
# Defense report
# Timeless Odyssey

Epixar

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# Contents

# 1 Introduction

The primary purpose of this report is to provide a comprehensive overview of the progress made since the validation of the specifications for the "Timeless Odyssey" project. As part of the project management process, it is crucial to evaluate the work completed, the challenges encountered, and the strategies implemented to address any delays in order to gain a clear understanding of the current project status.

"Timeless Odyssey" is an innovative video game project, coordinated by Epixar, a renowned animation company with a rich history in the entertainment industry. The video game aims to combine the artistic prowess of animation with cutting-edge gameplay mechanics, creating a compelling experience for players of all ages.

This report will delve into the various stages of development that have taken place since the project's inception. By documenting the work done, it aims to highlight the accomplishments achieved by the team, while also addressing the obstacles encountered during the development process. Furthermore, this report will identify the steps taken to mitigate any delays. The development of Timeless Odyssey has faced certain challenges that have impacted the project timeline and it is crucial to reflect on these issues in order to better understand their causes and the solutions implemented to resolve them.

## 2 Company overview : Epixar

Epixar, founded in 1998, is a world-renowned animation studio that caters to audiences of all ages. It has distinguished itself as a major player in international cinema since the rise of animation over the past twenty years. Since 2006, it has maintained significant influence in its core industry: the creation of animated films. Epixar remains at the top thanks to its unique artistic approach, which focuses on creativity, storytelling, and narrative.

Originally, the studio was a technical provider specializing in software development for animation creation. It offered its technological solutions to creators. Five years after the studio's founding, Henrry Laasse, a former Disney animator who had joined Epixar after the birth of his son, came up with the idea of creating CGI short films to demonstrate the effectiveness of the company's software. This is how Epixar changed the rules of animated feature film production by following Henry Laasse's principles: highlighting diverse stories and complex characters.

At Epixar, every story deserves to be told, whether it's about the meeting of two friends or the journey of a loved one who triumphed over cancer while always holding onto hope. The studio has made it its mission to create animated works that tackle various themes such as family, adventure, and fantasy. Its goal is to touch hearts, inspire future generations, and convey essential values like sharing, respect, and kindness. For example, "The Call of the Stars" highlights the importance of pursuing one's dreams, even when they seem out of reach. It is essential to believe in something and not let oneself get trapped in a boring routine.

One of Epixar's main competitors is Dreemwork, a large animation studio trying to make its mark in the industry. In 2008, the studio rose to the top with its film "Shrek", a feature film for both children and adults that offers a great time with family or friends. However, this was before our heroes at Epixar stepped in and raised the bar even higher by creating an unprecedented project: "The Timekeeper's Secret", an adventure film set in a strange dimension where time intertwines. This sensational success brought all the spotlight to the studio, which has since remained at the forefront of the global animation film scene.

It was the sudden success of this film that inspired Epixar to open a new branch specializing in video games, starting with an innovative project drawn from this universe: "Timeless Odyssey".

## 3 Team overview and roles

The Timeless Odyssey project is being managed and developed by a team of highly skilled individuals, each contributing their expertise to different areas of the project. Below is a breakdown of the roles and responsibilities:

• Baptiste: QA Tester (Quality Assurance): Tests the game throughout its development to identify bugs, performance issues, and ensure that all game mechanics function as intended. They also ensure that the player experience is smooth and enjoyable.

• Timothy: Developer: Responsible for programming the game. This includes implementing gameplay, technical systems (such as artificial intelligence or collision management), as well as integrating elements created by other team members.

• Mehdi: 3D/2D Artist: Creates the visuals for the game, whether 3D models, textures, animations, or 2D illustrations. This role may include creating characters, environments, and graphical interfaces.

• Naïs : Composer/Sound Designer: Responsible for creating the game's soundtrack, including music, sound effects, and voices. They ensure that the audio supports the game's atmosphere and enhances immersion.

• Lilou: Game Designer: Responsible for the design of the game, its mechanics, the player experience, and the gameplay. They define the rules, the story, the universe, and the objectives of the game.

# 4 Technical specifications

## 4.1 Origin and nature of the project

Our project originates from our shared passion for various cultures and historical periods. We aimed to create a concept that brings together multiple eras and civilizations within a single universe, playing with their distinctive characteristics to give rise to a unique game setting. The development of other aspects of the game—whether in terms of aesthetics or gameplay—was guided by our personal preferences and, of course, by our technical skills, aligned with the project's requirements and constraints.

The game we envisioned, "Timeless Odyssey", falls within the rogue-like/action/ adventure and ARPG (Action Role-Playing Game) genres. It draws inspiration from gameplay mechanics found in titles such as "The Binding of Isaac" and "Hades". Visually, our game features a universe reminiscent of "Pokémon", both in its top-down perspective and its pixel art style.

In this game, the player takes on the role of a hero chosen from a variety of classes, each offering unique characteristics. Our hero awakens in a strange room, with no memory of their past or identity. It doesn't take long for them to realize that they are in a place where time periods collide, disrupting the very laws of reality.The player must not only survive in this unstable and hostile environment but also grow stronger in order to uncover the reason they've been drawn into interdimensional battles.What awaits at the end of their journey? Glory, power... or the truth? That's for you to discover.

To successfully carry out our project, we will rely on a range of tools and resources tailored to our needs.

### 4.1.1 Physical Equipment:

We will primarily use our personal computers, as well as those available in the computer labs at EPITA. This equipment will enable us to develop, test, and advance the game throughout every stage of its creation.

Communication and Project Management Tools:

- Discord will be our main communication channel. It will allow us to exchange ideas in

real time, share feedback, and coordinate tasks among team members.
- Trello will help us organize and track the progress of our tasks. With this project management tool, we'll be able to plan the various stages of development, assign responsibilities, and monitor the overall progress of the project.
- GitHub will be used as our repository for storing and sharing work, whether it's code or design assets. It will also enable us to version our project and ensure smooth, structured collaboration between developers.

#### 4.1.2 Technical Aspects:

From a technical standpoint, we will use the CSharp programming language and rely on the Rider IDE to write the game's code. Development will take place using Unity, a powerful and flexible game engine that is particularly well-suited to this type of project.

#### 4.1.3 Additional Resources and Content:

To strengthen our skills and overcome potential obstacles, we will turn to online resources—primarily Google and YouTube—for tutorials and valuable insights into Unity development. In addition, we will use external plugins and assets, which we can download from platforms such as the Unity Asset Store or itch.io, to enhance the graphical and functional elements of our game.

By combining these tools, we will be able to work efficiently and ensure steady progress throughout the development of our project.

By setting up this toolkit, we are establishing a solid organization and smooth collaboration—two key elements for the success of our project. However, beyond the technical aspects, it is essential to highlight the goals and interests that drive this initiative. Understanding the motivations behind our approach and the outcomes we aim to achieve will provide deeper insight into the stakes of this project and the ambitions that guide our work.

### 4.2 Purpose of the Study

The purpose of this project is to design a video game that is both fun and captivating, while providing an enjoyable experience for the players. The gaming experience must be smooth, engaging, and original to maximize the players' enjoyment.

Beyond the final product, this project presents an excellent opportunity for us to acquire a variety of technical skills essential for video game creation. We will learn to use different tools, such as programming languages like CSharp, game engines like Unity, and graphic design software for character and environment creation. We will also explore sound design software to compose original soundtracks and sound effects. This learning process is crucial for developing versatile skills.

In parallel, this project serves as an immersive experience in project management. By going through all stages of development—from initial design to product finalization—we will face challenges related to planning, code management through unit testing, and bug fixing. Another important challenge will be time management, requiring us to follow a structured schedule with deadlines, simulating the real-world constraints encountered in a professional setting.

This project aims to create a game with an original concept, accompanied by an exciting and unique story inspired by a successful animated film. We will also strive to be creative in the design of characters, environments, and game mechanics. Additionally, one of our goals is to improve our skills in teamwork and communication.

This project will also bring substantial benefits on both a collective and individual level. On an individual level, it provides the opportunity to acquire technical skills related to various resources and expand our knowledge of game progression and design. Working on this project offers us hands-on experience in game creation, which is a significant asset for our future. Moreover, it fosters our autonomy, initiative, and time management skills, as we oversee the project from start to finish.

On a collective level, this project allows us to share our knowledge and combine our various skills to succeed together and grow individually. For example, we may need to manage potential conflicts when differing opinions arise within the group, particularly when making important decisions. This is an opportunity to learn how to resolve disputes constructively and make collective decisions—skills that are essential in any professional environment.

In conclusion, this project goes far beyond simply creating a video game. It is a comprehensive experience that allows each team member to progress both technically and personally, while strengthening our project management and collaborative skills. These skills will undoubtedly be crucial for our future careers.

To better understand the impact of our project, it's interesting to place it within the broader context of the video game industry, which has evolved over the decades. By tracing the history of different types of games, we can see how each advancement paved the way for new experiences and innovations, making the creation of our game possible today.

### 4.3 State of the Art

Our video game can be classified into several categories, but we will limit it to two main categories: RPGs and Rogue-likes.

To better understand the ins and outs of these video game categories, we will provide a brief summary of their origins, their histories, and how they continue to impact the art of video games today.

RPG :

Main characteristics of RPGs :

RPGs often emphasize complex stories, with deep characters and well-developed quests.
Character Development: Players can customize their characters by choosing skills, classes, attributes, and equipment.
Exploration and Open World: Many RPGs allow for extensive exploration of a vast world, filled with secrets, items, and adventures.
Varied Combat Systems: RPGs offer various combat systems, ranging from turn-based to real-time combat, influenced by the character's skill development.

Evolution and History of RPGs :

The Beginnings on Paper: "Dungeons and Dragons" laid the foundation for the genre, with a dice-based gameplay system, character classes, and fantasy worlds.
The Golden Age of RPGs on Consoles and PCs (80s-90s): With games like "Final Fantasy" and "Dragon Quest", RPGs began to grow on consoles and computers, marking the genre's entry into video game culture.
The Arrival of Western and Japanese RPGs: Japanese RPGs (JRPGs), with titles like "Chrono Trigger" and "Final Fantasy", stand out for their narrative style and graphics, while Western RPGs (WRPGs), such as "Baldur's Gate" and "The Elder Scrolls", focus more on freedom and exploration.
Modern RPGs: Since the 2000s, RPGs have evolved to include online elements (MMORPGs), larger open worlds, and more varied gameplay mechanics, with titles like "The Witcher 3" and "Dark Souls" pushing the boundaries of the genre.

Recent Innovations and Trends :

Graphics and Immersion: Advances in graphics, 3D open worlds, and visual effects allow modern RPGs to offer even more intense immersion. Games like "Cyberpunk 2077" and "The Elder Scrolls V": Skyrim benefit from these technologies to create captivating environments.
Choice and Consequence Systems: Modern RPGs, such as "The Witcher 3", emphasize choice and consequence systems, which influence the narrative and the evolution of the game world, offering a personalized experience.
Interactive Storytelling and Open World: The trend of open worlds continues to grow, allowing players to decide the pace of their progression and the quests they want to pursue.
Hybrid RPGs and Fusion with Other Genres: Modern RPGs are blending with other genres, such as rogue-like ("Darkest Dungeon"), FPS ("Borderlands"), or survival games ("Fallout").

Iconic RPG Examples:

"Final Fantasy" (series): An iconic JRPG series, known for its epic stories and innovative

combat systems.

"The Elder Scrolls V": "Skyrim": A WRPG offering a rich and interactive open world, with unparalleled exploration freedom.

"The Witcher 3": Wild Hunt: Praised for its open world and immersive quests, with choices that influence the game's universe.

The RPG genre has evolved over the decades to become one of the pillars of the video game industry. Thanks to the flexibility of its mechanics and themes, it has spawned numerous subgenres and innovative titles that continue to captivate players. Today's RPGs offer narrative immersion, detailed worlds, and meaningful choices that allow players to experience unique adventures and form deep connections with characters and stories.

Rogue-like:

Definition of Key Characteristics of Roguelikes:

Origin: Levels are randomly generated, meaning each playthrough is unique. This creates nearly infinite replayability.

