

**Analysing the Dual Effects of Game Immersion
on Cognition and Reality Perception**

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May 2026

DECLARATION

I, Teh Yong Keat declare that this thesis report entitled “**Analysing the Dual Effects of Game Immersion on Cognition and Reality Perception**” is my own original work except for the citation from the references. The report has not been accepted or submitted to any party and will only be submitted to Degree of Bachelor of Art (Honours) Game Design under the University Tunku Abdul Rahman.

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Date: 22nd May 2026

ACKNOWLEDGEMENTS

First and foremost, I would like to express my gratitude to my university, Universiti Tunku Abdul Rahman (UTAR) for giving me an opportunity to learn and build up my confidence to chasing my dream.

Secondly, I would also like to express my sincere gratitude to three of my supervisors, Dr Simon Ang Kok Yew, Ms Christie Chow Mee Mooi, and Puan Nik Norazira Binti Abdul Aziz for providing me as well as to my team of the support for professional guidance and feedback throughout the development of our final year project, including this thesis report.

Next, I would like to thank to my teammates for their understanding and contribution throughout the whole development process of our final year project. Without their great cooperation, we will be unable to produce this project with quality and match with the standard.

Finally, I would like to thank my family for their continuous encouragement and support throughout my studies. Not only provide me with financial support but also provide me with emotional support when I was at the low point. I also want to thanks to all my friends and other mentors and lecturers who have guided me throughout my life.

ABSTRACT

Introduction

This study was to explore the dual effects of game immersion on cognition and reality perception, focusing on how immersive gameplay can enhance players' concentration and memory while also faced the perceptual distortions such as time loss, spatial disorientation, and blurred reality boundaries. This study was conducted alongside with the development of *Rempit in the Night*, a horror game inspired by Malaysian local folklores and featuring with Malaysian element culture that designed as part of a product-based Final Year Project.

Methods

The study using a mixed-method approach, where the quantitative data were collected through a structured survey of university students, while qualitative insights were gathered from open-ended survey responses and the player feedback during playtesting sessions. The survey used to measure the cognitive functions, perceptual experiences, and reality distinction, while the playtest feedback was used to provide a more direct observations of gameplay experience, usability, and narrative engagement from the play tester.

Results

The survey findings showed that more than 70% of respondents reported to have improvement in both focus and memory recall during the immersive gameplay. At the same time, over 50% admitted having perceptual distortion such as losing track of time, with many also experiencing spatial disorientation and sensory mismatches. Besides, the qualitative responses highlighted both benefits such as fun, creativity, stress relief, and problem-solving, together with some drawbacks like time distortion and disconnection from reality. Meanwhile, the playtest feedback confirmed these patterns, with the players showed concentrated attention, emotional reactions to horror and comedy elements, and show positive recognition to the cultural references during the playtest session, while some of

them struggled with chase mechanics and become tension after a prolonged gaming session.

Discussion

The findings confirm the hypotheses where immersion can produce both cognitive benefits and perceptual risks. The integration of cultural horror themes in *Rempit in the Night* successfully engaged the players, demonstrating the potential of local inspiration design in enhancing the game immersion. However, there was some limitations where due to the timing of the exhibition was short, only the small sample size and short playtest sessions can be conducted, but this study had provided a valuable insight for the future research and improvement on game development. Hence, recommendations for future works can be done are expanding the survey to larger groups, refining the game mechanics, and exploring more branching narratives for deeper immersion.

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1.0 INTRODUCTION

1.1 Project Overview



Figure 1.1 The Game Title of *Rempit in the Night*

“Rempit in the Night” is a single-player survival horror game featuring side-scrolling elements where the game set in 3D space with 2D characters. The game is inspired by “Fran Bow” and “Detention”, in which gameplay of visuals switching that representing characters emotions and perspectives. The game art style meanwhile was inspired by Lat’s “Kampung Boy” art style and Junji Ito’s horror manga art style. The game story was inspired by some Malaysian folktales and the folktales of Genting Highlands, set in a fictional world in the 2000s of the sacred hills of Bukit Tinggi. Play as Ahmad, exploring in an abandoned school to rescue both of his friends, Ming and Haran and escaping from the mysterious creatures after an accident during a road trip in Bukit Tinggi.

Besides of the narrative and artistic decision, this game is designed to emphasize the use of two different visuals perspectives to show the character’s mental states as a part of gameplay and using gamepad for additional experiences like rumble for haptic feedback. Both mechanics bring out the scope of this study in which to explore the cognitive and perceptual impacts of the video game immersion. As the current days many video games increasingly achieved with more realistic game environments, players expose themselves in a more immersive experience that might blurred between the boundaries of reality and

virtual simulation. Hence, this project not only develops a playable game demo but also serves as a case study to analyse how immersive design elements influence cognition, perception, and the ability to distinguish between real and virtual stimuli.

1.1.1 Game Objectives

In *Rempit in the Night*, players take on the roles of Ahmad, Ming and Harun, setting off on a journey that is both terrifying and comical, inspired by Malaysian folklore. The main objective of the game is to rescue Ahmad's friends after a midnight accident that leads them into an abandoned school haunted by supernatural creatures. Along the way, players must find a way to survive encounters with the Pocong, Orang Minyak and Santu Sakai, each of these creatures presenting unique challenges tied to local myth. The gameplay relies on puzzle-solving mechanics, including lockpicking and overcoming obstacles and attacks from the enemies, while maintaining immersion through a dialogue-driven narrative. The game design focuses on exploration, survival and uncovering secrets, with Ahmad's Insane Perspective mechanic further deepening the sense of psychological horror through distorted visions. Finally, the game aims to balance fear with humour, creating a horror-comedy experience with a distinct Malaysian flavour.

1.1.2 Game Scope

The game is set in a fictional place call Bukit Tinggi during the 2000s, with the abandoned school in the forest serving as the central setting. The narrative is structured into three Acts, each dominated by one of the friends, while allowing character switching to highlight their unique abilities. Ahmad can enter the *Insane View* and consume pills to return to normal; Ming specializes in projectile combat using matches and later enhanced the attack by implementing Black Oil, while Haran has ability of charge attacks and become a defensive barrier against the enemies. The game also features a shared inventory system, puzzle-

solving accessible to all characters, and escalating enemy encounters across different building levels, where Pocong in Act 1, Orang Minyak in Act 2, and Santu Sakai as the final boss in Act 3. The art style of the game blends Junji Ito's horror manga for environments and enemies design with Lat's Kampung Boy for characters design, reinforcing its dual tone of horror and comedy. With its multicultural characters, folklore-inspired enemies, and chapter-based progression, *Rempit in the Night* presents a distinctive narrative-driven survival horror adventure rooted in Malaysian cultural identity.

1.2 Background of the Study

Throughout many decades, video games had been evolved simultaneously together with the computer technology. From a bunch of simple pixels that performing text graphics to 3D visual graphics that creating lifelike virtual world, from using mouse and keyboard to interact with the computer to using Virtual Reality (VR) technology to interact with the game space with real-life sensory inputs. Many game developers tend to implement various elements that could improve players in experiencing the game immersion during the game development process. Major elements that used are such as the graphics, audio, and haptics had been innovated, modified, and experimented to find out the best design that could create more immersive and engaging gaming experiences. As the results, these became a standard for the player to choose from different types of game despite of their visual graphics, audio design and the ways of game control. This progression encompasses not only how players interact between the real world and the game world, but also how they perceive the game world to achieve an immersive experience.

Many researchers had proven that immersive gaming improved cognitive performances in which individuals have significant improvements of attention, memory, and problem-solving skills. According to Sousa et al. (2021), Active Virtual Reality (AVR) showed a higher sensory and imaginative immersion, challenge, and positive outcomes compared to Sedentary Virtual Reality (SVR), where the participants scored higher marks in recognition memory test for AVR

than the SVR, in which immersive gaming potentially to improve cognitive health. In addition, immersive gaming using VR also works for cognitive training in medical areas. For example, Liu et al. (2023) proved that cognitive functional training using VR improved overall cognitive ability such as verbal memory, attention, spatial orientation, and daily living ability towards post-stroke elderly patients more than using traditional cognitive training, while also increasing patients' engagement in the training process.

However, as video games become a way for individuals to escape from reality, it is concerned that immersive gaming may also impact individual perceptions in which distort their senses of time, space, and sensory awareness. For instance, according to research done by Ida et al. (2021), individuals found to have a misperception of the sizes of the virtual object when trying to avoid it by lifting their legs during the postural adjustment experiment. This demonstrated that the virtual environment able to distort individuals not only the visual perception, but also their spatial awareness when predicting the objects or environments when they are inside the virtual world. As current gaming technology still yet unable to provide players actual sensory experiences, in which the factors such as latency between the visual, audio, and haptic feedback from virtual world to the devices and the level of realism of the game environment, players' perceptions may have mismatched with reality when they are within virtual simulation.

In summary, it is confirmed that many studies had proven that immersive gaming gave positive outcomes which help in building and improving the cognitive function of the individuals in terms of attention training, multi-tasking, and memory training. However, some studies reviewed the side effects of immersive gaming, primary the perceptual distortions that blurred boundaries between the reality and virtual stimuli. This created a gap in understanding how game immersion able to improve players' cognitive function but also induce their perception abilities. Therefore, this study aims to address this gap by examining the cognitive benefits and perceptual impacts of immersive gaming, with a particular focus on whether immersion in games could affects players' ability to differentiate between virtual and real-world stimuli.

1.3 Problem Statement

Video game immersion had been widely studied for its benefits in cognitive learning and perceptual training. Primary, many scholars had highlighted that immersive gaming has potential as a tool for education, medical purposes and skills development, with evidence that showed improvements in attention, memory and problem-solving. However, there were fewer research examined on its implication on players' perception, particularly the risk of blurring boundaries between reality and virtual stimuli. Such perceptual distortions may manifest as abnormalities in the perception of time, misinterpretation in spatial judgment, or sensory misalignment. This raised the concerns about how deeply immersive environments can influence player's ability to distinguish between real and simulated experiences.

Furthermore, emerging technologies such as VR that integrated the physical inputs into virtual spaces, further emphasized these perceptual challenges with multiple sensory engagements. By engaging multiple senses simultaneously, VR allows players to experience realistic simulations within the game world in which lead them deeply immerse into the game world. However, it also increases the likelihood of altered cognition and perception. For example, when players establish illusory emotional bonds with in-game characters, they formed a parasocial relationship with that character. Parasocial relationships, in which is a person has one-sided emotional attachment to another that only existed in their mind, whether they are real or fictional entities (*Parasocial Relationships*, 2025). This phenomenon can link to game immersion, illustrated such immersion can extend beyond gameplay into psychological and social domains where reshape not only cognitive processes but also social and emotional realities.

Besides of the academic research, social media and public opinion often link violent or aggressive behaviour with the video games. There are many reports of crimes involving teenagers which have raised questions about whether prolonged gaming contributes to blurred reality boundaries. For instance, in Malaysia, the Bandar Utama school stabbing happened in 2025, where the

suspect using terms that related with online gaming such as “Non-playable Character” (NPC) and “Zero Day” prompting people to take a closer look at the role of games in the suspect’s way of thinking, citing concerns that violent gameplay could desensitize children to aggression (Camoens, 2025; The Vibes, 2025). Internationally, violent video games are frequently blamed for school shootings in the United States, with public figures suggesting links between gaming and mass violence. For instance, the U.S. Health and Human Services Secretary, Robert F. Kennedy Jr. mentioned that every 23 hours in U.S. has mass shootings happening and predicting this may possibly be due to psychiatric drugs, video games, or social media (Mordowanec, 2025).

Similarly, tragic incidents such as a 13-year-old boy’s unintentional suicide in Haimen, Jiangsu in China allegedly influenced by PUBG, which the mothers of the victim believing and blaming this accident happened due to obsession with the game, causing her son to jump from the building; the police also suspected that the boy’s action may possibly being influenced by PUBG (Fun, 2020). In addition, another report of a 17-year-old young Indian boy taking his life after being restricted from gaming by his mother, as well another 16-year-old young Indian boy stabbed his own brother to death for scolding him playing PUBG (Pundir, 2024). All these real-life cases underscore the concerns about gaming addiction as a disorder of altered cognition.

These examples demonstrate that immersion’s dual effects, which are cognitive enhancement and perceptual distortion, where they are not merely theoretical but have real-world implications. While research confirms the benefits of immersive gaming, the risks of blurred reality boundaries, parasocial attachments, and potential behavioural consequences remain underexplored. This study therefore aims to address this gap by analysing whether game immersion simultaneously improves cognition and distorts perception, and whether such distortions influence players’ ability to distinguish between reality and virtuality.

1.4 Research Objectives

O1: To examine how different levels of game immersion influence players' cognitive functions (attention, memory, decision-making) and perceptual experiences (time perception, spatial awareness, sensory adaptation).

O2: To evaluate whether immersive gaming environments provide cognitive benefits while also posing perceptual challenges, particularly in players' ability to distinguish between virtual stimuli and real-world inputs.

1.5 Research Questions

RQ1: How different levels of game immersion can influence players' cognitive processes (e.g.: attention, memory) and perceptual experiences (e.g.: time distortion, spatial awareness)?

RQ2: Are high-immersion games more likely to improve cognitive skills while also cause perceptual distortions compared to low-immersion games?

RQ3: Does immersive gaming influence players' ability in distinguishing reality and virtual stimuli?

1.6 Hypotheses

In order to prove the research objectives and the research questions, a set of hypotheses are presented based on the targeted theories, which are Flow Theory, Presence Theory, Media Equation Theory, and Cognitive Load Theory, which suggest that immersive experiences can simultaneously enhance cognitive engagement and alter perceptual boundaries. These theories will be tested through quantitative survey analysis to examine whether game immersion able to create cognitive benefits and perceptual distortions among the players.

- **H1:** If players experience higher levels of game immersion, then they will show improvement in cognitive functions compared to lower levels of game immersion.

- **H2:** If players experience higher levels of game immersion, then they will show increased perceptual distortions compared to low levels of game immersion.
- **H3:** If players experience higher levels of game immersion, then they are more likely to have difficulty on distinguishing between reality and virtual stimuli, leading to perceptual distortion.
- **H4:** If players differ in demographics or games differ in design factor, then they will moderate the relationship between game immersion and perceptual distortion.

1.7 Significant of the Research

The importance of this study is that it gives both academic and practical value in psychology, education, and game design. By looking into how game immersion can bring positive effects to the players in terms of cognitive skills but also cause perceptual distortion, this research fills a gap in past studies and also responds to society's worries about immersive technology in daily life.

1.7.1 Academic Contribution

This study improves theoretical understanding by implementing the perspectives from cognitive psychology, media studies, and human-computer interaction. Although previous research has proved that immersive gaming can enhance players' attention, memory, and problem-solving skills, there are fewer studies had proved its perceptual consequences, such as time distortion, spatial misjudgement, and blurred reality boundaries (Ida et al., 2021). By analysing both cognitive benefits and perceptual risks, this research able to adds to a more balanced framework for understanding immersion and provides insights that extend beyond single-domain studies.

1.7.2 Practical Implications

The results of this research can be useful for game developers, educators, and even healthcare professionals. For game developers, understanding how game immersion can affect players' cognition and perception able to help them design games that are entertaining but also prevent them to have perceptual distortions. For educators, immersive games can be used as tools for cognitive learning and skill development, but they also must be careful about its risks. Lastly, for healthcare professionals, VR can be used for therapy or cognition training, but they also need to think about its benefits and potential perceptual distortions that might affect the patients.

1.7.3 Societal Relevance

This study also connects to social media and public debates where they link gaming to violent or aggressive behaviour, where they portray immersive games are one of the factors or being the main factor in crimes or tragedies like school shooting or suicides due to influence by prolonged gaming sessions. By testing if game immersion really blurs the reality, this research gives evidence that can help policymakers, parents, and society to understand the issue better. Where this can move away the stories or predictions in the media and provide actual data about how game immersion affects players psychologically and socially.

1.7.4 Future Research Pathways

Finally, this study is just the groundwork for future research. Although currently the research focuses on young adult participants, including the teenagers within a short period of time, but the findings can be expanded in the future to bigger groups, different cultures, and new platforms like VR or AR. Since immersive technology continuously growing fast, such research can look into the long-term effects of game immersion and compare across different regions.

1.8 Scope and Limitation

The scope of this study focusses on the dual effects of game immersion on cognition and reality perception. To be more specific, the research investigates how immersive games can influence players' attention, memory, decision-making, and perceptual experiences such as time distortion, spatial awareness, and sensory adaptation. In order to obtain the required data for the analysis, a survey was created and published to obtain the data primary from young adult participants within a university context, while also targeting teenagers within high school context, which in order to get a clearer and more diverse conclusions. These groups of participants were chosen due to they play games more often and are easy to reach within the limited time.

1.8.1 Scope of the Study

- **Participants:** Mostly university students aged 18–25, since they are active gamers and still developing in terms of perception and identity.
- **Gaming Context:** The demo game *Rempit in the Night* is used as a case study. It focuses on features like dual visual perspectives and haptic feedback to represent immersion.
- **Variables:** The research focuses on two main areas — cognitive functions (attention, memory, decision-making) and perceptual experiences (time distortion, spatial awareness, sensory mismatch).
- **Methodology:** Data is collected through the surveys, with a few of open-ended questions at the end to able to collect quantitative data relating to immersion's effectiveness and obtain qualitative insights from the participants.

1.8.2 Limitations of the Study

- **Sample Size and Diversity:** The study is limited to approximately 20 – 40 participants, most of them are teenagers or young adults, which this small size makes the research hard to generalize to all gamers. This also may cause cultural and educational bias as they

unable to reflect broader populations such as teenagers or older adults.

- **Short-Term Exposure:** The findings are based on participants' reported experiences rather than long-term observation. Prolonged gaming sessions or chronic exposure to immersive gaming may give different results that are not captured in this study.
- **Self-Reported Data:** The open-end questions in the survey rely on subjective responses from the participants. This can create bias in terms of precision of measuring cognitive and perceptual changes.
- **Technological Constraints:** While VR and AR technologies can provide advanced forms of immersion, this study primarily uses traditional gaming environments that feature immersive mechanics such as haptic feedback, so the results may not cover with the advanced technology.
- **Cultural Context:** The study is conducted in Malaysia, as well as mostly in university context. Hence, the cultural factors may influence how players perceive game immersion. Results may differ in other cultural or societal contexts.

1.8.3 Implications of Scope and Limitation

Even with these limitations, the study is still able to provide valuable insights into the dual effects of immersion, offering a foundation for future research. By stating the scope clearly, the research stays focused and doable within two semesters (7-week of short semester and 14-week of long semester). Mentioning its limitations also shows awareness of potential bias and gives a space for improvement in the future.

2.0 LITERATURE REVIEW

The purpose of this literature review is to indicate what has been studied so far on game immersion, cognition and reality perception and to explain why this study is required. Much of the previous work focuses on the positive side of immersion, such as the effect of games on focus, memory and decision-making. At the same time, there are fewer studies about the negative side such as players lose track of time, feel confused about the space, or mix the game events with real life. The chapter attempts to present a more balanced view of immersion by considering both the benefits and the dangers.

This part of the thesis also presents the main theories that guide the study, which also closely related to the research questions and the hypotheses, which are **Flow Theory**, **Presence Theory**, **Media Equation Theory** and **Cognitive Load Theory**. These theories able to explain why immersion can lead to improvement of cognitive abilities, but also why it can cause perceptual distortions.

Finally, this literature review also points out the gaps in the previous studies. Most of the research only focuses on the benefits, and very few combine cognition and perception together. There is also limited work done in Malaysia or Southeast Asia, making this study more relevant. This chapter highlights these gaps and shows the importance of current research and how it can provide added value to both academic and practical discussions around immersive gaming.

2.1 Theoretical Framework

This chapter is to explain the theories that guide the study, which to show how game immersion can bring both positive and negative effects in terms of improving cognition but also blurring reality. In other words, game immersion is not only about having fun or engaging into the game world, but also about how players think, remember, and even perceive the world around them.

Game immersion has been studied from different perspectives to understand its benefits and consequences. Much past research often focuses on understand its benefits, such as better attention, stronger memory, and faster

decision-making. At the same time, fewer studies look into its risks, like time distortions, feeling disoriented in space, or being blurred the boundaries between real life and in-game environment. This study tries to balance both sides by using theories that explain why immersion can help cognition but also cause perceptual distortions.

There are four main theories had been chosen for the research, which are **Flow Theory**, **Presence Theory**, **Media Equation Theory**, and **Cognitive Load Theory**, which they are directly connect to the research questions and hypotheses. Flow and Presence explain how immersion works and why players feel absorbed. Media Equation explains why players sometimes treat game characters or events as real. Cognitive Load explains why age, experience, and design factors change how immersion affects people.

By combining these theories, the framework shows that immersion is a complex experience. It can make players sharper in thinking but also blur the line between reality and virtuality. This dual effect is the core of the study and will be tested through surveys that measure both cognitive functions and perceptual experiences.

2.1.1 Flow Theory (Csikszentmihalyi, 1990)

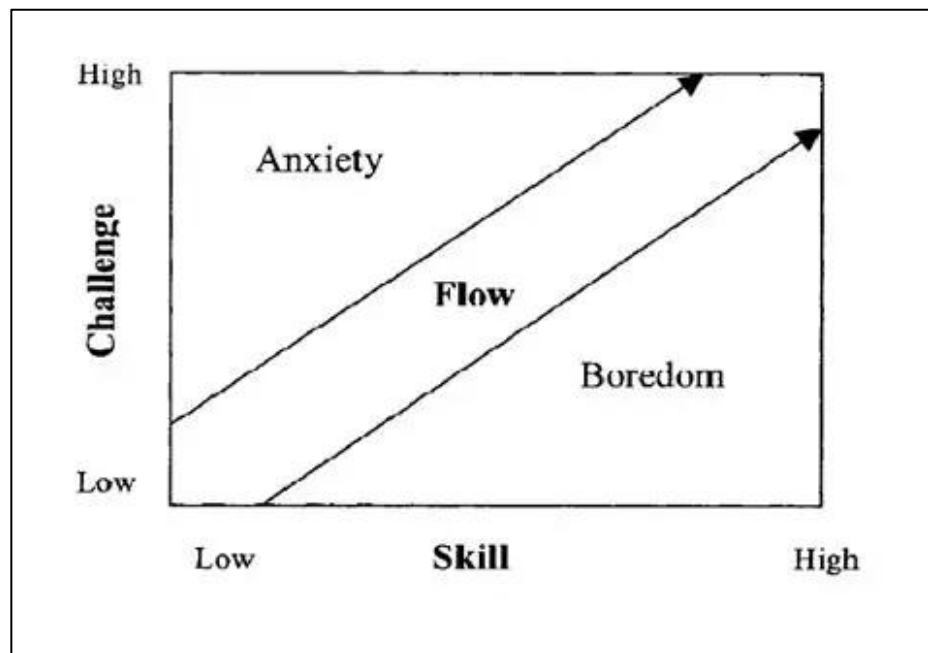


Figure 2.1 Flow Theory Diagram

Flow theory is a description of the state of mind of being fully engaged in a task in which the challenge level and skill level are matched. This concept was first introduced by Csikszentmihalyi in the 1970s and later developed by him in his own book: *Flow: The Psychology of Optimal Experience (1990)*. In the game contexts, this state often leads players to have better focus, better memory, and faster decision-making, while they also lose their sense of time, as their attention is completely focused on the game.

Much research shows that video games have effectiveness in producing flow. Flow has been linked to attention control, reward processing, and automaticity in gameplay (Khoshnoud et al., 2020). Besides, Sharek and Wiebe (2011) also showed that flow conditions can be reliably created by manipulating challenge and skill in game design, leading to better engagement and decision-making.

Applied to this study, flow can predict cognitive gains in *Rempit in the Night*. The survey's question "*I can focus better when I am playing a game*" measure these benefits. The Flow theory also directly supports the **H1**, testing whether higher immersion enhances players' cognition abilities.

2.1.2 Presence Theory (Slate & Wilbur, 1997)

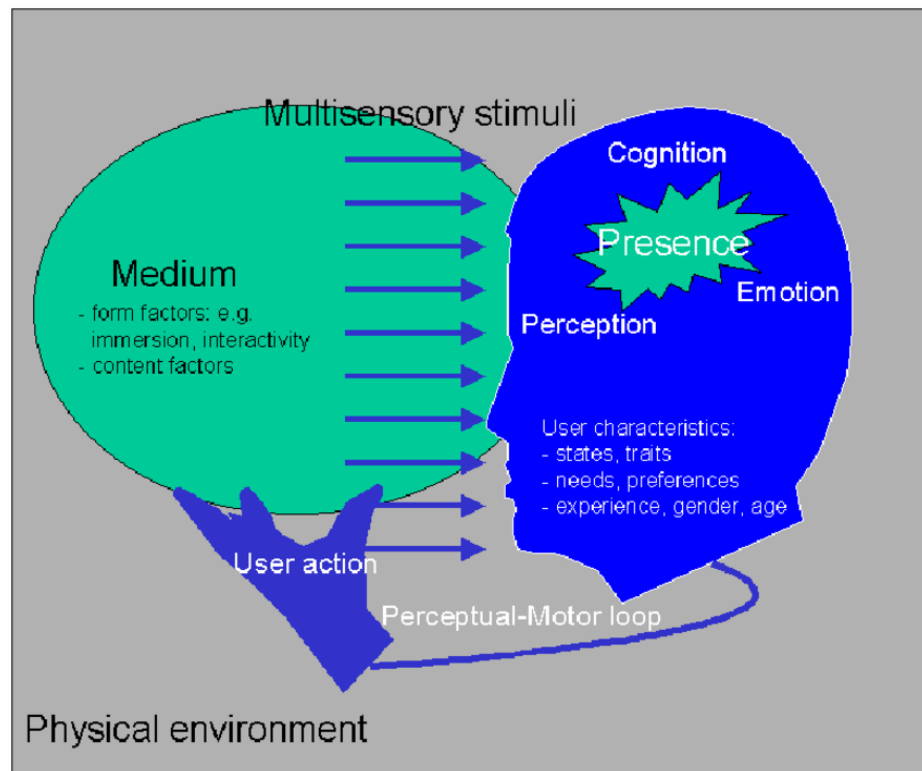


Figure 2.2 Presence Theory Diagram

Presence theory describes the feeling of “being there” inside a virtual or game world. It occurs when sensory inputs such as visuals, sounds, and haptics are match closely with reality. Presence is considered a state of consciousness where players feel physically located inside the virtual environment. Slater and Wilbur’s framework for immersive virtual environments (FIVE) explains that presence depends on how inclusive, vivid, and surrounding the display system is.

