DADIU

Level Design

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Introduction:

DADIU is the National Academy of digital interactive Entertainment and it is a institution with a collaboration between different universities. The universities have different roles depending on the university and which specialities the students has. The students get categorized into different positions which fits into an emulated game production.
The master education Medialogy have four roles which are Programmer, Game Designer, Level Designer and UX Manager.
I am currently enrolled in DADIU with the position as a Level Designer. The DADIU education, this year, is one semester where the program consist of three game productions, two smaller ones then a Competence course and then the big production: the Graduation Game.
See the DADIU semester schedule on the figure below:

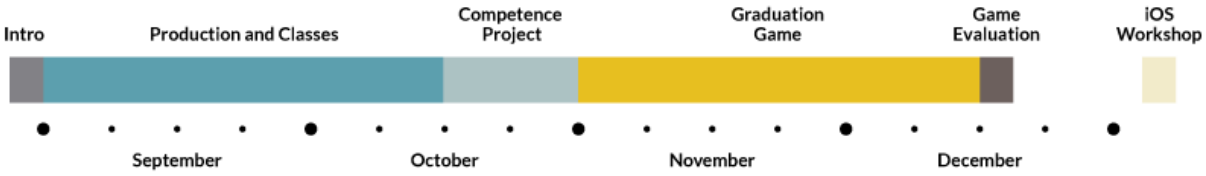

Figure 1) One DADIU semester schedule [1]

Our different time phases on the DADIU semester was as following:

Production phase one was from 1. September to the 16. September
Expert week was from 19. September to the 23. September
Production phase two was from 26. September to the 7. October.
Level Designer Competence week was from 10. October to the 21. October
Graduation Game preparation in collaboration with leads from the 24. October to the 28. October.
Graduation game from 31. October to the 9. December.
Evaluation 12. December to 16. December.
An IOS workshop in January

My role as a Level Designer is defined from DADIU by a position who is responsible for designing and implementing the levels in the game which includes flow as well as a player aesthetic experience. [2]

In reality throughout the game production my work tasks has varied while developing the games, the different task and work will be explained further under the different production phases and game development descriptions.
I have chosen to also include our mini project one and two because I did a lot of interesting level design in these two game productions, throughout the game productions my work tasks have varied.

The Condition in Production phase one and two was stated that we need to use a specific book and have to respects its looks, feel, content and universe, and therefore our first mini game production was based on the book, which was choosen to us from DADIU named Ymerdrengen, which is about a boy who likes Ymer by Oliver Zahle and Siri Melchiors. See the front page picture from the book in figure 2 [3].
The technical conditions: The game product must be developed in Unity [4] and build to the tablet HTC Nexus 9 and the builds has to be both in danish and english. [5]

Production Phase One - Ymerdrengen

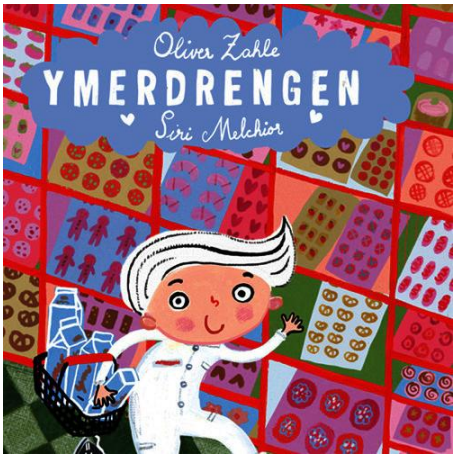

Figure 2) Front page of the book Ymerdrengen [3]

In the production phase one, we choose to make a game about the main role in the book Ymerdrengen. The Player's goal are to go towards a singing girl while avoiding Ymer spilled over the floor in a supermarked. The singing girl and the supermarket are represented in the book and also the Ymerdrengen not eating Ymer due to him trying to be someone else than himself.