Permadeath: When the player dies, they must restart the game from the beginning. This mechanic encourages players to think carefully about each action.

Progression Based on Equipment and Abilities: Instead of leveling up, players rely on the items and abilities they find to strengthen themselves.

Complexity and Resource Management: Roguelikes are often known for their tactical depth and the need to carefully manage resources.

History and Evolution of Roguelikes:

The Beginnings with "Rogue" (1980): This game, based on a system of randomly generated dungeons, laid the foundation for the genre. It influenced a generation of computer games, including "NetHack" and "Angband", which brought strategic depth and a variety of enemies and quests.

The Revival of Roguelikes in the 2010s: Games like "The Binding of Isaac" (2011) revitalized the genre by introducing modern elements and increased accessibility. This marked the beginning of the growing popularity of roguelikes and roguelites.

Modern Roguelikes: Today, many games incorporate roguelike elements while diversifying into sub-genres. For example, "Dead Cells" mixes real-time action with platforming, and "Slay the Spire" merges roguelike mechanics with deck-building. The success of games like "Hades" (2020) shows the growing appeal of this genre.

Recent Innovations and Trends:

Dynamic Storytelling: Games like "Hades" introduce narrative elements between each run, enriching the gaming experience and adding a more immersive dimension.

Persistent Progression: Many modern roguelikes allow for some form of persistent progression. For example, in "Dead Cells", the player can unlock weapons and abilities for future runs.

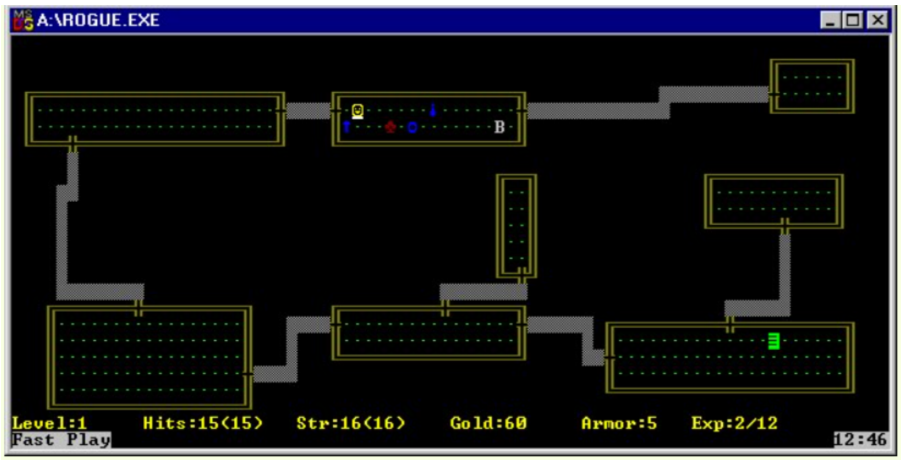
Aesthetic and Sound Design: The genre has expanded to include a variety of graphic styles, ranging from traditional pixel art to more modern and stylized visuals. Dynamic music, reacting to the player's actions, is also a strong feature in games like "Crypt of the NecroDancer".

The rogue-like genre continues to evolve and captivate players thanks to its replayability, strategic complexity, and unique progression mechanics. With constant innovation, roguelikes have become a cornerstone of the video game industry, offering diverse and adaptive experiences for a broad audience.

Thus, both RPGs and roguelikes—with their unique characteristics and rich histories—have managed to evolve and adapt to players' expectations. They continue to influence their respective fields, proving that innovation and creativity remain at the heart of the art of video games. It is in this spirit of innovation that the company Epixar seeks to position itself with its new game, "Timeless Odyssey".

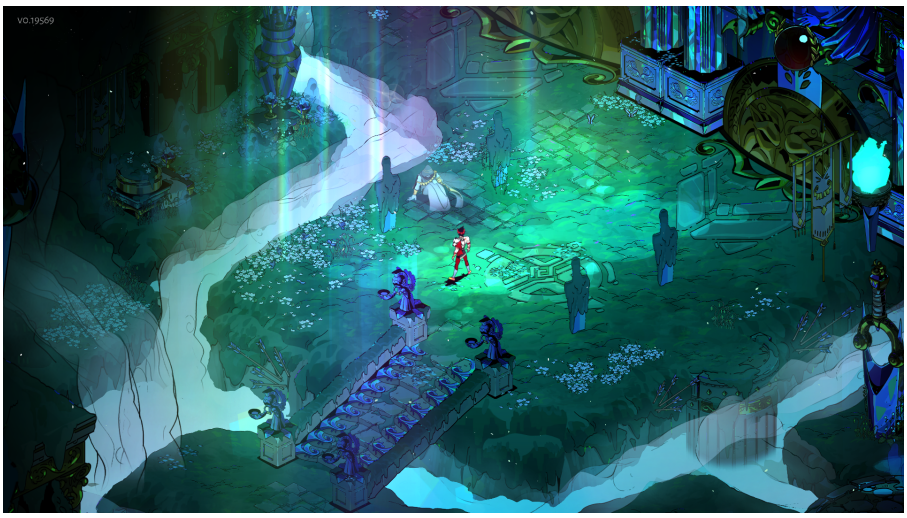
Notable Roguelike Games and Their Impact:

Rogue (1980): The founding title of the genre, known for introducing randomly generated dungeons, which became a defining feature of roguelike games.




The Binding of Isaac (2011): Praised for its accessible yet challenging gameplay and its use of dark humor, the game helped popularize roguelikes among a wider audience and inspired a new wave of indie developers.


Hades (2020): Developed by Supergiant Games, this title introduced an innovative narrative dimension to the roguelike genre. It is one of the most critically acclaimed roguelikes to date, praised for its storytelling, gameplay depth, and polished presentation.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### 4.4 Our Team

Baptiste CHEFSON, determining his place in the world from his 1.59×10e-3 km distance between the ground and the top of his head, has been a grand guru of computer science for the past 30 years. He joined Epixar in 2000 and became part of the video game division upon its creation in 2024.
His extensive professional experience grants him calmness and wisdom in the execution of his work. While occasional lapses in focus may arise—due to an excessively active neurological system also responsible for a notable lack of zeal—delay is not something he takes for granted, and he does not overlook detail.
Team spirit is one of his top priorities: he always finds the right word to make others laugh (although, admittedly, he tends to amuse mainly himself). His deep passion for computer science allows him to zero in on his goals—especially when the deadline is less than 48 hours away.

Timothy LAMARRE, a 159 cm tall computer engineer, is a passionate enthusiast of both computer science and video games who has always dreamed of joining a major game development studio. A recent graduate from EPITA (Class of last year), he had the opportunity to join the development team for Epixar's upcoming game, "Timeless Odyssey".
Although he lacks professional experience, he is fully committed to giving his best (at least as much as he does on Summoner's Rift). His goal is to learn as much as possible in the field and do everything he can to help bring the project to life.
His only claimed talent is being naturally gifted in mathematics. While this hasn't particularly helped him in programming (yet), he remains determined to contribute meaningfully and see the project through to the best of his ability.

Mehdi MAJIDI, standing proudly at 1.59 meters, is a 29-year-old computer engineer with a lifelong fascination for the world of video games. A graduate of EPITA Paris in 2019, he has gained solid experience in software development within major companies.
In 2024, Mehdi decided to take on his first independent video game project—an ambitious RPG. He stands out for his leadership skills and his ability to guide a team toward achieving shared goals.
Driven by a thirst for learning, he enjoys exploring new ways of working and brings a strong team spirit to every collaboration. While he's aware of certain gaps in his programming skills, he's fully committed to working hard to overcome them. Determined and motivated, he's eager to prove himself through this first team project.

Naïs MATHIEU, who in reality measures 1.59 meters, may have misrepresented her height on her ID—but this doesn't make her a liar, just a dreamer. A passionate reader, her mind is overflowing with imagination—so much so that, at times, it spills over into her perception of reality, as illustrated above.
Fortunately, this excess of creativity will be a real asset for our project, where standing out with an original and inventive approach is essential. While her background in chemistry won't be directly useful—knowing why a reaction rate is first-order isn't exactly a project requirement—her ability to balance chemical equations with precision is not unlike debugging a program.
This skill, along with her creative mindset, will undoubtedly contribute to the success of our game development journey.

Lilou SCAFFIDI, 159 cm tall, has been passionate about computer science from a very young age. She proudly calls herself a "die-hard coder" ever since her first experiments with Scratch—where she created revolutionary games (featuring cats doing somersaults, no less).
While she may spend a bit too much time binge-watching endless series—sometimes confusing her own life with a fictional plot—this has only sharpened her unshakeable patience. A quality

that will certainly come in handy when she spends two hours debugging code because of a forgotten comma.
Despite what her weekly Netflix stats might suggest, Lilou has a grounded sense of realism. This allows her to keep her teammates' more eccentric ideas in check, helping the group stay focused on what's actually achievable within the project's deadlines.

### 4.5 Distribution

From the beginning of the Timeless Odyssey project, we recognized the importance of clear and efficient team organization. To ensure smooth collaboration and optimal productivity, we carefully distributed the roles based on each member's strengths, interests, and areas of expertise. This strategic allocation of responsibilities allowed everyone to contribute meaningfully while also fostering individual growth and accountability.

| **Tasks** | **People (lead, backup)** |
|---|---|
| Project Management (Team communication, task progress) | Mehdi MAJIDI / *Lilou SCAFFIDI* |
| Main Menu | Timothy LAMARRE / *Baptiste CHEFSON* |
| Network (Multiplayer) | Lilou SCAFFIDI / *Timothy LAMARRE* |
| Artificial Intelligence | Naïs MATHIEU / *Timothy LAMARRE* |
| Character Movement and Attacks | Baptiste CHEFSON / *Mehdi MAJIDI* |
| Game Mechanics | Timothy LAMARRE / *Baptiste CHEFSON* |
| Music | Naïs MATHIEU / *Lilou SCAFFIDI* |
| Sound / Sound Effects | Timothy LAMARRE / *Mehdi MAJIDI* |
| Room and Object Graphics | Mehdi MAJIDI / *Naïs MATHIEU* |
| Character Graphics and Animations | Mehdi MAJIDI / *Baptiste CHEFSON* |
| Progression Management (Saving, Game Over, etc.) | Baptiste CHEFSON / *Timothy LAMARRE* |
| Visual Universe Consistency (top-down view, pixel art, etc.) | Naïs MATHIEU / *Lilou SCAFFIDI* |
| Lore, Dialogues and Story Comprehensibility | Lilou SCAFFIDI / *Naïs MATHIEU* |
| Playability and Bug Testing | Baptiste CHEFSON / *Naïs MATHIEU* |
| Marketing / Website Creation | Lilou SCAFFIDI / *Mehdi MAJIDI* |

This distribution allowed us to stay organized, avoid redundant work, and deliver a game that reflects the combined efforts and talents of our entire team.

### 4.6 Progress and Planning

At the outset of Timeless Odyssey, a detailed set of project specifications was established to guide the team's efforts and provide a clear vision of the final product. These specifications outlined the core features, gameplay mechanics, artistic direction, technical architecture, and team responsibilities. They served as a roadmap — not only helping to align the team around common goals but also offering a benchmark against which progress could be measured.

| **Task** | **13/01 to 17/01** | **10/03 to 14/03** | **26/05 to 30/05** |
|---|---|---|---|
| Main Menu | 30% | 60% | 100% |
| Network (Multiplayer) | 10% | 75% | 100% |
| Artificial Intelligence | 20% | 75% | 100% |
| Character Movement and Attacks | 25% | 75% | 100% |
| Game Mechanics | 10% | 60% | 100% |
| Music | 0% | 50% | 100% |
| Sound Effects | 0% | 50% | 100% |
| Room and Object Graphics | 25% | 60% | 100% |
| Character Graphics and Animations | 25% | 60% | 100% |
| Progress Management (Saves, Game Over...) | 0% | 70% | 100% |
| Visual Coherence (top-down view, pixel art, ...) | 25% | 60% | 100% |
| Lore, Dialogues and Story Comprehension | 0% | 75% | 100% |
| Playability and Bug Hunting | 40% | 60% | 100% |
| Marketing / Website Creation | 85% | 100% | 100% |

As development progressed, the specifications remained a point of reference, even as the realities of time constraints, technical limitations, and unforeseen challenges required the team to adapt and revise certain goals. Some features were refined or re-imagined, others postponed for a future iteration.

