

**Sound Effects in Horror Games: The Key of Creating
Tension Towards Players**

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Declaration

I, Ng Poh Yang declare that this thesis report entitled “Sound Effects in Horror Games: The Key of Creating Tension Towards Players” 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.

Signature:



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Date: 22nd May 2026

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Abstract

Introduction

This study is to examine and justify on the sound effects in horror video games on their effectiveness in creating tension towards players and eventually enhancing the immersion of the gameplay from the player's perspective.

Methods

The study will be using an observation method approach, which the data will be analysed through players reaction and behaviour when they are under tension, their decision-making when they hear sound effects throughout their gameplay in a horror game. Then, the observation will be examined for each of the players in a deep study in order to prove the theory of this study.

Results

The results show the players will feel tension and frequently trying to run away from the zombies in the game and often gets outnumbered when there are multiple zombies in a short distance. Thus, the sound effects are also effective in affecting players' decision, as the deep footstep sound from Tyrant makes them feel tension and often trying to run away from it.

Discussion

The findings of the study confirm the hypotheses do match with the study itself, and sound effects do influence tension and deep immersion into the video game and the players. But there are limitations throughout the study, where the data is only collected through online videos of players reacting instead of observing players in real life as this could make the results more accurate; Thus, considerations such as other factors that can cause tension towards the players can be implemented into the study for deeper knowledge.

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1.0 Introduction

1.1. Project Review

This thesis report is based on the final year project, with a group of consist of 4 members including myself. The members are Ng Poh Yang, Teh Yong Keat, Clement Chiam Heng Chen, Sky Soo Sin Kai. We are also known as Imagine Space in our recent projects throughout the years.

The game title for our game project is “Rempit in the Night”. Rempit in the Night is a story driven 2.5D side scrolling comedy-horror game, with combinations of 2D and 3D dimensions as a feature. The art style we are using for designing characters are inspired by a local comic book series called “Kampung Boy”, and the infamous manga artist, Junji Ito’s art style.

The key characteristics of the characters in Kampung Boy are presented in a funny and comedic way for entertaining their readers, the appearances of the characters in the comic book are frequently shown in a simple form but also some details inside. The characters are drawn in in a caricature style with exaggerated facial features, including big smiles, wide mouths, and toothy grins.

On the other hand, Junji Ito’s art styles are famously known for its monster designs, his designs have a very recognizable art style that blends realistic illustration with disturbing, surreal horror. His character designs are not just about appearances; his arts also make the readers sense the monsters are not easy to handle with.

By combining these two specialities, the story narration takes a huge role. The story is about 3 boys, Ahmad, Ming, and Haran, with different family backgrounds and personalities. They plan to hang out together riding their motorbikes to Genting Highlands just as usual in midnight time. As they are riding on their way to the Genting Highlands, one of them unfortunately crashed. Just as 2 of them are looking for his condition, they encountered a creepy fog and eventually passed out. As Ahmad wakes up, he finds himself hurt, and alone at the bottom of the hill. The story starts to expand as the game goes on.

1.2 Background of the Study

The study is mainly focusing on the sound effects in video games, and specifically, the sound effects in horror games that makes people feel uncomfortable, scary, horror, frightening and so on. The background of the study comes from our final year project, which is also a horror themed video game that has horror sound effects elements in it.

Thus, as a level designer and sound designer for this project, me personally is attracted by sound designs, from how they make them, edit them, tuning and compress them, to the finalized version of the horror sound effects produced by them.

Furthermore, in game industry, it is important that sound design is also a part of a core element of the game itself. A good sound design will attract and bring along player's attention towards a certain event in the game. Sound design creates an immersive experience towards the player themselves, even without any visual aid on the screen, sounds will eventually give the players about the information around the avatar in the game, presenting on what is happening in it.

In our final year project, our video game is themed with comedy-horror. Not only narration takes the huge part, but sound designing also is a core element of the game itself. Creating sounds may be easy, but creating a sound specifically for an occasion like in a horror game takes some skills to do so.

One of the key aspects of sound design in video games are the tension towards the players from the sound itself. As the study continues, we would be able to find out how sound effects in horror games that actually works and eventually create tension towards players themselves.

1.3 Problem Statement

After the evolution of horror games throughout the past 2 decades, especially horror games that are released in the recent years, horror video games as a genre itself have gained a lot of player's eyesight and the popularity of the horror game genre itself has increased significantly within the game industry. This happens because even not every game company makes horror games, but in a game company like Capcom, who is specialized in making horror game titles in their Resident Evil franchise, they have the skills and ability to create sound effects that are immersive and emotionally engaged towards the players, allowing the Resident Evil series to continue popularized as every new game title or remake title released. In their infamous Resident Evil series.

There are many different variants of sound design elements used in every title they had released, basically it shows that the importance of how sound effects play a huge role in horror games. Sound effect elements in horror games include ambient sounds, audio cues, distortion noises, and environment effects

can be found commonly in good horror game titles, in order to create the feeling of fear, surprise, and tension towards the players during the gameplay.

On the other hand, there are many discussions and research studies that suggest horror games are designed in primary focusing on visual elements, narrative designs, and game mechanics to gain the attention of the players to make them feel tensioned during the gameplay. In the meanwhile, sound effects in horror games in comparison results in less attention towards players when it comes to psychological impact between both of sound effects and the actual gameplay. Even though as mentioned, sound designing in video games especially horror games is one of the core elements to create immersion and tension towards the players, but the studies still doesn't show on how specific sound effects affect players' psychological thinking, emotion, and specifically the tension, which makes the research has very limited resources to find out the study on understanding the psychology behind on how tension is built-up regarding to psychological impacts towards players.

At this point, sound designers and game designers may face this issue as a big wall of challenge in choosing and creating the sound effects and will need to identify which sound effects suits the most into their horror games. Not only that, they have to also consider building up tensions while also keep maintaining engagement with players in horror games when creating sound effects for them. Lack of knowledge in creating sound effects of a sound designer may result in lack of immersion and tension in overall, which players will not able to feel engaged with the game due to just a single element that lacks combining into the game.

Therefore, this research is aimed to study on how sound effects becomes the key of an element in horror games, and how sound effects influence player's psychology and emotion when they are playing horror games.

1.4 Research Objectives

The purpose of this study is to:

1. Research on the importance of sound effects in horror games
2. Research on psychological impact on the players from sound effects
3. Research on the immersion, fear, and emotional engagement through sound effects in horror games.

1.5 Research Questions

The following are the research questions that will be guiding us to this study are:

1. How important is sound effects in horror games
2. How does sound effects in horror games impact on player's psychology
3. How sound effects influence immersion, fear, and emotional engagement towards players.

1.6 Significant of the Research

The research will provide a deep learning of understanding on the importance of sound effects in video game industry. Other than that, this study also specializes research on horror games about on their contribution in creating the tension feel towards players, building up the feeling of stresses from the sound effects.

The research findings in this study might be useful on benefit audio designers in video game companies by guiding insights, allowing them to create and produce effective sound design skills that can eventually improve player's experience when they are play horror video games.

Ultimately, this study will also benefit both game designers and sound designers in the industry for them to communicate in between to produce sound effects that are useful and affective in horror game in creating tension towards the players as an objective.

1.6.1 Academic Contribution

This research will be contributing to the game design's academic field. The purpose of the research is to provide deeper understanding on the relation between horror games, sound effects in the horror games, and player's tension when they are playing horror games.

The study will contribute by using the existing horror game titles, then examine them and differentiate them on how different types of sound effects will be able to influence immersion, suspense, fear, and tension towards the players during their experiences when playing the horror games.

The findings in this research may be able to assist the game designers and sound designers in video game companies, discussing on regarding the role of sound effects in horror games as a core element in video games as a key of creating the tension, immersion, fear, and emotional engagement in them.

1.6.2 Practical Implications

In this research, the findings may be able to provide practical guidance for video game developers, in order to improve the overall gameplay experiences in horror games, by providing a deep understanding on how sound effects works in a huge part as a core element that is able to influence player's tension, fear, immersion and emotional engagement in horror games.

Other than that, this study is also able to benefit sound designers in video game industry to help them identify in which sound effects and audio elements that will be the most suitable and effective in improving the tension feel while also maintaining player's attention towards the gameplay. Appropriate sound effects in horror games such as sound effects, ambience sounds, audio cues are some of the key components that will be needed to apply in the horror games that may or significantly influence the intensity of tension of horror video games in order to strengthen the player's immersion during gameplay.

Furthermore, this study will might be very useful to sound design and game design students for them as a guide on how they should properly create a suitable sound effect in horror games. Also, this study might be a reference tool for beginner game designers and audio designers in the industry to understand their practical role of sound effects as a core element in horror game to interact with the players during the gameplay.

1.6.3 Societal Relevance

The research is highly relevance not only in video games but also in the society, as it also significantly increases the understanding on how sound elements in video games or digital medias highly influences human's emotion and psychology depending on different types of sounds being played in the event.

The research might be able to also contribute to the public regarding to the importance of sound effects in communications and emotions. This research can be done by examining on how sound effects create tension in horror video games. At the same time this research will be highlighting the psychological impact of audio elements in a human's perspective, perception, aware on their attention and behavior within the virtual environments in the world of video games.

Other than that, the research in this study with the provided findings may be able to encourage more responsibility and creativity in approaching into the game development phase by promoting the use of specialized audio technique to enhance the gameplay experiences while taking account into graphical presentations and visual effects to create the immersive feel in the game.

1.6.4 Future Research Pathways

As mentioned, this study is to focus on the role of sound effects in horror games and how do they create tension while also creating immersion at the same time in a horror game. In the future research, the study might be considering to include other elements in horror games that might be taking account into creating a more immersive and tension psychology towards the players.

There are multiple considerations for the future research purposes. One of the research studies for the future pathways is to include background music, voice acting and silence in horror games on how they influence tension and immersion towards the player during the gameplay. These elements are taken into account as background music also plays a huge role as in creating emotions using instruments would affect a player's psychology in different situations.

Voice acting at this point provides a deeper immersion especially where video games are heavily focusing on storytelling, including horror games with rich stories. Silence is also a useful strategy in horror games, as psychologically, players won't hear a single sound in the environment, and the tension is increasing whenever there are sounds coming out from different directions.

Other than that, the future research might also consider taking account into Virtual Reality (VR) horror games, as VR games in general usually require a VR headset to play using the VR feature in the VR supported games like Resident Evil 7: Biohazard, which has VR supported feature exclusively on PlayStation platforms (PS4, PS5).