When creating the level design the first step were prototyping the level design on paper and think about the introduction to the game and the tutorial levels.
The game mechanics were that while the music was playing the player would move on a set path towards the girl. The player could use the gyroscope to make the Ymer disappear so it is possible to progress.

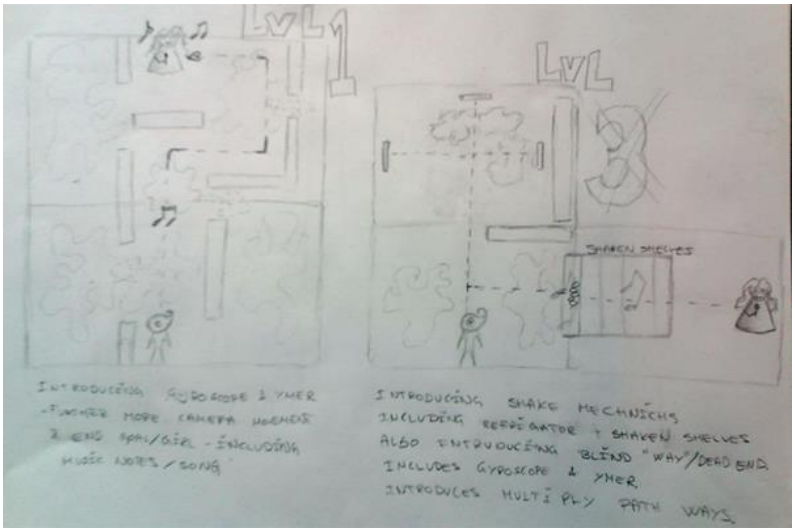

Figure 3) Sketch of Level Design

Level 1 began by introducing the controls and the game mechanics by using the gyroscope.
The progression throughout the different levels was that it got more and more complex. Before creating the levels in Unity [4] I created some sketches on the level design and the progression in the game.

In our first game production, not everything get implemented due to pipeline and us having around a week to create the game and all the game mechanics.
The gameplay trailer can be seen on the link below:

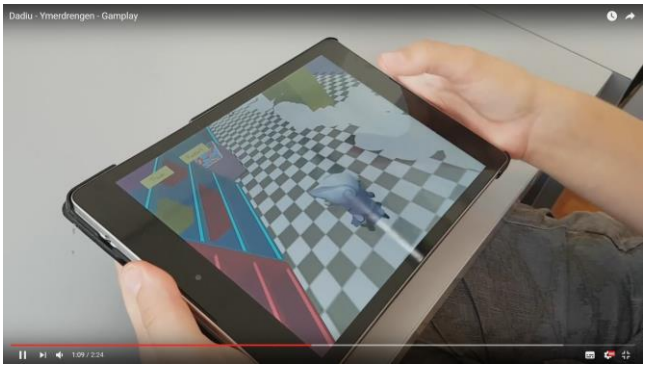

Figure 4) Youtube video Gameplay from Ymerdrengen
https://www.youtube.com/watch?v=wLGVjP1C27k [6]

Production Phase two - Rude Food

Rude food was the story about Ymerdrengen as an adult where he falls asleep in his office and he has nightmare about different food types attacking him. This story is not derived from the book, however we took art inspiration and some of the elements from the book Ymerdrengen.
The game mechanics is swipe mechanics where you have to swipe up, down, left, right to avoid the food monsters and collect ymer to make new tiles. You can place the tiles many different places and therefore the levels can be different every time you play them and replay them. Rude food was really fun and challenging to develop, for a level design perspective you had had to reflect upon the pattern the player would move within the grid system. The grid system varied from level to level. As a Level Designer you had great control, over making the monsters spawn in specific patterns were it was possible to decide where the player would go and in what order by timing the monsters and their placement.
The first Levels was created by lego pieces and on paper to test on how the player would react and respond to the different monsters. See figure 5.
The Grid was created like a coordinate system, see picture below, where the Level Designer could choose exactly what position and direction the monsters had this was due to their direction depending on the placement which could be specified. The figure, shows how the different direction was specified. See figure 6 below.