# 5 Monitoring of progress

This section provides a detailed review of the tasks completed since the first defense, highlighting the progress made on the key components of the Timeless Odyssey project.

## 5.1 First presentation

For the first presentation, our progress was as below:

| Tasks | percentage | Tasks | percentage |
|---|---|---|---|
| Main Menu | 30 | Sounds / Sound Effects | 0 |
| Network (Multiplayer) | 10 | Graphics of Rooms and Objects | 25 |
| Character Movement and Attacks | 25 | Character Graphics and Animations | 25 |
| Game Mechanics | 20 | Consistency of the Visual Universe | 35 |
| Music | 0 | Marketing / Website Creation | 85 |

**Website development**

The development of the official website has been a fundamental step in establishing Timeless Odyssey's online presence. Not only does the website serve as a platform to inform stakeholders about the project, but it also functions as a marketing tool to engage potential players and build an audience around the game. Baptiste has played a crucial role in this aspect of the project, focusing on both the design and the user experience.

- Design Phase : The initial design phase of the website has been completed, which includes the layout and visual elements that represent the aesthetic of the game. Baptiste worked on creating a visually appealing and cohesive design that reflects the atmosphere and themes of Timeless Odyssey. This included selecting color schemes, fonts, and overall page layouts that align with the game's visual identity. The homepage and key sections, such as "About the Game" and "Team" were structured to provide visitors with clear and accessible information about the game's development.

- User Experience (UX) Focus : Baptiste has also prioritized the user experience to ensure that visitors have an intuitive and enjoyable browsing experience. Navigation menus have been carefully designed to be straightforward, ensuring that users can easily access various sections of the website. Furthermore, attention has been given to the loading speed and responsiveness of the site, ensuring that it performs well on different devices, including mobile phones and tablets.

**Multiplayer development**

The multiplayer mode is one of the core features of Timeless Odyssey and is essential to creating an engaging and dynamic experience for players. The development of the multiplayer system has been a major priority for the team, as it directly impacts the core gameplay experience. Lilou has been responsible for laying the groundwork for the multiplayer functionality, focusing primarily on coding the initial stages of the multiplayer system.

- Initial Development : The primary goal during this phase was to establish the basic framework for multiplayer functionality. This includes setting up the networking infrastructure required for players to connect to a central server and interact in real-time within the game world. Lilou has implemented basic mechanics such as player spawning and simple server-client communication, allowing players to enter the game world and interact with each other to a limited extent. These foundational elements are critical for ensuring that the multiplayer

environment operates smoothly before more complex features are introduced.

- Time Constraints and Basic Functionality : Due to time constraints, only basic multiplayer mechanics were completed during this phase. The system is functional but limited in terms of player interaction. Features such as in-game chat, player-to-player actions (like emotes or combat), and matchmaking have yet to be fully developed. While the system is operational, additional features that would enhance the multiplayer experience are still in the planning stages.

**Movement system**

The movement system is one of the most crucial components of Timeless Odyssey, as it directly influences the gameplay experience. The development of smooth and intuitive character movements has been a key focus for Timothy, and significant progress has been made in this area.

- Development of Movement Mechanics : Timothy has worked extensively on the character movement system, ensuring that the controls are responsive and fluid. This includes basic movements such as walking, running, and jumping, as well as more intricate mechanics like crouching, climbing. The movement system is designed to feel natural and immersive, with smooth transitions between actions and minimal input delay. Timothy has focused on the player's ability to navigate the world and interact with the environment in a way that feels intuitive and responsive, an essential element for any engaging game.

- Testing and Refining the Mechanics : Extensive testing has been carried out to ensure the movement feels realistic. During testing, minor glitches and inconsistencies in character animation were identified, leading to adjustments in the underlying code. The character's interactions with the environment were also refined, including handling objects, terrain obstacles, and other game elements. The testing process has been iterative, with tweaks being made to ensure the mechanics provide a seamless and enjoyable experience.

### 5.2 Second presentation

For the second presentation, our progress was as below:

| Tasks | percentage | Tasks | percentage |
|---|---|---|---|
| Main Menu | 100 | Story and lore | 100 |
| Network (Multiplayer) | 100 | Graphics of Rooms and Objects | 25 |
| Character Movement and Attacks | 60 | Character Graphics and Animations | 60 |
| Game Mechanics | 60 | Consistency of the Visual Universe | 75 |
| Music | 60 | Marketing / Website Creation | 100 |

#### Website update

The development of the official website has been an essential step in establishing Timeless Odyssey's online presence. The site has undergone key changes to better suit its purpose as a hub for downloading the game and learning about its development. In addition to several enhancements on the visual front, one of the most significant improvements was the transition to a new hosting platform, which improved functionality.

Website Visual Enhancements and Team Section Redesign : A major aspect of the recent updates involved a complete visual rework of the Team Members section. The goal was to present the development team in a more engaging and professional way, ensuring that visitors could easily associate faces with the game's creation. This redesign included refining the layout, adjusting image placements, and improving the overall aesthetic to match the game's identity. The arrangement of team photos, text formatting, and styling choices were carefully considered to create a visually cohesive and appealing presentation.

Improved Visual Consistency Across the Website : Beyond the Team Members section, additional refinements were made to ensure visual consistency across the website. This involved the change of font, subtle tweaks to the color palette, spacing, and graphical elements, ensuring a smoother and more cohesive user experience. The idea was to create a website that feels unified, where every section contributes to the overall aesthetic rather than appearing as separate, disconnected parts.

Hosting Migration : One of the most significant changes was the migration to GitHub Pages. The previous hosting service did not allow users to download files directly from the site, which was a major limitation. Moving to GitHub Pages resolved this issue, ensuring that visitors can easily access the game.

#### Multiplayer development

The multiplayer mode is one of the core features of Timeless Odyssey and is essential to creating an engaging and dynamic experience for players. The development of the multiplayer system has been a major priority for the team, as it directly impacts the core gameplay experience. Lilou has been responsible for laying the groundwork for the multiplayer functionality, focusing primarily on coding the initial stages of the multiplayer system.

Core Multiplayer Mechanics: Lilou has been working on the networking infrastructure for the game's multiplayer mode. This includes setting up the server-client architecture where multiple players can connect, interact, and play together in real time. She ensures that game states (like player position, actions, and scores) are synced across all players' devices to maintain a seamless experience without noticeable lag or discrepancies.

Multiplayer Features: Depending on your game type, Lilou is working on either cooperative multiplayer (where players work together) or competitive multiplayer (where players compete against each other). This could include team-based gameplay or free-for-all modes. Lilou's focus is on ensuring that players can interact in real time. This includes handling player inputs and synchronizing them over the network, so everyone sees and experiences the same actions without significant delays.

Testing and Balancing: To ensure the multiplayer mode can handle a variety of player loads, Lilou is conducting stress tests to simulate multiple players connecting and playing simultaneously. This ensures there are no crashes or issues when the game goes live. She is also testing gameplay balance, particularly in multiplayer modes where multiple players are interacting. Adjustments are made to ensure fairness, whether it's balancing character abilities, resources, or game mechanics.

Advancements in Multiplayer Mode and Networking : The development of the multiplayer mode has been a significant step in expanding the gameplay experience of Timeless Odyssey. A strong focus has been placed on refining the user interface, synchronization across devices, and player autonomy, ensuring that the online experience is both seamless and immersive. Recent progress in this area has involved extensive work on the menu redesign, character selection synchronization, and proper player spawning, all of which contribute to a polished and functional multiplayer environment.

Redesigned Multiplayer Menu and Character Selection : One of the key aspects of the multiplayer experience is the menu system, which serves as the entry point for players joining a session. The menu underwent a complete redesign, improving both its visual appeal and usability. The layout has been optimized to ensure that navigating through the multiplayer options is intuitive, allowing players to quickly select their characters and connect to a session without unnecessary complexity. The character selection screen has also been revamped, ensuring that it accurately reflects each player's choice and synchronizes correctly across all connected devices.

Seamless Synchronization Across Devices : A crucial challenge in multiplayer development is ensuring that all players experience the game world consistently. Significant effort has been put into refining the synchronization system, making sure that character selections and in-game events are properly mirrored across devices. When a player selects a character, this choice is now accurately reflected for all other participants in real time, ensuring that each player appears as their chosen character on every screen. This synchronization extends beyond character selection to game state updates, preventing discrepancies and desynchronization issues that could disrupt gameplay.

Proper Player Spawning and Individualized Controls : Ensuring that each player spawns into the game correctly has been another critical aspect of development. Work has been done to guarantee that when a session begins, each player is assigned the correct character and appears in the right location within the game world. This means that no duplicate characters appear, and no player is mistakenly assigned an incorrect avatar. The system now dynamically assigns characters based on selection and network data, ensuring a smooth transition from the menu to actual gameplay. Moreover, great care has been taken to ensure that each player has control over their own character and camera exclusively. Unlike in a single-player experience, where the game world revolves around one user, multiplayer requires that every player has an independent viewpoint and control scheme. This means that each participant's camera is locked to their respective character, preventing confusion and ensuring a fluid, immersive experience. Controls are fully individualized, preventing any overlap or interference between players' actions.

These advancements in menu design, character selection synchronization, proper player spawning, and independent controls mark a significant step forward in the multiplayer functionality of Timeless Odyssey. The improvements ensure that players can seamlessly enter a session, see accurate character representations, and interact with the game world without desynchronization issues. By refining these core systems, the multiplayer mode is steadily evolving into a smooth, engaging, and technically sound experience, laying the foundation for further enhancements and expanded online gameplay possibilities.

### Gameplay and Environment Enhancements

The movement system is one of the most crucial components of Timeless Odyssey, as it directly influences the gameplay experience. The development of smooth and intuitive character movements has been a key focus for Timothy, and significant progress has been made in this area.

Alongside advancements in multiplayer functionality, significant progress has been made in refining the game mechanics and environmental design to enhance player immersion. A key area of focus has been the implementation of collision systems within the tutorial map, ensuring that player movement and interactions with the environment feel natural and responsive. Proper collision detection is fundamental to maintaining a polished gameplay experience, preventing players from passing through walls or encountering unintended movement glitches. The system has been carefully adjusted to ensure that all objects and surfaces behave as expected, creating a realistic and structured game world.

To further enhance the atmosphere of the tutorial section, new lighting effects have been introduced, significantly improving the visual presentation of the game's introductory area. The environment has been made darker, increasing contrast and emphasizing key elements within the scene. This design choice helps create a more focused and immersive experience, guiding players through the tutorial in a way that feels both intuitive and visually compelling. Additionally, halo lighting effects have been added around player characters, making them stand out within the dimly lit environment. These subtle yet impactful visual enhancements help draw attention to character movement and interactions, reinforcing the sense of depth and presence within the game world.

By integrating these improvements, the tutorial area now feels more polished and atmospheric, serving as an engaging introduction to the game's mechanics. The combination of refined collision detection and carefully placed lighting effects ensures that players not only experience smooth and logical movement but are also immersed in an environment that visually guides and enhances their journey from the very first moments of gameplay.

### Original soundtrack

A vital part of enhancing the player experience in Timeless Odyssey has been the creation of an original soundtrack, carefully composed to complement the game's environments and narrative tone. Music plays a crucial role in establishing atmosphere, guiding player emotions, and reinforcing the distinct identity of each in-game location. To achieve this, several key areas of the game have been given their own dedicated musical themes, ensuring that each space feels unique and immersive. The menu theme, the Egyptian room, the final room, and the tutorial room now feature original scores, each designed to evoke a specific mood and reinforce

the game's unique aesthetic.

The menu theme serves as the player's first auditory experience, setting the stage for the adventure to come. The composition is designed to be both welcoming and mysterious, creating an immediate sense of intrigue while maintaining a subtle, ambient quality that encourages exploration. It provides a smooth and engaging transition into the game world, preparing players for their journey.

