramatic and some students may only write about this part. Others will write about the mine explosion nazarenko was talking about.



- Event System, Events - Unity Learn
- Have red circles as child of the map, enable the right circle when a dialogue is finished



Notice of meeting

Subject: Project meeting

Time/Place: Friday 25.03.22 kl.14:00 - 15:00, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

Agenda:

- **Case 1: Player map**
- **Case 2: Dialogue system**
- **Case 3: Project state**

Report

Subject: Project meeting

Time/Place: Friday 25.03.22 kl.14:00 - 15:00, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

- The group showed Alexander and Øyvind the progress we made regarding the map. The map is now connected to the Event System/State Machine, so when the player finishes a dialogue, it changes state and the map will update itself by the changed state.
- Dialogue system is now finished and can be implemented on all the characters in the scene. The group also explained that we are using a new type of dialogue system. The other bachelor group used VIDE, we chose xNode.
- The project group also discussed the project's state, and everyone in the meeting was happy that progress is being made and our goals are achievable and realistic. Meeting these goals is also helping the group's morale as Simon explained.
- The group showed a small game sample, and Øyvind loved truck animation, since it made the scene look more dynamic and most importantly, real. The group came to an agreement that the game should have more of these animations to make the game more dynamic.



Notice of meeting

Subject: Project meeting

Time/Place: Friday 1.04.22 kl.12:30 - 13:30, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

Agenda:

- **Case 1: Animations**
- **Case 2: The scenes**
- **Case 3: Gun Range**

Report

Subject: Project meeting

Time/Place: Friday 1.04.22 kl.12:30 - 13:30, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

- Since last week, the group has implemented several animated GameObjects in the scene, such as two new trucks and a couple of airplanes flying past the fortress. Øyvind liked these, and also commented on the type of plane that should fly by, and that it should now happen often.

Øyvind also mentioned that it is still the group's project, so the group could feel free to use any airplane model, only if it is realistic in the environment it is in.

- While discussing the different scenes, Øyvind wanted to have a car scene where the player is sitting in the taxi while it is driving towards the fortress. The group thought this was a cool idea and will start implementing it next week.
- Øyvind has earlier been unsure about adding weapons to the game because of the conflict between Russia and Ukraine. However, Vagleik wanted to add a pistol of some sort into the game. The group was able to implement this throughout the week and presented this to both Øyvind and Alexander.



Notice of meeting

Subject: Project meeting

Time/Place: Friday 8.04.22 kl.12:30 - 13:30, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

Agenda:

- **Case 1: What to focus on before and after the easter break**
- **Case 2: Testing after easter break**
- **Case 3: Other**

Report

Subject: Project meeting

Time/Place: Friday 8.04.22 kl.12:30 - 13:30, Microsoft Teams

Present: Simon, Griffin, Oneal, Øyvind and Alexander

List of things to implement before/after easter break:

- Car intro scene
- Nature/Design improvements
- Explosion and Smoke effect for the truck
- The group wants to add a belt where the map can attach itself to by the use of XR Sockets
- Finish the game such that a player can at least start the game and play through the whole thing

- There will be an internal player testing after the break with Øyvind, Vagleik, maybe Ilona and other coworkers of Øyvind. It will take place in the **Læringslab 21.4.22, kl:11:00**.

- Again, adjust some objects in the scene. Add more fences and barriers such that the player cannot escape the base game.



Notice of meeting

Subject: Project meeting

Time/Place: Friday 20.04.22 kl.10:00 - 11:45, Læringslab HVL

Present: Simon, Griffin, Oneal and Øyvind

Agenda:

- **Case 1: Låne PC**
- **Case 2: Omvisning - læringslab**
- **Case 3: Diskutere når hoved testene skal skje**

Report

Subject: Project meeting

Time/Place: Friday 20.04.22 kl.10:00 - 11:45, Læringslab HVL

Present: Simon, Griffin, Oneal, Øyvind

- The employees at HVL showed Øyvind and the group a gaming laptop that could be used for testing. Simon borrowed the laptop from HVL Læringslab so that everything is installed before the testing begins.
- Øyvind gave the group a tour of the lab and gave a preview of the area where the testing will take place
- The group was informed that a date should be set as soon as possible for an external testing of the game. This date should be set as soon as possible.