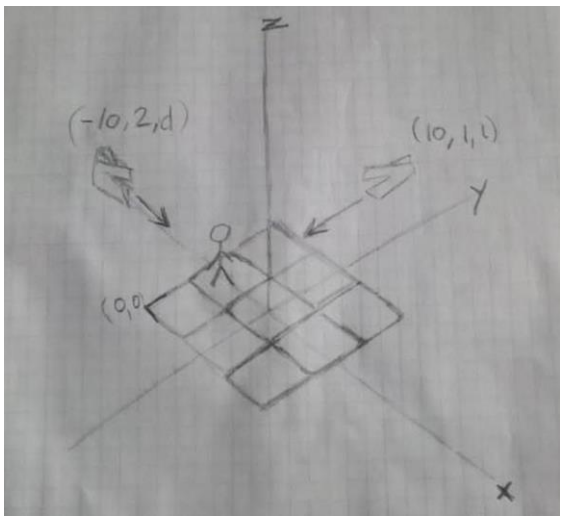

Figure 6) The Grid system woorking like a 3D coordinate system

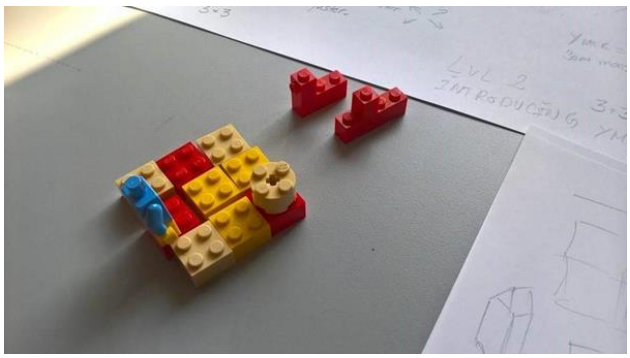

Figure 5) Creating Level Design with Lego figures

The level design in this production was focused upon making the player in the game move around as much as possible and set the different levels up with the art from the art department. Furthermore the progression throughout the different levels, when introducing the different monsters.

Throughout the level design many different grids and patterns was created. The first Levels introduced the flying pizza monster, then the Ymer was introduced, then the other monsters/game mechanics was introduced. Every Time a new game mechanics was introduced the level was easier to complete, the Level progression became more and more challenging for the players.

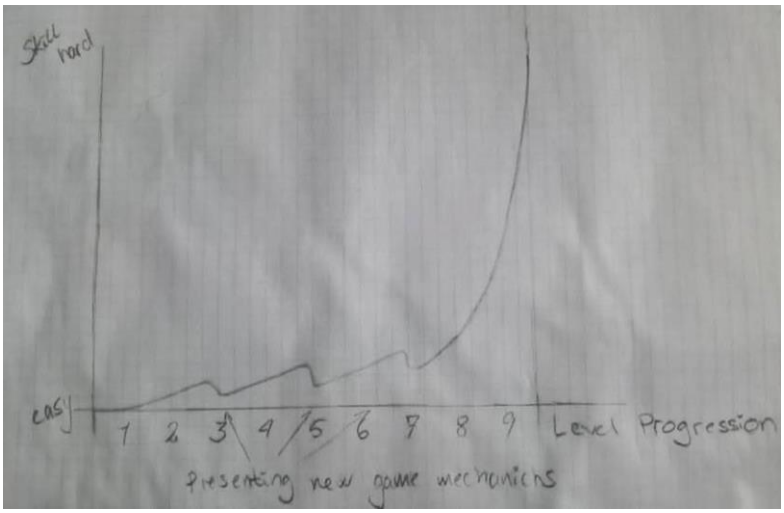

Figure 7) The skill progression throughout the different levels

As a team we all liked this game and we wanted to publish it, but since we needed permission from the book publisher, due to our game have taken inspiration from a children's book, we did not publish it. Figure 9 shows the final game.

