Figure 1 - Hansuan Fabregas 2023. Haunted House [digital art]

The Tension of Terror: How does the Removal of Respite Mechanics Affect Emotional and Spatio-temporal Immersion in Survival Horror Games?

By Jack Self

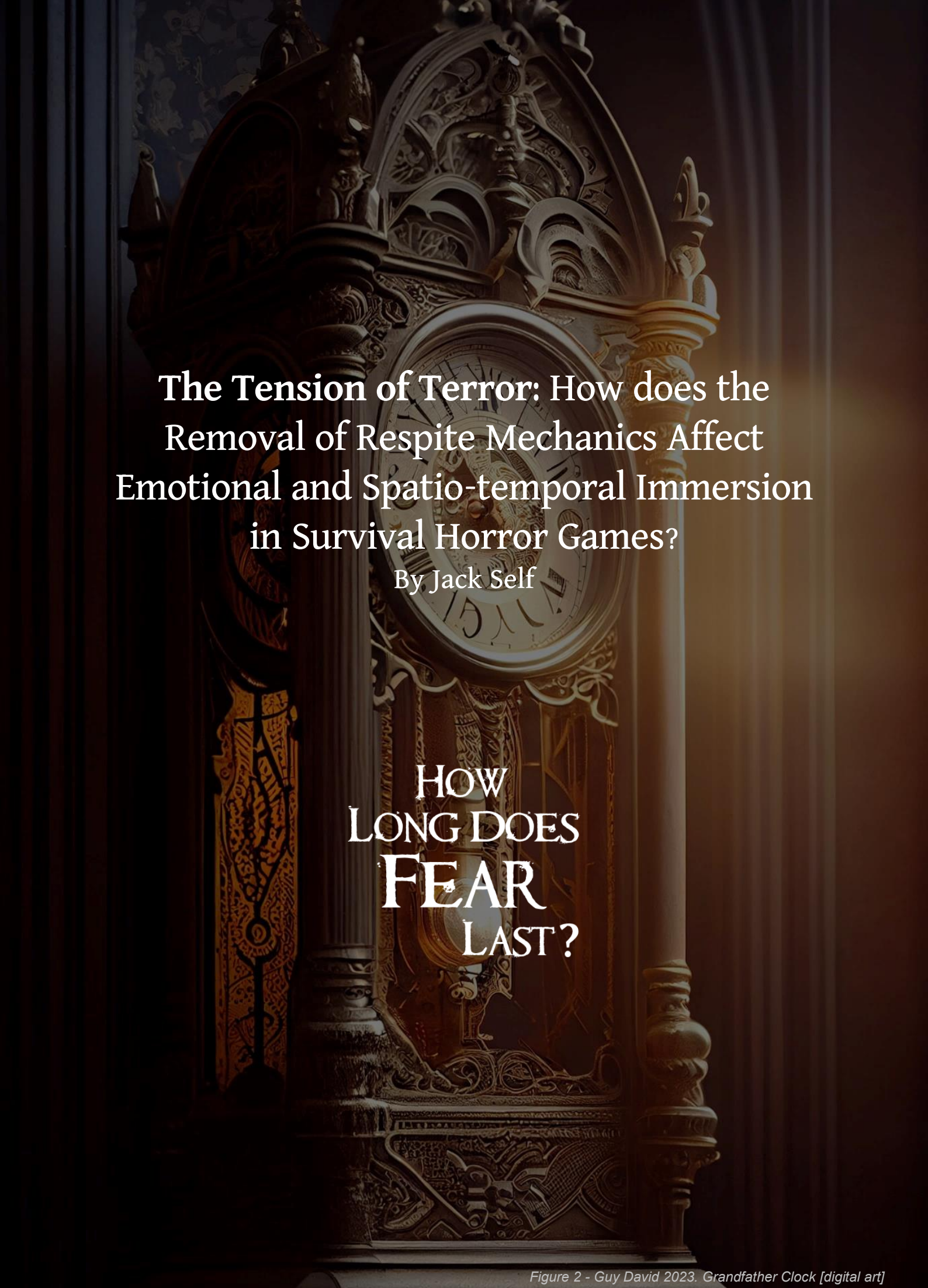

Figure 2 - Guy David 2023. Grandfather Clock [digital art]

Contents

1 Abstract

For my final major project, I propose an experimental investigation to study the effects of removing respite mechanics on emotional and spatio-temporal immersion in survival horror games. This study will involve the development of Seven Nights in Horshaw House, a first-person survival horror game set in a haunted mansion where players assume the role of a paranormal detective tasked with solving a murder mystery in seven in-game days. This research has the potential to reshape our comprehension of immersive elements in gaming beyond synthetic experiences such as VR (Ryan, 2015). Likewise, it seeks to uncover the motivations that drive developers to incorporate mechanics that provide players with fleeting moments of respite in otherwise dangerous virtual worlds.

2 Overview

""Survival Horror" is generally understood to be a game in which the player leads an individual character through an uncanny narrative and hostile environment ***where the odds are weighed directly against the avatar."***

(Hand, 2004)

The recent surge in survival horror games has sparked inquiries among renowned developers regarding innovative ways to heighten types of immersion. For instance, earlier this year, the Realisation Director for the remake of Dead Space (2023), Joel MacMillan, felt that removing the pause feature would heighten the impact of horror games, *"ensuring players could never truly feel safe"* (Inverse, 2023). However, the development team remained unconvinced and ultimately chose to keep the feature in the game. This inquiry presents a significant opportunity for independent developers, including myself, to experiment and explore potential solutions using our creations. Therefore, I believe it is high time we disrupt these conventions and delve deeper into our understanding of emotional and spatio-temporal immersion.

The development timeline for Seven Nights in Horshaw House spans 28 weeks (including the break between study blocks), commencing in May, and concluding in December later this year. I aim to study the impacts of each respite mechanic on emotional and spatio-temporal immersion by providing players with various demos throughout the 28-week period. The end product will be a survival horror game void of any respite mechanics, regardless of how it affects players and published on the Itch.io store.

2.1 Research Question

How does the removal of respite mechanics affect emotional and spatio-temporal immersion in survival horror games?

2.2 What is a Respite Mechanic?

To my knowledge, the term respite mechanic is not commonly used in the current context of modern video game development. Instead, I have coined this phrase to illustrate a game mechanic that unintentionally provides a break from challenges, such as a pause screen mentioned earlier. In addition, a respite mechanic could also encompass a feature deliberately designed to offer a sense of security and safety for players, such as the hideouts in 4A Games post-apocalyptic Russia, Metro: Exodus (2019).

To summarise, any game mechanic, regardless of its scale, that provides a deliberate or unintentional break to the player or detracts from the core sensory experience can be categorised as a respite mechanic. However, the question remains: How can developers effectively recognise such mechanics in the first place?

2.3 Identifying Respite Mechanics in Survival Horror Games

Firstly, it's important to note that my focus lies in identifying respite mechanics, specifically within the survival horror genre. While the techniques I demonstrate might also apply to other video game genres like first-person shooters or racing games, my approach centres on using fear and anxiety as key factors in identifying respite mechanics. For instance, in the context of racing games, I would employ the measure of adrenaline to distinguish which mechanics provide players with moments of relief.

2.3.1 Personal Experience

I might be the most fitting and least suitable person to develop a survival horror game, especially one that provides constant fear to players. While I am deeply fascinated by the genre, I am also the type of gamer who instinctively pauses the game during jump-scares to escape the virtual terror. Considering this perspective, I feel entirely justified in identifying mechanics within survival horror games that personally offer me brief moments of relief. For instance, in Frictional Games, Amnesia: The Bunker (2023), whenever players opt to undertake actions, such as reading notes or organising their inventory, the in-game world comes to a halt. In my opinion, these moments, along with the ability to freely pause the game, detract from the overall experience, as they undermine the sense of spatial immersion and tension established throughout the game.

2.3.2 Heart Rate Monitoring

As per the insights of Greg Dorter (MA, Registered Psychotherapist: Guelph Counsellor and Therapist) and expounded upon in Konstantinos Ntokos' research paper titled "Level of Fear: Analysis of Fear Spectrum into a Tool to Support Horror Game Design for Immersion and Fear" anxiety can be deconstructed into four distinct components: Physiological (physical symptoms such as increased heart rate or nausea), Behavioural, Emotional, and Cognitive. Dorter emphasises that these components can work together to form a vicious cycle that creates and maintains anxiety *(see figure 3)*. Among these components, my focus will be on the physiological aspect, particularly in the context of identifying respite mechanics.

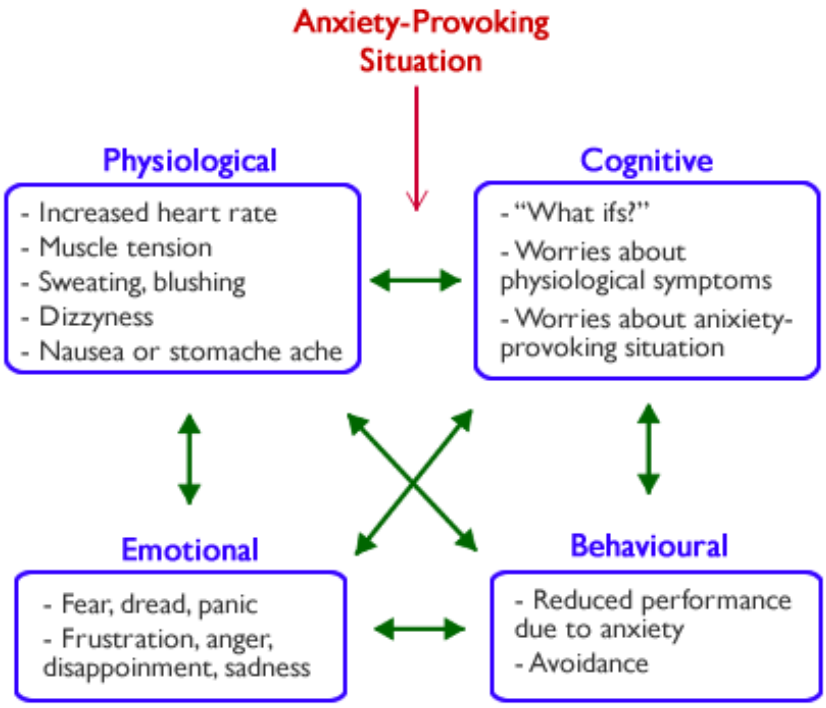

Figure 3 - Greg Dorter 2019. Anxiety Cycle

By observing a participant's heart rate engaged in a survival horror game, we can pinpoint the mechanics that induce varying levels of dread. This method relies on BPM measurements, distinguishing between those causing a lesser sense of unease and those resulting in a sudden spike of fear. For example, when the participant's BPM remains stable (<90)[1], it suggests a state of comfort, indicating the presence of respite mechanics.

[1] The BPM measurements are derived from the BuzzFeed Multiplayer video, entitled "Playing Horror Games with a Heart Rate Monitor" (BuzzFeed Multiplayer, 2021).

Conversely, when the BPM surges (>100), often triggered by sudden events such as jump scares, we can assume that the participant's fear levels have heightened (Ntokos, 2017). Additionally, even after such fear spikes, it is possible to detect respite mechanics by examining the rate of change in BPM over time.

Fortunately, there are an abundance of YouTube videos featuring content creators playing horror games with heart rate monitors. Nevertheless, I plan to examine one provided to gamers as bonus footage in Supermassive Game's Until Dawn (2015) titled "The Science of Fear." While watching this video, a distinct pattern emerges: the participants' heart rates remain steady when making in-game choices, only to surge when they witness the outcome. Essentially, this observation provides valuable insights into the mechanics that reduce and otherwise heighten anxiety levels.