The tutorial room has been given a more subtle and guiding musical theme, ensuring that players can focus on learning the game's mechanics while still being enveloped in an immersive soundscape. The composition is kept calm yet engaging, helping to create a welcoming atmosphere that encourages exploration and experimentation without overwhelming the player.

For the Egyptian room, the music takes on a more atmospheric and ancient quality, drawing inspiration from traditional sounds and textures that evoke the grandeur and mystery of lost civilizations. The instrumentation and tonal choices reflect the historical setting, incorporating instrumentation and melodies that evoke the region. This composition helps immerse players in the environment, reinforcing the visual storytelling of the scene.

Finally, the last room, being a climactic point in the game, features a score that is designed to heighten tension and anticipation. The music gradually builds in intensity, guiding players toward the final moments of their journey with a composition that is both dramatic and emotionally charged. Every note is carefully placed to underscore the significance of this pivotal moment, ensuring that players feel the weight of their progress and the stakes of their final challenge.

Each of these compositions contributes to a richer, more cohesive auditory experience, reinforcing the game's world-building and emotional depth. By carefully tailoring the music to each environment, the game now offers a layered and immersive soundscape, ensuring that every area feels distinct while still fitting seamlessly into the broader Timeless Odyssey universe.

**Visual asset development**

A crucial part of shaping the visual identity of Timeless Odyssey has been the careful selection of assets that define the game's environments, characters, and interactive elements. Every asset used in the game has been chosen with a strong emphasis on maintaining consistency, reinforcing the game's atmosphere, and ensuring smooth integration within the gameplay experience. Recent progress has focused on refining this selection process, making sure that every object, texture, and effect contributes to a unified and immersive world. When selecting environmental assets, the priority has been to create a world that feels both visually compelling and functionally clear. Special attention has been given to structures, props, and decorations to ensure that they match the game's artistic direction. This includes choosing textures and models that not only look cohesive but also serve their gameplay purpose effectively. Elements such as walls, platforms, and obstacles have been carefully evaluated to maintain clarity, preventing any confusion between background elements and interactive objects.

For characters and player models, the focus has been on making sure they stand out against the environment while still fitting naturally within it. The chosen character assets maintain a consistent art style, ensuring that animations and movement feel smooth and responsive. Every detail, from proportions to shading and color choices, has been reviewed to make sure characters are both visually appealing and functionally readable in different lighting conditions and

camera angles. By carefully curating assets across environments and effects, Timeless Odyssey now features a cohesive and polished visual experience. Each asset has been chosen to contribute to the game's unique style and enhance its overall playability and immersion, ensuring that every element, no matter how small, feels like an intentional part of the world.

### Egyptian room design

The creation of the Egyptian room has been a pivotal moment in the design process for Timeless Odyssey, as it introduces players to one of the most richly thematic and visually distinct environments within the game. The design of this room required a balance between historical accuracy, atmospheric depth, and gameplay functionality, ensuring that it not only feels immersive and believable but also aligns with the core experience of the game. The room's architectural elements were carefully crafted to evoke the grandeur and mystique of ancient Egypt.

The overall design of the Egyptian room aims to transport players to another time and place, offering an experience that is both visually captivating and deeply interactive. By blending historical references with creative gameplay elements, the room contributes to the larger Timeless Odyssey universe, immersing players in an ancient world where every detail serves to tell a story and enrich their adventure.

### 5.3 Final presentation

For the last presentation, our progress is as below:

| Tasks | percentage | Tasks | percentage |
|---|---|---|---|
| Main Menu | 100 | Sounds / Sound Effects | 30 |
| Network (Multiplayer) | 100 | Graphics of Rooms and Objects | 100 |
| Character Movement and Attacks | 100 | Character Graphics and Animations | 100 |
| Game Mechanics | 90 | Consistency of the Visual Universe | 100 |
| Music | 100 | Marketing / Website Creation | 100 |

**Baptiste** played a versatile and essential role in the project, contributing to both the artistic and level design aspects of the game:

Logo and Visual Identity: Participated in the creation and finalization of the game's logo, helping to define the visual branding of Timeless Odyssey.

Level Design: Designed and built key areas of the game, including:
The Viking Room, with its unique visual atmosphere and level mechanics.
The Final Room, which serves as the narrative and gameplay culmination of the game.

Egyptian Boss Design: Developed and integrated the Egyptian-themed boss, including its design, behavior, and in-game implementation, contributing significantly to the game's climax.

Additionally, Baptiste supported the team in many areas throughout development, stepping in where needed to help with various tasks. His flexibility and initiative made him a key contributor to the overall success and polish of the project.

**Timothy** played a central role in developing the core gameplay systems of Timeless Odyssey. His main focus areas included:

Combat Systems: Designed and implemented distinct attack mechanics for both the ninja (fast and precise) and the viking (slower but stronger), ensuring variety and balance in playstyles.

Collision Management: Built a reliable system to handle interactions between characters, enemies, and the environment, crucial for game physics and combat accuracy.

Game Over Logic: Developed the full Game Over system, including condition checks, UI display, input freeze, and reset flow.

Enemy Health System: Created the backend logic for managing enemy health and defeat, even though no visible health bars were shown to players.

Debugging: Regularly identified and fixed bugs across gameplay, animation, and UI, improving stability and polish.

His work was essential in making the game feel responsive, immersive, and technically sound.

**Mehdi** was in charge of designing key environments and a major boss in Timeless Odyssey. He created the Egyptian room and the Japanese room, each with distinct visual themes and gameplay layouts that enriched the player's experience. He also designed and programmed the Japanese boss, handling its attack patterns, behavior, and visual identity. His work added

strong thematic variety and challenge to the game, making him a crucial contributor to its world-building and combat design.

**Naïs** played a central and multifaceted role in the project, contributing both creatively and technically. She composed and integrated the game's music, crafted the animations for both the Viking and Ninja characters, and developed the player health bar, ensuring a clear and responsive UI. She also took charge of the project report and game packaging, delivering high-quality documentation and presentation materials. Her blend of artistic talent and technical skill was essential to the game's polish and immersion.

**Lilou** played a crucial and versatile role throughout the game's development, significantly shaping its visual style, gameplay mechanics, and technical stability.

Animation and Combat: She created and implemented smooth, expressive animations and attack mechanics for the character "Flam," ensuring fluidity and consistency in movement and combat.

Custom Assets and UI: Lilou designed unique in-game assets and enhanced the main menu's visual appeal and usability, improving player experience from the start.

Debugging and Gameplay Polish: She tackled major bugs including lighting, idle animations, player spawning, movement balancing, and multiplayer sync, resulting in smoother and more stable gameplay.

AI Development: Lilou developed AI for standard mobs, a challenging Berserker enemy, and a complex multi-phase final boss, adding depth and challenge to encounters.

Dialogue System: She created the narrative dialogue system to support immersive storytelling and emotional engagement.

Room Transitions and Spawning: Lilou ensured seamless level navigation by implementing smooth room transitions and dynamic enemy spawning systems.

Website Development: Along with Baptiste, she contributed to the game's official website, focusing on design and content aligned with the game's identity.

Overall, Lilou's blend of artistic skill and technical expertise made her a pivotal contributor to Timeless Odyssey's gameplay, aesthetics, and overall player experience.

## 6 Assessment of planned milestones against achieved results

As part of this project, certain features initially outlined in the specifications were not implemented—namely, the save function and the main level structure consisting of a central room connected to three others. This was not due to oversight or insurmountable technical limitations, but rather the result of a deliberate decision made by the team during development.

Indeed, as the project progressed and we entered the first testing phases, we reassessed our priorities and adjusted our vision for the game. We realized that, while these features were relevant on paper, they added unnecessary complexity to the project without significantly enhancing the player experience we aimed to deliver within the given timeframe. For example:

- The save function required complex game state management, which would have demanded considerable development time and testing—at the expense of other features more visible and impactful for the player.

- The central room with three adjacent rooms imposed a rigid structure that no longer matched our revised artistic and gameplay direction. We chose instead a more fluid and linear environment progression, better suited to our resources and vision.

This change in direction reflects an iterative approach, common in both creative and software development projects. It allowed us to focus our efforts on elements more essential to the final game's quality, such as gameplay, user experience, sound design, and multiplayer stability. Although these decisions represent deviations from the original specifications, they were made thoughtfully, with consideration for the time available, the team's skills, and the overall coherence of the game.

Some other features that were initially planned or considered could not be integrated into the final version of the game, mainly due to time constraints. These include:

- The addition of more complex cutscenes to explain the backstory of the final boss and enrich the game's narrative universe.

- The implementation of more advanced enemy behaviors (AI) to make combat more varied and strategic.

These elements were part of our initial ideas to enhance player immersion and deliver a more refined experience. However, given the time limitations and project priorities, we had to refocus our efforts on the core features necessary for the game to function properly, such as gameplay stability, level coherence, and overall balancing.

Rather than risk introducing incomplete or poorly integrated features, we chose to prioritize the quality and reliability of what could realistically be achieved within the given timeframe. This kind of decision-making is an integral part of project management: it is sometimes necessary to make trade-offs in order to deliver a consistent and playable final product.

Nevertheless, we still consider these ideas as potential areas for improvement in a future version of the game, should development continue.

One of the design choices we made concerns the absence of visible health bars for enemies. Unlike many games that clearly display the remaining health of opponents, we decided not to

include this element in the user interface, for two main reasons.

The first reason is tied to our desire to enhance the game's difficulty and player immersion. By not providing a precise indicator of enemy health, the player is immersed in a more uncertain and tense experience, where they must rely on intuition and observation—such as changes in enemy behavior, animations, or sounds—rather than numerical data. This choice helps to heighten suspense and make each encounter feel more intense.

The second reason is practical and technical. Implementing a dynamic health bar for each type of enemy, with smooth and consistent visual updates, would have required additional development time—time we chose instead to allocate to more central aspects of gameplay. Given the project's time constraints, this decision seemed appropriate.

Therefore, even though this may differ from standard gaming conventions, the absence of enemy health bars is not an oversight, but a deliberate and thoughtful game design choice made by the team.

Another element we were unable to finalize in Timeless Odyssey concerns the integration of certain specific sound effects. Although the game's musical atmosphere was carefully composed and implemented, several short sounds — such as those for attacks, collisions, environmental interactions, or visual feedback (like menus or item pickups) — were not included in the final version of the project.

This was mainly due to a lack of time during the final production phase. Finding or creating appropriate sound effects, editing them (cutting, normalizing), and integrating them into Unity (using event triggers, audio priorities, or spatialization) is a meticulous and time-consuming task that is often underestimated in a project of this scale.

Adding these sound effects would have significantly enhanced player immersion, improved auditory feedback during key actions, and strengthened the emotional impact of certain scenes and battles.

We clearly see this as a priority for any future or extended version of the game. A more polished sound design would greatly refine the sensory experience and make the overall gameplay even more engaging and believable.

# 7 Challenges and delays

Unfortunately, the Timeless Odyssey project has experienced delays, which have impacted our ability to meet the original timeline. While significant progress has been made in certain areas, several key components of the project are behind schedule.

The causes of these delays can be attributed to several factors, each of which presented unique challenges that hindered the expected pace of progress. Below, we outline the primary reasons for these delays and the specific issues that arose during the development process.

## 7.1 Lack of communication

When working on a video game project, especially in a team setting, communication is essential for coordinating tasks, ensuring alignment on goals, and resolving issues that arise. Without the ability to meet in person or collaborate effectively, a number of challenges can emerge that may prevent the completion of tasks.

- Delays in Feedback: In game development, it's important to get feedback from the team on the progress of various tasks. If feedback is not shared regularly or if team members can't easily reach each other to ask questions, delays in adjustments or improvements may occur. For example, if the AI system is implemented incorrectly and no one is available to review it, the issue might persist for a longer time, delaying progress on related tasks.

- Difficulty in Collaboration Across Disciplines: Video game development often involves multiple disciplines—designers, programmers, writers, artists, and sound designers—who need to collaborate closely. Without effective communication, it becomes difficult to coordinate the work between these different areas. For instance, if a level designer does not communicate clearly with the writer, the story elements might not fit well within the game's environment or progression, making it harder to implement things like lore and dialogue.

