

THE SKY IS THE LIMIT

Process Documentation



INTRODUCTION

A few weeks prior to the semester, the idea to attempt the most ambitious semester game project, which the UE BTK Hamburg had ever seen, started to develop. A lot of research and discussions went into the preparation of said project, as consent by the head of Game Design studies and all affected lecturers at our university had to be given. Furthermore, prior clarification on how flexibly course assignments could be tailored to a singular focus on one specific game was also of utmost importance, as one could anticipate an extremely high workload in the process of this undertaking. It was important to grasp whether there was going to be too much friction between our course assignments and the work we would have to do to develop our game, before committing fully to it. Hence as many course assignments as possible had to be streamlined, within the boundaries of the curriculum, to allow us to pour most of our resources into our game.

Fortunately, we were able to receive sufficient guarantees to give us the confidence to proceed with the original idea, to develop a single game from nothing to a finished vertical slice prototype of a highly polished standard. To achieve this, a team of significant size with expertise in most if not all important areas was crucial. Therefore the Game Producer, Bela, began recruitment a month before the official start of the semester, to allow everyone the time to decide whether they wanted to participate in this new challenge and also to guarantee everyone a spot in the required elective courses.

The project in this manner was formed to give us the opportunity to address the following aspects, which are difficult or impossible to implement in a normal semester context.

- On the one hand, we as a team felt the need to make a game for the first time that gives us the feeling of being thoroughly designed and properly polished.
- On the other hand, a project of this size provides a platform to simulate the "real" operation processes of professional game design and offers each project participant the opportunity to focus on specific fields of interest instead of being forced to "wear many hats", as it would usually be the case in a semester, where students work in multiple groups of 2-5 people on small scope games or game features per course.
- A project of this kind would be a great preparation for the upcoming practical semester and sensitize everyone for the necessary soft skills required to make a large group of people work in unison.



Download the game here!

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THE TEAM

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As the semester drew closer, the team started to take shape and every single contacted student committed to the project. Furthermore, the addition of two external game developers further complicated the organization of the project, but also diversified the team and overall array of skill sets.

Given the team size, it seemed suitable to divide the team into departments for the three major pillars of game development - Game Design, Game Art and Game Programming - and hand the management responsibility of each department to a single person in the form of a Lead Designer, Lead Artist or Lead Programmer.

To maximize team efficiency and overall happiness amongst the team members, a survey was created to give an overview of each individual's strengths, weaknesses, professional focus points, areas of interest, hopes and desires for the upcoming project.

Despite the initial longing to have a singular focus for each team member, due to the confines of our curriculum, but also personal interests and preferences, it was suitable or required for most team members to take part in at least two departments, with emphasis on one of the two.

Fortunately, Lead roles were easily distributed to eager candidates without any conflict, which also further solidified the feeling that the team was selected properly and quite well balanced, not only in regard to skill sets, but also considering the urge for leadership and responsibility amongst all team members.

THE TEAM



Bela Baldwin

4th Semester
Bachelor of Arts:
Game Design

Focus Role: Game Producer

Additional Roles: Narrative Designer & Support Game Programmer

Strengths: Creating opportunities for individual growth and excellence for all team members. Keeping the vision, maintaining structure and a realistic outlook on project processes. Well developed writing and narration skills. Highly self-reflective and driven to personal and professional growth.

Personal Goals: Achievement of an excellent result by the end of the semester, to individually apply for the internal university scholarship and potentially even for competitions (e.g. DCP) on a national level as a team.



Falk Blunck

4th Semester
Bachelor of Arts:
Game Design

Focus Role: Lead Game Designer

Additional Roles: Level Designer & Support Game Artist (2D & 3D)

Strengths: Developing and keeping a creative vision, enriched through engaging ideas and narratives, which emotionally and/or creatively stimulate the player. Friendly, communicative and embracing teamwork.

Personal Goals: Seeking knowledge in Game Art related areas and acquiring new hard skills with software and workflows. Hoping to overcome old struggles with intrinsic motivation and work ethic, through commitment to this single passion project.



Franziska Schümann

4th Semester
Bachelor of Arts:
Game Design

Focus Role: Lead Game Artist

Additional Roles: Core Game Programmer

Strengths: Strong art related focus with extremely broad skill set in animations and especially 2D & 3D art. Highly intrinsically motivated and flexible in terms of task fields. Visual vision keeping. Helpful, supportive and guiding in a positive team environment.

Personal Goals: Further development and enhancement of 3D art skill set, especially sculpting and modeling. Potentially also pursuit of rigging and animations, if feasible.



Christian Katz

4th Semester
Bachelor of Arts:
Game Design

Focus Role: Lead Game Programmer

Additional Roles: none

Strengths: Strong skill set in programming. Disciplined, focused and extremely ambitious. Self-reflective and capable of receiving criticism, eager to contribute to and work as a team.

Personal Goals: Taking responsibility on a new scope. Seeking out different programming challenges and thus acquiring as many new skills as possible and broadening his overall knowledge of code.



Alannah Wächter

6th Semester
Bachelor of Arts:
Game Design

Focus Role: Core Game Programmer

Additional Roles: Core Game Designer

Strengths: Strong skill set in programming with a focus on complex code logic. Communicative and reasonable in assessing task scope and overall organization.

Personal Goals: Contributing valuable ideas to the overall game design concept and further development of programming skills, further intensifying the familiarization with complex and recyclable code logic and architecture.



Kay Seifert

6th Semester
Bachelor of Arts:
Game Design

Focus Role: Game Animation Artist

Additional Roles: Game-play & Game Mechanics Designer

Strengths: Strong focus on highly polished animations and clever game design. Sensitive and accepting of others, enthusiastic and encouraging.

Personal Goals: Dealing with all major animations of the game and hone his skills, with a specific focus on giving his animations more weight. Furthermore striving to serve as the bridge to enable a streamlined communication of and coordination between Game Design and Game Art related processes.

THE TEAM



Robin Jünemann

4th Semester
Bachelor of Arts:
Game Design

Focus Role: Core Game Artist

Additional Roles: Level Designer

Strengths: Strong skill set in 3D art, with focus on 3D modeling and Environment Design.

Personal Goals: Improving his skills with stylistic 3D models and refine his overall modeling workflow, with a focus on UV unwrapping. Additionally boost his social and communication skills and behavior.



Kadir Gürsoy

Alumnus
Diploma Game Design

Focus Role: Core Game Designer

Additional Roles: Support Game Artist

Strengths: Decently developed skill set in 2D and 3D art, albeit a little bit rusty. Communicative and precise in analysis and execution.

Personal Goals: Reintroduction into game development in a friendly and positive team and working environment. Eager to contribute valuable ideas during pre-production. Acquiring more knowledge on professional workflows regarding 3D art development and reinvigorating dormant knowledge and skills.



Sophie Nyncke

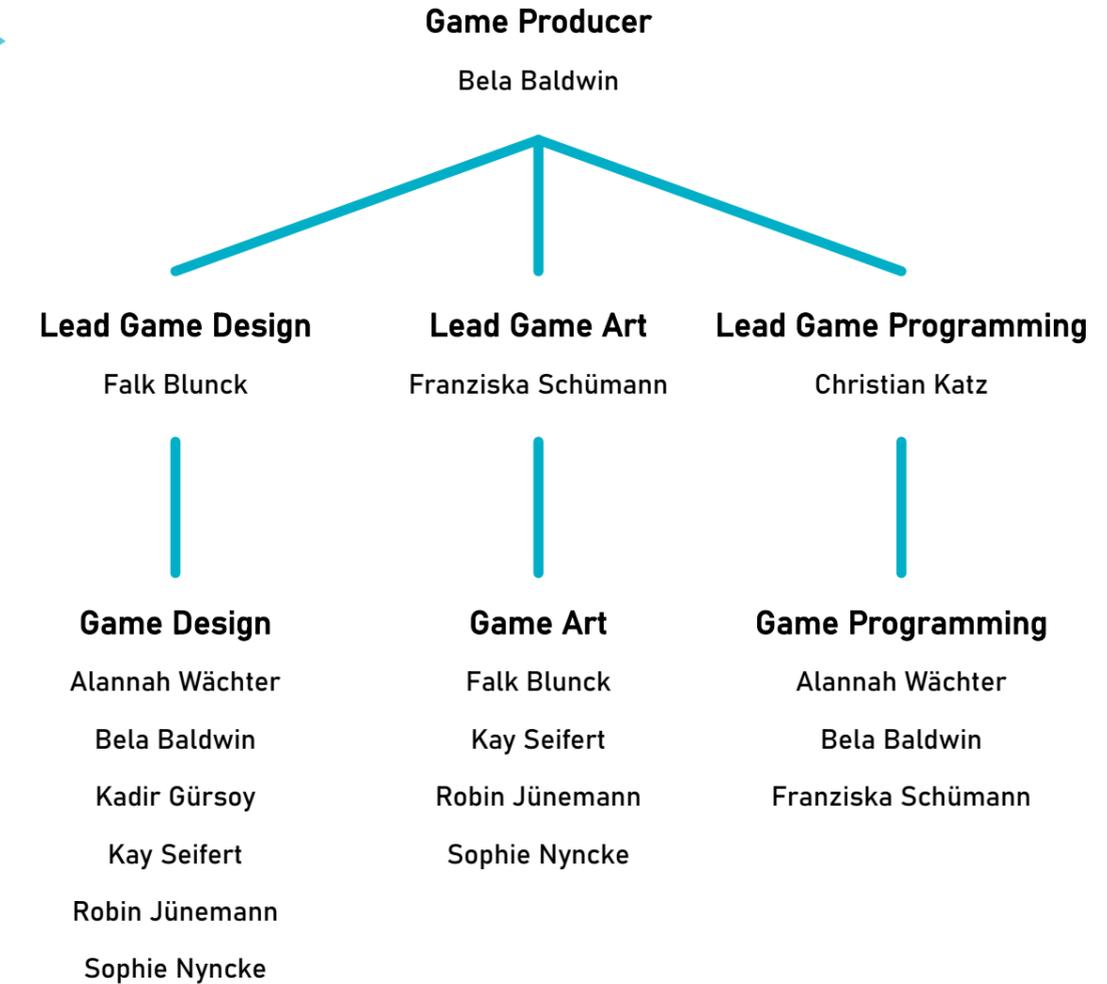
Alumna
Bachelor of Arts:
Illustrations

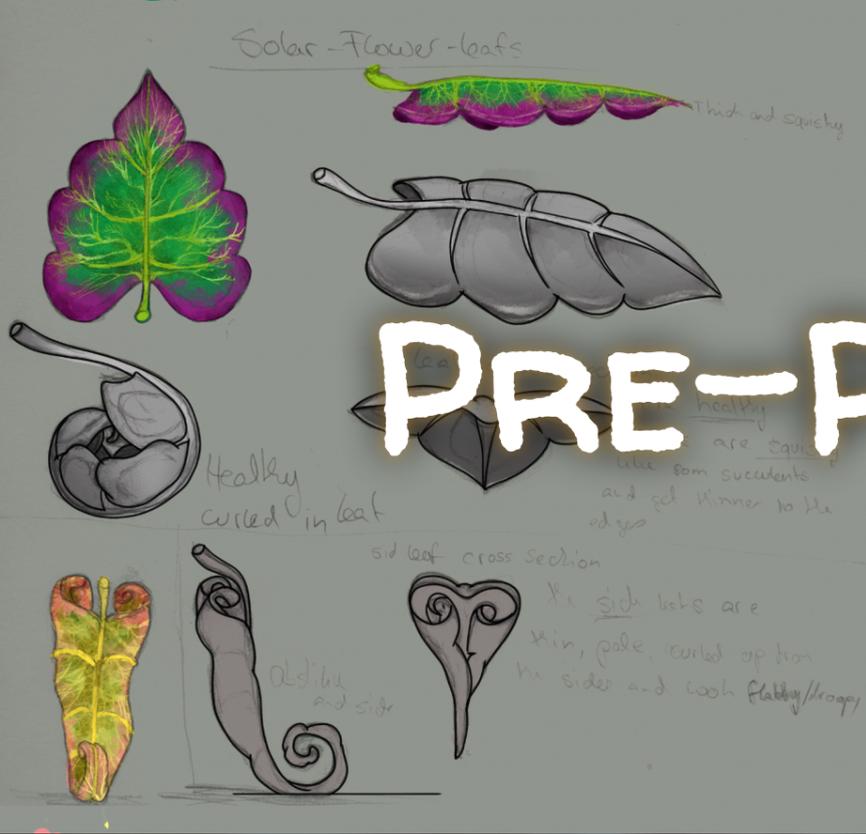
Focus Role: Game Concept Artist

Additional Roles: Game Designer & Support Game Artist (3D)

Strengths: Strong skills in Character Design and Environment Design. Driven and ambitious with passion projects. Sensitive and encouraging in the right team environment.

Personal Goals: Creation of excellent material to utilize for her portfolio and future job applications. Familiarizing with 3D art development software and workflows to broaden skill set.





PRE-PRODUCTION



PROJECT PLAN

Design (Falk)

Preparing a project plan for all facets of the design process was difficult, especially prior to establishing the overall concept of our game. In an effort to lay the groundwork however, Falk gathered information from everyone in the design team about their goals and preferences and devised a structure that assigned a specialized role for each member of the team that perfectly suited their talents and interests. These "job titles" served as a division process that allowed meetings and design work to be conducted in smaller, professional groups that could make progress separately and at the same time. Falk, as the design lead and "vision keeper", could then be the bridge between all of these subgroups and ensure they were working in the same direction.

The process of getting to know the wants of the designers furthermore resulted in a general direction for our yet to be conceptualized game and established our focus on atmosphere and level design.

Art (Franziska)

In preparation, two major team meetings were held to provide every team member of the art department with the pipelines and workflow that will be used for the project. For the first meeting, the goal was to determine the ambitions and objectives of each team member. These objectives were recorded in an Art Overview document. Based on the objectives of every team member, the tasks were distributed among the group. Additionally, the Art Overview document contains the workflow and pipelines of the asset creation process, the list of programs that are used for specific tasks, naming conventions and the envisaged folder structure.

Once the design process progressed further and the game idea that was developed was clear to everybody, another meeting was held to create the Art Bible document to specify the vision, art style and general visuals of the game. This document should serve as a base that should be extended and developed with the progress of the game.

PROJECT PLAN

Code (Christian)

As Lead Programmer Christian wrote the documentation for the team. It contains how they should work in programming and what they have to do. Thus he created the following documentations:

- Programming Workflow (how to code and structure in Unity)
- Bug Fixes (how the team should report bugs)
- Codecks (Workflow in Codecks & of the tasks)
- Version Control (how the programmer should work with Git)

Git Workshop (Franziska)

When using version control in a large group of people, it is important that every team member is equally informed about the usage of the workflow that will be used for the project. To ensure that every member has the ability to work with version control interfaces, a workshop was prepared. This workshop was divided into a beginner and an advanced category to provide everyone the necessary information they require. Kay and Franziska worked together to prepare the contents of the workshop. Kay instructed the advanced group while Franziska took care of the beginner group which also included other students that were interested in understanding version control for their own project.

FEEDBACK MEETINGS

Overview

As the scope and complexity of the intended game development were far beyond what we had experienced over the course of the prior semesters at our university, Bela arranged a feedback meeting for each individual department with lecturers from the specific background, which were to take place in the early stages of pre-production. Prior to those meetings each department, with the guidance of their leads, conceptualized and documented intended workflows, pipelines and also noted all relevant questions, specific or general, to be asked in the respective feedback meeting. Those documents were then passed on to the lectures as preparation a few days before the meetings, thus maximizing the potential gain on any possible input during this valuable time.

Overall, the meetings were great successes and lasted between one to two hours on average. The input gave the team and departments confidence in their individually created approaches and further added to them with valuable professional input, occasionally clarifying or solidifying certain aspects of game development cycles.

As there were small but helpful clues aplenty, we have decided to only list the core lessons learned, which proved to be most impactful for our future project processes.

FEEDBACK MEETINGS – LESSONS LEARNED

Design (Falk)

Just as with the project plan, it seemed difficult at first to predict structures of the design areas before the conception of even the most basic game parameters. That is why it proved challenging to try and come up with relevant questions for our lecturers concerning potential future design difficulties. However, the insights of Da and especially Steven were quite useful in the end.

The most urgent lesson we distilled from the meeting was about how our design processes needed to be sped up, since the structure of the semester demanded an expedient production. We then tried to save ourselves the less important bits of design work and conducted others simultaneously to the production period, working flexibly and discarding the mindset of exclusively linear pipelines.

Art (Franziska)

For professional feedback in the art department two meetings were arranged. The first one should prepare the art team for the pipeline and workflow while the second one was held during the character development to gather feedback for the character's design and the current pre-production state in general in respect of game art and a bit of design.

The first meeting helped us a lot to answer specific questions we had written down beforehand. We also learned useful tips and tricks that would help us along the way. In general we learned how to plan the art process and prevent problems in advance to not get overwhelmed during the production phase.

The second meeting helped us to rethink the character design choices and what would be important for further iterations. An additional emphasis was made on the modular asset creation which would be a key aspect that had to be paid attention to to reduce the amount of work for the creation of the big world we had in mind.

Programming (Christian)

The most important tips were about prototyping. We should focus on the mechanics and not on clean structured code. If the system works and the mechanic supports the game, then the prototype is finished and can be reviewed. The second important tip was for the movement system. It is difficult to build different full functional movement mechanics that works fluently in an open-world game. For example, we had to keep an eye on where the character could access the areas with the jump or that the movement system with the animations feel smooth.

MILESTONES

Due to the structure of the semester and the Game Design elective module, our game development cycle was, with addition of our individual and voluntary semester preparation, split into four basic cycles, which were intended to be rigidly separated from each other. The aim was to thus force the team to work within given time frames, to minimize procrastination, increase efficiency, streamline interdisciplinary task processes and severely decrease the risk of crunch before milestones' deadlines.

Each milestone had its individual major achievements, which were scheduled to be finalized by a concrete stated date.