2.4 Examples of Respite Mechanics

Using the methods stated previously, we can now determine instances of respite mechanics in the survival horror genre. Examples include:

- **Safe Rooms:** Designated areas where enemies cannot reach the player.
- **Pause Button:** Allowing players to stop the game at any moment.
- **Inventory Management:** Taking time to organise items.
- **Cutscenes:** Pre-rendered sequences where players don't have control.
- **Quick Time Events:** Requiring players to press buttons during cinematic sequences.
- **Tutorial Sections:** Segments where gameplay slows down for explanation.
- **Low-Tension Areas:** Sections where there is minimal threat to the player.
- **Health Recovery:** Allowing the player to restore health.
- **Hints:** Providing clues or guidance when players are stuck.
- **Narrative Pacing:** Story elements that provide a break from the tension.
- **Interactive Dialogue:** Engaging in conversations with NPCs.
- **Save Points:** Opportunities for players to save progress and retry from a specific point.
- **Limited Enemy Presence:** Occasional areas without enemies to create contrast.
- **Backtracking:** Encouraging players to revisit locations.
- **Player Death:** Segments where gameplay stops.
- **Loading Screens:** Sections when the game is preparing to transition the player to another area.

2.5 Emotional Immersion

"People go to films, watch TV shows, and listen to music that moves them. ***Emotion will be one of the keys to the mass market in games as well.****"*

(Freeman, 2004)

In their collaborative research paper titled "Spatial Immersion versus Emotional Immersion, which is More Immersive?", scholars Chenyan Zhang (MPhil), Andrew Perkis (ME, MTM, PhD), and Sebastian Arndt (Dr.-Ing) define emotional immersion as the *"type of immersion when the user feels emotionally aroused and absorbed by the narrative content of the story"* (Zhang, et al., 2017). Using this definition, we can begin to contemplate how the exclusion of respite mechanics may affect narrative content and whether their absence would evoke different player responses.

In the GDC talk titled "Evoking Emotions and Achieving Success by Breaking All the Rules," developer Thomas Grip from Frictional Games delves into the unconventional design choices behind Amnesia: The Dark Descent (2010). Grip outlines the implications of such choices and how this kind of thinking extends beyond horror development to other genres. Furthermore, through various methods of testing, Grip identifies emotional states that are most likely to trigger when we remove certain mechanics typically found in a survival horror game. These emotions include anxiety, fear, and frustration (GDC, 2017).

By incorporating the respite mechanics in Examples of Respite Mechanics into a Venn diagram alongside the categories defined by Thomas Grip, we are a step closer to understanding how the removal of these mechanics may affect emotional immersion in survival horror games *(see figure 4)*.

Figure 4 - Self 2023. Respite Mechanics & Emotional States Venn Diagram

Our attention now shifts to the mechanics that are left to engage players within our virtual worlds. Fortunately, scholar David Freeman in his book titled "Creating Emotion in Games: The Craft and Art of Emotioneering[2]", puts forth a range of techniques developers can utilise to provoke emotions within their games, many of which exclude the use of respite mechanics. For example, techniques involving player-NPC chemistry, narrative, and motivation enhancement are worth exploring during the development of Seven Nights in Horshaw House to evoke emotions that players generally associate with a survival horror game without the need to implement respite mechanics.

2.6 Spatio-temporal Immersion

The term "spatio-temporal" is defined by the Cambridge Dictionary as *"relating to both space and time or to space-time"*. Although, in the context of video games, scholar Marie-Laure Ryan defines spatio-temporal immersion as *"a sense of being present on the scene of the represented events."* By incorporating both definitions, we can summarise that spatio-temporal immersion refers to the sense of being fully present within the game world, experiencing a seamless connection between space and time. Considering this, we can start to contemplate how the absence of respite mechanics might impact this form of immersion in survival horror, much like we did for emotional immersion.

[2] *"Emotioneering refers to the expansive body of techniques for evoking emotional breadth and depth in games, as well as immersing a player in a role or in a game's world."* (Freeman, 2004).

By eliminating respite mechanics, players remain consistently engaged within the game's environment. Without the ability to pause the game or escape to a safe room, players feel a stronger connection to the ongoing narrative and events (Hanson, 2018). When applied to Seven Nights in Horshaw House, this concept can create a seamless flow, as players can interact with the environment and experience the atmosphere of the haunted house without interruption. In summary, removing respite mechanics could enhance spatio-temporal immersion in survival horror games by creating a continuous and unique gameplay loop that keeps players engaged in the game world and its unfolding events.

3 User Description

Due to the experimental nature of this research, I am confident that Seven Nights in Horshaw House will attract horror enthusiasts while also catering to a unique niche, blending elements of a souls-like[3] experience with that of survival horror.

I anticipate that Seven Nights in Horshaw House will appeal to a diverse range of gamers, including those in search of intense and frightening gaming experiences as favoured by horror game enthusiasts *(see figure 5)*, those who seek emotional engagement and immersion, such as horror film enthusiasts *(see figure 6)*, and, finally, those who relish challenging gameplay such as souls-like enthusiasts *(see figure 7)*. These categories form the primary target audience in the age range of (18-34). However, due to the prototype's experimental nature, I don't expect it to resonate with casual gamers. Nevertheless, its unique qualities could pique the interest of content creators engaging in Let's Play[4] videos (Perron, 2018), thus forming the secondary target audience. With this in mind, I've crafted three user personas that capture the ideal fan base for Seven Nights in Horshaw House, taking its core design principles into account.

[3] A game that features elements similar to the game Dark Souls (2011).
[4] "Let's Play" are a type of playthrough video where individuals offer commentary while engaging in a specific video game.

3.1 User Personas

Figure 5 – Self 2023. Persona Isaac, photograph from Xtensio

Figure 6 – Self 2023. Persona Alice, photograph from Xtensio

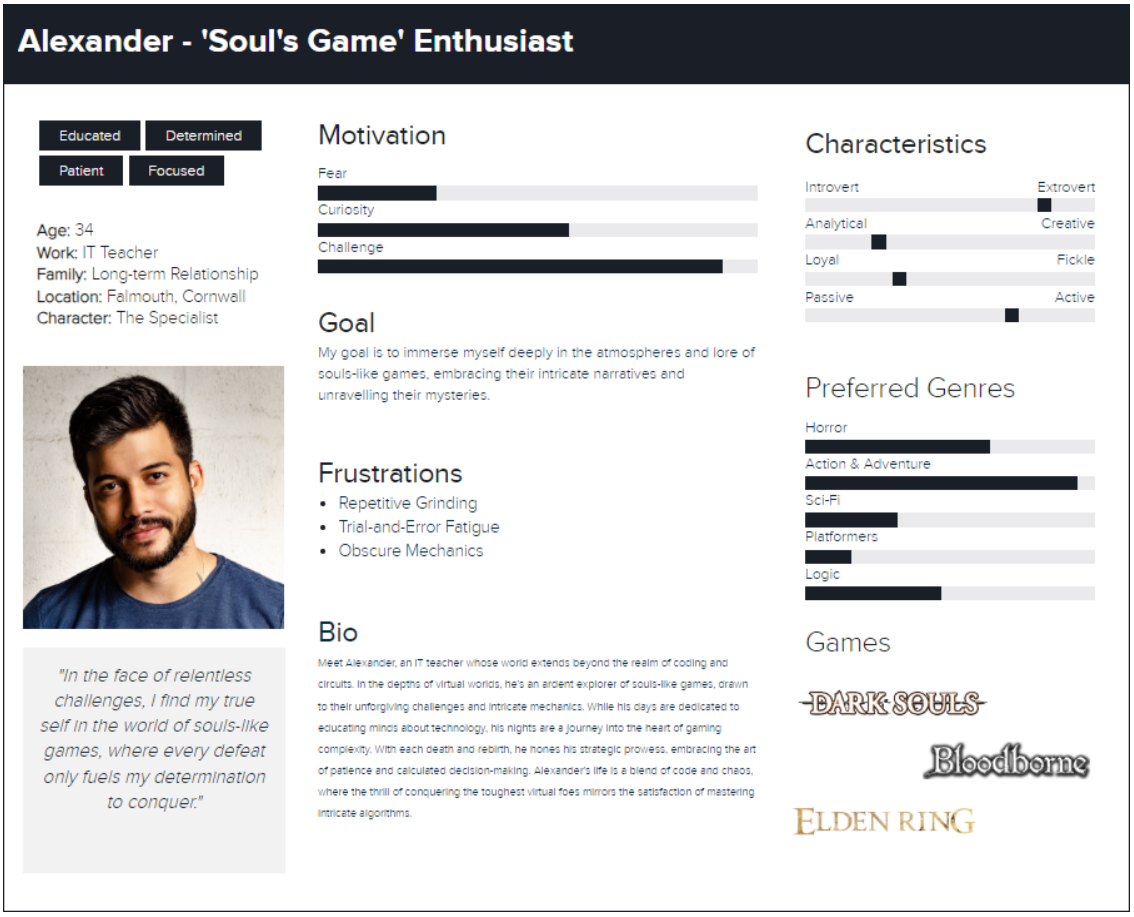

Figure 7 - Self 2023. Persona Alexander, photograph from Xtensio

3.2 Competitor Research

Given the niche nature of the proposed game, it's essential to research competitors to facilitate a viable marketing plan later on. Here, I've pinpointed games I consider to be within a similar genre as Seven Nights in Horshaw House. I've analysed factors such as their pricing, available platforms, estimated revenues, and user bases to make informed decisions regarding the game's commercial expansion.

3.2.1 Dead Space (2023)

- **Developers:** Motive Studio
- **Publishers:** Electronic Arts
- **Steam Tags:** Horror, Third-Person Shooter, Sci-fi, Space, Shooter, Survival Horror
- **Price:** £49.99* (PC)
- **Platforms:** PlayStation 5, Windows, Xbox Series X/S
- **Total Estimated Revenue (Steam Revenue Calculator):** £56,922,621.40*
- **All-Time Peak Users (Steam Charts):** 28,842*

3.2.2 Metro Exodus (2019)

- **Developers:** 4A Games
- **Publishers:** Deep Silver
- **Steam Tags:** Post-apocalyptic, FPS, Open World, Story-Rich, Singleplayer, Atmospheric
- **Price:** £24.99* (PC)
- **Platforms:** PlayStation 4, Windows, Xbox One, Stadia, Linux, macOS, PlayStation 5, Xbox Series X/S
- **Total Estimated Revenue (Steam Revenue Calculator):** £90,384,432.60*
- **All-Time Peak Users (Steam Charts):** 15,357*

3.2.3 Dark Souls: Remastered (2018)

- **Developers:** QLOC
- **Publishers:** FromSoftware, Bandai Namco Entertainment
- **Steam Tags:** Souls-like, Dark Fantasy, RPG, Difficult, Action, Dark
- **Price:** £34.99* (PC)
- **Platforms:** PlayStation 4, Windows, Xbox One
- **Total Estimated Revenue (Steam Revenue Calculator):** £86,030,096.90*
- **All-Time Peak Users (Steam Charts):** 24,505*

3.2.4 Amnesia: The Bunker (2023)

- **Developers:** Frictional Games
- **Publishers:** Frictional Games
- **Steam Tags:** Stealth, Dark, Survival Horror, Horror, Resource Management, Survival
- **Price:** £20.99* (PC)
- **Platforms:** PlayStation 4, Windows, Xbox One, Xbox Series X/S
- **Total Estimated Revenue (Steam Revenue Calculator):** £3,353,670.84*
- **All-Time Peak Users (Steam Charts):** 1,520*

4 Storyboard of User Experience

Below is a storyboard that outlines the user experience for Seven Nights in Horshaw House. It utilises screenshots from the game's initial playable demo (01/08/23), illustrating the potential trajectory of a user's gameplay journey.