Presence theory is academically important as it relates with perceptual distortions. Much research shows that players often misjudge distances, lose track of time, or feel sensory mismatch after prolonged play. For instance, Ida et al. (2021) found that participants that wearing VR misjudged the object sizes and spatial awareness in the simulated environment. These distortions highlight the risks of immersion beyond enjoyment.

In this study, Presence theory supports **H2**. Survey’s question “*I often lose track of time when I am playing*” measure the perceptual

distortions. It also helps to explain why immersion increases time misperception, spatial distortions, and sensory mismatch in *Rempit in the Night*.

2.1.3 Media Equation Theory (Reeves & Nass, 1996)

Media Equation theory states that people will treat media like computers, televisions, or any virtual stimuli as like they are actual human or real things to them. In video games especially, players might get really attached to characters emotionally, or act like those non player characters are just regular person they know. Sometimes it even spills over, where someone starts thinking about real situations using rules from the game. This explains why immersion can blur the line between reality and virtual simulations.

Reeves and Nass (1996) ran through multiple experiments, showing that humans respond socially to computers and media, where they will show politeness, empathy, and even gender bias toward digital voices. Their book *The Media Equation* provides evidence that players' brains react to virtual stimuli as if they were real people or places.

In this study, Media Equation theory supports **H3**. Survey question like "*I feel emotionally close to certain game characters*" measure the boundaries between reality and virtual simulation. This theory also helps test whether immersion makes players more likely to be confused in gaming with real life, especially in narrative-heavy games like *Rempit in the Night*.

2.1.4 Cognitive Load Theory (Sweller, 1988)

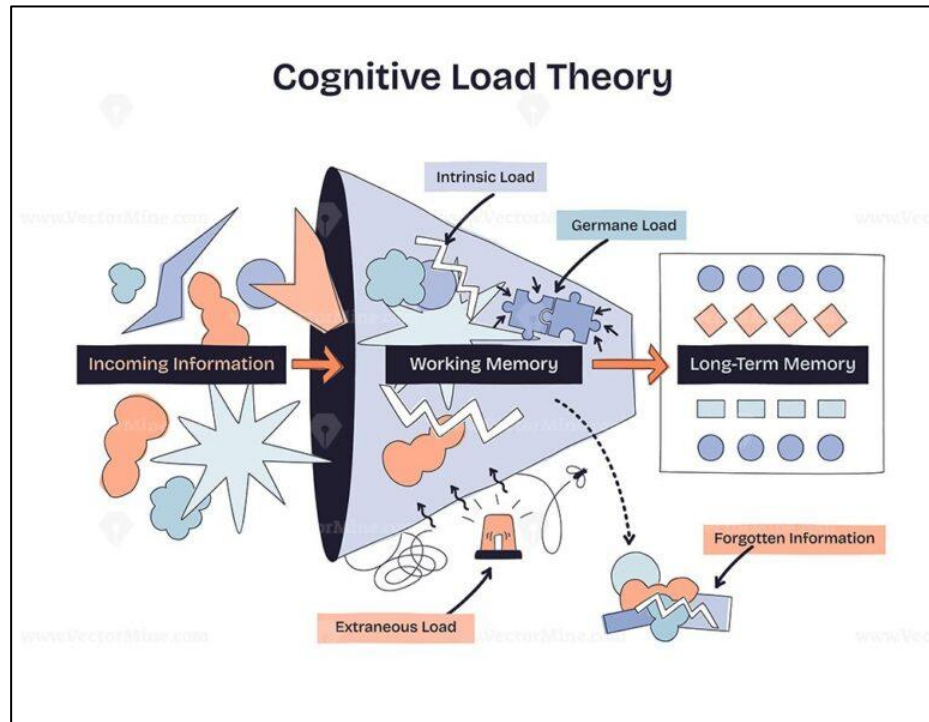


Figure 2.3 Cognitive Load Theory Diagram

Cognitive Load Theory (CLT) explains about how much mental effort a person can handle. According to Sweller (1988), there were three types of loads, which are intrinsic (task complexity), extraneous (distractions), and germane (learning effort). His later book *Cognitive Load Theory (2011)* expanded this framework to multimedia learning and game design.

In gaming, CLT explains why immersion affects players differently. Experienced gamers may manage their cognitive load effectively, while beginners may struggle due to overload. Besides, game design factors such as visuals, haptics, and UI also influence the immersion whether enhances players' cognition or distorts their perception. For instance, an experiment conducted by Liu et al. (2023) showed VR games can reduce cognitive deficits in elderly players by optimizing load, proving its relevance to immersion studies.

Applied to this study, CLT supports **H4**. Demographic data like age, gaming frequency, and genre preference inside the survey measure moderating factors. CLT explains why immersion effects vary depending

on who the player is and how the game is designed, especially in *Rempit in the Night* with its dual visual perspectives and haptic feedback.

2.1.5 Integration of Theories

Together, these four theories form the foundation of the study. Flow and Presence theories explain the dual effects of immersion in terms of cognitive benefits and perceptual distortions. Media Equation theory explains blurred reality boundaries. While Cognitive Load theory explains why these effects differ across players and designs.

This integration shows immersion is complex, where it can sharpen cognition but also distort perception. By combining these theories, the study builds a balanced framework that connects directly to the hypotheses and survey design, positioning *Rempit in the Night* as a case study for testing immersion's dual effects.

2.2 Review of Key Studies

The review of key studies highlights how previous research has examined immersion's effects on cognition and perception. By organizing studies under the four guiding theories, **Flow Theory**, **Presence Theory**, **Media Equation Theory**, and **Cognitive Load Theory**. This section reveals consistent evidence of cognitive enhancements alongside with the perceptual risks, while it also highlights the methodological gaps like limited to Malaysian samples and lack of integrated dual-effect analyses. These gaps are directly addressed through our game *Rempit in the Night*.

2.2.1 Flow Theory Studies

There are several empirical studies confirm that immersion able to enhance cognition through flow, particularly in attention and memory, which aligned with **RQ1**. For example, Sousa et al. (2021) conducted a

controlled experiment where tested VR puzzle games with sedentary college students and found that their recognition memory and orientation skills have significant improvement. Meanwhile, Khoshnoud et al. (2020) reviewed neuroimaging studies, identifying the physiological markers of flow like reduced prefrontal cortex activity and EEG theta waves during gaming session, which it enhanced attention control and automatic decision-making, showing that the flow links to attention control and reward processing.

Furthermore, Sharek and Wiebe (2011) manipulated challenge and skill in experimental games, this experiment had proven that flow conditions increase engagement and decision-making by 25-30% compared to non-flow conditions. These studies also note perceptual side effects, such as time distortion. Nakamura and Csikszentmihalyi (2002) classically described flow's "timelessness," later validated in VR by Weibel and Wissmath (2011), where players underestimated session duration by up to 40%.

Applied to *Rempit in the Night*, flow from narrative-driven survival, where rescuing friends while avoiding folktale creatures, likely sharpen players' cognition (**H1**) but risks temporarily blurring. This duality justifies the survey measures on attention and time perception in the methodology. Especially for Malaysian players who may experience narrative immersion that culturally specific.

2.2.2 Presence Theory Studies

Some empirical studies had highlighted that perceptual distortions can be affected by presence, which lies with **RQ3** regarding the blurring of boundaries between reality and virtual world. Slater and Wilbur (1997) introduced the FIVE frameworks, where it defined that immersion as the sensory fidelity that evokes a sense of "being there"; this theory has been empirically validated through post-experience questionnaires, with the results that shows how vivid 3D cues can increase immersion scores by 35%. Besides, Ida et al. (2021) conducted

an experiment regarding VR alters activities of postural muscles during obstacle avoidance, participants found to have a misperception of the sizes and the distance of the virtual object by 15-20% when trying to avoid it by lifting their legs during the postural adjustment experiment, proving that immersion can distort players' perception.

Furthermore, Witmer and Singer (1998) conducted a Presence questionnaire to measure the presence in virtual environments; this questionnaire further quantified time loss and environmental transport, with a 50% of greater disorientation reported by high-presence gamers. Meanwhile, Cummings and Bailenson (2016) conducted a meta-analysis of 36 studies, confirming that presence correlates with sensory mismatches ($r=0.42$), including auditory hallucinations after post-VR experiences.

In *Rempit in the Night*, presence is expanded by haptic feedback from gamepad and Malaysian folklore-inspired visuals. The game's dual perspective, which is the combination of 3D exploration and 2D emotional shifts may heighten perceptual distortions, especially for local players that familiar with relevant cultural elements. This establishes immersion as the core driving force of **H2**, demonstrating that in culturally rooted horror immersion experiences, the boundaries between time and space become blurred.

2.2.3 Media Equation Theory Studies

Empirical studies on the Media Equation consistently show that players will treat digital environments and the characters as they were real to them, which can see how immersion fosters social realism that blurred real-virtual boundaries per **RQ3**. Reeves and Nass (1996) foundational experiments showed users exhibit politeness and empathy toward media voices, with 70% bias mirroring real interactions. Meanwhile, Klimmt et al. (2010) extended this to the games, finding out that the players form parasocial bonds with the avatars akin to celebrities,

which evidenced by emotional investment surveys ($r=0.55$ for attachment strength).

Furthermore, Hartmann and Goldhoorn (2011) induced a real empathic response in participants by placing fictional NPC in distressing situations, shows with a result of 20% increase in their skin conductance; this response persisted even after the experimental briefing had concluded. In addition, recent research on MMORPGs suggested that virtual characters serve as extensions of players' identities, and the players will attribute anthropomorphic traits to these virtual characters.

For *Rempit in the Night*, the narrative of Ahmad forges a strong bond with his friends Ming and Haran amidst a sense of dread, which this foreshadow **H3**. This can show how pseudo-social relationships intensify confusion about reality, for example, players will perceive in-game threats as genuine dangers, particularly within the context of Malaysia's collectivist culture, where a point that has not yet been fully explored in this research.

2.2.4 Cognitive Load Theory Studies

Numerous research on CLT have explained why immersive experiences have varying effects depending on players' age, experience, and design, thereby explaining the differences in the dual effects observed in **RQ2**. Sweller (1988) noted that short-term memory has severe limitations and the cognitive overload during problem-solving can slow down the schema acquisition and learning. In his later book *Cognitive Load Theory (2011)* extended these principles to multimedia environments, emphasizing that effective design must reduce the irrelevant load while promoting relevant load to help deeper learning ("*Cognitive Load Theory*", n.d.).

In the gaming contexts, CLT has been used to explain how design features able to influence cognitive outcomes. Paas and Sweller (2012) extended to the fields of collaborative and multimedia learning, where it noted that instructional designs able to minimize irrelevant cognitive

load to help enhancing the learning outcomes especially working on complex tasks. Furthermore, Liu et al. (2023) conducted a VR puzzle game for post-stroke elderly patients, where this experiment proved that VR training improved about 18% in memory and attention when cognitive load was optimized; meanwhile, it was suggested that younger people can handle the immersion better than elderly people. In addition, Plass and Kalyuga (2019) explained that the emotion can influence cognitive load in different ways, for example like competing with working memory resources and affecting motivation, which it is relevant to how game design may shape learning and engagement.

All these studies confirmed that the effects of immersion are not fixed but are influenced by player characteristics and the design choices. When applying CLT theory into *Rempit in the Night*, the theory predicts the **H4**, in which the game's haptic feedback and dual-perspective visuals, are able to benefit those skilled younger players by enhancing their relevant cognitive load, however, it could also overwhelm novice or older players by generating irrelevant load. This makes the demographic analysis crucial, where players are exposed to variety of gaming conditions based on their age and gender, as well as if they are in different locations and familiarity with local folklore, By applying CLT within this context, this study addresses a gap in global research that has rarely been focused on the diversity of Southeast Asian players, and explores in depth how cultural design elements interact with cognitive load to shape the immersive experiences.

2.2.5 Summary of Key Studies

In summary, the reviewed studies confirmed that the dual nature of immersion, where the flow and presence both not only provide long lasting cognitive benefits such as quantifiable improvements in memory, attention and problem solving, but also give the negative effects like perceptual distortions, including illusions of time, errors in spatial judgment and sensory mismatch. Research on the Media Equation

Theory highlighted how immersion able to foster parasocial relationships and blurs the boundaries between reality and virtuality, leading players to perceive simulation and NPC as a part of their social reality. Besides, Cognitive Load Theory explained why these effects vary according to players' demographics, prior experiences and design factors, suggesting that optimised cognitive load can enhances players' cognitive performance, while may also lead to perceived risk if overloaded.

Although the evidence base is solid, several limitations remain. Firstly, most of the studies focused on either cognition or perception alone, which they are rarely examining both within a unified framework. This isolated research approach leaves unsolved questions regarding how cognitive enhancement and perceptual distortion interact during prolonged immersion. Secondly, the existing literature is heavily focused on Western region, where over 80% of empirical samples originate from North America and Europe regions. This raises concerns regarding the cultural bias, as the Southeast Asian region practicing collectivist values, folklore narratives and distinct gaming remained understudied. Thirdly, although narrative-driven horror elements or culturally specific design features may amplify the effects at the cognitive and perceptual levels, few studies have incorporated these elements into research on immersion.

Therefore, this thesis will address these gaps by applying all four theories to *Rempit in the Night*, a Malaysian horror game inspired by local folktales and designed with dual visual perspectives. In addition, this study also provides new evidence to the broader research field on game immersion by examining both cognitive and perceptual effects within a single integrated framework and focusing on non-Western cultural context. In this way, this study not only deepens our understanding of the effects of game immersion but also provides practical guidance for designers to develop immersive games that capable to resonate more deeply and meaningfully with different audiences.

2.3 Research Gaps

Although much research in the past has provided strong evidence that immersive experiences can enhance both cognitive abilities and distort perception, there have still remained several gaps in the existing literature which this study aims to address them. These gaps are both conceptual and methodological in nature, highlighting the timeliness and necessity of conducting research in Malaysia that focuses on narrative-driven horror games.

Firstly, most of the existing studies researched either the cognitive outcomes such as attention, memory and decision-making or perceptual outcomes like time distortion, spatial misjudgement and prosocial relationships in isolation. While this separation has provided valuable insights, it has failed to address how these two aspects interact during gameplay. For instance, many Flow Theory studies emphasize the enhancement of cognitive acuity while Presence Theory studies focus on perceptual disorientation, few studies have integrated these findings to reveal how cognitive benefits coexist with perceptual risks. By integrating theories of Flow, Presence, Media Equation and Cognitive Load into a single framework, this study constructs a holistic model capable of capturing and simultaneously testing the dual effects of immersion.

Secondly, most of the existing studies shows a significant bias where majority of them are Western-centric, in which about more than 80% of empirical samples came from North America and Europe. This had led to cultural bias and overlooks the regional context particularly in Southeast Asians as their collectivist values, folklore narratives, and unique gaming practices may influence immersion in different ways. Furthermore, there were still remains a lack of research into horror games rooted in local narrative traditions such as *Rempit in the Night* that inspired by Malaysian folklore, despite their potential to enhance cognitive engagement and perceptual distortion.

Thirdly, a gap in methodology still exists. Many studies have relied on brief lab-based VR experiences or simplified task-based experiments, which cannot capture the narrative depth and emotional impact of story-driven games. This is particularly true for survival horror games, as they combine high cognitive demands like problem-solving and memory recall with amplified

perceptual risk such as fear and reality disorientation, but remain largely overlooked in research on immersion. Thus, this study fills this gap by placing immersion in the context of narrative-driven horror experiences and using questionnaires designed specifically for the gaming experience to measure both cognitive and perceptual outcomes.

Finally, the study of how demographic factors influence immersion in gaming remains underdeveloped. Although CLT research has highlighted differences between age groups and levels of experience, there were very few studies have systematically analysed how players' demographic characteristics, such as age, gaming frequency and cultural familiarity, may interact with cultural narratives to shape the immersive experience. In this study, by collecting both demographic data and immersion measurements simultaneously, factors such as age, gaming frequency and cultural familiarity were explored to determine how such variables able to influence both cognitive and perceptual effects.

In summary, this study will address several key gaps in the following ways:

- Integrating cognitive and perceptual factors into a unified framework.
- Applying immersion research to the Southeast Asian culture context.
- Extending theoretical principles to the narrative-driven horror gameplay, rather than the short-duration VR tasks.
- Verifying demographic moderation effects across a diverse sample from the Malaysian population.

Hence, this study not only able to provide the insight about the effects of game immersion but also offers practical guidelines for the game developers to design the immersive games that can resonate across different cultures and player demographics, where they can use this information to make the games meaningfully relevant to the audiences.

2.4 Hypotheses Development

As outlined in *Section 1.6 Hypotheses*, the hypotheses of this study are derived from four targeted theories, which are the Flow Theory, Presence Theory,

Media Equation Theory, and Cognitive Load Theory. Four of these theories collectively suggest that immersive experiences can simultaneously enhance cognitive engagement and alter perceptual boundaries. In that earlier section, the hypotheses were introduced in concise form to align with the research objectives and questions.

Building on this foundation, *Section 2.4 Hypotheses Development* will further develop each of the hypotheses by supporting it with a broader theoretical framework discussed previously together with the example of the game *Rempit in the Night*. Based on the literature reviewed completed in *Chapter 2.2* and the research gaps in *Chapter 2.3*, the hypotheses are refined to capture the cognitive benefits and perceptual distortions that result from game immersion. Besides, these hypotheses also take into account of the moderating effects of players' demographics and the cultural factors. Throughout this process, the hypotheses have evolved from an abstract statement into a verifiable prediction, which directly links with the theories, empirical evidence and the game design.

2.4.1 Flow and Cognitive Gains (H1)

Flow theory predicts that when challenge and skill are balanced, players experience heightened focus and improved cognitive performance. Prior studies show flow enhances attention, memory, and decision-making. In the game *Rempit in the Night*, players have to solve puzzles, overcome survival challenges and rescue friends while dealing with supernatural threats. These game mechanisms are specifically designed to induce a state of flow, enhancing cognitive abilities through focused engagement.

H1: If players experience higher levels of game immersion, then they will show improvement in cognitive functions compared to lower levels of game immersion.

This hypothesis directly linked with **RQ1**, testing whether the narrative-driven horror gameplay can produce measurable cognitive benefits.

2.4.2 Presence and Perceptual Distortions (H2)

Presence theory explains how lifelike sensory realism can create a sense of being real, which people might feel the simulation is as the same as reality, leading them to perceptual distortion. Much research reveals that high immersion is closely associated with time distortions, spatial distortion, and sensory mismatches. In the game *Rempit in the Night*, the game implemented dual visual effects mechanics, haptic feedback through the gamepad and elements of cultural horror such as the creatures from the Malaysian folktales like Orang Minyak and Santu Sakai are expected that they can enhance players' sense of immersiveness.

H2: If players experience higher levels of game immersion, then they will show increased perceptual distortions compared to low levels of game immersion.

This hypothesis is linked with **RQ3**, which to examine whether Malaysian horror aesthetics increase the perceptual risks compared to generic VR tasks.

2.4.3 Media Equation and Reality Blurring (H3)

Media Equation theory suggested that players perceive media as social reality, which they will form parasocial relationships with the game characters, and attribute the human-like characteristics to the virtual characters. In *Rempit in the Night*, the emotional bonds that the main protagonist, Ahmad, formed with his friends, Ming and Haran during the gameplay may give a strong sense of parasocial ties. Given the collectivist nature of Malaysian culture, these ties may become further reinforced, which then will blur the boundaries between the game and reality.

H3: If players experience higher levels of game immersion, then they are more likely to have difficulty on distinguishing between reality and virtual stimuli, leading to perceptual distortion.

This hypothesis extends **RQ3**, where it focuses on social identity and emotional realism within the narrative design that grounded with the context of local cultures.

2.4.4 Cognitive Load and Moderation Effects (H4)

CLT explains why different players may experience different levels of game immersion. A moderate cognitive load can enhance cognitive abilities, while if overloaded may lead to a sense of disorientation. Demographic factors such as age, gaming frequency and cultural familiarity will moderate these factors. In *Rempit in the Night*, the art styles choice by combining 2D characters and 3D environments together with implementation of dual visual perspective gameplay and haptic feedback for immersive narrative gameplay may be beneficial to the skilled younger players, but this could be overwhelming for those novice or older players.

H4: If players differ in demographics or games differ in design factor, then they will moderate the relationship between game immersion and perceptual distortion.

The hypothesis linked with **RQ2**, and it aims to test whether demographic diversity in Malaysia can influence the experience of game immersion.

2.4.5 Conceptual Model

Together, these hypotheses form an integrated model of immersion's dual effects:

- Flow (H1) will enhance the cognitive abilities.
- Presence (H2) will cause the perceptual distortion.
- Media Equation (H3) will increase the blurriness of reality boundaries.
- Cognitive Load (H4) will moderate both cognition and perception within the context of players' demographics.

This conceptual model adopts *Rempit in the Night* as a case study to examine the dual effects of immersion within the cultural context of Southeast Asia. The model provides an intuitive representation of immersion as a core concept, which cognitive and perceptual outcomes are derived. Meanwhile, the demographic variables act as moderators, influencing the strength of the effects along each pathway.

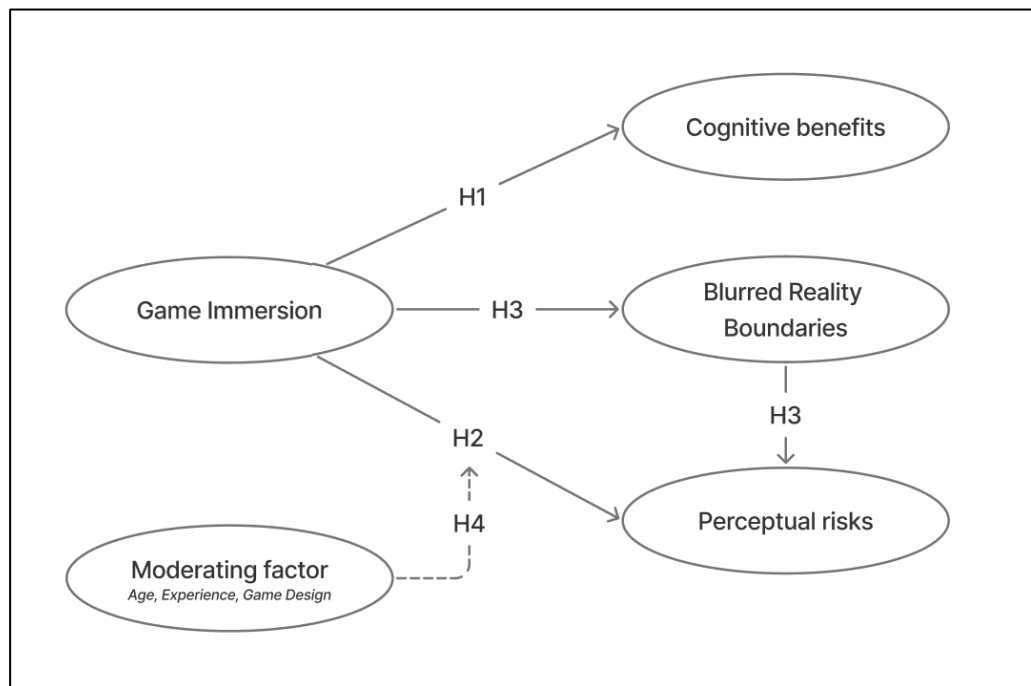


Figure 2.4 Hypotheses Framework for Game Immersion

3.0 SYSTEM SPECIFICATION & REQUIREMENTS

3.1 System Requirements

The game was developed on different devices, specifically on the laptop. The main laptop that used to test the game is MSI Sword 16 HX B13V, which the specifications are as shown below:

- **Processor** 13th Gen Intel Core i7-13700HX (2.10 GHz)
- **RAM** 16.0 GB
- **Graphics card** NVIDIA GeForce RTX 4060 Laptop GPU (8 GB)
- **Storage** 954 GB (Estimate 1TB)
- **System type** 64-bit operating system, x64-based processor

The game was able to run smoothly on this device. In addition, the game also has been optimized where the scene is separated into two major parts:

- **Persistent Scene:** All characters and game managers (Sound Manager, Level Manager, Input Manager, etc.) stored in this scene and always overlap on every game scene.
- **Game Scene:** Only load when players enter into the scene, Persistent scene always overlap on top of it.

Hence, the game was expected able to run on this minimum system requirements as shown below:

- **CPU:** Intel Core i5 Processor and above
- **Graphics Card:** NVIDIA GeForce GTX 1650 graphic cards and above with DirectX 11.0 and above.
- **OS:** Window 10 & Window 11
- **Free Disk Space Needed:** 2GB
- **RAM:** 4GB and above
- **Control:** Xbox Gamepad or any third-party gamepad that supports X-Input.