Core elements which set our project apart from usual game projects pursued by students at our university are:

- Scope and complexity, achieved through development of a single game in unison with our courses
 - This required very thorough preparation and detailed communication between many people, prior to the start of the semester
- Awareness and desire for professional work approaches and processes, thus taking a large and meaningful step towards our integration into the workforce
 - Achieved through regular meetings and dedicated leads optimizing their respective departments

- Maintained by carefully structuring documentation, task tracking and actively communicating via designated channels
- Excellence and congruence, made possible through the joined efforts of dedicated and passionate team members, where everyone had a voice and issues - interpersonal or project related - were addressed in a timely and constructive manner

MILESTONES



DEVELOPING THE CORE GAME CONCEPT

Finding the Vision

After the very first lesson of our "Frieden"-module, the entire team came together for a five hour long video-chat to brainstorm, conceive and lay down the bare bones of our concept. An arduous process to be sure, although our excitement carried us through quite well. Using the Miro whiteboard software, we collected an enormous amount of keywords in what can only be described as the mother of all mind maps (Fig. 1,2) Next, each team member chose five of their favorite keywords to narrow down our inspirations. Splitting the team into three groups of three, the creation of the first, broad ideas for concepts began, utilizing the associations we had with our favorite keywords. We were unsure why, but the direction we were headed in was already quite similar in many ways for almost everyone. It was then that we knew we were going to make a game that tightly centered around nature, connectivity and movement.

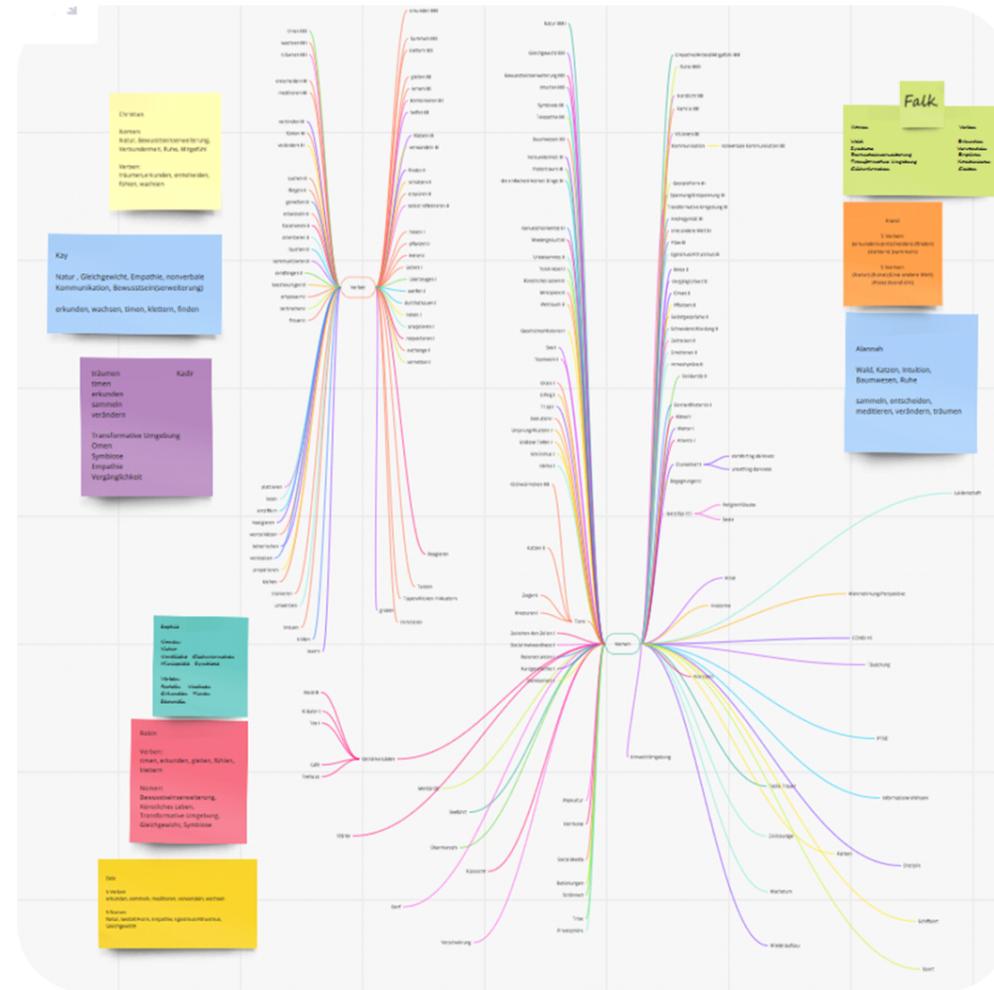


Fig. 1: Brainstorming in Miro

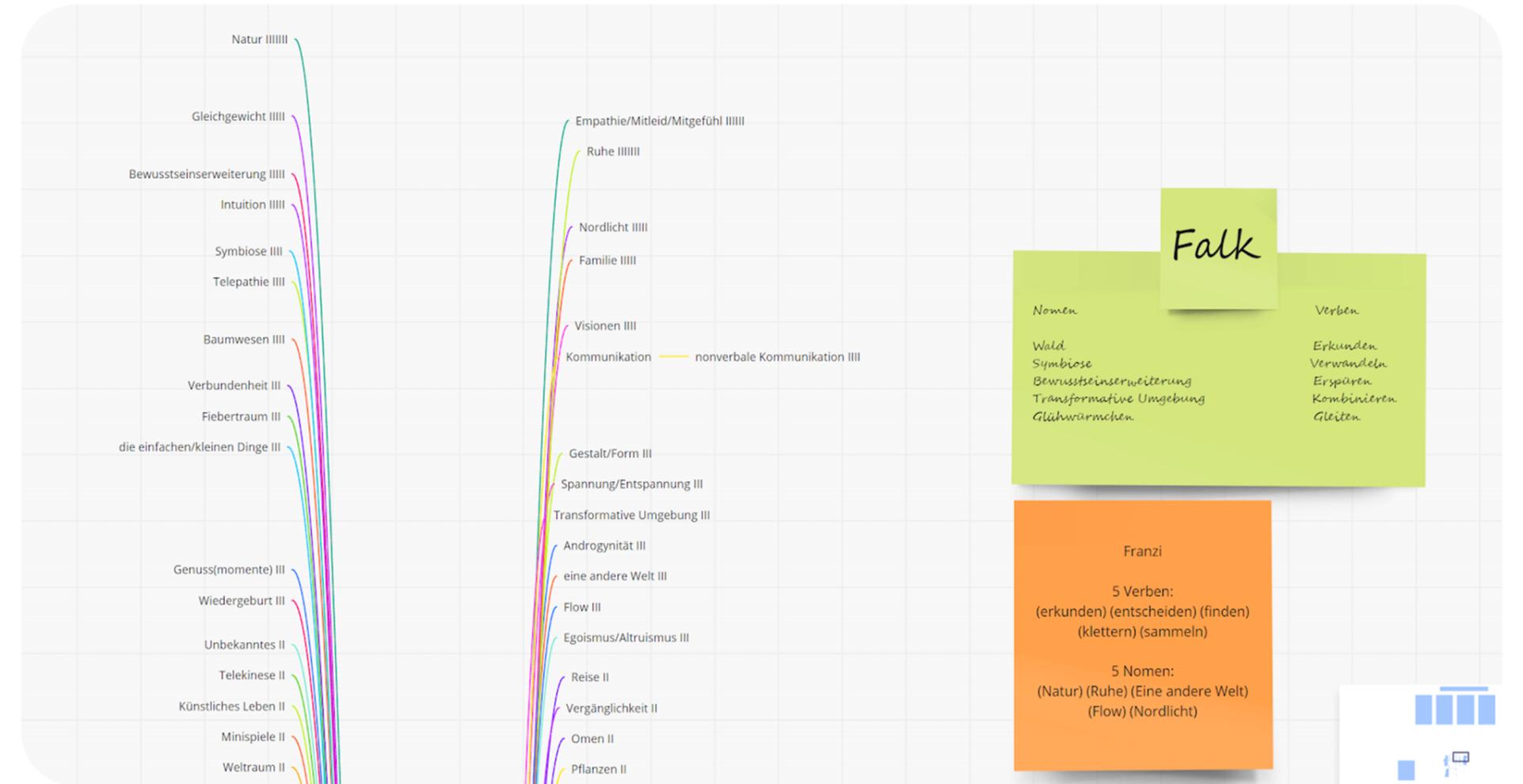


Fig. 2: Close-Up of the brainstorming

DEVELOPING THE CORE GAME CONCEPT

Design Pillars and Elevator Pitch

With Steven's introduction of the design practice, it was then time to devise three design Pillars to guide us through the evolution of the game. These are values that all design decisions should support, making them an effective tool for keeping designers on track. "Exploration of Nature", "Balance and Consequence" and "Change through Connection" were chosen for this purpose, encapsulating the intent for game feel, narration and mechanics, respectively.

Additionally, a short pitch was created in unison with these principals, briefly describing in text form what kind of game was about to be created:

"In "Placeholder" you assume the role of an entity with a profound relationship towards nature, which, through exploring and becoming intertwined with its surroundings intimately, changes them and itself, only to learn that its desire for peace and balance may not be as simple to fulfill as initially thought."

Design Pillars

Exploration of nature

Balance and consequences

Change through connection

DEVELOPING THE CORE GAME CONCEPT

Game Changing Conflict

At this point, many team members had faith in the vision they had worked on. Some, however, could not visualize the specifics of how it could all be realized in the end. With the project still in the early stages, this conversation quickly became highly theoretical and ultimately confusing. Resolving these worries seemed impossible and with such strong doubts, simply demanding trust did not feel like a satisfying solution. A quickly sketched and presented alternative game concept further created division within the team. Opposing opinions now either argued that starting over was too risky, or that proceeding with a flawed or incomplete idea was just as dangerous.

Doing Something About It

Talking had not solved the issue, so it was decided to take action instead. Since creating a prototype was on the agenda anyway, a plan was hatched to split into groups and work on different prototypes, to help us make a decision on how to proceed. Every subgroup was assigned a programmer and at least one designer. A positive side effect of this course of action was that we were able to test our capabilities regarding the programming of movement mechanics, which had incurred warnings from coding lecturers. Since we had never tried it before, we were also intrigued by the idea of using more of a bottom-up design process, creating something rather than theorizing. Within a very short period of time, the following explorations of possible paths to take were created.

PROTOTYPING – GROUP 1

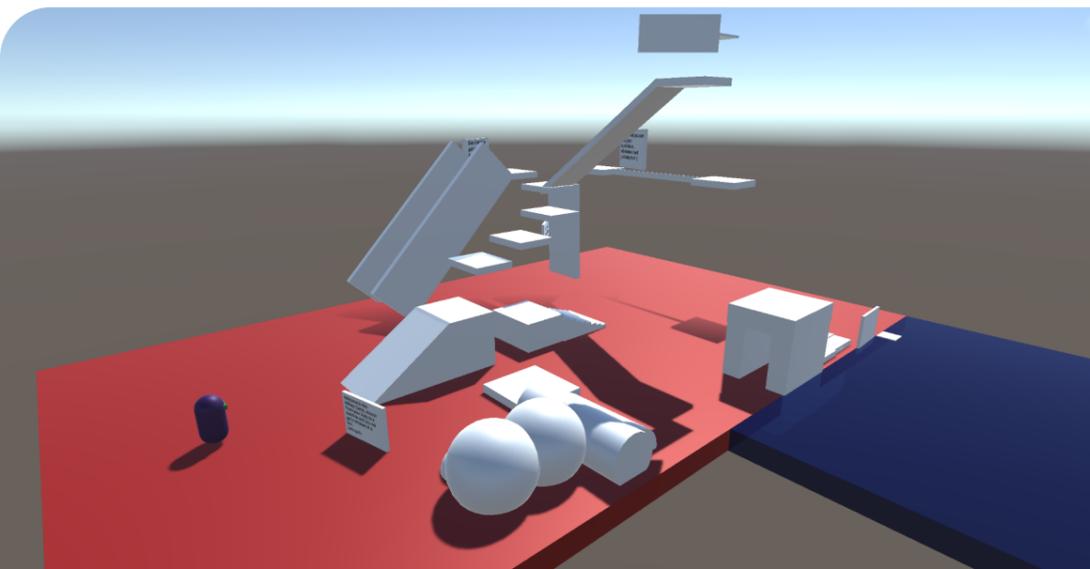
Version 1

Christian created the prototype with different movement mechanics. The player was able to move in all directions, could jump, climb, glide in the air and slide over the water. In the end, this prototype was chosen because of the already functional mechanics, which presented the desired freedom and different possibilities to explore and discover the game world.

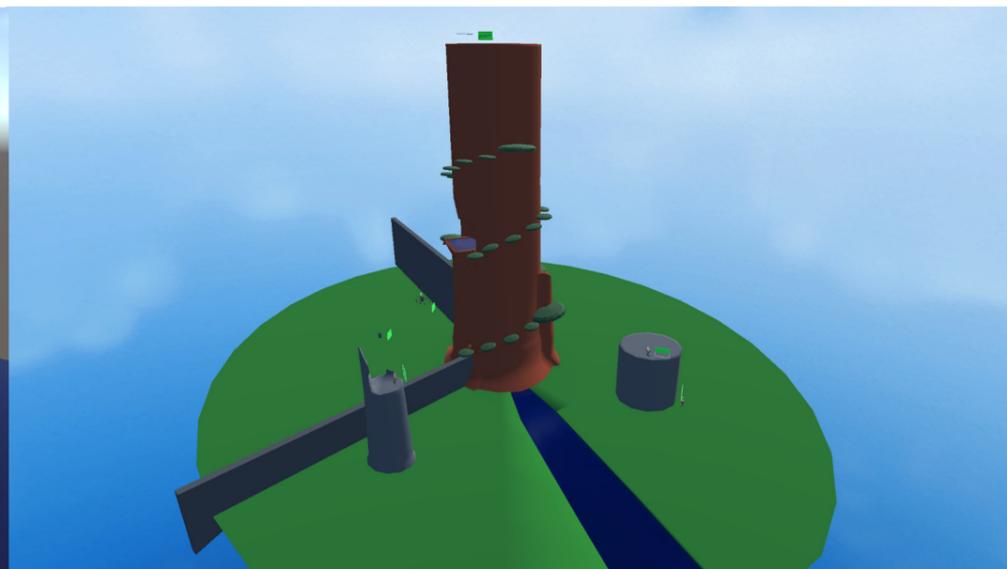
Version 2

In this prototype, the team defined the mechanics more specifically and created the first level design of the game. The player had the skill to slide through holes, to climb, to activate platforms for crossing and to use the cable railway. After the player has collected all skills they can reach the top of the tree, where the supposed end of the game would be.

Prototype Version 1



Prototype Version 2



PROTOTYPING – GROUP 2

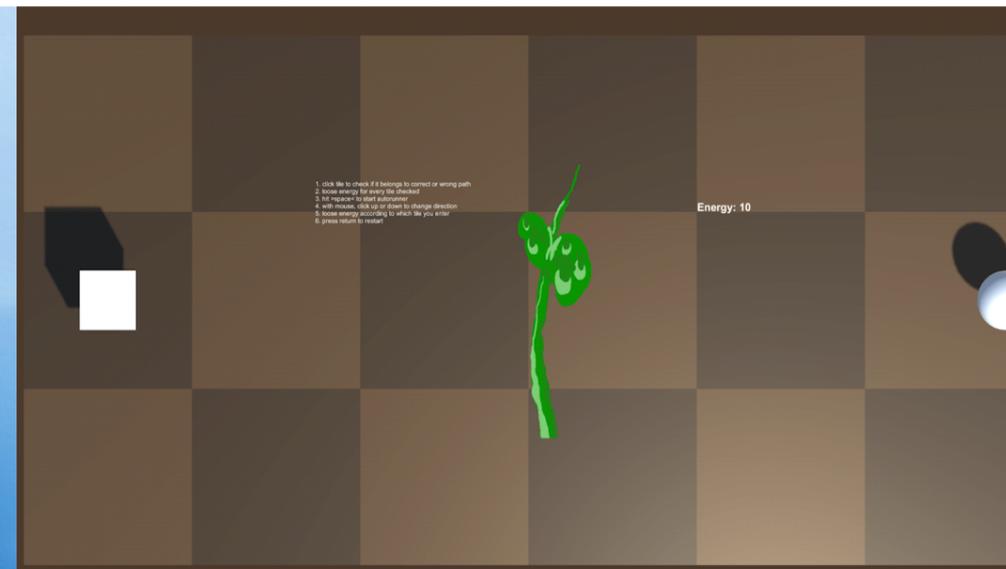
Alannah, Kadir and Bela were grouped together with the goal to develop an alternative prototype, which would emphasize the interaction between player and hero plants. Kadir and Bela took the role of Game Designers, developing a concept which would then be handed on to the Game Programmer, Alannah.

The challenge was to spontaneously create a concept which would suffice as a core game mechanic and retain player motivation. The overall design process, due to the tight time budget, was quite rushed and felt forced in many areas, as it had to fit into the already decided core game elements.

In the end the group focused on an interaction mechanic, which was supposed to visualize a connection between the player character and the hero plants, through a connection of a root system. The game mechanic was supposed to be a more tactical mini game feature, in a top down view, combining a crucial resource with a two stage game-play.

The rough idea was that the player character would approach a hero plant, interact with it and trigger an animation. Then a camera transition would take place and start the mini game. Firstly, the player would enter the scouting phase, during which they would have to spend energy to find a secure path to connect their roots to the hero plant's roots. This scouting would be done in a tactical puzzle fashion, not unlike the board game "memory". Secondly, the player would grow their roots towards the hero plant in a more dynamic phase, where precise directing of the root would be crucial, otherwise the player character could lose its remaining energy and falter. If out of energy, the player would have to abort the connection process and recharge by finding water pools or sun beams in the game world, before attempting the whole process again.

Screenshot of the first stage, the scouting phase. The player can click on each field to check if it's safe (marked green) or not (marked red).



Screenshot of the second stage, the root growing phase. After having scouted sufficiently, the player has to move and click with the mouse to direct their root (the ball) to reach the hero plant's root (the square) without spending all of their energy.



PROTOTYPING – GROUP 2

Conclusion

In the end, the team felt overall like this mechanic was not really suitable to be added to the game, neither as a core, nor as a feature game mechanic. The team wanted to create an immersive experience, which would have only limited or no moments at all, that could be an immersion breaker. A game mechanic, which is a non-diegetic mini game and also shifts the camera from a 3rd person to a top down view, felt like a drastic cut in our desired game flow. Hence, the decision to disregard this mechanic was made with confidence by the team.