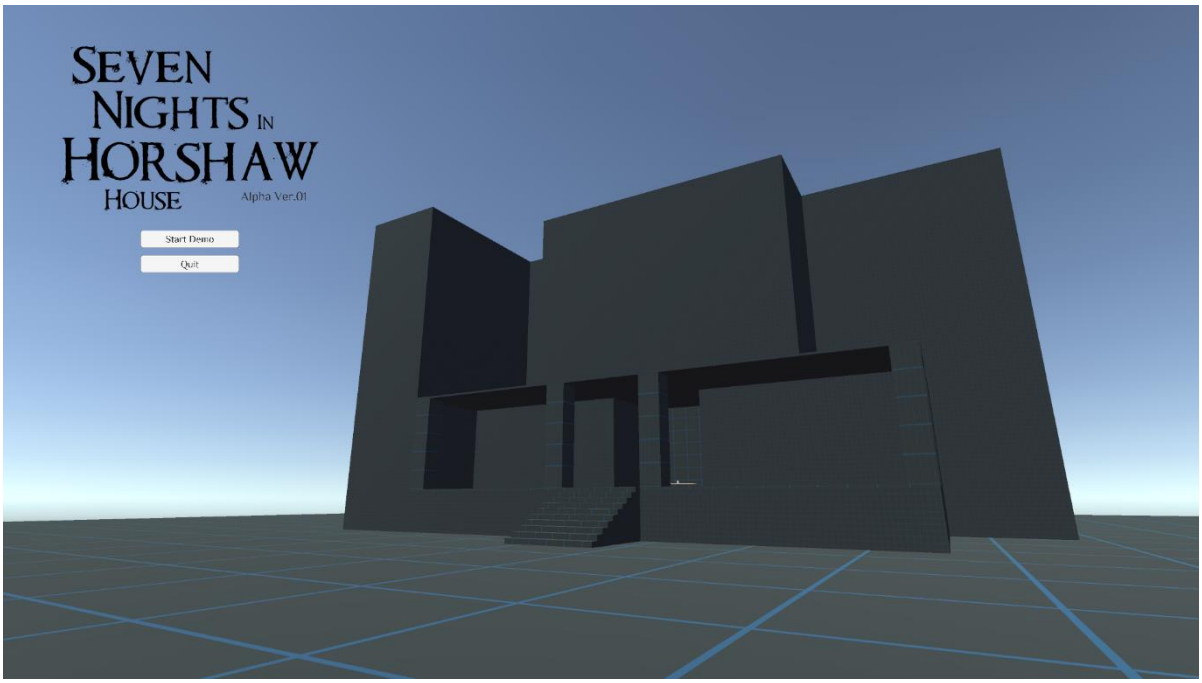

Figure 8 - Self 2023. Storyboard of Main Menu [Unity]

Upon launching the game, players will encounter the main menu screen *(see figure 8)* featuring the eerie backdrop of Horshaw House, a haunted mansion situated atop a steep hill. This setting offers ample room for the player to explore. Within this screen, players will have the option to click: "Play," "Settings," and "Quit."

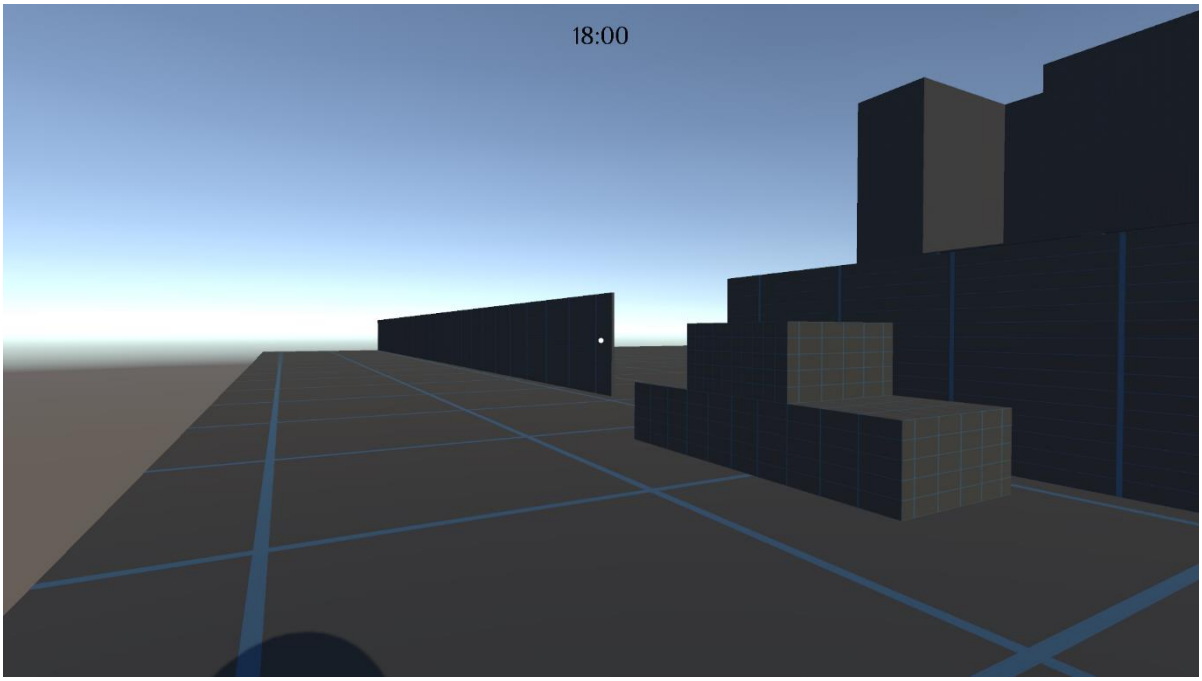

Figure 9 - Self 2023. Storyboard of Player Perspective [Unity]

Opting to click on “Play” initiates the player’s journey outside Horshaw House, standing next to the car they arrived in *(see figure 9)*. The primary objective at this point is to enter the mansion. During this phase, players are free to move around and explore. Additionally, they can access their inventory, although hints will be limited. Notably, there is a timer displayed at the top of this screenshot; however, it’s important to clarify that this timer is exclusive to the demo and will not be incorporated into the final version of the game.

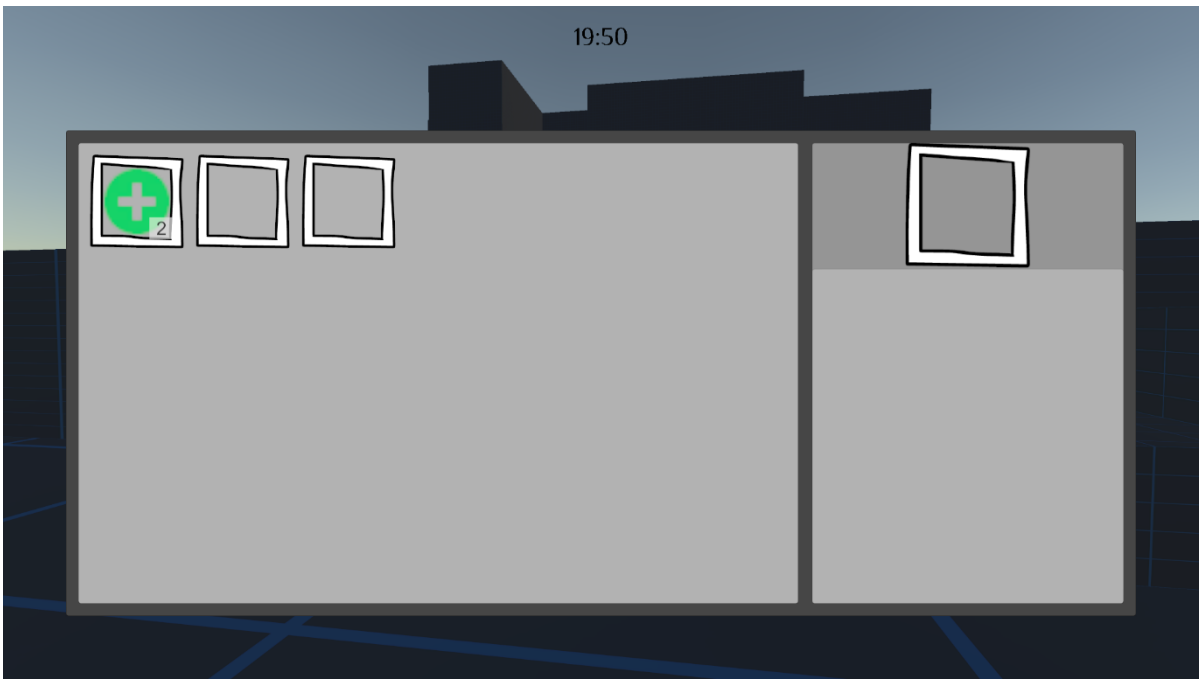

Figure 10 - Self 2023. Storyboard of Player Inventory [Unity]

By pressing the "I" key on the keyboard, players can access their inventory. Using the inventory interface, players have the ability to organise items, including puzzle-related objects and consumables for healing *(see figure 10)*. In addition, the drag-and-drop function is available for players to arrange their inventory as they see fit. It's important to highlight that while the player has the inventory open, the in-game world remains active, making them vulnerable to potential threats. This concept is reminiscent of the inventory system employed in Elden Ring (2022).

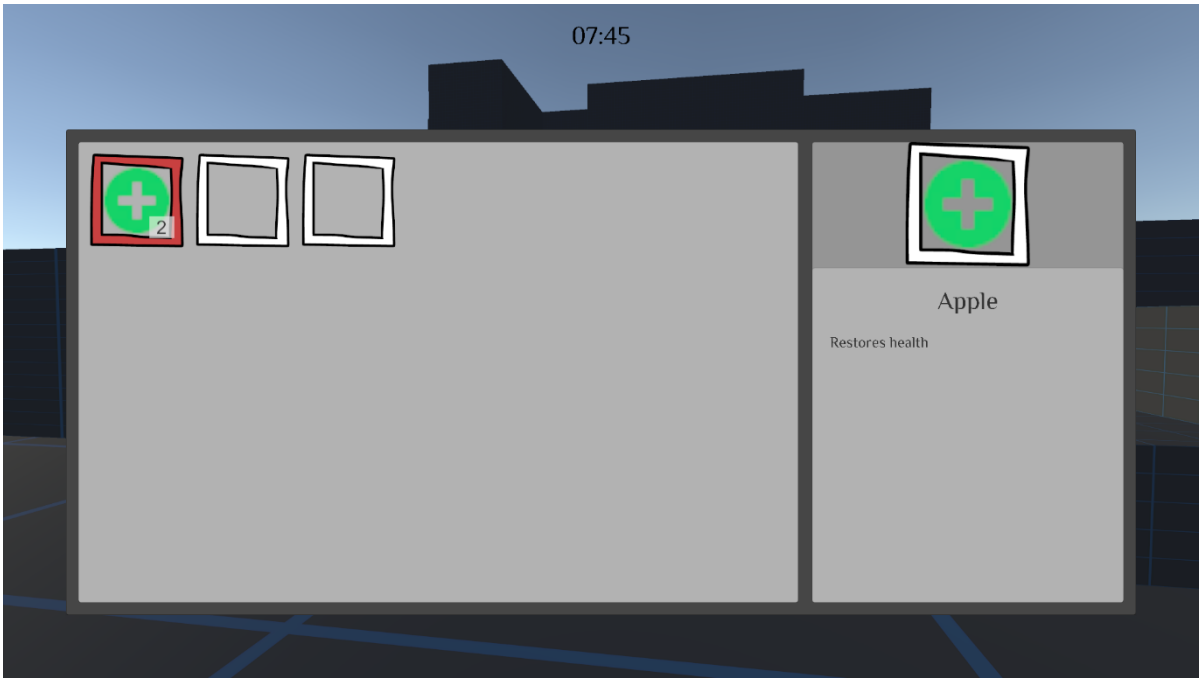

Figure 11 - Self 2023. Storyboard of Item & Description [Unity]

The left side of the inventory displays stored items, while the right side showcases the name and description of the selected item *(see figure 11)*. It's important to note that, for the purpose of the demo, basic Unity sprites have been used to represent items in the game. Moreover, the item descriptions are currently placeholders.