In this case, VR headset basically provides a better immersion comparing to playing video games on a flat television or monitor, VR contributes a stronger sense of tension, fear, suspense overall when playing horror games, which also significantly improves the psychological impact on players in horror games. This is taking account into combining both visual elements and sound elements may also able to contribute valuable insights of sound design in horror games.

Furthermore, the future study for this research may also taking account into different study methods, such as monitoring heart rates, analyzing facial expressions, and even stress tracker on the players when they are playing horror games as an objective to gain a more proper and accurate data regarding to the tension and immersion in a player's psychology whenever they are playing a horror game.

Lastly, another consideration we can study on the research is to include different player groups as in age and personality. These two elements play a huge role when it comes to psychological impact in different video game genres, as different age and personality would act differently, which will also impact their tension and immersion throughout the gameplay.

1.7 Scope and Limitations

1.7.1 Scope of the Study

The scope of this research mainly focusing on sound elements that are produced and currently existing in released horror games. Sound effects especially ambient sounds, sound cues, environmental effects, and distortion noise sounds will be examined to study on how they influence tension and immersion towards the player during gameplay experiences.

The video games that will be covered in the study are popular horror game titles and series, such as Resident Evil series, Poppy Playtime, The Evil Within, The Last of Us, Little Nightmare and so on. The research doing around these games due to not only they are popular in the horror game community, but they are great examples on how sounds would influence tension, fear and immersion in the gameplay.

Furthermore, the study will also focus on player's perception and emotional approaches when they are reacting to the sound effects during the gameplay. This will be studied through player reactions available online, as their reaction plays a huge role on reacting to a horror game.

Thus, the findings in this research will be very limited due to the size of the community, the amount of players who are keeping in touch of horror games are too wide for this research to study on, therefore only selected few reaction videos online are suitable for this study as they act generally the same as normal players would do when they are playing horror games

1.7.2 Limitations of the Study

The limitations of the study in this research are to only focus on sound elements in the horror games. Which also means that any other elements that do not include sound elements will not be taken into account for our study purposes.

As said above, the horror game community is too wide for this research to go on. To make it convenience, this research will be choosing reaction video that are available online to review on.

Thus, this research has very limited time for study purposes, which will be taking account into time management. As not all results in the study will be useful if the time for this research is done by consuming too much time for some purposes only.

1.7.3 Implications of Scope and Limitations

The scope and limitations for this study includes the influence of sound effects in horror games on their impacts towards player's psychology, tension, and immersion feelings. As the study is more specifically towards on sound elements in horror games, the findings in this study may primarily apply to horror game titles as a major horror genre, while at the same time other major genres like fast-paced genres, adventure genres, simulation genres.

Other than that, other elements in horror games will not be taken into account for this study. The elements that are not included, for example are, narrative, game mechanics, graphics and visuals. Therefore, the research might not be accurate and precise and overall deeper understanding of other factors that also contribute to create tension, fear and immersion in horror games.

2.0 Literature Review

In this section of the chapter, we will be reviewing previous studies that are related to sounds designs in horror games, player psychology when they are building up tension, emotional feedback towards the players, and the immersion given to the players when they are playing video games. The literature review aims to examine the knowledges that are currently existing, identifying them and figuring out the research gaps that are related to sound effects as a whole and its role in creating tension among the players in the horror games. Then, there will be theoretical frameworks to explain how it all applies into horror video games' sound design in the next subsection.

As said earlier, sound effects are one of the core elements in the video game industry, especially in horror game titles. Sound effects in each different styles need to be carefully used in different situations; different genres have their own way to do it. There are a ton of video game genres currently out there, you can name it. Adventure, 3D, 2D, Horror, Comedy, Action, Hack-and-Slash, Role-Playing-Game (RPG), Open World, Racing, etc. You can almost find any games in each of the single genres. But before we start focusing on how sound effects in horror game works, let's first look at sound effects in affecting a person's psychology.

As a normal person, no matter if that person plays video games or not, they will be affected and behaviour differently by listening to the sounds they heard. According to Robinson (2026), she stated that sounds in general is

keeping us safe in every situation. She came out this idea way back from her own experience. It was a raining afternoon; she felt the calmness when listening to the rainfall on her back porch of her house. On the other hand, she felt frustrated because the sound of her neighbour's footsteps at upstairs that broke her peaceful moments as she was trying to take a chill break.

Then, she finds out that the sense of hearing in every single human exists is to keep us safe. Whenever there is a sudden loud sound unexpectedly came out nearby, everyone within that area gets startled and jumps in their heartbeat. In other way as comparison, a lot of people find that the chirping sounds coming out from birds makes them feel peace and making them feel comfortable as they represent there are no potential threats in their current environment.

The research she found says that they have yet to find out the level of intensity of frequency that will start to generate the feeling of fear, but they know that the intensity of a person's emotion and physical response depends on how the person is familiar with his or her own brains are with the sounds. Even when a person is sleeping at night peacefully, the body will react by its own when it listens to sounds around them to signal the person to wake up, a good example will be an alarm clock set on the phone, where people will instantly wake up when the alarm goes off to tell the brain to wake up as the time has reach the mark for whatever situation that person needs to do, like going for work or school.

Another occasion she mentioned is music and emotion. Within the last decade, researchers out there have been studying on the connections between music, emotion and peoples. Whenever we are listening to music, our brain releases dopamine as we are enjoying listening to music. This is a process of chemical reaction in our brain when we start to feel happy, sometimes this is also equivalent to a drug high or eating favourite foods in a person's life.

Music at this point has been determined as one of the most used and effective tools for not only a therapy session of a mid-to-late-stage dementia patients but also being used as a tool for every single person on the entire world to help them cure their mind whenever they feel overwhelmed under any circumstances.

Other than that, there are research that are done with different machines and technologies. The research is done with a psychophysiological measurement to the testers, these measurements such as electrodermal activity and electromyography, where these shares the same features. They provide an adaptive feedback loop to the testers to gather information when they hear sounds around them. These measurements helped them to identify suitable physiological responses by recognizing their emotions in a horror game environment as sounds play the primary role as an affective stimulus (Garner & Grimshaw, 2013).

Now we can start proceeding to the next section, which the literature review will be focusing on the sound effects in horror games. Sound effects in horror games must be carefully used as it is very crucial when creating a game that must be immersive and scary given to the players as an experience.

According to Sun (2025), it is the key to make players feel tension and emotionally depending on how the sound is shaped and given to the players. Sound effects in horror games are all created to generate that fear responses from people deeply from their mind, at this point it will strengthen the player's mind of natural instincts in the game, which is to survive in the game as long as possible and evade from any harm that could possibly make them die or kill them in those disadvantage situations (Anderson et al., 2020).

According to Savino (2025), different sound designs can trigger different situations depending on the video game that players are playing. Sound designers

and game designers had to come up with strategies on sound effect usages in different scenarios. As in a horror video game, the strategy that the game studios are using is to get a good use on dissonant soundscapes, it means that the sounds around the environments are combined with compositions of music to clash on together to form some certain pitches, tensions, and abrasive textures rather than just applying traditional sound effects or music.

In this case, when the combination of music and sound effects are combined into a dissonant soundscape, it is eligible to provide a sudden, sharp sound cue that will trigger the player's nervous system and leading them into higher heart rates and their adrenelines.

Thus, according to Toprac and Abdel-Meguid (2011), they mentioned that in their research that players will be experiencing different emotional responses approach and tension depending on specific sound effects in different cases on how the sound is being tuned. This occurs from the volume of the sound, the timing between the sound effects and the event happening, and the direction of the source sound effects, these can directly influence the emotional response and tension given to the players.

This allows game designers and sound designers to create horror sound effects that are able to control a player's psychology and mental on their threats when playing a horror game and overall strengthen the emotional engagement between players and the horror game significantly.

Furthermore, even though this is a combination of visual and audio combination design in video game. But Utomo and Fajar (2025) stated, when the combination of visual and audio element and they are implemented into a horror video game, this will significantly impact the psychology of a player's mental in their reactions, especially when there are any unexpected events, such as jump scares.

This encourages game designers and sound designers to be creative in any matter that can include both of these elements to maximize their psychological impact to the players in a horror game title.

As one of the previous studies mentions that music is one of the ways for people to enjoy and relax as they are listening to their favourite music and releasing dopamine from their brain. In this case, when music is implemented into a horror video game, it can change the role of music comparing to normal usage.

Instead of just using individual sound effects and implement them into the game, Roberts (2014), states that game designers and sound designers can also use the combination of sound effects of the environment and music to create a new spectrum of horror into the horror games.

In this case, the usage of these combinations is aimed to establish an atmosphere to convey a narrative storytelling, this method works way more efficiently rather than just using a backing music whenever there is an incident going on.

2.1 Theoretical Framework

In this theoretical framework, it will show theories that combines the psychology of fear, tension, coming from audio perspective in sound design among horror game designs. This is to explain how sound effects in horror games functions as a key element in them for creating a tension feel towards the players. This framework will show a conceptual description of the relationship between sound design in horror games and player's psychological impact, emotion and experiences in their gameplay. The sound effects usage will be conceived as an

intentional and interactive design to perform the feeling of fear and suspense during their gameplay.

2.1.1 The feel of fear, tension and the experience of horror

There are several research of psychological theories done to help explaining how humans feel the fear and tension in their daily environments. In James-Lange Theory of Emotion (Cherry, 2026), the emotion proposes that our body changes whenever we are trying to feel the corresponding emotion in different situations. They say that our emotions are basically the result of how your brain perceive your body is experiencing through. For example, you may feel that you are terrified when you feel your heartbeat is racing quickly.

This theory is later being aligned and categorized to the same as Cannon-Bard Theory of Emotion. According to Cherry (2026), the theory is extended later from the previous theory, and now it emphasizes that the experience of emotions and the feeling of arousal psychologically occur simultaneously. This theory mentions specifically on a frightening sound will greatly increase the psychological feel and generate responses in their bodies.

In later another theory further explains about the emotions and psychology of a person. According to Moors (2017), the Appraisal Theory of Emotion says that emotions, feelings, or other emotional components are caused by different situations. Then, they are later differentiated accordingly by observing them whether they had achieved or failed to achieve with their goals and expectations, this can be caused by their own or others. In a deeper study from the theory, it also explained on the feeling of fear is shaped accordingly on how players react on ambiguous or threatening situations.