- Misunderstandings of Roles and Responsibilities: Without clear and consistent communication, team members may not fully understand their specific responsibilities or what is expected of them. This can lead to confusion over who is responsible for implementing certain features like AI, progression management, or the storyline, resulting in some tasks being overlooked or left unfinished.

In summary, without effective communication, teams can face numerous issues that hinder progress, including unclear roles, misaligned priorities, delayed problem-solving, reduced morale, and poor collaboration. This often leads to unfinished tasks, which is why maintaining open, clear, and frequent communication is vital for successful game development.

## 7.2 Resource Constraints

Another significant challenge has been the limited resources available to the project, particularly in terms of the expertise required to tackle specific aspects of the game's development. While the team is highly skilled, the complexity of the tasks at hand stretched the available manpower and skills, resulting in slower-than-anticipated progress.

The complexity of the game's core features, such as multiplayer interaction and movement mechanics, was underestimated during the planning phase. Tasks such as creating smooth character movements, implementing physics, and ensuring balanced multiplayer interactions require an iterative approach, with frequent testing and fine-tuning. The complexity of these tasks demanded more attention and time than originally anticipated, further contributing to

delays in the project.

As a result, the intricate nature of the tasks required reallocation of resources, causing delays in meeting initial milestones.

### 7.3 Unexpected Challenges

Throughout the development of Timeless Odyssey, the team faced several unexpected challenges that required significant adjustments and resulted in some delays. These hurdles tested the flexibility and problem-solving skills of the team, but each issue was addressed in a way that ultimately strengthened the project.

One unexpected challenge we encountered during the development of "Timeless Odyssey" was the design and layout of the game's rooms. At first, we assumed that creating a series of interconnected rooms would be a relatively straightforward task. However, as development progressed, we quickly realized that room design plays a critical role in both the game's pacing and the player's experience.

We needed to ensure that each room was not only visually consistent with the game's pixel art aesthetic, but also functionally interesting — offering players meaningful choices, strategic movement, and engaging combat scenarios. This required us to carefully consider the placement of obstacles, enemies, and interactive elements, while also maintaining variety across runs in a procedurally generated world.

Moreover, the top-down perspective introduced additional design constraints. Rooms had to be readable at a glance, with clear boundaries and recognizable visual cues. We also had to think about how rooms would connect logically, making sure transitions between them felt natural while maintaining a sense of exploration and discovery.

Balancing all of these factors — artistic direction, gameplay flow, technical limitations, and randomness — made room design one of the most complex and time-consuming aspects of our development process.

Another unexpected setback occurred with the bug fixes. As development progressed, bugs that had not been anticipated during the planning phase began to surface, particularly in areas related to the interaction between the game's physics engine and character controls. These bugs, though not initially expected, caused significant disruptions in gameplay, leading to delays as the team addressed each issue methodically. Each bug fix required testing, adjustments, and validation to ensure that no new issues were introduced.

One of the most prominent challenges arose with the camera system. Initially, the cameras weren't following the correct player in the multiplayer mode, causing confusion and disrupting the flow of gameplay. To resolve this, the camera system had to be completely redesigned to ensure that each player's camera remained focused on their own character. This required reworking the code and testing different solutions to guarantee a smooth, personalized experience for every player, which took more time than initially planned.

Another unexpected setback occurred with the website hosting. The chosen hosting provider did not support the necessary functionality to make game downloads available directly from the site. This limitation caused a significant delay in launching the download feature. To address this, the team had to migrate the website to GitHub Pages, which allowed the desired functionality but required additional configuration and testing to ensure everything worked properly.

### 7.4 Unrealistic Time Estimates

One of the primary challenges encountered during the development of Timeless Odyssey has been unrealistic time estimates. As with many creative projects, there is a tendency to underestimate the amount of time required to complete various tasks, especially when faced with new technical challenges or the need for additional polish. At the outset, many aspects of the development were given optimistic deadlines. However, as the project progressed, it became clear that the initial estimates did not account for the complexity of the tasks involved. These unexpected delays were compounded by the need for thorough testing and debugging, which further extended the timeline.

In hindsight, the underestimation of time requirements highlighted the importance of allowing for more flexibility in planning. Moving forward, more realistic time frames are being set, with a better understanding of the time needed for both creative processes and technical challenges. These delays have ultimately provided valuable insights into the workflow and have prompted a more careful approach to future scheduling, ensuring that future tasks are approached with a more realistic outlook.

In conclusion, the challenge of unrealistic time estimates has been a critical learning experience for the Timeless Odyssey team. Recognizing the complexities inherent in both creative and technical tasks has underscored the need for more flexible and accurate planning.

### 7.5 Project Mismanagement

In any complex project, including game development, effective project management is essential for ensuring that tasks are properly prioritized, deadlines are met, and the team remains focused and aligned toward shared goals. Poor project management can create a range of problems that may delay progress, cause confusion, or lead to tasks being left unfinished. Here's how project mismanagement can manifest and the ways it can affect a game development project.

If the project manager fails to accurately estimate the time needed to complete tasks, deadlines can be missed, leading to rushed work or incomplete features. For example, underestimating the time required to implement an AI system could lead to an unfinished or buggy implementation that doesn't meet expectations. Missed deadlines might also have a cascading effect, delaying other tasks and pushing the entire project timeline back.

Ultimately, project mismanagement leads to inefficiencies, confusion, and delays. When priorities are misaligned or deadlines are missed, essential tasks like AI implementation, narrative design, or bug testing may remain incomplete, and the game's quality suffers. These issues may also have a snowball effect: delayed tasks can impact subsequent phases of development, leading to cascading delays and unfinished or subpar work. The overall project may be at risk of not meeting its objectives, which can lead to a release that's rushed, incomplete, or not aligned with the intended vision.

### Conclusion

In summary, while the Timeless Odyssey project has made meaningful strides, the various challenges encountered have necessitated a reevaluation of our original schedule. The delays in critical areas such as AI implementation, progression management, narrative development, and gameplay testing underscore the complexity of the project and the need for careful refinement. Moving forward, the team is committed to addressing these issues systematically, prioritizing

quality and cohesion to ensure the final product meets our high standards and delivers an engaging experience to players.

# 8 Proposed solutions to prevent the observed delays

## 8.1 Preventive solution to avoid communication-related delays

During the review of our recent project, it became evident that one of the primary causes of the observed delays was a lack of effective communication. This breakdown led to misaligned expectations, missed updates, and delayed responses to emerging issues. To prevent such delays in future projects—or had we implemented it earlier—a structured communication framework would have significantly improved coordination and overall performance.

To ensure consistent, clear, and timely information flow across all levels of the project, a structured communication system should have been introduced at the beginning. This framework is designed to surface problems early, clarify responsibilities, and maintain alignment among all team members and stakeholders.

**Communication planning at project kickoff**
At the initiation phase of the project, a comprehensive communication plan should have been developed. This plan would define:
- Key stakeholders and team members
- Preferred communication channels for different types of information
- Frequency of updates and required meeting cadences
- Escalation paths for issues or delays
- A designated communication lead per sub-team to ensure consistent information sharing

This upfront clarity would have prevented confusion around roles and reporting, especially when schedules began to shift.

**Weekly project sync meetings**
Implementing a weekly 30-minute sync meeting would have provided a reliable space to:
- Share progress updates
- Identify and escalate blockers
- Clarify task dependencies
- Align on goals for the coming week

These meetings should have followed a clear agenda and included all relevant team members. Regular touchpoints like this are essential to prevent siloed work and overlooked issues.

**Shared project dashboard**
Maintaining a centralized, real-time dashboard would have enabled the entire team to track:
- Milestones and deadlines
- Assigned responsibilities
- Status of current tasks
- Identified risks or blockers

This transparency would have allowed everyone to stay informed and make decisions based on up-to-date information.

Had this structured communication framework been implemented from the start, many of the delays we experienced could have been mitigated or avoided entirely. Improved communication leads to earlier detection of issues, faster decision-making, and stronger alignment among team members. As a preventive measure, this framework should be adopted for all future projects to ensure smoother execution and better outcomes.

### 8.2 Preventive solution to prevent resource-related delays

An analysis of the delays encountered in our project has revealed that resource constraints—including insufficient staffing, overbooked team members, and lack of access to necessary tools or expertise—played a significant role. These constraints led to bottlenecks, unbalanced workloads, and missed deadlines. To prevent such issues in the future—or had it been applied earlier—we propose a resource planning and management strategy that emphasizes proactive forecasting, prioritization, and dynamic reallocation.

A structured resource management approach should have been implemented at the start of the project to ensure we had the right people, in the right roles, at the right time. This framework focuses on visibility, flexibility, and data-driven allocation.

**Resource Mapping During Project Initiation**
At the kickoff phase, a comprehensive resource mapping exercise should have been conducted. This would include:
- Identifying all required roles and skill sets
- Estimating time commitments per role per phase
- Listing available internal resources and known constraints
- Documenting known absences, competing priorities, or overlapping projects

Impact: This step would have highlighted early gaps in capacity or skills, allowing time to fill them through hiring, contracting, or re-scoping.

**Buffering and Load Balancing**
Tasks and timelines should have included buffer time for each resource, especially for critical paths or high-risk items. In addition:
- Use resource utilization reports to prevent overallocation
- Cross-train team members to provide coverage in key areas

Impact: This would have reduced dependency risks and avoided burnout-related delays.

**Expected Outcome**
If this resource planning framework had been implemented earlier:
- We would have identified resource gaps before they caused delays.
- Workload would have been distributed more equitably.
- Adjustments could have been made dynamically as the project evolved.
- Key deliverables would have remained on track despite constraints.

### 8.3 Proposed solution to prevent delays from unexpected challenges

A review of the delays encountered in our project indicates that several arose from unexpected challenges—including unplanned technical issues, third-party delays, requirement changes, and unforeseen dependencies. While not all surprises can be avoided, their impact can be mitigated through better anticipation, contingency planning, and risk response structures.

To reduce the impact of unexpected challenges, we propose implementing a risk-informed resilience framework designed to proactively identify potential disruptions, build in response buffers, and formalize escalation paths. This approach ensures the team is better prepared to adapt quickly when the unexpected occurs.

**Risk Identification Workshops During Planning**
Before the project began, a risk identification session involving cross-functional stakeholders should have been conducted. This session would:
- Brainstorm internal and external risks across all phases

- Categorize them by likelihood and impact
- Assign owners to monitor key risk areas

Impact: Creates shared awareness and early alertness to threats that could derail the timeline.

**Weekly risk and issue review**

In addition to regular status updates, conduct a weekly risk and issue review. Focus on:
- New risks that have emerged
- Early indicators of developing problems
- Effectiveness of mitigation actions in progress

Impact: Maintains a proactive stance toward challenges, rather than reactive firefighting.

**Expected Outcome**

If this resilience framework had been adopted at project kickoff:
- Many challenges could have been predicted or their effects softened.
- Teams would have responded more quickly and confidently.
- Escalations would have followed predefined paths, saving time and confusion.
- Project milestones would have remained more stable despite turbulence.

Unexpected challenges are inevitable—but project delays caused by them are not. Through structured risk planning, built-in flexibility, and proactive monitoring, we can reduce the impact of disruptions. If this framework had been in place earlier, many of the delays experienced could have been mitigated or avoided altogether. We recommend integrating this approach into all future project planning and execution efforts.

### 8.4 Proposed solution to prevent delays caused by unrealistic time estimates

A root cause analysis of the delays experienced in our project reveals that unrealistic time estimates significantly contributed to missed deadlines, rushed deliverables, and rework. These inaccurate estimates—often based on optimism, pressure to commit quickly, or limited understanding of task complexity—created a timeline that was misaligned with actual execution needs.

This solution focuses on producing more accurate and achievable timelines through collaborative techniques, historical data, and continuous refinement. Implementing it early in the project would have allowed for better planning, more realistic stakeholder expectations, and improved resource allocation.