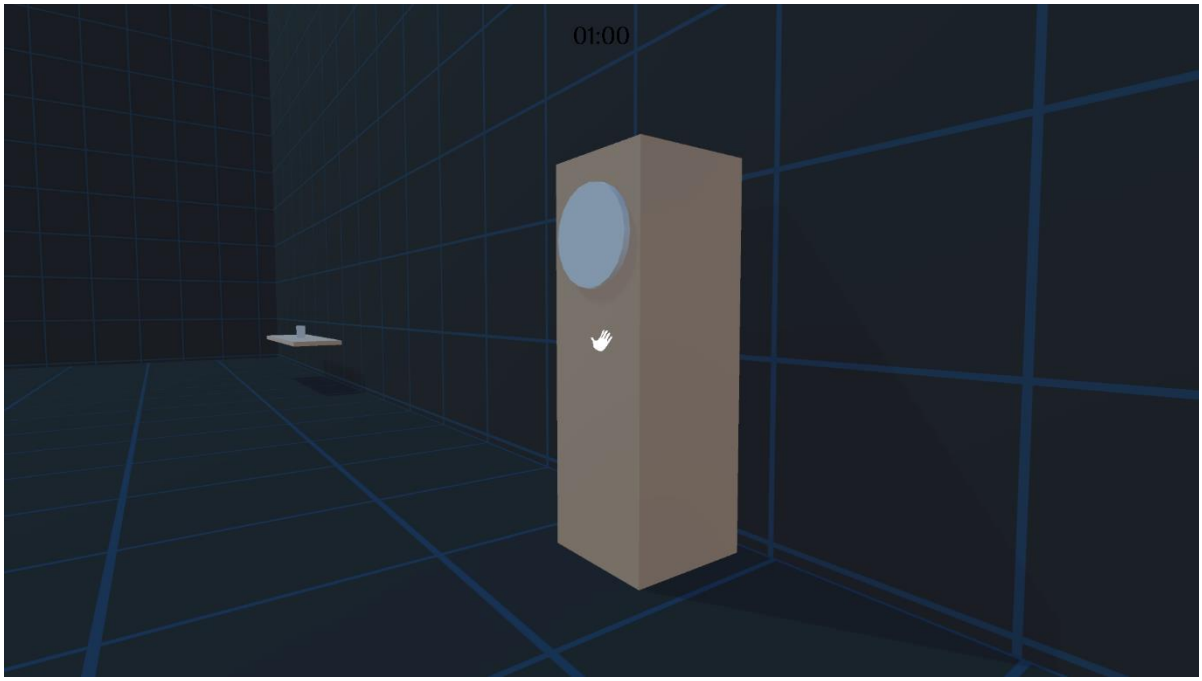

Figure 12 - Self 2023. Storyboard of Grandfather Clock [Unity]

If the player wishes to pause the game or exit, they can by interacting with the grandfather clock located within Horshaw House *(see figure 12)*. When the player interacts with the clock, the in-game world will freeze, presenting the player with choices to either resume or exit the game. Furthermore, the grandfather clock will also take the place of the timer displayed at the top of the screenshot, indicating the current in-game time to the players.

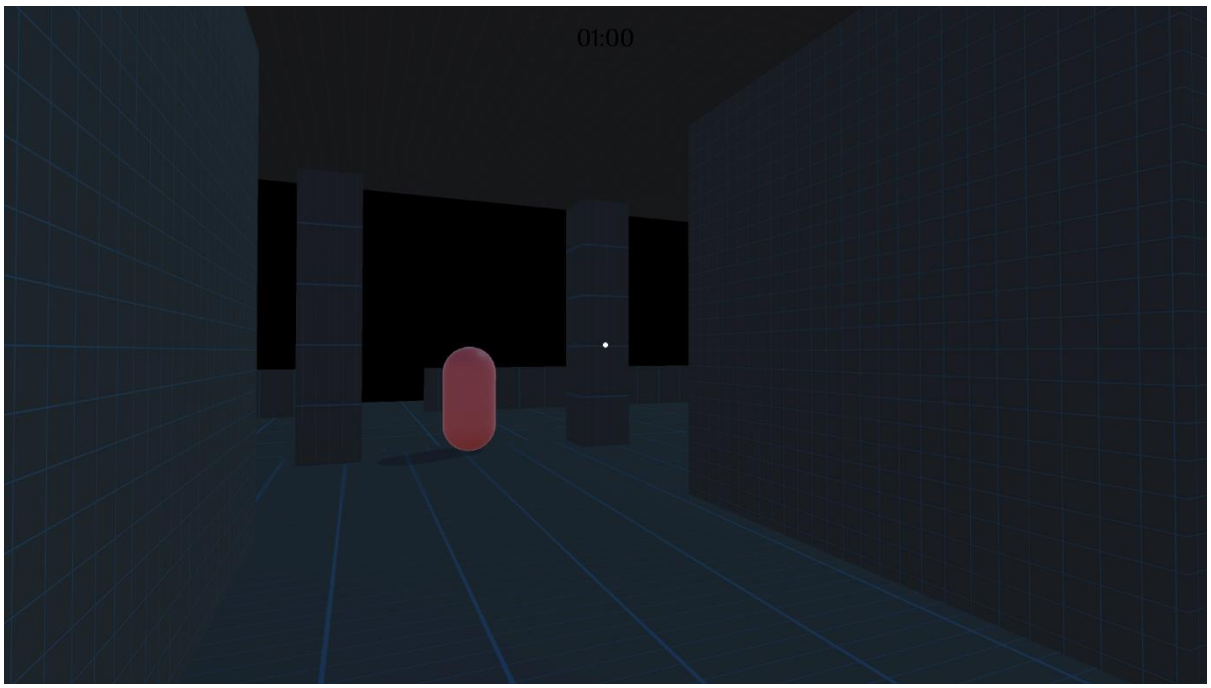

Figure 13 - Self 2023. Storyboard of Enemy [Unity]

As night falls, the stalker (enemy) emerges (depicted by the red capsule). Players must either confront or evade the stalker by any means necessary *(see figure 13)*. With each passing day, the stalker becomes more and more hostile. Players can choose between fleeing, waiting for sunrise, hiding, or engaging in combat. It's important to note that combat mechanics are not yet featured in the playable demo.

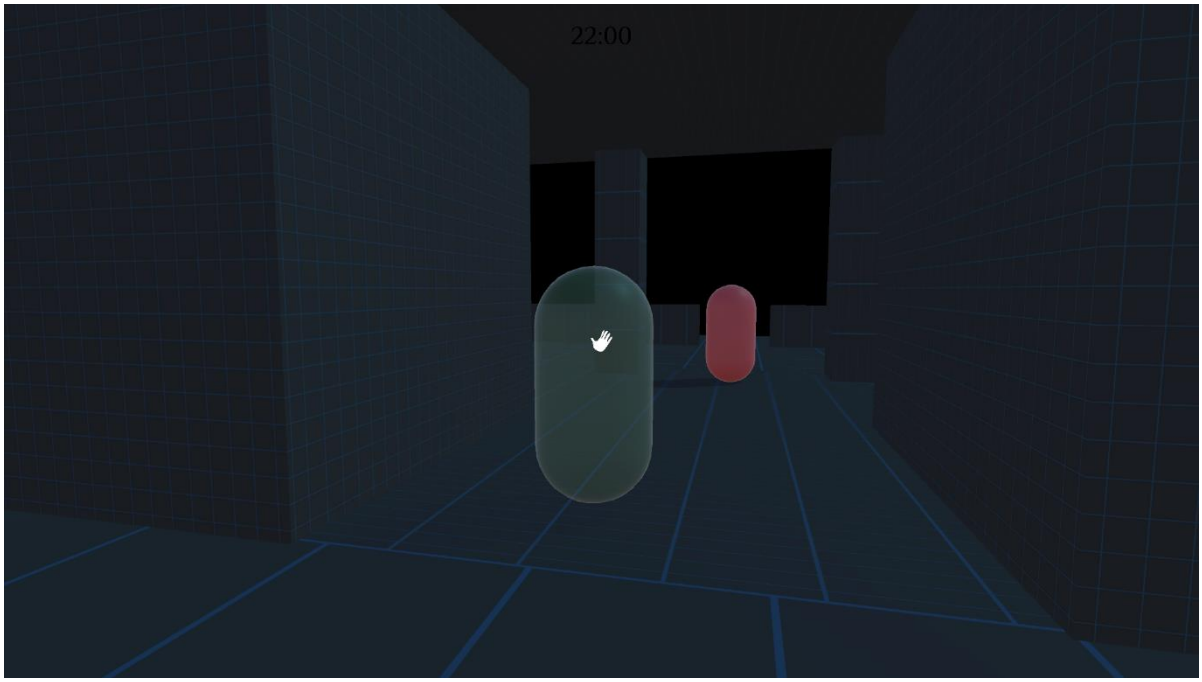

Figure 14 – Self 2023. Storyboard of Spirit Realm [Unity]

Should the player fall victim to the stalker and be killed, they are transported to the spirit realm *(see figure 14)*. In this domain, time speeds up, and the player must locate their body (indicated by the transparent green capsule) to continue the investigation. However, dying in the spirit realm results in permadeath and a game over. Once the player is inside Horshaw House, they have seven in-game days to unravel the murder mystery and escape.

5 Prototypes

A series of prototypes will be distributed throughout the development of Seven Nights in Horshaw House. These prototypes aim to conduct A/B testing on individual respite mechanics, evaluating their impacts on emotional and spatio-temporal immersion. By changing one variable at a time, this iterative process will help us understand the effects of each mechanic before integrating the desired result into the game's final version (Howell, 2022). Furthermore, participants will be asked to record their gameplay and include a face cam so that I can assess their reactions. For immediate data collection, participants will be requested to fill out a brief online survey upon completing each prototype.

Lastly, Unity analytics will be integrated to monitor player behaviour. The results will then be transferred to a spreadsheet to examine the effects more closely.

The initial prototype (01/08/23) test intends to conduct A/B testing by comparing the presence and absence of a pause button, analysing its impact on emotional and spatio-temporal immersion in a survival horror game.

5.1 The Final Build

Potential Itch.io Tags: Survival Horror, First-Person, Mystery, Atmospheric, Puzzle, Singleplayer, Indie, Story-Rich, Stealth, Dark, and Experimental

The final build version will feature a polished playable area, a state-driven enemy AI, and a murder mystery narrative with integrated puzzles. Developed using the Unity game engine, Seven Nights in Horshaw House will be released on Itch.io by December 2023. Throughout the development process, prototypes will be distributed to assess the effects of removing respite mechanics on emotional and spatio-temporal immersion. Therefore, the final build will not incorporate any respite mechanics, irrespective of their impact on the stated levels of immersion.

6 Features & Functionality

In Seven Nights in Horshaw House, players assume the role of a paranormal detective tasked with solving a murder mystery within the span of seven in-game days. This time frame is inspired by the theories of renowned paranormal investigators Ed and Lorraine Warren, who suggest that 28 days are necessary to pierce the spirit veil (Brittle, 2013). Your objective as the player is to thoroughly investigate the mansion's tragic events before the time limit expires, all while evading the monster who still resides there. Should the player meet their demise at the hands of the monster, they will be transported to the spirit realm. There, time accelerates as they endeavour to find their body and continue the investigation.