PROTOTYPING – GROUP 3

The third group consisted of Kay, Robin and Franziska. While all worked together to come up with the prototype concepts, Franziska took care of the programming.

The first two prototypes were based on an idea that Kay had developed since the initial concept wasn't fully developed yet. This change of concept would help define the approach and show different views on the game feel. A core element of Kay's idea was a plant that needs help. The main character, a small creature that lives underground, finds this plant and helps it grow. The growing would lead the character to the next level above to explore different areas.

Version 1

The first version tried to implement the idea by creating a small level with the plant in the middle. The player then can run around and roll to collect water drops that are used to water the plant and make it grow. To implement the movement, a rigidbody was used. This way, the rolling would be influenced by the physics and create momentum to let the player jump over larger areas. Unfortunately, the physics based movement didn't work as intended.



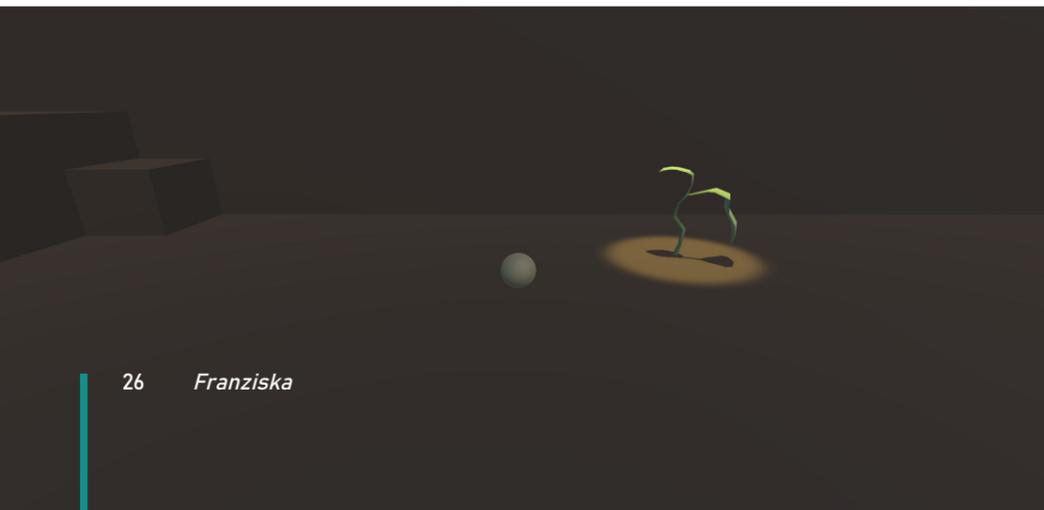
Prototype Version 1

PROTOTYPING – GROUP 3

Version 2

This prototype is based on the same idea as prototype one except that it used the concept of a side-scroller. This version would help us identify if different camera perspectives would work well. This concept would make it more of a platformer consisting of different levels than an open world that can be explored. However, in this version the player was moved by using the character controller of Unity. This way of constructing the movement is less prone to problems and can be adjusted without the influence of predefined physics. This is a useful realization that has helped to determine the approach that could be used for the actual game.

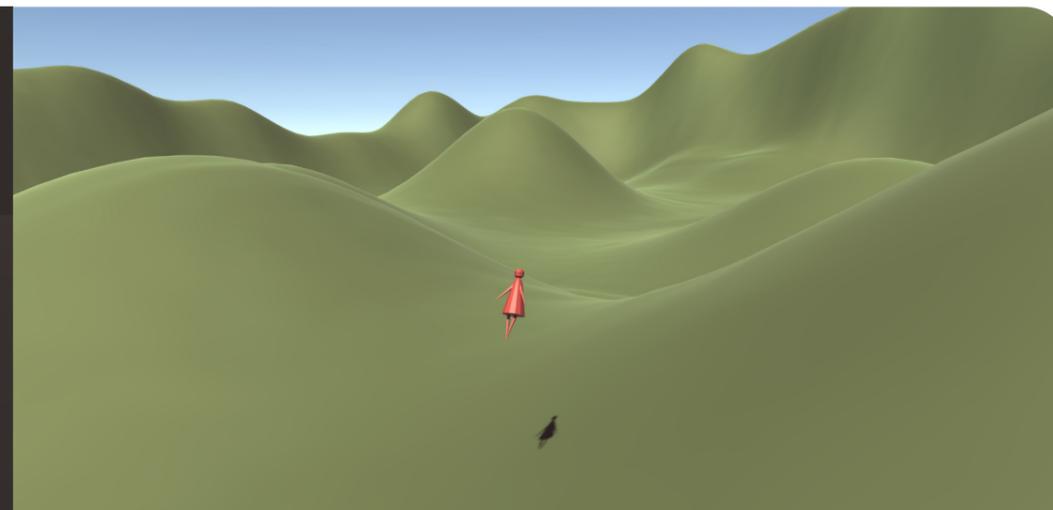
Prototype Version 2



Version 3

The third prototype is greatly different from the other ones. It is not based on any idea but should rather simulate a wider, more open area that can be explored with faster movement. Instead of restricted movements in a more condensed area, this prototype focused on an energetic and dynamic impression. The player was able to jump higher and had the ability to fly.

Prototype Version 3



PROTOTYPING – CONCLUSION

Decision-making

A vote quickly determined that Prototype Group 2, while having explored an interesting new direction, was not the way anyone really wanted to go. Prototype Group 1 and 3 were each successful in their own rite, both of which reaffirmed our tendency to focus on movement as far as mechanics go. The vote and following discussion had us settle on the prototype group 1 created, utilizing elements of group 3 as well, however.

This prototyping process offered new insights and first bits of experimental code, but it was not the key element to solving our aforementioned conflict within the team. This was finally achieved with the following.

Repitch-Presentation

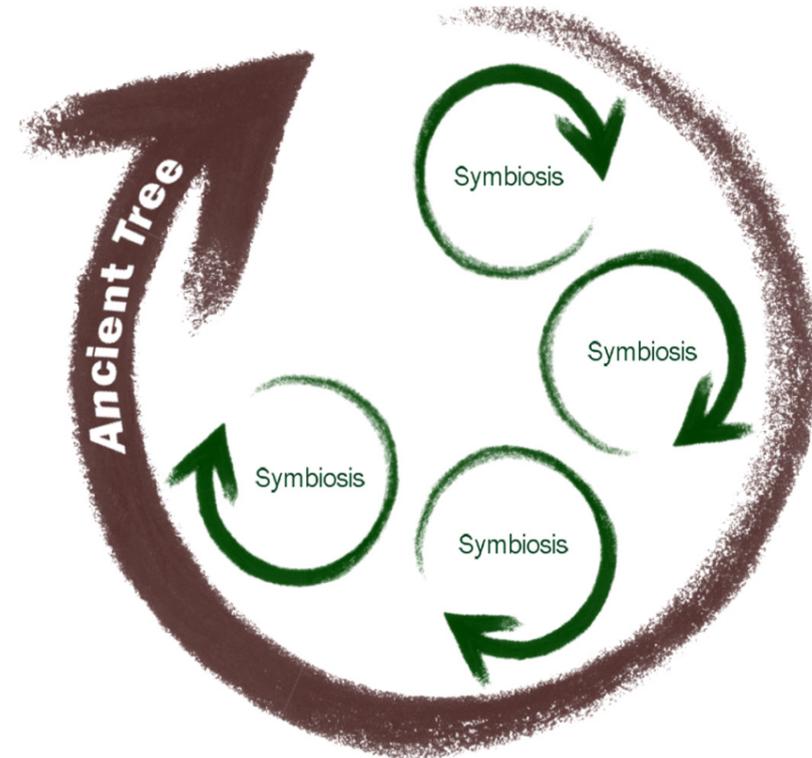
A part of Prototype Group 1, Falk basically misunderstood the assignment slightly and proceeded to be the only one who designed a presentation to illustrate what the game the prototype served could look like in the future. Determined to clear up the discrepancies within the team and to finally successfully communicate the vision he had in his mind, the presentation turned out quite extensive. Among other things it explored progression style, player motivation loops, mechanics and more. Most importantly, it did so while utilizing specific examples that illustrated exactly how the concept could work. This specificity was ultimately enough to provide a solid understanding of the (previously nebulous) concepts that everyone could share. We thus also learned that a bottom-up approach to design is of limited use to us, since the only thing that could clear up these uncertainties was a well thought-out rundown of a concept, very much a top-down practice. Be that as it may, a great starting point for the more hands-on stages of the project was reached, and the team was on the same page!

CORE FACETS OF THE GAME CONCEPT: AN OVERVIEW

Game Progression and Motivation Loops

The Player Character cannot climb the enticing, ancient tree but wants to, they will have to unlock new forms of movement.

In order to try and help plants in the forest flourish, players must seek out the four "mama-plants" representing a species of plants each. Finding them while exploring the singular, intricate level triggers a symbiosis between them and the player character, unlocking new paths or types of movement abilities. Having found, reached and helped all four "mama-plants", players must then use their new-found ways to move to climb the centric tree, a mysterious place that acts as a stage for the final showdown.



Mechanics

To highlight the centric exploration aspect of the concept, the mechanical focus in the game was determined to be on movement. These mechanics were going to be tied to the aforementioned "mama-plants", each granting either a new way for the player to move or unlocking new paths the player could use to move through different parts of the forest. The latter was a way of incorporating movement while still ensuring an achievable goal for the programmers, since unlocking paths is simple enough to script and usually entails little complication.

The four types of new movement were meant to be distinct from one another, so that the exploration stayed fresh and each new plant symbiosis seemed like a new feature contributing to the player character's growth. The examples we had established for the clarifying "Repitch-Presentation" served as a good indicator of what we were going for, while still being subject to change:

- Aloe Vera: Smear yourself slimy to slip through cracks
- Ivy: Climb vertical surfaces like ladders
- Lotus: Use these newly-grown, leafy platforms to cross ponds
- Liana: Zip-line through the canopies to get around quickly



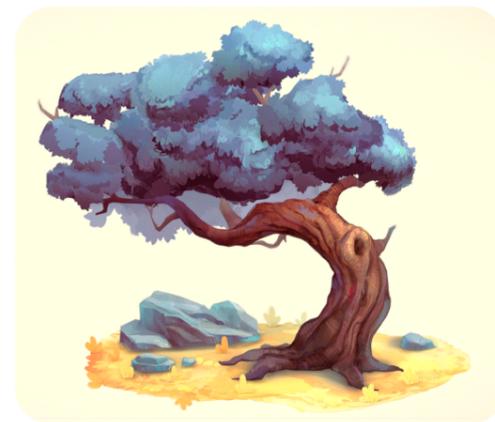
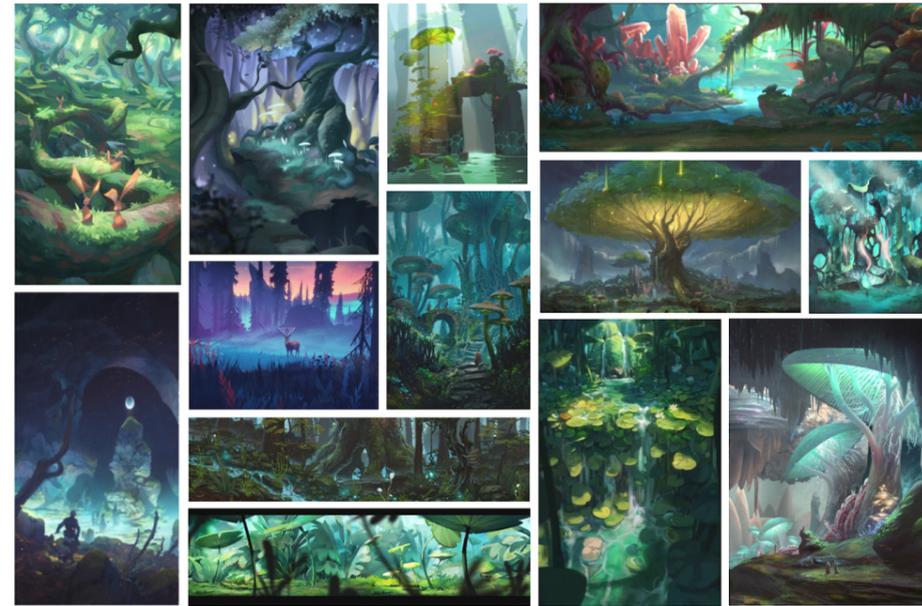
CORE FACETS OF THE GAME CONCEPT: AN OVERVIEW

Art Style

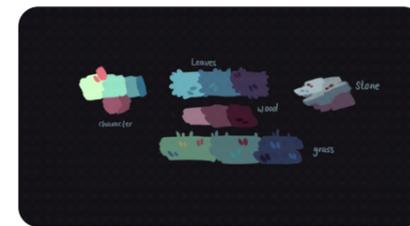
The art style for the game mainly developed during an art department meeting. For the art style a survey was made to gather the general vision of the art style and the color scheme. The results showed an interest in a stylized game with a bluish green color scheme that should feel calming and mystical but also earthy and uplifting. Additionally, many references were searched beforehand by all of the team members and gathered in three categories, one of which was „art style references“. In this collection a tree with a painted texture caught everyone’s interest. This texture was then used as an inspiration for our art style.

We decided to make the assets mid-poly while using a texture that would represent the feel of watercolors or paint. Since we wanted to create a calm, soothing game a paint/watercolor appearance would support this idea. To keep the style consistent, a specific brush had to be used to paint the textures. A color chart would help to keep the colors uniform and serves as a guide.

Moodboard



Style Inspiration



Color Palette

UI/UX

Minimal in-game UI elements

The goal was that the player should enjoy the beauty of the environment and the UI shouldn’t get in the way of this goal. The simple game-play of our game doesn’t call for many UI elements anyway.

Diegetic

Any in-game UI element should be diegetic if possible, this shares a similar design goal with the minimalism in terms of the number of UI elements. The player should be fully immersed in the meditative game-play and world. Any non-diegetic in-game pulls the player out of this experience and should be avoided. We used some non-diegetic elements, for the tutorial and as an indicator for possible important interactions, like mother-plants.

3D Main Menu

The main menu features a handcrafted 3D scene with minimal text elements. The goal was to instantly pull the player into the world of our game, to play to the strengths of our game and give the player a tiny snapshot of the world that he can expect. The minimalist text elements are inspired by other indie games like Firewatch and Outer Wilds, that have a similar strong artistic touch.

CORE FACETS OF THE GAME CONCEPT: AN OVERVIEW

Sound Design

As our game aimed to create an immersive, fantastical environment, which the player would relish to explore, we knew that Sound Design would play a key role, to emphasize those elements.

Unfortunately, no specific Sound Designer could be found amongst the team members, which led the team to focus on more pressing tasks and processes. As there was no concrete commitment by anyone, no concrete design decisions were made in this regards, knowing fully well that at some stage during production, Sound Design would have to be focused on.

Eventually towards the end of production, Franziska volunteered to take on the role of Sound Designer and individually pursued design specifics and execution, as the rest of the team was focusing on other aspects of development.

Narration:

A general direction for what would later become the Narrative Design was given through the main Game Design Pitch, developed by Falk and Sophie. It formed a few pillars, which the Narrative Design had to be tailored to, but also the research and conceptualization process hugely profited from, as a rough direction to follow was presented.

It was decided from an early stage that Bela would take care of the Narrative Design for our game. As the focus of our game was in different areas, it allowed for a lot of flexibility for the narrative aspects. Hence conceptualization of the narrative was planned to happen in the middle of production, after concrete design decisions had been finalized. With a slight delay, research into Asian, mainly Chinese and Japanese, philosophy and mythology was undertaken, a narrative concept was developed by Bela, revised with the help of Kadir and eventually pitched to Falk, as Lead Game Designer, for evaluation.

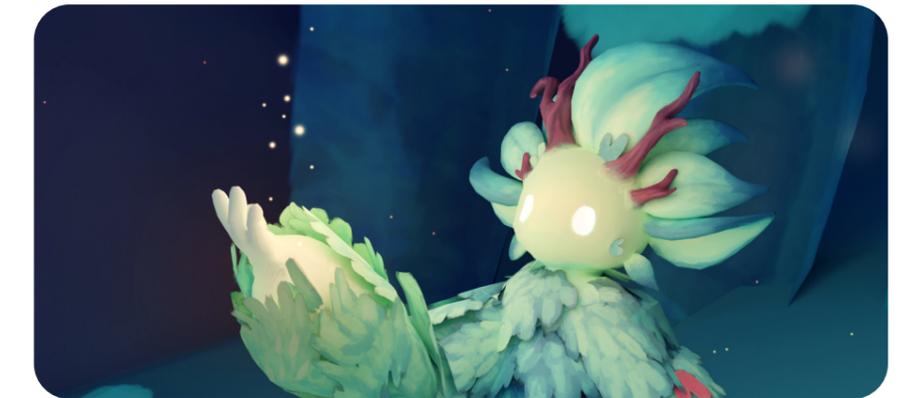
Certain elements, which would have translated some research findings much more consistently at the cost of players' clarity budget, were eventually cut, to really focus on the most fundamental narrative elements.

Towards the end of production, it became apparent that it would be unfeasible with the given resources to include any narration in our game, as certain crucial elements were of a higher priority, still unfinished or unfeasible to make it into the game during this semester.

Despite that, the back-log now contains a well thought out Narrative Design, which supports the overall game-play experience, adds subtle philosophical content to the game and has the potential to inspire self reflection in the players, after a successful implementation in the game at a later stage.

To summarize, the Narrative Design in its current form intends to wrap the game-play experience in a cinematic intro scene and outro scene.

Key elements of the narrative are floating glowing orbs that represent soul energy of deceased plants within the game world. The player character is born from them and, through the process of playing the game, will gain insight into the rules of the game and its world, thus enabling his origin soul to reach a higher state of being - enlightenment or sagacity. At the end of the outro scene the player will see that they only played one cycle of many, emphasizing the futility of their actions, thus expressing a key understanding of Daoism, an ancient asian philosophy.