In this case, when they are implemented into the sound design in horror games, it shows that whenever a player hears a sudden event like jump scares, suspicious music, high pitched sound effects, the player's psychology will trigger an immediate response in their body, such as body flinching, screaming, blocking their faces by their own hands.

This is interpreted as a feeling of fear and tension of a player when they are playing a horror game, and their body will react differently in each single players as every player behaves differently.

2.1.2 Karen Collins Theory

According to Collins (2014), in her theory, *Playing with Sound: A Theory of Interacting with Sound and Music in Video Games* demonstrates that she proposes sounds from video games and sounds from film or movies from a TV, sounds basically different in their role. This is due to sounds in video games are interactive within the players and the game sound and the game world rather than only listening to them when watching a film, video, or movies on TV.

As mentioned above, sounds in video games are interactive. She demonstrated that players don't just listen to the sounds, sound effects, music when playing video games as they are very different from watching TVs. When players are playing video games, the sounds in the video games triggers their brain, and eventually influencing them to perform on their next actions, such as jumping, dodging, running, firing, etc.

On the other hand, she argues that listening to sounds is only a one-way mode to the viewers. When watching movies or films on TV, viewers can only listen to them, and there is not any interaction between them.

In this situation, players could potentially receive more emotional feedback and tension towards them rather than just watching horror movies or films.

2.2 Review of Key Studies

The first key studies about how sound effects influence emotion and psychological effect is the James-Lange Theory of Emotion, which they explained that how it works, which our expressions of emotions come up after there are any physical changes in the body.

In a sequence, it starts with whenever there are any changes of situation around the person, then the arousal step comes in, making the person alert and very reactive to the situation. Lastly, after those steps, the person's emotions are finally formed depending on the situation that person just faced.

Then, Karen Collins also explained in her theory. She explained and argued about the sounds in video games and the movie on TV are drastically different from each other. Sounds in TV movies and films are only working as a tool of providing sounds for the viewers to listen, there is no interaction between the movies and the person who is watching them. But instead, in video games, the sounds in them are made to provide interaction between the video games and the players.

Sounds in video games are not just background audio to support the gameplay itself, it is a communication tool in between players and the video games for them to interact with. At this point, she demonstrated that player behaviours will react to the sounds especially in horror game titles.

Thus, there was an interview with Mark Angus about horror soundscapes designs in video games. In his explanation in the interview, he mentioned that sound design in horror games do not need to constantly come with screaming and groans in order to provide the feel of frightened (Angus, 2022).

2.3 Research Gap

In the studies that are brought out by different researches, there are studies and experiments being conducted very well. As sound effects are considered as one of the main elements that will always be concerned by people around the world and also players when they are playing video games. It has proven that sound effects really matter in a video game, especially in horror games as it will eventually decide whether the video game is immersive or it is just another pile of unsettled piece of work.

In those studies, there are missing key studies that will be involved in sound design of horror games. The current weakness of those studies combined together is they lack of details on how sound effects in different frequencies will affect player's behaviour and how different is it in sound design of video games. Ultimately, there is no research about how each individual will react and behave differently to the sound effects or not.

As for the experiment for this study, it will collect multiple videos of different players playing different horror video games. With this experiment is

made, we can finally analyze them and also fill up the gap as if every will react differently or they all behave just in the same way that everyone does.

3.0 System Specification and 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 is 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

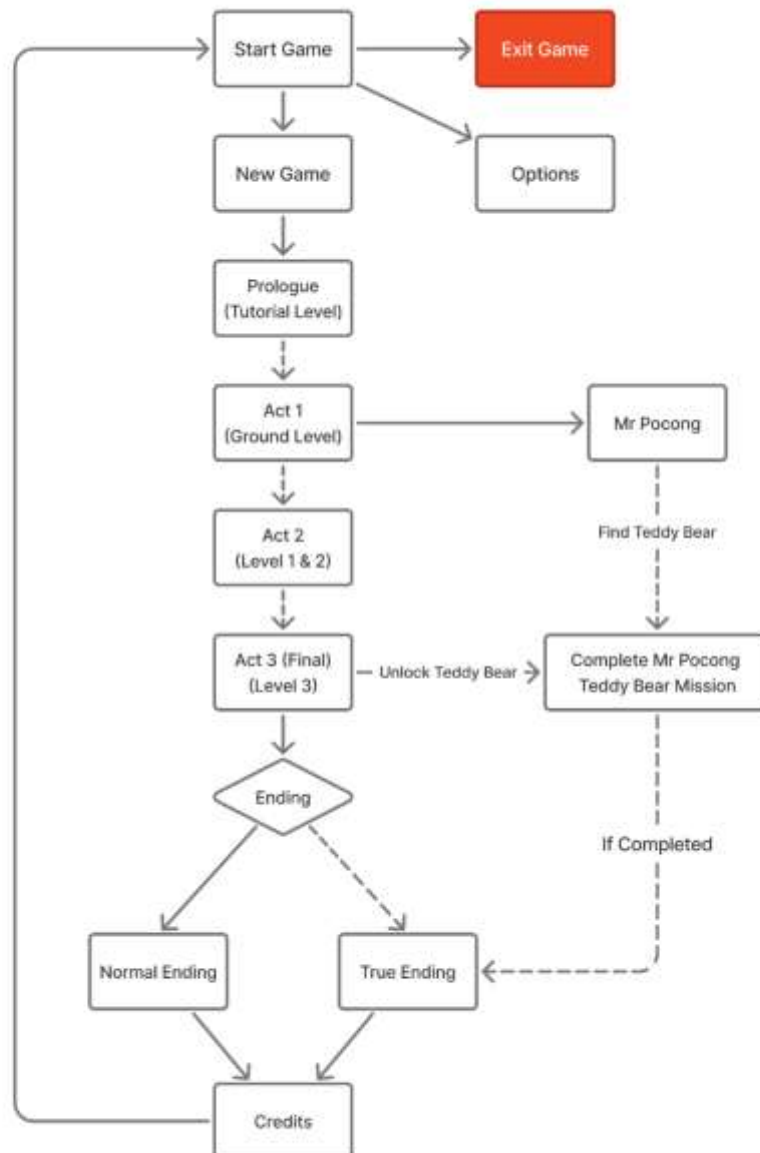


Diagram 3.1 *Rempit in the Night* Design Structure of Gameplay

3.1 Methodology

In this Methodology section, we will break down the goal of the study, explaining the research methods, conducting methods and also some limitations that might be concerning with the study itself.

3.1 Research Design

This study will be adopting deep research on the player's reaction and behaviour when they are playing horror games, this is to measure on whether the players in between each other where they are playing the same video game, but would they react differently depending on each individual.

The horror video game that is selected to look for is Resident Evil 2 Remake. The reason this game is chosen is due to it is one of the most successful title in their remake series. This game has received a lot of attention to new players and also long time fans that has been playing the original Resident Evil series. The feedback on this game is overwhelmingly positive on Steam platform, and it has been sold to many players as proof of success of the game itself.

3.2 Data Collection Methods

The main data collection method in my study will be observing gameplay videos that are available on Youtube as our primary visual and audio data. All of the featured videos will have a compilation of players reacting to the game's jump scare moments.

Then, the analysis will be conducted on their reactions and how they behave before and after the shocking moments. With those, they all will be noted down and analyzed for research purposes.

In short, the data in this study will be collected through observations in each single of the individual in the videos when they are in the high-tension moments and jump scare moments in Resident Evil 2 Remake.

4.0 Design and Implimentation

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 both 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 try 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 get 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 these 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 past 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

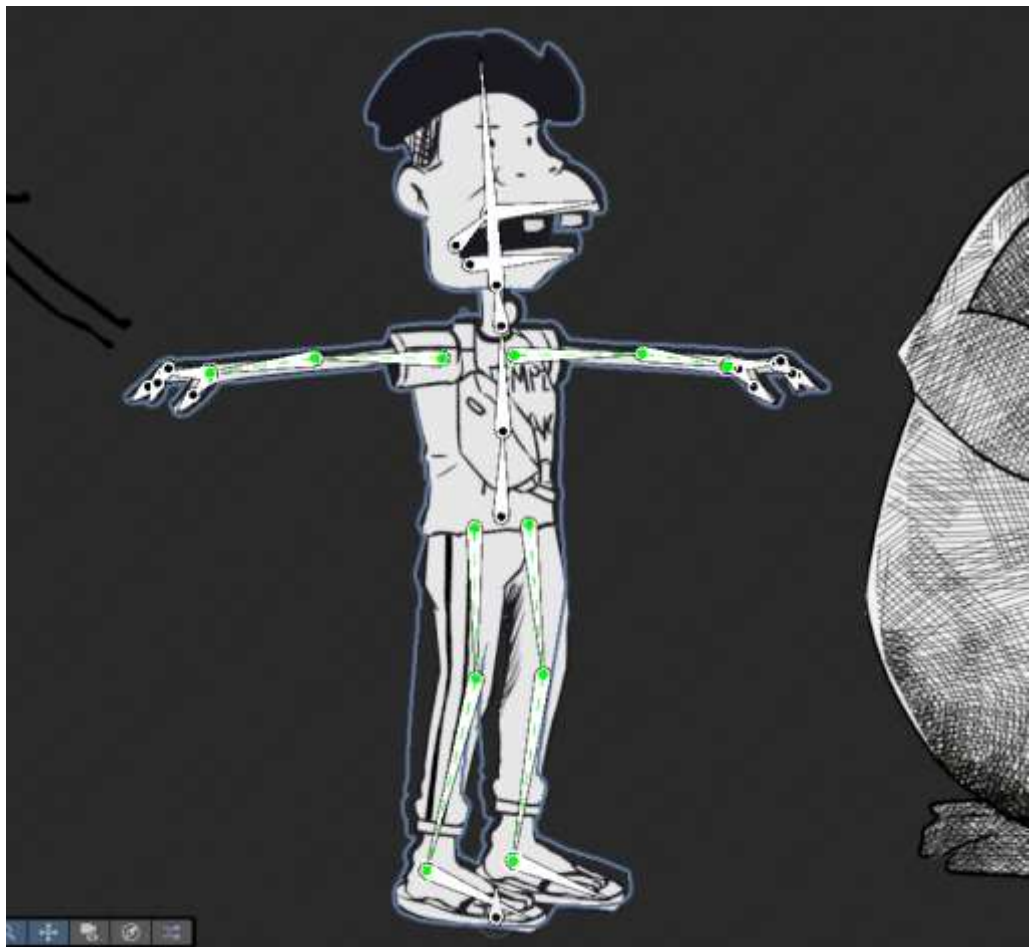
Due to the art direction of the game, the texture also needs to be stylish to accomplish the concept art of the game. To achieve the comic look visually, there are a few steps that need to be implemented. Firstly, find textures from the internet that are suitable for the object, for example, the ground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