Seven Nights in Horshaw House will aim to offer a story-driven experience while establishing emotional bonds between the player, the environment, and the antagonist. Through the removal of respite mechanics, I hope to blur the boundaries between the virtual realm and reality, creating a cinematic experience. Moreover, I intend to use the passage of time as a tool to intensify the pressure, thus affecting player behaviour by instilling a sense of urgency and willingness to complete the story. It's important to highlight that in cases where the complete removal of a mechanic is not feasible due to its essential functionality, such as pausing the game to exit, I will consider redesigning the mechanic to eliminate any sense of relief it might provide.

Below, I have outlined a series of unique selling points (USPs) and design pillars, starting with the most general in terms of the player experience to the more distinctive features that set Seven Nights in Horshaw House apart.

- **Experimental Survival Horror:** Given the substantial removal of mechanics that one may consider intrinsic to survival horror games, I suspect that the game cannot be easily categorised as a traditional survival horror title.
- **Deep Levels of Emotional and Spatio-temporal Immersion:** Using techniques outlined by scholar David Freeman in his book “Creating Emotion in Games: The Craft and Art of Emotioneering,” my goal is to elicit emotional responses without relying on the inclusion of respite mechanics. In addition, I plan to leverage the environment and the passage of time to establish a haunting atmosphere, prompting players to question the unfolding events: What lies ahead? How will it transpire? And when will it occur? (Laglaive, 2021)
- **Cinematic Experience:** Removing the ability to pause the game creates a near-cinematic experience, keeping the player engaged and in a heightened state for a short period of time, which begs the question: how long does fear last?

Figure 15 - Self 2023. Seven Nights in Horshaw House Moodboard

- **Remove mechanics that offer moments of respite for the player:** Seven Nights in Horshaw House will deliberately exclude any mechanic that provides respite or relief to players to create an engaging narrative experience set within a hostile and sinister environment.
- **Employ the passage of time to intensify pressure in solving a murder mystery:** In Seven Nights in Horshaw House, players will have seven in-game days to unravel a murder mystery. However, there is a possibility that players may not solve the case in time, resulting in an unfavourable ending.
- **Create a confined playable environment devoid of loading screens:** The prototypes will be designed for a single continuous playthrough, providing a seamless environment where players can freely explore their surroundings and decide what challenges to tackle at their own expense.

7 Justifications for Design (Theoretical & Practical)

The concept of “immersion” in video games has been a widely discussed topic since the late 1990s, following the publication of theoretical works such as Janet Murray's "Hamlet of the Holodeck" (1997, 2016, 2017). Within this book that delves into the influence of digital technology on the development of narrative, Murray defines immersion in terms of the metaphorical concept of "transportation" as the *“experience of being transported to an elaborately simulated place”* (Murray, 1997). While many other scholars have further defined immersion and explored strategies to elicit emotional responses from players, my approach aims to push the boundaries by removing respite mechanics to investigate their impact on various forms of immersion.

Regarding temporal immersion, scholar Mihaly Csikszentmihalyi, in his book, "Flow: The Psychology of Optimal Experience", explains that people enter a state of flow when they become deeply engaged in a task, losing track of time (Csikszentmihalyi, 1990). This concept has influenced other scholars and developers, like game designer Xinghan Chen (professionally known as Jenova Chen) from ThatGameCompany, to use flow synonymous with immersion, stating in his thesis, "Flow in Games", that *“the description of Flow is identical to what a player experiences when totally immersed in a video game”* (Chen, 2007). However, Seven Nights in Horshaw House aims to challenge this notion by deliberately heightening the player's awareness of the passage of time with the intention of enhancing their immersion.

Moreover, I am developing this artefact due to my profound fascination with the survival horror genre and its ever-evolving nature in video games. I'm curious about why certain mechanics which detract from fear-inducing experiences are still prevalent among modern horror games today.

Additionally, I intend to examine the implications of immersing players in terrifying environments, employing the passage of time and space as a way of intensifying pressure. Lastly, I believe this research will bridge the gap between what it means to be a spectator of horror films and a player in a horror game.

To summarise, this experimental research seeks to uncover reasons why developers use certain mechanics and assess the possibility of eliminating them for more profound effects in our games.

8 Results of User Testing

Various prototypes will be developed and distributed among testers to investigate the effects of removing respite mechanics on emotional and spatio-temporal immersion in survival horror games. Using the prototypes and the survey created from Google Forms, I will gather qualitative data, focusing on conducting individual A/B tests for each respite mechanic. However, carrying out such testing depends on whether we have identified respite mechanics in the first place. Scholars Christian Sebastian Loh, Dirk Ifenthaler, and Yanyan Sheng, in their book “Serious Games Analytics: Methodologies for Performance Measurement, Assessment, and Improvement” state that *“techniques such as pre/post-tests and A/B testing can only provide designers insights into whether games are aligned or which of the tested features are better for alignment. These approaches require an explicit experimental design, and the foresight of what features might be worth varying.”* (Sebastian Loh, et al., 2015) Therefore, it is significant that we are able to first identify these mechanics before assessing their influence on emotional and spatio-temporal immersion.

Additionally, I plan to incorporate Unity Analytics to collect quantitative data for a more detailed analysis of player behaviour. This analysis will involve observing players' activities over the course of the seven in-game days and assessing the pace at which they progress through the narrative, with the aim of understanding whether the passage of time has indeed influenced their actions. It's important to note that the initial testing phase did not include Unity Analytics, but it's a component I aim to integrate at a later stage. Furthermore, as described in the prototype section, each participant will be requested to record their experience, ideally using a face cam, and complete a brief online survey to provide insight into their engagement. The survey results will then be compiled into a spreadsheet for a more thorough examination.

8.1 Survey Results (Appendix 1)

You can access a copy of the online survey here: https://forms.gle/cSh2av7wY6AXbMhi6

Two anonymous participants were engaged in the initial prototype (01/08/2023) designed for A/B testing, comparing the presence and absence of a pause button as a preliminary assessment *(see figure 16)*. Unfortunately, video footage was not provided, but both participants completed the short online survey. As their testing was conducted separately, using two different branches from the same prototype (one including the pause button and one without), I could not present the data as a summary; instead, I had to evaluate their findings individually. This situation does pose an issue when collecting quantitative data from the survey. However, certain questions in the survey do provide an exception to this, such as "Which prototype were you engaged with during the course of this research?" *(see figure 17)* and "From your perspective, would you opt to remove this specific respite mechanic from the final version?" *(see figure 18)*.

Figure 16 - Self 2023. Pause Screen [Unity]

In the survey, the participants were first asked to specify the respite mechanic they were testing and whether they engaged with the branch that featured it. Subsequently, they were requested to describe how this mechanic influenced their emotional and spatio-temporal immersion. Lastly, they were asked to rate their overall experience and whether they would remove the mechanic from the game.

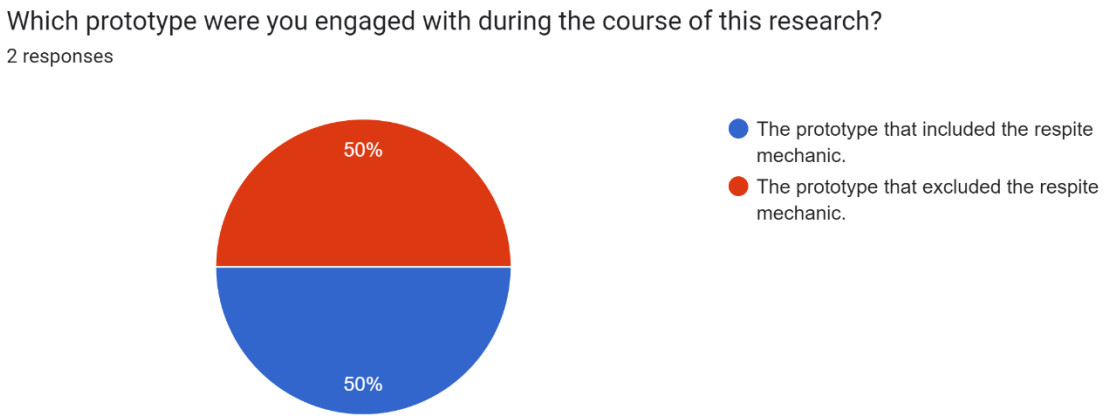

Figure 17 - Self 2023. Survey Results (Part 1) [Google Forms]

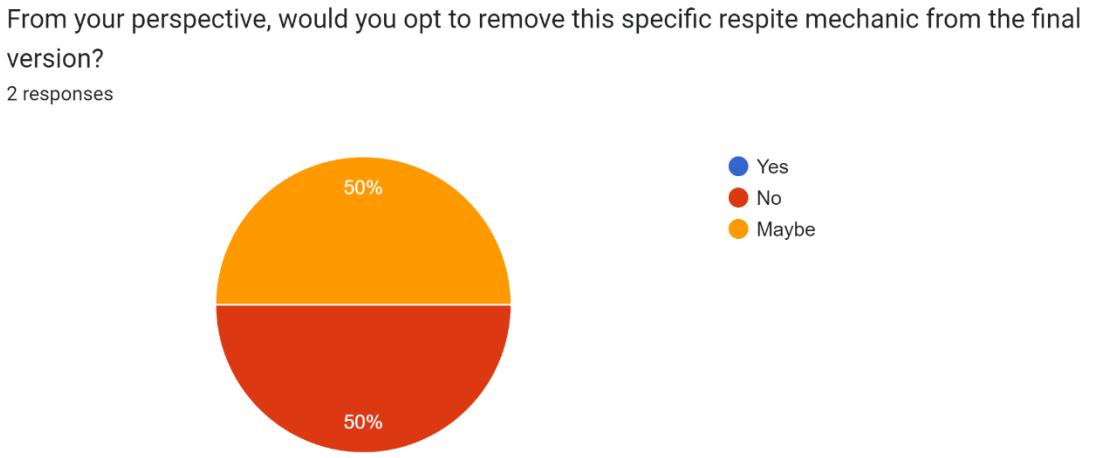

Figure 18 - Self 2023. Survey Results (Part 2) [Google Forms]

It's worth highlighting that both participants expressed their inclination not to remove the pause button from the game's final version. It seems a more extensive test is necessary to determine if this sentiment is shared among others.

8.1.1 Qualitative Data Results

The participant who engaged in the branch featuring the pause button expressed a sense of relief during their playthrough. Although they noted that their emotional immersion suffered, and it detracted from the feeling of being immersed within the mansion. In contrast, the participant who did not have access to the pause button reported feelings of heightened frustration and fear. They experienced a sense of vulnerability while traversing the mansion and expressed frustration over the inability to pause the game and step away from the experience (Appendix 1).

8.1.2 Conclusion

In retrospect, I am satisfied with my approach to testing. Employing A/B testing appears to be the appropriate method to gauge the impact of each respite mechanic on emotional and spatio-temporal immersion in survival horror games, potentially yielding new insights in this domain. It's worth mentioning that the initial testing involved participants who were both survival game enthusiasts, driven by commercial considerations. I'm curious about how it would affect the data if I were to include participants who don't align with my intended target audience. Nevertheless, my next objective is to incorporate additional respite mechanics to provide participants with more prototypes.

9 Limitations of Design

In any project, particularly for solo developers, it's crucial to account for the constraints and shortcomings inherent in your design. In fact, in the GDC talk titled "Solo Development: Myths, Reality and Survival Strategies," game developer Joe Winters emphasises that *"limits will set you free!"* Winters elaborates further, stating that *“no matter how narrow of a scope you create, there’s an infinite amount of game to be developed”* (GDC, 2022). Therefore, I have conducted a skills audit and highlighted potential shortcomings that I anticipate could arise from the design of Seven Nights in Horshaw House *(see figure 19)*.