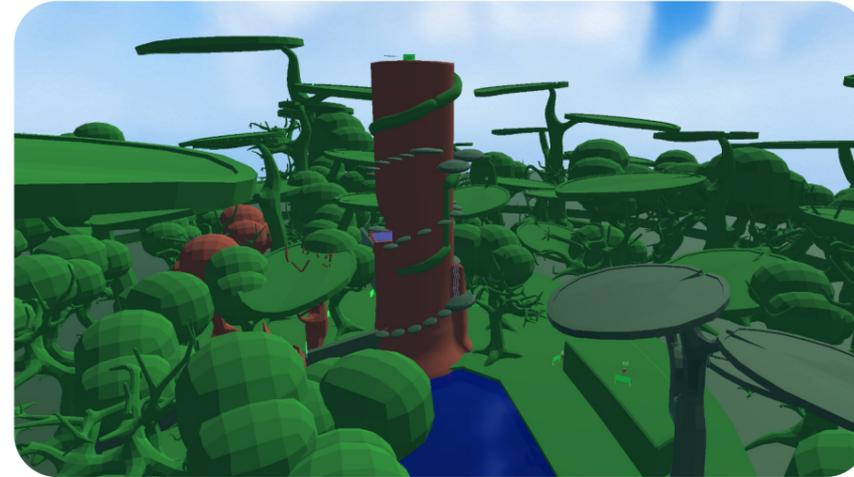
CORE FACETS OF THE GAME CONCEPT: AN OVERVIEW

Final Prototype

The Prototype was the first real test of the core game concept, it included the first test of the overall level structure, the different abilities and early asset testing. The focus was on the design aspects of our project and we wanted to test the following things before we committed

- Testing a circular level structure
- Testing of all four original abilities in more game like environment
- Testing of camera movement in a more realistic environment
- Finding a Balance between fluent game-play and visuals of dense woods
- Testing optimal jump range/distance and overall difficulty of the game
- Testing movement script interactions with more complex game models

The prototype was a success, the feedback from our module group was overall positive and it influenced all the decisions for the alpha build immensely. We held onto the circular level structure but changed pretty much everything else. Three of the four abilities were replaced, the overall difficulty was lowered to better fit with the meditative theme of the game and the movement script got reworked.



INTRODUCTION

We split our Alpha builds into two different versions, as the first one had to be created much earlier due to the deadline set by our elective module course. The team decided to focus all production efforts on the Alpha 2.0 though, as this version was intended to be playtested and hence was much more valuable for our project. Therefore the Alpha 2.0 includes a lot more polish, additional elements and features than the Alpha 1.0, as we decided to give team members more time to finish certain tasks, thus advancing the Alpha 2.0 as far as possible at the cost of having a relatively minimal Alpha 1.0.

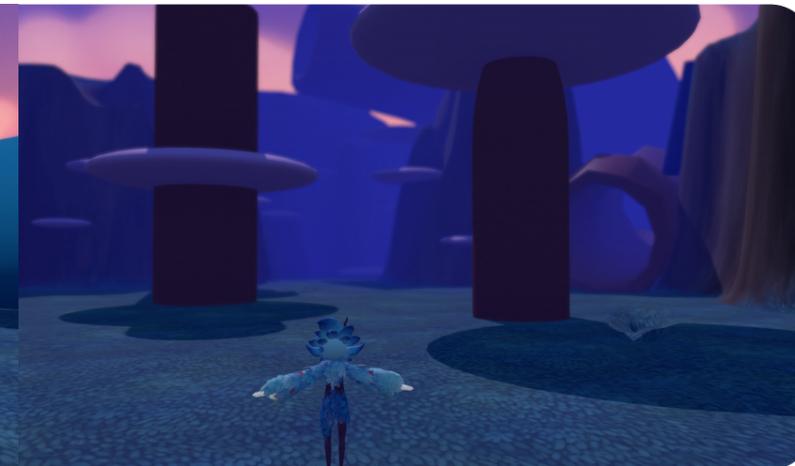
View from the starting point at the Solar Flower



Placeholder of the beginning of the ivy area



Mushroom trees placeholder in the ivy area



EXECUTION

Alpha 1.0

In this version, the Alpha 1.0, the character is in a T pose and can be moved around. It is the first concept of the level and there are few assets implemented yet, thereby the game world appears to be rather huge and empty. The player starts in the middle of the map at the foot of the central massive tree. That is, as intended by our game design, the end goal for the player and should be climbable in the final version. The start zone includes a few trees and some grass to fill the region and thus provide a first insight into the game's visual feel. Textures, trees and plants are already polished that emphasize the beauty and diversity of nature within our game world.

The first destination in the Alpha 1.0 is to get the skill of the first hero plant, the solar flower plant, to awaken her daughter plants. The flourishing plants, giant leaves at this stage, help the player to stride ahead by serving as platforms and bridges. To get the ability the player jumps over the leaves that are shown in the background on the left side of the screen and interacts with the golden luminous hero plant to the right.

The climbing level should be full of sky-high trees and enormous mushrooms to get the feeling of a climbing area. Ivy would represent the climbable territory to get to the higher places to discover this area and continue further. The region is accessible, but there are no ground tags, thus it is not possible to do anything, as jumping is not functional through code yet. The huge green cylinders serve as place holders for the demarcations - which would later be replaced by bushes, rocks and the likes - and the red ones for the trees. The pink flat cylinders are placeholders for the mushrooms and should be reachable with the jump later on.

Furthermore, there already is the first implementation of Post Processing and Unity fog to have better insight into the overall visual appeal.

EXECUTION

Alpha 2.0

Here exists the first version of the main menu and the slow and calm background music supports the peacefulness and tranquility of the intended game atmosphere. The player is able to go in the options menu, can start and quit the game. The options menu has only working graphics settings at this stage, containing mostly placeholders. Further settings like sound, credits and controls will be added later, to give the player the most important adjustment settings and basic information about the game (e.g controls overview and credits). The font and the scene will be changed throughout the iterative process, but this already gives an idea of how assets, color and lighting could introduce the natural feel and set a calming mood before the actual start of the game.



Main Menu

Execution



View at the new Solar Flower

The game itself didn't change much. The first run animation was implemented and the hero solar plant placeholder was replaced by a polished 3D asset. Unfortunately, the animation is broken and looks very stiff, but will be reworked in the beta. The hero solar plant appeared much more interesting and helped to emphasize the importance of this destination. It is, as intended by our design, the first guideline in the level to be pursued by the player as a goal to achieve.

Furthermore, the respawn mechanic is added and will be activated, when the player falls in the water. They will be set back at the start position and the actual respawn process will be more dynamic in the next iterations. Also, a wall check was implemented that doesn't allow the player to jump up walls, so as not to reach incomplete or unintended zones within our game world unintentionally.

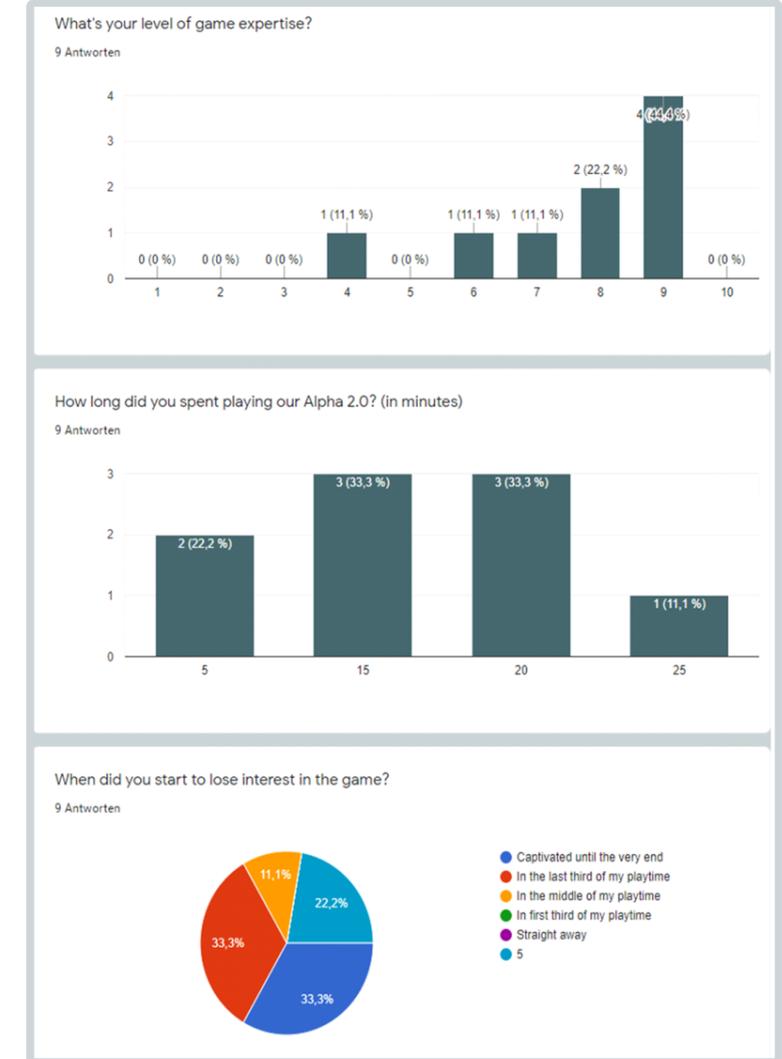
PLAYTESTING

A possible turning point for our project and game's direction could have been the UE Tuesday playtesting event, an online meeting where Game Design students, lecturers and professors come together, to playtest, evaluate and discuss current course game projects. As we so far had had no opportunities for external playtesting and feedback, it seemed crucial for us to attend this event with our Alpha 2.0.

Additionally, Bela also created a playtesting survey which was given to friends and family members together with our Alpha 2.0 for additional feedback.

Overall we didn't get any great feedback on our game state, as a lot of elements were missing and intended features were simply unfinished, or not implemented yet. As is often the case with early playtesting, a lot of feedback focused on what was obviously missing and a decent amount of playtesters were confused about the unfinished state of the game. It became apparent that a lot of people, who lack the understanding about the complexity of game development, could not go beyond what was visible on the surface.

Despite that, the general direction in which we were headed seemed to resonate with people and especially visually our Alpha 2.0 was already appreciated. The survey also gave some hints about which features we could easily scrap, to focus our resources on what seemed most crucial to further enhance our game.



Survey results



INTRODUCTION

The Great Realization

During the process of production and after finalization of the Alpha 2.0 a team meeting was held, in which Bela took charge and addressed a feeling, which a lot of team members might have still attempted to ward off. Once spoken out loud though, the team embraced the realization that we had aimed too high and at this stage it was utterly unfeasible to even get close to where we wanted to end up as conceptualized.

As individual course assignment deadlines were also looming ahead, which were not all directly contributing to our game, the team decided to cut back the overall scope of the game and, for the time being, focus solely on individual assignments.

With this approach we would hit two birds with one stone, firstly completing the required individual assignments and thus also adding to our game project. Any additional remaining resources and time could then be spent on further adding features or polish to the game.

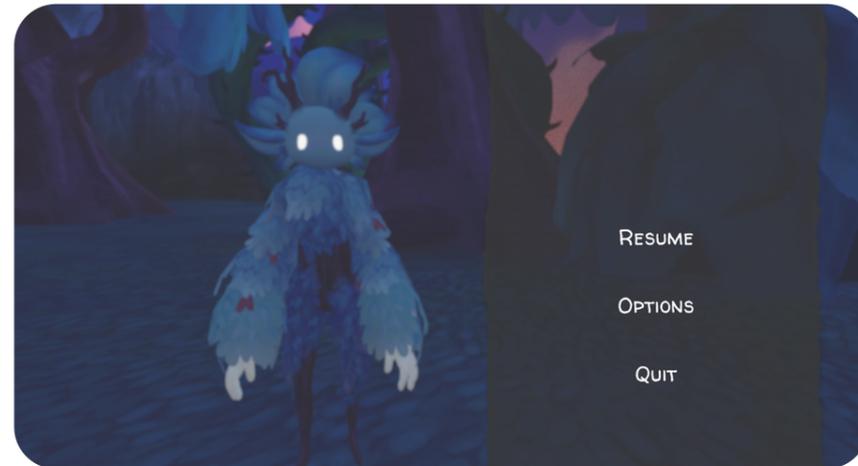
This led to the development of two Beta builds. Yet again, a Beta 1.0 version to meet a deadline of our elective module and a following Beta 2.0 to include a lot of elements, which were only finalized after the official end of the elective module course.

EXECUTION

New Character animations were finished for actions like walking, jumping and climbing. These animations added a lot to the believability of the character and strongly enhanced the feeling of the game play. In some areas of the alpha build we still used placeholders of game models, to fill the created space. In the beta build all basic placeholders were replaced by finished 3D models.

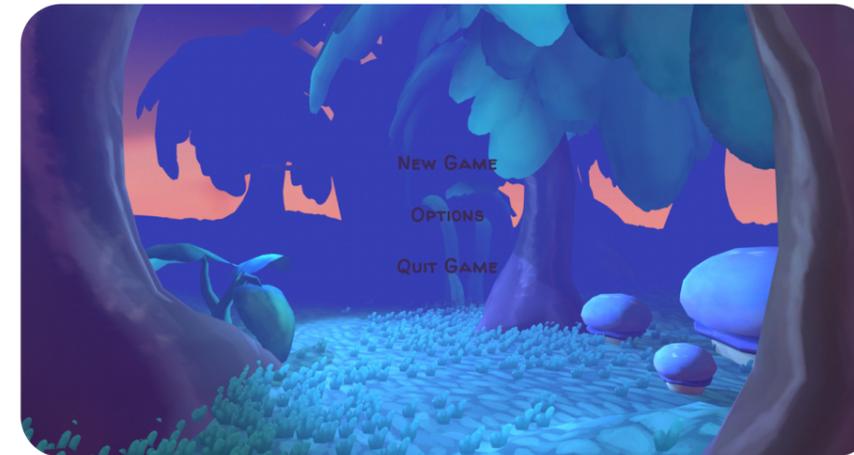


The screenshot above shows the same area as one of the alpha shots. The area really comes together after the removal of the cylinders and the addition of regular game models. These advancements can be found in other areas of the game as well.



We finalized the in-game menu with sprites and a camera rotation that shows the main character from the front. The in-game UI got a similar touch up, the sprites got replaced to match the other UI elements.

One of the most noticeable changes was the advancements in terms of sound and music, the main soundtrack got reworked and the already decent sound of the music got further improved. These changes plus the addition of a working audio manager put the sound design of the game on a new level and the results seem way more polished.



The alpha version of the main menu featured some placeholder models, these got replaced by some of the new in-game models. Replacing these models rounded the main menu out and it got a much more finished look.

One profound problem with the alpha version of the game was the lacking player guidance, especially directly after the start of the game. The addition of more boundaries, in the form of bushes, stones etc., to guide the player, this is particularly noticeable in the starting area of the game.

The meditation feature was added in the beta, the player character can sit down in specific spots and meditate. The music changes and the camera slowly spins around the character. This feature gives the team the ability to guide the player to curated vistas, which are spread across the game world. The meditation might be used as a way to show off the graphics, give clues for hidden spots and give the player guidance through the game, through a diegetic method.



PLAYTESTING

Playtesting so far has not happened on a similar scale to the Alpha 2.0, as resources have been scarce and other priorities were pursued. Playtesting for our Beta 2.0 - or possibly a Beta 2.1, which might be completed by the end of the semester break - with a more specific and properly thought-out survey is definitely intended.



THE FINAL GAME

THE FINAL GAME

Looking back at our initial hopes for the scope of our game once again shows the amount of cut-backs that are necessary for game development processes of any kind, even though we tried to limit our naivety from the get-go. Even the core concept could in the end only be realized partly, resulting in a sort of demo, which shows successfully where the game is going, but is far from complete.

This does not mean we failed. It means we learned that to truly complete a game within the time frame a semester dictates while also completing other courses, the game in question must be rather small. We wanted to try something larger and while it may have been too ambitious from a certain standpoint, we got started on what we set out to do and created a good chunk of something valuable. This is a success. Even more so, if we get to continue working on this in the future.

Our player character turned out very well and leaves nothing to be desired, from the model to the animations, this is an area we did not fall short of.

Of the three hero plants we designed we were able to implement the first two. The Solar Flower, which grants its light and enables the player to use it to unfurl leaves throughout the forest to use them as bridges and platforms and the Thorny Vine, which activates its vining children so they can be used as ladders to reach new heights. The third hero plant, the Floaty Seeds, was meant to bestow upon the player the ability to charge up their jump, making them go higher and sail down softly afterwards.

The level design accomplishments reflect those of the hero plants. The first two areas, the homes to the first two hero plants, are largely completed, though further polishing is required. Just like its inhabitant, the third hero plant, the last area of the game is yet to be included. More time to produce and tweak assets as well as to place them decoratively in vast numbers will be a future goal to further help the forest come to life.

The large, centric, tree we had based a lot of our core concept on, was unfortunately far too ambitious to realize. We knew it demanded the highest amount of work and since it would have come into play mainly towards the end of the game that we already wouldn't reach within this semester, we had to postpone the creation of this giant, intricate asset until further notice. A placeholder currently suggests what is to come.

The most noticeably lacking area is the narrative, due to us simply not having enough time to create the beginning and ending sequences that would have framed the game experience so beautifully. This will be an important and extensive task for the future, for which the design groundwork has already been laid.

There are little things we included and invested time in that were not originally planned, which is bittersweet. The bits and bobs are largely the product of the graded assignments we had to fulfill for our lecturers. The programming course, for example,

demanded a multitude of small mechanics that found their way into our game spontaneously and not quite organically. This took time that could have otherwise been invested in further working on our initial plans, but at the same time awarded us with nice details like the meditation scenes, respawn mechanic, adaptive audio manager and more.

All in all, what we made during this semester is an evolved, if yet to be completed, expression of our initial concept. It stays true to our intent to create a peaceful, atmospheric experience centered around exploration and nature and embodies these traits successfully. As a whole we are proud, happy, and some of us are looking forward to further work in this project soon.



PROJECT REVIEW

To conclude the whole game development process, one can summarize certain major achievements and key realizations for each of our four development cycles.

The project hugely benefited from a head start, the semester project preparation, during which a lot of structural and organizational fundamentals could be discussed and decided on. This allowed the team to hit the ground running and not waste precious time during the semester on elements that were easy to be clarified ahead of time.