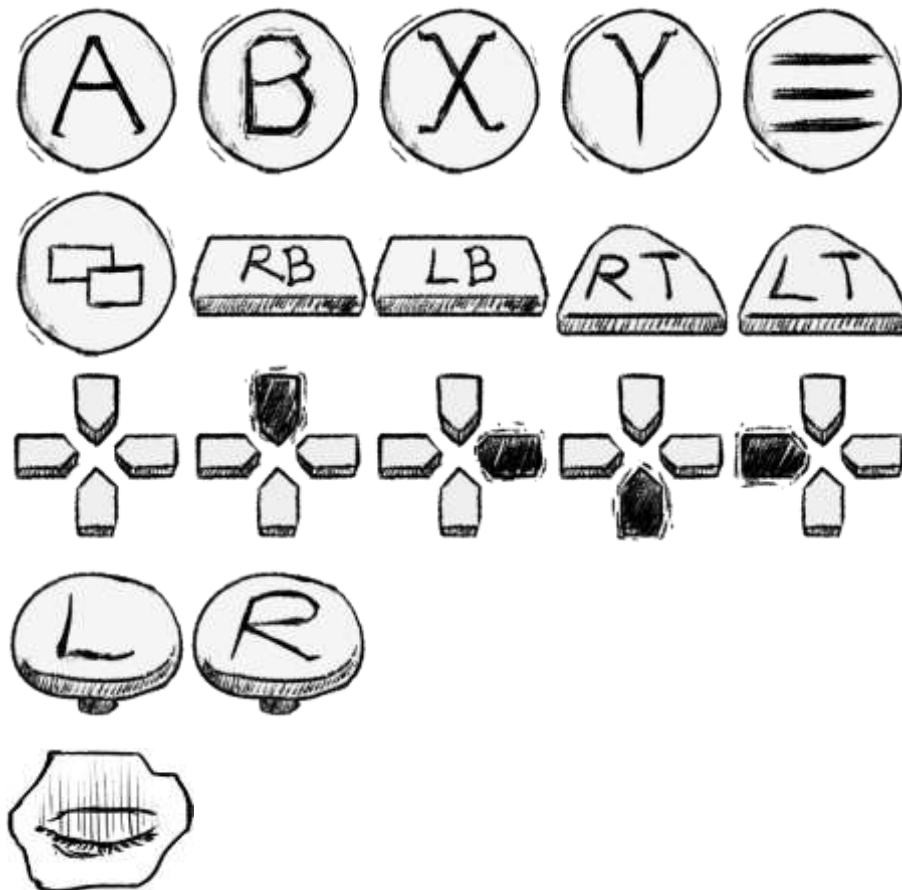
Character Sprites

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.



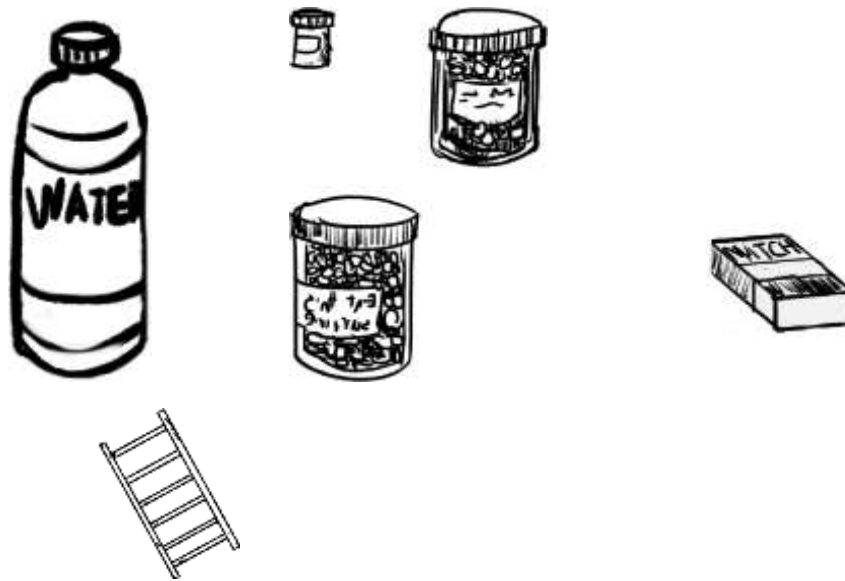
UI Design

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.



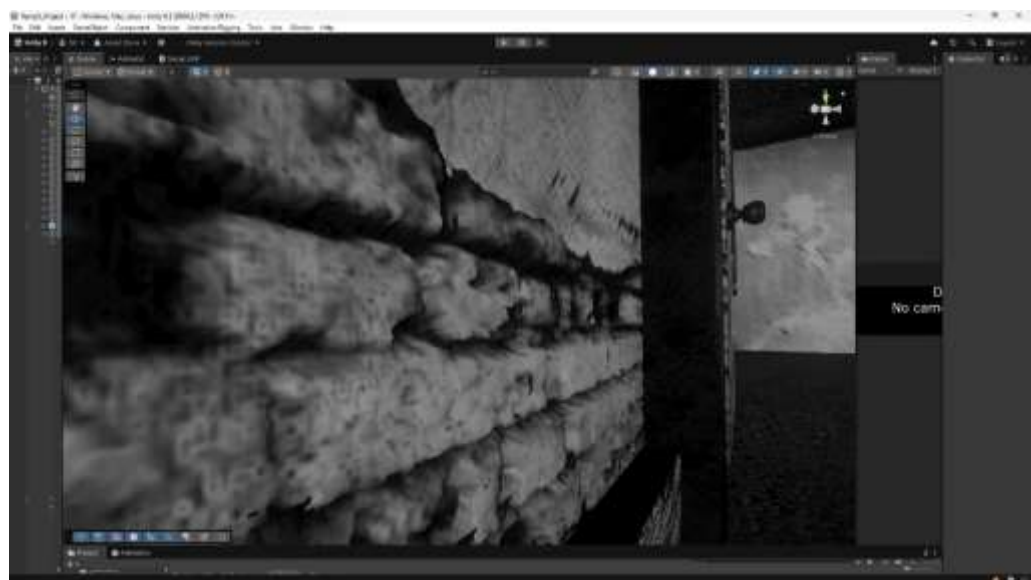
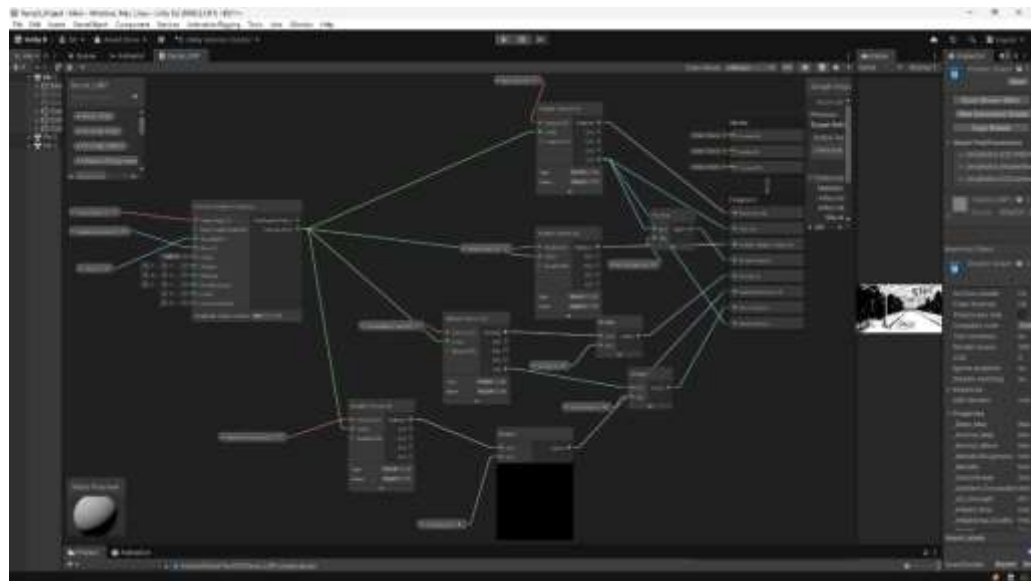
Items Design

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



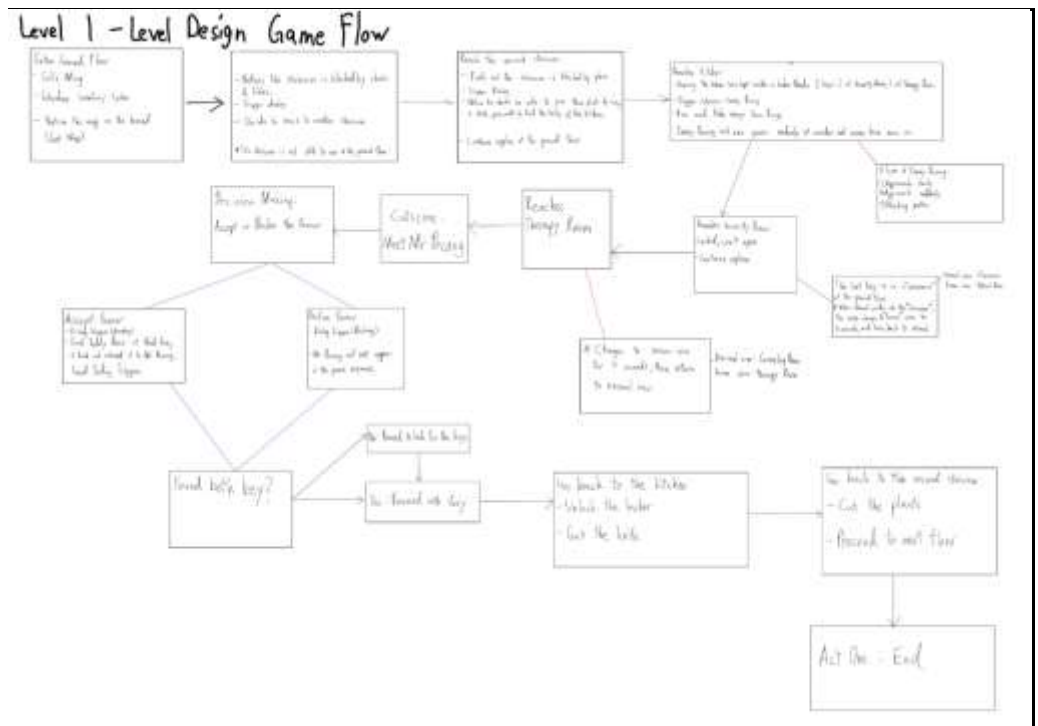
Decals

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.