9.1 Skills Audit

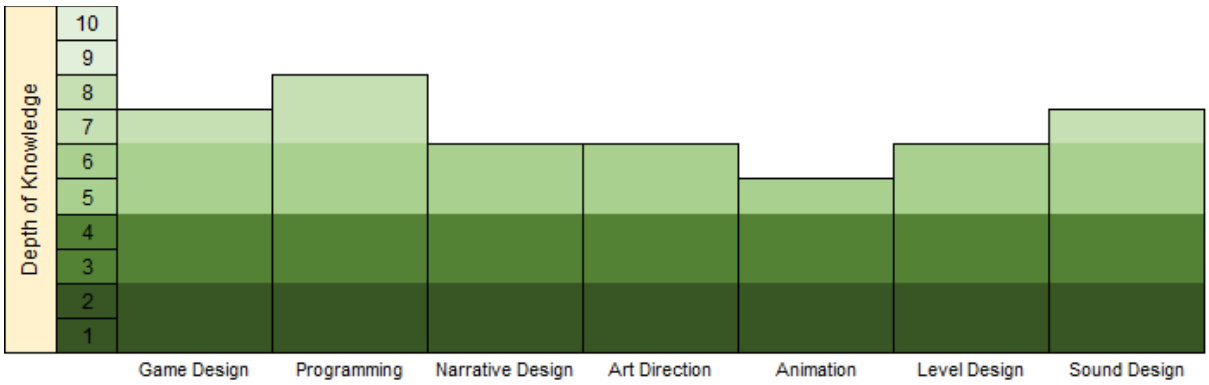

Figure 19 - Self 2023. Skills Audit [MS-Excel]

I consider myself a versatile game developer, embracing a jack-of-all-trades approach that holds significance, particularly as a solo developer. However, I recognise that I am confident in certain areas as opposed to others, such as programming and sound design. Regarding the development of Seven Nights in Horshaw House, I'm eagerly anticipating the opportunity to delve into Game Design, creating intricate puzzles and challenging conventions; Level Design, fashioning an environment where players can freely explore the haunted mansion; and Narrative Design, creating an engaging story that captivates players.

While I value being well-rounded, I have yet to create a portfolio piece that focuses on these specific facets of game development. Assessing my proficiency in each area is difficult. From my perspective, level 1 signifies a beginner, and level 10 represents the industry standard. With seven years of game development experience, I would not be surprised if I overestimated or underestimated my competence in certain aspects.

9.2 Potential Shortcomings

- **Implementation of Every Respite Mechanic:** While I hope that the final build excludes respite mechanics, the necessity of A/B testing demands the implementation of these mechanics, which could potentially extend the game's development timeline.
- **The Layout of Horshaw House:** The layout must strike a balance between providing ample space for exploration while at the same time maintaining a level of confinement that keeps players focused on their objective.
- **Game Difficulty:** I do not know if the game will be too easy or difficult to complete.
- **Participants/Testers:** To carry out this research effectively, I require a substantial number of testers since I intend to evaluate more than ten different respite mechanics.
- **Funding:** I'm considering putting the game on Kickstarter because I have confidence in its unique appeal, although achieving this might be challenging within the 28-week project timeline.

10 Resource Evaluation

Below I have outlined a series of tools and technologies that will help facilitate the project's development. It's important to mention that all the resources listed below are either free or available at no cost to Falmouth University students.

- **Unity 2021.3.19f1 LTS (Game Engine):** With years of experience using Unity, I am confident in my ability to develop the game within this engine.
- **Visual Studio Community 2022 (Programming Software):** Visual Studio can easily be integrated with Unity, making it a practical choice.
- **GitHub (Version Control Software):** GitHub will serve as the platform for storing, managing, and tracking changes and commits throughout the development of Seven Nights in Horshaw House.
- **HacknPlan (Online Kanban Board):** HacknPlan will serve as my virtual Kanban board, aiding in task management through each sprint.
- **Microsoft Office:** Microsoft Office will be employed to create documents and spreadsheets for the research and its findings.
- **Google Forms:** Google Forms will be utilised to create surveys for testers.

11 Expansion (Stretch Goals)

I am carefully considering expansion in terms of the commercial and academic sense as I strive to establish myself as an independent game developer while also maintaining my academic pursuits, particularly within the realm of horror video games. Given this perspective, I view Seven Nights in Horshaw House as having commercial viability while offering new insights into emotional and spatio-temporal immersion within the survival horror genre. Therefore, I have outlined a set of stretch goals, encompassing both commercial and academic endeavours, that I intend to pursue after publishing the game on Itch.io.

11.1 Commercial

For Seven Nights in Horshaw House to achieve long-term success, securing funding and maintaining constant communication with its target audience will be vital. Therefore, I propose crowdfunding as a viable avenue as opposed to seeking a publisher or angel investor. I am aware of the challenges associated with crowdfunding, which makes it significant to establish an audience and a social media presence prior to launching the game on platforms such as Kickstarter. However, long-term funding will enable me to explore various aspects, including expanding the game's narrative through DLC, potential console ports for platforms like Xbox and PlayStation, multiplayer integration, distribution on Steam, and lastly, incorporating physical evidence used to help solve the murder mystery akin to Infocom's Deadline (1982).

11.2 Academic

In terms of research, Seven Nights in Horshaw House could broaden its investigations by exploring the consequences of removing respite mechanics on other forms of immersion, such as narrative, sensory, and ludic. This expansion has the potential to assist fellow developers in making informed decisions about the inclusion of a particular respite mechanic, considering its effect on certain types of immersion within the survival horror genre.

12 Next Steps

I will continue developing Seven Nights in Horshaw House while preparing to distribute prototypes for A/B testing of individual respite mechanics to assess their impacts on emotional and spatio-temporal immersion. I hope to publish my findings alongside the game by December 2023. Below is a development timeline *(see figure 20)*, work breakdown structure *(see figure 21)*, Gantt chart *(see figure 22)*, and risk register *(see figures 23 & 24)*, all contributing to the project's feasibility.

12.1 Development Timeline

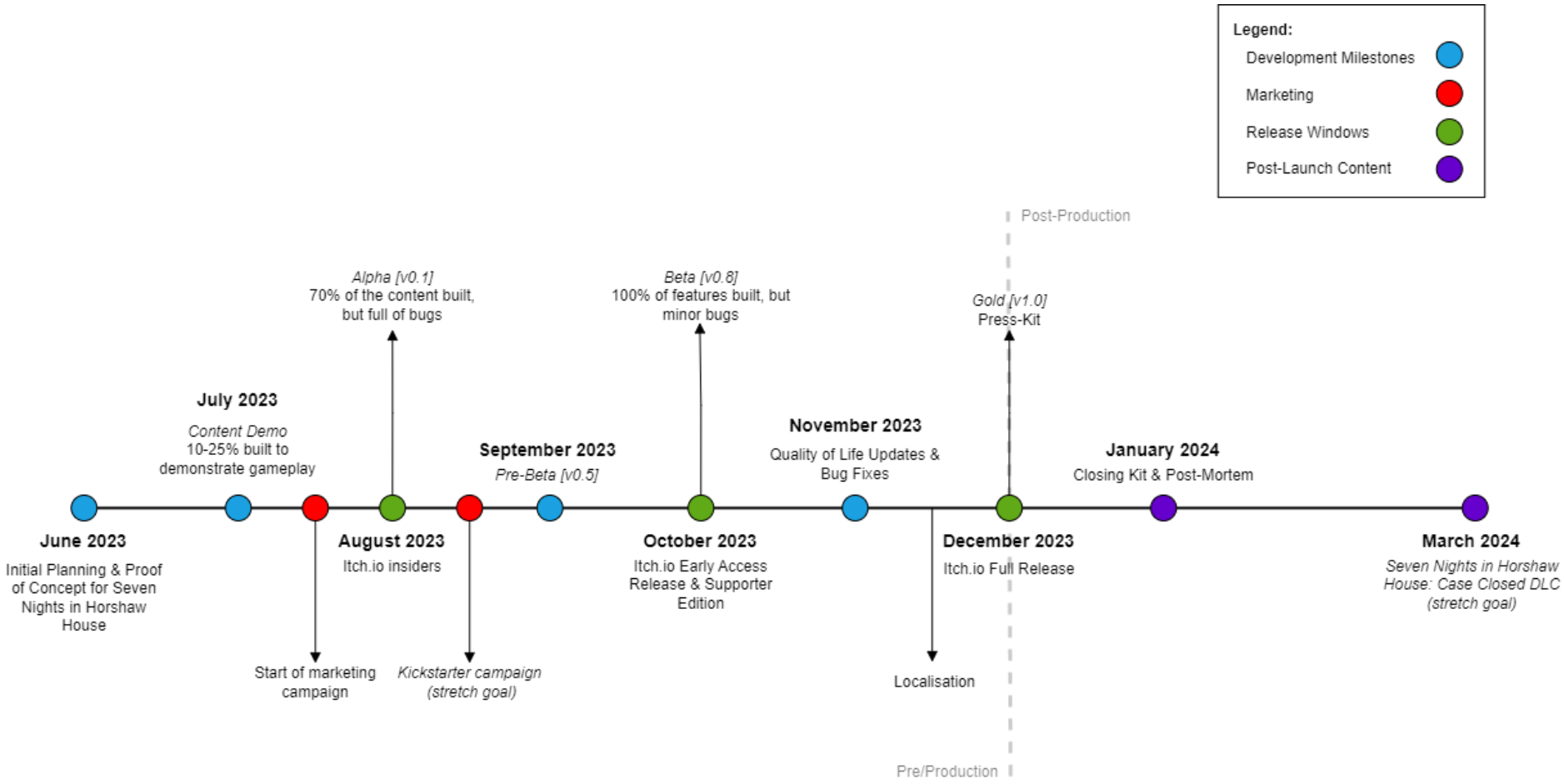

Figure 20 - Self 2023. Development Timeline [app.diagrams.net]