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**Continuous Estimation Refinement**

Integrate estimation reviews into each sprint or milestone:
- Reassess remaining work based on actual progress
- Update timelines based on newly discovered work or effort
- Use tools like burn-down charts or earned value analysis

Impact: Keeps the plan adaptive and realistic throughout execution.

**Expected Outcome**

If this estimation framework had been implemented at project initiation:
- Timelines would have better reflected actual complexity and effort

- Overall project flow would have been smoother, with less pressure and rework

Unrealistic time estimates are a silent driver of project failure. While they may offer initial comfort to stakeholders, they ultimately lead to frustration, stress, and delay. A structured, collaborative, and data-driven estimation process ensures that commitments are grounded in reality. If this approach had been in place from the beginning, many of the delays we faced could have been avoided. We recommend incorporating this framework into our project planning standards going forward.

### 8.5 Proposed solution to prevent delays caused by project mismanagement

A retrospective analysis of our project has revealed that project mismanagement played a major role in the delays we experienced. Issues such as unclear roles and responsibilities, poor prioritization, inconsistent progress tracking, and lack of structured oversight contributed to inefficiencies and missed deadlines. These management gaps caused confusion, duplication of effort, and reactive decision-making instead of proactive planning.

This solution introduces best practices in project planning, execution, and oversight. It is designed to eliminate ambiguity, align teams around shared goals, and empower project managers to lead with structure and discipline.

**Use of a Centralized Project Management Tool**
Adopt and enforce consistent use of a project management platform to:
- Track progress in real-time
- Assign tasks and deadlines
- Log dependencies, blockers, and risks

Impact: Provides visibility for all stakeholders and ensures alignment on status and next steps.

**Weekly steering meetings and health checks**
In addition to team standups, hold weekly steering meetings with key stakeholders to:
- Review project health indicators
- Resolve escalated issues
- Reassess priorities and reallocate resources if needed

Impact: Creates a formal cadence for risk management and executive visibility, preventing surprises.

Project mismanagement is a preventable source of delay when the right structures, tools, and behaviors are in place. By implementing a governance and execution framework, we can dramatically improve project control, transparency, and team coordination. Had this framework been applied at the outset, the project would have progressed more smoothly, with greater confidence and fewer disruptions. We recommend that all future projects adopt these principles as standard operating practice.

# 9 Work completed by each team member

In this section, we provide a detailed breakdown of the specific tasks completed by each team member since the beginning of the "Timeless Odyssey" project.

## 9.1 Baptiste

Website Development:

Baptiste played a key role in the creation and launch of the official website for "Timeless Odyssey", which serves as the primary platform for promoting the game and providing information to potential players and stakeholders. His work included the design, development, and deployment of the website, ensuring that it was both visually appealing and functionally efficient. He took care to align the site's aesthetic with the game's visual identity, incorporating elements of the pixel art style and color palette used in the game to create a consistent brand experience.

Beyond the visual aspects, Baptiste also structured the site to clearly present essential content, such as gameplay descriptions, character overviews, team bios, download links, and updates. He ensured the website was accessible across different devices (desktop, tablet, mobile) and optimized for fast loading and intuitive navigation.

Additionally, Baptiste handled technical aspects such as hosting, domain registration, and basic SEO, helping the project gain visibility online. His contribution significantly improved the project's professionalism and reach, allowing "Timeless Odyssey" to connect with a wider audience and leave a strong first impression.

Progress on asset selection :

A critical aspect of shaping the visual identity of Timeless Odyssey has been the careful selection of assets that define the game's environments, characters, and interactive elements. Each asset is chosen to ensure consistency, enhance the atmosphere, and integrate seamlessly into the gameplay.

For environmental assets, the focus has been on creating a visually compelling world that is also functionally clear. Structures, props, and decorations are selected to match the game's artistic direction while serving their gameplay purpose.

For character and player models, the emphasis is on ensuring they stand out against the environment while fitting naturally within it. Every detail, from proportions to shading and color choices, has been carefully reviewed to ensure visual appeal and readability across different lighting conditions and camera angles.

The result is a cohesive and polished visual experience where each asset contributes to the game's unique style and enhances immersion, making every element feel intentional and integral to the world of Timeless Odyssey.

**Detailed contribution of Baptiste for the final result**

Throughout the development of Timeless Odyssey, Baptiste distinguished himself by his versatility and strong involvement in several key aspects of the game. His work spanned from

level design to artistic elements and enemy creation, making him a pivotal member of the team.

Visual Identity and Logo Finalization

Baptiste participated in the design and finalization of the game's official logo, which plays a crucial role in defining the visual identity and first impression of the project. He contributed ideas for the overall aesthetic, helped refine the shapes, fonts, and symbols, and ensured the final version aligned with the game's theme — blending ancient mythologies with a modern pixel-art feel. This attention to detail contributed to making Timeless Odyssey more recognizable and professional.

Level Design – Viking Room

One of Baptiste's major responsibilities was the design and construction of the Viking Room, a key environment within the game. This involved:

- Selecting and arranging appropriate assets to create a strong Norse atmosphere.
- Designing the layout in a way that supported both exploration and combat.
- Balancing aesthetics with gameplay elements, such as platform placement and enemy encounters.

His work brought a distinct mood to this section of the game, enhancing the variety and immersion of the player's journey.

Level Design – Final Room

Baptiste also created the Final Room, the climactic space that concludes the main game. This room needed to feel both narratively significant and mechanically challenging, so Baptiste focused on:

- Designing a spatial layout that supports a final showdown.
- Integrating visual cues and environmental storytelling to make the space feel conclusive and important.
- Collaborating with others to ensure smooth transitions into this final section and proper gameplay flow.

This room serves as a key moment in the player experience, and Baptiste's design helped ensure it delivered a satisfying ending.

Design and Implementation of the Egyptian Boss

Baptiste developed the Egyptian Boss, one of the most memorable and challenging enemies in the game. His tasks included:

- Designing the visual identity of the boss, using Egyptian mythological influences.
- Programming its behavior patterns and attack logic.
- Balancing its difficulty to ensure it was both fair and engaging.
- Integrating it seamlessly into the final room, both visually and mechanically.

This boss fight serves as the ultimate test of the player's skills and a major highlight of the game. Baptiste's creativity and technical execution played a major role in bringing this enemy to life.

Support Role and Flexibility

Beyond his assigned tasks, Baptiste also supported the team across various areas. Whether it was helping troubleshoot bugs, adjust scene lighting, or give feedback on other members' work, he remained involved and proactive throughout the project. His ability to adapt and assist where needed was a key asset during crunch periods.

Conclusion

Baptiste's contribution to Timeless Odyssey was multifaceted and deeply valuable. He blended artistic sensitivity with solid technical execution, shaped essential parts of the game world, and played a central role in building its identity. His work on the Viking Room, Final Room, and Egyptian Boss helped elevate the game's polish and coherence — while his collaborative spirit made him a vital member of the development team.

### 9.2 Timothy

Game Mechanics Development:

Timothy focused on developing the foundational game mechanics for "Timeless Odyssey", with a primary emphasis on the character movement system. This component is a cornerstone of gameplay, as smooth, responsive, and intuitive movement is essential for player immersion and overall game enjoyment.

Timothy began by designing and implementing a fluid control scheme that allows players to move their character seamlessly in all directions, ensuring that inputs felt natural and responsive across different platforms and control types. He also fine-tuned acceleration, deceleration, and collision detection to maintain a balance between precision and realism.

Beyond basic movement, Timothy worked on integrating movement with other core systems such as combat, environment interactions, and animations. He paid special attention to how the character transitions between actions, helping to create a polished and cohesive gameplay experience. His efforts were critical in setting the tone and feel of the game, establishing a strong technical foundation upon which the rest of the mechanics were built.

Thanks to his contributions, "Timeless Odyssey" offers controls that feel engaging and satisfying, directly enhancing player immersion and helping the game achieve a high standard of gameplay fluidity.

Progress on the game mechanics :

Significant progress has been made in refining both game mechanics and environmental design to improve player immersion. A key focus was on implementing a collision system in the tutorial map to ensure smooth and responsive player movement. This system prevents issues like passing through walls or movement glitches, creating a more realistic and polished gameplay experience.

Additionally, new lighting effects were introduced to enhance the tutorial's atmosphere. The environment was darkened to increase contrast and highlight important elements, making the tutorial both visually compelling and easy to follow. Halo lighting effects around the player characters further emphasized their presence in the dimly lit space, guiding player attention to key actions and interactions.

These adjustments, including the refined collision system and thoughtful lighting enhancements, have significantly improved the tutorial area, creating a more polished, immersive, and engaging introduction to the game.

**Detailed contribution of Timothy for the final result**

Timothy was a key technical contributor in the development of "Timeless Odyssey", taking charge of several core gameplay systems. His work directly shaped the player experience, from how characters fight and react, to how the game handles failure states and enemy interactions. His contribution reflects a deep understanding of both programming logic and player expectations in action-based gameplay.

Ninja Attack System and Animation Integration

Timothy designed and implemented the attack mechanics for the ninja character, one of the two main playable heroes. This involved managing several interdependent elements:

- Attack animation triggering: Coordinating animation transitions with player inputs to ensure attacks felt responsive and smooth.
- Hit detection: Coding precise collision zones and conditions under which an enemy is damaged.
- Cooldowns and timing: Balancing the frequency of attacks to maintain fair, skill-based gameplay.
- Feedback systems: Adding visual and auditory cues (like particle effects or enemy reactions) to reinforce successful hits.

This feature set was key to making the ninja character feel agile, fast-paced, and satisfying to control.

Debugging and Stability Work

Timothy consistently contributed to the identification and resolution of bugs during development. He was particularly active during integration phases, where systems built by different team members needed to work together. He debugged issues such as:

- Inconsistent enemy responses to attacks
- Broken hitboxes or collisions between game objects
- Edge cases in the Game Over logic
- Errors in UI state transitions and gameplay resets

His ability to troubleshoot across various systems helped keep development on track and ensured a stable final build.

Advanced Collision Handling

One of the more technically demanding aspects of the game was the management of collision detection between characters, enemies, and the environment. Timothy developed and refined this system to ensure:

- Reliable detection of attacks landing on enemies
- Environmental boundaries were respected (e.g., no walking through walls)
- Physical feedback (e.g., knockback or stun) occurred under the right conditions

- Consistent performance, even in multiplayer scenarios or with multiple entities active at once

This system underpins much of the game's physical coherence and believability.

Game Over Logic and UI Integration

Timothy also created the Game Over system, which is triggered when specific conditions are met—such as the player losing all health or failing a timed challenge. This involved:

- Detecting loss conditions across different gameplay modes
- Displaying a customized Game Over screen
- Freezing gameplay and input to signal the end of a run
- Providing smooth transitions to restarting or returning to the main menu

This feature is crucial for delivering a structured and understandable player experience.

Viking Attack Mechanics

In contrast to the ninja, the viking is a slower, tankier character who deals more damage per hit. Timothy developed a distinct attack system for the viking, ensuring gameplay variety. His tasks included:

- Implementing slower attack animations with high-impact feedback
- Adjusting hitboxes and timing to reflect the viking's brute force style
- Ensuring balanced gameplay in both solo and multiplayer sessions

The contrast between the two characters adds depth to the game and encourages different playstyles.

Enemy Health Management (Backend)

Although the team intentionally chose not to show visible health bars for enemies (to heighten tension and immersion), Timothy was responsible for developing the underlying health tracking system:

- Enemies have internal health values that decrease upon taking damage
- Logic is in place to trigger enemy defeat, animations, and removal from the scene
- This system supports diverse enemy types and future scalability (e.g., bosses, elite enemies)

Without this hidden system, enemy behavior and progression wouldn't function as intended.

Overall Impact and Collaboration

Timothy's contributions were deeply technical yet player-focused. By developing combat systems, managing collisions, and ensuring logical end-of-game states, he helped build the foundation of the Timeless Odyssey experience. His ability to collaborate with animators, UI designers, and gameplay developers made him a vital bridge between systems, ensuring cohesive and enjoyable mechanics.

His work stands out for its precision, problem-solving, and attention to player feedback — all essential traits in a game developer.