Figure 8) The spawning system when spawning monsters

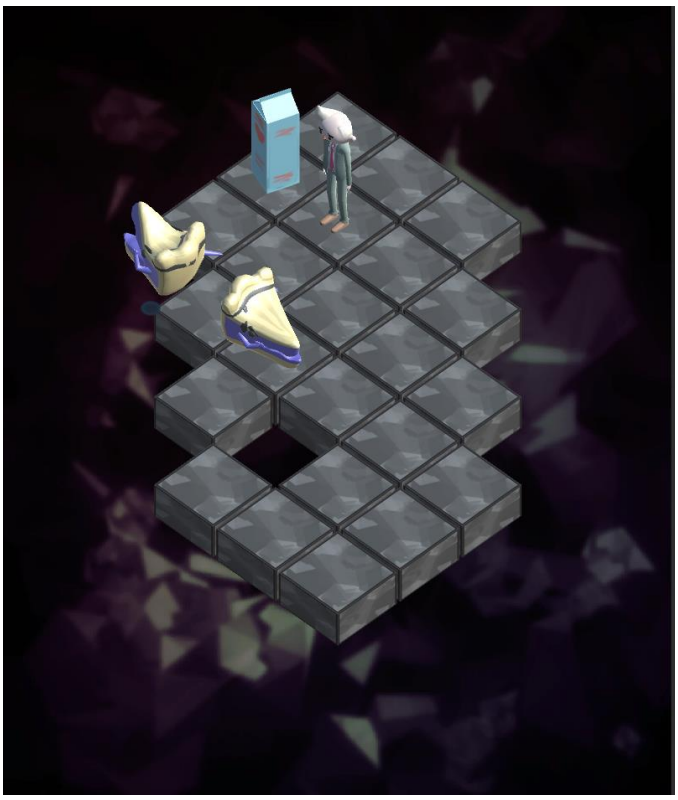

Figure 9) The final Game with tiles and Ymer

Final Game Production - The Worst Knight

Our final game, contradictory to the other game productions, had a story which we developed ourselves. The story was about a knight who did not want to save the day and did not want to marry the princess.
The game mechanics is about losing reputation by doing the quests wrong and e.g. instead of protecting a house you need to make the monsters destroy it, you can do this by taunting the house and make the not very smart monsters attack it. The knight can move around by a joystick, taunt, attack and furthermore overreact when getting hid, to lose more reputation.
From the Design document was following about the game written:

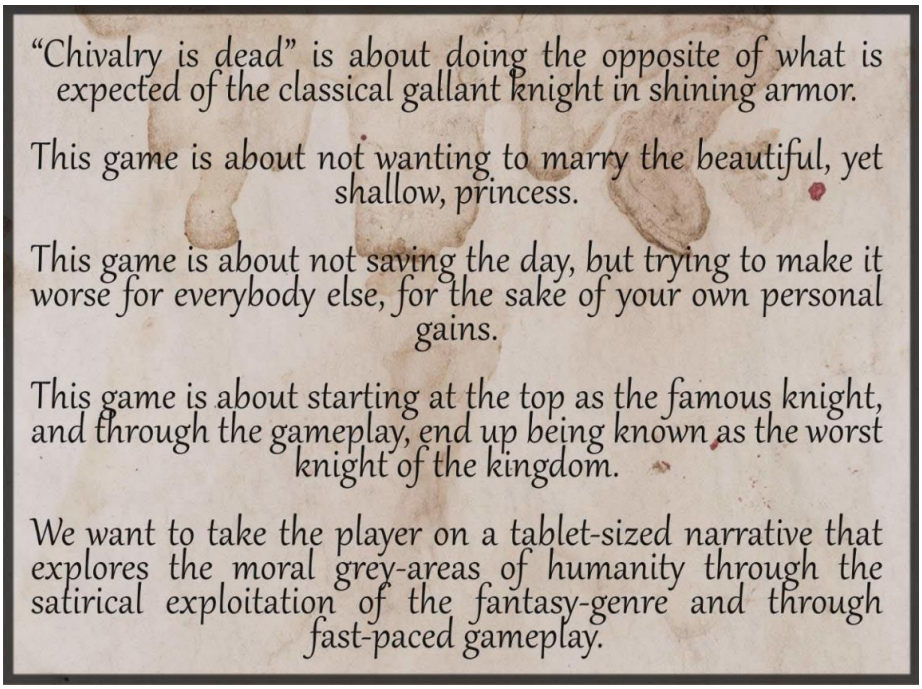

Figure 10) Design Document from Chivalry is dead (Title later changed to the Worst Knight). [7]

The Development process of the graduation game from the role of the Level Designer:

24 - 28. October. - Developing the Concept of the game; The Worst Knight.
31 - 6. November. - Development of game mechanics, game design and level design in collaboration with Game Designer. Creating level design with pen and paper.
7 - 13. November. - Grey boxing level design in Unity. Starting to implement, Box - Monsters with first developed AI, when scripts were done they got implemented.
14 - 20. November. - Implementing scripts, AI, characters into Unity. Furthermore working together with Art - Director creating environment and the look of the game.
21 - 27. November. - Polish Face; Placing all finished objects, scripts into the game furthermore, changing and improving the level design by feedback from the UX- manager.
28 - 7. December. - Finishing the last build, polishing it and implementing the last things and making changes based on feedback from UX manager.

Based on the development plan the methods the level design was created in was by;

- First prototyped the levels
- Then grey boxing them in Unity
- Then started to collect stuff in Unity
- The Level Design was then iterated upon, when feedback was received from UX manager.

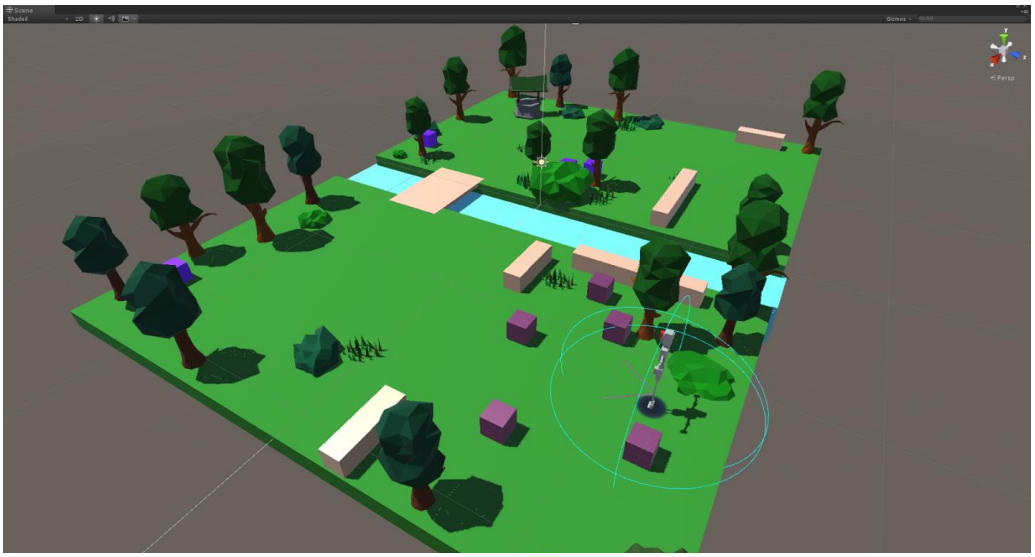

Figure 11) Grey boxing Level Design in Unity

From the development plan the level design focus was upon the placement of the static and dynamic placement of the objects. Also different shapes was created to every level to create difference in the levels with.
Tutorials: To present the game mechanics in the game three tutorial levels was created, where the work was focused upon the presentation of the game mechanics to the player. In the first tutorial level the player learn to walk, use the joystick and how to attack. After the cinematics the player learn that they have to behave badly to win the game, the next tutorial teaches the player how to get hit by ranged AI enemy. How to taunt and how to kill sheep when you taunt them and an enemy AI. The last tutorial you learn to overreact when you get hit and furthermore how the melee monster works.