3.2 Design Structure of the Game

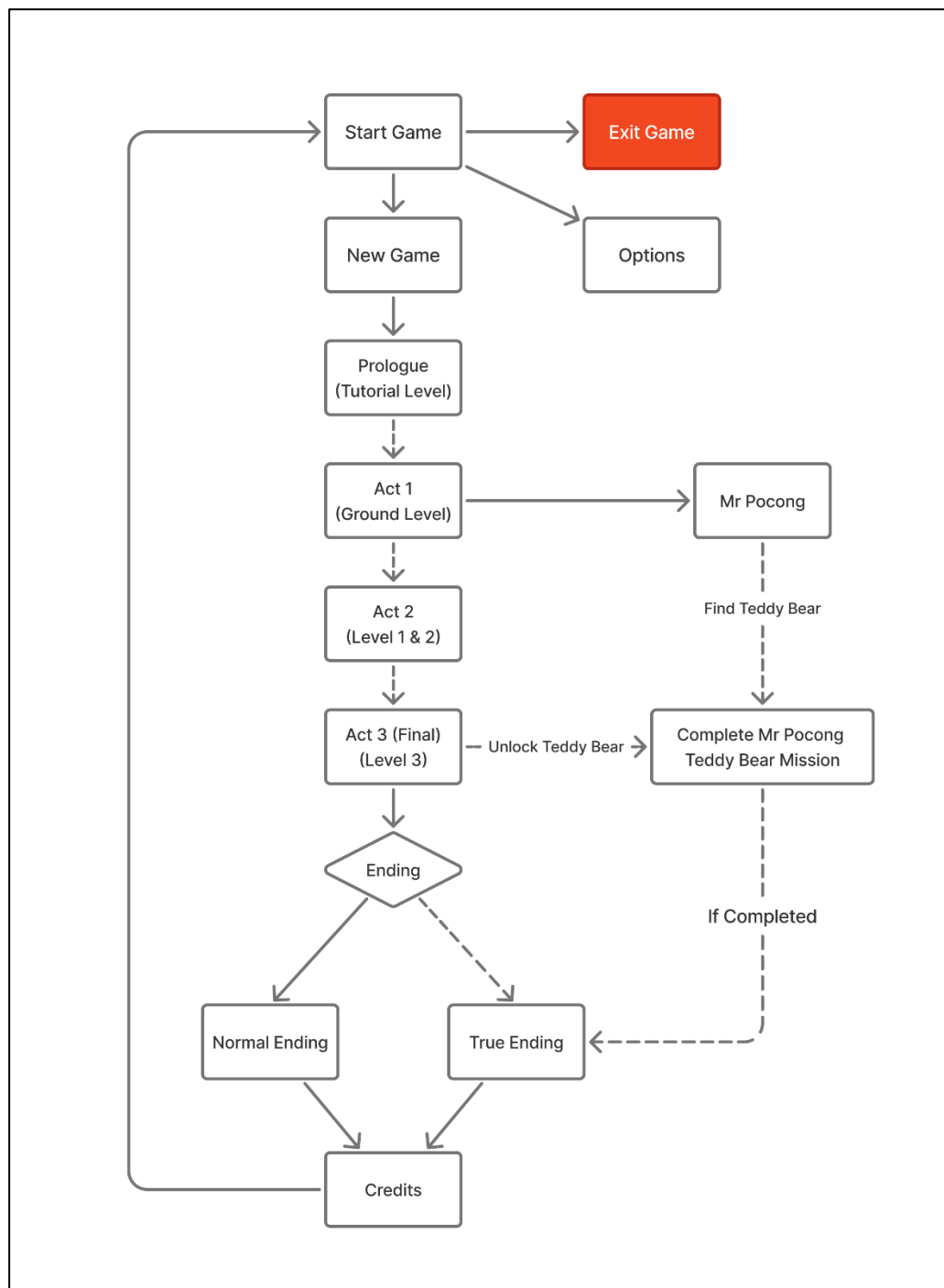


Diagram 3.1 *Rempit in the Night* Design Structure of Gameplay

3.3 Research Methodology

This section provides an overview of the research methodology framework used to investigate how the dual effects of game immersion affected on both cognition and perception of reality. Based on the hypotheses proposed in **Chapter 2**, this study designed a methodology using questionnaire which the survey is a mix of number-based and open-ended questions to get an understanding and to provide a comprehensive analysis. The questionnaire asked about attention, memory and how games can blur reality in a quantifiable format, while the open-ended questions served as interview format to let players share their thoughts on immersive experiences.

This research methodology was designed to ensure the study is aligned with the objectives and research questions, while also to fill the gaps in the existing studies. By combining questionnaire analysis with an exploration of player reflections, this study not only to test the theories of Flow, Presence, Media Equation, and Cognitive Load, but also to examine these findings within Malaysian cultural context of *Rempit in the Night*. This mix-methods approach helped to get results to prove the hypotheses and to understand player experiences.

Therefore, the following sections will provide a detailed overview of the study methodology, the research population and sampling, research instruments, data collection procedures, data analysis techniques, and the ethical considerations that guided this research.

3.3.1 Research Design

This study used a mixed-methods research approach, which it combined both quantitative survey analysis and qualitative insights gained from open-ended responses. The purpose of using this approach is to capture both the quantifiable effects of in-game immersion and the players' deeper personal experiences, allowing for a more comprehensive understanding of its dual impact on cognition and perception of reality.

The quantitative section uses a questionnaire format to test hypotheses mentioned in **Section 2.4** based on the theories of Flow, Immersion, the Media Equation, and Cognitive Load. This study used Likert-scale items to measure cognitive functions like attention, memory, and decision-making, perceptual distortions such as time illusion, spatial disorientation, and sensory mismatch and lastly the reality blurring. In addition, the demographic variables such as age, gaming frequency and cultural familiarity were included to examine moderating effects. This structured design enabled statistical testing of the relationship between immersion and its outcomes.

Meanwhile, the qualitative research section enhanced the questionnaire by including open-ended questions at the end. These questions were designed in an interview-style format, which use to encourage participants to reflect on their own immersive experiences, their perception of the boundaries between reality and the game, and how immersion affects their everyday life. Besides, these responses were analysed to provide a deeper understanding of how players interpret immersion beyond quantitative metrics, highlighting nuances such as emotional resonance, cultural narratives and the formation of identity.

Hence, this research has achieved three-way validation through the integration of quantitative and qualitative research methods, which it enhances the effectiveness and reliability of the findings. The quantitative data from the questionnaire questions able to help to reveal generally universal patterns of the players' experiences, while the qualitative feedback from the open-ended question provided in-depth insights and contextual information from player's personal reflection, particularly within the Malaysian cultural context. The combination of these two approaches helped this study to investigate how the immersive gaming experiences can deliver both cognitive benefits and perceptual distortions to the players while also revealing how cultural narratives and player demographics influence these effects.

3.3.2 Data Collection Methods

The data for this study was collected using a structured online survey distributed through **Google Forms** to the potential participants. This survey was designed into two sections:

- **Structured questionnaire section:** This front section consisted of closed-ended answers using Likert scales and demographic questions. It is used to measure the cognitive functions such as attention, memory, and decision-making, perceptual distortions like time misperception, spatial disorientation, and sensory mismatch, and lastly the reality blurring. Meanwhile, the demographic information such as age, gaming frequency, and cultural familiarity was also gathered at the beginning of the survey to examine the moderation effects.
- **Open-ended response section:** The final part of the survey included a several open-ended questions that worked as interview-style format. These questions encouraged participants to reflect on their personal experiences of their gaming immersion, their perceptions of reality boundaries, and how games feel real in everyday life. Example of questions are shown below:
 - *Describe a time when playing a game felt so real that it almost seemed like part of your actual life.*
 - *Describe how playing immersive games has affected your everyday life (e.g., thinking, emotions, interactions).*
 - *Explain what you see as the positive effects (benefits) and negative effects (drawbacks) of playing games that feel very immersive.*

These qualitative questions helped enhancing the quantitative data by providing a deeper insight into how players will interpret immersion beyond numerical measures, highlighting both cognitive benefits and perceptual risks in their own words.

The survey link was distributed via social media platforms and UTAR student networks especially within the same degree. This ensures the accessibility to a diverse group of participants from different background. The responses were collected in about one month in April 2026 and the participation was entirely voluntary.

Before beginning the survey, participants were presented with an informed consent statement, which this to ensure them that their responses would remain anonymous, confidential, and used solely for the academic purposes for this study. The participants can proceed to the questionnaire only after they agreed to the consent statement.

This way ensured that the data collection from the participants was efficient, accessible, and ethically sound, as well as able to capture both measurable outcomes and personal reflections that can be analysed for the research objectives and hypotheses of this research.

3.3.3 Sampling Techniques

This study applied **convenience sampling technique**, this is a method which is commonly used in exploratory research where accessibility and feasibility are prioritized. The participants were recruited primarily through online channels such as social media platforms like Facebook and Reddit, and UTAR student networks like students' groups in Discord, WhatsApp or UTAR Confession on Facebook. This approach ensured that the survey can reached to any individual who were actively engaged with digital games and relevant to the study's objectives.

The sampling frame targeted Malaysian gamers across different age groups, gaming frequencies, and cultural backgrounds, which these allow the study to capture variations in how immersion influences cognition and perception. By including demographic variables such as age, gaming experience, and cultural familiarity, the study was able to examine moderation effects as outlined in **H4**.

Although convenience sampling may not be able to guarantee as the full representation of the wider gaming population, however, it was appropriate for this study as it has advantages in reaching participants quickly and efficiently within a short period. Furthermore, the combination of both quantitative and qualitative data also helped to strengthen the reliability of the findings by providing triangulation between both statistical patterns and personal reflections from the participants.

The final sample size consisted of **20 responses**, which this number was neither too small to allow for statistical analysis nor so large as to provide an abundance of qualitative insights.

3.3.4 Data Analysis Methods

The data collected in this study was analysed using both **quantitative percentage-based analysis** and **qualitative thematic analysis**, which to reflect the mixed-methods design outlined in **Section 3.1**. This dual approach ensured that the hypotheses could be tested rigorously while also able to capture the richness of participants' personal reflections.

3.3.4.1 Quantitative Analysis

- The responses from the structured questionnaire were summarized using **frequencies and percentages** rather than complex statistical measures.
- Demographic variables such as age, gaming frequency, and cultural familiarity were presented in terms of how many participants fell into each category.
- For hypothesis testing:
 - **H1 (Cognition)**: The percentage of participants who agreed that immersion improved focus, memory, or decision-making was calculated.
 - **H2 (Perceptual Distortions)**: The proportion of participants reporting the experiences such as losing track of time or spatial disorientation was identified.

- **H3 (Reality Blurring):** The number and percentage of participants who described difficulty to distinguish between game and real-life experiences were reported.
- **H4 (Moderation):** Comparisons were made between demographic groups to show the differences in percentages of perceptual distortions.
- This approach provided a clear and accessible overview of the dataset without requiring advanced statistical techniques.

3.3.4.2 Qualitative Analysis

- The open-ended responses were analysed using **thematic coding**. Each response was read carefully and coded according to their recurring themes.
- Themes included:
 - **Immersion as reality overlap** (e.g., feeling emotionally involved or physically present in the game world).
 - **Everyday life impact** (e.g., changes in thinking, emotions, or social interactions outside of games).
 - **Perceived benefits** (e.g., improved focus, creativity, problem-solving).
 - **Perceived drawbacks** (e.g., losing track of time, disconnection from reality).
- This thematic analysis provided an in-depth insight into how players personally interpret the game immersion, complementing the statistical results by highlighting their subjective experiences and cultural contexts.

3.3.4.3 The Integration of Findings

By combining both percentage-based quantitative analysis and the qualitative thematic coding, the study achieved

methodological triangulation. The quantitative results revealed general patterns across participants, while the qualitative insights helped to add the depth and context through the participant's personal reflections. Together, they provided a comprehensive understanding of how immersion can produce both cognitive benefits and perceptual distortions, while both are moderated by the demographic and cultural factors.

3.4 Ethical Considerations

Throughout the research process and game development, we have consistently maintained a set of strict ethical principles to ensure that this study is conducted responsibly and with the respect to the participants and other relevant interested parties.

3.4.1 Research Ethics

- **Informed Consent:** All participants were presented with a clear consent statement before beginning the survey. They were informed that their participation was voluntary and their responses would be remained anonymous, which the data they provided would be used only for the academic purposes.
- **Confidentiality and Anonymity:** No personal identifiable information was collected such as their personal name, home address, and some other private details. Besides, their responses were stored securely, and only the aggregated results were presented.
- **Voluntary Participation:** All participants had the right to either withdraw or continue to answer the survey at any time without facing any penalties.
- **Data Integrity:** All the responses to the survey were recorded accurately and analysed without any modification, this to ensure the transparency and reliability.

- **Respect for Participants:** The open-ended questions were designed to encourage participants to provide their personal reflection while avoiding from causing them to feel discomfort or psychological harm.

3.4.2 Game Development Ethics

- **Cultural Sensitivity:** The game's horror narrative has been designed with full respect for Malaysian cultural elements and avoided any stereotypes or offensive portrayals.
- **Player Well-being:** The mechanics were balanced to provide immersion without excessive psychological strain. For example, the game features pace control and UI to reduce the risks of over-immersion such as time loss or disconnection from reality.
- **Responsible Content:** The game avoids promoting harmful behaviour and only focused on narrative immersion and creative expression.
- **Testing and Feedback:** Playtesting was conducted with voluntary participants who were informed about the purpose of the evaluation. Their feedback will be kept anonymous and used only for improving the game.

3.4.3 Compliance

This study was adhered to the ethical guidelines established by Universiti Tunku Abdul Rahman (UTAR) for Final Year Projects, ensuring that both the research and product development components met academic and professional standards.

4.0 DESIGN & IMPLEMENTATION

4.1 About this game

Rempit in the Night is a single-player narrative-driven survival horror adventure game that features comedy elements and horror themes. The game was set in a fictional world which was a sacred hill of Bukit Tinggi in the 2000s. You play as Ahmad, together with your two friends ride your motorbikes climbing up the Bukit Tinggi. As you were riding fast on the road, you encountered a mysterious monster that caused a tragedy, while when your friend tried to save you, they had been captured by another monster. As Ahmad, you are stranded in a forest, and your friends are all gone. Tension and fear drive you to be insane, yet it becomes a weapon for you to uncover secrets and find ways to escape, while also rescuing your friend from the monsters. Are you brave enough to survive and save your friends from the horrors of Bukit Tinggi?

4.2 Gameplay

In *Rempit in the Night*, the player first plays as Ahmad who is lost in the forest of Bukit Tinggi after an accident and must now find his friends and figure out a way to survive and escape.

Throughout the search for Ahmad's friends, the player will have to navigate a dimly lit environment while also becoming insane where Ahmad will change his perspective into Insane View. The player is also able to hide from enemies to avoid them from attacking them.

Exploration is key, as players search the environment for items and clues that can assist in progressing through the game and while also finding the other two characters. Once they find the other two characters, the gameplay will be extended to character switching, where they can control the other two characters, Ming and Haran, with their unique gameplay and mechanics to help the players further the game progression.

The deeper the player goes the more tense the atmosphere becomes, the player will have to be more cautious with every action that they make since making the wrong move might cost them their lives.

Key gameplay and related mechanics

- **Player vision:** Ahmad has two different visions, the Normal View and the Insane View. These visions are one of the parts of the gameplay where it can distort players' vision to see the game environment.
- **Exploration:** Players can explore around to find items in different rooms such as pills to regenerate the Insanity, keys and other items that they will need to use to progress through the game.
- **Inventory:** Players have an inventory system to put the items they have collected and can be used for progression or character development.
- **Hiding:** Throughout the game, players will be able to hide in areas such as rooms or cabinets to avoid enemies from detecting them.
- **Insane Meter:** Players are required to monitor their Insanity constantly and replenish it when it's low by consuming the pills since having the Insane Meter reach to zero will result in the character in the game to die.
- **Puzzles:** Some rooms and entrances require players to solve the puzzles to unlock them in order to progress the game.
- **Side- Scrolling:** The game is a side-scroller where players explore various locations in a 3D environment while the characters are in 2D.

Controls

The game was exclusively using the gamepad as the control for the game. The gamepad layout used by the game is X-Input in which any gamepad that has the same layout and input system like Xbox Gamepad were able to play this game.

- **Left Joystick** - Movement
- **Select** - Open and close the Pause menu

- **A** - Interact/Hide/Continue the dialogue
- **X** - Item pick up/Use Item in Inventory
- **Y** - Open Inventory
- **B** - Close Inventory
- **D-pad** - Navigate Inventory / Dialogue Options
- **LT** - Sprint
- **RT** - Throw Matches (Ming)/ Charge Atk (Haran)
- **LB & RB** - Tap repeatedly to pass through enemies.

4.3 Game Story

4.3.1 Prologue

The game is set in the 2000s of Malaysia, there are 3 friends planning and meeting up in a restaurant preparing to ride their bike at full speed on Bukit Tinggi with a “superman” pose where Malaysians call them “Mat Rempit”. As 3 friends “Rempit” make their way along the road on Bukit Tinggi, Ahmad, one of the 3 friends, is taking the lead of “Rempit”, riding in front of his two friends, Ming and Haran.

Ahmad suddenly sees a Pocong wandering in the middle of the road, he was shocked and lost control of his bike. He eventually crashed into the fence of the roadside and fell down a cliff to a forest together with his motorbike. Ming and Haran who follow behind Ahmad were shocked and tried to save Ahmad. As they were waiting for the police to come, a monster, Santu Sakai, approached from behind and captured them.

After a while, Ahmad below the cliff was awakened and he was injured. He found he had a bottle of weird pills in his pocket and decided to eat it as he thought the pills were a painkiller. Then, he felt suddenly cured from injured. Without wasting time, he immediately tried to call his friends but none of them picked up his phone.

Then, he saw an abandoned school not far away from him, and he decided to head there. At this moment, he hides in bushes when he hears footsteps. He sees 2 of his “rempit” friends, Ming and Haran being brought by Santu Sakai and entered into the school. Without thinking a lot, he decided to enter the school and tried to find and rescue his friends.

4.3.2 Act 1

When first entering the school, Ahmad will start his exploration in Ground Floor. Ahmad started to explore the school, he found there was a staircase blocked by plants, while another was fully blocked by a bunch of broken desks and chairs. Ahmad knows that he only can get up to the upstairs from the staircase which is blocked by plants.

He went to the canteen to find the knives but it turned out there was nothing there in the kitchen of the canteen. Hence, he decided to find other rooms if there was any item that was sharp enough to cut off the plants.

When he came out from the canteen, he heard a creepy laughing sound from his right side, as he looked to that side, he saw a Pocong appeared. The Pocong was looking around and its eyes met with Ahmad eyes, which made the Pocong feel angry and started to approach Ahmad. Ahmad was shocked and immediately hid inside a cabinet. The Pocong wandered around the cabinet and did not find Ahmad, who then left the cabinet.

After a while Ahmad did not hear the sound of the Pocong, he decided to come out and continue his exploration. He found a key inside the security room and was thinking where the doors could be unlocked. As he continued to go see the door at the end, a fat Pocong suddenly appeared behind him. Pocong introduces himself, Mr Pocong, and asks if Ahmad can help him to find the teddy bear in the school.

At this point, players can either choose to help or ignore the request asked by Mr Pocong. After making the decision, Mr Pocong will disappear.

Ahmad continued his exploration and found a knife in the toilet after using the key he found just now, he then used the knife to cut the plants and finally went upstairs to continue to find Ming and Haran.

4.3.3 Act 2

Ahmad first explored the first floor and finally found Ming in Room 101. Although Ahmad tried to convince Ming to get out of the room, Ming decided not to due to being afraid of the ghost and monsters around. Ahmad then told Ming to stay inside and continue to find Haran at the second floor.

While Ahmad explored the second floor, he met Mr Pocong again in Room 202. After a few conversations with him, Mr Pocong gave protection to Ahmad and so Ahamd continued his exploration. For a long time searching both floors in the school, Ahmad still hasn't found Haran, the only staircase he can go to the third floor was locked with a gate. When Ahmad tries to figure out how to get into the rooms that he was unable to go into, he saw a vent and thought it was a good idea to climb into the vent to reach the other locked rooms. He then found a ladder in a room and used it to reach the vent.

However, Ahmad was unable to climb inside due to his body size. But he remembered Ming's small body size meant he was able to climb into the vent. Thus, he returns back to find Ming and ask Ming to help. Ming then went with Ahmad to the vent and climbed into the vent. Ahmad heard the sound from the farthest left of the room and found Ming was inside. As they came out of the room, they heard something.

The floor at the opposite side suddenly appears with a lot of black oil, a humanoid figure appears from that puddle of black oil, it is Orang Minyak. Ahmad and Ming were shocked, then Ahmad told Ming to hide

somewhere while he tried to bring Orang Minyak to somewhere else. Ahmad thinks to bring the monster to the female toilet on the ground floor, and then he hides inside...

On the other perspective, Ming was hiding in a room. He found a match box and thought it could be a great idea to burn Orang Minyak using the matches. He decided to help Ahmad to encounter the monster. While exploring, he found a key in a room, which then he used this key to open the backyard door of the ground floor and get inside the ground floor. Once he gets inside, the Orang Minyak are already at the same place and start to approach Ming. Ming, in panic, quickly throws the burned matches onto the Orang Minyak and successfully burns it to death. He then found another key from the Orang Minyak corpse.

Ming then finally found Ahmad inside the toilet and gave the key to Ahmad, Ahmad then brought Ming together and finally unlocked the locked gate of the third floor's staircase and continued to explore the last floor in this school.

4.3.4 Act 3

Ahmad and Ming finally reached the third floor and continued to explore the place, as the right side was blocked with desks and chairs, they decided to explore the left side. As they walked towards the left side of the third floor, Santu Sakai suddenly came out from Room 301. Ahmad, Ming and Santu Sakai, look at each other...

At that moment, Santu Sakai yelled at them and charged towards them. Ahmad and Ming quickly hid inside the cabinet next to them and successfully dodged the Santu Sakai attack. At this point, Santu Sakai had already gone to nowhere, Ahmad and Ming continued to explore the right side as they heard Santu Sakai destroy something. The blocked path was gone, Ahmad and Ming saw there was a room at the end and decided to go inside.

They found Haran inside the room. When Haran saw Ahmad and Ming, he immediately talked with them about what had happened previously, from when he woke up inside a room with Ming, until got locked by Santu Sakai inside the room when he tried to attack it. Since Haran was finally free, he decided to help Ahmad and Ming continue exploring the last few rooms on the third floor.

Haran found a room covered with black oil with a strongbox covered with sticky black oil in the middle. He then uses the knife given by Ahmad to cut off the sticky oil. However, he found out the strongbox was locked, the key he found in the room he was locked inside just now unable to use. Hence, he continued to find the actual key to unlock the strongbox.

Finally, after encounters with Santu Sakai and many searches of different rooms. He finally gets the actual key to unlock the strongbox. He got a bottle of black oil from the strongbox and thinks it's a great idea to use it to kill Santu Sakai. Without any thought, he immediately went back to the room to meet with Ahmad and Ming. Haran ask if Ming can use the matches together with the black oil to deal with Santu Sakai. At first, Ming was very resistant as he did not want to encounter any monsters anymore, but after being encouraged by Ahmad and Haran, he decided to give it a try.

It was all about to end; they found Santu Sakai when they came out from the room. Haran charged towards the Santu Sakai and grabbed it tightly to avoid it escaping again. Ming immediately threw the matches with black oil onto the Santu Sakai. For a few tries, the plan worked. Santu Sakai's fur started to burn and at the end its whole body was burned in fire. After a moment, Santu Sakai died. Three of them, Ahmad, Ming and Haran were happy that they finally killed Santu Sakai.

While they planned to get out from this abandoned school, Ahmad found a teddy bear inside the room that Santu Sakai just stayed in. He remembered the request from Mr Pocong...

4.3.5 Ending

There are two endings which will affect the endings depending on the player's choice either to return the teddy bear they found to Mr Pocong or directly get out from the building.

Normal Ending - REMPIT TAK MATI

Ahmad did not care about the teddy bear currently; all he was thinking is to immediately escape from this abandoned school with Ming and Haran. Without any moment, they finally arrived at the entrance and escaped from the school.

For such a long walk, they finally get out of the forest and get to a good spot that has a good signal to call the police to rescue them. Their tension finally eased, and they let out a shout at sunrise: “**REMPIT TAK MATI!**”

True Ending - REMPIT FOREVER

Ahmad decided to bring the teddy bear to Mr Pocong. Mr Pocong received the teddy bear and started to cry, then continued to tell Ahmad his backstory. Mr Pocong reminded Ahmad to wake up from the dream, but Ahmad did not understand what he meant, then in front of Ahmad's eye, Mr Pocong turned into light starting a new journey to find his wife and his daughter...

After that, Ahmad found Ming and Haran and continued to get out of the building. As they reached the entrance, Ming and Haran stopped to move, and even told Ahmad to wake up, but still Ahmad ignored what they said and together escaped from the school.

A long walk, they still have not get out of the forest. Finally, Ming and Haran stopped their steps and started to head back. They told Ahmad to wake up again and appreciate being Ahmad's best friends. Ahmad did

not know what was going on and only kept chasing Ming and Haran. A light suddenly appeared in front of Ahmad, and he opened his eyes...

Ahmad found out he was on a bed all the time as well as he was inside the hospital. But the more shocking news he heard was that Ming and Haran were already dead after the accident at the beginning. All of these were just a dream, an illusion for Ahmad.

Ahmad continued to lay on the bed, thinking about the past memories shared together with Ming and Haran. He finally let it go and appreciated what they had done for him.

*“One day, we will meet again and **REMPIT FOREVER**...”* Ahmad said.

4.4 Story Structure

Rempit in the Night follows the 3 Act Structure, with some mix of Joseph Campbell's Hero's Journey in the story. The story uses a combination of Temptation, Crossing First Threshold and Supernatural Aid. Since the game only uses some of the Hero's Journey, the rest will be listed down on the table.

The most used narrative delivery method is the use of cutscenes and dialogues, which are interactive and require the player to interact by pressing a certain key in order to continue the dialogues of the characters in the story. Some of the cutscenes are non-interactive which purposely to make the player understand the game settings and showing the strong friendships of the Protagonist and his friends in the story, which at the same time makes the characters in the game look alive. There is no head back once the player chooses the path of the story, which is why it is very important that players need to think carefully before deciding the paths of the story.

Besides, the game designer's objective is to create an immersive gameplay for the player to experience the mood in a horror game, where the ambience music and the sound effects are applied into the game environment to create a horror feeling for the player.

All of this narrative methods applied into the games are necessary to create an immersive story-driven horror game with comedy elements that provides the player with an immersive gameplay experience.