Despite that, as the team wanted to create something in unison, brainstorming and conceptualization during pre-production took much longer than anticipated, as all of us were inexperienced working in such a large team. The pressure to quickly solidify our design concept, to start production as early as possible, pushed us to spontaneously develop new methods and find creative solutions under immense time pressure.

In the end the team overcame the most daunting challenges for our project confidently and completed the pre-production halfway into the designated production period. On the one hand it caused a ripple effect throughout the rest of the development, materializing in a much less finished Beta 2.0, than originally intended. On the other hand it also created a great foundation to further pursue this project during the next semester and continue where we left off.

Production went relatively smoothly, important milestones were met sometimes with ease and sometimes with a lot of pressure and stress for certain team members. The team profited from an agile project and task management, which was flexibly adjusted to the developing changes to the course assignment deadlines and individual needs.

As the semester progressed, a proper post-production period never officially happened, as the team was stuck in production and still creating crucial elements of the game, whilst also focusing on individual assignments, until the very end.

To summarize one can state the following key findings:

Realization: To aim all semester courses at a single project of such scope and finishing it within a single semester turned out to be unfeasible.

- **Future Outlook:** Structuring a project like this over the course of two semesters with the right input and focus points from individual courses has immense potential for the university and its students.

Realization: To create a vertical slice prototype that can compete on a national level seems to have been too ambitious a project for a single semester.

- **Future Outlook:** With the right team, more time and resources the current game state could still reach that potential, eventually.

Realization: Despite the bitter aftertaste of falling short on our extremely high set goals, the team worked in a harmonious way, grew together and independently on many levels, took the next step in their career paths and finished with an excellent and coherent result that can certainly be used as portfolio material.

- **Future Outlook:** Creating opportunities like this for motivated and passionate students, could really be the way to go for the last two theoretical semesters of the bachelor studies. It creates much more complex dynamics and problems, which take students to the next level and out of their comfort zones of making many small scale games and failing fast at them. A process which rightfully is the focus in the first three semesters, but might not be the best choice for more advanced and driven students.

There is no concrete plan on how the project will be continued in the upcoming semester, as there are many variables that are still undecided. The rough idea though is that at least the majority of the leads of the project will continue to work on the game and potentially seek new team members to support them in the finalization of what has already been designed and is still sitting in the back-log. A great foundation has been created and it would be wasteful to let it wither at such a premature stage. Therefore, the rest of the year will show how far this game project can still progress.



INDIVIDUAL PERFORMANCES

BELA – EXPECTATIONS, HOPES & MOTIVATION

Due to the fact that the whole idea about a project of this scale originated from me, I had had a special stake in the project's success. Partially also a reason why I gladly stepped up to be the Game Producer of such a challenging game development.

As the representative for the Game Design 2018 class, I had been carefully observing the processes of our courses over the last semesters and also regularly exchanged thoughts and opinions with my fellow students individually. My findings and also what my own heart was longing for, motivated me to think outside the box and imagine what could potentially be achieved over the course of a single semester. Hence these were my main hopes for this project:

- Creation of a professional and harmonious working environment
 - Enabling shared and individual growth, personally and professionally
- Redefine the boundaries of our bachelor studies and gain valuable insight into our curriculum and possible improvement potential
- Become a role model project for other students in the following years
- Be a platform for our external team members to (re)connect to the Game Design industry

My personal hopes tied to this project were:

- Challenge and prove myself as a Game Producer and leave my comfort zone
 - Development and enhancement of:
 - Project Management
 - Trust and Delegation of Responsibilities
 - Communication & Conflict Management
- Set a personal milestone to be proud of
- Be granted my second scholarship due to his vision of and role in this project
- Support of the team with my creative abilities as a Game Designer

To summarize, I was aiming extremely high for myself and also for the team, which I brought together with a lot of dedication in the months leading up to the semester during the project preparation cycle.

CONTRIBUTIONS – GAME PRODUCER

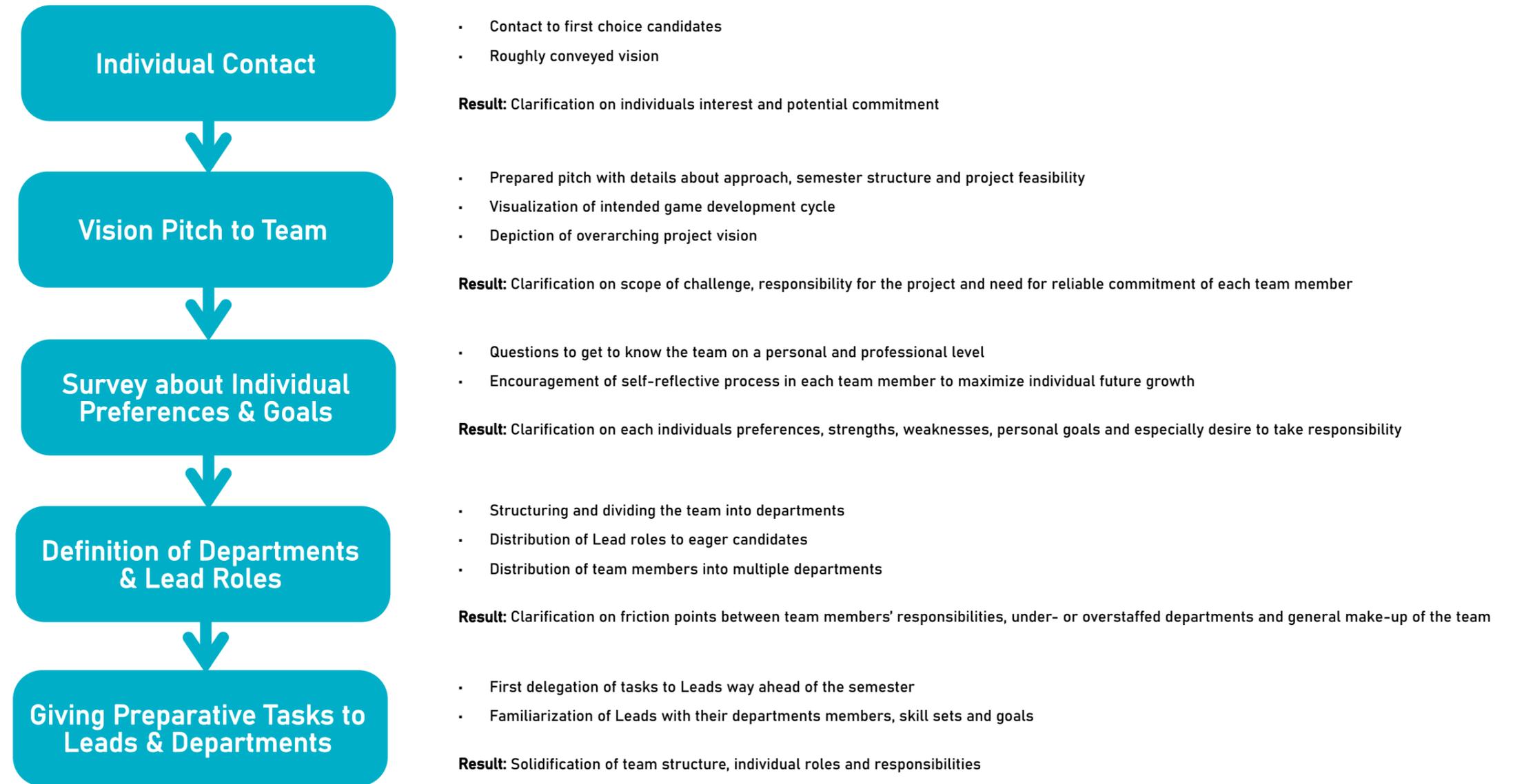
As a Game Producer it is quite cumbersome and sometimes impossible to show all efforts over the course of a development cycle like this. Below the attempt has been made to highlight some of my responsibilities and key contributions to the success of our project.

The Vision and Building a Team

As described above, it was I who formed this idea of attempting an extremely ambitious project - hence the working title "The Sky Is the Limit" - and I took responsibility in finding the right mixture of people, which I felt would have the highest chance of achieving the above mentioned shared goals.

To begin, I did my research on the upcoming semester and contacted the responsible staff individually, to define under which circumstances my vision could materialize.

For the assessment of team compatibility and to prime my eventual team during the project preparation, I went through the following process.



CONTRIBUTIONS – GAME PRODUCER

This process was quite valuable, as it secured each participant the position in the team they desired, without compromising their elective courses for the semester. Furthermore, the team benefited from this by hitting the ground running, as soon as the semester began. To go through this whole process with a team of 9 from four different backgrounds - two different external members, 4th and 6th semester students - would have cost precious time and resources, which were thus saved and could be spent on valuable processes during pre-production.

Communication, Meetings and Agendas

Another main facet of my involvement was the conceptualization of meeting cycles, their scheduling and the creation of agendas and documentation of the meetings' key findings.

The necessary communication between all involved parties, was entirely my responsibility, except for meetings that were held by the Leads and their departments, or in a spontaneous manner amongst individual team members.

Meeting Types

Team Meeting

A weekly meeting to discuss project relevant developments and processes.

Lead Meeting

A weekly meeting to discuss department related developments and processes.
Evaluation of project risks and potential solutions.

Feedback Meeting

Introductory meetings to gain insight from professionals (lecturers) on our conceptualized workflows and pipelines.

Course Assignment Meeting with Lecturers

Sporadic meetings with lecturers, when organization of project related course assignments was crucial.

Further Crucial Communication

Communication with Lecturers and Professors about Workload

Agile feedback loops with university staff about how my team felt equipped and capable to perform as intended by the curriculum.

Communication with Lecturers about Deadlines and Requirements

Meetings to get clarification on milestones and course related requirements, to tailor project workflows towards overarching course assignments.

Communication with Team Members about Individual Fulfillment and Conflict

Agile team and conflict management, when potential project threats occurred, to evaluate problems and develop feasible solutions.

CONTRIBUTIONS – GAME PRODUCER

Codecks

During the process of pre-production, with design vision and concepts slowly taking shape, the team needed a clear overview of each individual task and general deadlines and the major milestones, which dictated the whole development and how its cycles were broken up.

Hence, I started to ponder some tools, which I had personally used in prior semesters for smaller game projects (Asana, GitKraken Boards, etc.) and eventually came to the conclusion, that a new task tracking tool, Codecks, especially designed for game development, was worth a shot as it was said to be a very visual, diverse and yet simple tool.

I got to know the basic functionalities of the tool, registered his team and created the basic foundation for our project.

Codecks is a tool, which compiles tasks in the form of cards in different categories, called decks, and allows each user to edit each card in a multitude of ways, adding details and values, connecting it to deadlines and milestones, embedding it into other cards and so on.

I decided to divide task fields into these 6 main decks:



Each Lead received their own deck, which they could structure and ask their respective team members to follow certain guidelines, however they wanted. Thus, I managed to create a framework, which suited my work approach, without taking freedom and managerial creativity away from my Leads.

The other three decks were managed by me and contained more general project management related tasks.

Timeline



I was also responsible for creating milestones and restructuring them, when our project and task management changed from a waterfall into an agile one, over the course of development, as unpredictable factors drove us to constantly reevaluate our development cycles and individual milestones.

During that time I had to make some hard calls and make significant changes to our overall project vision, which were all necessary to bring the project to a temporary successful halt at the end of the semester. Ending with a Beta 2.0 build, which managed to represent the intention and future direction of our game.

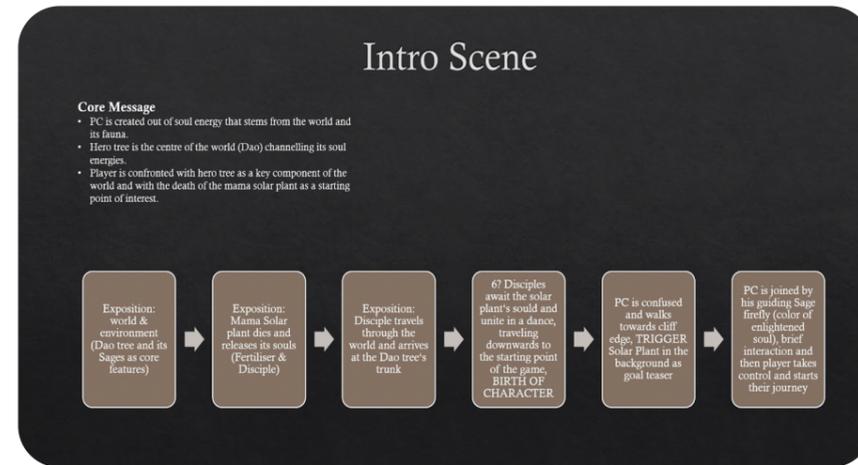
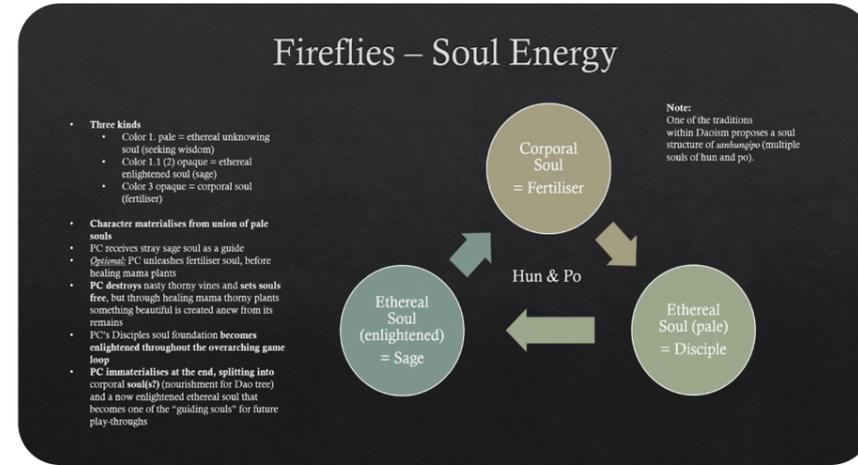
CONTRIBUTIONS – GAME DESIGNER

I took part, as almost every team member, in the initial conceptualization of our design pillars and game mechanics. Furthermore, I was involved in the development of one of the three experimental prototypes, which were an integral part of finding the right core game mechanic.

My most independent and unfortunately also, at this current stage, insignificant contribution to Game Design facets of our game was the Narrative Design. The iteration process and its rough main elements have been elaborated on in the “Narration” part of our process documentation, so I won’t repeat it here.

For my original pitch idea, I wanted to make the firefly particle effects, which were intended to be ever-present in our game world, a major narrative component. Tightly mirroring the soul structure of one tradition within Daoism, called “sanhunqipo”, I originally wanted to depict three types of soul energy - corporal, ethereal and enlightened ethereal - in three types of firefly particle effects with different colors. An iteration process led to prioritizing players’ clarity budget over the accurate translation of research material, which meant that we would only focus on the two types of ethereal soul energy. This way, we would still emphasize the spiritual journey of enlightenment through the realization of some of the core values of Daoism through the narrative process in our game, but decrease the risk that we would completely bewilder players with the underlying narrative content.

A roughly outlined intro scene, which already defined some key moments, but also left a lot of room for alterations and improvements was also presented during the pitch.

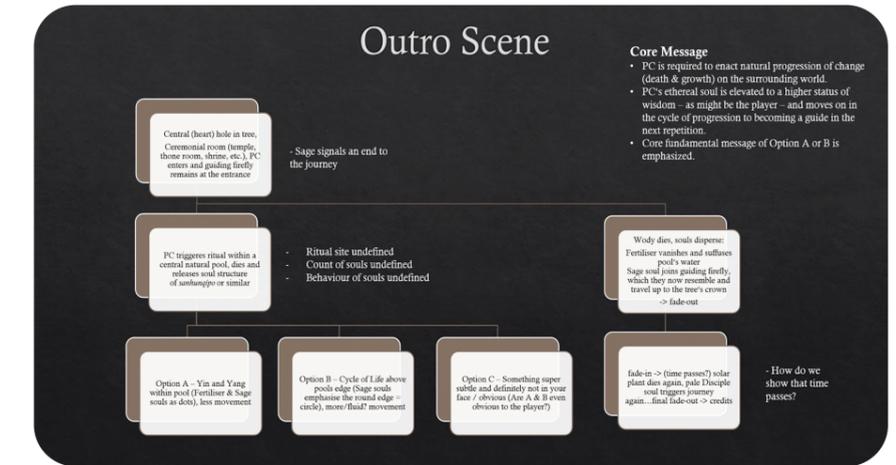


The main goals of the intro scene were the communication of:

- Brief exposition of the game world
- Showing the “Dao Tree” as centre point of the game world
- Beginning of a yet unknown cycle (materialization of ethereal soul energy)
- Player character birth (originating from ethereal soul energy)
- Player character emotions
- First goal for the player

To eventually conclude the whole game-play experience and bring them into perspective, the same key moments were also framed for an outro scene. Both scenes, as scripted cinematics, would suffice to serve as a call to action in the beginning of the game and later communicate our message sufficiently, to give meaning to the players’ experiences.

- The main goals of the outro scene were the communication of:
- The player character being part of an overarching cycle of development (death & growth)
- Enlightenment of the player character’s ethereal soul energy
- The death of the player character as part of the cycle
- Renewal of the cycle looping back to a the materialization of new ethereal soul energy



To conclude, we managed to iterate my narrative foundation and hone out a more concrete concept for a future implementation of both scripted scenes. A task which is so time-consuming that it could serve as a course assignment, pursued over the course of a whole semester. This is also the reason it was completely unfeasible to implement this in any sufficient form into our game.

Therefore, Kadir has taken on the task of the documentation of all key findings and decisions in a storyboard for each scripted scene. Further steps in the development cycle will be taken in the next semester.

CONTRIBUTIONS – GAME PROGRAMMER

Additionally, the most visible contributions to the game I made as a programmer, in the form of the unity scene setup and code functionality for our game's main menu, the credits and an additional game mechanic feature, I called Dynamic Loading Screen System (DLSS), which was part of my course assignment for Game Programming 3.