### 9.3 Mehdi

Report and Presentation Coordination:

Naïs and Mehdi worked together to coordinate and oversee the preparation of the first defense report, ensuring that all necessary information was gathered and presented in a clear and organized manner. This was an important task, as the defense report served as a key opportunity to showcase the team's progress and outline the next steps for the project.

Progress on room design and presentation coordination :

A significant effort has gone into organizing the presentation and preparing for the oral defense of Timeless Odyssey. The focus has been on creating a clear, logical flow that presents each key aspect of the project in an engaging and concise manner. This involved structuring the presentation, defining the outline, and ensuring the most important aspects are communicated effectively.

In addition to planning, supervising the oral preparation has been crucial. This included reviewing individual speaking parts, ensuring team members are comfortable with their roles, and ensuring smooth transitions between sections. Attention was also given to presentation slides and visual materials to support the speech without overwhelming it. The goal has been to create a confident, professional, and well-coordinated presentation that effectively showcases the work and vision behind the project.

In parallel with the overall presentation, considerable attention has been given to the design of the Egyptian room. This room serves as a crucial part of the game's narrative and environment, and its design is being refined to reflect the grandeur and mystery of ancient Egypt. Key visual elements—such as intricately detailed stone textures, atmospheric lighting, and ancient artifacts—have been crafted to immerse players in this unique space. Ensuring that the room's design aligns with the overall project presentation has been a priority, as it is an integral part of the game's world-building.

**Detailed contribution of Mehdi for the final result**

Throughout the development of Timeless Odyssey, Mehdi played a key role in the creation of several core environments and one of the major bosses. His work focused primarily on the visual and gameplay design of culturally themed areas and on crafting memorable encounters, contributing significantly to the diversity and richness of the game world.

Design of the Egyptian Room

Mehdi was responsible for designing the Egyptian-themed level, one of the distinct zones in the game. His tasks included:

- Selecting and arranging props, tilesets, and background elements evocative of ancient Egyptian architecture and symbolism.
- Building the level layout to support both exploration and combat while maintaining aesthetic consistency.
- Balancing environmental design with gameplay needs such as platforming, enemy positioning, and item placement.

His attention to cultural references and atmosphere helped create an immersive zone that

contrasts effectively with other areas of the game.

Design of the Japanese Room

In parallel, Mehdi also created the Japanese-themed room, which required a completely different artistic and spatial approach. For this level, he:

- Chose and implemented visual elements inspired by traditional Japanese architecture and nature (e.g., temples, lanterns, sakura trees).
- Structured the level to highlight verticality and movement variety, creating a distinct gameplay rhythm.
- Worked with the team to ensure transitions between levels were smooth and visually coherent.

This zone added thematic depth to the game and showcased Mehdi's ability to shift between visual styles while preserving consistent game mechanics.

Design and Programming of the Japanese Boss

A highlight of Mehdi's contribution was the creation of the Japanese boss, one of the game's most significant enemies. This task included:

- Designing the boss's visual concept, inspired by Japanese folklore or warrior motifs.
- Programming its behavior patterns, attack phases, and animations.
- Ensuring the boss encounter was both challenging and fair, requiring players to learn patterns and adapt strategies.

The boss fight became a key moment in the game, standing out for its unique pacing and aesthetics, and added to the narrative and mechanical depth of the Japanese zone.

Conclusion

Mehdi's contributions brought richness and variety to Timeless Odyssey, both visually and in terms of gameplay. His ability to craft environments with strong thematic identities and to design challenging boss encounters helped elevate the game's overall quality. His work demonstrates a solid grasp of level design, visual storytelling, and enemy mechanics — all of which were essential to the immersive experience the team aimed to deliver.

### 9.4 Naïs

Report and Presentation Coordination:

Naïs and Mehdi worked together to coordinate and oversee the preparation of the first defense report, ensuring that all necessary information was gathered and presented in a clear and organized manner. This was an important task, as the defense report served as a key opportunity to showcase the team's progress and outline the next steps for the project.

Progress on the music and report :

A key element in enhancing the player experience in Timeless Odyssey has been the creation of an original soundtrack, composed to match the game's environments and narrative tone. Each key area of the game, including the menu, tutorial room, Egyptian room, and final

room, now features its own unique musical theme to enhance immersion and evoke specific moods.

The menu theme introduces the game with a welcoming yet mysterious tone, setting the stage for the adventure ahead. The tutorial room theme is calm and engaging, designed to help players focus on learning the mechanics without overwhelming them. The Egyptian room features atmospheric music inspired by traditional sounds, evoking the grandeur of ancient civilizations and reinforcing the setting. The final room theme builds intensity, heightening tension and anticipation as players approach the climactic moments of the game.

These musical compositions work together to create a rich and cohesive auditory experience, reinforcing the emotional depth and distinct identity of each area in the game.

As Timeless Odyssey progresses, maintaining a well-structured report is crucial for tracking the team's achievements, progress, and upcoming tasks. This report serves as a central document, capturing individual contributions from various departments like game mechanics, asset selection, music and sound design, and website development, and presenting a clear overview of milestones and future goals.

Beyond simple documentation, the report synthesizes feedback and updates to ensure the project's vision is communicated clearly. It provides a comprehensive yet concise narrative, helping the team stay aligned, track progress, and identify next steps, ensuring a cohesive approach to completing the game.

**Detailed contribution of Naïs for the final result**

Naïs was one of the most versatile members of the team, contributing across artistic, technical, and documentation tasks. Her involvement touched on nearly every core aspect of the game experience.

Music Composition and Integration

Naïs composed the original soundtrack for the game, designing music that matched the mood of each stage — from exploration to combat to the main menu. She used her musical background to select appropriate tones, instruments, and rhythms that enhanced the emotional impact of each moment. Beyond composing, she also handled the technical integration of these tracks into Unity, managing smooth transitions between scenes and ensuring music triggers responded dynamically to player actions.

Character Animations (Viking + Ninja)

Naïs created the animations for both main characters. She brought the Ninja and Viking to life by animating their movement cycles, attack sequences, and transitions. These animations weren't just visual — they directly impacted the readability and responsiveness of the gameplay. She implemented these in Unity through the Animator system, carefully setting up state machines and conditions to ensure smooth transitions that felt natural during play.

Player Health Bar (UI)

She also developed the health bar system for players. This visual interface element is vital for gameplay feedback, helping players understand their status and make strategic decisions. Naïs linked the UI with the character's health system via CSharp scripts, ensuring real-time

updates and clean, visible changes when taking damage. The design was clean and readable, adapted to the game's aesthetic.

Project Report and Documentation

Naïs was responsible for writing the entire project report and the user manual. This included documenting the development process, detailing the technical and artistic choices made by the team, and explaining how to install and play the game. Her clear, structured writing contributed to the professional presentation of the project.

Game Packaging

She also handled game packaging and delivery, preparing the build, executable, and accompanying files in a way that made the game easy to install, launch, and understand. This included organizing assets, compressing the game build, and ensuring all necessary documentation was included.

Overall Impact

Naïs's contribution was essential in shaping the emotional tone, visual polish, and overall professionalism of Timeless Odyssey. Her work bridged the artistic and technical sides of the project, and her dedication helped deliver a cohesive, immersive, and high-quality game experience.

### 9.5 Lilou

Multiplayer Development:

Lilou has been primarily responsible for developing the multiplayer mode of "Timeless Odyssey", which stands as one of the cornerstone features of the game. From the outset, her role focused on designing and building the initial framework that would allow multiple players to connect, interact, and explore the game world together in real-time.

She began by researching the most suitable networking solutions for the project, weighing factors such as latency, synchronization accuracy, and ease of integration with Unity. After selecting the appropriate tools and libraries, Lilou implemented the core networking architecture, enabling player sessions, connection handling, and data synchronization across clients.

A major challenge she addressed was ensuring that actions performed by one player — such as movement, combat, or object interaction — were accurately reflected for all other connected players, with minimal lag or desynchronization. She also worked on building systems for session management, including lobby creation, player joining/leaving logic, and error handling to ensure stability and a smooth user experience.

In addition to the technical implementation, Lilou contributed to debugging and testing multiplayer scenarios, identifying edge cases, and iterating on the design to improve gameplay fluidity. Her work laid the foundation for cooperative play, which significantly enhances the game's replay value and user engagement.

Progress on the website and on the multiplayer mode :

The development of the official website for Timeless Odyssey has been a crucial step in establishing its online presence. Recent updates included visual enhancements, such as a complete redesign of the Team Members section to showcase the development team more professionally. Other visual refinements were made to improve consistency across the website, including font changes, color tweaks, and spacing adjustments. A major improvement was the migration to GitHub Pages, which now allows users to directly download the game, resolving previous hosting limitations.

In parallel, significant progress has been made in developing the multiplayer mode. Key advancements include the complete redesign of the multiplayer menu and character selection system, making the process more intuitive and visually appealing. A strong focus was placed on seamless synchronization across devices, ensuring that character selections and in-game events are mirrored correctly in real time. The spawning system was also refined to ensure players are assigned the correct characters and appear in the right locations without duplicates. Additionally, each player now has individualized control over their character and camera, ensuring a smooth and immersive experience.

These updates in both the website and multiplayer mode have contributed to a more polished and engaging experience, with a seamless flow from downloading the game to interacting with others online. As development continues, further refinements and expansions to multiplayer functionality are expected.

**Detailed contribution of Lilou for the final result**

Lilou played a central and multifaceted role in the development of Timeless Odyssey, contributing across animation, gameplay logic, debugging, interface design, and artificial intelligence. Her work significantly shaped the visual identity, interactivity, and technical stability of the game.

Animations and Combat – Character "Flam"

Lilou was responsible for the animations and attack system of the character "Flam." She created and implemented smooth and expressive movement and combat animations, ensuring that "Flam" had a clear visual identity. Her work also included:
- Attack mechanics implementation (hit detection, timing)
- Idle and transitional animations for a natural, lifelike flow
- Visual and functional consistency across all states

Custom Assets and Interface Updates

She contributed several in-game assets, including personalized elements for characters and interface. She also modified the game's main menu, enhancing both its visual design and functionality to improve the player's first interaction with the game.

Debugging and Gameplay Polish

Lilou handled a large part of debugging, focusing especially on:
- Lighting issues related to Flam
- Fixing idle animation bugs
- Player spawn bugs
- Character movement speed balancing
- Multiplayer synchronization problems

Her debugging efforts helped ensure smoother gameplay and stable online interactions.

AI Development: Mobs, Berserker, Final Boss

Lilou developed the AI behavior for several enemies:
- Mobs (standard enemies): She implemented pathfinding, attack logic, and basic behaviors
- Berserker AI: A more aggressive and complex enemy, with specific patterns and difficulty scaling
- Final Boss AI: She coded intelligent, multi-phase behaviors, attack patterns, and coordination with environment triggers, making the boss fight one of the highlights of the game

Dialogue System

She created the dialogue system, which allowed for narrative moments between characters and events. This system was used to:
- Display scripted interactions
- Support immersion and storytelling
- Add emotional depth to key moments in the game

Room Transitions and Spawning

Lilou also handled room transitions and room spawner systems, two critical elements for level navigation:
- She ensured seamless movement between different game areas
- Developed logic for when and how new rooms are loaded or enemies are spawned
- Coordinated environment loading to avoid gameplay interruptions

Website Contribution

Alongside Baptiste, Lilou contributed to the official game website, helping structure content and visual presentation. This included:
- Design choices reflecting the game's visual identity
- Updating site content and presentation
Supporting the game's visibility and communication

Overall Impact

Lilou's work demonstrated a deep understanding of both the artistic and technical sides of game development. From animations and character behavior to complex AI systems and gameplay polish, her contributions were vital to the functionality, challenge, and identity of Timeless Odyssey. Her flexibility, problem-solving, and technical depth made her a key pillar of the project.

# 10 Making Of

This section aims to present the individual experiences of each team member throughout the project. It is not only a technical overview of the tasks accomplished, but also a personal perspective on our involvement in the project, the skills we applied, the challenges we faced, and the lessons learned from this collective journey.

Each member had a specific role within the team, based on their skills, interests, and strengths. Through these reflections, we hope to highlight the diversity of backgrounds, responsibilities, and contributions that shaped the project.