Throughout the development of the game I worked on a variety of different tasks.
Some of these task was e.g. the camera in the game, which first was created in different zones and you had to place the camera zones around the levels. It was not the best camera script, because you had to set a focus point and it did not follow the player, but the camera script worked for the task. Later in the process by some influence from the level designer the camera script was changed so it always followed the player instead of being static.
See the different camera zones below, which was the first iteration of the camera:

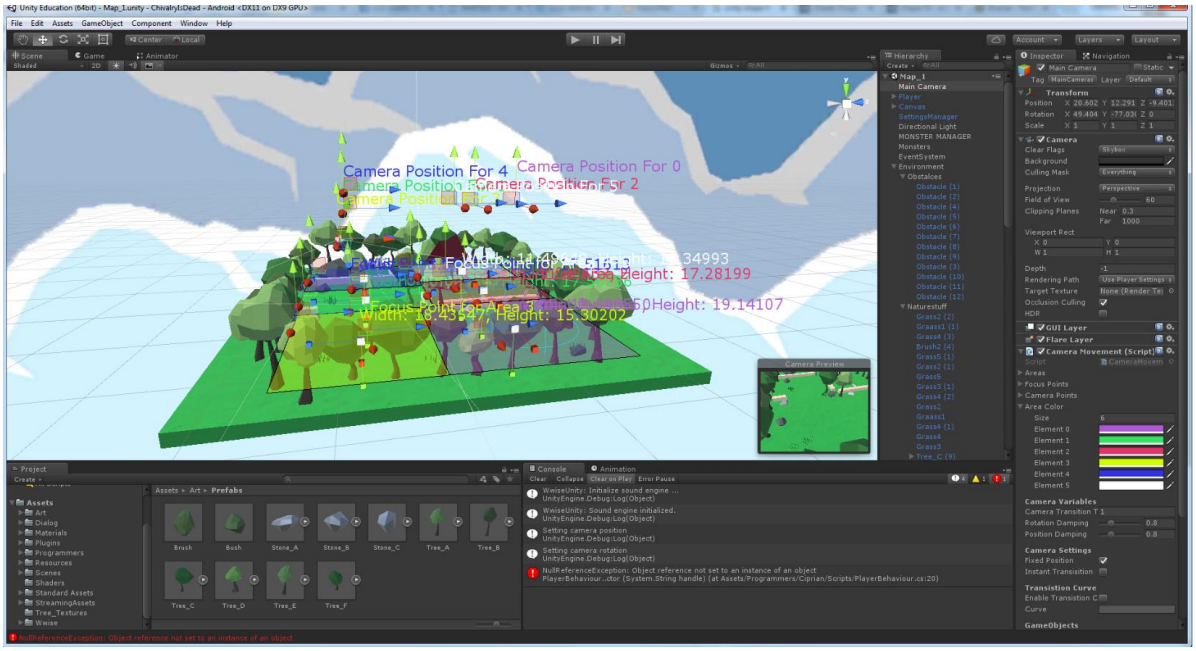

Figure 12) First iteration of the camera, where you created different camera zones.

Later in the process we also added an animation script, where in the tutorial levels the camera was animated to show the goal of the level to the player, so they knew the direction in which they had to progress.

Furthermore there was a lot of work with the Navigation mesh, which was a mesh that was constructed to apply where the enemy AI could walk and not walk, this was rendered with colliders in the scene which was set to static in the picture below you can see the blue grid, which are the navigation mesh.