Main Menu



Functionality

- Button interaction
- Management of canvas groups
- Glow effect on UI elements
- Graphics settings
- Audio settings

Unity

- Hierarchy setup and basic scene arrangement
- Basic setup of all visual UI aspects

Credits



Functionality

- Display of credits
- Automatic return after credits
- Forced return through input

Unity

- Hierarchy setup and basic scene arrangement

DLSS



Functionality

- Illustration that covers the whole screen, customizable in editor
- Panel that contains some text (e.g. tutorial tip, lore or narrative fragment), customizable in editor
- Loading bar showing the progress of the loading process, customizable in editor
- Timer that forces the loading screen to pause at a certain stage in the loading process, to avoid rapid transitions

Unity

- Creation of a prefab for this game mechanic feature and its implementation into our existing game

POST MORTEM

During the process of this project I had to fulfill one or two roles simultaneously at any given development cycle. As the project foundation was solidified and the team eventually entered the production phase, my role as a Game Producer became less focused on visionary creation and more focused on maintenance of existing processes. It allowed me to invest time in other tasks, like the Narrative Design and programming aspects of my individual course assignments. I never lost my grip on my responsibilities as a Game Producer and stepped in when it was required, for instance when I was approached by dissatisfied or concerned team members, when we had to shift production priorities, or tough decisions had to be made.

Fortunately, my Leads did an amazing job and hence supported me greatly in my managerial duties, which allowed me to apply myself creatively, with a passion for storytelling, in Narrative Design or, with a knack for analytical thinking, in any programming related tasks.

My own personal development, especially on the professional side concerning my hard skills took a massive leap forward, which I am immensely proud of. By the end of the semester, I was drained and now know for certain that I had taken it a notch too far, as I couldn't completely satisfy my own perfectionism and achieve all of my set goals.

Most importantly the achievements of this semester give me great confidence in my own abilities and potential as a Game Producer, but also taught me a few valuable lessons, which I will benefit from in my future career path.

Lessons Learned

- Awareness for complexity of large teams and projects
- Respect for deadlines and a need for rigid cut-off points for feature implementation before imminent build releases
- Need for regular evaluation of team's task progress
- Version control workflow
- Game programming workflow

Concluding, I really hope that this project can and will serve as a role model, but also emphasize the main weaknesses of the current curriculum, benefiting all Game Design students of future years to come.

CHRISTIAN – GAME PROGRAMMER

Workflow

I was and still am the Lead Programmer in the project and had to document and plan the workflow as well as the tasks. I developed two prototypes, the first one is with the movement mechanics and then the second one is, where we expand the mechanics and make the plant skills more specific. Over the course of the whole project I worked on the following programming related things:

- Player Controller
 - WASD Movement
 - Jump
 - Prevent Sloping
 - Activation of the plant skills
 - Coyote Time
- Skills
 - Solar Plant Skill --> awake plants in a fixed radius
 - Thorny Vine Skill --> climb up and down at ivy
 - Floaty Seed --> super jump with gliding
- Wall Check
 - If the player is at a wall, he can't move anymore
- Animation Implementation
 - In mecanim the animation implemented and connected it with the code
- IK Animation (Code Implementation)
 - Hand IK, so that the player is able to lay his hand against the tree
 - Foot IK, so that the player can adjust the feet at the environment

After a meeting, I write down the task in Codecks and start to work. First, I think about the organization of the code like which pattern could be used, what is the name of the namespace and folder, or what methods or variable could be taken. That helps me to have an overview of the core concept. If necessary I sketch the process on a piece of paper or on the PC to have a visualization of the function. When the preparations are done, I write the code and keep the order of how I conceived it. Thereafter, I test the code and fix the issues that occur.

If there are any bugs, I decide how I should proceed with the issue. If it is not game-breaking and just looks bad I will first implement the whole feature, after that the optimization phase begins and the bugs will be fixed gradually. When I start to search for bugs, the first step is to be very clear on the reproduction to know exactly how and where it occurred. Then I follow the code's logic step-by-step, deciphering how the bug happened with the help of the debug tool of Rider. Then I alter the code and test if it is fixed.

Iteration

Overall the game runs fluently, but I had to improve and adjust some things. The first player controller was sufficient for the two prototypes, but not for the Alpha because it ran with the rigidbody and caused too many problems. So I created a new one with the character controller of Unity. After the rework, the character was more smooth and without sloping or problems with walking upstairs. Additionally, we added the screen fade, to hide the possible changes in the world, after every plant interaction.

CONTRIBUTIONS – GAME PROGRAMMER

After prototype 2, the skills had a rework as well and were changed in the Alpha. The character couldn't slide through holes anymore, that was not exciting enough and it had been decided to exchange it for the Solar Skill, so that the character could awaken plants to create platforms. Thus, the skill to instantly activate all platforms in a fixed area like in the prototype 2 was thrown away as well, it was too boring and not creative enough. The climbing skill, however, needed just small adjustments. The player has to push a button to activate and deactivate the climb. First, we desired that they could climb freely around without pushing any button, but I had too many challenges and simplified it. Last but not least, the super jump with gliding is the new skill in the game. The character can jump higher and is able to glide for a short time in the air. That was more exciting as just the railway cable from the prototype 2, which was scrapped.

Furthermore, we discovered a problem, that the player can jump up along walls and I decided to introduce a wall check to suppress any control on walls. Also, the IK Animation implementation was very exhausting and difficult. I had problems to optimize the hands and feet, as they adjust dynamically on different surfaces. At the current state, it doesn't look smooth enough and has issues when jumping. So we decided to take it out, but it was for me a valuable experience to pursue this mechanic and its functionality. The animation implementation went well, but still issues with the jump are present. It seems that the animation is not as fast as the code and has a delay problem. I still have to take a look at it, but overall the animation runs with the controls.

Applied & Acquired Skills

I learned a lot in the field teamwork and team management, because of the big team size and specific role as Lead Programmer. I am a calm person and have my emotions under control, which helps me to solve conflicts and to be open for every topic. I got an overview of how to create documents and which documents are important. I learned to communicate with the different departments to clarify processes or to talk about programming related problems. For the first time, I had to deal with an open-world game and had to gather knowledge about a fully functional player controller with skills and animations. The above contributed to the game working fine. I am satisfied to have worked on this big project, which has challenged me and that I could learn more about communication and coding. The coding skills, which I improve continuously every day, helped me to solve the issues with the mechanics so that a fully playable game was developed.

POST MORTEM

Experience of the Semester

The semester was very intense and very informative at the same time. Because of the big project "The Sky Is the Limit", "Studienarbeit II" and Kevin's course assignments, I was busy the whole day to reach all the requirements. In contrast to the other students, I didn't have much problems with it, because of my time management, calmness, faith, and ambitions. Despite the hard workload, I had my fun and learned a lot in coding, about teamwork and team management.

I got all that I wanted without much stress or burnout. Nevertheless, it should not be the general workload for the semester, because others can't perform similarly, have the same intrinsic motivation, or even the time for it. Everyone has another lifestyle and it should be possible to study Game Design without being required to work every day on assignments.

The new lecturer Kevin Hagen and Steven Kaule are great and I gathered much new knowledge in coding and UI/UX Design. Steven over his lectures, gave a lot of feedback during the lectures itself or in individual meetings, which helped a lot to continue and improve on our work. The feedback sessions, in my opinion, should be more often so that you can improve and accelerate the process of learning. From Kevin, I learned much of his expertise in programming and he taught me new knowledge about patterns, workflows, code structure and possibilities to approach and solve code problems.

Overall it was a very demanding semester, but overall it was worth it in the end.

Lessons Learned

I noticed that I had too many comments in the code. Not every line needs a description of what happened there, because many variables and methods are self explanatory. It would be more important to state how it works and why I decided to do it, so that the developer can comprehend the process and my thoughts. Also, I should break my code up into more pieces, to keep a better overview. It would help to have more methods or scripts, which have fewer lines, but more clarity of the code logic and its processes. Thus the team and the coder itself could comprehend the code much faster.

The next important point is to have an understandable variable and method description to know what happens there. Sometimes I don't find the right description, which could confuse later on, so I will take more care in this regard in the future.

Furthermore, I have to keep the documentation concise and steps to fulfill the tasks, otherwise, the team could lose motivation to utilize the documented knowledge or overlook key elements. The best thing would be to use key points in the future, to summarize the most important content at a glance.

CONCLUSION

All in all, it was the best semester that I have had so far.

Such a big project helps a lot in game development, because I had to communicate with different departments in a team and had better feedback to change the code, so that it works fine for everyone. Also, I was much more serious about the game than in the small projects before. It felt like a simulation or test for the real gaming industry world. Therefore I gave it my best to create the documents, tasks and code so that the team wasn't going to be disappointed or confused by my efforts. The workload was hard, but I learned a lot.

Overall, I am very grateful to have had this opportunity to challenge and develop myself further.

FALK – EXPECTATIONS, HOPES AND MOTIVATION

Feeling

As with most things in my life, I saw this project and what I wanted from it first and foremost from an emotional standpoint. I had applied to study in this field because of a feeling, a passion that was unparalleled for me, which I had only felt when I was conceptualizing worlds, building systems, creating characters and devising plots. This passion is what I wanted to feel as much as possible during this project, since it is my reason for walking this path in the first place. To some degree I can find the feeling in question in all my projects but having to limit myself due to short time frames or undeveloped skill sets stood somewhat in the way. A fantastical, larger and colorful project that I would have fun thinking about in bed in the evening was what I was hoping for.

Skill Sets

Since Design is the broad area I see myself ending up in, I doubtlessly want to deepen my capabilities in this regard at every step while I'm in university, and ideally forever after that. Additionally, I had struggled so far to also keep up with the skills in the Game Art area. I felt like there was tons and tons of progress that needed to be made to catch up to what I wanted to be able to do. During this project, I wanted to get some of that progress made.

Lastly, knowing ahead of time that I was going to assume a leading role was as intriguing to me as it was intimidating. This is not a type of role I had experience with, nor was I particularly confident in my natural proclivities when it comes to assuming that kind of responsibility. Any experience in this regard was surely going to advance

my skill sets but also tell me more about myself and what I could maybe go on to do in the future.

Simulation of Professionality

While having been able to collect valuable experiences during past projects, there is still a somewhat different process when it comes to university projects compared to professional ones. A larger group separated into areas of expertise, a chain of command and an altogether more ambitious project suggests an experience that could be more reminiscent of the work a small company does, which I was eager to simulate and try out.

Personal Stability and Well-being

Because previous semesters have established how heavy the workload can weigh me, and because I tend to fall into unhealthy patterns under pressure anyway, the urge to avoid another downward spiral had once again grown prior to this project. I was skeptical, but I hoped to at least try and find ways in which my completing the assignments would involve less mental anguish.

Dealing with Uneasiness

Knowing myself, the probability that I would have a hard time dealing with the expectations was high. There is skill involved when trying to at least react to that situation best as possible, and that is something that one can try even in the midst of anxiety, depression and stress. This is likely a very important skill that I will have to apply throughout my career, so any progress is more than welcome.

CONTRIBUTIONS – DESIGN LEAD AND SUPPORT ARTIST

Meetings and Creative Communication

A task I thoroughly enjoyed, being in charge of guiding design enthusiasts through sharing the creative process with each other was as much a social as a professional success, albeit sometimes demanding.

The more administrative duties like scheduling and composing agendas were and are never my strong suit, but I was able to handle them for the extent of this project and was able to weaken my natural resistances against these orderly processes some more. I was also often the one who documented findings for everyone to be able to read up on, writing the design prognosis, game design document, design pillars (Fig.1), elevator pitch, guide for the cooperation of art and design teams and many more.

Communicating is a strength of mine, which enabled me to facilitate teamwork during design meetings. I was often able to draw out quieter team members, keep everyone on the right track, make sure nobody was left behind and help create a productive atmosphere. I concerned myself with the worries and uneasiness others felt at certain points and addressed as needed, to ensure everyone was confident and content with the way things were progressing.

This of course extended beyond just meetings, since it was largely my job to communicate design decisions to all departments and make sure programmers and artists understood what was being asked of them. When it came to questions about our intention and concepts, I would often be the one to clarify. If there were doubts, I would be the one to reexamine our work for flaws until they could be laid to rest.

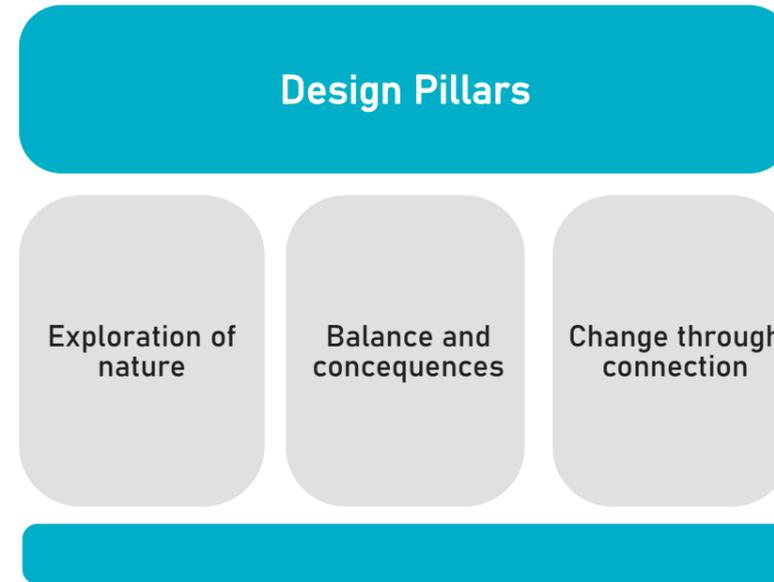


Fig. 1

Steering the Ship and Staying on Course

Guiding a joined creative process meant more than just communication, however. Leads dealt with our task tracking tool early on, trying to predict best as possible which tasks needed to be specified. Laying out the road ahead is difficult but very much necessary. I further defined these structures by giving them priorities, estimating time intensity and providing notes and commentary for the team member that was going to execute a task (Fig. 2).

This whole process of course needed to be adapted multiple times over the course of the project, switching around priorities, canceling tasks, adding new ones. When certain roadblocks were hit or deficiencies within the concept were encountered, agile design practices were needed to address the issue at hand and prevent the progress from being slowed down too much, or even to prevent the team from veering into the wrong direction as a whole.

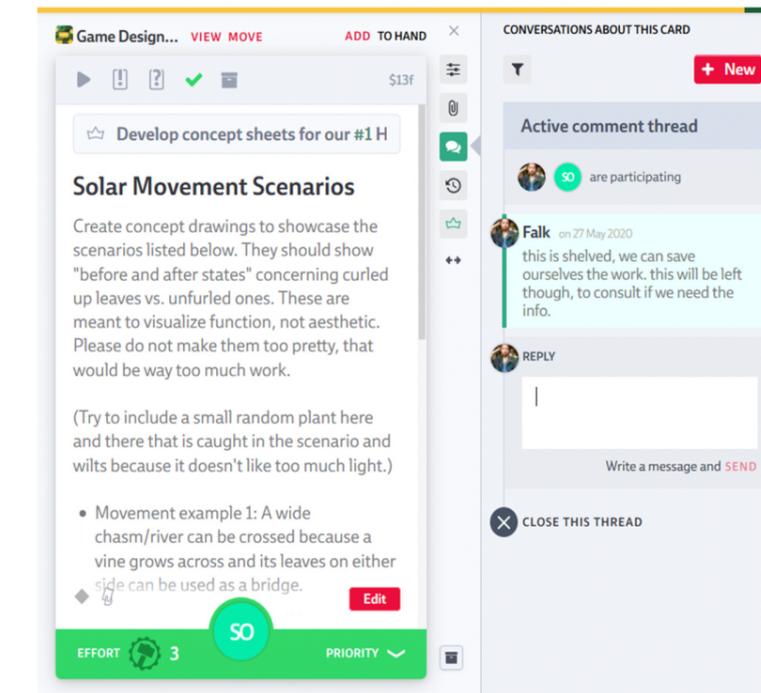


Fig. 2: Codecks Card Close-Up

Concept Contributions

Not only was it my job to structure and oversee meetings, I also contributed to the design process. The overview I gained from being part of most meetings in the design department allowed me to offer input that harmonized with the work that was being done in the other areas.

Apart from playing an integral part in developing and shaping the core concept I happily and successfully partook in conceptualizing the character, world, hero plants and their movement skills (Fig. 3), mechanical specifics and more, sometimes sketching visualizations to facilitate explaining concepts to programmers or artists. My most notable contributions were focused on level design, as will be elaborated on below.

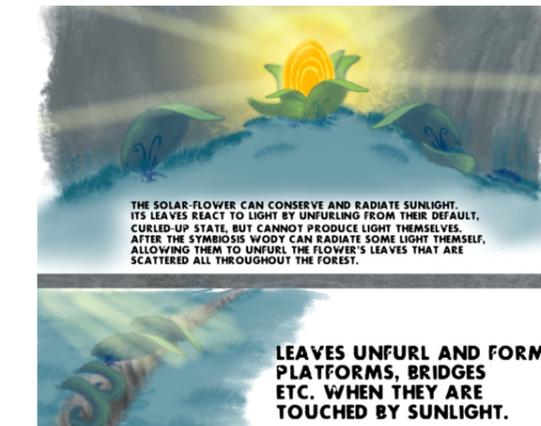


Fig. 3: Solar Flower First Concept

CONTRIBUTIONS – DESIGN LEAD AND SUPPORT ARTIST

Level Design

While I was always going to be involved in all areas of design, even in the beginning I anticipated that I might focus somewhat on level design, since the domain was a little understaffed. What I couldn't have anticipated though, is just how much time and effort I would be pouring into this by the end of the project, and how proud I would be of this achievement.

I began my work in this department during the pre-production, roughly planning out the shape and character of our world. I pushed for a single, circular forest level because I felt it offered a certain freedom of exploration to players. I was also the one to introduce the idea of a large, centric tree, both to utilize it as a goal and motivation for players and to structure the level around. This ancient tree, which ultimately turned out to be an insurmountable challenge to produce during this semester, was going to be a level in itself. Only if the player had unlocked all forms of movement, could they scale this giant to reach the final stage of the game. For early prototypes I sketched a quick and dirty version of what that might look like, also including a very simple draft of the surrounding area (Fig. 4,5).