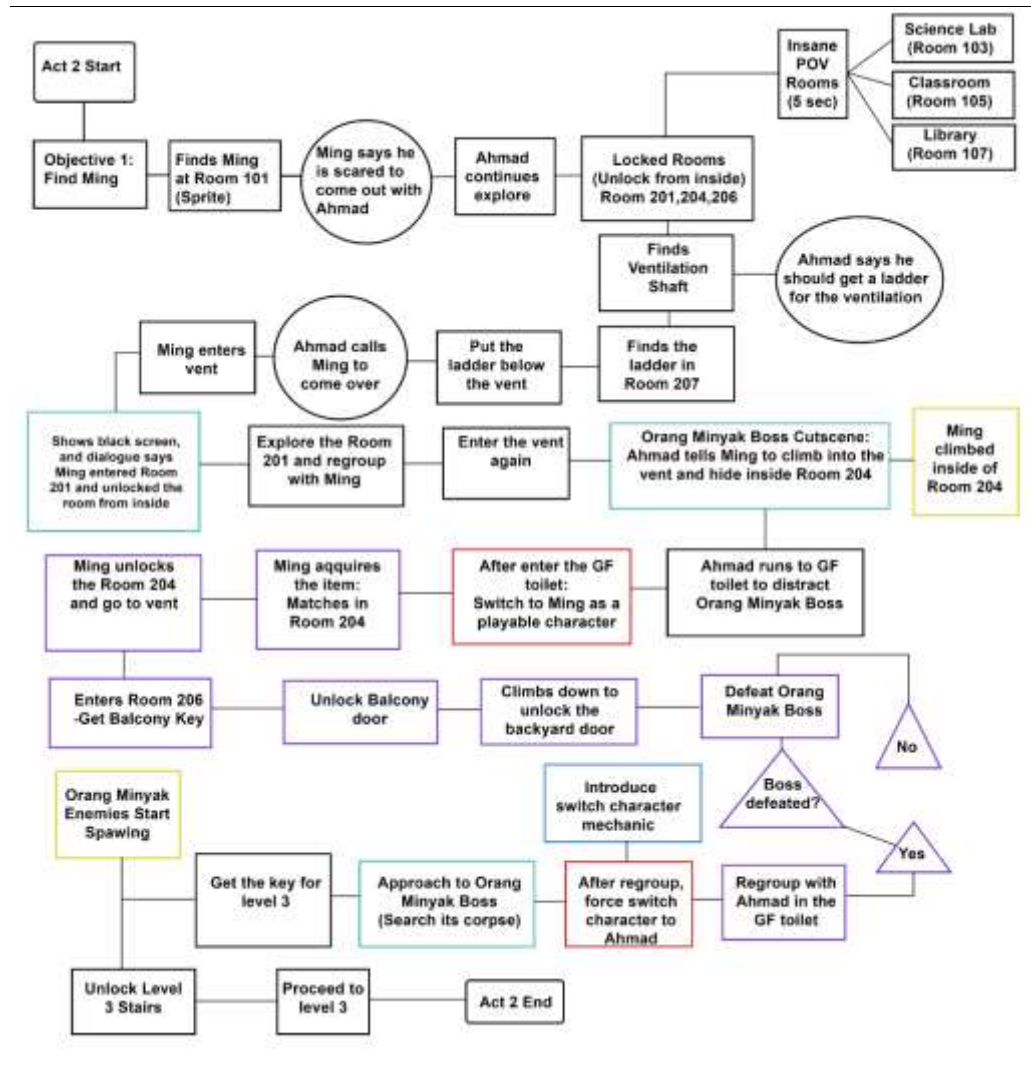


4.8 Level Design Flowchart

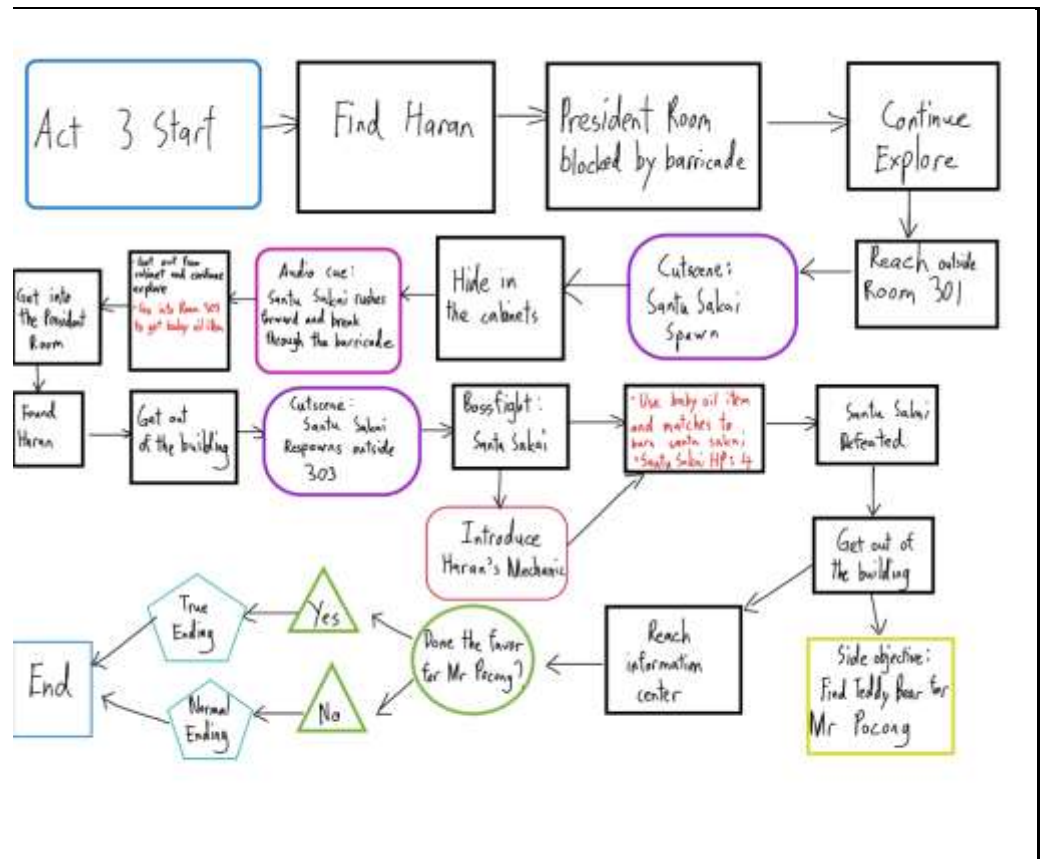
4.8.1 Act 1 Flowchart



4.8.2 Act 2 Flowchart



4.8.3 Act3 Flowchart

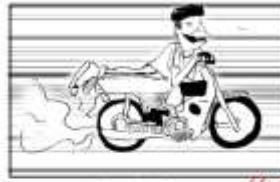


4.9 Cutscene Storyboards

Storyboard template



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



MEDIUM SHOT
STATE OF AHMAD RIDING THE MOTOR WITH SPEED UP



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



LOW ANGLE VIEW
AHMAD IS DRIVING INTO THE DARK TUNNEL

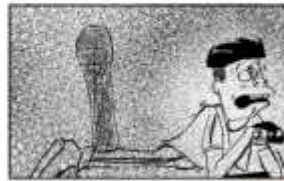


POV
AHMAD RIDING THROUGH THE TUNNEL



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

Storyboard template



Tracking shot
Admad passing the figure.



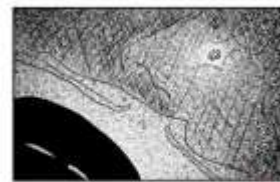
Close up
a person wrapped in a cloth appear in Ahmad view and he got shocked by it