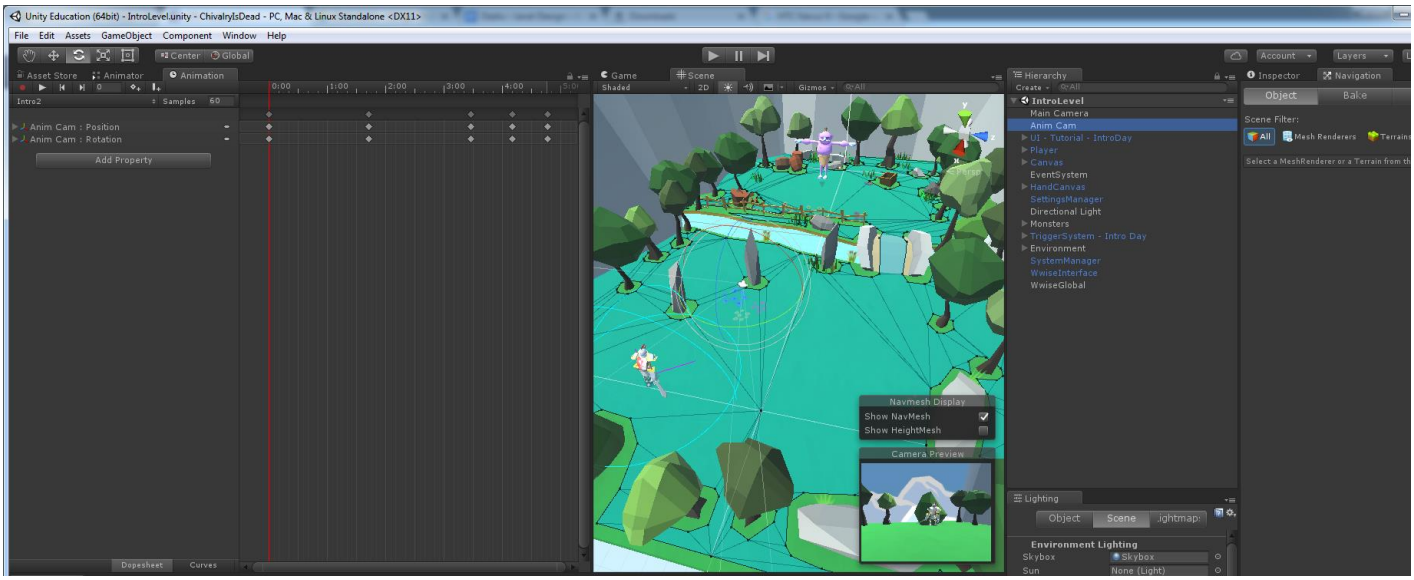

Figure 13) The Navigation mesh and animation camera

Evaluation part

Evaluation: The Worst Knight - Self-reflection, what I could have improved:

Shapes on the levels, I was delimited by production and the map sizes, however I would love to change the square maps or sizes because the game in general felt very square.
Because of the small map sizes, you could get stuck around the objects. This is some issues I would like to have worked more on.
Procedural quest and Spawning Monsters, prefer being Level Design where you place the monster contumely instead. All monsters spawned at once, no balance, and it seems like the same, when not different monsters/ enemy types.
It did not have this due to the procedural spawning pattern and it was too random.
To make every level being progression with the player skills, to give it a natural progression like Flow theory by *Mihály Csikszentmihalyi* [8].
Do more testing on the tablet while doing the level design, was very hard due to the procedural question system, if you untagged the procedural system it would break the game. So programming wise not optimal.