When it came to actually designing the final structure of the level, I went on to draw up a layout of the level from a birds-eye view (Fig.6). This sort of task feels immensely gratifying to me, not only because the creative component brings me tremendous joy, but because I had many images already in my head since the very beginning of the project. As a highly visual person, having all these specific shapes and ideas in my head without anyone else being able to see them yet, it was ecstatic to give them form and be validated for them.

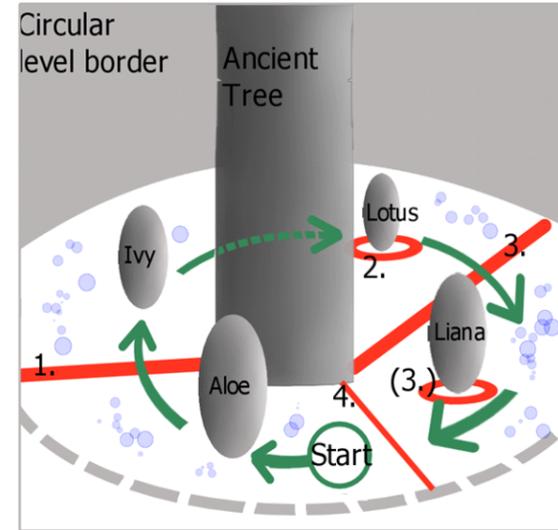


Fig. 4

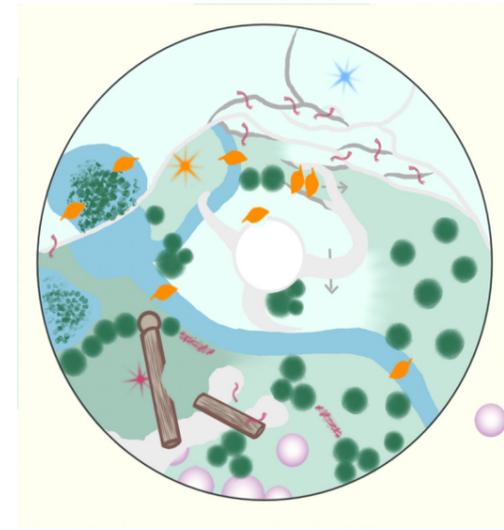


Fig. 6: Level Map

Der Aufstieg auf den zentralen Baum



Fig. 5

At this point, the stressful phase of the project was in full swing and there was no time to discuss, revisit or double-check, I was in charge of building the level and had to do so quickly. I built the terrain and applied textures to it, to start out with a basic skeleton. I then proceeded to start placing the assets Franziska provided, constantly tweaking positioning, scale and even the terrain to make it work. This was new to me and I had no idea how insane the amount of work is that goes into this. Filling up the level to make it come alive took upwards of 70 hours, often spent at night and in large crunchy, chunks, and there is much more to be done there. However, I thoroughly enjoyed this task. I learned a tremendous amount both about level design and about unity and I affirmed my suspicion that this might be something I would like to do professionally in the future (Fig. 7,8,9).



Fig. 7

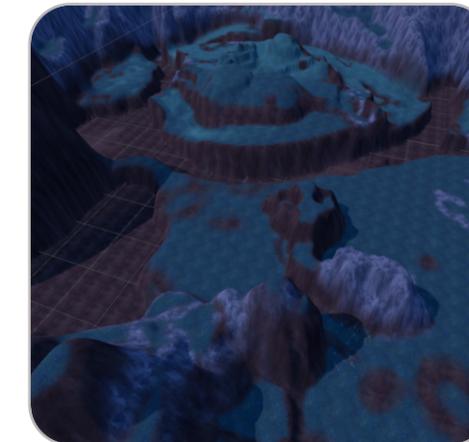


Fig. 8: Overview of the terrain



Fig. 9

CONTRIBUTIONS – DESIGN LEAD AND SUPPORT ARTIST

Main Menu

Another rather time-consuming endeavor was designing the main menu. This process was overseen by the UI-Design course and the many iterations (Fig. 10,11,12) were shaped by Steven's feedback. However, creating the sprites, making the 2D elements work in unity and working on post-processing for the 3D-scene that served as the background proved to be a lot of work that I was hesitant to invest. There were so many matters that seemed more pressing to me, that the iterations had to conclude at a point that is acceptable, but not ideal, in my opinion.



Fig. 10: First main menu draft

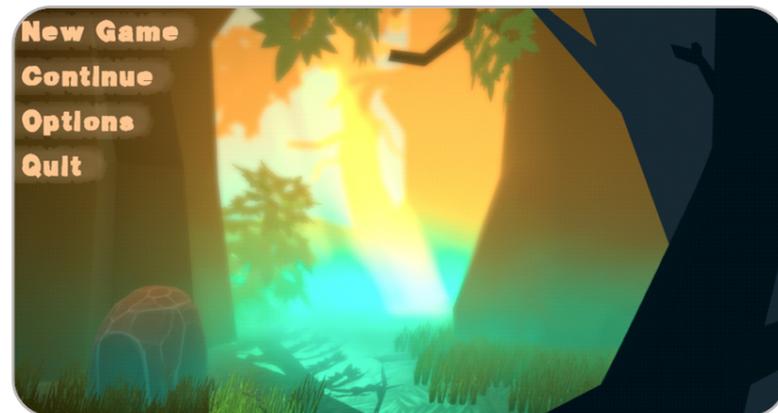


Fig. 11: Draft after some iterations



Fig. 12: Final Graphics Settings in the main menu

Asset Production

Unfortunately, I was unable to contribute as much as I would have liked in the asset department. Since 3D-modeling is a skill I am very much still expanding, I was sad to, once again, fall short here. Between my management responsibilities, concept work and level design achievements, there simply was nothing much left to invest. However, I managed to make the second hero plant, the Thorny Vine, both designing and modeling it myself and I am happy with how it turned out (Fig.13,14).

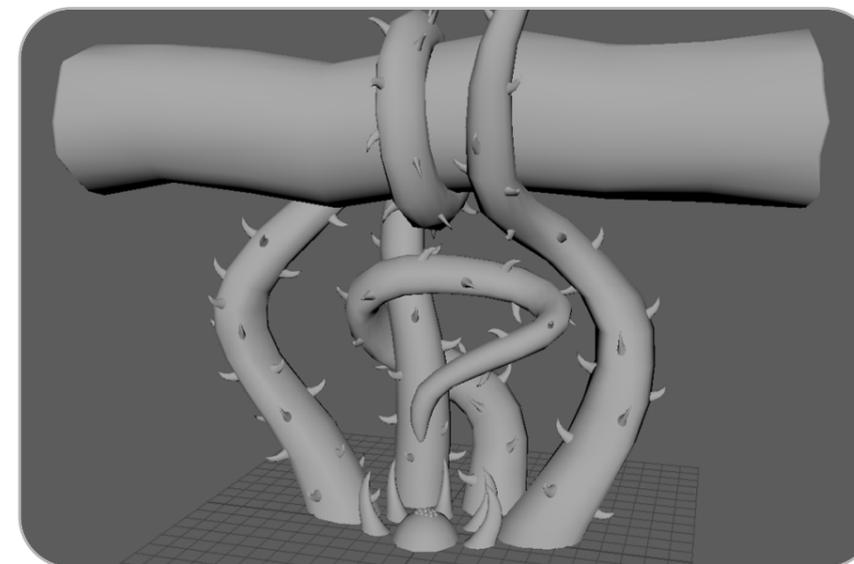


Fig. 13: Thorny Vine mesh in Maya



Fig. 14: The Thorny Vine in-game

PERSONAL REFLECTIONS AND PROJECTIONS

Rundown of my Experience

I have already talked about my personal experience with the many specific areas I worked on in the previous sections. To summarize, I worked harder than ever before and I am proud of the work I did, the progress I made with my capabilities as a team leader, game designer and specifically level designer. I advanced my skills regarding unity, illustration, concepting and to a lesser degree 3D modeling and I discovered many more ways in which I have yet to improve in these areas.

I wanted the project to scale up in comparison to previous endeavors and it very much did. I had a lot of fun working on something like this and I think the way we went about our aspirations and goals was closer to what I want from my projects in university, which is very valuable.

However, investing as much time and effort as many of us did and still being far from completing what we set out to do showed me beyond any doubt that the current structure of the curriculum does not allow for the ideal execution of projects like this one. The time frame and course load unfortunately disharmonized in many ways with the focus I want to set for this kind of project and I strongly believe that these structures need to shift to a format that allows students to gather experience on larger scales without foregoing the lessons we would learn if we could actually see these projects to an end.

That being said, I am very grateful for how receptive to this sort of feedback our professors and lecturers are. There was a lot of accommodating our lack of time with flexible deadlines and I felt supported and heard with my frustrations. The prospect

of being allowed to, for the first at this university, continue working on a project in the following semester fills me with joy, because that is the direction things should move in, in my opinion, to provide the best learning experience for students.

Lessons learned

I was reminded early on during this project, when a conflict arose about the core concept, that I have a tendency to have an extensive, clear image in mind that I trust and believe in, far before there was enough communication or demonstration to help everyone else share these visions. It is possible to ask for a certain amount of trust, but when multiple voices announce that they do not stand behind the concept and cannot see exactly where it is going, there needs to be a better process of getting everyone involved to rally behind the same vision. Visuals that are clear in my head are often not obvious to others and what I am taking away from this is that I need to step into other people's perspective and examine ideas from more angles, so that I can find better ways to communicate them and discover sides and possibly flaws, that I may have had a blind spot for.

Another lesson I took away was centered around the structure of pipelines. I often lumped all processes of, for example, mechanical design together, thinking there will be a period of time where all tasks in that area will have their turn. However, when time is short, a far more flexible approach is needed. I ended up finishing design specifications for the Solar Flower before there were even concepting the Thorny Vine. This way, there was already an asset, code and testing opportunities for the Solar Flower when the Thorny Vine was still undergoing design processes. This interlaced progression of tasks enables different specialists to work simultaneously

and minimizes the amount of manpower that is put on hold, waiting for something to finish before they can start.

For me personally, I determined an important characteristic of my preferred way working. When I was working solely on level design tasks, I could focus on what I wanted to achieve and mold something entirely to my will without distractions. I am not necessarily bad at it, but juggling many different tasks at once weighs far more heavily on me, stresses me more and does not give me as much satisfaction as just focusing on one area I can be the master of and delve into profoundly. When I have to put something unfinished aside to switch to a different task, I have trouble recalibrating and I often ended up having a lot of "open drawers" in my mind, worrying about what needs to be done in all departments I was a part of and growing anxious because of it. While this might be a tendency I could overcome at some point in my life, I find it valuable to identify a preference for highly specialized, laser-focused work.

For the mental side of things, there is not so much a lesson I learned as there is practice that was had. I have learned many lessons about my mind during my life so far and none of the unhealthy reactions I had during this project came as a surprise. Since living a life without pressure and responsibility is unrealistic, there is value in exposing myself to these situations and pulling through, so that next I might find it easier to withstand.

Most importantly I need to constantly remind myself, there is no shame in not finding the necessary energy some days, taking mental health breaks when they are needed is nothing to feel guilty about.

Final Conclusion

This semester was the most demanding one yet. The sheer amount of work I completed and time I invested took a lot out of me and I certainly did not always take that in stride.

However, I learned more and am prouder than ever before of what I was able to do. I am excited for my future as a game designer and I feel validated in my choice to pursue this path.

While structures at our university leave room for improvement to accommodate larger projects more reminiscent of actual game development practices in real world companies, I believe we are on the right path and I humbly see my part in that as valuable.

I think students embarking on this path in the future will profit from our experiences and be provided an a little bit less draining experience.

All things considered, if I were to rewind to the beginning of this semester, I would not change a thing.

FRANZISKA – MOTIVATIONS AND EXPECTATIONS

When I was approached with the idea of working in a big team I got very excited for the future of the upcoming semester. I saw a big opportunity in working with more people than usual to create a more comprehensive game. From the beginning, I had a 3rd person adventure game in mind which I hadn't had the possibility to make in the previous semesters. It seemed to be the idea of everybody else so I was eager to join this big project.

All previous games that I had taken part in helped me in my growth as someone that wants to create games but I also wasn't fully satisfied with any of the projects to show them off as something great that I have worked on. With this project I was hopeful to create a game that I would be proud of at the end of the semester.

Working in a big team also meant that I would be able to focus on art which I wasn't able to do in the previous projects either. My goal was to extend my knowledge and improve my workflow in 3D asset creation. My primary focus was to enlarge upon the character creation process. I also wanted to try out technical art related tasks like creating a shader to make the style of the game look more unique. Additionally I wanted to contribute to the concept progress and other areas where help would be needed.

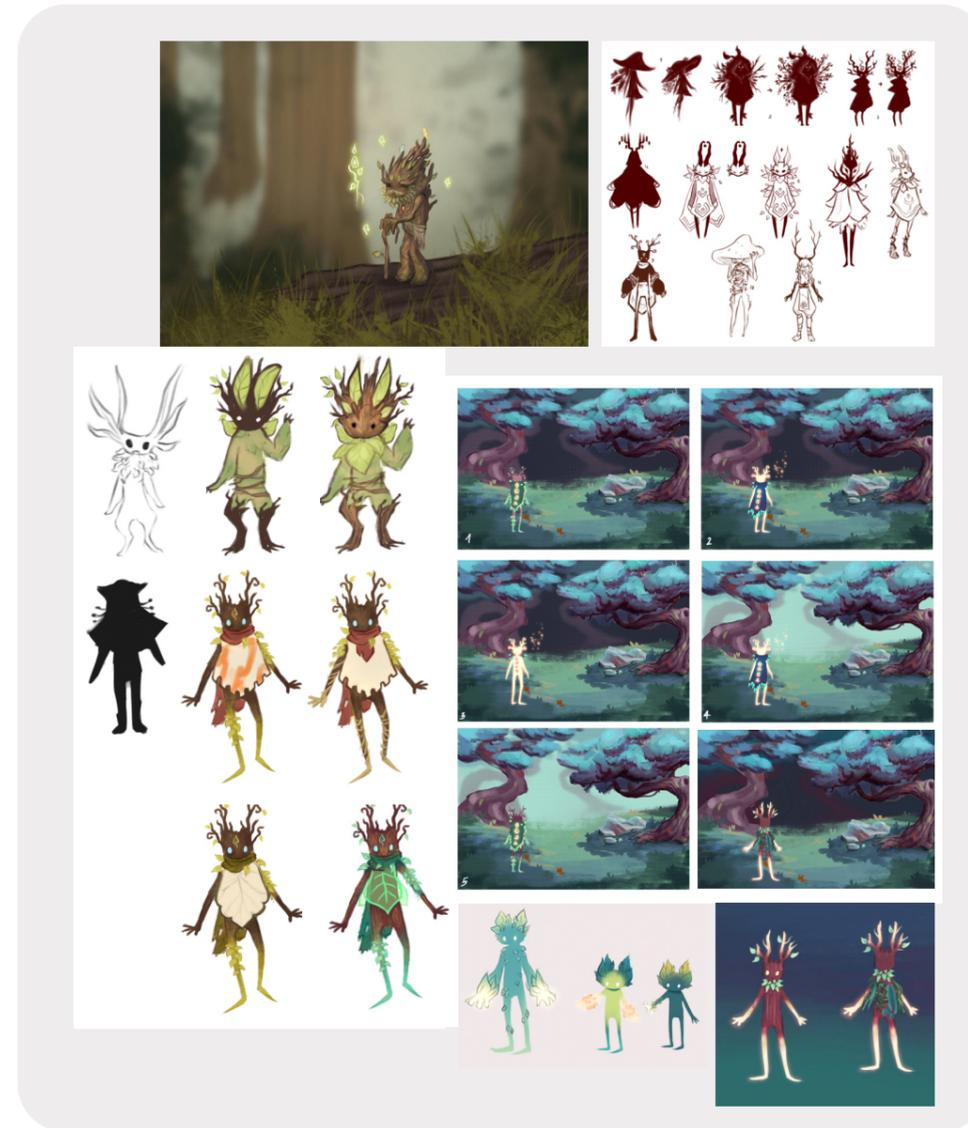


Fig. 1: All character concepts

CONTRIBUTIONS – GAME ARTIST

Like mentioned, I wanted to mostly focus on game art. I also took the opportunity to work as the Lead of the art department and act as a contact person for art related questions and problems. In pre-production, I prepared the team for production by arranging the art meetings and creating important documents like the Art Overview and the Art Bible. After that, I would undertake the task management and have an overview of what everybody is working on. Meanwhile I worked on 3D assets myself.

Character Workflow

The first task that I encountered was the character creation process. A lot of time went into the concepting of the character (Fig. 1). Because of the size of the team, a lot of opinions were involved that heavily influenced the concepting progress. The second art feedback meeting that focused partly on the character also consisted of more input that led the design into a specific direction and aided the iteration process. Soon, the final concept was created (Fig. 2) with which everyone agreed with and I was able to work on the 3D model. I started by creating the base in ZBrush (Fig. 3). After that I started working on the retopology in Maya (Fig. 4). I tried to keep it fairly low-poly. For the leaves on the character's body I decided to use planes made out of four to six quads since these planes would be used a lot (Fig. 5). I started with a collection of planes which I then textured before I placed them on the character's body. This way it was easier to reuse the textures and place them where they would fit best. This process worked pretty well although the low poly count of the planes led to a few clipping problems while animating. Fortunately, the leaves on his body looked busy enough so the clipping wouldn't be as visible to the player.