4.5 Home Country Elements

The game has 4 home country elements which are Genting Highlands that inspired Bukit Tinggi, Malaysia mythology creatures, the Mat Rempit culture, and the Malaysian Rojak languages culture.

Bukit Tinggi was inspired by Genting Highland as the foundation world settings for the game. This place was chosen as this place was well known with many horror stories and some mythologies. As the game setting was a horror game, Genting Highlands has been one of the most famous spots when it comes to encountering paranormal phenomena. A lot of said there are suicidal cases by jumping out of the hotel, becoming haunted. Customers had experienced ghosts wandering in the hotel. At this point, applying to the Bukit Tinggi, the game starts with a cutscene from a highway near Bukit Tinggi, where the 3 friends had eventually encountered a Pocong while “rempit” along the way of Bukit Tinggi.

Next, the three of the Malaysia mythology creatures, Pocong, Orang Minyak and Santu Sakai, are based on stories from the past. Pocong was originally from Indonesia, but people also encountered it in Malaysia. In Muslim culture, the passed ones will be shrouded in a white cloth in several parts to keep the white cloth stay in place. Many believe if the knots are not removed for 40 days, its soul can't leave the body and become the Pocong ghost. Orang Minyak is a supernatural creature summoned by a bomoh, it's mainly summoned to cause troubles. Its dark shiny skin makes it undetectable during night times, allowing it to sneak around when the day turns dark. As for Santu Sakai, it is a half human, half monster with large fangs hunting for meat in the forests. In 1967, a hunter encountered Santu Sakai during his hunting in a forest in Kuala Lumpur. The hunter describes it as a very large demon coming from hell.

Mat Rempit culture is famous for its “superman” stunt pose when riding the bike. Bikers usually ride their bike at high speed at night or on highways as

during low traffic on the roads. Rempit is also symbolised as recklessness, showing fascination among the public.

Finally, Malaysian Rojak Language is a culture that has been living in Malaysians for decades due to different cultures and languages. The culture is a mixture of mainly 4 languages, Malay, Chinese, English and Tamil. The mixture of languages is mainly due to communication, as time passes, formal languages are slowly transformed into a mixture of different languages, making it a culture in Malaysia, and citizens are able to communicate with the “rojak” language. These elements had applied onto the characters’ dialogues, while the game primarily used English as the main language to show the story, some dialogues will use other three languages with the translation to fulfill the criteria of Malaysian Rojak Language.

4.6 Characters

4.6.1 Playable Character

Ahmad – designed by Teh Yong Keat



Character's Sketch



In-game Character's Sprites

Gender: Male

Race: Malay

Age: 19 years old

Traits

- Kind to anyone and brave to do anything for his friends, which makes him liked by people in Rempit culture.
- A very honest person that causes him to be outspoken and sometimes not everyone likes it.
- Like to make fun of Ming and Haran, but actually loyal to their friendships.

Notable friends

- Ming (Ahmad's Chinese friend)
- Haran (Ahmad's Indian friend)

Summary Character Background

Ahmad was a Malay boy born in a middle-class family who was involved in Rempit culture due to the friends he met, Ming and Haran, when back in high school. He has a grandma that is very close with him and always listens to his grandma. He was a friendly person and loves to talk to everyone around him. He's easy to make friends with, but some people do not really like him as he sometimes could hurt other people by telling them the truth they don't want to hear. Other than that, he was brave to explore unknown surroundings along with his friends. Although he's been having problems with his parents for a long time after he joined this circle, he still chose to stay in this circle that made him happy.

Ming - designed by Sky Soo Sin Kai



Character's Sketch



In-game Character's Sprites

Gender: Male

Race: Chinese

Age: 19 years old

Traits:

- Ming is a timid person that preferred to run away from difficulties rather than face them.
- Ming is a sensitive person and gets emotional when things go wrong.

Notable Friends

- Haran (Ming's Indian Friend)
- Ahmad (Ming's Malay Friend)

Summary Character Background

Ming is a Chinese boy born in a small village in Ampang, Selangor, Ming was left alone with his mother after his father's car accident at age 5. He became timid and preferred to run away from difficulties. At 16, he obtained a motorcycle license and used it for transportation. One night, he collided with an Indian

motorcyclist, Haran, and both were hospitalized. Ming felt ashamed of causing Haran's injuries. While hospitalized, both of them started to have some conversations and became friends while knowing they were in the same school. Many days of hospitalization, Haran encouraged Ming to join Rempit culture to train his fears. Initially resisted, Ming eventually accepted Haran's invitation and was given a new motorcycle with customization. When he Rempit with Haran, he felt excitement for riding the motorcycle, which made him no longer feel timid. This experience changed Ming's perspective on life and the importance of overcoming fears.

Haran - designed by Ng Poh Yang and Sky Soo Sin Kai



In-game Character's Sprites

Gender: Male

Race: Indian

Age: 19 years old

Traits

- Haran is a person full of encouragement; he can cheer up if anyone around him gets upset.
- He is also an easy-going person, he doesn't take things too seriously, he doesn't want others to worry about anything whatever happens.

Notable Friends

- Ming (Haran's Chinese Friend)
- Ahmad (Haran's Malay Friend)

Summary Character Background

Haran was born in a rich family in Ampang. He makes a lot of friends thanks to his behaviour. Haran is an easy-going person, also a person full of encouragement. He was involved in Rempit due to his other friends hanging out with him and seeing Rempit culture for the first time. He was feeling full of excitement after looking at Rempit. He wants to get into Rempit because he is a person seeking for extreme and excitement, he was sick of staying alone at home playing games, nothing can catch his attention other than Rempit. He then bought his own motorbike and participated in Rempit nights. He never quit Rempit since the first day he joined it.

4.6.2 Non-Playable Character

Mr Pocong (NPC) - designed by Sky Soo Sin Kai



Gender: Male

Age: 50

Traits:

- Mr Pocong is a very kind and helpful being, he did not like to violence and soft, but when his friends or person he loved was in danger, he could do whatever just to help them or protect them.

Summary Character Background

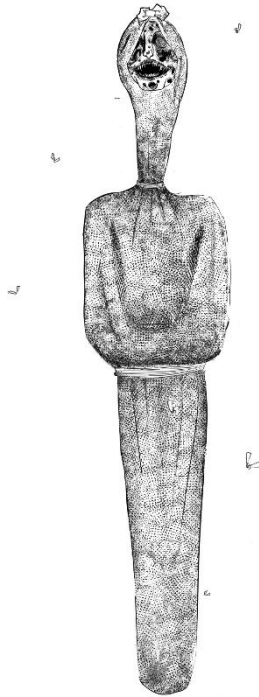
Kianu Leaf, known to many as Mr. Pocong, was a dedicated white-collar worker with a loving family—a beautiful wife and a cherished daughter. Their lives were filled with joy until one fateful day when his wife was murdered one day on her way home, and the murderer fled the scene. But then the murderer had been captured yet he knew his wife would never come back anymore. His daughter kept asking him where her mother went, and he only gave her a teddy bear as a lie to comfort his daughter from the death of her mother. He thought his life would continue together with his daughter peacefully, however the God seemed to make a joke to him, his daughter was diagnosed with cancer. At the end of day before his daughter passed away, she gave back the teddy bear since Mr. Pocong gave it to her once she was young, promising him if he missed her and his wife, hug the teddy bear to feel them.

After the death of his daughter, Mr. Pocong went insane and was sent to a hospital together with the teddy bear. The doctors there tried to help him but he could not stop hurting the other, yet they decided to take away the teddy bear from him. Until the last day of Mr. Pocong, he still wanted to get back the teddy bear from the doctors. His intense obsession prevented him from leaving the mortal world after his death, which then made him become a Pocong, waiting for someone to find his teddy bear and bring it back to him...

4.6.3 Enemies Design

GAME ENEMY

Pocong - designed by Sky Soo Sin Kai



Abilities:

- The Pocong was covered by white clothes tied with ropes on their bodies.
- The Pocong will randomly appear in Female Toilet and will approach players.
- The more the players hide in the same hiding spot, the higher chances that Pocong will spawn in front of the players.

Summary Enemy Description

Pocong was originally from Indonesia, but people also encountered it in Malaysia. In Muslim culture, the passed ones will be shrouded in a white cloth in several parts to keep the white cloth stay in place. Many believe if the knots are not removed for 40 days, its soul can't leave the body and become the Pocong ghost.

GAME ENEMY and FINAL BOSS (ORANG MINYAK)

Orang Minyak - designed by Sky Soo Sin Kai



Abilities:

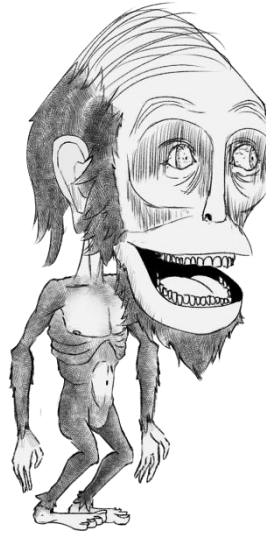
- The Orang Minyak is entirely made out of oil making him immune to any physical attacks.
- The Orang Minyak can throw up oil from his body which will causing debuff to players

Summary Enemy Description

The Orang Minyak is a well-known Malaysian myth, characterized by his dark and oily appearance. He was once an ordinary man who wanted to win back his love but was instead cursed to become an aggressive figure completely covered in oil. Now, he lurks in the shadows of the night, searching for human victims to break his curse. Over the years, the curse has deformed him further, causing oil to cover his entire body and gradually turning his entire form into oil. Although aggressive by nature, deep down, the Orang Minyak is a broken man—angry and unhappy about his fate, and willing to do whatever it takes to break his curse.

GAME ENEMY and FINAL BOSS (SANTU SAKAI)

Santu Sakai – designed by Sky Soo Sin Kai



Abilities:

- Santu Sakai will rush to player and smash them to ground
- Santu Sakai is able to knock back the characters except Haran.

Summary Enemy Description

Santu Sakai, a legendary monster that was hidden in the woods of KL, found itself wandering far from home. With its superhuman strength and agility, it catches any human that has their position caught by this monster from hell. Santu Sakai with its innate super hearing is able to detect sound up to 300m away, but because of the overwhelming number of footstep sounds, it decides to ignore any sound associated with it. In a recent incident where this monster tried to chase something in the distance. The thing that the monster found is just some wandering Pocong, it found Pocong near an abandoned school. Recently, humans have strangely fallen near this school. Santu Sakai notices the abundance of humans and decides to make the third floor of the school as its home.

4.7 Game Assets

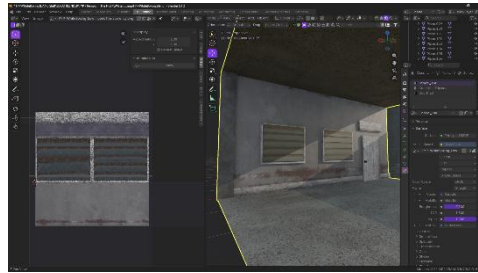
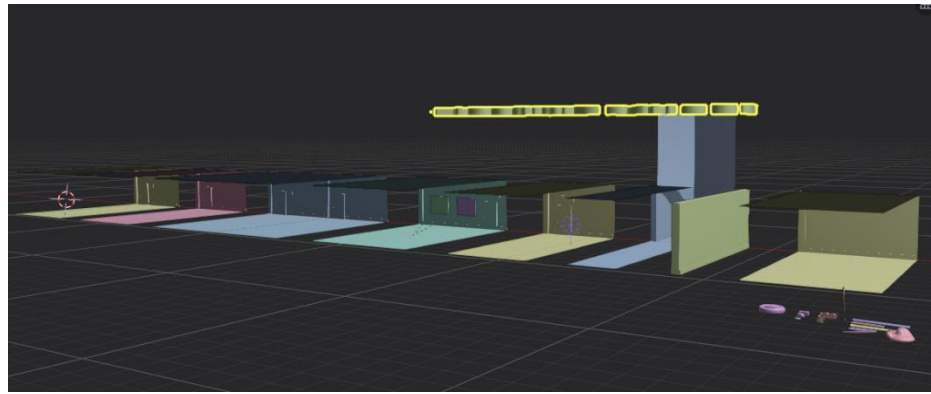
4.7.1 3D Assets

Modelling

Most 3D assets are modelled using open-source 3D modelling software, Blender, and texturing using Adobe Substance Painter.

When modelling the 3D model, we need to ensure the poly of most models is low but also maintain the silhouette of the model to make the games run more efficiently. To also optimize the game and the process of level building, we also modelled modular assets that can save performance when running the game. The modular assets share the same material and use only one texture.

Before the creation of the modular assets, the 3D modeller needs to have strategic planning before creating the asset. The 3D modeller needs to draw concept art based on the level design to have proper planning to make the assets more dynamic. Since the most repetitive asset will be the hallway/corridor in the game, the modular assets can start making from here. The corridor has 2 main variants, which are short (1) and a longer version (2), and by following this up, there are more variants, which are a normal and a horizontal inverted version. By using these created modules, the scene can have a lot of variant scenes in the game. The texturing phase of the 3d Modular assets utilize a technique called “TrimSheet”, which is using a single texture file to texture as much surface as the designer can.

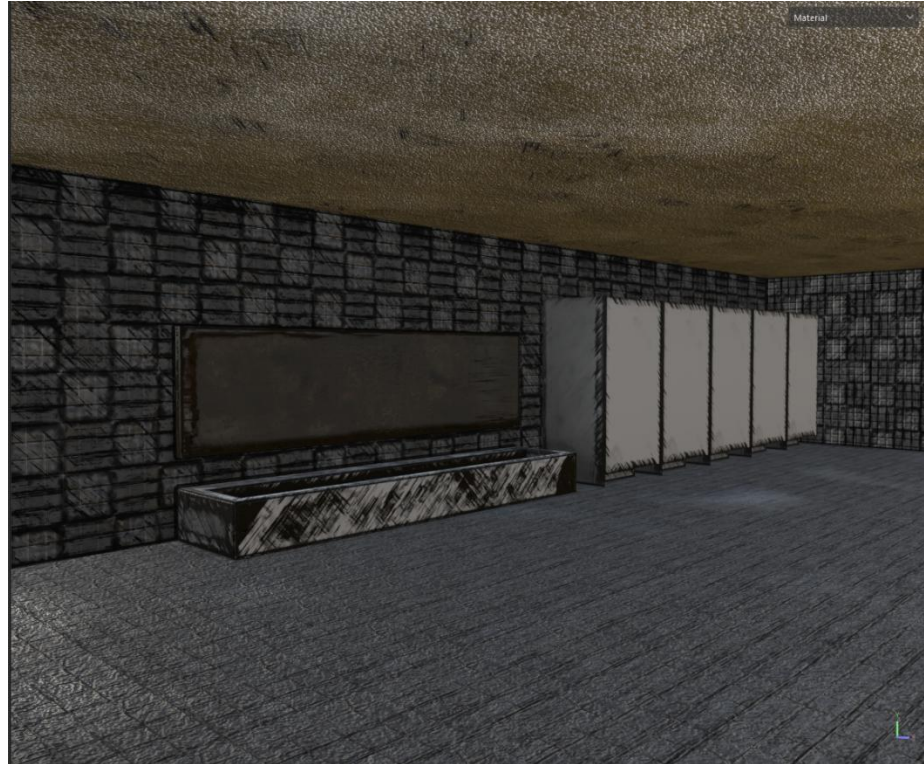


Texturing

Due to the art direction of the game, the texture also needs to be stylish to accomplish the concept art of the game. To achieve the comic-look visually, there are a few steps that need to be implemented. Firstly, find textures from the internet that are suitable for the object, for example, the ground texture for the concrete floors needs to be a concrete material.

Commonly, the texture from the asset website is included with different types of material maps, such as AO map, Normal Map, Diffuse Map, Roughness Map, and Height Map, but this kind of map is used in a more realistic rendering, so we need to do some processing after importing it into texturing software. After importing the texture into the game, the base colour of the object needs to be processed inside Adobe Photoshop. Inside Photoshop, the base colour is processed by making it greyscale, after that increasing the contrast until the structure of the texture looks convincing enough like a sketch. The other texture map will just remain the same to make the texture look stylistic, but also have some characteristics of real life, to have a balance of the comic-look and real life. Besides Photoshop, Adobe Substance also takes an important role during the texturing phase. In-game 3d Props which need to have a

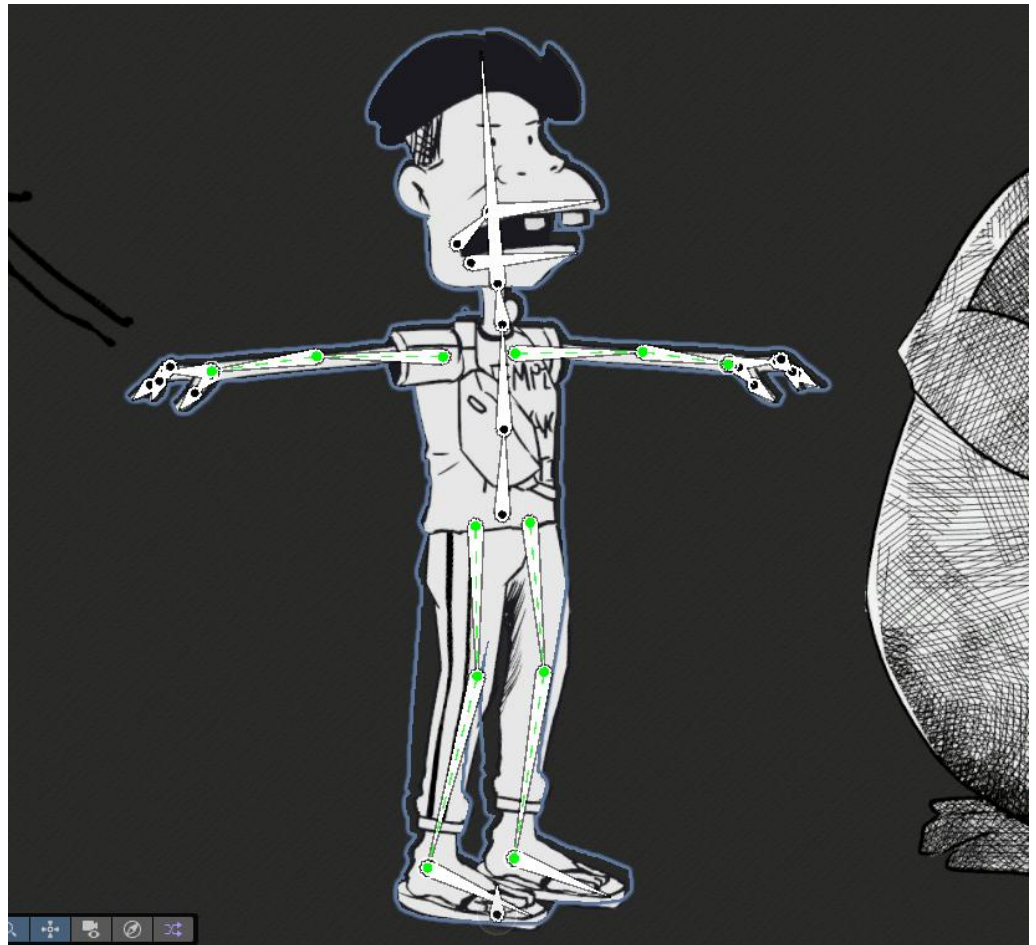
material for themselves will be processed via the comic filter provided by Adobe Substance. By applying these steps, the texture of the game can look like a hand-drawn comic texture.



4.7.2 2D Assets

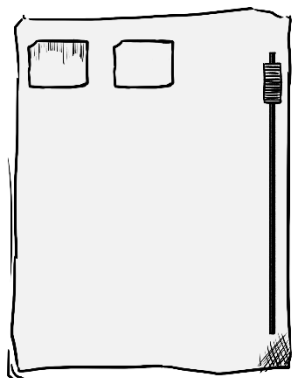
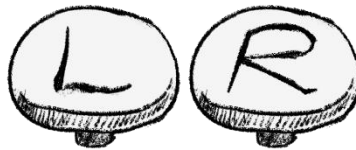
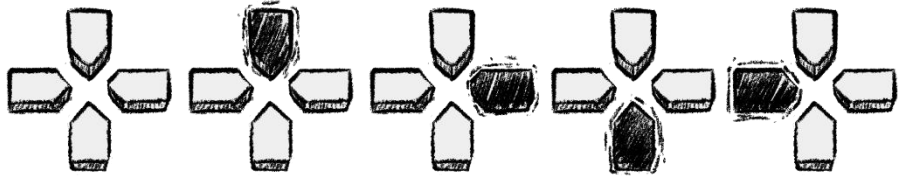
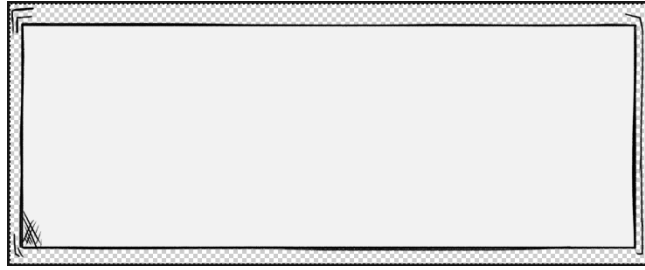
Character Sprites

To make the in-game character more alive, we use the 2D rigging system provided by Unity. The Rigging system can provide us an easier way to make animation for the character because we can save time to animate the character frame-by-frame. By importing a character's photoshop file (.psd) into unity, unity will automatically detect it as a game sprite. The character's rig includes a simple fk control to make the process of animating easier.



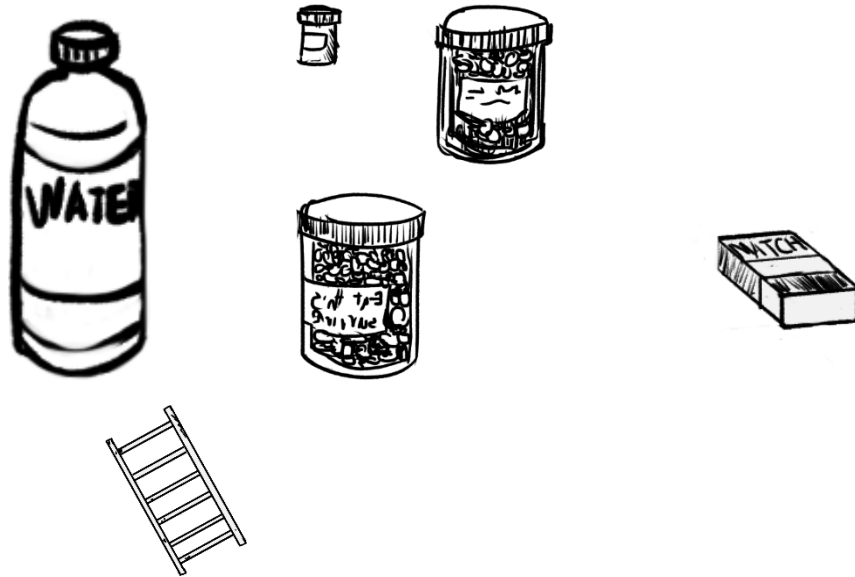
UI Design

The UI design of the game is designed to be as simple as possible to improve the visibility of the user interface, which also improved the immersive player at the same time. The UI design also needs to match the art direction of the game, so the UI is also designed using comic elements.



Items Design

Same as item design, the style of the item also needs to match the art style of the entire game.