12.2 Work Breakdown Structure

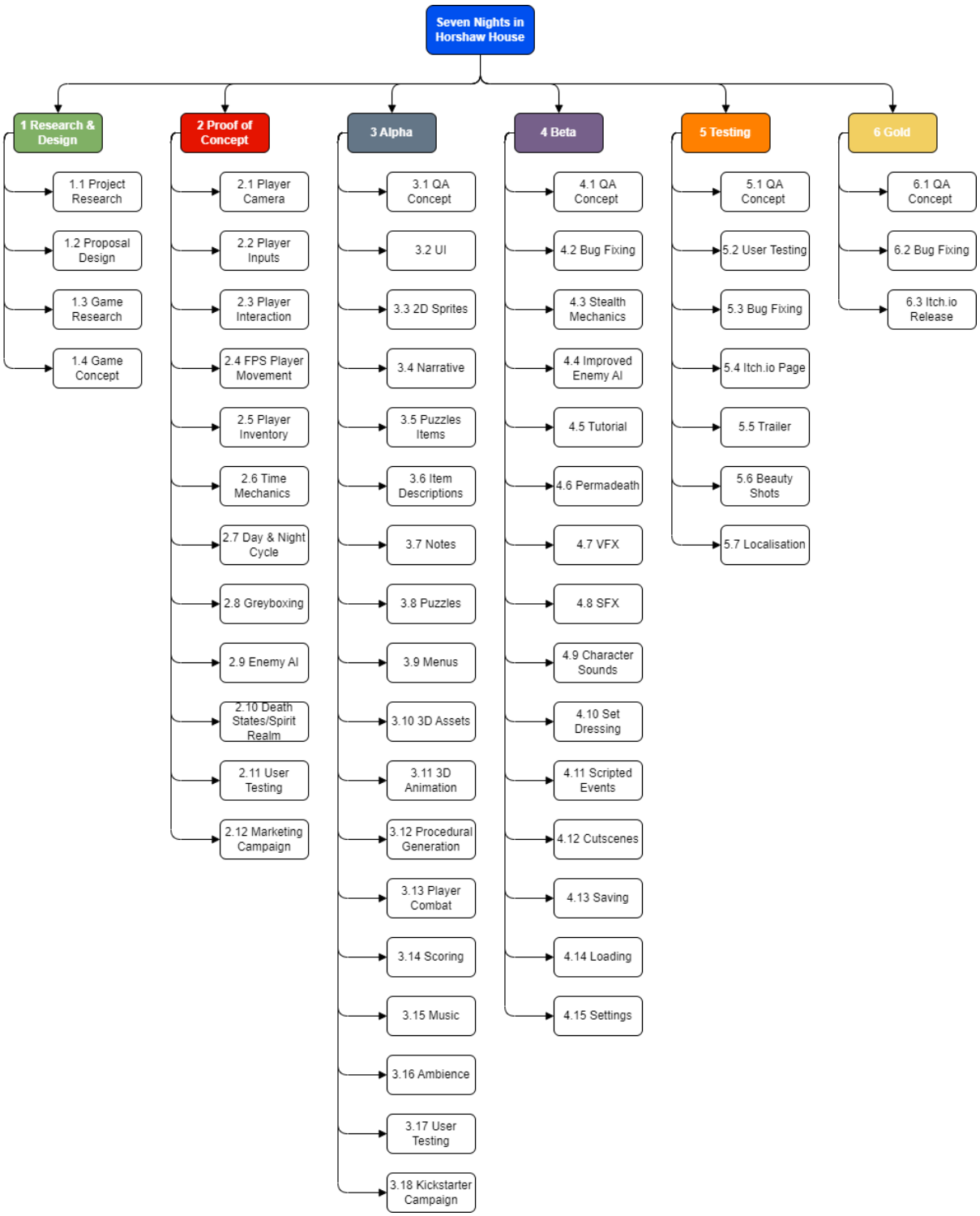

Figure 21 - Self 2023. WBS [app.diagrams.net]

12.3 Gantt Chart

		Month	May	June				July				August				September				October				November				December			
		Sprint No		Sprint 1			Sprint 2			Sprint 3			Sprint 4							Sprint 5				Sprint 6		Sprint 7		Sprint 8			
		Sprint Focus		Envisioning			Proof of Concept			Prototyping			Development			Break				Testing				Adaptation		QA		Evaluation			
	Completion (%)	Week No	1	2	3	4	5	6	7	8	9	10	11	12						13	14	15	16	17	18	19	20	21	22	23	24
1 Research & Design	**100**																														
1.1 Project Research	100																														
1.2 Proposal Design	100																														
1.3 Game Research	100																														
1.4 Game Concept	100																														
2 Proof of Concept	**77.5**																														
2.1 Player Camera	100																														
2.2 Player Inputs	100																														
2.3 Player Interaction	100																														
2.4 FPS Player Movement	100																														
2.5 Player Inventory	100																														
2.6 Time Mechanics	100																														
2.7 Day & Night Cycle	100																														
2.8 Greyboxing	80																														
2.9 Enemy AI	60																														
2.10 Death States/Spirit Realm	40																														
2.11 User Testing	40																														
2.12 Marketing Campaign	10																														
3 Alpha	**7**																														
3.1 QA Concept	40																														
3.2 UI	20																														
3.3 2D Sprites	20																														
3.4 Narrative	10																														
3.5 Puzzle Items	10																														
3.6 Item Descriptions	10																														
3.7 Notes	10																														
3.8 Puzzles	5																														
3.9 Menus	0																														
3.10 3D Assets	0																														
3.11 3D Animation	0																														
3.12 Procedural Generation	0																														
3.13 Player Combat	0																														
3.14 Scoring	0																														
3.15 Music	0																														
3.16 Ambience	0																														
3.17 User Testing	0																														
3.18 Kickstarter Campaign	0																														
4 Beta	**0**																														
4.1 QA Concept	0																														
4.2 Bug Fixing	0																														
4.3 Stealth Mechanics	0																														
4.4 Improved Enemy AI	0																														
4.5 Tutorial	0																														
4.6 Permadeath	0																														
4.7 VFX	0																														
4.8 SFX	0																														
4.9 Character Sounds	0																														
4.10 Set Dressing	0																														
4.11 Scripted Events	0																														
4.12 Cutscenes	0																														
4.13 Saving	0																														
4.14 Loading	0																														
4.15 Settings	0																														
5 Testing	**0**																														
5.1 QA Concept	0																														
5.2 User Testing	0																														
5.3 Bug Fixing	0																														
5.4 Itch.io Page	0																														
5.5 Trailer	0																														
5.6 Beauty Shots	0																														
5.7 Localisation	0																														
6 Gold	**0**																														
6.1 QA Concept	0																														
6.2 Bug Fixing	0																														
6.3 Itch.io Release	0																														

Figure 22 - Self 2023. Gantt Chart [MS-Excel]

12.4 Risk Register (Health & Professionalism)

Risk Register & Contingency Plan							
Health & Wellbeing							
Risks					**Contingency Plan**		
ID	**Type**	**Qualitative Impact**	**Quantitative Impact**	**Precaution**	**Recovery**	**Action**	**Diagonsis Method**
1	Iness	Medium	7 Days	Manage mental state and do not over work. Stay warm and well hydrated.	Hydrate, rest and consume medicine.	Act Immeadiately	Stay at home and attempt to recover. See a doctor if need be.
2	Stress	High	2 Days	Manage your stress levels. Stay organised and up-to-date with the work load.	Take some time away from work to relax and recuperate.	Inform your supervisor and act accordingly	Take regularly scheduled breaks and learn to relax.
3	Mental Health	High	7 Days	Take regularly scheduled breaks and maintain good sleeping and eating habits.	Take some time away from work to focus on your overall welbeing.	Inform your supervisor and act accordingly	Address the issue and only commit to work when you're feeling better.
4	Concerns	Low	1 Day	Prepare the best you can and ask your supervisor and peers relevant questions.	Make a list of your concerns and tackle each one accordingly.	Inform your supervisor and act accordingly	Contatct your supervisor and attempt to solve the concern.
5	Motivation	Medium	2 Days	Keep your vision in mind and play games related to the genre.	Speak with others for advice.	Act if state worsens	Refrain from over-scoping and take inspiration from others.
6	Environment	High	4 Days	Keep your workplace clean and organised.	Tidy your workplace, otherwise work away from home.	Act if state worsens	Work in a peaceful and healthy environment.
7	Confidence	Medium	4 Days	Reflect on the work you have done in the past.	Talk with your supervisor and peers to help boost self-esteem	Act if state worsens	Tackle the task that may be hindering your confidence.
8	Resilience	Medium	4 Days	Prepare yourself for future hurdles and potential issues.	Talk with your supervisor and peers to help boost resilience	Act Immeadiately	Re-evaluate tasks that may be difficult to complete.
9	Work Load/Burnout	Medium	2 Days	Divide the task into smaller, more manageable steps, while considering the project scope.	Strive to do your best while maintaining a sustainable pace while effectively managing the backlog.	Act if state worsens	Ask your supervisor and peers for advice. Prepare for a better next week.
10	Negative Thoughts	Extreme	7 Days	Take frequent breaks and step away from work when needed. Long walks can be beneficial for the mind.	Take time off work to seek leisure and relaxation.	Inform your supervisor and act accordingly	Engage in open communication with your peers and supervisor. Maintain a positive mindset while working.
11	Eating	High	4 Days	Try your best to maintain a well-balanced diet.	Begin anew and make an effort to reduce the intake of unhealthy food.	Act if state worsens	Avoid working excessively long hours or experiencing burnout. Plan your day and meals to maintain a healthy work-life balance.
12	Sleep	High	4 Days	Prioritise getting enough rest by maintaining a reasonable sleep and wake-up routine.	Conclude your work by 8pm at the latest, allowing ample time to unwind and relax.	Act if state worsens	If feeling tired, prioritize going to bed for adequate rest.
13	Exercise	High	4 Days	Strive to maintain a regular exercise routine, and don't forget to take breaks and go out for a change of scenery once in a while.	Give priority to exercise and aim to strike a balance with your work commitments.	Act if state worsens	Create a work schedule that incorporates regular exercise breaks.
Professionalism							
Risks					**Contingency Plan**		
ID	**Type**	**Qualitative Impact**	**Quantitative Impact**	**Precaution**	**Recovery**	**Action**	**Diagonsis Method**
14	Procrastination	Medium	2 Days	Get ready for the workweek ahead by setting realistic and achievable tasks.	Add incomplete tasks to the weekly backlog.	Act if state worsens	Establish a healthy sleeping pattern and work ethic. Consider allocating additional hours for upcoming tasks.
15	Time Management	High	2 Days	Engage in a conversation with your supervisor to establish project milestones and deadlines.	Develop a capacity hour sheet and utilize it to evenly allocate work hours throughout the week.	Inform your supervisor and act accordingly	Use the capacity hour sheet to manage your time and meet deadlines.
16	Ogranisation	Medium	2 Days	Prepare for the upcoming weeks by building a Work Breakdown Structure (WBS) and a Gantt Chart	Utilize supervisor meetings as milestones to guide your progress.	Act if state worsens	Utilize Kanban boards to outline weekly tasks.
17	Conflict	High	1 Day	Be open-minded to suggestions and respectful of different opinions.	Do not let a day pass without addressing conflicts. Be ready to apologize for your actions.	Act Immeadiately	Talk with your supervisor and practice empathy by considering the other person's perspective.
18	Absence	Low	1 Day	If you anticipate being absent, inform your supervisor at least a week in advance.	Immediately contact your supervisor and offer an apology for your unexpected absence.	Inform your supervisor and act accordingly	Apologise and email your supervisor with any queries you may have regarding that week of work.
19	Work Ethic	Medium	4 Days	Make time to relax and ensure you always have a clear goal or milestone in mind.	Pause and reflect on your work, revisiting tasks to add quality before moving on to the next.	Act if state worsens	Request to review your peer's work and find inspiration to make relevant improvements in your behavior.
20	Miscommunicatio n	Low	1 Day	Communicate clearly and with intent. Address any confusion that may have occured.	Ensure the person you are speaking to understands your message by providing reassurance and clarification.	Act Immeadiately	Collaborate and seek to understand the source of confusion, then work together to rectify the situation.