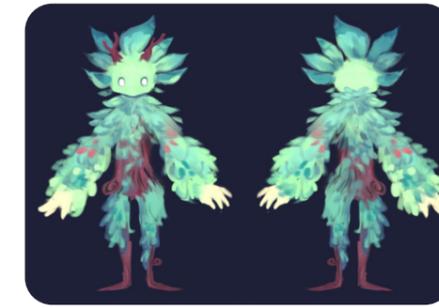


Fig. 2: Final character concept



Fig. 3: High-poly base mesh in ZBrush

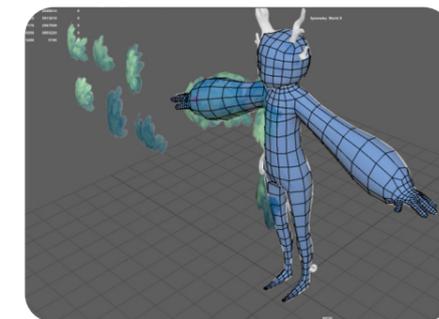


Fig. 4: Retopology

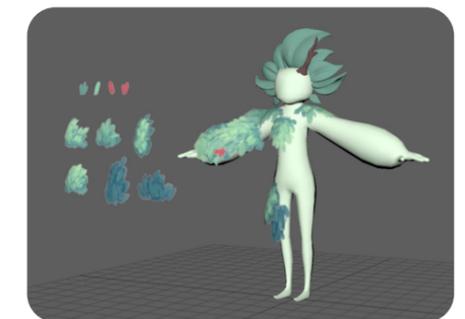


Fig. 5: Application of the grass planes

CONTRIBUTIONS – GAME ARTIST



Fig. 6: Final rigged Character model

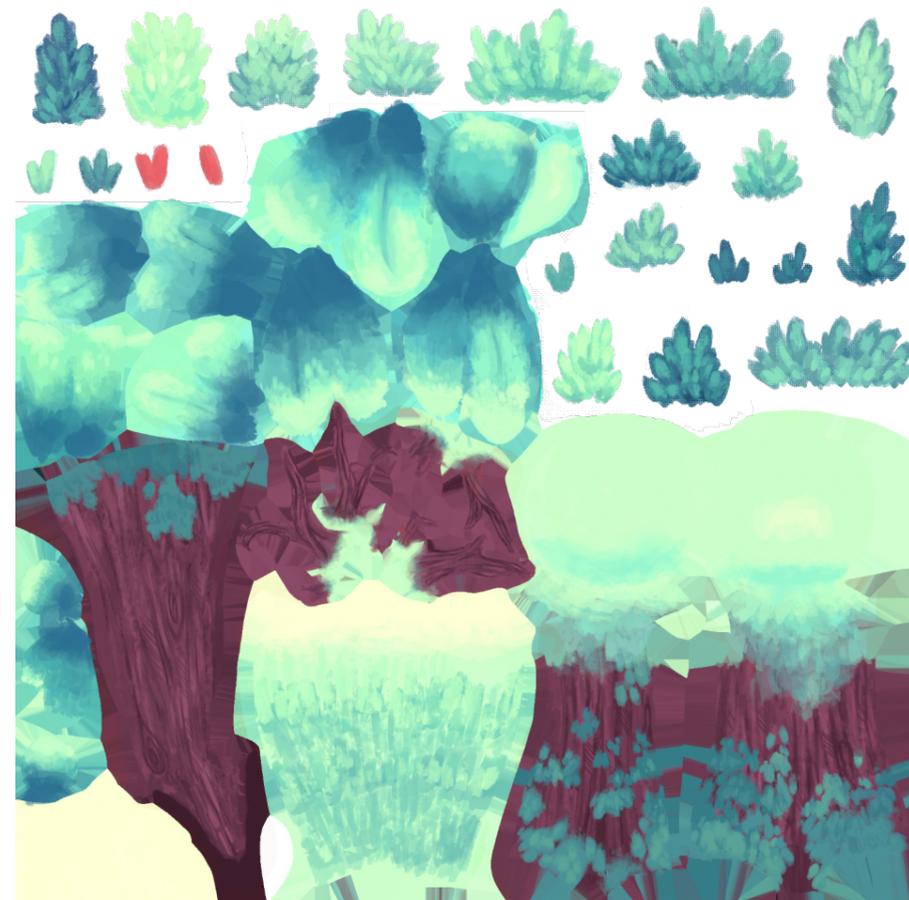


Fig. 7: Albedo map

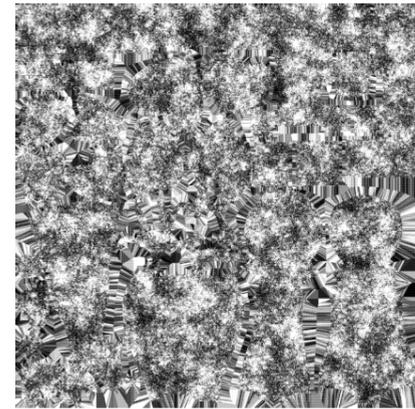


Fig. 8: Emission map



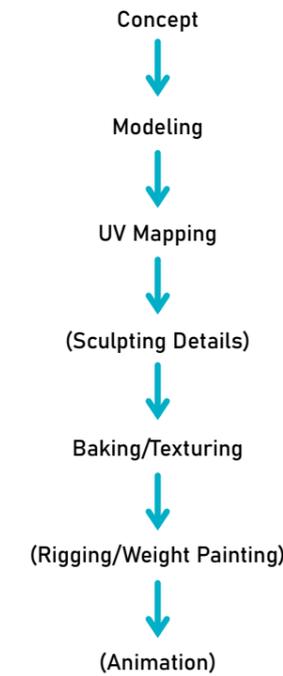
Fig. 9: Emission map

Asset pipeline

After the creation of the character, the environment had to be made. For these assets the pipelines differed slightly depending on the asset and the time frame I had. Generally, I followed two pipelines which were also written down in the Art Overview document.

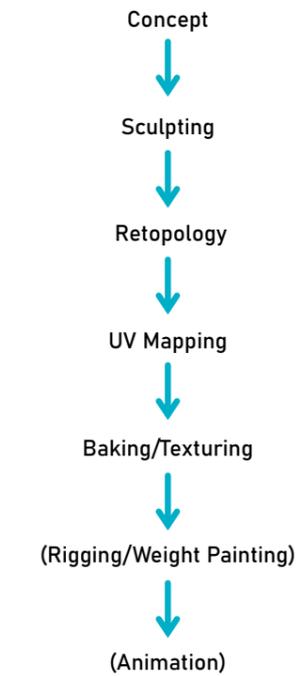
Low Poly → High Poly

(inorganic objects)



High Poly → Low Poly

(characters/creatures/other organic forms)



For the creation of simple leaves, planes were used to keep the poly count low and resemble the appearance of the leaves of the character. These were then simply textured and therefore had the most simple approach. For more complex assets I created a low-poly model and then sculpted in the details. A new technique that I found out for myself was the usage of the normal map from the sculpting as a texture base. I would then paint over the texture. Having the normal map as a guideline I could quickly create more complex textures.

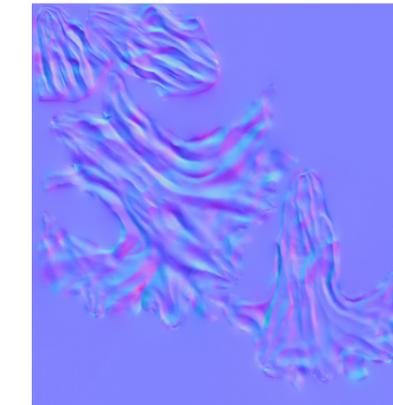


Fig. 10: Tree Normal map

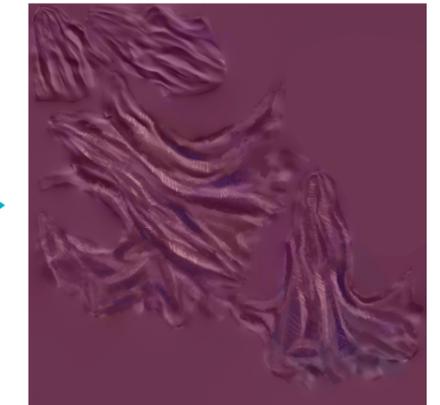


Fig. 11: Repainted Albedo map

CONTRIBUTIONS – GAME ARTIST

For the Solar Flower, I started with sculpting immediately and then did a retopology for the low- to mid-poly version. Since the big Solar Flower leaves would be used as platforms I didn't use simple planes for them. At the end, I rigged and animated the leaves and the Solar Flower itself to make it feel more alive.

Iterations

The character had to undergo the most iterations. While still in the pre-production phase where many parts of the game idea were still unclear, many opinions and ideas had to be considered and incorporated into the design. After the design was established, I initiated the aforementioned process of the character which was rather straightforward.

The Solar Flower, the leaves and a few tree concepts were provided by Sophie (Fig. 12) which I then translated into 3D models. While the tree concepts served as a general inspiration and the Solar Flower leaves didn't change much, the concept of the Solar Flower and its tree were changed. The main flowers should serve as a replacement for NPCs, therefore the concept was reduced to one big flower rather than multiple small ones. This would give the Solar Flower a more distinct feel and appearance.



Fig. 12: Solar Flower Concept by Sophie



Fig. 13: Final Solar Flower model

Asset Production

With the described pipelines I created most of the environment assets that would be used to create the Level Design for the world. These include basic assets that can be found in a forest like trees stones, mushrooms and different grass and leaf variants. A bush should serve as a barrier to define the areas the character can move in. Additionally, I did the terrain textures and the grass that would be spread all over the map (Fig. 14). For the grass and dirt I created different versions so the ground has a little more variations in its colors.

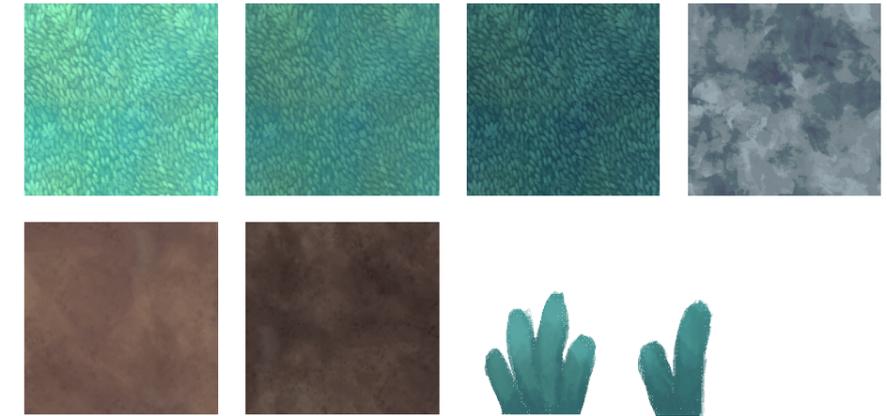


Fig. 14: Terrain textures (ground grass, stone, dirt, grass)



CONTRIBUTIONS – GAME PROGRAMMER

I was also assigned to help with the programming since we were just a few people in that department. Due to the amount of work I had as a game artist, I wasn't able to focus a lot on programming. However, the last assignment in the programming course was the creation of three mechanics which I then aligned with the needs of our game.

Respawn Mechanic

Certain areas of our game shouldn't be available from the beginning which is why we created rivers to divide them. This is why a respawn system was mandatory to make sure the player can't cross the river and would be respawned to a save position.

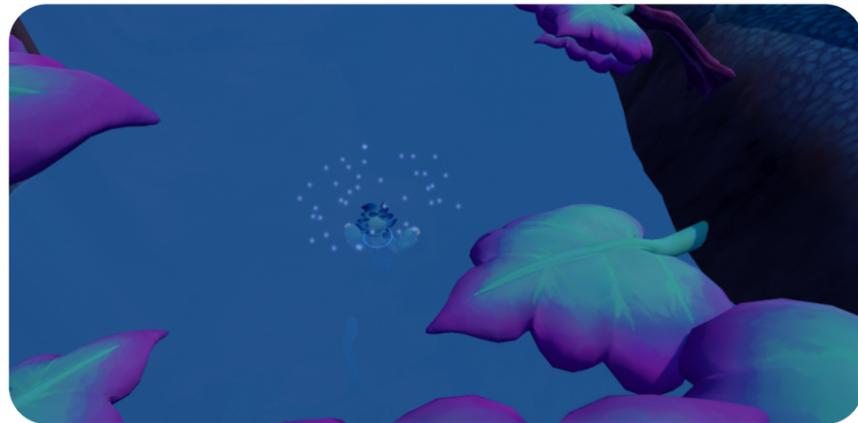


Fig. 15: Player falling into the water with particle effects

Meditative Resting Scene

Our game is supposed to be a very peaceful game, so this mechanic is used to enhance this feeling of calmness. The idea of this mechanic is to exaggerate the connection of the player character to the nature around him by meditating. Additionally, it can be used as a save point later on. This saving mechanic isn't implemented yet. Therefore, the current state of the meditation scene is used for audiovisual input only.



Fig. 16: Player meditating in a cinematic scene

Look-At Mechanic

In games, it is important to convey believable characters and environments. This can be achieved by adding dynamic movements that interact with objects in the world. A Look-At system can be a simple but effective way to implement that into the game. With this mechanic, the character looks at points of interest to suggest the player that something important is in front of him. So with this mechanic the world would feel more dynamic and simultaneously acts as a help for the player.



Fig. 16: Player looking at the Solar Flower

CONTRIBUTIONS – SOUND DESIGNER

As we had no Sound Designer in our team, I was interested in trying out Sound Design myself. Since it is important to have background music and sound effects in our game and I had interest in making sounds before, I thought I would give my best to provide the game with minimal sounds. I also had tried sound editing for previous games before but haven't had the opportunity to create my own sounds. We could have used premade royalty-free sounds but as realized in the previous games, these wouldn't provide the best quality and exactly the sound we need. Additionally, with making the sounds ourselves we establish a unique feel for our game.

During the production I first started working on the background music. The background music has gone through multiple versions that were reviewed by the team to get feedback. Different digital instruments were used to create each sound effect. The footstep sounds were made by using the sounds of actual grass and editing it afterwards.

The created sounds include:

- Background music
- Meditation music
- Footstep sounds
- Sun Skill sound
- Solar Flower Activation Sound
- Drop sound
- Respawn sound
- Button sounds

POST MORTEM

To sum up, I can say that this semester was the hardest and most stressful one yet. Not only were some of the homework very extensive, but I also dedicated myself to make this big project as great as I can. I felt responsible to reach my own expectations while also having the pressure to show progress for the semester courses. However, these expectations are highly connected to my motivation and passion I had for this game. I was able to work exactly in the fields I wanted to improve on.

Lessons learned

Even though the semester was very stressful, I learned a lot. I was able to push myself further than I ever could before. I needed to create multiple models in a short amount of time for which I had to reduce the amount of work I would put into the creation of a model while also maintaining the visual appeal. This way I was able to enhance my workflow and improve my time management.

I also was able to improve my knowledge in working with a DAW (Digital Audio Workstation) and making my own sounds for the game which was something completely new for me. I am very pleased with what I have created as I have never done sound design before.

While extensively preparing the version control workshop with Kay, I learned a lot about it. Together we were able to explain the functions to each other which had a great impact on my knowledge about version control and its functions. The whole team was able to use version control as it would be used with the Git workflow without major issues and I was able to help team members that had problems with

the usage of the program.

Working in a big team allowed me to recreate the feeling of working in a professional environment. As always, communication is key and every part of the team had to have a streamlined pipeline to ensure a fluid workflow among everyone. My role as the art lead also provided me an insight into how it feels to be responsible for managing a small part of a team that also had to be integrated into the project's workflow. I also learned that it is important to consider the amount of time that the pre-production phase would bring along with many team members. Since more different opinions exist, it is more difficult to achieve a consensus.

I also observed that my motivation has a downside as well. Because I wanted to reach certain expectations, I was stressed out a lot which at one time went beyond the limits of my capacity. I learned that I need to keep in mind that my perfectionism shouldn't get the better of me. Sometimes, I should lower my expectations and cap the working time to avoid crunching.

ROBIN

Motivation & Expectations

I was excited after Bela pitched the vision of a bigger and bolder semester project. I felt lucky to be a part of a big, motivated and talented team, with a big and polished game vision. All Projects before that felt rushed and unpolished, but this team wanted more than that. The prospect of a big team with focused and specialized team members sounded like a great idea, because I could focus on 3D modeling and I wouldn't have to deal with a lot with other areas of game making.

Individual Contributions

- Participation on conceptualizing the game-play mechanics
- Partial Creation of the 3D models of the game
- Execution of the prototype concept
 - Creation of the 3D models of the prototype
 - Composition of the environment in the engine Unity
 - Playtesting of the prototype
 - Balancing of the game difficulty
- Concepting of the in-game UI

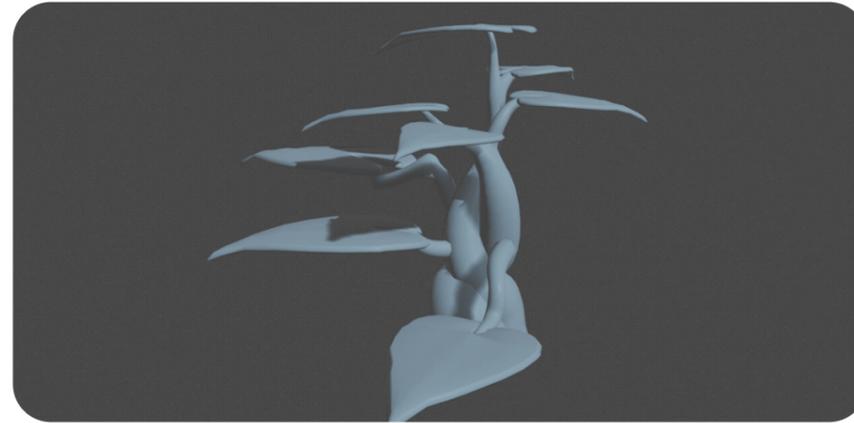


Fig. 1: Tree with leaves that act as platforms



Fig. 2 Mushroom tree for the Thorny Vine area

POST MORTEM

Lessons learned

I never really got any experience in stylized 3D modeling, I always used a more realistic approach. In the beginning I experienced some problems with the workflow, but I worked me through them and got a pretty good understanding of the workflow and the techniques.

Baking a normal map makes the quality of the UV maps pretty forgiving, the absence of a normal map for most models in this project, forced me to rethink and relearn my UV map skills. I strongly improved my UV map skills, through a lot of trial and error, but I'm proud of the progress.

A project this big called for a more modular modeling approach, so that the game models could be changed in the engine for a more easier approach and the illusion of a more varied world.

The size of this team forced me to up my engagement with other team members and I realized the importance of constant communication about my own progress and problems. I wish that I learned this earlier in the development of the game, but I'm happy that I learned it nevertheless.

CLOSING WORDS

The text was distributed between the team members. The author of the paragraphs can be identified by the name or names at the bottom left and right corner.

The text then was compiled into this document and designed by Franziska.



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