Notice of meeting

Subject: Project meeting

Time/Place: Friday 6.05.22 kl.09:00 - 13:00, Læringslab HVL

Present: Simon, Griffin, Oneal, Øyvind, Alexander and all testers

Agenda:

- **Case 1:** Discuss the game's setup
- **Case 2:** Let testers test the project
- **Case 3:** Discuss the tests with Øyvind

Report

Subject: Project meeting

Time/Place: Friday 6.05.22 kl.09:00 - 13:00, Læringslab HVL

Present: Simon, Griffin, Oneal, Øyvind, Alexander and all testers

Before the tests took place, the group met with Øyvind where he briefed the team about how the tests will be conducted and what time they will be testing the game. Before the testers play, they must watch a video that builds upon the game's story. They do this outside of the test area in another room. After they have finished, the testing of the main game will start. This was the plan for testing for every user. The group and Medielab also agreed upon switching testers mid way through the game such that players don't feel naive.

The tests were done around 13:00 and got a lot of feedback from the testers. The feedback was given while the testers were playing and let the group take notes during their experience through the game.

When all tests were complete and everyone left for the day, the group had an internal meeting with Øyvind where we discussed the beta test day. Everyone was pleased with the results, as well as Øyvind. He had some minor feedback as well, but this was not about the game, but the storyline Medielab has created for the game. Øyvind wanted an audio clip in the car taxi scene which builds upon the story.



4. Timesheets and status rapports

Week 1				
Activity	Oneal	Griffin	Simon	Weekly Sum
Research	5,0	5,0	5,0	15,0
Planning	5,0	5,0	5,0	15,0
Week 2				
Activity	Oneal	Griffin	Simon	Weekly Sum
Research	4,0	4,0	4,0	12,0
Report	8,0	8,0	8,0	24,0
Project Setup	12,0	12,0	12,0	36,0
Planning	5,0	5,0	5,0	15,0
Lectures	4,0	4,0	4,0	12,0
Meetings	3,0	3,0	3,0	9,0
Week 3				
Activity	Oneal	Griffin	Simon	Weekly Sum
Research	4,0	4,0	4,0	12,0
Report	6,0	8,0	6,0	20,0
Project Setup	3,5	4,0	3,5	11,0
VR implementation	4,0	6,0	6,0	16,0
Lectures	4,0	4,0	4,0	12,0
Meetings	2,0	2,0	2,0	6,0
Week 4				
Activity	Oneal	Griffin	Simon	Weekly Sum
Research	3,0	5,0	4,0	12,0
Report	2,0	4,0	4,0	10,0
VR implementation	1,5	7,0	0,0	8,5
Lectures	2,0	2,0	2,0	6,0
Meetings	2,0	2,0	2,0	6,0



Week 5				
Activity	Oneal	Griffin	Simon	Weekly Sum
Bug fixing	2,0	9,0	12,0	23,0
Research	5,0	7,0	8,0	20,0
OA-8-1	7,0	8,0	8,0	23,0
VR implementation	4,0	7,0	0,0	11,0
Lectures	4,0	4,0	4,0	12,0
Meetings	3,0	3,0	3,0	9,0
Week 6				
Activity	Oneal	Griffin	Simon	Weekly Sum
Bug fixing	0,0	4,0	5,0	9,0
Research	4,0	5,0	3,0	12,0
OA-8-1	4,0	4,0	4,0	12,0
Project Setup	0,0	0,0	10,0	10,0
VR implementation	4,0	10,0	0,0	14,0
Meetings	1,5	1,5	1,5	4,5
Week 7				
Activity	Oneal	Griffin	Simon	Weekly Sum
Bug fixing	0,0	0,0	2,0	2,0
Project Setup	0,0	4,0	8,0	12,0
Performance Analysis	0,0	6,0	1,0	7,0
VR implementation	6,0	6,0	2,0	14,0
Research	6,0	5,0	3,0	14,0
Report		10,0		10,0
Lectures	2,0	2,0	2,0	6,0
Meetings	2,0	2,0	2,0	6,0
Week 8				
Activity	Oneal	Griffin	Simon	Weekly Sum
Performance Analysis	0,0	0,0	4,0	4,0
Planning	7,0	7,0	7,0	21,0
Report	12,0	10,0	12,0	34,0
AI	0,0	2,0	0,0	2,0
Meetings	2,0	2,0	2,0	6,0