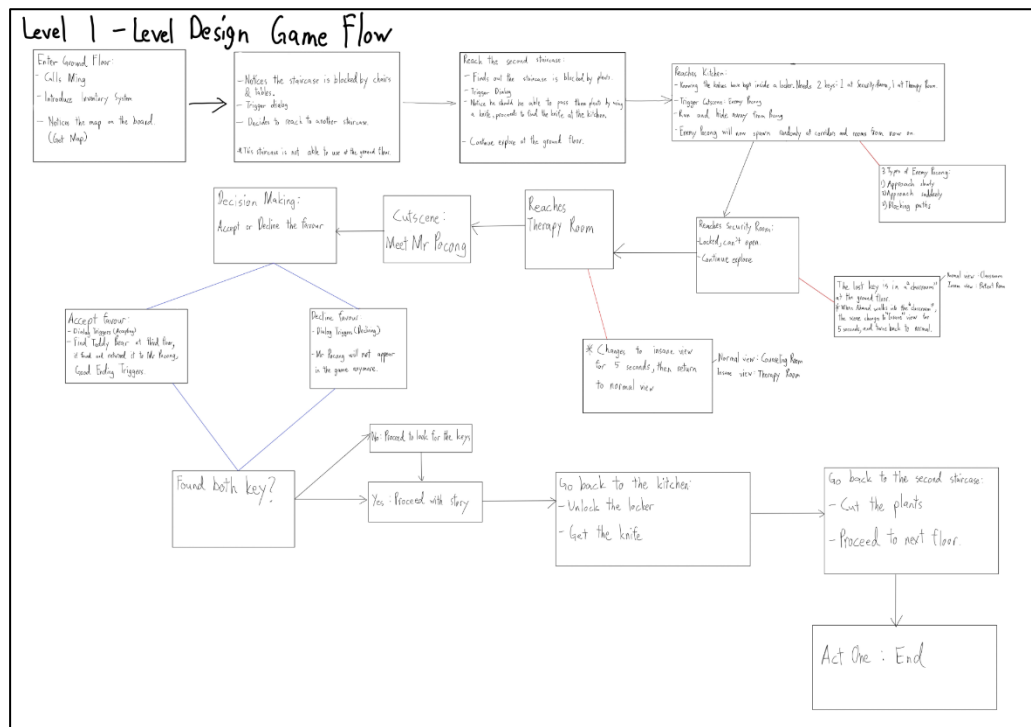


Decals

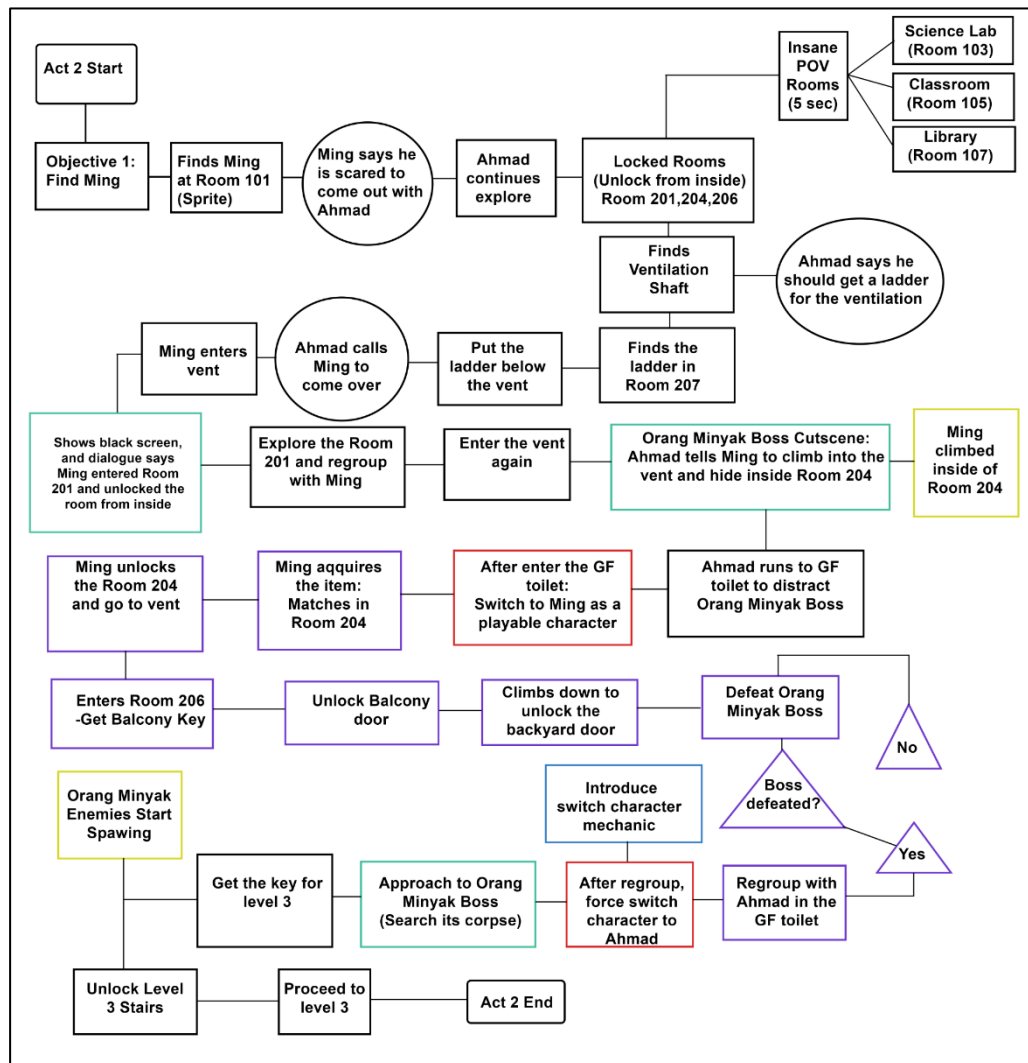
Adding Decals is one of the ways to remove the repetitiveness of the game environment because unlike a normal mesh with texture, it can be added as a new layer to the subject and add more variation. During the creation of decal, to improve the realism and save developing time, the 3D Artist had made a POM shader that can have a fake 3D geometry. The shader had provided more depth and details into the decal and made the game environment more alive.

4.8 Level Design Flowchart

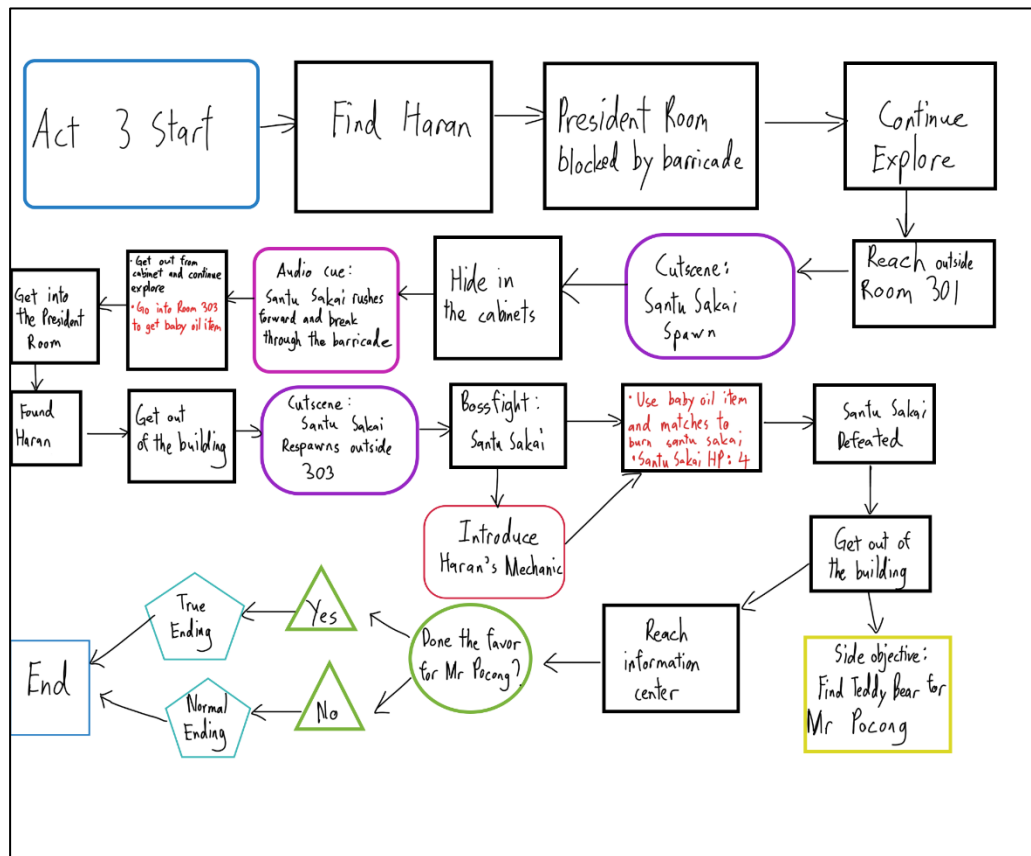
4.8.1 Act 1 Flowchart



4.8.2 Act 2 Flowchart



4.8.3 Act3 Flowchart



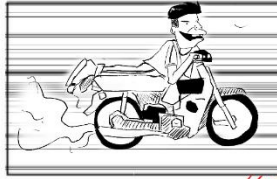
4.9 Cutscene Storyboards

This is the storyboard for the opening cutscene which explains the beginning of the story.

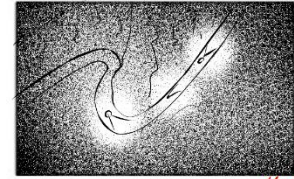
Storyboard template



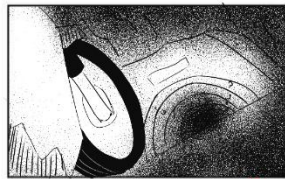
OVER SHOULDER SHOT OF AHMAD MEET UP WITH HIS FRIEND
MORE FOCUS ON CHARACTER AND THE BACKGROUND WILL BE BLUR /cut



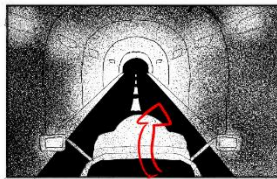
MEDIUM SHOT
STATIC OF AHMAD RIDING THE MOTOR WITH SPEED UP /cut



WIDE LONG SHOT
AHMAD AND HIS FRIEND ARE RACING IN THE NARROW MOUNTAIN /cut



LOW ANGLE VIEW
AHMAD IS DRIVING INTO THE DARK TUNNEL /cut



POV
AHMAD RIDING THROUGH THE TUNNEL /cut



POV. WHEN AHMAD RIDE THROUGH THE TUNNEL, HE SEE A PERSON WRAPPED WITH WHITE CLOTH IN MIDDLE OF THE ROAD /cut

Storyboard template



Tracking shot
Admad passing the figure. /cut



Close up
a person wrapped in a cloth appear in Ahmad view and he got shocked by it /cut



Black screen
'bang' sound effect of Ahmad crashing the side of the road /cut



Medium shot
Ming and Haran notice Ahmad falling through down the side of the slope of the road /cut

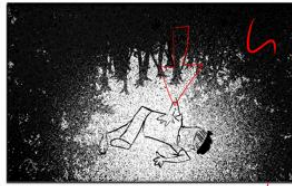


Extreme wide shot
Scene of Ahmad fell off and landed in a forest. /cut



Extreme wide shot
They stop their bike at the side and yelled to Ahmad but no response from him. /cut

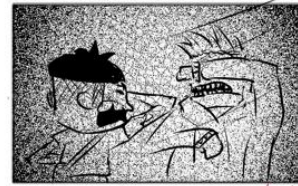
Storyboard template



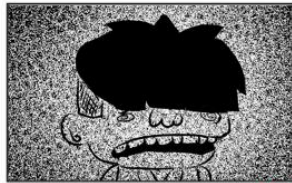
High angle shot , tilt shot /cut
Scene of Ahmad top view while
He lying on the ground



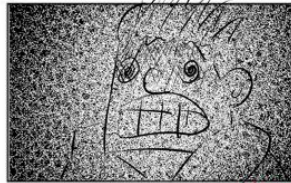
medium shot
Scene of Ming and Haran noticing
the fog starts getting denser
around them



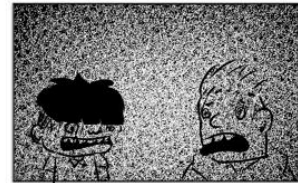
medium shot /cut
there was a strong wind
blowing towards them



Extreme close up /cut
Ming smell something slowly
lost consciousness

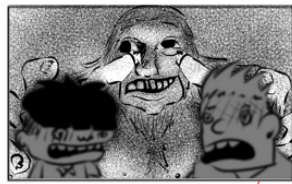


Extreme close up /cut
Haran smell something slowly
lost consciousness



close up
The fog slowly covered them

Storyboard template



Rack focus /cut
scene of Orang Minyak and the
Santu Sakai from behind to
approach them



Title of the game appear
in the screen



4.9 Mechanics and Systems

4.9.1 Movement



Figure 4.9.1 Character Movement for moving right

The game uses mainly the gamepad as its control scheme. The character moves using the left joystick. When the character moves, the camera follows the player character and sets the player position at the bottom left quadrant corner of the viewpoint.

The reason that the character is set at the opposite position of the direction of movement is to make it so that the player has the maximum amount of forward view while limiting the overall percentage of the view that can be seen. This means that the environment and the character can be made bigger without compromising the amount of view that the player can get.

This type of viewpoint works because it creates anticipation for the player. It also works well with this type of game genre where anticipation creates tension and immersion.

Besides that, whenever a player character model foot touches the ground, a sound will be produced. This is achieved by attaching the sound effects into the animation loop itself, so it will never be out of sync.

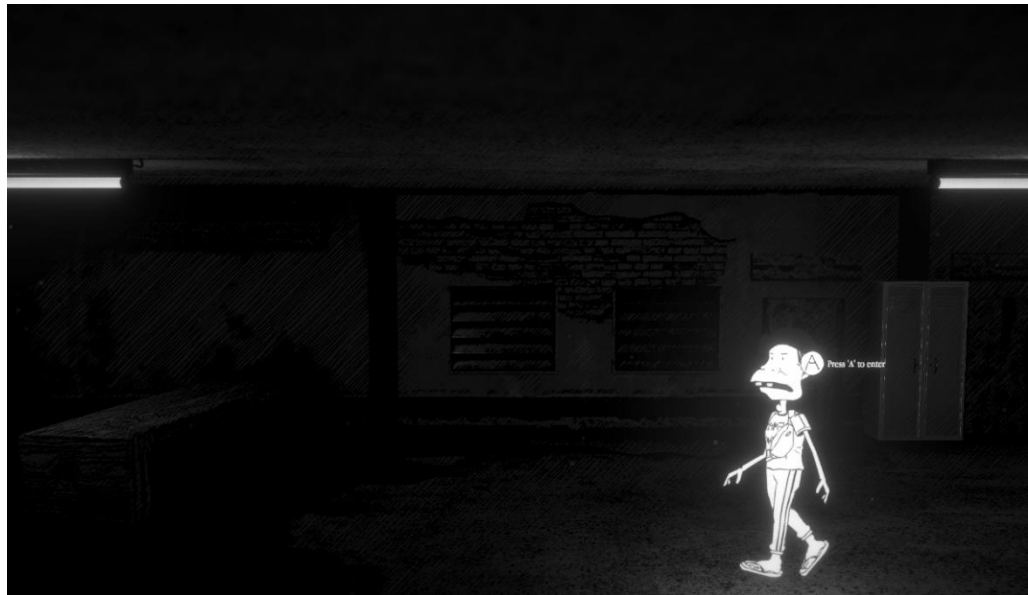


Figure 4.9.2 Character Movement for moving left

4.9.2 Pickup

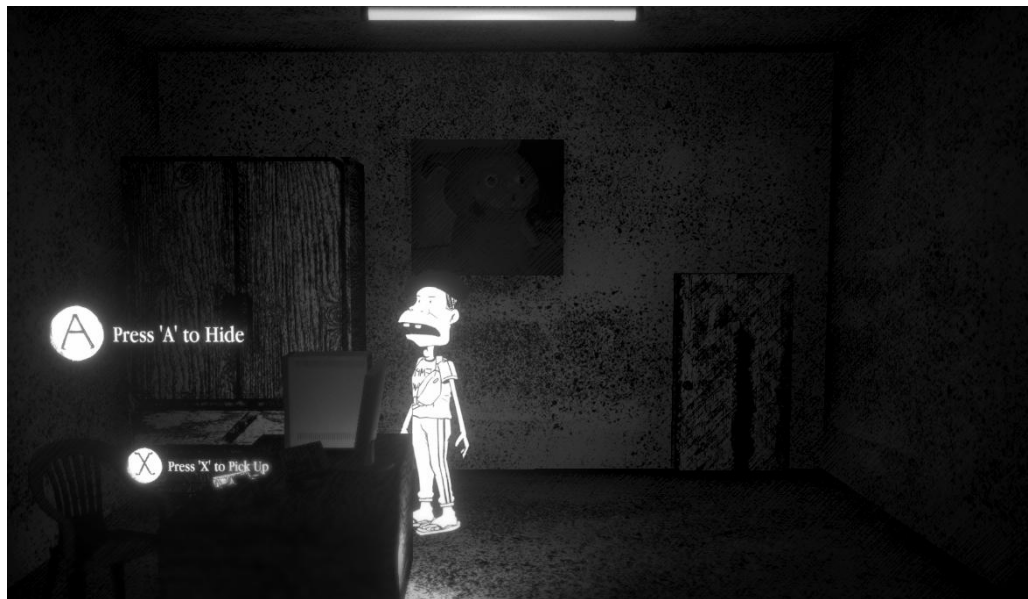


Figure 4.9.3 Pickup item UI

While the player is walking around the game environment, there are items that can be picked up for use. In Figure 4.9.3, the example shows the item key that can be picked up. When the player goes near an item, there is an UI indicator that will pop up. This type of UI is non-diegetic UI.

The reason that it is using non-diegetic UI is that it offers the maximum amount of attention induced upon the player. The player will notice the thing that is clearly different from the background and will likely be interested in it.

Not only that, the UI itself is using the semiotic theory of signs. For this UI, Icons and text are used. Icons are chosen because it directly refers to the object that it is referencing. In this example, the actual button icon design is used to make the player know it directly. The buttons Icons are using the X-box standard control layout since it is the most popular button layout design for pc gamepads.

After the player picks up the item, the item will disappear entirely and a high pitch sound is used. This sound is picked because it functions similarly to the coin sound in the classic Super Mario. The function for this type of sound effect is to alert the player what they have inputted into the game.

4.9.3 Items

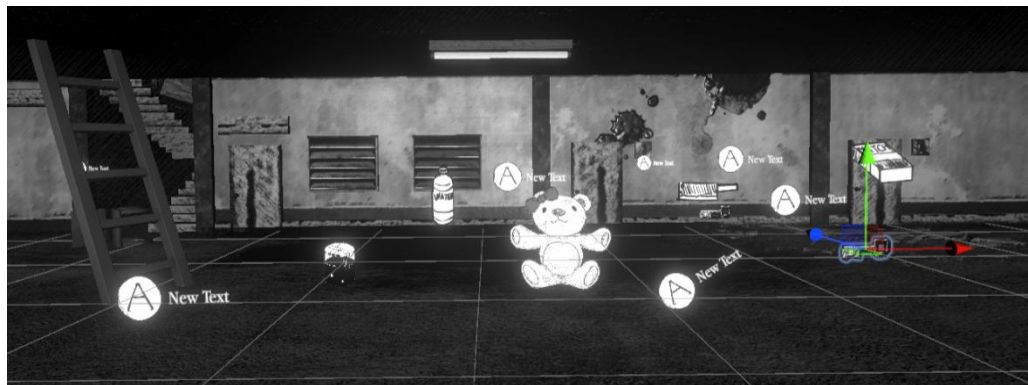


Figure 4.9.4 Items example

There are several items in this game, all the items offer different functionality. The items are placed strategically to act as a progression tool. Players will need to eventually pick up most of the items to be able to clear the game level.

For example, the ladder item is needed for one of the characters to be able to access the vent. There is no puzzle associated with this ladder item. The item just acts as a storytelling tool.

The reason that most of the tool doesn't have puzzle mechanics is that it accommodates to our game genre of being a horror game that is most focused on the narratives and not the gameplay. Therefore, if there are a lot of complex puzzles and difficulty, this will decrease the player's immersion into the game's storytelling.

4.9.4 Inventory

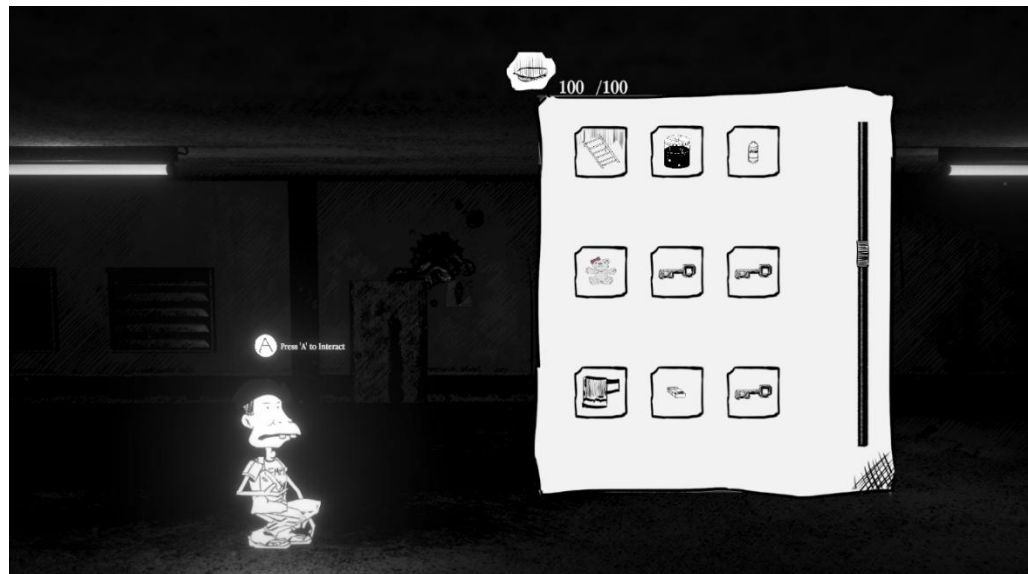


Figure 4.9.5 Inventory

To be able to use the item, the player has to open their inventory. This instruction is given to the player at the tutorial level. The button used to open the inventory is the Y-button and the B-button is used to close it. There are three elements in this inventory menu, the sanity system, the item slots and the vertical scrollbar.

For the sanity system in this menu, the player can see that it is the eye like a ui with the letters beside it. This system is where the player can know the health point of the player character, whenever the player is taken damage the number on the left will decrease. If it reaches the threshold for the insanity value, the player character will go into the insane view mode. Here, the environment is swapped and all the other characters disappear. Besides that, the eye UI will go into an insane view animation where the eyes open and blinks around rapidly.

For the item slots, this is the individual slots seen in Figure 4.9.5. Initially without picking up any item, the item slot remains empty but when picking up any item the slot will instantiate itself onto the scene and fill in the empty space in the middle.

Lastly the scrollbar on the right shows the player that this inventory can be expanded. To see more of the inventory, the player has to rotate the right joystick vertically to do so.

Besides the actual elements of the inventory system, the player characters are also ducked down to match the game since the player character model has its bag at its chest. So logically the character needs to reach down to open their bag, and this is shown as such in the game using character animation.

4.9.5 Hiding



Figure 4.9.6 Hiding

Throughout the game environment, there are places where the player can choose to hide. The things that the player can hide in are the cabinet object. Whenever the player hides all the characters in the screen also disappear. It follows the same Ui design as the pick-up mechanics as this is an instruction type UI.

4.9.6 Enemies

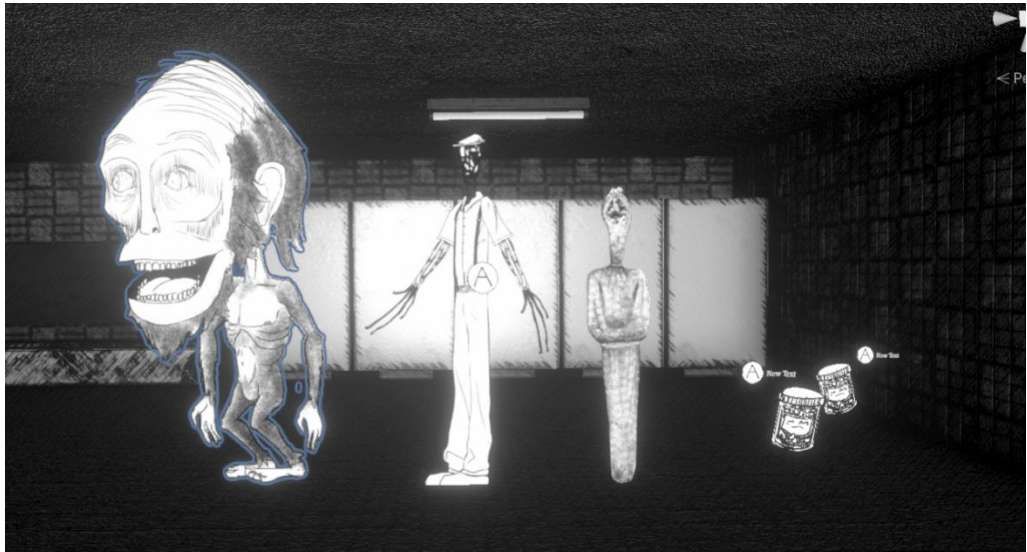


Figure 4.9.7 Enemies

There are three types of enemies in this game, Pocong, Orang Minyak and Santu Sakai. All the enemies have different mechanics to them, and they appear in different sections of the game.

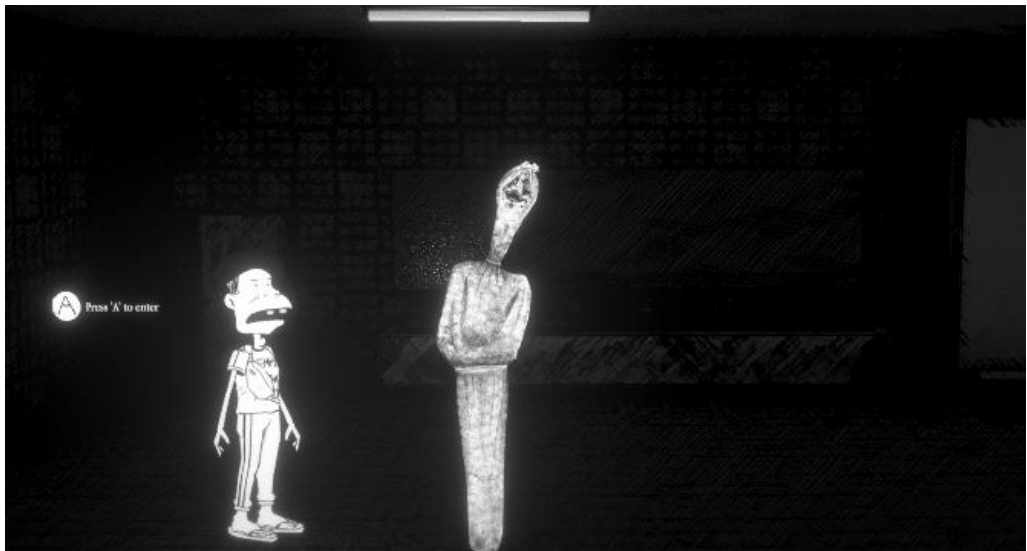


Figure 4.9.8 Pocong Attacks

For pocong, the enemy is not actually attacking, just scaring the main character. Whenever the main character Ahmad goes near the pocong, their sanity will decrease. The pocong appears only in the female toilet. This enemy type is the

easier type of enemy for this game. To clear it, the player just has to outrun it or hide inside the cabinet to let it pass.



Figure 4.9.9 Orang Minyak Attacks

The second type of enemy the player will encounter is the Orang Minyak enemy. This enemy will appear in the second act of the story. Orang Minyak attacks by shooting oil substances at the player. Whenever the player is hit by this oil, the player is slowed by 50 percent on its movement. To clear this slow effect the player has to either use water or wait for a certain amount of time for it to clear naturally. To clear Orang Minyak, the player has to use ming, which is another character in this game and use its character ability to kill it. Another thing about this enemy is that its movement causes vibration to the player's gamepad.