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



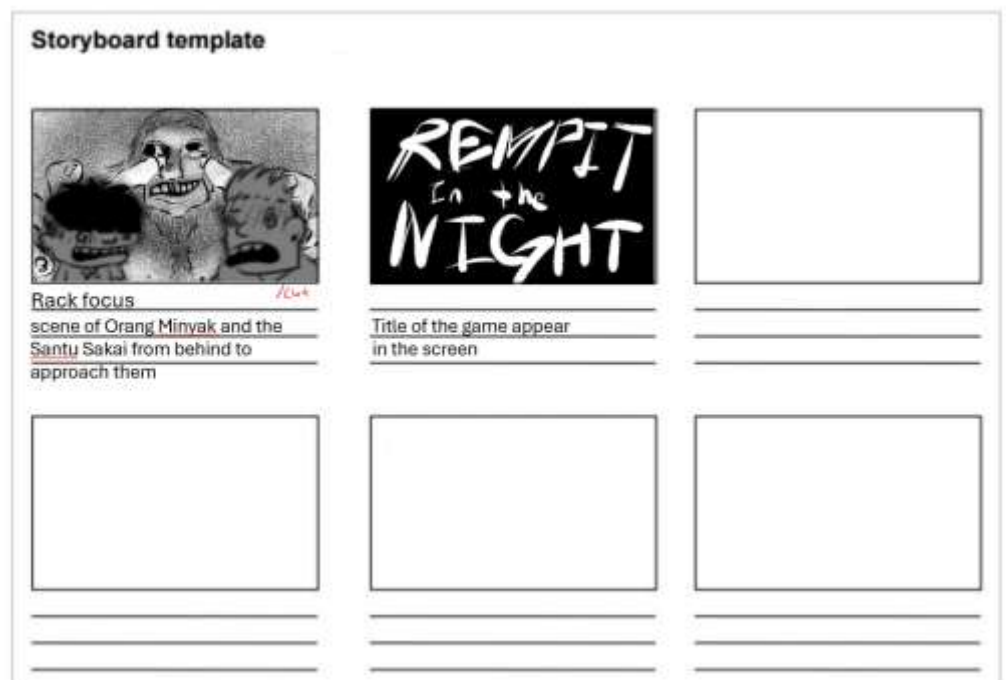
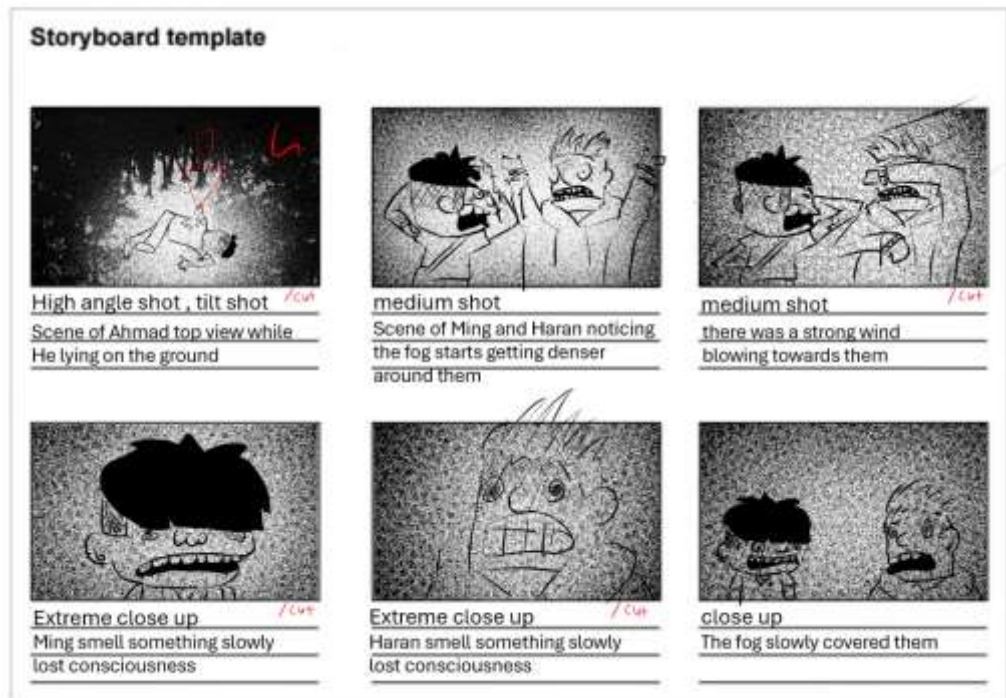
Medium shot
Ming and Haran notice Ahmad falling through down the side of the slope of the road



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



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



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

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 a non-diegetic UI.

The reason that it is using a 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

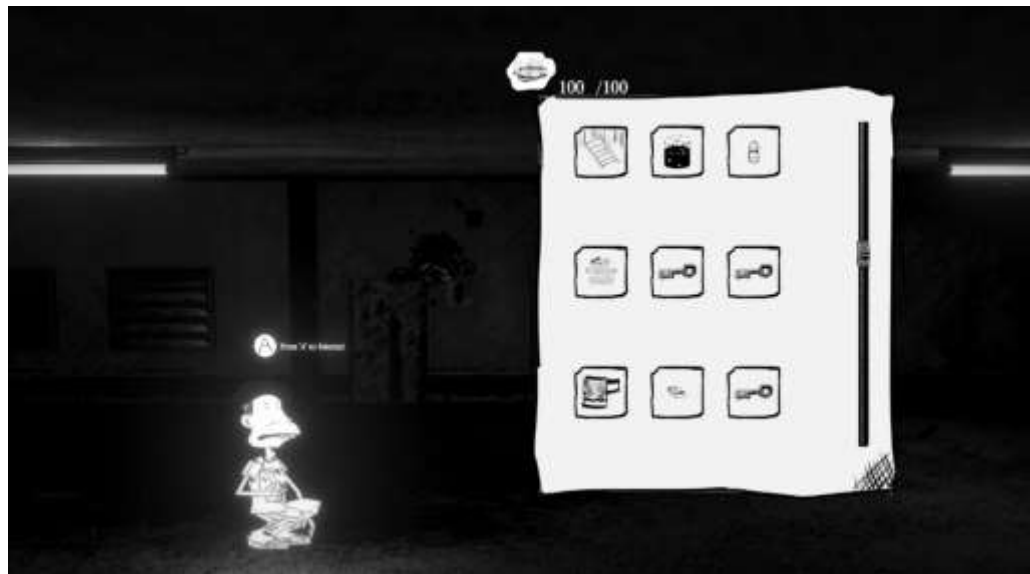


Figure 4.9.5 Inventory

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

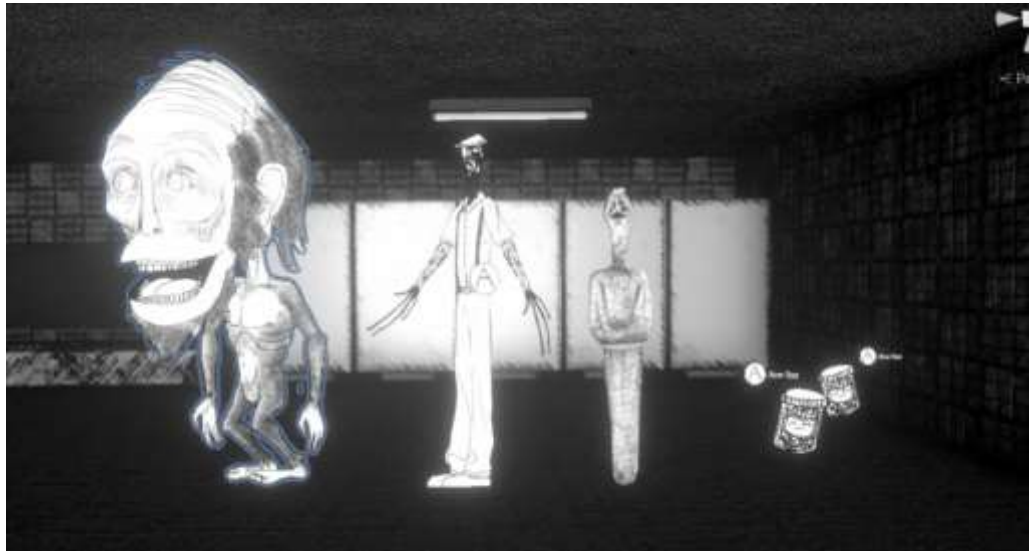


Figure 4.9.7 Enemies

There are three types of enemy 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.

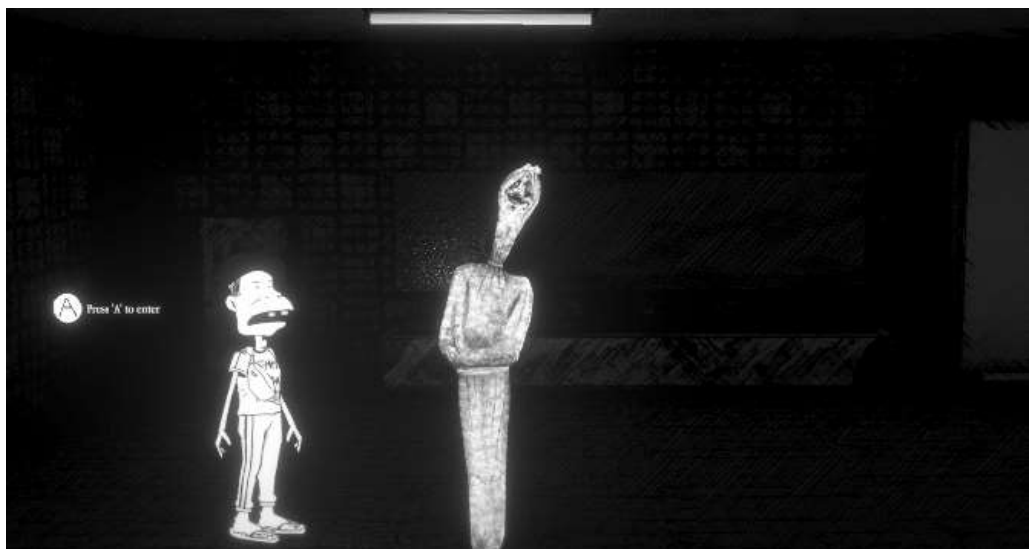


Figure 4.9.8 Pocong Attacks

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.

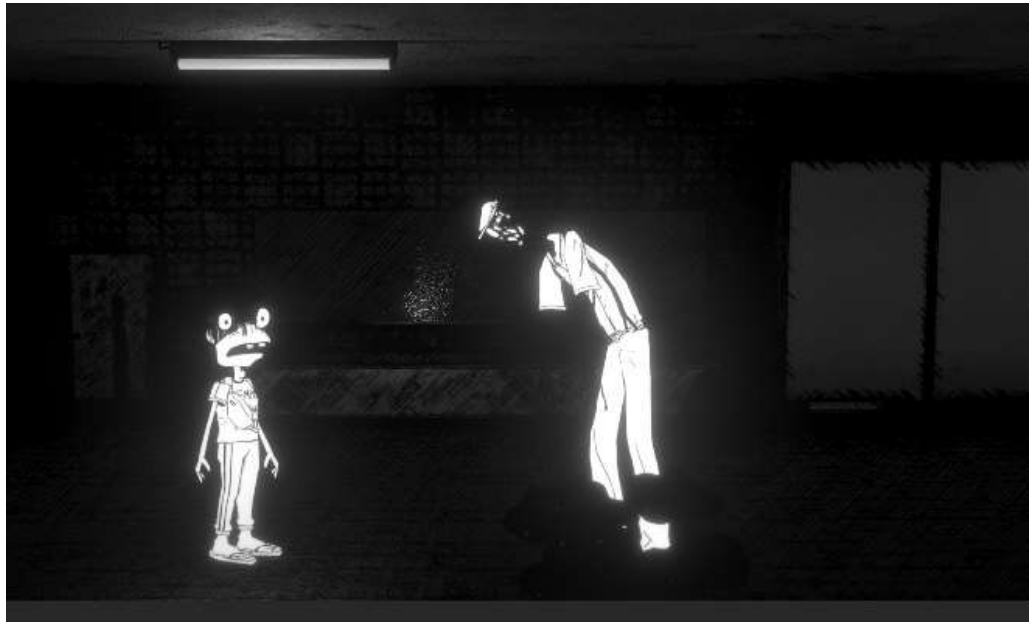


Figure 4.9.9 Orang Minyak Attacks

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.