Week 9				
Activity	Oneal	Griffin	Simon	Weekly Sum
Dialogue System			15,0	15,0
Planning	3,0	4,0	4,0	11,0
Report	19,0	19,0	22,0	60,0
Presentation	3,0	3,0	3,0	9,0
VFX		6,0		6,0
Meetings	1,5	1,5	1,5	4,5

Week 10				
Activity	Oneal	Griffin	Simon	Weekly Sum
Dialogue System			9,0	9,0
Modeling			3,0	3,0
Presentation	3,0	3,0	3,0	9,0
Planning	5,0	6,0	5,0	16,0
Project Management			12,0	12,0
Lighting and effects		3,0	2,5	5,5
Bug fixing	3,0	5,0	0,0	8,0
Intro		5,0	0,0	5,0
Taxi scene		6,0		6,0
Report		5,0	5,0	10,0
Meetings	1,0	1,0	1,0	3,0

Week 11				
Activity	Oneal	Griffin	Simon	Weekly Sum
Events		6,0	6,0	12,0
Modeling			12,0	12,0
Map			8,0	8,0
Dialogues		20,0	0,0	20,0
Lighting and effects			3,0	3,0
Animations	6,0	3,0		9,0
Mines	9,0			9,0
Taxi scene		3,0		3,0
Meetings	1,0	1,0	1,0	3,0



Week 12				
Activity	Oneal	Griffin	Simon	Weekly Sum
Modeling			45,0	45,0
Animations		5,0	2,0	7,0
Events		15,0	0,0	15,0
Bug fixing	12,0	5,0		17,0
Interactables	8,0			8,0
Meetings	2,0	2,0	2,0	6,0
Week 13				
Activity	Oneal	Griffin	Simon	Weekly Sum
Animations		10,0	12,0	22,0
Environment	9,0	6,0	6,0	21,0
AI			5,0	5,0
Inventory		3,0	7,5	10,5
Interactables	6,0	4,0		10,0
VFX		5,0		5,0
Timer	19,0			19,0
Performance		3,0		3,0
Meetings	2,0	2,0	2,0	6,0
Week 14 (Easter holiday)				
Activity	Oneal	Griffin	Simon	Weekly Sum
AI	0,0	6,0	0,0	6,0
Environment	0,0	6,0	0,0	6,0
Performance	0,0	10,0	0,0	10,0
Animations	0,0	6,0	0,0	6,0
Inventory	0,0	4,0	0,0	4,0
Bug fixing	0,0	3,0	0,0	3,0
Meetings	1,0	1,0	1,0	3,0
Week 15				
Activity	Oneal	Griffin	Simon	Weekly Sum
Project Management	4,0	4,0	6,5	14,5
Animations	4,0	7,0	3,0	14,0



AI	0,0	5,0	6,0	11,0
Environment	8,0	5,0	15,0	28,0
Inventory	0,0	3,0	4,0	7,0
Bug fixing	4,0	4,0	2,0	10,0
Modeling	0	0	5,0	5,0
Testing	8,0	4,0	5,0	17,0
Events	4,0	4,0	3,0	11,0
VFX	0	4,0	0	4,0
Meetings	1,5	1,5	1,5	4,5
Week 16				
Activity	Oneal	Griffin	Simon	Weekly Sum
Testing	4,0	5,0	5,0	14,0
Report	18,0	10,0	13,0	41,0
Performance	5,0	7,0	5,0	17,0
Meetings	1,0	1,0	1,0	3,0

Week 17				
Activity	Oneal	Griffin	Simon	Weekly Sum
Report	20,0	20,0	20	60,0
Meetings	1,5	1,5	1,5	4,5
Week 18				
Activity	Oneal	Griffin	Simon	Weekly Sum
Report	25,0	20,0	28	73,0
Meetings	1,0	1,0	1,0	3,0
Week 19				
Activity	Oneal	Griffin	Simon	Weekly Sum
Report	27,0	15,0	28	70,0
Week 20				
Activity	Oneal	Griffin	Simon	Weekly Sum
Report	30,0	26,0	38,5	94,5