Process analysis

From a Level Designer perspective the greatest frustration when working in a study environment like DADIU have been the lead group.
More specified is that very young people with no experience at all are in the lead group. This however does not need to be a problem, but the problem has been their inexperience. The lead have been very power hungry which results in some of them not being willing to listen to those under them who are performing the actual tasks.
The lead have taking wrong decisions without listening to the people who should do the work, which resulted in a bad pipeline and no time to implement all the things which should have been implemented. Planning too much but not having the time to execute the actual work. However it has not been everyone in the lead group, e.g. the lead programmer was being excellent in handing out task and be sure that people could do it on time.

One of the greatest problems in the production has been the Game Director. The Game director has no experience in the field and he is 20 years. I want to state that the problem is not regarding the age, but the matureness, there might be some in this age who really know what they are doing and are really great at it, but our Game Director just started the Filmskole institute *(where he is taking the animator instructor education)* [9]. It seemed like he had no experience in developing games and creating games. This is not necessarily a problem, however the greatest problem have been the power hungriness and not being able to listen to those who have a “minor role”. The Game Director enforced his own ideas and work, even when it was horrible and no one in the production agreed. E.g. our last

game, he made wall of text, because he is used to make films. Player do not want to read wall of text, but play a game.
One of the main problems after have studying for many years and read different articles it is really hard to work for someone who does not regard science at all and don't care about how wrong they are and only wants to listen to their own thoughts and ideas, because they have a lead role.

The Art Director, were very emotional, it was impossible to reason with her and if she did something wrong and you mentioned this for her, and she would start yelling and make a scene. Wrong decisions was made by the Art Director based on them basing their opinions on feelings and what they want, instead of knowledge of the Unity engine and how to develop a game. E.g. the art department decided to texturing colours into the art and texture mapping instead of changing the light in the Unity engine, where after everything had to be redone. Also the UV mapping and the texture mapping was ridiculous big compared to be created to a tablet game. It is fine that the Art Director do not possess the necessary knowledge, but instead of accepting and learning, a scene was created instead.

It seemed like that the Game Designer and Lead programmer who both came from a Master of Science degree, did a much better work in their lead position, they were much more willing to listen to the other students and they also admitted when they did a mistake and took responsibility.
Furthermore you worked with many young people who all the time cared about what everyone else was doing.
The tone of the production room was also not very nice, people said e.g. it looks like shit, and did not talk very nicely to each other. However I guess this is common, when so many young people work together.

Pipeline Evaluation

The way our structure and pipeline was developed, did not work very well. We are all in a small production room together, and due to some leads being very power hungry, all communication regarding a specific area had to go through them.
Which often resulted being a waste of time, because they would misunderstand the communication and the actual tasks, where it would be easier to communicate directly to the people who are making the specific tasks.
Example, if an animation are broken, and you see this in Unity when working in engine collecting all stuff which are being made, it was not possible to go directly to the animator and say what mistake it is or what problem it was, even if it takes five minutes to fix, you have to go through the Art Director, which have to acknowledge the mistake, before it could continue to the animator, this process was a waste of time and a lot of things ended up being misunderstood and cause unnecessary drama. Where a direct communication would have worked much better.

Post Modem

"It has been fun, Good job with the level design. Incredible depth in the game. Seems like there is a lot of thoughts about the universe the humour etc. furthermore breaking with game convention because you are the Worst Knight."

- From our evaluation and level designer Astrid Bz Madsen

Throughout the Dadiu production I have learned a lot about level design. Furthermore I have gotten a better self-confidence, also in the 3D rendering and modelling department, after seeing how much knowledge I actually possess after I have met a lot of 3D artist from Truemax academy.
I also got a deeper knowledge within texture atlas, batching and draw calls which I would never have learned elsewhere because we had to make a tablet game.
Furthermore I met a lot of great and talented people I will gladly work together with in the future, to game jams as well as in the game industry.

Youtube Link to our trailer our final game the worst knight:

14) The Worst Knight - Youtube link: https://www.youtube.com/watch?v=52pvojxbSAU [7]

Link to our final game on Google Play:
https://play.google.com/store/apps/details?id=dk.dadiu.worstknight

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