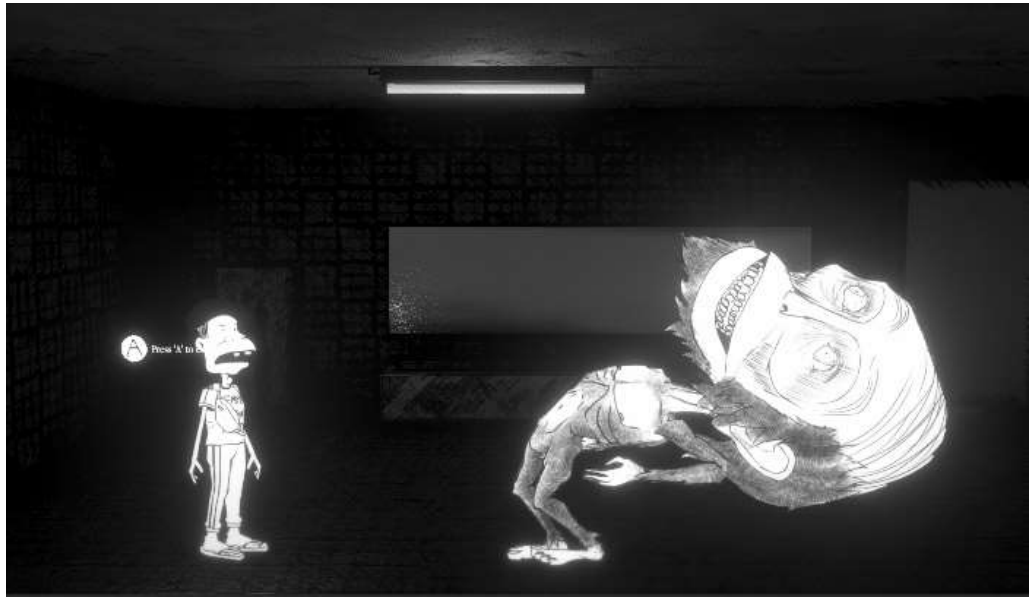


Figure 4.9.10 Santu Sakai Charging

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 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

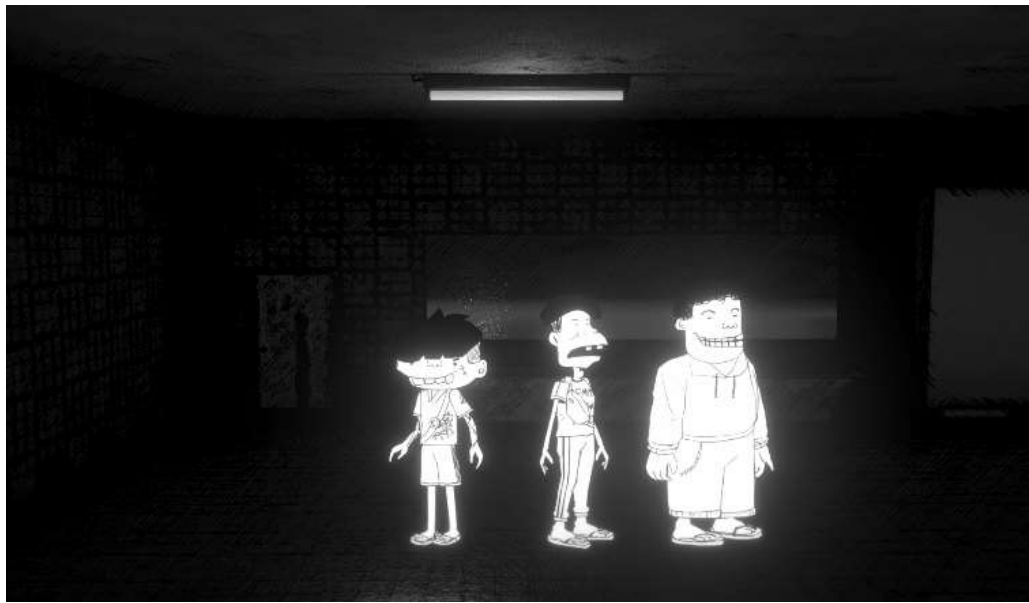


Figure 4.9.12 Characters

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

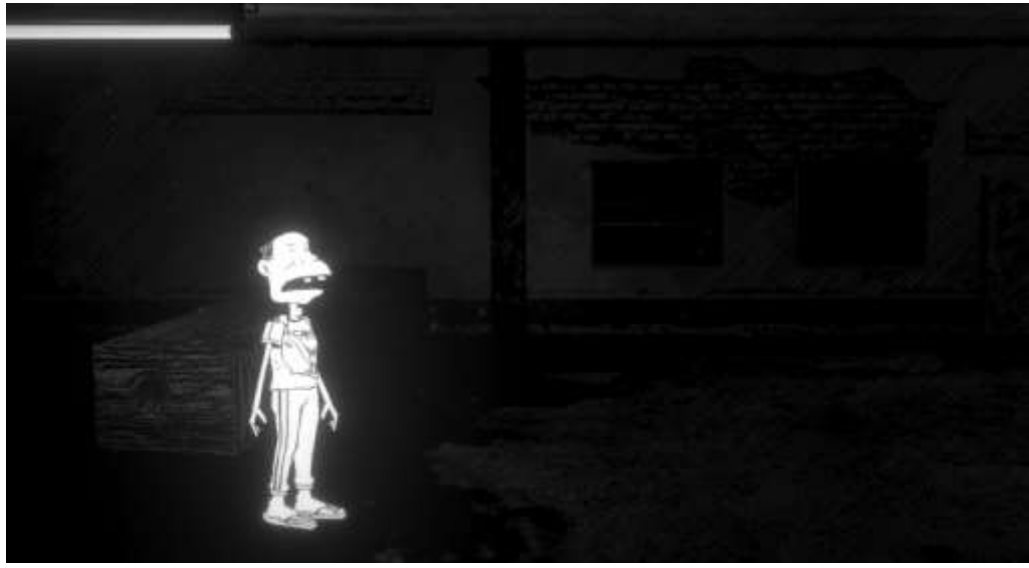


Figure 4.9.13 Ahmad character

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

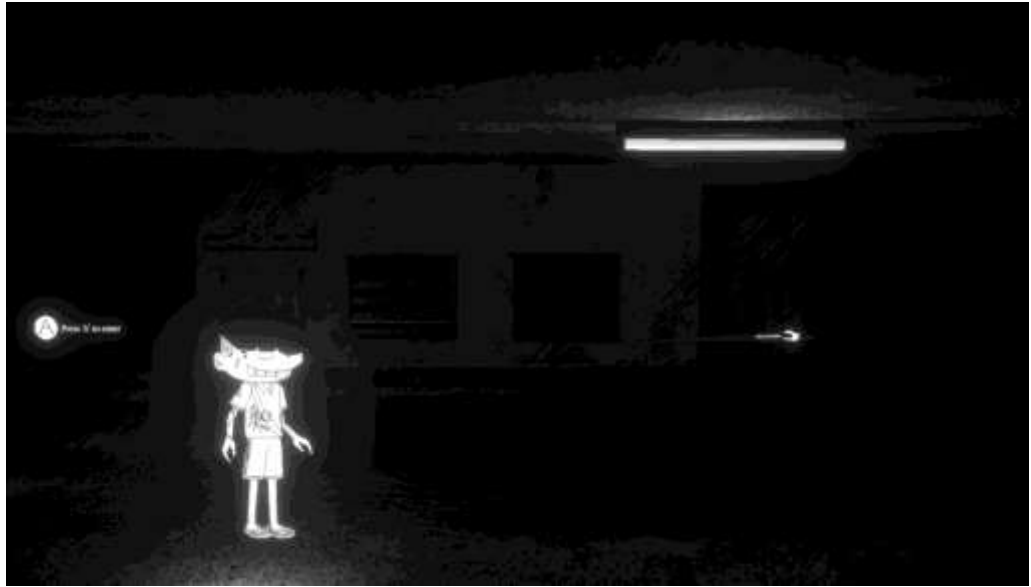


Figure 4.9.15 Ming Character

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.