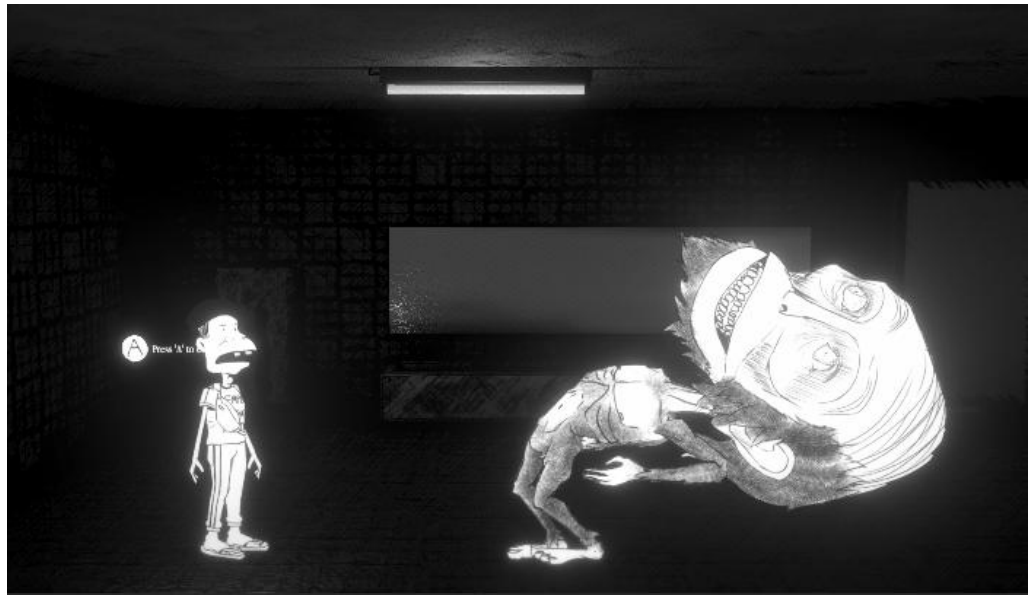


Figure 4.9.10 Santu Sakai Charging

The last type of enemy the player will encounter is the Santu Sakai enemy. This enemy will appear in the third act of the story. Santu Sakai first charges at the player character to start their attacks. Their attacks have two modes, charging and releasing. For charging, Santu Sakai will wind up their heads and wait for a few seconds. The second mode is then initiated once the charging is finished, here it smashes the ground doing an Area of Effect attack as shown in Figure 4.9.11. The player character is then knocked back. To clear it the player has to use the third character Haran to go past it since it is not affected by the knockback and has an ability to assist this. The goal here is to get the oil item. This item lets Ming kill it with its skills.



Figure 4.9.11 Santu Sakai Attacks

4.9.7 Characters

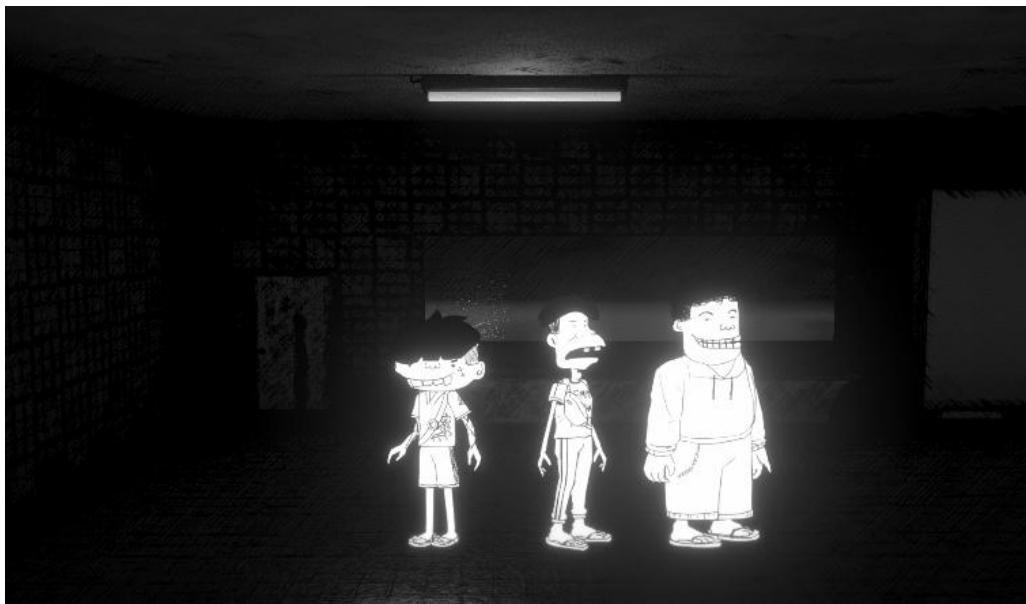


Figure 4.9.12 Characters

There are three types of characters in this game, Ahmad, Ming and Haran. All the characters have different mechanics to them, and they appear in different sections of the game.

Ahmad



Figure 4.9.13 Ahmad character

Ahmad is the main character of this game; it is the character that the player starts with at the beginning of the game and is used the most in this game. Ahmad has a sanity system as its unique feature. Whenever the sanity reaches below the threshold, Ahmad will enter an insane view, here there are items that Ahmad can pick up and use.



Figure 4.9.14 Insane View

Ming



Figure 4.9.15 Ming Character

Ming is the second character of this game, the character has one special ability which is that it can throw matches towards the direction it is facing. To throw matches the player needs to pick up the match boxes item. This item is used to kill Orang Minyak and Santu Sakai.



Figure 4.9.16 Ming Throws Matches

Haran

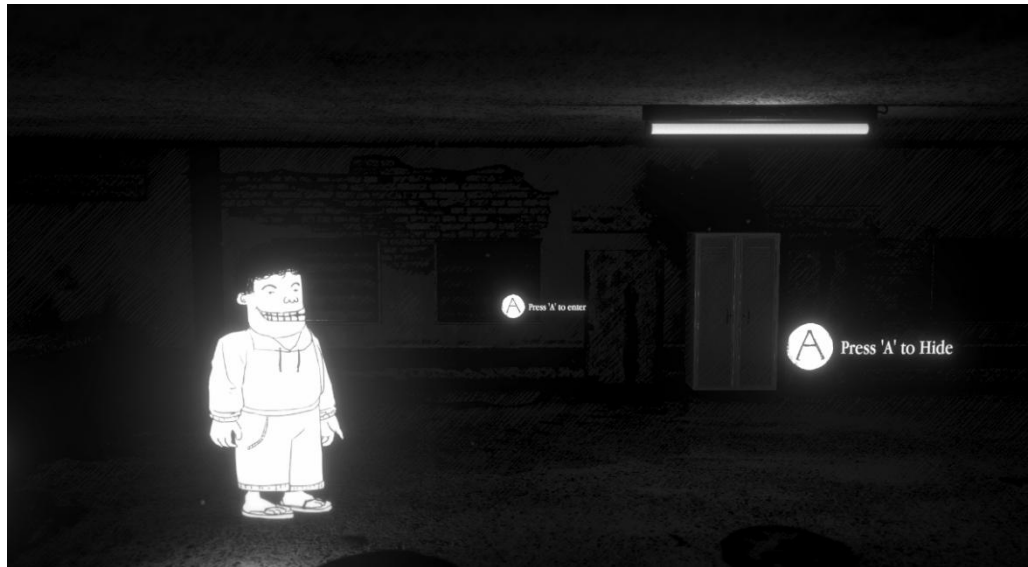


Figure 4.9.17 Haran Character

Haran is the third character of this game, the character has one special ability which is that it can rush towards the direction it is facing. When rushing this character can block all types of enemies preventing them from getting closer towards the other character.



Figure 4.9.18 Haran rushing

4.9.8 Puzzles

There are only two types of puzzles in this game, it is the lock picking puzzles and the cutting plants puzzles. Key items are used to clear the lockpicking puzzles while knife items are used to clear the plants cutting puzzles.

For lockpicking puzzles, the player needs to rotate their joystick to clear it. To assist and also improve the player experiences, whenever the player gets closer towards the goal the vibration will become stronger.

For plant cutting puzzles, the player needs to hold down the right trigger to start cutting. Whenever the player starts cutting something, the controller vibrates. This continues until the trigger is released.

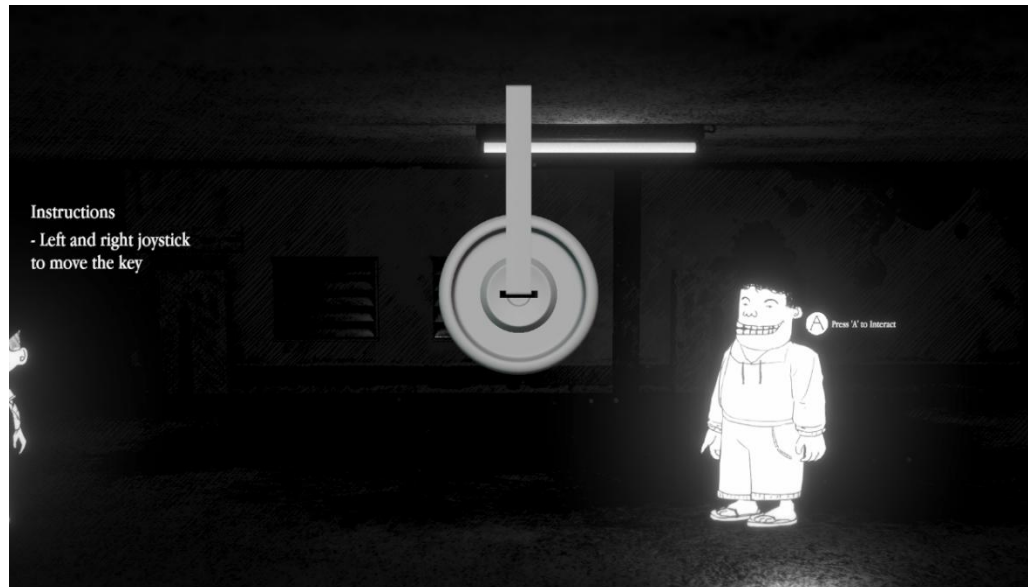


Figure 4.9.19 Lockpicking puzzles

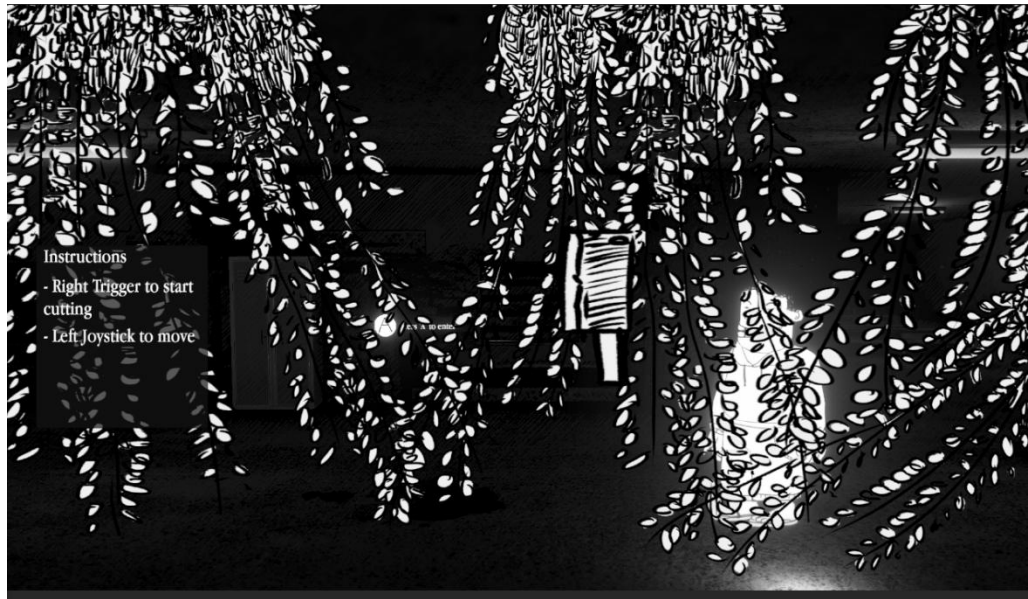


Figure 4.9.20 Plant Cutting Puzzles

4.9.9 Enter rooms

Since our game uses a different way to load the scene, the enter rooms mechanic is added to this section. The game is separated into two types of scenes, the persistent scene and the room scene. For the persistent scene, the object inside is not destroyed and it stays until the ending cutscene. For the room scene, this scene changes constantly. Since the game has an insane view, for each of the levels there are two environments that need to be switched when the character goes into insane mode. Therefore, to have a better performance the environment scene and the player scene is separated.

Whenever the player enters a room a Crossfade transition is used. This is to hide the loading sequence and the player position initialization at the start. Without this, the player would just awkwardly float at the starting position wherever they enter a room.



Figure 4.9.21 Rooms

4.9.10 Haptics

The game uses the features of a gamepad in their mechanics. The main haptics is the vibration feature. In the game there are three types of vibrations, short pulse, hard pulse and variable pulse. The short and hard pulse are used in the enemy movement while the variable pulse is used in the puzzle mechanics.

4.9.11 Dialogue System

The dialogue system in this game uses a third-party plugin, Fungus CE v0.6, which is specialized for creating dialogue and cutscenes. While the dialogue lines using the plugin, some extensions and modifications were made for this plugin in order to match with the gameplay and the theme.

The dual-dialogue boxes use animator and animation to create visuals of comic-style dialogue boxes where every time players continue the dialogue, the dialogue box will pop-up from the left or right based on which characters were talking. When the current character is talking, another character dialogue box will be transmitted behind the current dialogue box and become translucent. In addition, the dialogue box itself will adjust its sizes based on the text numbers inside the box, making the visuals more dynamic.

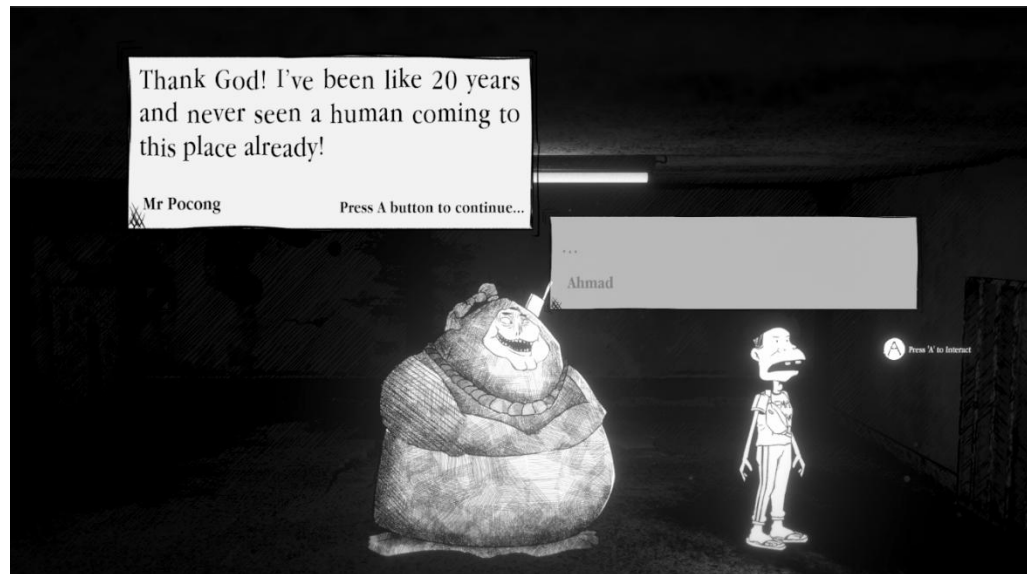


Figure 4.9.22 Dual Dialogue Box

In addition, the dialogue can be triggered in three ways: Enter Collider, Interact, and Auto-Run. For the Enter Collider, when players enter the collider of the dialogue, it will immediately trigger the dialogue. For the Interact, the dialogue only shows once players interact with the object such as doors in the scene. And lastly, for the Auto-Run, this dialogue required a condition where players need to collect or complete certain things in order to play the dialogue. For example, when players kill Santu Sakai, the dialogue will immediately play as it had met the condition where Santu Sakai was dead. These approaches enable the game to have dynamic dialogue flows, which are able to make the game story not to be too linear where dialogues will only play based on players own action.

5.0 RESULT & ANALYSIS

This chapter will present the findings from two complementary sources:

1. **Survey results** collected through Google Forms, which provide quantitative percentages and qualitative reflections on game immersion.

2. **Player observation sessions** during they playtesting *Rempit in the Night*, which capture how players behaved, reacted, and interacted with the game during playtesting.

Together, these findings not only enable to conduct a comprehensive analysis of how immersion influences cognition and perception but also serve to validate the game’s design approach.

5.1 Survey Results

5.1.1 Quantitative Findings

Section A – Demographics Data

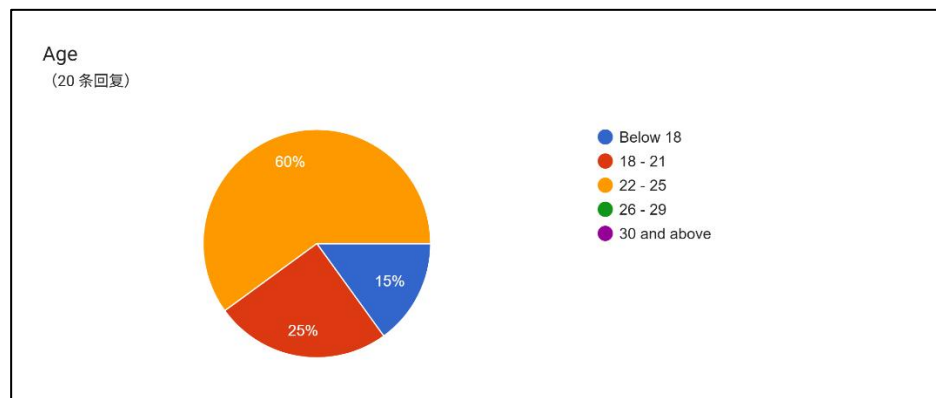


Diagram 5.1 The Age of the Respondents

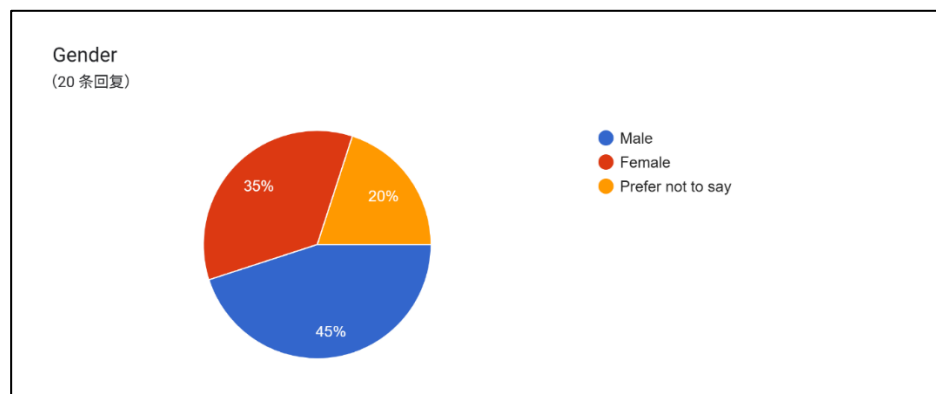


Diagram 5.2 The Gender of the Respondents

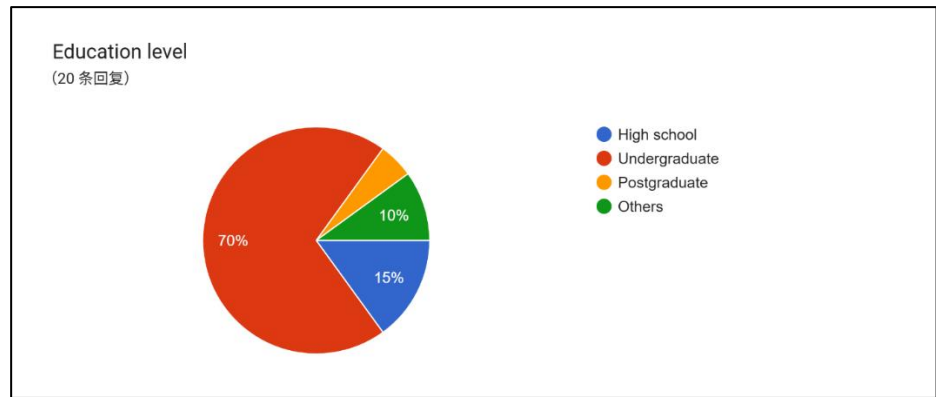


Diagram 5.3 The Education Level of the Respondents

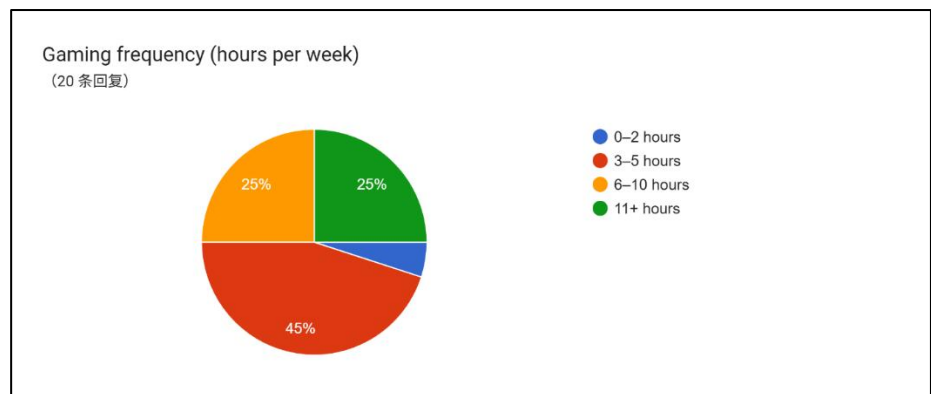


Diagram 5.4 The Game Frequency of the Respondents

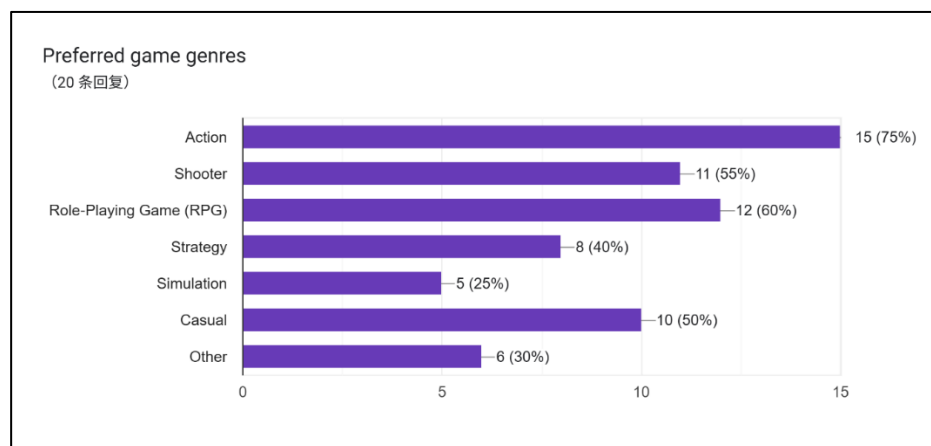


Diagram 5.5 Preferred Game Genres of the Respondents

Section B: Cognitive Functions

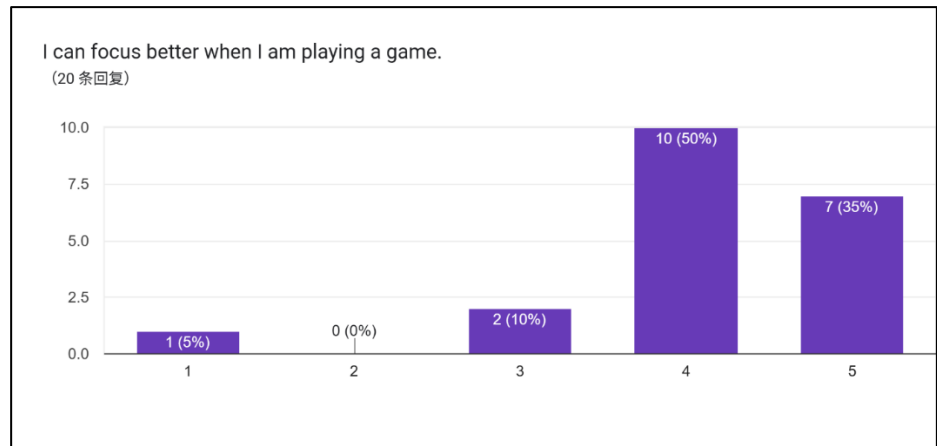


Diagram 5.6 First Question Data

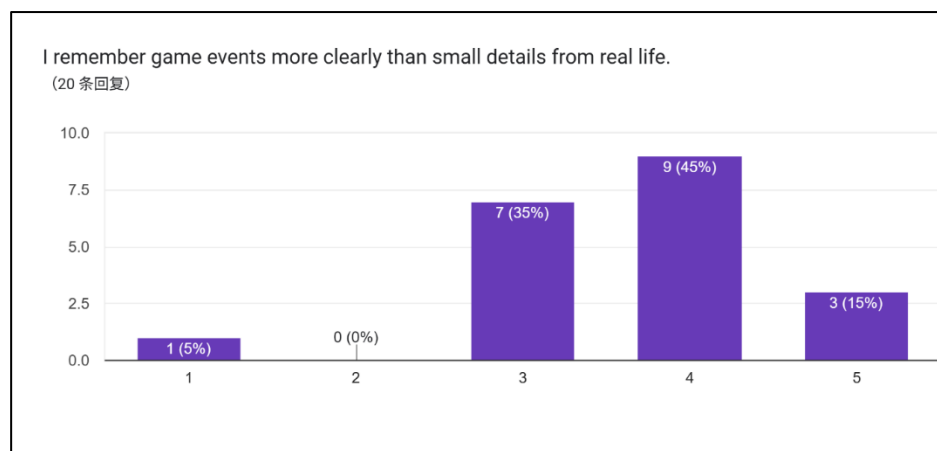


Diagram 5.7 Second Question Data

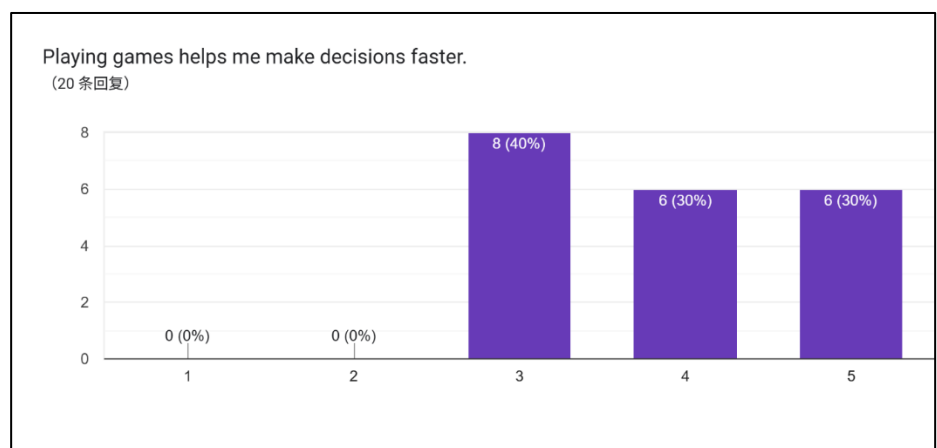


Diagram 5.8 Third Question Data

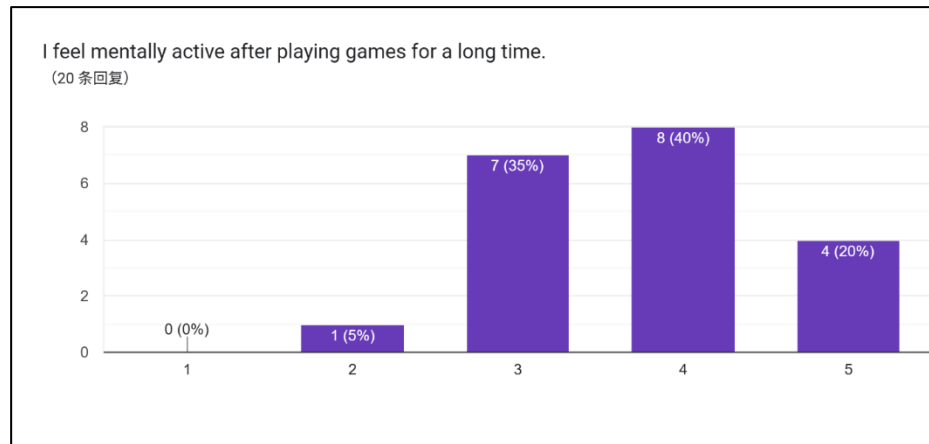


Diagram 5.9 Fourth Question Data

Section C: Perceptual Experiences

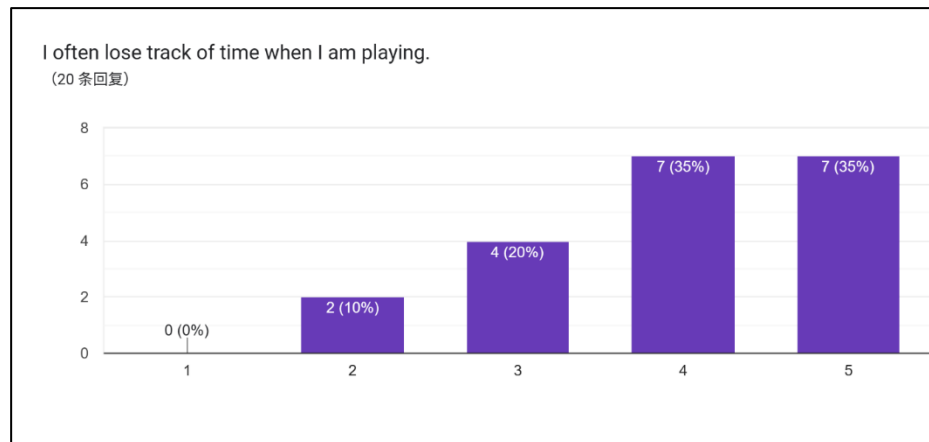


Diagram 5.9 First Question Data

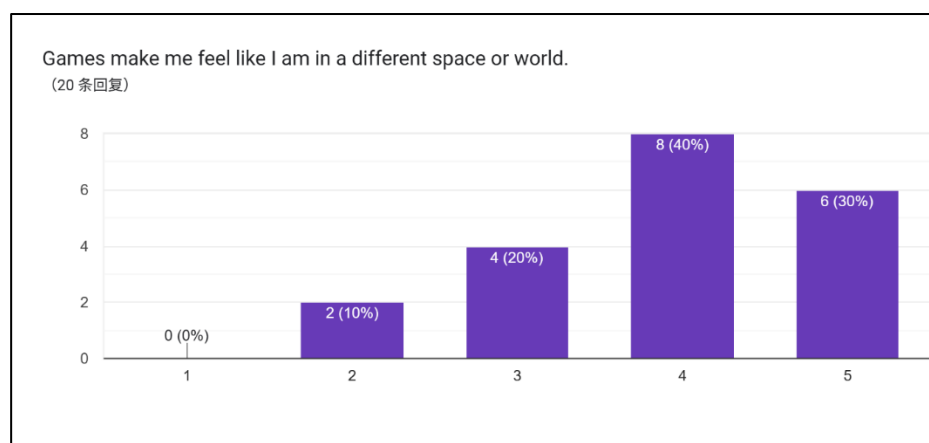


Diagram 5.10 Second Question Data

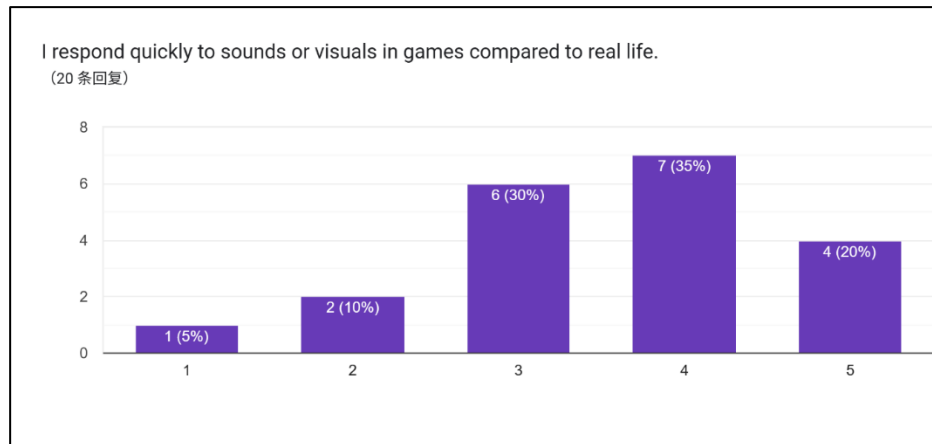


Diagram 5.11 Third Question Data

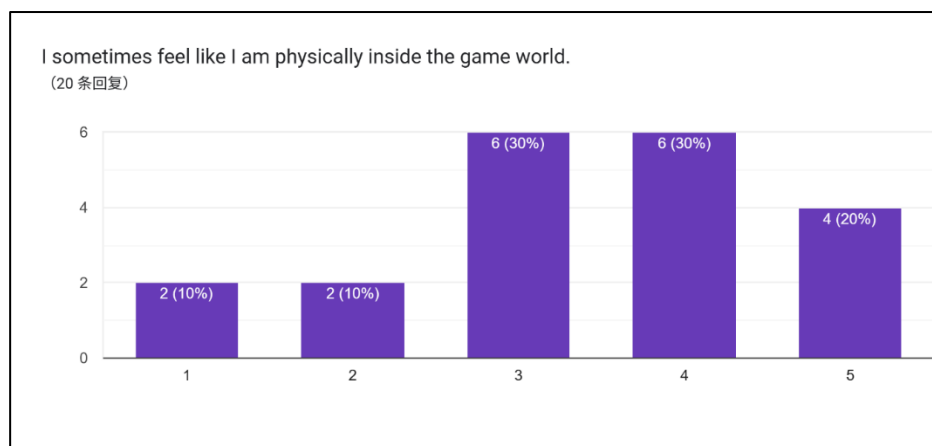


Diagram 5.12 Fourth Question Data

Section D: Reality Distinction

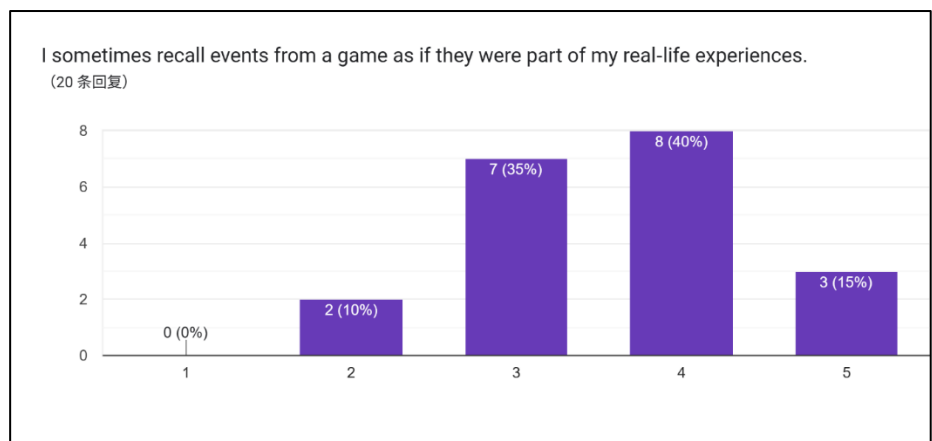


Diagram 5.13 First Question Data

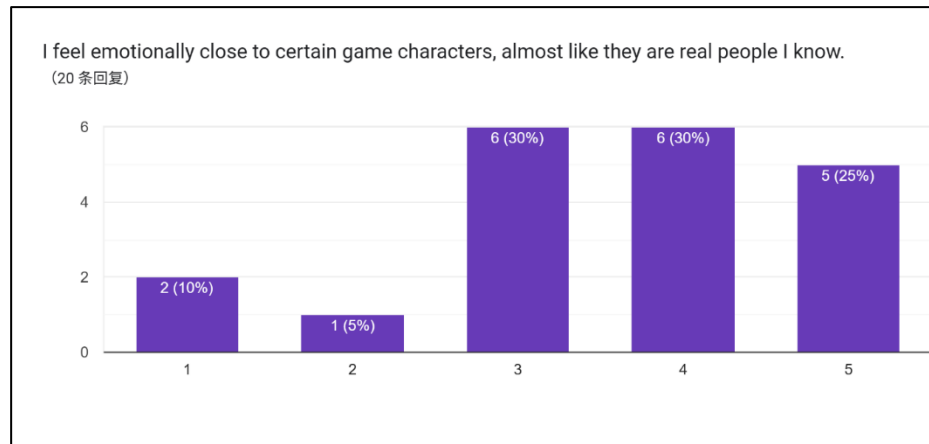


Diagram 5.14 Second Question Data

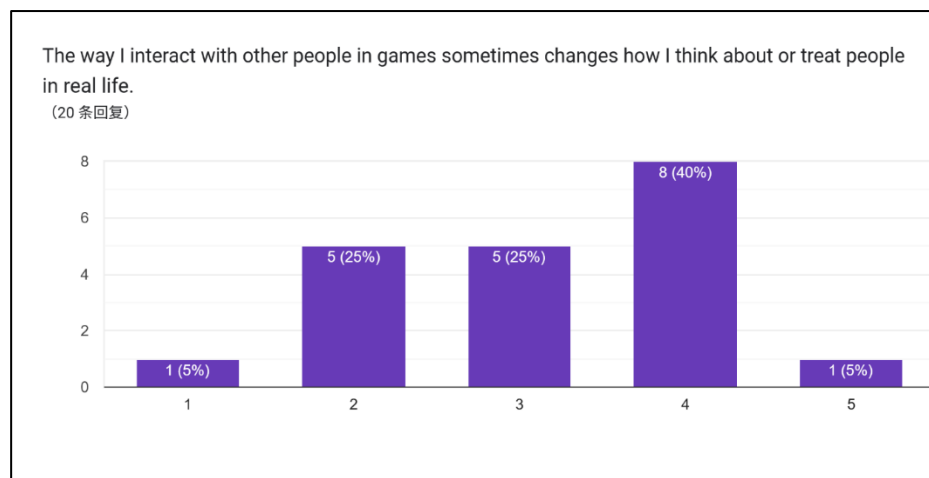


Diagram 5.15 Third Question Data

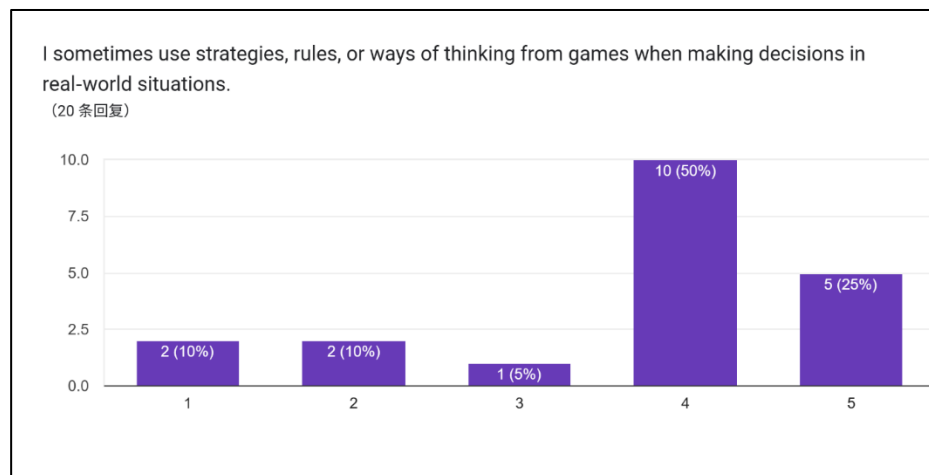


Diagram 5.16 Fourth Question Data

As presented the final quantitative data gathered from the questionnaire, it can be seen that most participants were young adults,

primarily the university students aged between 18 and 25 based on the demographic profile of respondents shown. Most of them were reported to play games frequently, which many of them spend more than 11 hours per week on gaming. Besides, the game genres categories that most likely preferred by them were such as Action, Shooter, Role-playing, and Casual game. This demographic distribution reflects the fact that this study focuses on active players, as they are more likely to experience the immersion effect from gaming.

In terms of cognitive functions related to **H1**, majority of the respondents believed that immersive games helped them to improve their concentration. In addition, many respondents also stated that they can remembered the events happened in the games more clearly than compared to remember the minor event in real life. This suggests that immersion able to help enhance a person's memory recall. Meanwhile, several respondents also mentioned that playing games also helped them to make decisions more quickly, this proved that immersion also able to improve decision-making abilities.

On the other hand, the phenomenon of perceptual distortions related to **H2** were also very noticeable. Based on the data gathered, more than half of the respondents mentioned that they did often lost track of time during the gaming sessions, even there are some of them said that they felt they were in another space or world. Although the sample size for this data was small, some respondents stated that they do have some mismatch of the sensation, such as reacting more quickly to the sounds or visual stimuli in the game compared to the stimuli in the real-life situations.

Furthermore, a blurring of reality related with **H3** was observed in the respondents' answer. They described that they did recall the in-game events as if these events were a part of their own real-life experiences. Besides, some of them even stated that they experienced immersive moments where they felt as though they were physically presented within the game world. For the moderating factors linked to

H4, it was reflected in the differences between different groups, where the younger players and those who played daily were more likely to have time distortion and spatial disorientation compared to the older players or those who played only occasionally.

In brief, these quantitative findings confirm that immersion can deliver both cognitive benefits and perceptual risks while moderated by the demographic and gaming frequency variables of the players.

5.1.2 Qualitative Findings

The open-ended responses had given a deeper insight into how players personally perceiving the game immersion. Based on the answers provided by the respondents, the analysis can be categorized into four main themes.

The first theme is **immersion as reality overlap**. This theme was commonly described by the respondents. They explained that how they placed themselves into the character's role, as well as imagining the character's backstories and experiences as if they were their own. One respondent reflected on *Final Fantasy XV*, stating: *"I've put myself into the character of the game, imagining his roles, backstory, and experiences throughout the gameplay."*

Secondly, **everyday life impact** was also commonly mentioned by some of the respondents where they explained that immersion had influenced their emotions and interactions outside of games. For example, there was one respondent described how competitive games like *Dota 2* or *Valorant* shaped their expectations of teamwork, which sometimes it led them to frustration when real-life collaboration fell short.

Thirdly, **perceived benefits** were highlighted by the respondents. Many participants expressed that immersion made the gaming experiences more fun and exciting, which these had improved their focus, and provided them emotional release. One of the participants commented:

“It is good to feel immersive when playing a game because it makes it more fun and exciting.”

Finally, some respondents also mentioned that they have **perceived drawbacks**. They admitted that immersion sometimes caused them to lose track of time or risked blending game experiences with reality. One respondent stated: *“It does cause you to lose track of time.”* Another respondent explained that they consciously will try to avoid combining in-game behaviour with real-life actions to prevent confusion.

In conclusion, these findings from the qualitative research provided a complement to the quantitative results presented previously by revealing the subjective expressions from the respondents regarding the experiences of game immersion. All of these answers have been further confirming the dual nature of the immersion, where it can enhance people’s concentration and their creativity, while it may also can lead them to perceptual distortions like time distortion as well as blurring the boundaries between the real world and the virtual world.

5.2 Player Observation Findings

During the playtesting sessions of *Rempit in the Night* in Final Year Project exhibition, the players who play tested the game had provided direct insights into how they interacted with the game mechanics, atmosphere, and narrative of the game. Based on the observations done, it was revealed that most players show high focused attention, which they kept leaning forward and maintaining eye contact with the screen. Besides, the emotional reactions were common, several players were panic and shout during the chase sequences or laugh nervously when reading the character’s dialogues. These behaviours have showed that the horror atmosphere in the game successfully engaged players while the comedy parts in dialogues also tends to engage players to express their emotion, which this heightened the game immersion.

In terms of usability, less participants navigated the inventory system and controls smoothly, suggesting that the interface of the game was not intuitive. Many players struggled during the chasing event, as the players required to keep

tapping on both bumper buttons on the gamepad to pass through the enemies, so of them might forgot to move when doing such action. This had shown that the game UI navigation and controls was not really straightforward, with the players having a hard time to adapt with the control on gamepad.

Regarding the narrative engagement, players were responded positively to the cultural references embedded in the game. They were more commented on the art style of the game were inspired by Lat's Kampung Boy, which has resonated with Malaysian players in which they expressed the recognition and connection to the local context. In addition, some players also commented about the alternative narrative paths where they were struggling to make a choice on decided to step into one of the ending paths. This suggested that branching story could further enhance the game immersion as well as its own replayability.

5.3 Comparative Analysis

By combining both the survey results and the player observations, there are several similar patterns can be found on both sides.

Based on the survey result, it can be confirmed that 75% of respondents often lost track of time while playing, which this was also reflected during the playtesting, where some players play more longer than the expected duration of gameplay. Furthermore, the survey also showed more than 50% of the players were experienced some spatial disorientation, which it aligns with the observed behaviours where the players during the playtesting were ignoring their surroundings and remained absorbed in the game.

Survey findings also highlighted cognitive benefits, where more than 70% of the respondents reporting to have an improvement in focus and enhancement in memory recall. These results were also can be seen during the playtest observations, where players showed problem-solving behaviours during the chase sequences and maintained concentrated attention throughout the gameplay. However, the survey responses revealed the drawbacks such as more than 40% of respondent have disconnection from reality, which was mirrored in the

playtesting when some players show the feeling of tension or being fatigued after a prolonged gaming session.

Lastly, the narrative engagement also can be seen in both survey results and playtesting observation. The respondents from the survey described immersion as making games “more fun and exciting,” while the playtest players commented on the cultural resonance of the setting and the game atmosphere. This triangulation confirms that *Rempit in the Night* successfully delivers immersive experiences that reflect both the cognitive benefits and perceptual risks that identified in the survey.

6.0 CONCLUSION & FUTURE WORK

6.1 Conclusion

This study successfully achieved its objective of analysing the dual effects of game immersion on cognition and reality perception. The survey results had showed that immersion can improve people concentration and memory but also can cause perceptual distortions such as time loss and reality overlap. Besides, the playtest feedback had confirmed that *Rempit in the Night* successfully delivered the immersive experiences through its horror atmosphere and cultural references, while also highlighted the things that can be improved such as chase difficulty and control navigation.

6.2 Limitation

Although the data from both survey and playtest able to prove the hypotheses, the research was still limited by a small sample size where only total of 20 respondents completed the survey while for the playtesting observation was limited by the timing of the exhibition was set during final exam and semester break weeks. This make the playtest sessions to be short, which restricted the ability to study the long-term immersion effects from the players.

6.3 Future Work

The future studies could be expanded by gathering more respondents from the survey with a larger and more diverse group. Besides of that, conducting a longer playtest and refining the critical game mechanics based on feedback could help to make the observation more accurately and reduce game errors that can cause players breaking away from immersion. Finally, the exploration on the branching dialogue and the balance of the game difficulty would further enhance the game immersion and replayability.

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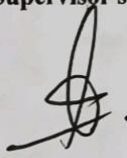
APPENDICES

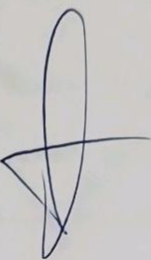
Appendix A – FYP 1 Logbook

Appendix A	
Project Paper Consultation Logbook	
Project Title	Rempit in the Night
Student Name	Teh Yong Keat
Student ID	2204325
Year/Semester	Year 3 Semester 1
Supervisor	Ts Dr Ang Kok Yew

WEEK 01	
Comments: - Group forming with 3 other students, initial roles have been discussed (will changed if needed): - o Clement Chiam Heng Chen (Programmer) - o Ng Poh Yang (Audio Designer and Level Designer) - o Sky Soo Sin Kai (Game Artist and UI Designer) - o Teh Yong Keat (Story Writer and Level Designer) - The group name has been confirmed: Imagine Space - First game idea has been created, initially confirmed the game theme is Comedy Horror and game genre is side scroller. - Second game idea has been created, initially confirmed the game theme is Mafia and game genre is Rogue-lite.	Supervisor signature:  Ts. DR. ANG KOK YEW Deputy Dean Student Development & Industrial Training Faculty of Creative Industries Universiti Tunku Abdul Rahman
Progress (please circle the feedback) 12345 PoorSatisfactoryGood	Date:
WEEK 02	

Comments: - The story of the first game "Rempit in the Night" needs to be trimmed due to excessive number of scripts and plots. - Initially trimmed until Act ONE for Game Alpha. - Planned a few scenes for Act ONE, adding "Hiding" mechanic with some objects that players able to interact for this mechanic.	Supervisor signature:  Ts. DR. ANG KOK YEW Deputy Dean Student Development & Industrial Training Faculty of Creative Industries Universiti Tunku Abdul Rahman
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date:
WEEK 03	
Comments: - Discussed the game scenes that will have in Level ONE. - Continue trimming the game story. - Writing and designing the dialogue scene of NPC – Mr Pocong has two options for players to choose, in which will affect the ending of the game.	Supervisor signature:  Ts. DR. ANG KOK YEW Deputy Dean Student Development & Industrial Training Faculty of Creative Industries Universiti Tunku Abdul Rahman
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date:
WEEK 04	
Comments: - Final decision to choose "Rempit in the Night" as our game project for FYP. - Confirm the level scenes for Act 2 and Act 3. - Minor adjustment for the Level One scene to minimize the level size and fit with the game story.	Supervisor signature:  Ts. DR. ANG KOK YEW Deputy Dean Student Development & Industrial Training Faculty of Creative Industries Universiti Tunku Abdul Rahman
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date:
WEEK 05	

Comments: - Some minor adjustment for the dialogue scenes between the NPC and protagonist. - Arrange the narrative flow of the story, where the first enemy – Pocong, the stage of its appearance has been changed from after meet Mr Pocong to before the dialogue scenes happen. - Adding two game objectives for the first level (Act One): - Find the staircase to go to the second floor (Blocked by obstacle – Plant). - Find an item (Knife) to destroy the staircase’s plant.	Supervisor signature:  Ts. DR. ANG KOK YEW Deputy Dean Student Development & Industrial Training Faculty of Creative Industries Universiti Tunku Abdul Rahman
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date:
WEEK 06	
Comments: - Create the dialogue system - Create dialogue box animation and transition. - Adding text animation effects like jiggle, shake, bounce.	Supervisor signature:  Ts. DR. ANG KOK YEW Deputy Dean Student Development & Industrial Training Faculty of Creative Industries Universiti Tunku Abdul Rahman
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date:
WEEK 07	

Comments: - Improve the dialogue trigger logic. - Separate two types of dialogue trigger ↳ Auto Trigger : Will play dialogue scene automatically ↳ Interactor : Dialogue scene will show after interact. - Adding extra methods that work for cutscenes/dialogue. ↳ Audio Object ↳ Show/Hide Player ↳ Lock/Unlock Player Movement ↳ One Time Only / Repeatable Dialogue	Supervisor signature: 										
Progress (please circle the feedback) <table border="0"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Poor</td> <td colspan="2">Satisfactory</td> <td colspan="2">Good</td> </tr> </table>	1	2	3	4	5	Poor	Satisfactory		Good		Date:
1	2	3	4	5							
Poor	Satisfactory		Good								

Appendix A – FYP 2 Logbook

Appendix A	
Project Paper Consultation Logbook	
Project Title	Rempit in the Night
Student Name	Teh Yong Keat
Student ID	2204325
Year/Semester	Year 3 Semester 2
Supervisor	Ts Dr Ang Kok Yew

WEEK 01	
Comments: - Debugging the game. - Help testing the game to find more possible bugs, continue providing founded bugs to the programmer, Clement.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 19/5/2026

WEEK 02	
Comments: - Discussed the concept and design of the Orang Minyak. - Adding extra settings, where there will have two types of Orang Minyak: - o General enemy similar to Pocong. - o Boss in Level 2 (Chapter 2) - Draft the mechanics, features, and behaviors of general type Orang Minyak, - Further discussion for Boss mechanics and behaviors will do after completing level design for Chapter 2.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 19/5/2026

WEEK 03	
Comments: - No updates for Week 3, progress will continue after CNY celebration.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 19/5/2026
WEEK 04	
Comments: - Discuss Level 2 Design with Level Designer, Poh Yang. - In Level 2, two floors (1F and 2F) are designed, additional with a Backyard scene that for Level 1 (this unlockable during gameplay of Level 2). - Discuss and confirm to put Checkpoint system and Death Mechanic into the game.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 19/5/2026
WEEK 05	
Comments: - Adding new gameplay - Character Switching mechanic. ○ After Level 2 will appear other NPC (Ming and Haran), they do not have any purpose, instead just follow player. ○ Add new gameplay to able to control Ming and Haran, as well confirmed their unique mechanic. ▪ Ahmad (MC) – Only person that can go into Insane View. ▪ Ming – Detect Orang Minyak (faint if approach too near to himself), only person that can use projectile item (matches – throw to Orang Minyak to deal damage) ▪ Haran – Charge attack to enemy (can stunt Santu Sakai), only person that will not be stunt by Santu Sakai attack. - Further discuss about Orang Minyak mechanics ○ Boss Orang Minyak will shoot projectile (oil) that can cause blindness or slow down character. ○ Add two spawn points that Orang Minyak will spawn ○ Only visible to players when switching to Ming.	Supervisor signature: 

- Discuss about Level 3 Final Boss – Santu Sakai mechanic - o 2 ideas to be confirmed - o Either Final Boss attack by throwing objects and stunt players. - o Or it charges toward to the character and stunt players.	
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 19/5/2026
WEEK 06	
Comments: - Continue on working adding new mechanics - Discuss with Sky about the Santu Sakai design, and the cutscene for Tutorial level.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 19/5/2026
WEEK 07	
Comments: - Debugging session for Character Switching mechanics. - Fix the Dialogue System: - o Adding saving marking function to dialogue system, avoiding dialogue reset every time load back scene to scene. - o Expanding the function in which unlock or disable certain dialogues in the scenes after a dialogue run. - o Fix Tutorial level dialogues with new functions and add the cutscene into the dialogue scene (Santu Sakai dragging cutscene done by Sky). - o Fix Level 1 dialogue scene and refined the story flow of Level 1. - o Start doing Level 2 dialogue scene, currently work for 1F scene (as many room scenes and 2F are not fully completed yet).	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 19/5/2026

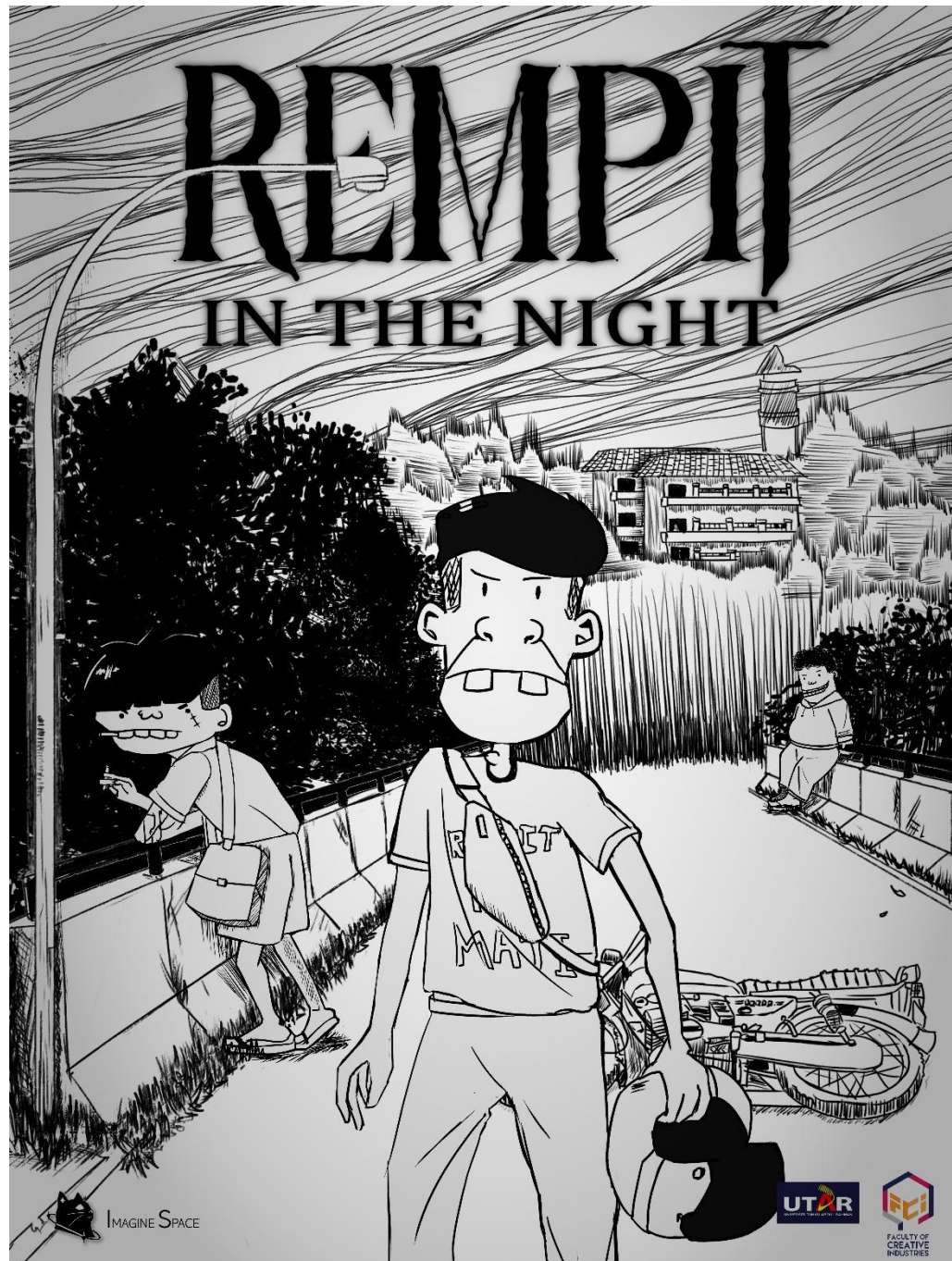
WEEK 08	
Comments: - Continue work on Level 2 dialogue. - Progression issue: GitHub merge branch cause error where some progress accidentally covered by old updates, newest updates like Santu Sakai mechanics and assets went missing. (Solved 24/3) - As the Level 2 dialogue has two parts based on game level (First floor and second floor), currently working on First floor's dialogue part before programmer completing the 2nd floor set up and mechanic application.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 19/5/2026
WEEK 09	
Comments: - Stop working on Level 2's dialogue due to finding certain game flow logic issues in the level design. - Discuss with Poh Yang (Level Designer) to identify the illogical parts in the levels that may affect the dialogue and the storyline. - Fixing the level flow with Poh Yang, some dialogue lines need to be refined and fixed to match with the new level flow.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 19/5/2026
WEEK 10	
Comments: - Continue refine and fixing the level flow with Poh Yang, this process has been done for few times within this week. - Some dialogue lines need to be refined and fixed to match with the new level flow.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 19/5/2026

WEEK 11	
Comments: - Continue work on Level 2's narrative part - Fixing the flow of the Level 2 after discussing with Level Designer, Poh Yang. - Refine the dialogue system scripts and continue adding the dialogue lines following the latest level design flow.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 12/5/2026
WEEK 12	
Comments: - Complete Level 2's dialogues and cutscene. - Start discussion and confirmation of Level 3 narrative content. - Working on planning the endings for the game.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 12/5/2026
WEEK 13	
Comments: - Adding missing dialogue scenes for Level 1 and Level 2. - Refine some dialogue lines which align with the story logic and flow of the gameplay. - Writing storyline for Opening Cutscene and Ending Cutscene. - Debug the dialogue system where conflicting with the player control system. - Assign character sound to every dialogue line based on the character and their emotion. - Start working on Level 3 dialogue scene as well implement the ending condition.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 12/5/2026

WEEK 14	
Comments: - Refine the Dialogue System, making the dialogue box change size based on the numbers of text inside (Dynamic dialogue box). - Continue debugging the dialogue system - Integrating Opening Cutscene and Ending Cutscene into the game. - Final polish and debugging.	Supervisor signature: 
Progress (please circle the feedback) 1 2 3 4 5 Poor Satisfactory Good	Date: 

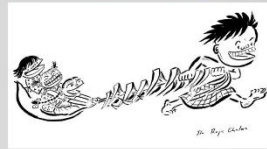
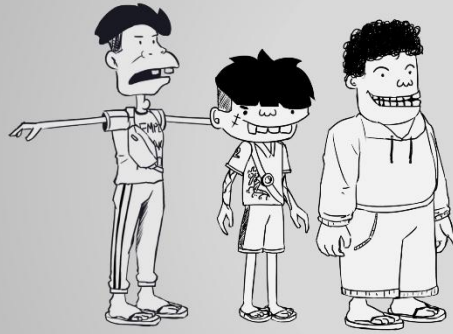
Appendix D – Promotional Materials

Game Poster



Design Board – Character Design

CHARACTER DESIGN



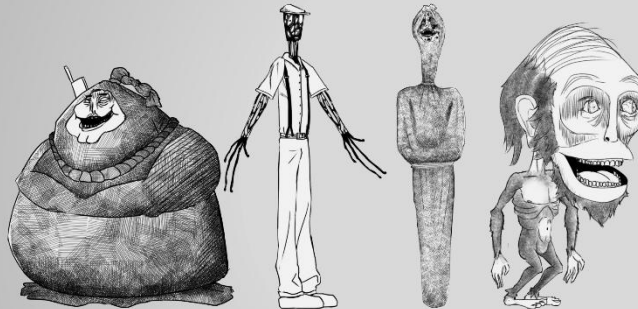
The character design takes inspiration from The Kampung Boy by Lat, incorporating exaggerated proportions and expressive features to create a visually distinctive and memorable character. This artistic approach enhances the character's uniqueness while preserving a playful and recognizable style.

REMPII
IN THE NIGHT



Design Board – Monster Design

MONSTER DESIGN



The monster design is inspired by the horror art style of Junji Ito, known for its disturbing details and unsettling visual elements. This design choice creates a strong contrast between the human characters and the monsters, making the creatures appear more terrifying and visually impactful. At the same time, it serves as a tribute to different artistic cultures by combining the nostalgic Malaysian-inspired style of The Kampung Boy with the dark Japanese horror aesthetic of Junji Ito. The contrast between these two styles helps strengthen the visual identity and atmosphere of the project.

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Name Card Design





Appendix H - Final Project Title Form

Fill in the information below as detailed as you can after confirming project title.

Project Type:

☒ Product Based Project

☐ Research Based Project

(tick the appropriate box)

Student ID	Student Name	Email & Contact no.
2204682	Clement Chiam Heng Chen	chiamhengchen@lutar.my / 010-9669688
2207564	Ng Poh Yang	ngpohyang2004@lutar.my / 012-5009877
2205103	Sky Soo Sin Kai	soosinkai@lutar.my / 014-6501360
2204325	Teh Yong Keat	tehyongkeat040711@lutar.my / 011-61501256

Supervisors:

Dr Simon Ang Kok Yew, Ms Christie Chow Mee Mooi, and Puan Nik Norazira Binti Abdul Aziz

Project Title:

Rempit in the Night

Project description:

Rempit in the Night is a **narrative-driven survival horror adventure** rooted in Malaysian folklore and culture. Set in the 2000s at Bukit Tinggi, the story is about three friends, Ahmad, Ming, and Haran, whose late-night motorbike ride turns into a nightmare after a mysterious encounter on the highway. Separated and trapped in an abandoned school, they must confront supernatural beings including the **Pocong**, **Orang Minyak**, and the fearsome **Santu Sakai**.

Players explore in an abandoned school environment, solve puzzles, and switch between characters that each of them has their unique abilities: Ahmad's Insane View, Ming's projectile combat, and Haran's charge and barrier skills. The game blends psychological horror and comedic undertones, with the art styles inspired by Junji Ito's unsettling environments and enemy design together with Lat's Kampung Boy character designs.

This project aims to deliver a distinctive horror-comedy experience that highlights Malaysia's rich folklore while offering immersive gameplay and narrative depth.

Student name	Individual Project Scope
Clement Chiam Heng Chen	• Role: Game Programmer • Objectives: Focus on developing the game mechanics and compiling the game. • Tasks & Deliverables: Create UI mechanics, puzzle mechanics, characters' mechanics and debugging the game. • Collaboration: Work with narrative designer on dialogues and cutscene events, game artist on visual consistency, and audio designer on sound integration.
Ng Poh Yang	• Role: Audio Designer and Level Designer • Objectives: Focus on designing levels for the game and create BGM and sound effects for the game. • Tasks & Deliverables: Create levels flow for three acts and environment design for them; work on creating BGM and sound effects for the game. • Collaboration: Work with narrative designer on dialogues and cutscene events within the level game flow.
Sky Soo Sin Kai	• Role: Game Artist • Objectives: Focus on creating levels' environments and character designs. • Tasks & Deliverables: Create levels with 3D modelling and create characters with animation via Unity.

	• Collaboration: Work with narrative designer on character design background and game programmer on visuals implementation and shaders development.
Teh Yong Keat	• Role: Narrative Designer, Story Writer and Team Leader • Objectives: Focus on developing the character dialogues and manage team workflow. • Tasks & Deliverables: Create character dialogues as well as the dialogue system in the game and guiding the team progression. • Collaboration: Work with game programmer on implementing dialogue system and trigger sequences, game artist on implementing dialogue UI assets and audio designer on sound integration.

Appendix – Survey Questions

Analysing the Dual Effects of Game Immersion on Cognition and Reality Perception

This survey is part of a Final Year Project conducted by Teh Yong Keat, a Bachelor of Arts (Hons) Game Design student at Universiti Tunku Abdul Rahman, Faculty of Creative Industries (FCI), Department of Game Studies. The project, titled '**Analysing the Dual Effects of Game Immersion on Cognition and Reality Perception**', explores how immersive gameplay influences both cognitive functions and perceptions of reality. Participation is entirely voluntary. Responses will remain anonymous, and no personal identifiers such as names will be collected. All data will be treated with strict confidentiality and used solely for academic purposes in the completion of this thesis and related game project. The survey will take approximately 8–10 minutes to complete.

* 表示必填

1. I have read and understood the information provided. I voluntarily agree to participate in this survey, and I understand that my responses will remain anonymous, confidential, and used solely for academic purposes as part of the Final Year Project thesis titled "**Analysing the Dual Effects of Game Immersion on Cognition and Reality Perception**". *

请仅选择一个答案。

☐ I agree to participate.

Section A: Demographics

To gather background information that helps contextualize responses and allows for comparison across different participant groups.

2. Age *

请仅选择一个答案。

- ☐ Below 18
- ☐ 18 - 21
- ☐ 22 - 25
- ☐ 26 - 29
- ☐ 30 and above

3. Gender *

请仅选择一个答案。

- ☐ Male
- ☐ Female
- ☐ Prefer not to say

4. Education level *

请仅选择一个答案。

- ☐ High school
- ☐ Undergraduate
- ☐ Postgraduate
- ☐ Others

5. Gaming frequency (hours per week) *

请仅选择一个答案。

- ☐ 0-2 hours
- ☐ 3-5 hours
- ☐ 6-10 hours
- ☐ 11+ hours

6. Preferred game genres *

请选择所有适用项。

- ☐ Action
- ☐ Shooter
- ☐ Role-Playing Game (RPG)
- ☐ Strategy
- ☐ Simulation
- ☐ Casual
- ☐ Other

Section B: Cognitive Functions

To see how games affect focus, memory, and thinking skills.

Please select your answer based on this Linear scale (1 = **Strongly Disagree**, 5 = **Strongly Agree**)

7。 I can focus better when I am playing a game. *

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

8。 I remember game events more clearly than small details from real life. *

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

9。 Playing games helps me make decisions faster. *

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

10。 I feel mentally active after playing games for a long time. *

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

Section C: Perceptual Experiences

To understand how games change the way people feel about time, space, and senses.
Please select your answer based on this Linear scale (1 = **Strongly Disagree**, 5 = **Strongly Agree**)

11. I often lose track of time when I am playing. *

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

12. Games make me feel like I am in a different space or world. *

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

13. I respond quickly to sounds or visuals in games compared to real life. *

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

14. I sometimes feel like I am physically inside the game world. *

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

Section D: Reality Distinction

To explore how games may blur the line between game experiences and real life.

Please select your answer based on this Linear scale (1 = **Strongly Disagree**, 5 = **Strongly Agree**)

15. I sometimes recall events from a game as if they were part of my real-life experiences. *

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

16. I feel emotionally close to certain game characters, almost like they are real people I know. *

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

17. The way I interact with other people in games sometimes changes how I think *
about or treat people in real life.

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

18. I sometimes use strategies, rules, or ways of thinking from games when making *
decisions in real-world situations.

请仅选择一个答案。

1	2	3	4	5
☐	☐	☐	☐	☐

Section E: Open-Ended Questions

To collect personal stories and reflections that explain how games feel real and how immersion affects everyday life.

Note: These questions are optional. Please answer only if you wish to share your experiences.

19. Describe a time when playing a game felt so real that it almost seemed like part of your actual life. For example, did you feel emotionally involved, physically present, or strongly connected to the game world?

Guidance: Write a short paragraph or give one example.

20. Describe how playing immersive games has affected your everyday life. For example, has it changed the way you think about problems, the emotions you feel, or the way you interact with people outside of games?

Guidance: Write 2–3 sentences or share one situation.

21. Explain what you see as the positive effects (benefits) and negative effects (drawbacks) of playing games that feel very immersive. For example, benefits could include improved focus or creativity, while drawbacks might include losing track of time or feeling disconnected from reality.

Guidance: List at least one benefit and one drawback.

Thank you for participating this research project.

Thank you for your participation in this survey. Your responses are valuable to the Final Year Project thesis '**Analysing the Dual Effects of Game Immersion on Cognition and Reality Perception**' conducted at Universiti Tunku Abdul Rahman, Faculty of Creative Industries, Department of Game Studies. The insights you have provided will contribute to a deeper understanding of how immersive gameplay influences cognition and reality perception. All responses will remain anonymous and confidential, and findings will be reported only in aggregated form for academic purposes.

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Appendix – Survey Responds

Section E: Open-Ended Questions

1. Describe a time when playing a game felt so real that it almost seemed like part of your actual life. For example, did you feel emotionally involved, physically present, or strongly connected to the game world?

Guidance: Write a short paragraph or give one example.

- Back when I was playing Just Shapes and Beats, I really didn't want my character to die. The "Close To Me" boss battle was exceptionally emotional.
- When playing red dead redemption 2, the world feels so real and sometimes it feels more realistic than real life, because it is fake, that's why it feels real.
- When I'm playing games that requires high thinking skills such as strategy game, role playing games and others similar games that needs me to concentrate on. The games make me recall vividly, like I'm part of the game.
- The whole wuthering waves 3.1 story Aemeath arc. It stirred emotions in me, happiness, sorrow, regret and hatred all in one patch.
- There was a moment when I was so immersed in a game that it felt like I was actually inside that world rather than just playing it. I felt emotionally connected to what was happening, reacting with real stress and excitement as if the events were happening to me. For a while, I lost awareness of my surroundings and felt fully present in the experience.
- I was so close to winning, but my teammates ruined it. I'm so angry!
- In Sekiro Shadow Die Twice, the MC faces multiple difficult train rail decision-like decisions, either you kill your master and yourself for the good, or you everyone else, i would connect my feelings emotionally into the character while making the choice in-game.
- One memorable experience was during my time playing 'The Last of Us Part II.' As I navigated the bleak environment, I felt a deep emotional connection to the characters and the story. The sound design and visuals were so immersive that I often forgot I was just in front of a screen—at times, I felt like I was truly part of their world, experiencing their struggles and triumphs as if they were my own.
- Some of the emotional investment felt very real.

- When I first play the walking dead the first time, I feel connected to the main character named Lee, who was convicted for a crime, but everything changed when the walker overruns the city. Throughout the entire story, I get emotionally involve like I'm part of him. I even develop emotional bond to another named Clementine, a little girl found by Lee which later he treated as if she is his own child.
- Playing Assasins Creed and jumping off building made me feel im really jumping off a building, or like that falling down feeling when ur on a roller coaster.
- I've put myself into the character of the game, imaging his roles as the character, backstory, his experiences throughout the gameplay and in the game world. It was Final Fantasy 15, because the story is driven by 4 members of good friends and allies working together to achieve their objectives as a royal guard member and the fate of the prince himself.
- I play lots of shmup so I naturally learn to finish things by myself. Co-op games taught me to teach newer players or know that not everyone is equal so sometimes you have to be the carry even in real life group projects. Don't toxic, guide them. Gacha games means is luck based or proper planning so in my real life too, I just take and use what I have to its full potential and learnt to save resources and money, reducing cost but not to the point of stingy
- usually playing games like horror games really made me feel like im part of it like phasmaphobia.

2. Describe how playing immersive games has affected your everyday life. For example, has it changed the way you think about problems, the emotions you feel, or the way you interact with people outside of games?

Guidance: Write 2–3 sentences or share one situation.

- Well, playing MMOs definitely affected how I viewed real world economy.
- allows me to think from more perspectives.

- i didnt play any gal game and thats why i dont have a girlfriend, same as rpg, the dialouge that can be choosen is not what i can say, it just a setted route create by the designer and not what i really want to say. But some game that require roleplay ia really fun, like lethal company, arc raider, games that provide proximity chat really give immersion
- In certain way, it change how I describe a problem, and how I solve the problem. I'm using game terms and idea most of the time. It makes me look like a nerd, i look so insane if i'm not talking to like-minded people.
- It allows me to put myself in other's shoes.
- Immersive games have made me better at problem-solving by thinking more strategically and staying calm under pressure. They also make me feel more emotionally connected and sometimes use games as a way to relax. However, they can affect my social life if I spend too much time playing instead of interacting with people outside.
- In life, there are some problems that cannot be solved by default ways, while playing game trains my mind to think outside of the box to solve the problem without breaking the 'Stated' rules.
- Playing immersive games has significantly influenced my everyday life. For instance, after completing complex puzzles in games, I find myself approaching real-life challenges with enhanced problem-solving skills. Additionally, I tend to reflect on emotional decisions made by characters, which sometimes shifts how I respond to friends and family in emotional situations.
- Kratos from God of War 2018 has taught me to be wise in how you approach problem. Resolving conflict with violence will always leave you with more resentment, regret and vengeance. Only do what is necessary, not what was written.
- Playing Nier Replicant made me feel more empathetic towards other people.

- This usually happens quite often, especially playing competitive games like Dota 2, Rocket League, Valorant etc. I expected my team would work together to win as a team, but so often they are less expected than I thought, which comes to real life, someone expected me to do the same with the skills and mindset I currently have but I find myself as the falling behind.
- after playing Helldivers 2, I am better at handling task and got an actual structure knowing what must be done first and care about time duration. Each task done in real life is like a small dose of dopamine just like in game completing side or sub objective while advancing towards the main objective and even proper planning in real life too just like choosing loadout depending on enemy type and terrain. sometimes task are impossible to be done due to unrealistic goal and time sensitive issues so just like real life work or assignments and it ended up being a triage where is about completing the main objective first and everything else can be forgo if necessary.
- not really as i try not to combine the way i act in game with how i act in real life.

3. Explain what you see as the positive effects (benefits) and negative effects (drawbacks) of playing games that feel very immersive. For example, benefits could include improved focus or creativity, while drawbacks might include losing track of time or feeling disconnected from reality.

Guidance: *List at least one benefit and one drawback.*

- Benefit: Actually learning real life skills. Drawback: You might spend too much time gaming.
- Improve reaction ability, forget time.
- sometimes a immersive game can help me escape from the stress from real life, but some people will too immerse into it and cant diffeeiate the reality and virtual, kinda fuck up.

- It helps me get through my tough time but it does affect my sleep schedule due to lost track of time.
- Benefits: i find that playing a game that is immersive, it stimulates my creativity. It helps me think idea beyond what can be achieved in real life. For example, there is a nascar driver that uses wall riding in real life that makes him caught up to the pack of the races. Drawback: it limits my thinking beyond the game. Now when I'm thinking of solving a problem, im only using a couple of known solution that are from the game. It makes me realise that i don't know as much as i thought.
- Might get a little mentally straining.
- Benefit very focus, drawbacks lose track of time.
- Immersive games tend to let players to dive deep into their game world that I found positive in our daily life as life these days are quite stressful, these immersive games allow players to take a moment to forget about reality and relief some cognitive pressure out of work or studies. But the negative side of it is that players forget about time since they are so immersed in the game world and forgot to do their responsibilities in real life.
- One major benefit of playing immersive games is improved focus; I often dive deeper into tasks after an intense gaming session. However, a drawback is losing track of time, which can lead to neglecting other responsibilities or feeling disconnected from real-life interactions. Oh and by the way, if you're still looking for respondents, surveyswap.io really helped me when I was running a survey myself last year. You fill in surveys from others and get free respondents in return. Perhaps it's also helpful to you. Anyway, good luck with the study!
- The benefit is it helps the players to be better problem solving as it requires a lot of attention. However, too much immersion can cause the player to not only lost track of times but also lost touch with the reality.

- Playing then modding Monster Hunter: World introduced me to virtual photography & 3D modelling. Years ago, I played Assassins Creed Black Flag for over 16 hrs straight when I first bought it, until I forgot to eat, game was too immersive.
- Benefit: I can see the depth of a heavy story-driven game like Final Fantasy, their team has a really good critical thinking whenever they are creating a new world of each new titles. Drawback: I often play the games too much that I ignored real life situations and leads to procrastinations in my works.
- adrenaline sharpens my decision making and precision in game and is like a dose of dopamine. Drawback: Fear and PTSD. certain sound effect makes me recoil or react quickly like missile tone/being locked/targeted sounds.
- is good to feel immersive when playing a game cuz it makes it more fun and exciting but it does cause you to lose track of time.