Figure 23 - Self 2023. Risk Register (Part 1) [MS-Excel]

12.5 Risk Register (Project)

Project							
Risks					Contingency Plan		
ID	Type	Qualitative Impact	Quantitative Impact	Precaution	Recovery	Action	Diagonsis Method
21	Planning	High	7 Days	Prepare essential documentation early to keep your project on track.	Prioritise identifying the project scope and necessary tasks before proceeding further.	Act Immeadiately	Seek guidance from your supervisor and peers, and reflect on what went wrong to make necessary adjustments.
22	Scope	High	4 Days	Avoid being overly ambitious; instead, remain realistic in your approach.	Divide the project into stages, and then proceed to identify the tasks within each stage.	Act Immeadiately	Review the WBS, make necessary adjustments and consider cutting features accordingly.
23	Inexperience	Medium	4 Days	Before implementing a feature, refresh your knowledge by revisiting past projects and learning from them.	Refer to YouTube tutorials or conduct research to find a relevant solution.	Act if state worsens	If you're unable to find a solution on your own, don't hesitate to seek help from a peer or a supervisor.
24	Standards	Medium	4 Days	Always uphold a high standard of work and seek additional opinions by sending drafts to your supervisor.	Conduct research on industry standards and seek guidance from peers in specific areas.	Act if state worsens	Seek feedback from your supervisor about areas where you can improve.
25	Deadlines	Extreme	7 Days	Plan and prepare your work a week in advance, aiming to avoid submitting it on the day of the deadline.	Do your best to catch up on the work that you missed and strive to meet the late deadline.	Act Immeadiately	Stay calm and submit your work when you feel it has reached an adequate standard.
26	PC Issues	Medium	7 Days	Ensure your PC is up-to-date and run diagnostic checks regularly to maintain its performance.	Work on tasks that don't require a PC, while making an effort to fix your PC in the meantime.	Act if state worsens	Try to fix the PC yourself. If unsuccessful, send the PC for repair and consider borrowing someone else's computer in the meantime.
27	Backup	High	4 Days	Ensure to back up your work consistently, either through USB drives or Google Drive.	Make an immediate attempt to re-create the work and prioritise it above all other tasks.	Inform your supervisor and act accordingly	Notify your supervisor about the situation and ask if they can recall what you wrote.
28	Plugins	Low	2 Days	Before development, identify the required programs and plug-ins. Choose programs you are familiar with and have significant experience in using.	Instead of wasting time learning new software, move on and seek a solution that makes you feel comfortable and confident.	Act if state worsens	Transfer your work from the program you wish to stop using to a new one that you feel comfortable working with.
29	Assets	Low	2 Days	Conduct thorough research on a variety of assets before making a commitment to one.	Stop using the asset and seek a replacement that makes you feel comfortable and suits your needs.	Act Immeadiately	Take a mental note to avoid using that asset and instead to concentrate on the task at hand.
30	Bugs	Medium	7 Days	Address bugs promptly before moving on to another task by conducting rigorous testing to prevent them from accumulating over time.	Create a testing table to document any game-breaking issues along with their corresponding solutions for fixing them.	Act Immeadiately	Resolve the bugs before the Itch.io release.
31	Testing	High	7 Days	Maintain constant communication with QA Testers. Address any concerns they may have promptly.	Ask relevant questions and inquire if they are willing to play again.	Act Immeadiately	Seek their suggestions and opinions based on their testing experience and use that feedback to enhance the game.
32	Backlog	Low	7 Days	Create manageable tasks and avoid overwhelming yourself by creating too many of them.	Prioritise the urgent tasks and focus on them one at a time.	Inform your supervisor and act accordingly	If the backlog becomes too overwhelming, seek advice from your supervisor for guidance.
33	Crunch	Extreme	14 Days	Ensure a healthy backlog by consistently addressing tasks in a timely manner.	Crunch only for important milestones and deadlines, avoiding excessive stress.	Act if state worsens	Finish urgent tasks take the opportunity to learn from your mistakes.
34	Unaccounted Risk	High	1 Day	Establish a risk assessment early and review past registers to identify any risks that may have been overlooked.	Add it into the risk register and endeavor to find a viable solution.	Act Immeadiately	Always conduct a comprehensive risk register before initiating any project.
35	Global Pandemic	Extreme	7 Days	Ensure to keep your work organised and prepare to adapt quickly.	Adjust to the new working conditions and try not to let it affect your performance.	Act Immeadiately	Seek advice on how to stay motivated during this time from your peers and supervisor.

Figure 24 - Self 2023. Risk Register (Part 2) [MS-Excel]

13 Summary

“You have once again entered... the world of survival horror. Good luck!”

(Resident Evil, 1996)

Beyond its commercial potential, Seven Nights in Horshaw House has the capacity to yield fresh perspectives on the survival horror genre by delving into the effects of removing respite mechanics on emotional and spatio-temporal immersion.

I find that there’s a certain appeal in incorporating moments of respite within horror games, whether it involves exploring the Aurora (train) in Metro Exodus (2019) or preparing for an intense boss battle in Elden Ring (2022). Therefore, it’s vital that we challenge these conventions that are so prevalent in the genre to understand their importance and contribute to our comprehension of immersion in video games, building upon the insights discussed by renowned scholars such as Janet Murray, and Marie-Laure Ryan. The exceptional uniqueness of Seven Nights in Horshaw House makes me confident that it will serve as the perfect catalyst to advance this type of research.

By securing additional funding, Seven Nights in Horshaw House could expand its scope and explore the effects of removing respite mechanics on other types of immersion. Furthermore, the game could integrate multiplayer to assess how the absence of respite mechanics affects a specific type of immersion within a shared experience. The possibilities for growth, both in terms of commercial viability and academic exploration, are truly limitless.

14 References

Brittle, G., 2013. *The Demonologist: The Extraordinary Career of Ed and Lorraine Warren.* 1st ed. s.l.:Graymalkin Media.

BuzzFeed Multiplayer, 2021. *Playing Horror Games With A Heart Rate Monitor.* [Online] Available at: https://www.youtube.com/watch?app=desktop&v=aYknJRtX7NU&ab_channel=BuzzFeedMultiplayer
[Accessed 9 August 2023].

Cambridge Dictionary, 2023. *"Spatio-temporal" Definition.* [Online]
Available at: https://dictionary.cambridge.org/dictionary/english/spatio-temporal
[Accessed 11 August 2023].

Chen, J., 2007. Flow in Games. 1(1), p. 2.

Conway, B., 2013. *How is player immersion affected by breaking the fourth wall?.* [Online]
Available at: https://www.gamedeveloper.com/design/how-is-player-immersion-affected-by-breaking-the-fourth-wall-
[Accessed 16 August 2023].

Csikszentmihalyi, M., 1990. *Flow: The Psychology of Optimal Experience.* 1st ed. s.l.:HarperCollins.

Curren, Y., 2023. *Lost Horror Game Mechanics that NEED a comeback! (and some more…).* [Online]
Available at: https://yagmanx.medium.com/lost-horror-game-mechanics-that-need-a-comeback-and-some-more-d6c65c05c1f
[Accessed 16 August 2023].

Dorter, G., 2019. *The Vicious Cycle of Anxiety.* [Online]
Available at: https://www.guelphtherapist.ca/blog/vicious-cycle-of-anxiety/
[Accessed 9 August 2023].

Filia, C. G. d. l., 2019. *Permadeath as a game mechanic in a survival horror: the Song of Horror case.* [Online]
Available at: https://www.gamedeveloper.com/design/permadeath-as-a-game-mechanic-in-a-survival-horror-the-song-of-horror-case
[Accessed 16 August 2023].

Freeman, D., 2004. Creating Emotion in Games. In: *The Craft and Art of Emotioneering.* s.l.:New Riders, p. 4.

GDC, 2017. *Evoking Emotions and Achieving Success by Breaking All the Rules.* [Online] Available at: https://www.youtube.com/watch?v=zBhiE6QZjzY&t=616s&ab_channel=GDC [Accessed 11 August 2023].

GDC, 2022. *Solo Development: Myths, Reality and Survival Strategies.* [Online] Available at: https://www.youtube.com/watch?v=YaUdstkv1RE&ab_channel=GDC [Accessed 15 August 2023].

Girard, P., 2011. *The Fear System - Triggering Tension in Survival Horror Videogames.* 1st ed. s.l.:GRIN Verlag.

Hand, R., 2004. Proliferating Horrors: Survival Horror and the Resident Evil franchise. In: S. Hantke, ed. *Horror Film: Creating and Marketing Fear.* s.l.:University Press of Mississippi.

Hanson, C., 2018. Game Time. In: *Understanding Temporality in Video Games.* s.l.:Indiana University Press, p. 72.

Howell, C., 2022. *Modern Game Testing: A Pragmatic Guide to Test Planning and Strategy.* 1st ed. s.l.:Modern Game Testing Company.

Inverse, 2023. *Dead Space remake devs reveal a terrifying change that didn't make the cut.* [Online]
Available at: https://www.inverse.com/gaming/dead-space-remake-interview-terrifying-change
[Accessed 9 August 2023].

Kubiński, P., 2014. *Immersion vs. Emersive Effects in Videogames.* [Online]
Available at:
https://www.researchgate.net/publication/281904769_Immersion_vs_Emersive_Effects_in_Videogames
[Accessed 16 August 2023].

Laglaive, M. P., 2021. *Video Games: Virtual Immersion and Localisation.* [Online]
Available at: https://terralocalizations.com/2021/08/23/video-games-virtual-immersion-and-localization/#:~:text=The%20first%2C%20the%20spatial%20immersion,will%20become%20someone%2C%20for%20instance.
[Accessed 13 August 2023].

Lancaster, K., 2001. *Performing the Force: Essays on Immersion Into Science-Fiction, Fantasy and Horror Environments.* 1st ed. s.l.:McFarland.

LeDoux, J. E., 1998. *The Emotional Brain: The Mysterious Underpinnings of Emotional Life.* s.l.:Simon & Schuster.

Murray, J. H., 1997. The Future of Narrative in Cyberspace. In: *Hamlet on the Holodeck.* s.l.:MIT Press, p. 98.

Ntokos, K., 2017. Analysis of Fear Spectrum into a Tool to Support Horror Game Design for Immersion and Fear. *Level of Fear,* 1(1), p. 35.

Perron, B., 2012. *Silent Hill: The Terror Engine.* 1st ed. s.l.:University of Michigan.

Perron, B., 2014. *Horror Video Games: Essays on the Fusion of Fear and Play.* 1st ed. s.l.:McFarland.

Perron, B., 2018. A Study in Videoludic Horror. In: *The World of Scary Video Games.* s.l.:Bloomsbury Publishing, pp. 70-71.

Pruett, C., 2016. *The Mechanics of Tension.* [Online]
Available at: https://www.gamedeveloper.com/design/the-mechanics-of-tension
[Accessed 16 August 2023].

Pruett, C., 2022. *Chris's Survival Horror Quest.* [Online]
Available at: http://horror.dreamdawn.com/
[Accessed 16 August 2023].

Ryan, M.-L., 2015. Narrative as Virtual Reality 2. In: *Revisiting Immersion and Interactivity in Literature and Electronic Media.* s.l.:Johns Hopkins University Press, pp. 1-13.

Sebastian Loh, C., Ifenthaler, D. & Sheng, Y., 2015. Methodologies for Performance Measurement, Assessment, and Improvement. In: *Serious Games Analytics.* s.l.:Springer International Publishing, p. 382.

Supermassive Games, 2015. *Until Dawn "The Science of Fear" (Bonus Content) Design Director Tom Heaton Behind the Scenes.* [Online]
Available at: https://www.youtube.com/watch?v=C-Y1ZP3kPX0
[Accessed 9 August 2023].

Zhang, C., Perkis, A. & Arndt, S., 2017. Spatial Immersion versus Emotional Immersion, Which is More Immersive?. 1(1), p. 1.

14.1 Video Games

- Alien: Isolation (2014)
- Amnesia: The Bunker (2023)
- Amnesia: The Dark Descent (2010)
- Amnesia: Rebirth (2020)
- Bloodborne (2015)
- Dark Souls (2011)
- Dark Souls: Remastered (2018)
- Deadline (1982)
- Dead Space (2023)
- Elden Ring (2022)
- Metro Exodus (2019)
- Resident Evil (1996)
- Resident Evil 7: Biohazard (2017)
- The Walking Dead: The Telltale Definitive Series (2019)
- Until Dawn (2015)

15 Table of Figures

16 Appendices

16.1 Appendix 1: Survey Results

The survey results from the preliminary testing of the pause button can be found here: https://docs.google.com/spreadsheets/d/1BxXsEK-T0M5NbNdbUA7Kjruvlvg_ivYX-gUwnSF4MHw/edit?usp=sharing

16.2 Appendix 2: GitHub Repository

The GitHub repository for Seven Nights in Horshaw House can be located here:

https://github.com/JackSelf97/final-major-project