Project Total	
	sum
AI	24,0
Animations	58,0
Bug fixing	72,0
Dialogue System	24,0
Dialogues	20,0
Environment	55,0
Events	38,0
Interactables	18,0
Intro	5,0
Inventory	21,5
Lectures	48,0
Lighting and effects	8,5
Map	8,0
Meetings	87,0
Mines	9,0
Modeling	65,0
OA-8-1	35,0
Performance	30,0
Performance Analysis	11,0
Planning	78,0
Presentation	18,0
Project Management	26,5
Project Setup	69,0
Report	506,5
Research	97,0
Taxi scene	9,0
Testing	31,0
Timer	19,0
Total Sum	1569,5
VFX	15,0
VR implementation	63,5



	Oneal	Griffin	Simon	Project Sum
Total Sum	435,0	557,0	577,5	1569,5



Project Status

Simon Vaular	
Completed	Lots of terrain and environment improvements this week. Also spent considerable time remodeling some of the bunkers in order to reduce average vertex count in frames as well as improve visuals. Added more slots to the inventory system and almost finished interaction with the gatekeeper.
Project Status	Result
	Schedule
	Hours
	Cooperation
Problems	<p>Lightmap baking is a problem that has been bugging us for months. We believe it would provide us with a huge boost in performance, however baking the lighting currently results in some objects having weird black spots or stripes.</p> <p>Also we have tried analyzing the games performance using Unity's profiler, but lack the required knowledge to identify the bottlenecks.</p> <p>Tests took a long time to get started because the PC would not run the game.</p>
Measures	<p>Gain knowledge on the profiling tools and use this to determine whether it's worth investigating the lightmap problem further. We suspect it might be necessary to remake some of the models as they have overlapping UVs, meaning shadow data from the back of the house also gets projected to the front. This will likely take too long to complete to be worth it for us.</p> <p>We should figure out what is causing the game to not run on certain machines. We suspect it is because these machines used SteamVR as default. They were for some reason not allowed to switch to OpenXR Runtime in the Oculus app. This is not necessarily a problem on our side</p>
Tasks for next week	Finish the gatekeeper with voicelines, more polished animations and object placements. Gate should open when interaction is done. Model the final bunker model (command bunker). Add more characters and interactable objects. Look into Oculus lip sync for unity.



Griffin Marshall Retzius	
Completed	<p>Added new interaction with Jugler, added a new car intro scene as well as fixing the intro scene. Some small environmental changes across the main scene such as rocks and foliage, as well as dampening the light in one of the bunkers (lamps added in the bunker).</p> <p>Added smoke trails and a big smoke trail for the car explosion. Sound and VFX included.</p>
Project Status	Result
	Schedule
	Hours
	Cooperation
Problems	<p>Player speed in relation to animation timing. If the player walks too fast, it can catch up to certain animations and events in the game.</p>
Measures	<p>The group needs to find a good balance here. Measures we can take are to decrease the movement speed and create new animations or keep the changes we have made and place the triggers for animations elsewhere so that the timing is correct for both the player and the animated object.</p>
Tasks for next week	<p>Create an outro scene where the player sits in the taxi and is driven out of the compound. Create another outro scene after the taxi scene where the player sits in a movie theater while watching the end game video that was given to the group.</p>



Oneal Didrik Ferkingstad Lane	
Completed	Added environmental changes, bugfixed previous work. Added minigame with time bonus. Added head tracking to NPC's.
Project Status	Result
	Schedule
	Hours
	Cooperation
Problems	Need to find a way to make timer less intrusive on the gameplay.
Measures	Figure out a way to link up the timer to something realistic like a clock attached to your wrist instead of having a giant timer hovering in the view.
Tasks for next week	Fix a clock solution to the timer so that it is attached to the VR hand, add new explosion effects to the mines which are more 3D, and refine the respawn mechanism. Link up the timer to an ending scene.