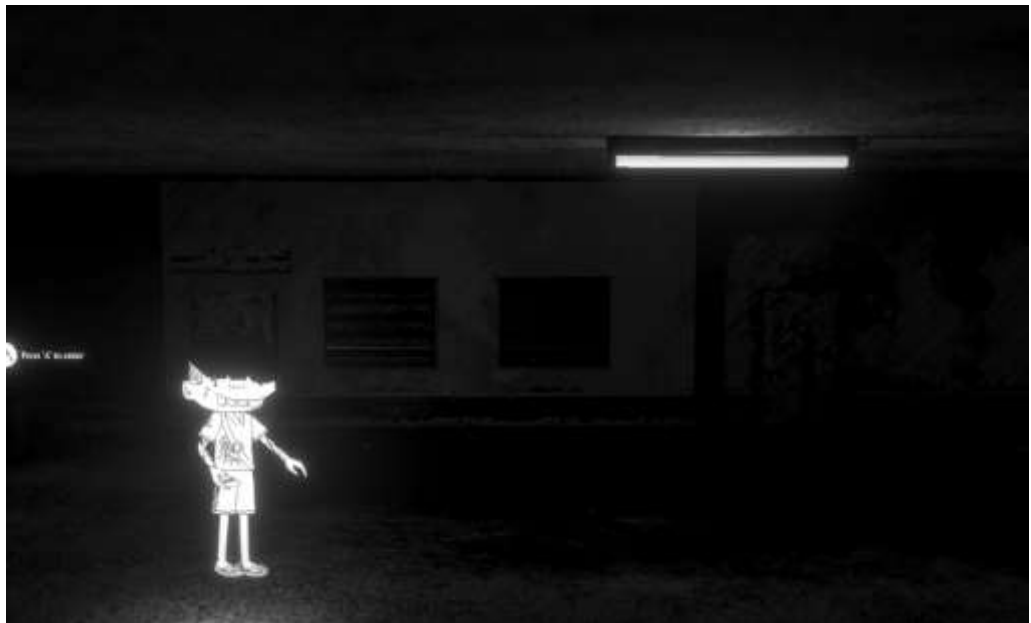


Figure 4.9.16 Ming Throws Matches

Haran

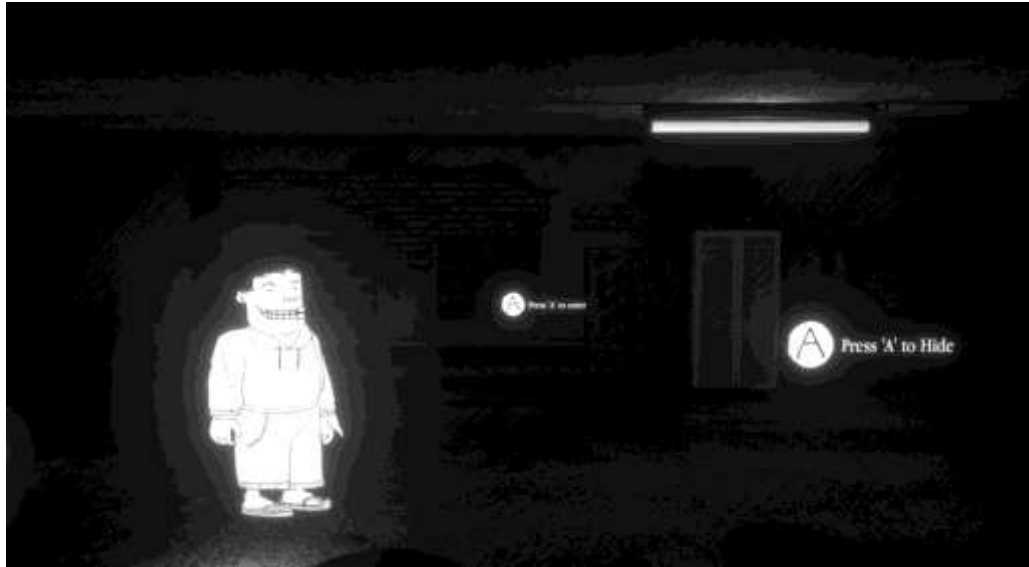


Figure 4.9.17 Haran Character

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.

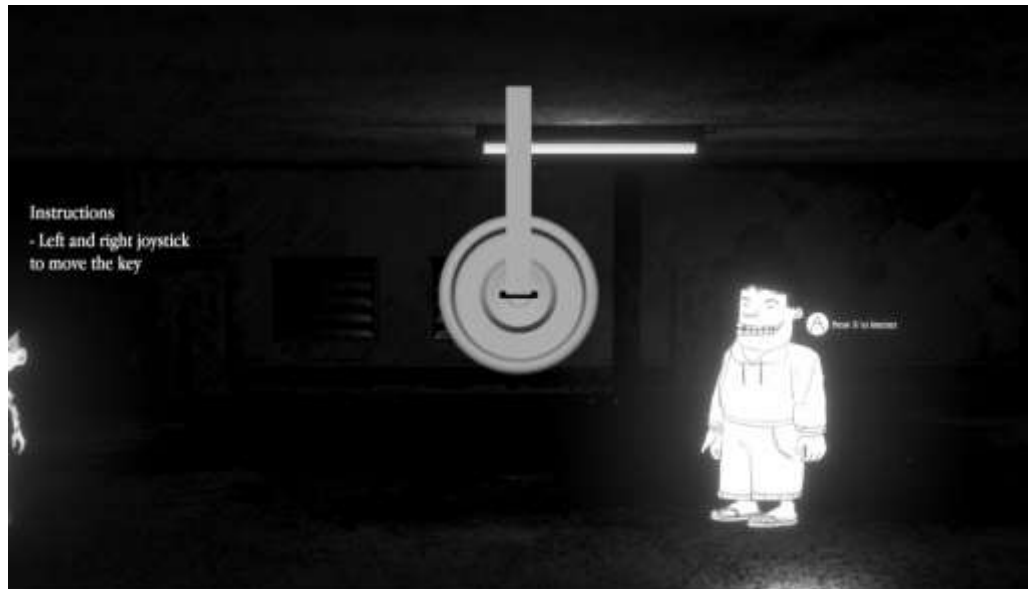


Figure 4.9.19 Lockpicking puzzles

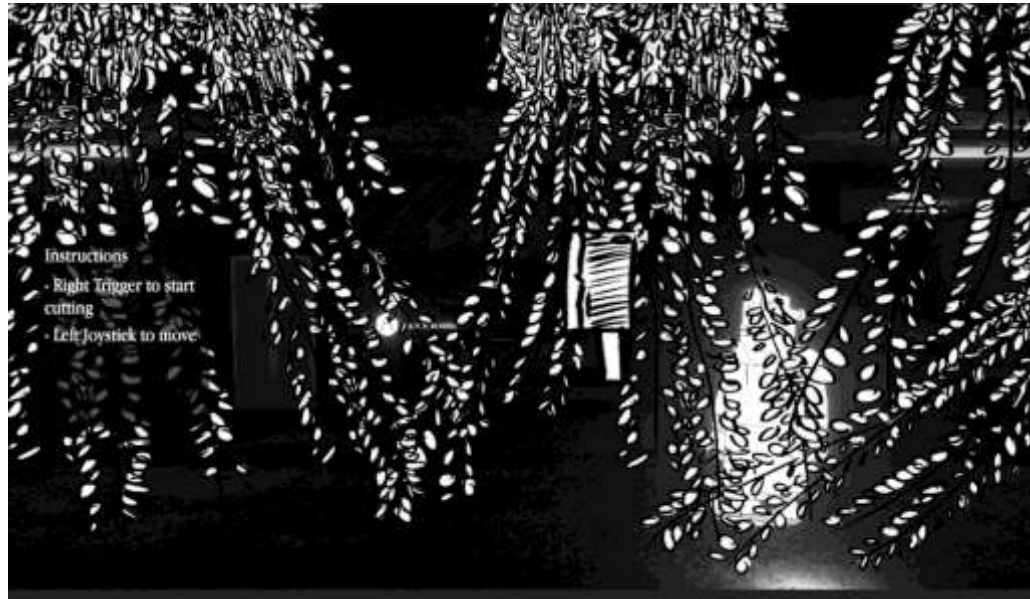


Figure 4.9.20 Plant Cutting Puzzles

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 are 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 and Analysis

In Result & Analysis, it will show the result that has been collected and gathered throughout all of the videos available online. Other than that, the analysis of the behaviour and reactions in terms of psychology will be examined as well.

5.1 Data Presentation

The first gameplay video reaction that we will be analyzing is the scene where players are facing the Tyrant or Mr.X for the first time. This is one of the scenarios that can showcase the tension towards the player's psychology perspective.

In the video, every single player featured in the video shows a sign of tension from the Tyrant. Due to the level design of the scenario, the players must walk back to where they came from as the path is blocked by the Tyrant. During retreating, all players shows the reaction of hurry feel where they have to rush back to a save point to avoid getting chased by the Tyrant.

On the other hand, minority of the players decides to confront Tyrant by firing weapons towards its head or using a flashbang to make it vulnerable and stunned for a few seconds. With that, they can finally get past Tyrant to walk to the next rooms behind it.

The second video that will be used is a mashup of different players, playing in different areas and scenarios. But they all have a similarity in between them, which they all are either getting jump scared or panicked when they are compromised by many zombies attacking the player at the same time.



Picture 4.1.1 Screenshot of player facing Tyrant for the first time



Picture 4.1.2 Screenshot of player compromised by multiple zombies

5.2 Analysis of Results

In the videos chosen for the analysis, even though the scenarios are different from each other but there is one same thing that is happening in every

single one of them, the pressure level of the tension is also affected by its sound effects.

First, it is the normal zombies around. Due to the ambient sound of the game is designed with a silent noise, every sound effects around the player is presented in a brighter and more obvious way, making them very noticeable to the players and they will be frightened or getting tension from the zombies around.

Thus, in the scene where the players first meet the Tyrant. When players turn their camera towards the helicopter, a brief building falling sounds start to appear. Then, as the Tyrant starts walking and chasing towards the players, the footstep sound of the Tyrant is very noticeable compared to other zombies in the game. The footstep sound features a footstep sound but it is tuned into a deeper bass sound.

This sound design is useful in creating tension due to the size of the Tyrant. Plus, even if Tyrant later on will be roaming around the indoor area, the footstep sound is too noticeable that players are forced to pay attention on where the direction of the Tyrant's footstep sound comes from, and they will have to confront it or make another way around to escape away from the Tyrant.

6.0 Interpretation/Discussion

In this section, we will be doing interpretations and discussions to whether the findings of the study can be applied into the missing gaps and other sound effects for horror games.

6.1 Interpretation of Results

In the study of the two videos that are available on YouTube, the theory behind the sound design of it can be applied to other sound effects in other horror games, as it is very effective in building tension towards the player and also allowing players to get immersive experience into the game.

In a nutshell, the interpretation of sound effects in horror games do really contribute to the tension and immersion towards the players.

6.2 Theoretical Contributions

In Resident Evil 2 Remake, the sound design that is used in the game can be all compiled into one design principle that is technically a design theory. The sound effects in the game are considered as “Less is More” principle. The reason that this applies to the sound design is because the sound design in this game is very minimal and simplistic, there are no other complex sound effects like sci-fi elements, which they sound realistic and this is more efficient as in sound effects for horror games.

6.3 Practical Implications

After doing the deep research under the tension towards the players and the psychology behind it, it is proven that sound effects will be able to trigger high level tension and it will affect their psychological thinking.

Thus, the theories and the design principle applied into the experiment also match the expected results from a horror game’s perspective. Overall, sound design theories applied into the game fits the research purposes of this study.

6.4 Study Limitations

The study has been conducted in a not so practical way as the experiment is taken through in comparison to other studies. Other studies are usually doing experiments with selected people and doing experiments physically with their testers. In this study, it is limited to observing reactions from gameplay videos instead and this might lead to inconsistent results.

7.0 Conclusion and Recommendations

7.1 Summary of Findings

Among all of the findings, the results do match the main goal of this study, which is to prove that good sound design in horror games will eventually affect in increasing player's tension and allowing players to feel immersive during the gameplay.

7.2 Conclusion

In conclusion, this study has gained a good amount of knowledge about sound design in games and especially in horror game titles. The study also proves that sound effect is not just a cue for players, it's also about the core elements that can change the psychological effect of players' perspective.

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8.0 Appendices

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.
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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.