## 10.1 Baptiste's development diaries

Over the course of this video game creation adventure, I discovered much more than just a programming exercise. I was immersed in a multidisciplinary world, where creativity, logic, technical rigor, and teamwork are deeply interconnected. This project allowed me to fully grasp the richness and complexity involved in video game development — far beyond the technical side alone.

I learned how to design coherent gameplay, keeping in mind not only the mechanics, but also the player experience: how to guide their attention, sustain their interest, and balance difficulty so that it remains challenging without becoming frustrating. This pushed me to consider the user from the earliest stages of development — a key skill in any field.

On the technical side, I gained new skills in programming interactive mechanics, debugging complex issues, and using professional tools such as Unity and Git. These tools helped me better understand the concrete demands of working on a real-world software project.

Time management, especially under pressure, forced me to set priorities, meet deadlines, and adjust my goals based on current constraints. Likewise, working as part of a team exposed me to the realities of collaborative communication: it requires listening, proposing, coordinating — and also adapting to different workflows and work rhythms.

This project also brought me face-to-face with moments of failure or technical blocks. I had to learn to persevere, reassess my approach, and find solutions independently. That ability to bounce back in the face of challenges is without a doubt one of the most valuable lessons I'll take away from this experience.

Finally, on a more personal level, being so immersed in a concrete project gave me a tangible view of how the theoretical knowledge I've gained in training can be applied. It strengthened my motivation to improve, boosted my confidence, and above all, deepened my desire to continue creating, experimenting, and innovating through similar projects in the future.

### 10.2 How it was made by Timothy

This group project was an extremely rewarding experience, both on a collective and individual level. Working on the creation of a video game gave me a unique opportunity to give real meaning to programming courses that had previously felt somewhat abstract or overly theoretical. The project also allowed me to discover the breadth and diversity of skills required in video game development — a field that is both technical, creative, and highly demanding.

My main role was to implement the various gameplay elements — that is, the interactive mechanics of the game as well as object interactions. To do this, I had to work extensively with the Unity engine, which I was not very familiar with at first. I explored its various components (scenes, objects, physics components, events, etc.) and learned to work with CSharp scripts to bring our ideas to life in a smooth and coherent way. This part of the work required rigor, curiosity, and patience, but it proved to be especially formative.

Another crucial aspect I discovered was the importance of using Git (and GitHub) properly to manage a project of this scale, especially in a team environment. It helped me better understand version control, collaborative coding, and conflict resolution. Although it may seem secondary at first, I realized that effectively using a version control tool is essential to avoid data loss, stay organized, and streamline communication between team members.

Of course, not everything went smoothly. I faced several technical challenges, particularly around debugging — which is inevitable in a project like this. The most difficult issue was probably setting up the multiplayer mode, with all its synchronization problems and the complex interactions between networked objects. It forced me to look for solutions, study documentation, run rigorous tests, and sometimes completely rework certain scripts.

Conversely, some tasks I initially feared turned out to be more manageable than expected, thanks in part to Unity's intuitive interface. For example, setting up basic mechanics like player movement or simple collisions went smoothly, allowing me to save time and focus on more complex gameplay features.

In summary, this project taught me a great deal. It not only gave me the chance to apply my technical skills, but also to develop new ones in areas I was less familiar with. More importantly, it gave me a much clearer understanding of what goes into developing a complete game — at our scale, of course — with all its technical constraints, artistic demands, and the need for true teamwork based on listening, coordination, and communication. It's an experience I see as a springboard for the next steps in my journey, and one that has deepened my desire to grow in this field.

### 10.3 Behind the scenes of Mehdi

Working on Timeless Odyssey gave me a valuable opportunity to deepen my understanding and practical use of several core programming concepts in CSharp. Throughout the project, I extensively applied classes, interfaces, delegates, and events, which are fundamental to writing clean, modular, and maintainable code. Leveraging Unity's component-based architecture, I learned to organize code around game object behaviors, making each element both interactive and dynamic. This approach helped me see how software design principles translate directly into game development, improving both flexibility and scalability.

Beyond coding, the project introduced me to the basics of game design, particularly through the creation of multiple game maps. Designing levels required me to think carefully about readability, ensuring players can easily understand their environment, movement fluidity to maintain immersion, and player progression to balance challenge and reward. The thoughtful placement of obstacles, pathways, and points of interest taught me how level design influences player experience, engagement, and storytelling in subtle but powerful ways.

Animation was another crucial area of growth. Using Unity's Animator system, I learned to breathe life into characters by synchronizing their movements with gameplay actions. Animating both the player character and enemies helped me appreciate the importance of smooth transitions and responsive feedback in making a game feel polished and immersive.

A particularly rewarding challenge was designing and implementing simple artificial intelligence for enemies. I programmed behaviors such as player detection, pursuit, attack, and patrol, which introduced me to fundamental AI concepts like state machines and event-driven programming. Developing these interactive systems provided insight into how enemies can react believably to the player, enhancing both gameplay tension and variety.

Overall, this project was a comprehensive learning experience that combined technical problem-solving with creative design. It significantly improved my CSharp programming skills while also introducing me to the interdisciplinary nature of game development—where coding, art, design, and storytelling intersect. This journey has inspired me to continue exploring and advancing my skills in game development, eager to tackle even more complex projects in the future.

### 10.4 Naïs' creation process

When we started the project, I was very enthusiastic about the idea of creating a video game connected to a fictional company. It was a unique opportunity to combine creativity, teamwork, and technical skills within an original framework. I was excited to see how our collective imagination would come together to create a concrete project.

The part I enjoyed the most was creating the fictional company. It involved imagining a believable universe with a story, an identity, values, and even a market vision. It called on our inventive abilities, and I particularly enjoyed this exercise because it offered great creative freedom while still requiring coherence and realism. This writing phase allowed me to fully invest myself in the project from the beginning, putting my imagination to good use.

As a musician, I was also responsible for composing the game's music. This was both a technical and creative task. I carefully considered the sound atmosphere that would accompany the player throughout the experience. I had to explore different scales, tones, and instruments to create an immersive ambiance that matched the game's visual world. Although it required a lot of time and patience — as I had to try several combinations before finding the right sounds — I found this part of the project truly enjoyable and rewarding.

Additionally, I was in charge of writing the reports for each presentation. This required a lot of precision: gathering information from team members, organizing ideas logically, and ensuring the content and format were well-crafted. It's a task that's often underestimated but is essential to effective communication within the project. I sometimes found it challenging, especially when certain information was missing or feedback was delayed.

In fact, one of the most difficult aspects of the project was the lack of communication within the team. I often had to follow up multiple times with teammates to get the information I needed, which slowed down both the report writing and overall coordination of the project. Sometimes, it took days to get a response, causing delays in our progress. This had a direct impact on task distribution — it was sometimes unclear who was responsible for what, leading to misunderstandings or duplicated efforts. This lack of clarity highlighted the importance of having a solid organization and smooth communication, especially in a group project of this scale.

### 10.5 Lilou's journey of development

Taking on the challenge of building an entire video game in Unity from scratch sounded exciting at first. We were motivated and ready to learn, but I quickly discovered the project would be far more intense and unpredictable than I had expected.

One of the biggest challenges was working in a group. Communication wasn't always smooth. Some team members would take days to reply, which made coordination and decision-making a slow and sometimes frustrating process.

When I worked on the AI's pathfinding system, I hit several roadblocks. The A* pathfinding project I tried to use didn't work, and although Unity's NavMesh seemed like a promising alternative, it's primarily designed for 3D environments. Even with tutorials to adapt it for 2D, it just wouldn't work. In the end, I had to implement a much simpler pathfinding solution than I initially envisioned.

Animation was another area full of surprises. I had planned to reuse animations across different characters to save time, but it turned out to be unworkable. We had to create each animation manually which was very time-consuming.

Finding good-quality, free assets in the right style was a persistent struggle. We spent a lot of time just trying to find art that matched the look we wanted.

Time management also proved difficult. At the start, it felt like we had plenty of time, but we didn't. The project quickly became a race against the clock. That pressure, however, had a positive aspect: I learnt a lot in a short period of time. Unity, which seemed confusing and overwhelming at first, now feels familiar and much easier to use.

Merging changes and resolving conflicts on GitHub was tricky, especially for group members who were less familiar with it. Still, it wasn't nearly as terrifying as some second-year students had made it sound.

Fortunately, there are tons of online resources (tutorials, forums, documentation) that really helped me get through the tough parts. Thanks to that, and a lot of late nights, I now feel much more confident not only in Unity, but also in managing technical challenges under pressure.

Despite the bumps along the way, this project was a valuable and rewarding experience. I'm proud of how much I've learnt.

# 11 Conclusion

The Timeless Odyssey project has been an enriching and challenging adventure that brought our team together around a common creative vision. Over the course of development, we explored every facet of video game creation — from initial concept design and artistic direction to technical implementation, testing, and polish.

Each member of the team contributed unique skills and perspectives, allowing us to build a cohesive, immersive experience despite the constraints of time and resources. We successfully developed a functional and engaging game that features multiple environments, dynamic combat systems, character-specific animations, original music, and a multiplayer framework. Our collaboration was rooted in mutual support, adaptability, and a shared passion for innovation.

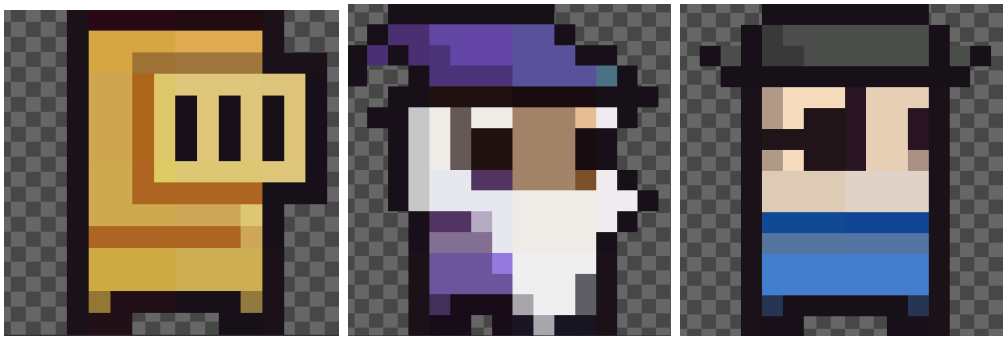
While certain elements, such as sound effects and advanced multiplayer features, could not be fully completed within the project timeline, we view these as opportunities for future improvements. The foundation we've created is strong, and we are proud of the progress we've made — both in the game itself and in our individual and collective growth.

Beyond the technical achievements, this project allowed us to gain real-world experience in teamwork, problem-solving, and creative project management. It has deepened our appreciation for the complexity of game development and has inspired us to continue exploring and pushing our limits in future projects.

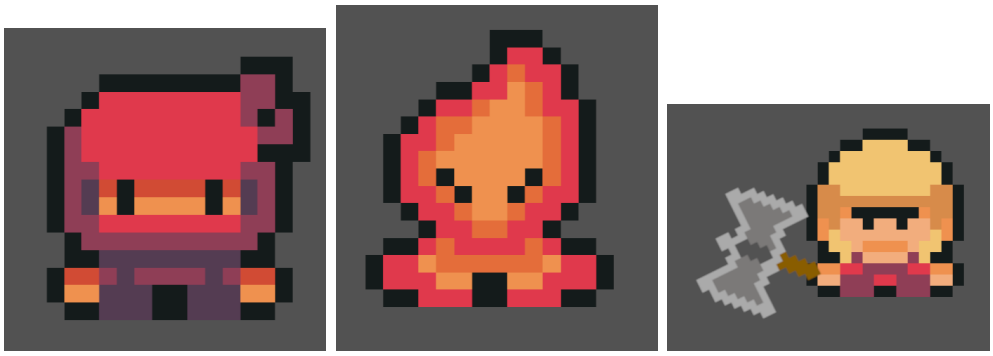
Timeless Odyssey is more than a student project — it is the result of dedication, curiosity, and a genuine love for interactive storytelling.

# 12 Annexes

Our first assets:



Our final assets:



Screen example: