UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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PROJECT TITLE:
THE STUDY OF HORROR ELEMENTS IN FPS GAME: S.I.T.I (SINK IN TERROR INSIDE)

BY:
NOR NAJMI NA'IM BIN NOR MAHADZIR

THE STUDY OF HORROR ELEMENTS IN FPS GAME: S.I.T.I (SINK IN TERROR)

NOR NAJMI NA'IM BIN NOR MAHADZIR

This report is submitted in partial fulfillment of the requirements for the Bachelor of Information Technology (Game Technology) with Honours.

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2021

DECLARATION

I hereby declare that this project report entitled

THE STUDY OF HORROR ELEMENTS IN FPS GAME: S.I.T.I (SINK IN TERROR)

is written by me and is my own effort and that no part has been plagiarized

without citations.

STUDENT : _____ Date : 27/06/2021
(NOR NAJMI NA'IM BIN NOR MAHADZIR**)**

I hereby declare that I have read this project report and found

this project report is sufficient in term of the scope and quality for the award of

Bachelor of [Computer Science (Software Development)] with Honours.

SUPERVISOR : _____ Date : 12/09/2021
(ASSOC. PROFESSOR TS. DR. AHMAD NAIM BIN CHE PEE**)**

DEDICATION

Praise the almighty God, ALLAH SWT upon his blessing.

To my beloved parents, thank you for everything that you have done for me during this tough moment. All support, love, encouragement, prayers, and motivation push me to complete this project.

To my supervisor Assoc. Professor Ts. Dr. Ahmad Naim Bin Che Pee, thank you so much for being such a caring supervisor. Your support motivates me to strive to do the best of my abilities.

To my classmates and friends who have been through thick and thin, thank you so much for your continuous support and feedback. Without them, I could not complete this project as well as it is right now.

Finally, thank you to Universiti Teknikal Malaysia Melaka for assisting me and providing me with the best guidance that I could ask for.

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Assalamualaikum w.b.t

I am very grateful to the blessing of Allah SWT and for giving me strength when I am feeling down or stress. Those answered prayers strengthen my resolve to complete this project in the time given with tremendous satisfaction.

I would like to express my gratitude and acknowledgment to my beloved parent for the love and care they provided to me without fail. I would not be able to continue in completing this project if not for their support and motivation.

I would also like to thank my best supervisor, Assoc. Professor Ts. Dr. Ahmad Naim Bin Chee Pee for believing in my ability to complete this project without fail. Your guidance and feedback have helped me improve the quality of my project tremendously.

Thank you all for all the support and assistance.

ABSTRACT

This project focused on the development of S.I.T.I (SINK IN TERROR INSIDE) game which aims to study the effectiveness of horror element build-up when a various element is integrated into creating an immersive horror experience. While horror game genre has been around since the early 1970s and keeps going strong up until this moment, most of them have stray from the path of creating a quality horror element with the combination of various factor. This has led to the fall of horror elements in most games as they are there just to fill the genre void and nothing more. From cheap jump-scare to the bad visual effects has brought the horror genre down. This project will address the issues by studying the effectiveness of horror element build-up when a various element is integrated into creating a good quality horror game genre. This project will be developed for Window 64-Bit that is commonly used in the market. The expectation of this project is to successfully build an effective combination of horror elements.

ABSTRAK

Projek ini memfokuskan pada pengembangan permainan S.I.T.I (SINK IN TERROR INSIDE) yang bertujuan untuk mengkaji keberkesanan pembentukan elemen seram apabila pelbagai elemen disatukan untuk mewujudkan pengalaman seram yang mendalam. Walaupun genre permainan seram telah wujud sejak awal tahun 1970-an dan terus berkembang hingga saat ini, kebanyakan mereka tersasar dari jalan untuk mewujudkan elemen seram yang berkualiti dengan gabungan pelbagai faktor. Ini menyebabkan kejatuhan elemen seram dalam kebanyakan permainan kerana mereka berada di sana hanya untuk mengisi kekosongan genre dan tidak lebih dari itu. Dari jump-scare yang murah hingga kesan visual yang buruk telah menurunkan genre seram. Projek ini akan menangani permasalahan tersebut dengan mengkaji keberkesanan pembentukan elemen seram apabila pelbagai elemen disatukan dalam mewujudkan genre permainan seram yang berkualiti. Projek ini akan dibangunkan untuk Window 64-Bit yang biasa digunakan di pasaran. Harapan projek ini adalah untuk berjaya membina gabungan elemen seram yang berkesan.

TABLE OF CONTENT

CONTENT **PAGE**

CHAPTER 4: DESIGN

CHAPTER 5: IMPLEMENTATION

CHAPTER 6: TESTING AND EVALUATION

List of Table

List of Figure

List of Figure

Abbreviation

Abbreviation	Subject
S.I.T.I.	Sink in Terror Inside
FPS	First Person Simulation
FYP	Final Year Project
3D	Three Dimensional
GDLC	Game Development Life Cycle
UI	User Interface
P.T.	Playable Teaser
PC	Personal Computer

List of Attachment

CHAPTER 1

1.0 INTRODUCTION

1.1 Background

S.I.T.I (Sink In Terror Inside) is a First-Person psychological horror game project that revolves around a protagonist that finds himself awakened in a strange hallway on an unknown territory. As the player progress through the stage, he/she found that many strange occurrences happened around him and abnormal creatures start to manifest in front of him. Equipped with only a flashlight in a dark and creepy environment, the protagonist needs to search for a way out to survive. This project aims to study the effectiveness of horror element build-up when a various element is integrated into creating an immersive horror experience for the players to explore. Such example of the various elements in a horror game is the combination of sounds, background music, visual effects, narrative and storyline, environment and props, atmosphere and, jump-scare.

A horror game is defined as a video game genre that centered around a combination of various elements designed to scare players (reference) These elements mostly derive from the usage of visual representation, narrative, sounds, and other relevant elements. This genre has been around for ages in the gaming industries where it first entry is detected in the early 1970s. One of the main reasons why player loves horror game is because of the pleasure of being scared. Most of them love venturing into the unknown territory fully known it is life-threatening and some unknown creatures are waiting to ambush them around the corner. The adrenaline rush felt by the players at the exact moment is what drove some players to even consider horror game as a fun game genre compared to other types of players. In addition to that, some player even took it as a way of mastering their fear by experiencing the terror brought by the horror game genre which is next to impossible in experiencing them in real -life situation.

1.2 Problem Statement

The horror genre in video games has been on the decline since the arrival of the seventh console generation This is due to the lack of quantity and quality provided by game developers that seem to stray from making a good horror game.

The lack of research, to the bare minimum effort put into creating a horrifying environment in a video game, seems to be the root cause of the problem. As a result, it turns off the audience that originally supports and loves the genre. Therefore, this project is proposed to study the horror elements to tackle the lack of research in developing horror games.

1.3 Objectives

The objectives of this project are as follow:

i) To study the horror components and elements that affect human emotions.

ii) To develop a functional prototype horror game that incorporates the required horror elements.

iii) To evaluate the functionality and the effectiveness of the incorporated elements into gameplay.

The player will experience an immersive psychological horror game with various successful integrated horror elements.

1.4 Goals and Genre

This game aims to let players experienced an immersive psychological horror game that combined various horror elements into one. In addition to that, players will be exposed to the various integrated horror element that is available in horror game genre in the current market.

S.I.T.I (Sink In Terror Inside) is a First-Person psychological horror game with a realistic 3D environment that could be explored by the player. The game is being developed using Unreal Engine 4.

1.5 Game Features

The game features a walking simulation with a realistic environment where players get to explore the eerie to find a way the exit. During the exploration, the player needs to navigate in the dark and gloom surrounding using a flashlight as the only source of light. As the player progress in each area, there will be an obstacle such as a locked door in which the player needs to find a key to move on through the area. Other than that, players could also encounter some notes hidden in the environment that could be read to find more about the backstory behind the protagonist. Finally, the main feature of the game is the creatures that players will encounter in some parts of the game that are taken from the Malay ghost myths such as *penanggal*, *toyol*, *pocong* and *pontianak*.

1.6 Conclusion

As a conclusion, this chapter briefly describes the general idea about this overall project that aims to study the effectiveness of horror element build-up when a various element is integrated into creating an immersive horror experience for the players to explore. For a final product, players will get to immerse in a real horror experience that could bring the adrenaline rush of being scared to them.

The next chapter which is the literature review and project methodology, the genre of this project, and the comparison of the existing game will be explained elaborately. In addition to that, the methodology of the project which uses the Game Development Life Cycle (GDLC) will be further explained.

CHAPTER 2

2.0 LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

In the last decade, horror game genre has been through a declining phase where most of the horror game on the market offers the same experience to the players. From the same storylines in most games, where the player needs to find a way out from an abandoned building to the same cheap jump-scare on every corner of the game. It is not too surprising to find other genres such as the battle royal genre like PlayerUnknown's Battlegrounds rose to the top. The reason for this dilemma is because most of the horror genre at the time offers the same thing over and over without having something unique that could be remembered by players.

However, there has been a certain horror game that has gained a lot of attention amongst the rest of the genre where the player gets to experience something unique and different from others. These developers use a different approach to tackle the genre from a different perspective compared to the similar method that has been used previously. One prime example is the game called "outlast" which has raised quite a spotlight for itself after its released. Although this game still features an almost identical narrative to any other horror game where the player explores an abandoned building in search of something, what made it different from other horror games is that it does not have combat mechanics. So, players could only explore the environment and hide from the abnormal creatures without having any means to fight back. This unique approach by the developer in addition to various combinations of horror elements integrated into the game has led it to be one of the scariest horror games ever made.

2.2 Genre

S.I.T.I (Sink In Terror Inside) is a psychological horror game. The horror genre has been around since at least the 1970s and keeps going strong until up to this date. Horror games have matured, going beyond simple gore and jump scares. Though these elements still play an important role in the genre, game developers' approach to horror has more nuance than ever (Hood et al., 2021). The horror genre provides players with

the satisfaction of an adrenaline rush plus the combination of various elements such as sounds, visual effects, jump-scare and, others to keeps instilling fear. A good horror game always finds a way to scare players each time they venture into the game. In addition to that, this game features a first-person subgenre that enhances the horror element within it.

2.3 Existing Game

First of all, there are similar games that have been developed by other developers. A few of them will be further discussed below by comparing them with this project.

2.3.1 Introduction to Existing Games

A similar game will be discussed based on their gameplay, game mechanics platform, duration, and the differences between them. By referring to the similarities below, the difference between these similar games and the project itself could be distinguished.

a) Outlast

Outlast is the first-person survival horror game developed by Red Barrels Studio that revolves around a journalist who ventures into a remote psychiatric hospital to investigate an incident as shown in figure 2.1 – figure 2.4). This game features a stealth mechanic where the player navigates around the dark area with only his camcorder equipped with night vision. Players can only run or hide and rely on stealth tactics if he ever encounters enemies inside the hospital, unlike most other horror game. Outlast is a single-player campaign where the player will dive deep down into the unique narrative through the eyes of investigative journalist Miles Upshur venturing into the psychiatric hospital overrun by homicidal patients.

Figure 2.1: Outlast Game

Figure 2.2: Outlast Game Main Menu

Figure 2.3: Outlast Game's Gameplay

Figure 2.4: Outlast Game's Enemy

b) P.T. (Playable Teaser)

P.T. is the first-person psychological horror video game produced by the famous Kojima Productions as shown in figure 2.5 – figure 2.7. It was directed by the legendary Hideo Kojima in collaboration with film director, Guillermo del Toro. Although the game received a lot of attention for its excellent visuals, direction, and

its horror element, the game was not more than a teaser or demo that only available for a short amount of time on a specific console before it was cancelled. In addition, the game also served as a teaser for the upcoming Silent Hills which disappoints fans around the world after it got cancelled.

Figure 2.5: P.T. (Playable Teaser)

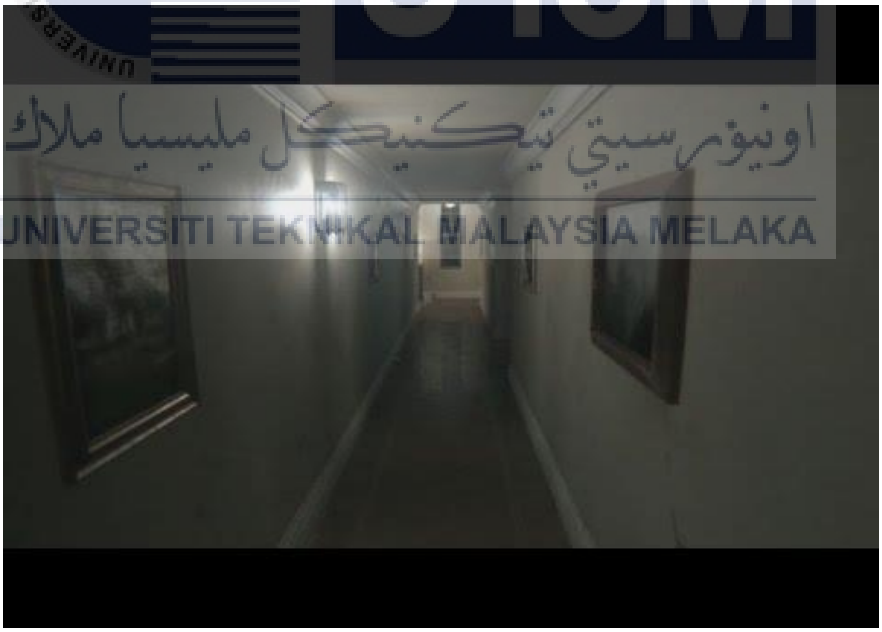


Figure 2.6: P.T. Game Hallway Scene

Figure 2.7: P.T. Game's During Enemy Encountered in The Gameplay

2.3.2 Comparison of Existing Games

Table 2.1 below summarizes the comparison of existing games.

Table 2.1: Comparison of Existing Games

	Outlast	P.T.
Gameplay	• Player assumes a role of a journalist venturing into a psychiatric hospital overrun by homicidal patients to investigate a certain incident. • Storylines are based on a progression where players need to explore the hospital to complete an objective and reach a new area within.	• Centre around an unknown protagonist who finds himself awakens in an abandoned house and starts to experience paranormal occurrences. • Storyline progress each time player went through a door in a L shape corridor. • Different event occurs every time player walk through the hallway.
Game Mechanics	• Player can walk, run, crouch, jump, climb, and vault over objects. • Player can use camcorder equipment that comes together with night vision mode to see through the dark environment (batteries required).	• Player can only walk through the environment and find the exit door each time at the end of a L shape corridor. • Certain places require the player to complete a puzzle in order for the exit door to unlock.

	• Certain area within the hospital is locked and required player to complete the objective in order to access it. • Player needs to explore the environment to complete the main objective and find resources.	• Sometimes the exit door is locked, and the player needs to backtrack to witness horror events to finally unlock it.
Platform	• Microsoft Windows • PlayStation 4 • Xbox One • Linux • OS X • Nintendo Switch	• PlayStation 4
Duration	• 5 hours or more depend on the players	• 2 hours or more depend on the players

2.4 Project Methodology

The project methodology used for this project is the Game Development Life Cycle (GDLC) as shown in figure 2.8. The reason for using this methodology is because it is one of the most used methods in developing games. Besides that, Game Development Life Cycle (GDLC) provides a better systematic structure in a game development process.

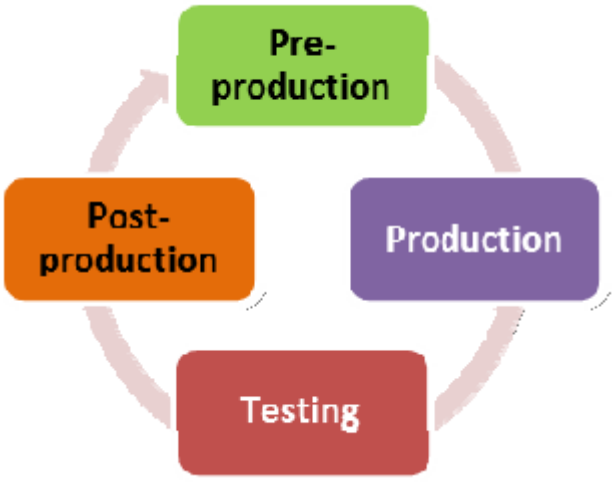


Figure 2.8: The Game Development Life Cycle (GDLC)

a) Pre-Production

The process of brainstorming new ideas generated from a discussion, meetings, or random ideas. This process takes into consideration of a game concept, design, and mechanics. Each idea is then written down and the best of it will be chosen after reaching an agreement. Early design of those agreed idea is then being sketched to get a better understanding. For example, the character design is being hand-drawn to determine the character's looks and characteristics. In addition to that, the narrative of the game will be carefully drafted to get a clearer picture of the flow so that any major plot holes could be reduced. The mechanics of the game will be written down as well as how to achieve it and what is the obstacles of developing it. Any further improvement can also occur in this stage.

b) Production

A visualization of the game concept, design, and mechanics is carried out in this part. The game concept and design start being visualized by using a game engine and 3d software. In an instance, the 3d model of the design will be designed using software called Blender while the concept such as environment and stages will be design using Unreal Engine 4. Furthermore, game mechanics such as movement of the character and another complex mechanic will be developed inside Unreal Engine 4.

c) Post-production

A phase where the project will be tested after reaching a certain milestone. The reason for this action is to test the game's functionality and inputs while finding a solution to make it better. One of the examples is testing a character movement mechanic to find the right balance between the character movement speed and the environment. The testing phases consist of two parts, which are alpha testing and beta testing. Alpha testing is done in a small group mainly the development team themself while the beta testing is done by a certain targeted user outside of the development team to gather useful information that the developer team has missed for the improvement of the game. Finally, after the game has been fully developed where it is called the master version, it is then released into the market.

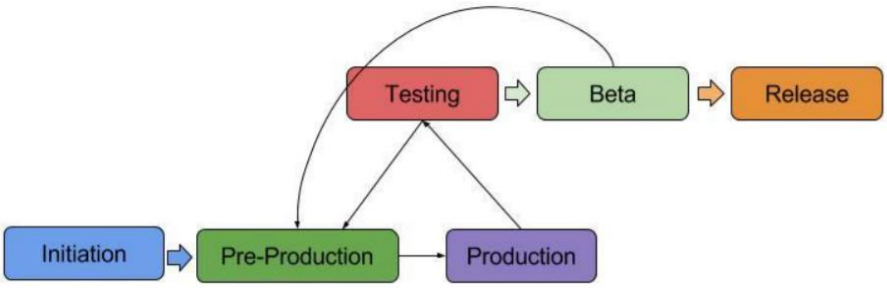


Figure 2.9: The Flow of GDLC

2.5 Conclusion

This chapter has fully explained the genre and how the horror genre in this industry has matured beyond just a simple jump-scare for the past decades. In addition to that, similar games that have been developed in the past by other renowned developers have been explained on how they are compared to this project in eery aspects possible. Finally, the project methodology is also being discussed in detail on how it will be used in this project.

In the next chapter, analyses that are broken into several parts such as project requirement, technical requirement, software requirement, hardware requirement, and other requirements will be explained in detail along with the project schedule and milestone.

CHAPTER 3

3.0 ANALYSIS

3.1 Introduction

In this chapter, further explanation on the requirement needed for this project will be discussed in a more detailed manner. This is to ensure that every hardware and software used will suffice to progress through with the project. In addition to the requirement, an analysis of the differences between the similar games mentioned in the previous chapter will be discussed.

3.2 Requirement Analysis

This analysis further uncovers the overall requirement needed by this project to be developed. The analysis consists of requirements from software, hardware, and technical.

3.3 Project Requirement

The project requirement focuses on the game aspect such as the player roles, gameplay, victory condition, core mechanic, level progression, and user interface.

a) Player Roles

Outlast: Players need to progress according to the storyline where they need to progress through each area finding clues and advance to the next area.

P.T.: The player advances through a looping L shape corridor each time by exiting through an exit door by the end of it.

b) Gameplay

Outlast: The player plays as a journalist venturing inside a psychiatric hospital overrun by homicide patients to find out the truth about what had happened inside.

P.T.: An unknown protagonist awakes in an abandoned house filled with supernatural occurrences.

c) Victory Condition

Outlast: To beat the game, players need to reach the end by progressing through the story. Each time player dies, they will respawn at the last checkpoint.

P.T.: The player needs to reach the end of the looping L shape corridor to witness the ending. Each time player is caught by the ghost, they will need to restart at the beginning of the corridor.

d) Core Mechanic

Outlast: The mechanic in this game is requires the player to utilize a stealth mechanic by hiding and running from the enemies to survive within the hospital. Collecting resources such as batteries and bandages are an important aspect to stay alive. By using the night vision mode from the camcorder, players can navigate the dark area with ease at the expense of consuming batteries which is the resource scatter throughout the environment.

P.T.: The core mechanic of this game is walking through the corridor. Other than that, some area in the corridor requires the player to solve puzzle or backtrack to witness horror event for the exit door to unlock.

e) Level Progression

Outlast: Each time player reaches a new cutscene, the game will autosave to allow players to start from that point each time they die. A new autosave will override the previous. Players could also save manually in the game. Player progress through each part by triggering a cutscene and exploring a new area.

P.T.: This game has a simple level progression where the player will explore a looping L shape corridor with each corridor has its horror event. Players need to reach the end of the game by progressing through the exit door each time until the end.

f) User Interface

Outlast: The user interface in this game is simple and plain. Furthermore, this game does not have any fancy interface where each interface is designed to simple yet user-friendly. Players could easily navigate through the interface.

P.T: This game user interface is also simple as it does not have much text and fonts. Players would not have any trouble navigating the simple interface.

3.4 Technical Requirement

The requirement needed in the technical aspect of the project ensures it smooth flow from start until the end.

a) Keyboard and Mouse

This project requires the player to use a mouse and keyboard as a medium of play. The keyboard will be the medium to control the movement of the character in the game. Other than that, a keyboard can be used to use a resource, open inventory, turning on the night vision, and others. Mouse on the other hand function as a medium to control the movement of the camera where the player is facing and interacting with objects.

b) Game Engine

This project will be using Unreal Engine 4 for development. The reason for using unreal engine is simply because it is one of the most famous game engines in the world. In addition, unreal engine 4 features one of the important aspects to develop this project which is realism. By using Unreal Engine 4, realistic visuals can be achieved easily. Moreover, Unreal Engine features a blueprint which other game engines lack. Blueprint is a scripting system that uses a nod-based interface in creating gameplay elements. It is a simple version of coding which does not require any coding skills. Although it does not require coding skills, some blueprints are complex and take time to understand.

3.5 Software Requirement

Software required for this project are shown in the table below.

Table 3.1: Software Requirement

Software	Description
Unreal Engine 4	An open-source game engine developed by Epic Games that has been used by big companies in developing top-quality games. It is written in C++.
Blender & Autodesk Maya	A free 3D software used mainly in creating 3D models, animation, visual effects, and motion graphics.
Microsoft Word	A word processor software used in writing documents.
Google Chrome 91.0.4472.77	A powerful cross-platform web browser is used to search for information.
Mixamo	3D computer graphics used to rig a 3D model and animation.
Audacity	An application used in recording and editing sound effects.

3.6 Hardware Requirement

Hardware required to develop this project and for player interaction are listed below:

a) Laptop / PC
b) Windows
c) Mouse
d) Keyboard
e) Strong Internet Connection

3.7 Other Requirement

Other requirement that are used in developing this project.

a) Microsoft Teams (Online meeting platform)
b) One Drive (Cloud Backup)
c) Hard Disk (Data Backup)

3.8 Project Schedule and Milestone

Project schedule and milestone is important to ensure and help the development process to finish on the intended duration (Table 3.2).

Table 3.2: Project Schedule and Milestone

Key Milestone	*Start Date*	*End Date*
Brainstorming Idea	3/15/21	3/22/21
Idea & Concept research	3/22/21	4/5/21
Character, Level & UI design	4/5/21	4/26/21
3d modelling	4/26/21	5/10/21
Gameplay & mechanic design	5/10/21	5/31/21
Programming	5/31/21	6/14/21
Sound production	6/14/21	6/28/21
Prototyping & testing	6/28/21	7/15/21

Gantt chart for the project helps developer to visibly see the schedule timetable to meet the intended duration easier as shown in Figure 3.1 below:

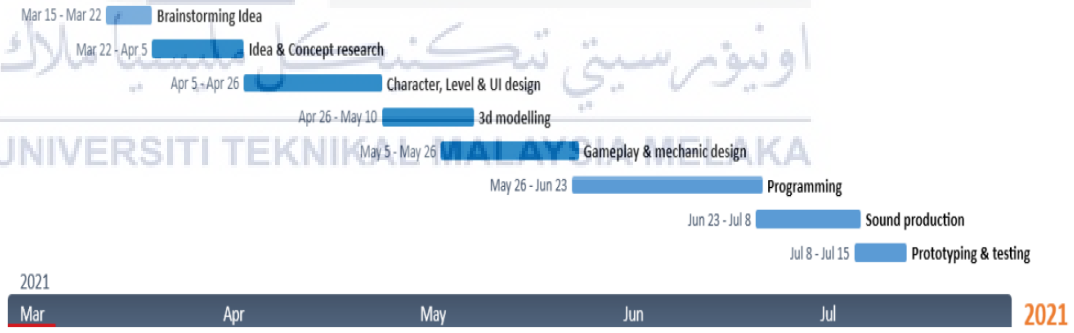


Figure 3.1: The Development and Report Gantt Chart

3.9 Conclusion

In conclusion, the overall requirement analysis, project timeline, and milestones have been fully discussed in this chapter. The requirement analysis consists of the difference between similar games that are essential in the development process of this project. Moreover, this project's hardware requirement has been discussed in detail together with technical and software requirements. Finally, the schedule and

milestones along with the development and report Gantt Chart have been analysed and planned in detail.

In chapter 4, the overall design of this project will be further discussed.

CHAPTER 4

4.0 DESIGN

4.1 Introduction

In this chapter, one of the most important processes in video game development which is design will be further explained in a detailed manner. A design process determines how the game will be visualized and played. It is separated into several parts which consist of game architecture, game design, and game art. These parts are then broken into smaller pieces that explain the whole design process.

4.2 Game Architecture

Refers to the structure of a game with some components that makes the game playable.

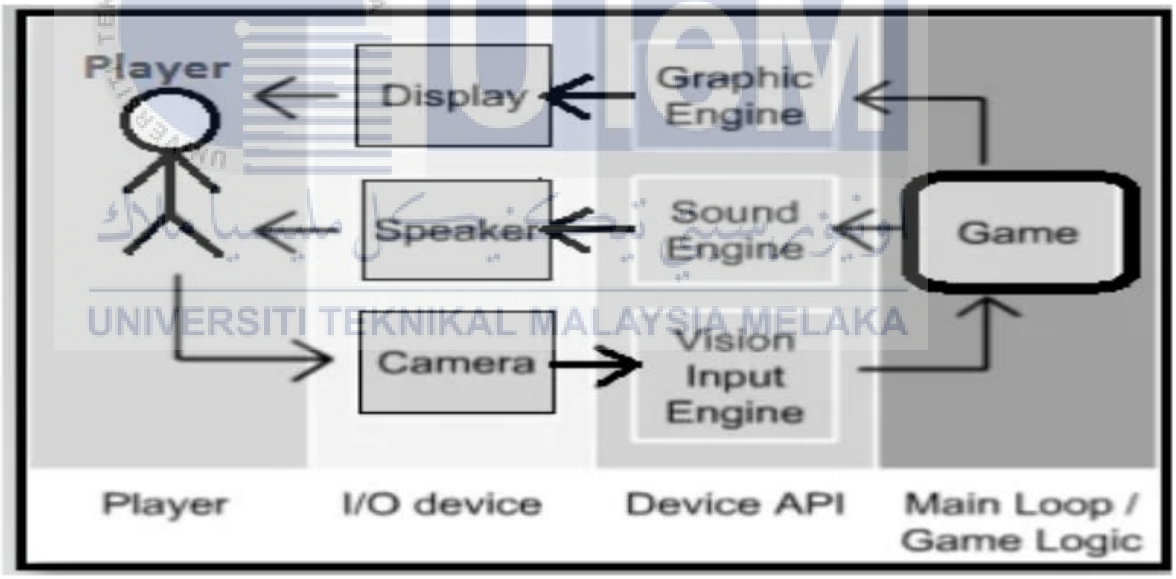


Figure 4.1: Game Architecture Diagram

4.3 Game Design

The design of the game is the aesthetic part that visualizes the game concept into something mesmerizing. The beauty of design does not come just from its arts alone but comes in pair with how entertainmenting it will be once played.

4.3.1 Gameplay

Player Roles: The player roles are to explore the environment and find a way out while witnessing the horror elements that happen when they trigger the event.

Game Rules:

i. Players need to explore the environment while searching for the exit.
ii. The player will encounter several lock doors where they need to find the key to unlock it.
iii. Several optional notes are scattered in the environment where players could pick up and read to find out more about the backstory of the game.
iv. The enemy will be in the form of horror elements that the player will encounter.
v. The health system is not present in this game.
vi. As players progress through the story, a variety of horror elements and cutscene will be experienced by the player.

Victory Conditions: Players need to reach the end of stage two and witness the ending to win the game.

Level of Difficulty: The difficulty presented to the player in a form of adrenaline rush and psychological stress as the player will witness horror events that challenge their insanity.

4.3.2 Core Mechanics

Player movement: Players walk in a dark environment with the help of a flashlight as a source of light.

Horror event 1: the combination of various sound effects each time player triggers an event.

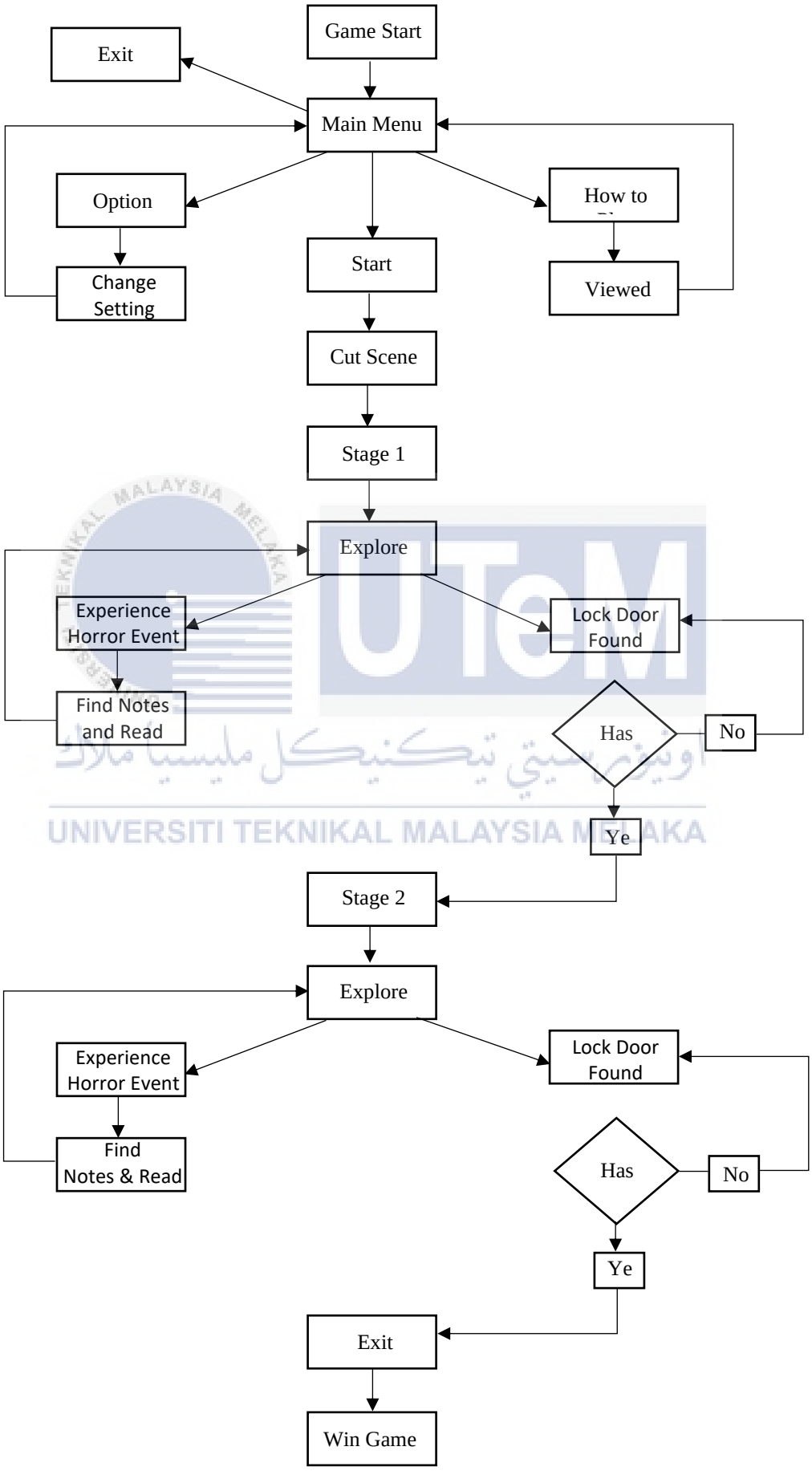
Horror Event 2: the combination of sound effects with visual effects that trigger an event.

Diary System: Function as a checkpoint each time after players encounter a cutscene.

Collectible Items: Notes scattered in the stage where the backstory of the game is vaguely revealed when read.

Main Menu: A menu that consists of the start game button, how to play, setting, and exit button.

4.3.3 Flowboard



4.3.4 Level Progression

Player progress through the game by finding the exit door at the end of the stage. In between that, the player will experience various combinations of horror events. Each horror event will differ from the other.

4.3.5 Storyline

The story revolves around an office worker who finds himself awakening in a creepy building without having any memories of how he got there prior before. Fear starts creeping in his heart as he musters all the strength left to grasp the situation surrounding him and find a way out. Armed with a single flashlight, he starts venturing the abandoned building by himself in finding clues to get out from the place. As time pass by, he starts to experience paranormal occurrences surrounding the building.

4.3.6 User Interface (UI)

Figure 4.3 shows the in-game menu that consists of *Start game, How to Play, Option,* and *Exit.* Each button leads to a different section. *Start game* will lead the player straight into a cutscene before heading into stage 1 while How to Play teaches the player the button controls. *Option* button takes player into a menu where they could adjust the sound volume. The *exit* button lets the player exit from the main menu.

Figure 4.2: Main Menu UI

As shown in figure 4.2 below, the in-game starts with a cutscene in a small office room.

Figure 4.3: In-Game UI

The inventory menu will appear after players press the *Tab* key button on the keyboard. This menu shows item such as keys and notes. In addition, the player could refer to the diary in this menu to find the next objective.

Figure 4.4: Inventory Menu

4.4 Game Art

Consist of the art of the game such as the stage design, character design, enemies, camera model and audio, and sound effects.

4.4.1 Game World

The game background takes place in the country of Malaysia. Moreover, the game begins in an unknown building where paranormal occurrences happened surrounding the protagonist. Figure 4.5 until Figure 4.7 shows the different environments of the unknown building.

Figure 4.5: Right Wing Hallway

Figure 4.6: Right Wing Room

Figure 4.7: Left Wing Hallway

4.4.2 Character Design

4.4.2.1 Player

The main character of the game is in a first-person perspective.

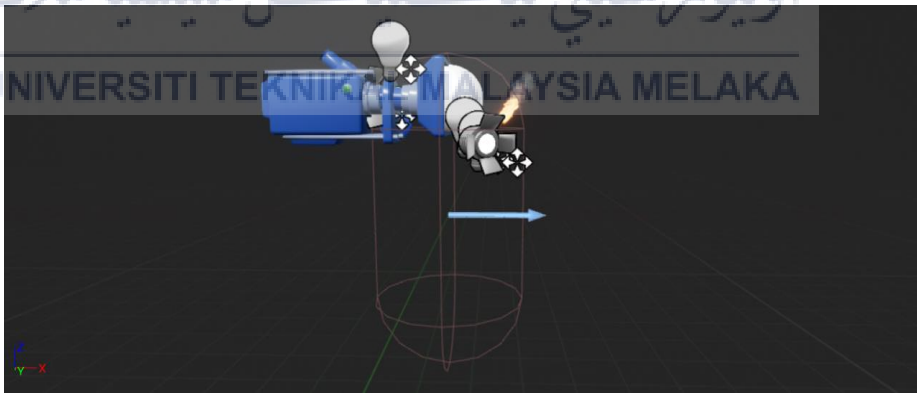


Figure 4.8: The Character Model

4.4.2.2 Enemies

The enemies that players will encounter as a horror event.

Figure 4.9 shows the creatures called “Toyol”. It is an undead infant that appears in folklore in a country such as Malaysia. The creature is invoked by black

magic to help the summoners rob people of their richness. In addition to that, this creature is playful and consume blood to satisfy their hunger.

Figure 4.9: Toyol

Figure 4.10 below shows the creature called “Pocong” which is the soul of dead people trapped in its cloth. The body is said to jump out from its graves after 40 days bound by the unsettle grudge. It is said to roam the world of the living until its souls are rest to peace.

Figure 4.10: Pocong

Penanggal is the vampiric entity that resembled the embodied woman's head trailing from its organs that are still attached. It is known that these creatures are mortal women who practice black magic.

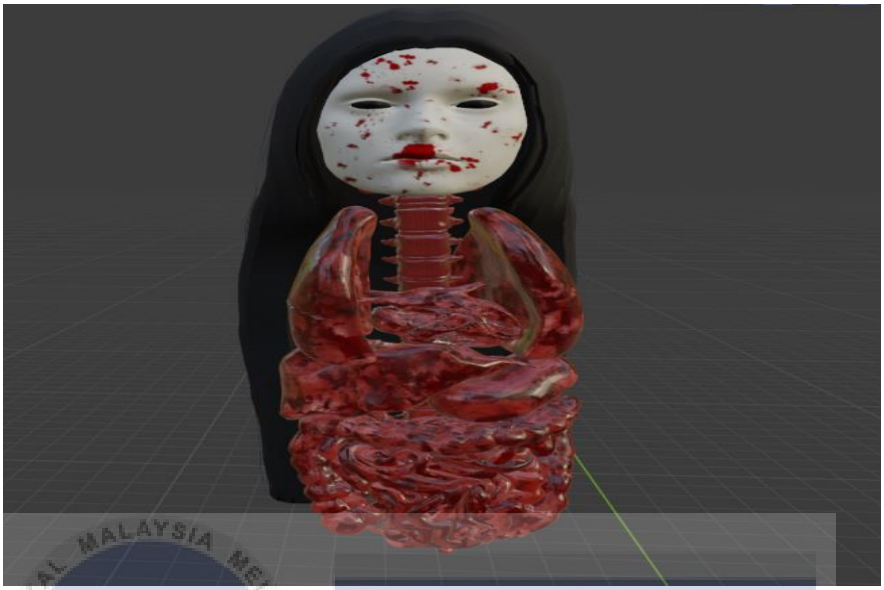


Figure 4.11: Penanggal

4.4.3 Camera Model

This project uses the first-person camera perspective. The camera is attached to the game player's head and will follow the intended movement.

Figure 4.12: First Person Perspective

4.4.4 Audio and Sound Effects

Various sound effects and audio used in this project come from royalty-free sites while some are recorded and modified using Audacity. Plus, a certain part of the

game features a voice-over. The sound effects mostly cover the sound of suspense, jump-scare, surrounding objects, and the voice of a human. The background music plays a subtle ambiance that adds tension to the atmosphere in the game.

4.5 Conclusion

In conclusion, the overall design process and its smaller part have been explained fully in this chapter. So, a better understanding of the topic such as the game architecture, flow board, level progression, storyline, user interface, game art, game world, character design, camera model, audio, and sound effects could be reached.

In the next chapter, the implementation of the game will be further discussed in detail. The topics consist of implementing game art, graphics, audio, video, animation, and game components

CHAPTER 5

5.0 IMPLEMENTATION

5.1 Introduction

This chapter will be introducing the implementation phase which is an essential part in a game development. The implementation phase involved converting and integrating the game art into a fully playable game. This process can be achieve using the Unreal Engine 4 software in producing the graphics, audio and visual, and animation. The technical view of a programmer is much needed into realizing the production through various functional core game mechanics.

5.2 Creation of Game Art

The creation of the game art exists only in a form of visualization from the desired art style. It is then visualize using the Unreal Engine 4 into an aesthetic game world.

5.2.1 Production of Graphics

The first phase of implementation is by creating the 3D model using Blender. The process involve modelling, texturing, and animating the 3D character. Afterwards, the next phase involved importing the 3D character into Unreal Engine 4. This phase is crucial because importing a 3D model from different software such as Blender need to be done in correct order for it to succeed. For example, during the import process in the Unreal Engine 4, certain choices such as importing the 3D model together with skeletons will affect how the model function in Unreal Engine. In between modelling the 3d model and importing it into Unreal Engine, the animation part is done using the software mixamo by creating different animations for the 3D model.

Figure 5.1 shows the final process of character modelling in Blender after the character had gone through modelling, and shading process. The model is ready to be imported into mixamo for animation process.

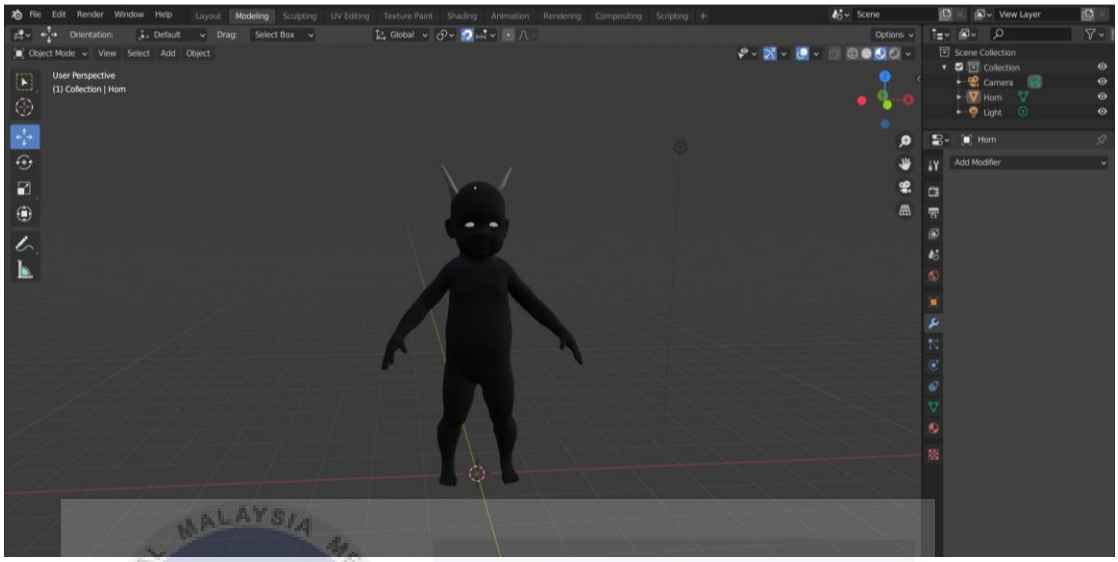


Figure 5.1: Modelling process of “Toyol” in Blender

The animation process can be seen below where the animation of the model is being done using Mixamo software.

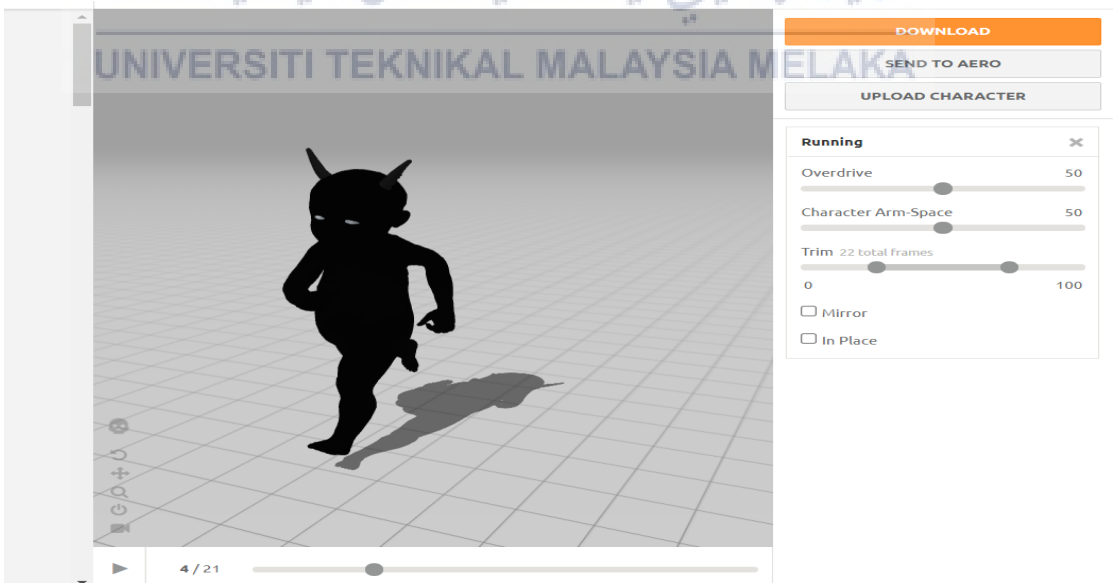


Figure 5.2: Animating the model movement in Mixamo

The process of importing the complete 3D model into Unreal Engine. In this phase, various setting can be chosen from as shown in figure 5.3 below. For example, 3D model has options to be imported either with or without skeletons. In addition to the 3D model, animations could be imported as well.

Figure 5.3: The import setting with various option

The next part involves realizing the desired world in Unreal Engine 4. The stage is piece together using a set of geometrical structure such as walls, doors, windows, and others.

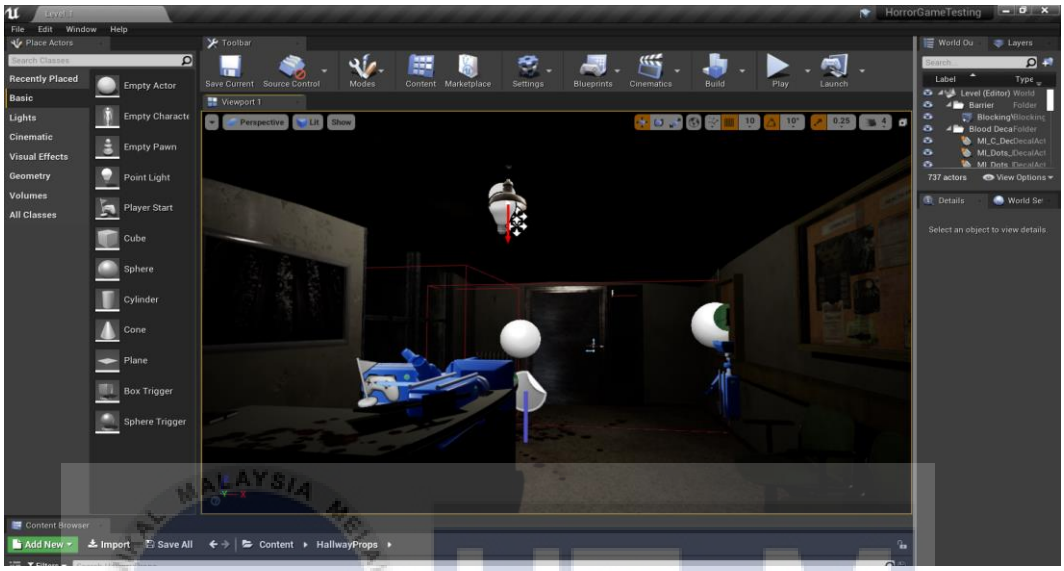


Figure 5.4: The starting point of the game

Figure 5.5 below shows the geometrical structure that are pieced together to visualize the level in the game. Certain structure such as doors has its own animation.

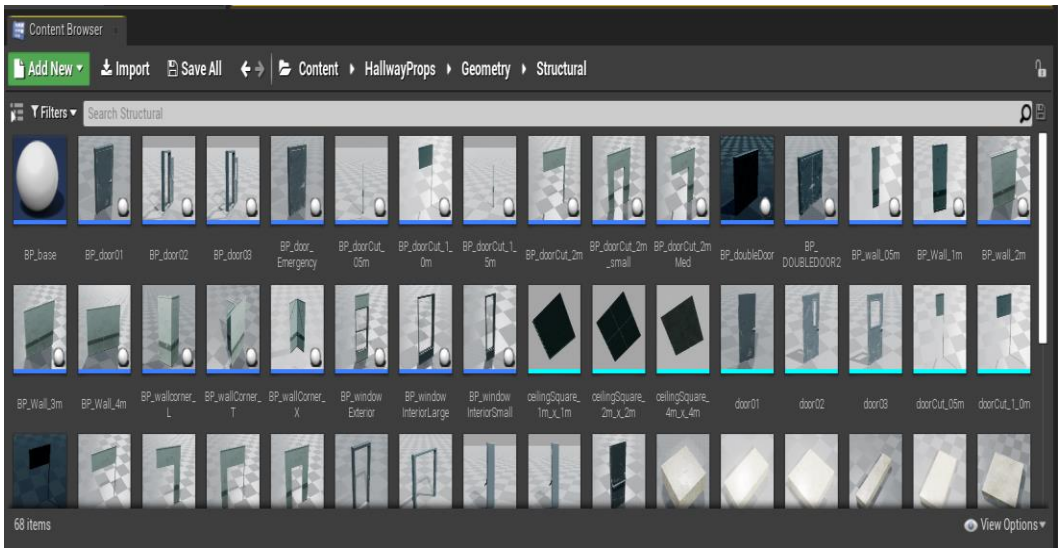


Figure 5.5: The geometrical structure

5.2.2 Production of Audio

The audio production in the game involves importing various audio outside of Unreal Engine 4 to create distinctive audio such as knock on a door, ambience sound, footsteps, and many other. Moreover, this game features two different sound types. The first sound type is 2D sounds where it works without any spatialization. The second sound type is the 3D sounds that works with spatialization.

Table 5.1 Type of Sound

Sound Type	Description	Example
2D Sound	Does not change in position as the player moves around the game. For example, the ambience sound in the game will not get louder or slower as player move around the level.	Ambience sound, footsteps, torchlight on and off, diary updates, taking object, opening, and closing door.
3D Sound	It has an origin point in the level and change its position as player moves around the game. For example, the flickering sound of the point light in the level get louder as player approach it and vice versa.	Door knocking, point light flickering, creatures heavy breathing, ringing telephone.

Figure 5.6 below shows the different type of sounds where each can be attached to an actor in the level as an origin point. For 3D sounds, the origin point affects the sound volume as player navigate through the level.

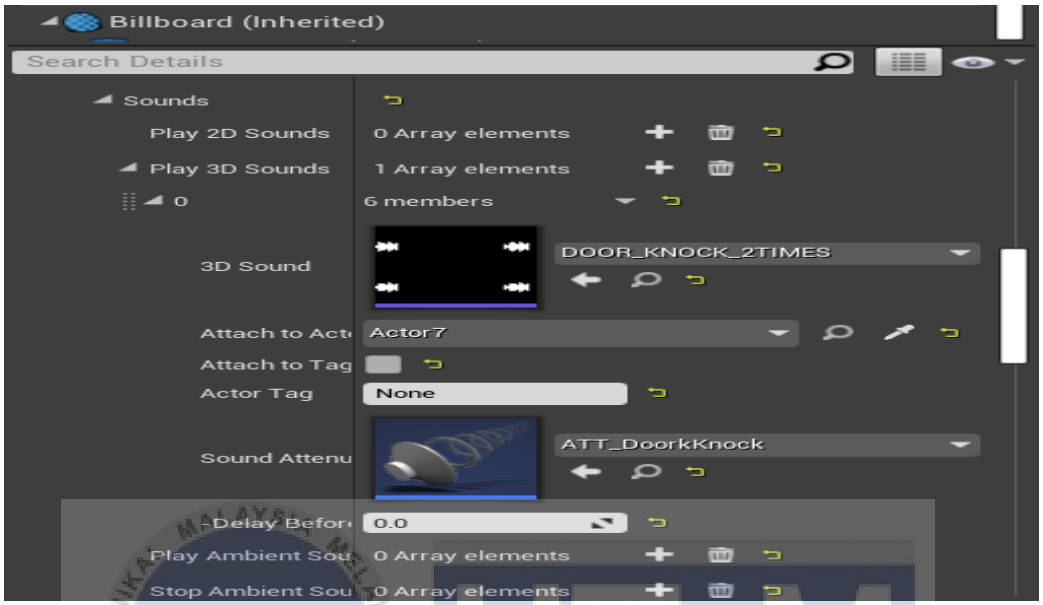


Figure 5.6: Audio Configuration

5.2.3 Production of Video

There is no video implementation inside the game.

5.2.4 Production of Animation

The animation process consists of two part. One is done using Mixamo software and the other is done within Unreal Engine 4. The animation process in Unreal Engine is much complex compared to Mixamo.

5.2.4.1 Importing Model Into Mixamo

After uploading the 3d model from Blender into Mixamo, it is ready to be animated. Mixamo contains a variety of fully animated movement such as running, walking, jumping and a lot more. The type of animations found in Mixamo varies in terms of its complexity. For example, some running animations contain a complex movement compared to others. So, choosing the correct animation is crucial in terms of making it running smoother during the animation phase.

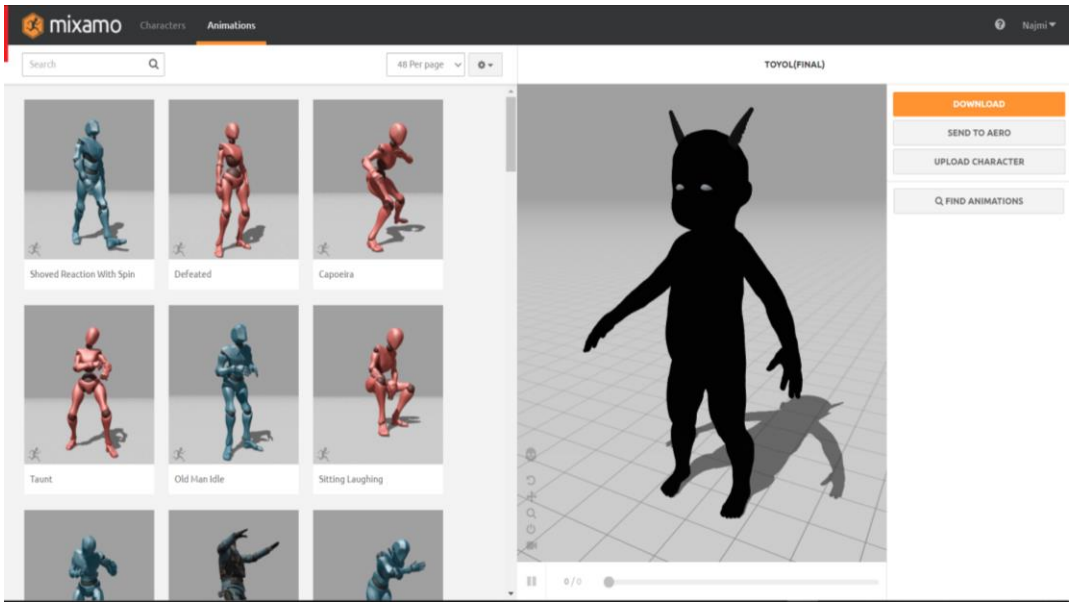


Figure 5.7: Variety of Animations

5.2.4.2 Setting The Animation

After choosing the perfect animation based on the 3d model, there will be a several settings that could further enhance the animation to our desire. The overdrive setting will alter the animation speed while lower overdrive makes the animation slower and vice versa. In addition to that, the character arm-space setting enables the character model's arm to be slightly wider or narrow resulted in a better and more realistic animation. Finally, the trim setting function as a total frame per second adjustment. Leaving it on default setting usually resulted in better total frame animation. However, certain animations required the total frame to be adjusted for a better output.

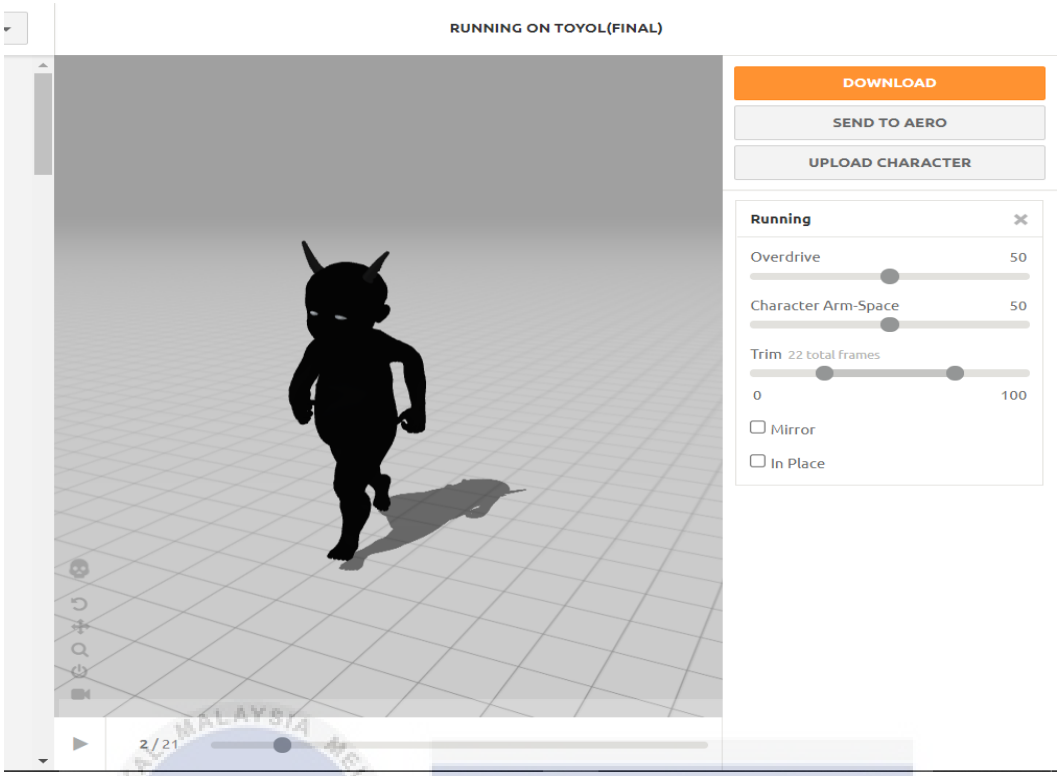


Figure 5.8: The Animation Settings

5.2.4.3 Downloading The Animation

The final phase of using Mixamo is downloading the desired animations. To make matter simple, Mixamo provides several options such as different format to cater to different software requirement. After downloading the 3D model with animations, it is then ready to be used in Unreal Engine 4.

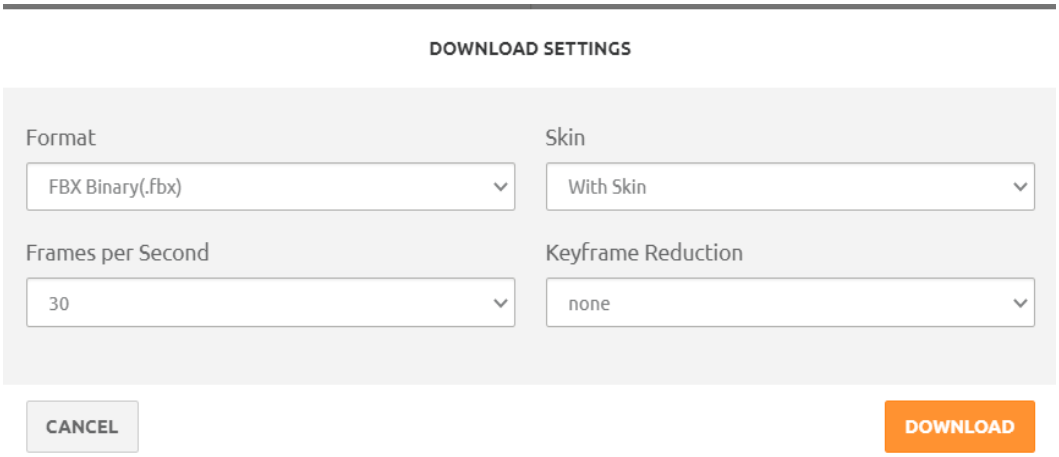


Figure 5.9: Download Options

5.2.4.4 Setting The Animation in Unreal Engine

Once the animation is imported into Unreal Engine, it will then need to map inside the Blend Space. Blend Space is a space in Unreal Engine where animations could be implemented to animate the model. For example, in this figure, the running animation will be dragged onto one of the Blend Space. If there is more than one animation on a character, Blend Space enables transition between animation. In an instance, the animation idle will be slotted on the first Blend Space. The walking and running animation will then be slotted on the second and third Blend Space accordingly. This will create a transition from idle to walking and finally running.

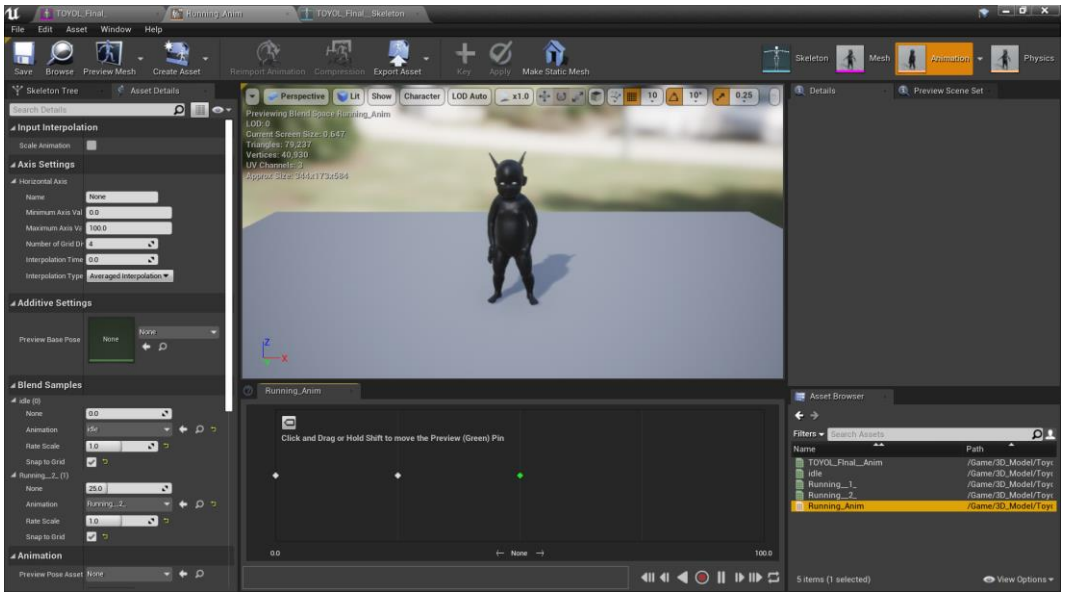


Figure 5.10: The Blend Space

5.2.4.5 The Animation Blueprint

The animation blueprint is where the condition for character movement mechanic takes place. In this part, variety of condition could be set, and the complexity of the condition depends on the intended movement of the character.

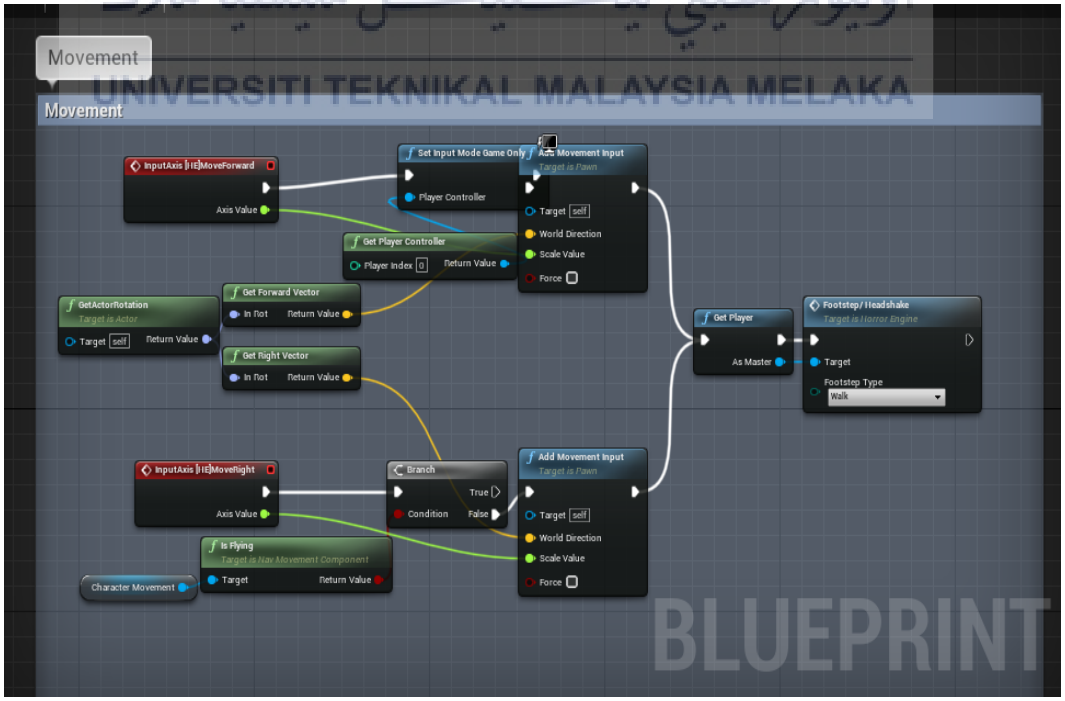


Figure 5.11: The Event Graph

5.2.4.6 Applying The Blueprint Onto The Character

The final step of animation is implementing onto the character model. As an example, figure below shows the animation being implemented onto the character model. Several options such as playing the animation from the start and looping could be chosen to further enhance the usability of the animation.

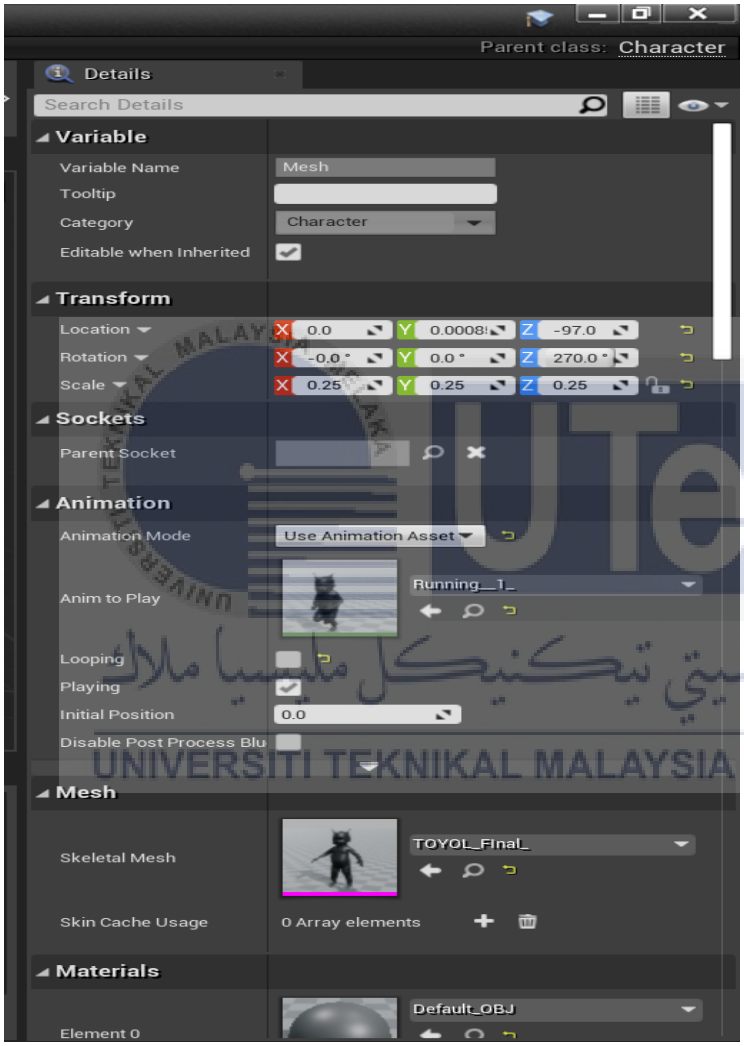


Figure 5.12: Implementing the Animation

5.3 Integration of Game Components

The game components consist of the implementation of the horror elements using the blueprint system. One of this blueprint systems is named Horror Event. Horror Event is categorized into several category such as environment, player, sounds,

quests, level, and subtitles. Other than that, a blueprint system named Horror Engine deals with other technical aspect such as the health system, main menu settings, inventory settings and use settings.

5.3.1 Horror Event Blueprint

Horror event blueprint contains the horror element that have been separated into different category. Each category has its own component that helps apply the horror element into the game.

5.3.1.1 The Environment Event

The environment integrates any horror element to the surroundings by tagging on an object. For example, one of the horror elements in the game involved spawning an enemy after player collides with an invisible object in the level that triggers a cutscene. After a certain duration, the spawned enemy is then destroyed and removed from the stage immediately.

Figure 5.13: The Environment Horror Event

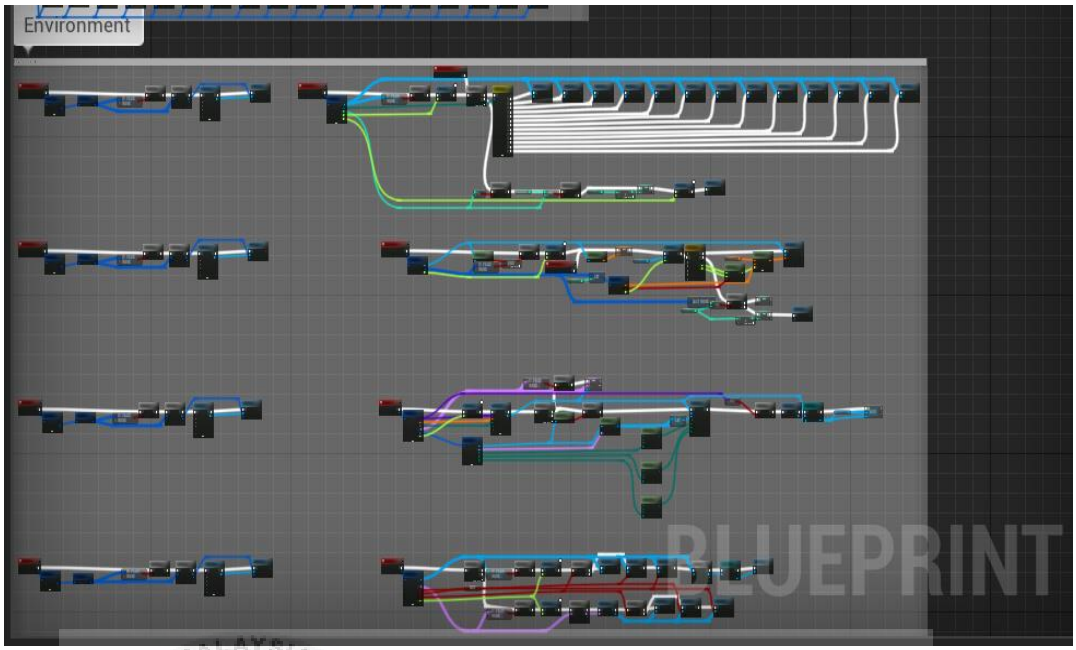


Figure 5.14: The Environment Horror Event Blueprint

5.3.1.2 The Player Event

The player events enable a horror event to occur on a specific location while focusing the camera on that event. These events may occur as a cutscene that divert the players attention towards it and let them experience the horror. In addition to that, player events allow player to get damage by any object in the level.

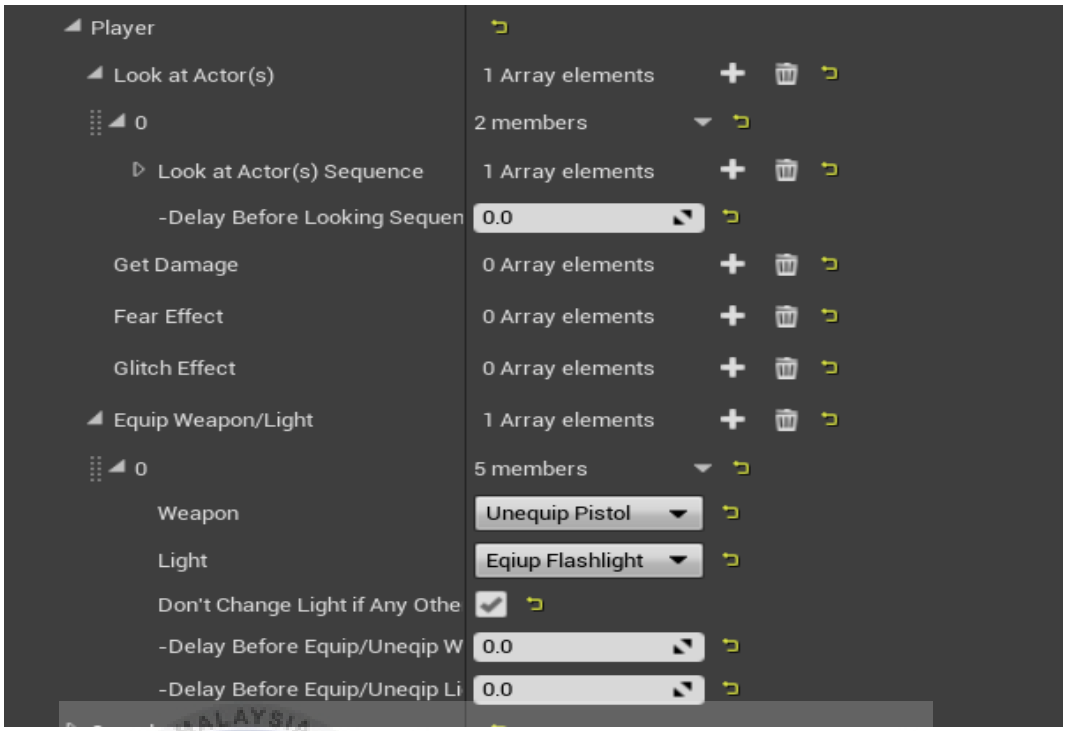


Figure 5.15: The Player Horror Event

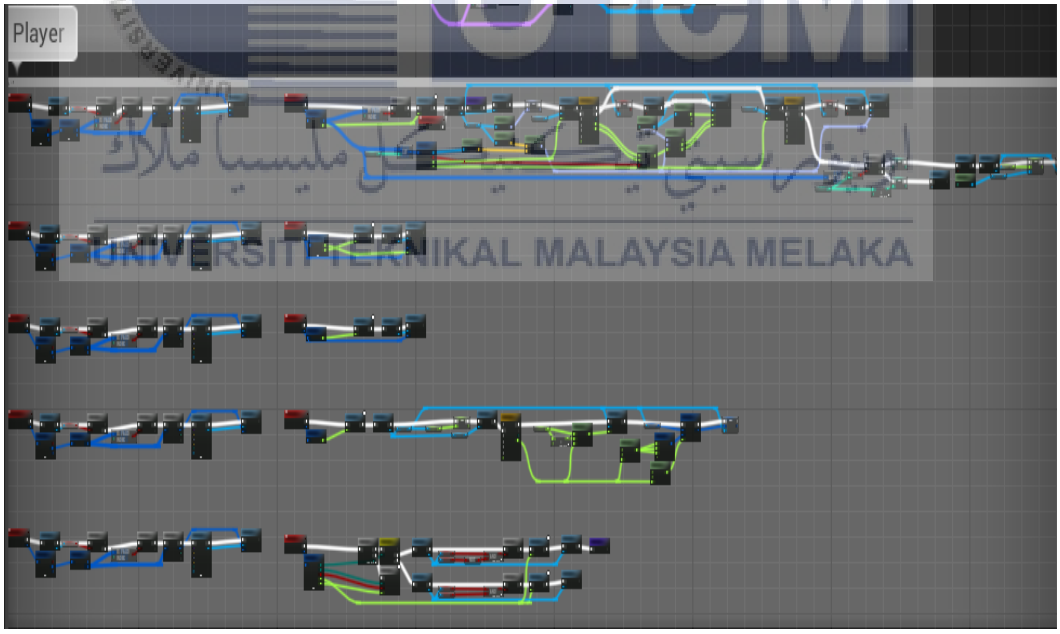


Figure 5.16: The Player Horror Event Blueprint

5.3.1.3 The Sound Event

Enable two types of sound to be played on any tagged object in the game. For example, an invisible actor is tag with a 3d sound that plays at that location after players collide with an object elsewhere. This scene triggers a horror experience after player complete a certain objective.

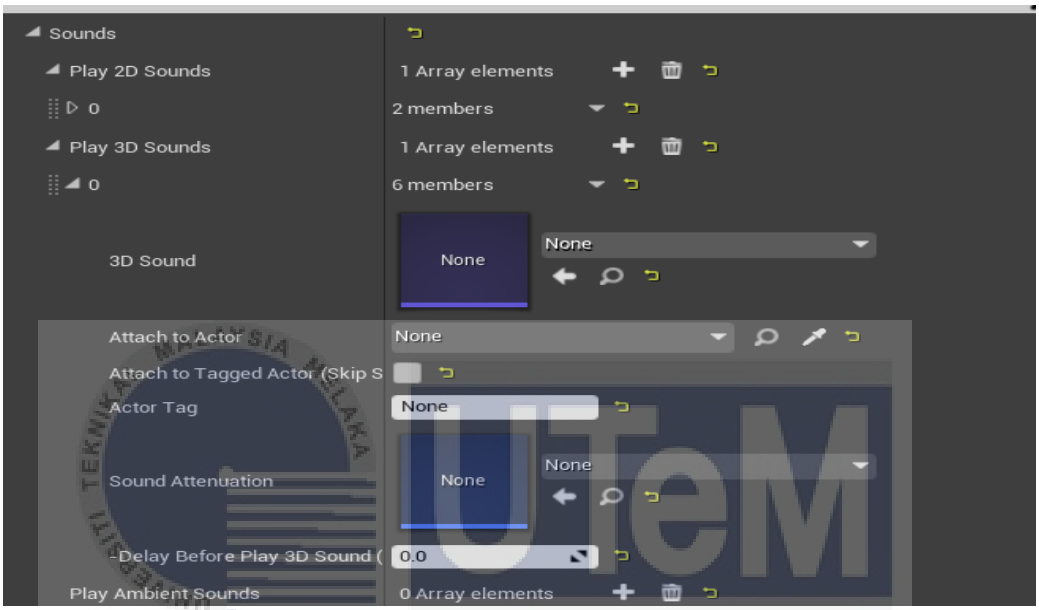


Figure 5.17: The Sound Horror Event

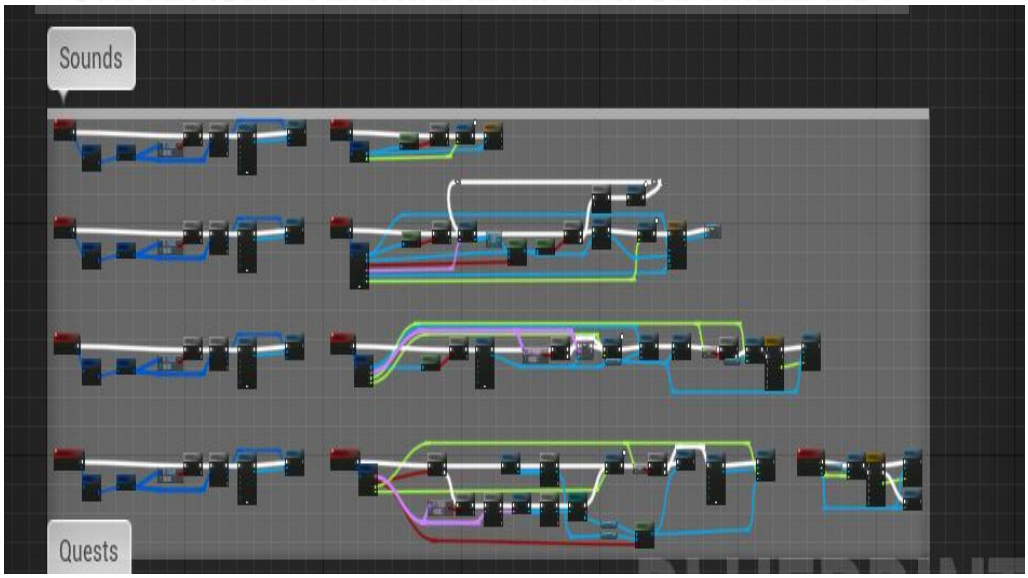


Figure 5.18: The Sound Horror Event Blueprint

5.3.1.4 The Quest Event

The quest event is related to the diary in the inventory system where each diary updates comes from the quest event. Same as previous event, the quest event can be tag onto an object and then triggered by player. In response, the diary will get updated with new dialogue.

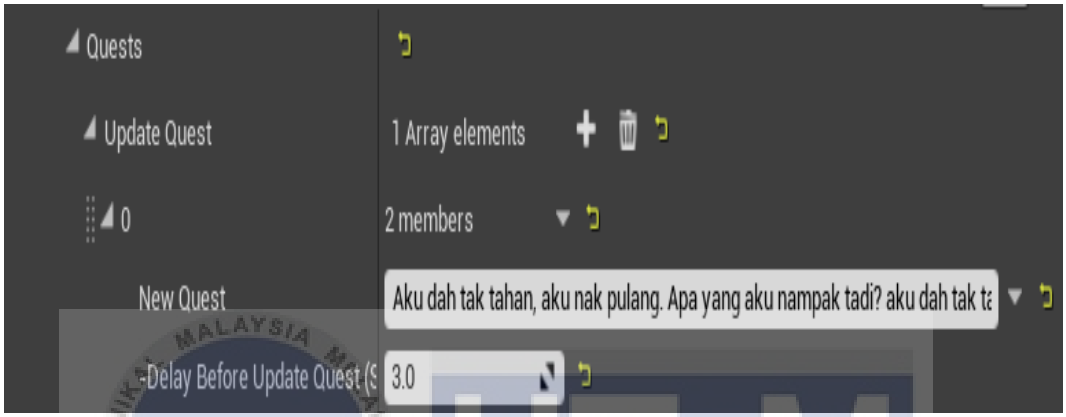


Figure 5.19: The Quest Horror Event

Figure 5.20: The Quest Horror Event Blueprint

5.3.1.5 The Level Event

An event that lets player move into another area or level. As an example, this event is tagged onto a lock door that lets player move into another level after unlocking

the door. So, player need to find a key to this door and unlocks it to move into another level.

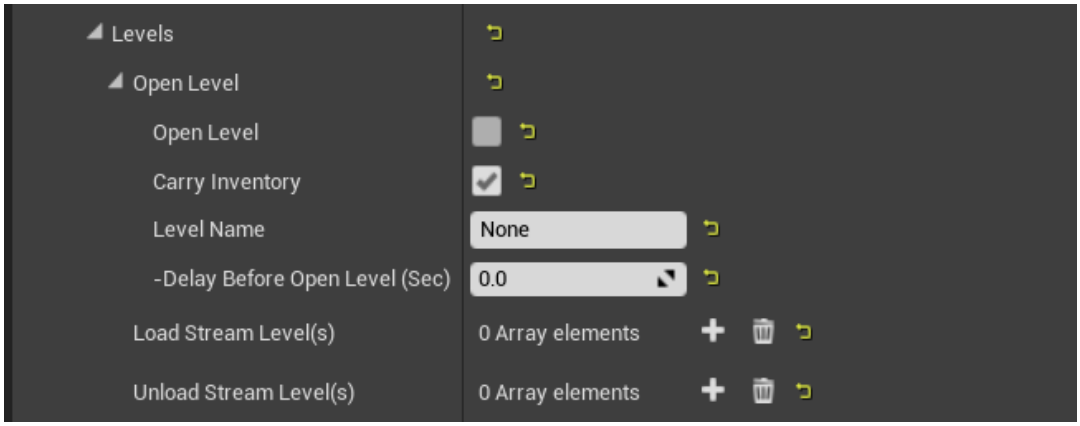


Figure 5.21: The Level Horror Event

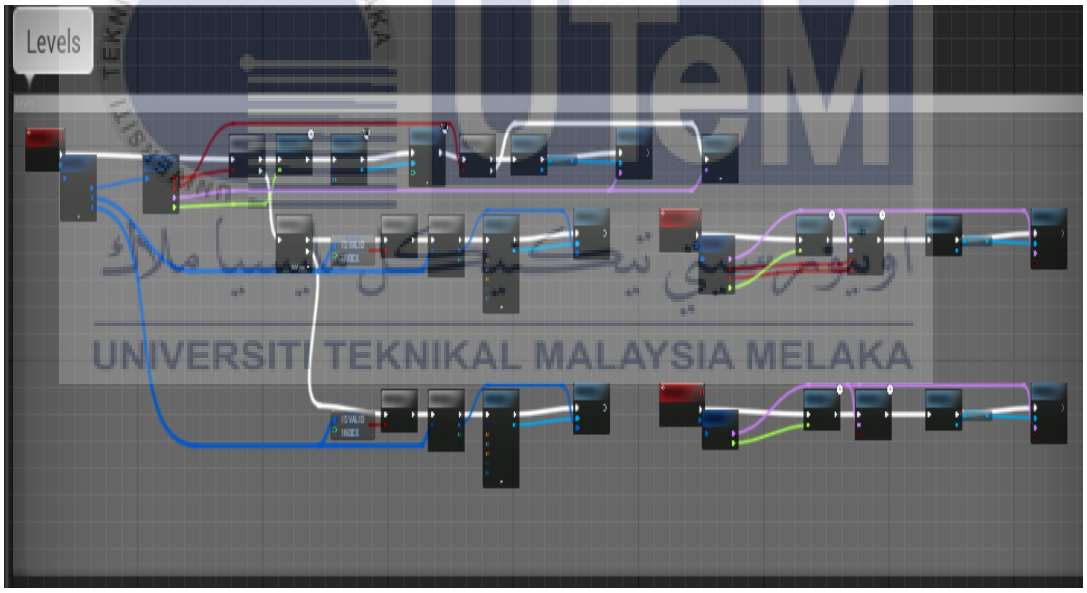


Figure 5.22: The Level Horror Event Blueprint

5.3.1.6 The Subtitle Event

An event that produces subtitles after triggering certain action. This event is usually use when players interact with certain objects in the game that produce a subtitle as an answer to the event that happens in the game.

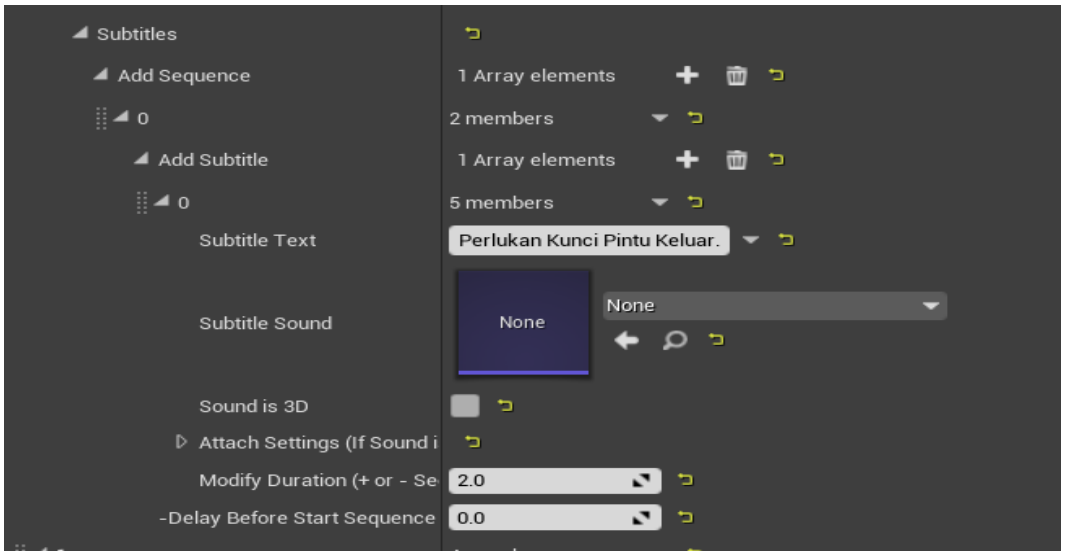


Figure 5.23: The Subtitle Horror Event

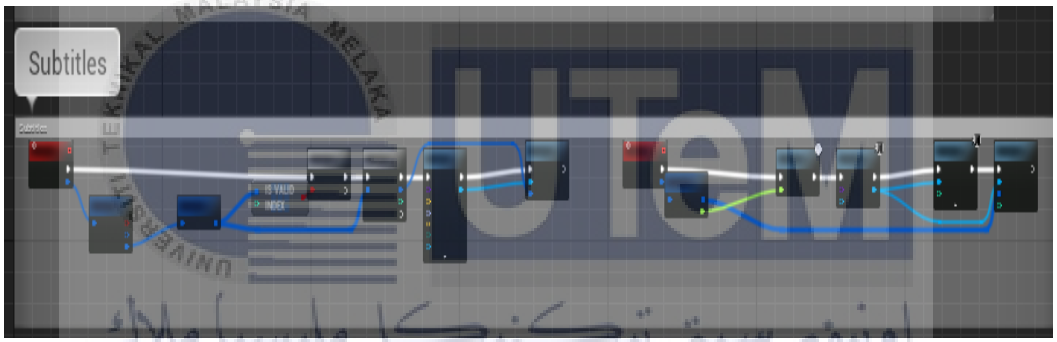


Figure 5.24: The Subtitle Horror Event Blueprint

5.3.2 Horror Engine Blueprint

Horror engine blueprint contains the blueprint to the health system, main menu, inventory system and use system. Each blueprint controls the technicality behind the core mechanics of the game. For an instance, the health system blueprint controls the health mechanic that is assigned to the character while the main menu blueprint let player interact with transition of the main menu. Finally, the inventory blueprint controls the navigation of the inventory when player press tab button and use system blueprint offers an interaction between players and certain object such as doors, keys, and others.

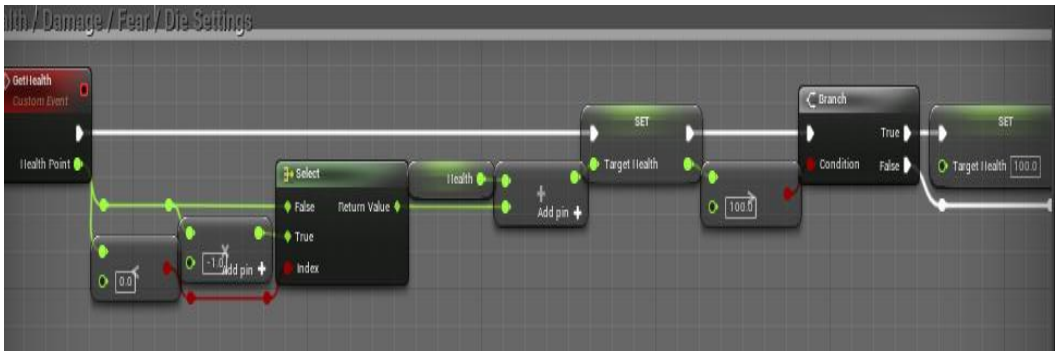


Figure 5.25: The Health Blueprint

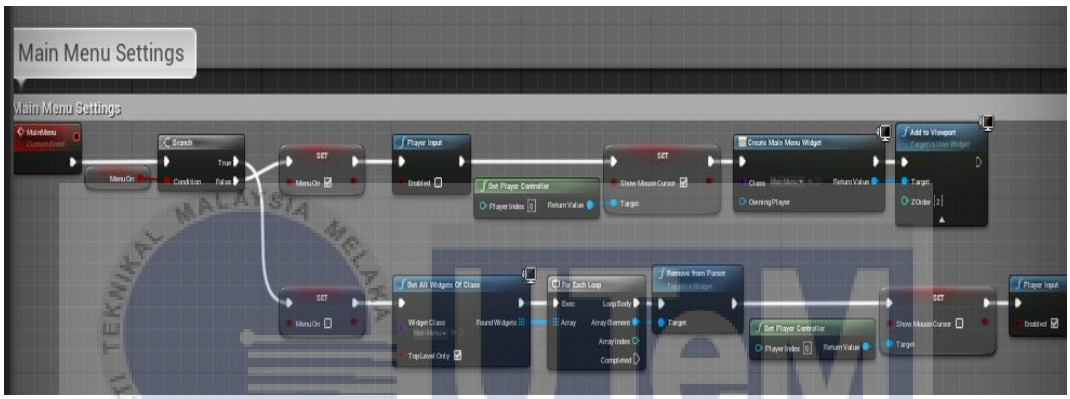


Figure 5.26: The Main Menu Blueprint

Figure 5.27: The Inventory Blueprint

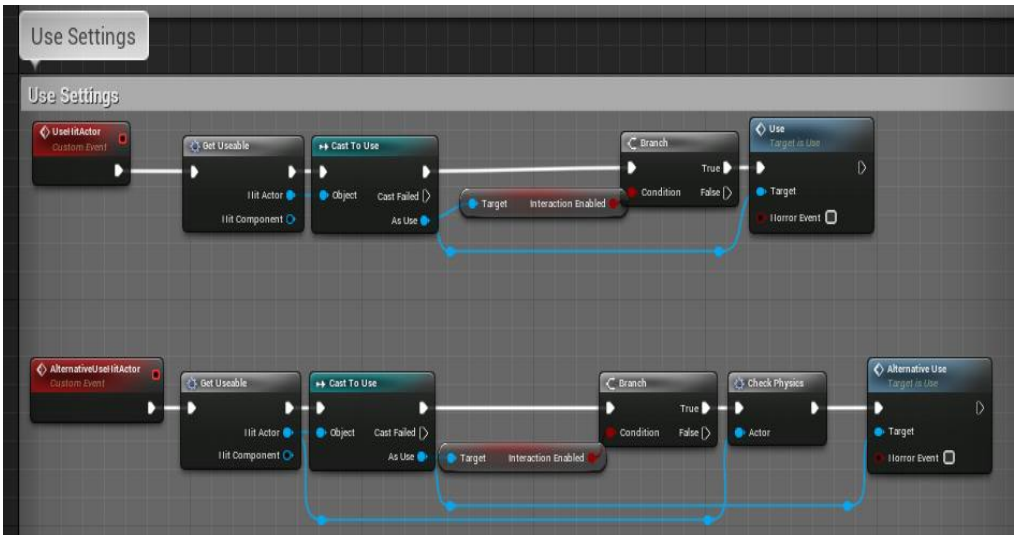


Figure 5.28 The Use Blueprint

5.4 Game Configuration Management

The game will be available through downloading files that contain the application. The game then can be started through clicking the application. This game requires input devices such as keyboard and mouse.

5.4.1 Configuration Setup

This project was published using Unreal Engine 4.25 intended for Window 64-bit. It requires simple setup where players need to download the whole file and launch the application after the download process.

5.4.2 Version Control Procedure

Table 5.2: Testing Phase

Phase	Description
Alpha	The beginning phase where the horror elements and the stage are arranged into position. It is then tested to find bugs and ensure the smoothness of the horror element in the level.
Beta	The game will be tested by the target audience. A pre and post survey will be handled out for them to fill in to gather data for further improvement of the game.
Full Release	The final version of the game after improvement are made based on the survey of the target audience. The game is then ready to be publish into the market.

5.5 Implementation Status

Table 5.3: Implementation Status

Component	Description	Duration To Complete	Completed Duration	Status
Brainstorming Idea	Gathering idea by brainstorming activity.	2 Weeks	2 Weeks	On Time
Idea & Concept Research	Research all the idea and concept from previous brainstorming activity.	1 Weeks	1 Weeks	In Time

Character, Level & UI Design	Designing the character model, level of the map and UI design. The character and level design are done in sketching method.	2 Weeks	2 Weeks	On Time
3D Modelling	Modelling the character and level design from previous sketching. The level design is done in Unreal Engine by placing the game assets into the level.	3 Weeks	3 Weeks	In Time
Gameplay & Mechanic Design	Designing the gameplay and mechanic to find the perfect balance between the two.	3 Weeks	3 Weeks	On Time
Programming	Start programming the mechanics to implement in the game.	2 Weeks	2 Weeks	In Time
Sound Production	Producing the sound effect using other software such as audacity and implement it inside the level.	1 Weeks	1 Weeks	On Time

Prototyping & Testing	Testing the horror element built in the level.	1 Weeks	1 Weeks	In Time

5.6 Conclusion

Implementation is a crucial part of this project as the idea and design is visualize into a working and playable prototype. The game art is created while involving the production of visual graphics, audio, and animation. In addition, the technical aspect in this project which involve integrating the blueprints to create the mechanics and the horror elements are done in Unreal Engine. In the next chapter, testing phase will be done for the target audience by conducting feedback through surveys.

CHAPTER 6

6.0 TESTING AND EVALUATION

6.1 Introduction

This chapter will carry out the testing phase involving the test plan, test implementation, test result and analysis. The testing strategy that will be use in this project is by handling out survey to the target audience to measure the effectiveness of horror element in this project based on the studies of problem statement and requirements.

6.2 Test Plan

The testing plan consists of several elements such as the demographic of the users, usability and playtesting, enjoyment and, visual and audio aesthetic. This element is crucial to ensure users, environments and schedule meets with the plan criteria before testing and analyzing the data findings phase.

The purpose of a test plan is to find a test user who are suitable as a target audience aged 18 and above. The targeted audience will be testing the project beta phase of the development cycle. The targeted audience which are 18 and above of age will be given out the download link for this project. After that, the target audience are required to answer a set of pre and post survey in a form of a questionnaire created by the developer. This questionnaire aims to study the feedback of the targeted audience after their experience with the horror elements in this project.

6.3 Test Implementation

The test will be implemented in three sections. The first section is where the developers contact the target audience that consist of family member, lecturers, friends, and strangers to explains about this project and its aim. Next, the targeted audience are given out the download link of this project for them to play. Before playing the game however, the targeted audience is given out the pre survey questionnaire. This survey intended to gather data on targeted audience knowledge and preference on horror game genre. After filling the pre survey questionnaire, the

targeted audience will be required to play the game in allocated time. Finally, the targeted audience will be given the post survey after they finished the game. This second survey aims to gather the data on targeted audience feedback on the game. The gathered data are then collected and analyzed from the pre and post survey questionnaire. The questionnaire contains a set of twenty-nine questions that are separated into several sections.

6.3.1 Test Description

Game User Experience Satisfaction Scale (GUESS) proposed by Smith, D. C., Shelstad, W. J., Smith, D. C., (2020) is used as questionnaire to evaluate the game. The proposed questionnaire contains a total of 9 factors that were considered for evaluating the game. The subscales are Usability/Playability, Narratives, Play Engrossment, Enjoyment, Creative Freedom, Audio Aesthetics, Personal Gratification, Social Connectivity and Visual Aesthetics. Among the 9 factors, a combination of 5 factors were chosen based on its relevance for evaluation test of the game. The chosen factors were Usability/Playability, Narratives, Enjoyment, Audio Aesthetics, and Visual Aesthetics. Table 6.1 shows the scoring that utilize the Linkert Scale method. The respondent needs to fill in their answer based on the scale of 1 to 5.

Table 6.1: Implementation Status

Description	Horrible	Bad	Neutral	Good	Excellent
Scale	1	2	3	4	5

Table 6.2: Demographic Factors

Gender
Age
Have You Ever Play Any Horror Game Before
What Type of Horror Game Did You Play Before
What Horror Game Did You Play Before

How Long Did You Play Spend Playing Horror Games
What Element That You Find Horrific in A Horror Genre
Do You Like Jump-Scare
Do You Find Jump-Scare necessary/Important in A Horror Game

Table 6.2 shows the demographic factors used in the pre survey questionnaire. The demographic factors refer to the common variable typically found in a questionnaire involving Game User Experience Satisfaction Scale (GUESS).

Table 6.3: Usability/Playtesting Factors

Usability/Playtesting
What Do You Feel About the Overall of The Game
How Long Did You Take to Finish the Game
Do You Understand the Objective in The Game
What Element Do You Find the Most Horrific in The Game
What Element Do You Find Lacking in The Game

The usability/playtesting factor showed on Table 6.3 derived from the Game User Experience Satisfaction Scale (GUESS) and was used in this project post survey. The factor was used as a medium to evaluate the playability of the game. On the other hand, this evaluation indicates that this game is either normal or too complex for respondent to understand. In addition to that, respondent could also tell which horror element that they find interesting and which they find otherwise.

Table 6.4: Narratives, Audio Aesthetics, and Visual Aesthetics Factors

Narratives, Audio Aesthetics, and Visual Aesthetics
How Do You Feel About the Game Environment
How Do You Feel About the Game Ambience Sound
How Do You Feel About the Game Jump-Scare
How Do You Feel About the Game Surrounding Sound Effect
How Do You Feel About the Game Visual Effect
How Do You Feel About the Game Storyline
How Do You Feel About the Game User Interface
How Do You Feel About the Game Instruction
How Do You Feel About the Game Movement in Navigation
How Do You Feel About the Use of Journal to Help Player Keep Track of the Game

Several factors from the Game User Experience Satisfaction Scale (GUESS) are combined into one part of the post survey in Table 6.4. This factor was used to evaluate the game storyline, audio choice and visual representation. This means that respondents will be able to dictate the immersion of the game story, sound, and visual effects. In other word, the factors can be the overall indicator in determining the game fun factor.

Table 6.5: Enjoyment Factors

Enjoyment
Do You Have Any Comment(s) On This Game
Do You Have Any Feedback(s) On This Game
Are You Satisfied with The Horror Element Present in This Game
Do You Think the Horror Element in This Game Could Be Improve
Would You Recommend This Game to Others

Table 6.5 shows the enjoyment factor based on the Game User Experience Satisfaction Scale (GUESS) that evaluates the fun factor of the game. It means that respondents will determine whether the game is fun to play and their satisfaction with the horror element present in the game contribute toward that.

6.4 Test Result And Analysis

According to the data gathered by the questionnaire, most respondent are familiar with a horror game genre and have played them before. In addition to that, most of the respondent are categorized into a group that play games frequently and has develop the logic behind games functionality. This ensures the smoothness of experience when the respondent plays the game. The questionnaire is separated into two parts and each of them contains several sections that need to be answered.

6.4.1 Pre-Survey

This section focusses more on gathering data on respondent experience with horror game genre. In addition to that, it also highlights the time spent on a horror game and the element of horror that respondent find horrific. This questionnaire gathered data on respondent preference in a horror game genre and to give them idea on what to be expected from this game.

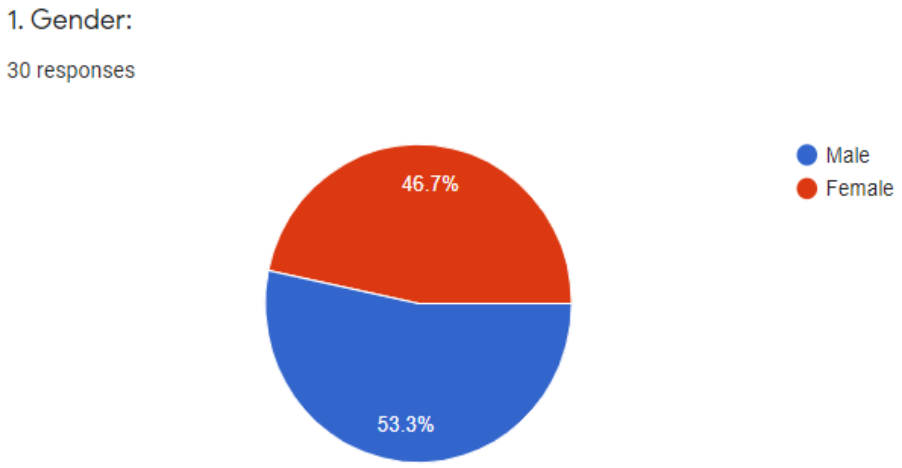


Figure 6.1: Result of Question 1

Figure 6.1 shows that 16 respondents (53.3%) are male while 14 other respondents (46.7%) are female.

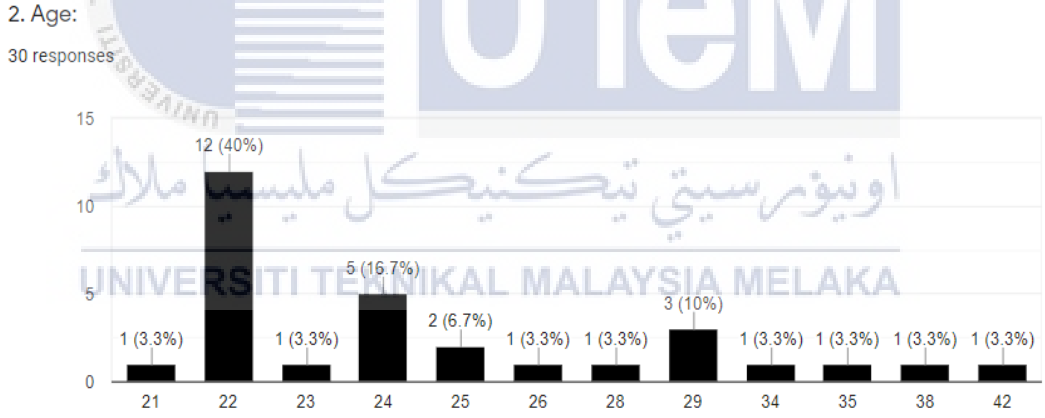


Figure 6.2: Result of Question 2

Figure 6.2 shows that majority of the respondents age between 21 until 29. Based on the data, there are 26 respondents (86.6%) aged between 21 to 29 while 4 respondents (13.3) aged between 32 to 42.

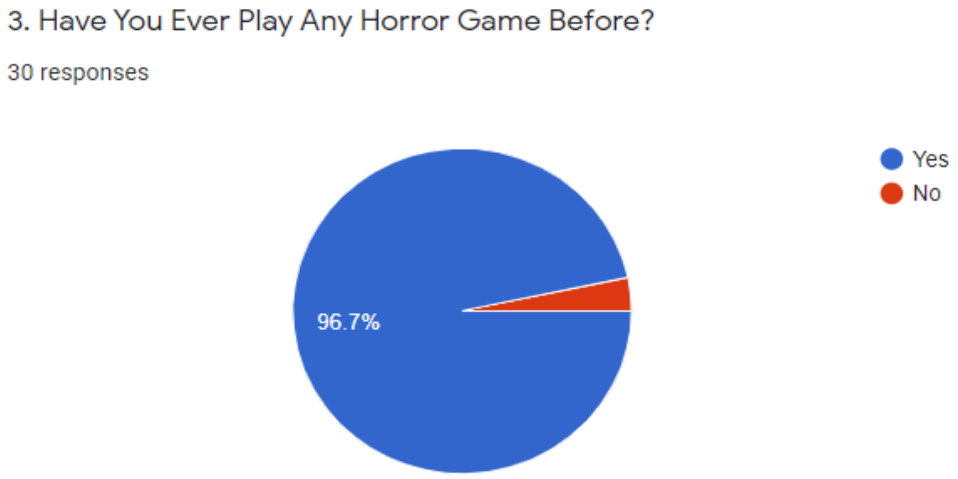


Figure 6.3: Result of Question 3

Figure 6.3 shows that almost all the respondents have played a horror game before. Out of 30 respondents (100%), only 1 respondent (3.3%) have never played a horror game.

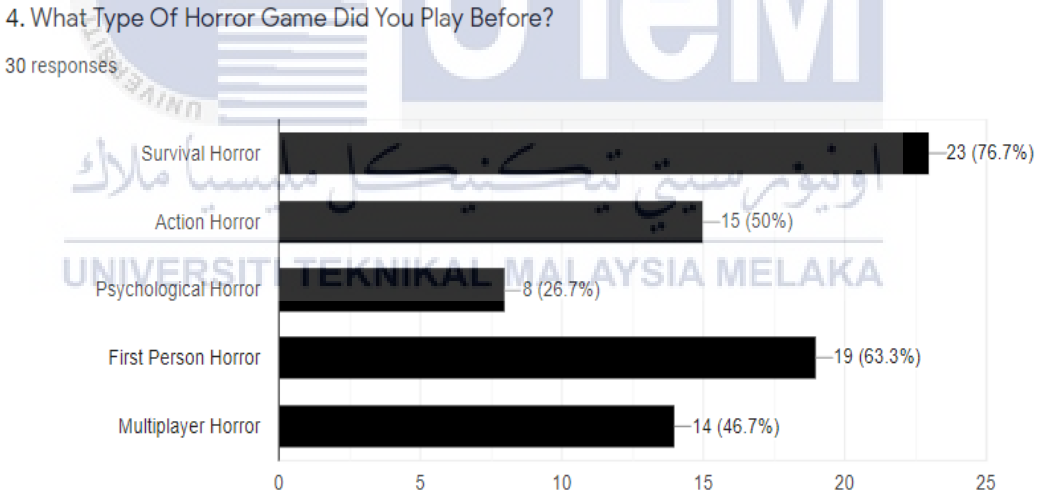


Figure 6.4: Result of Question 4

Figure 6.4 shows that the survival horror game was dominant where 23 respondents (76.7%) have played them before. Psychological horror game showed the least amount of playability in which only 8 respondents (26.7%) have played them. Other than that, action horror game, first person horror and multiplayer horror game were played by 15 respondents (50%), 19 respondents (63.3%) and 14 respondents (46.7%) respectively.

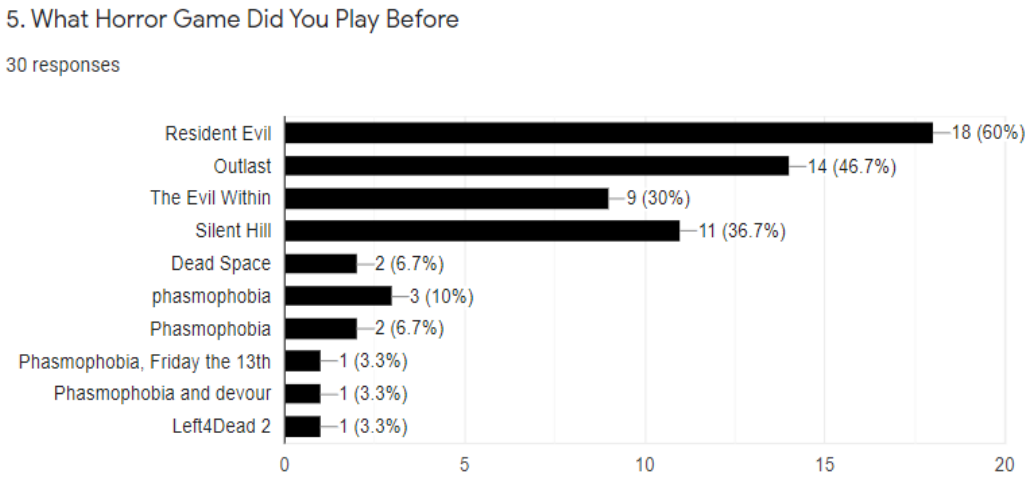


Figure 6.5: Result of Question 5

Figure 6.5 shows that Resident Evil dominates the chart where 18 respondents (60%) have played the game. Outlast sits on the second most played horror game with 14 respondents (46.7%) while Silent Hill were third with 11 respondents (36.7%). The Evil Within game were played by 9 respondents (30%) and Phasmophobia comes after that with 7 respondents (23.3%). 2 respondents (6.7%) have play Dead Space before and Friday the 13th, Devour and Left 4 Dead 2 each have 1 respondent (3.3%).

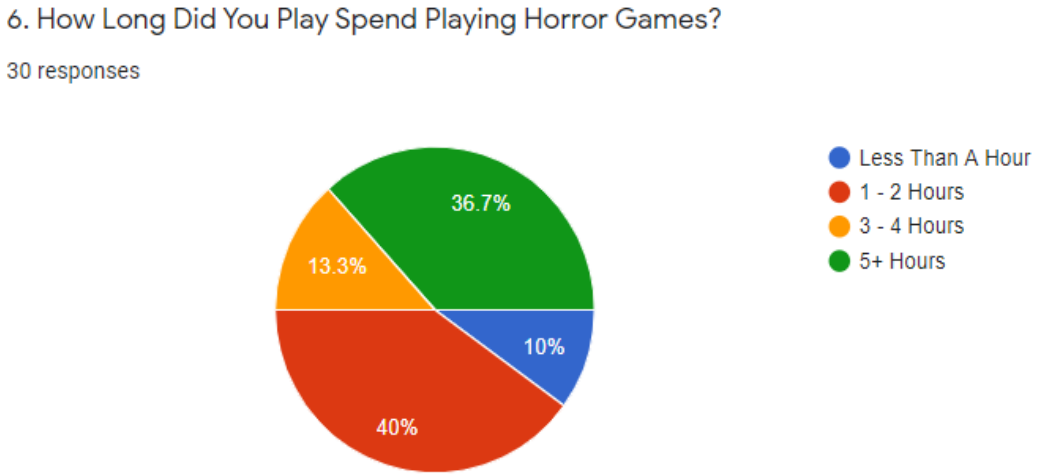


Figure 6.6: Result of Question 6

Figure 6.6 tells that only 3 respondents (10%) have spent less than an hour playing horror game. 12 respondents (40%) spent around 1 to 2 hours while 11 respondents (36.7%) spent more than 5 hours playing horror game daily. 4 other respondents (13.3%) spent 3 to 4 hours on playing horror game.

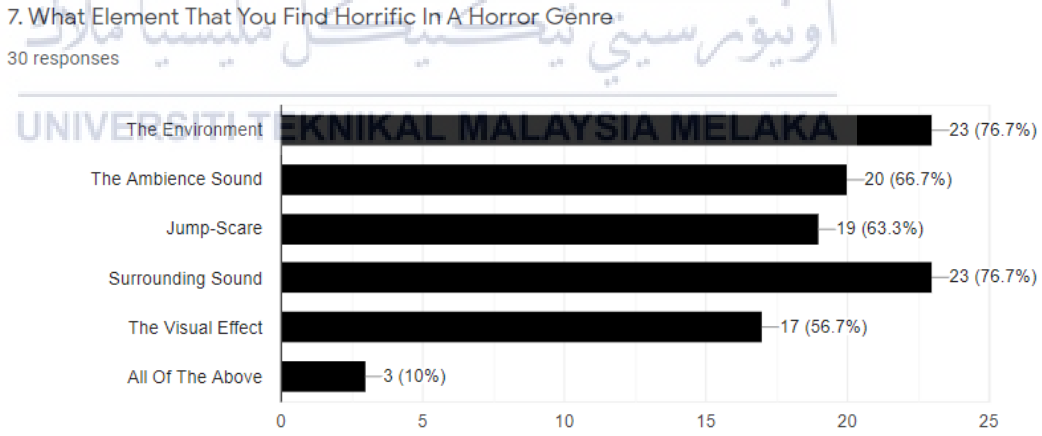


Figure 6.7: Result of Question 7

The environment and surrounding sound showed the same number of respondents that find it horrific in a horror game each with 23 (76.7%) in figure 6.7. In addition, the ambience sound gathered 20 respondents (66.7%) while jump-scare and the visual effect showed 19 respondents (63.3%) and 17 respondents (56.7%)

respectively. Else, only 3 respondents (10%) find all of the above elements is horrific in a horror game.

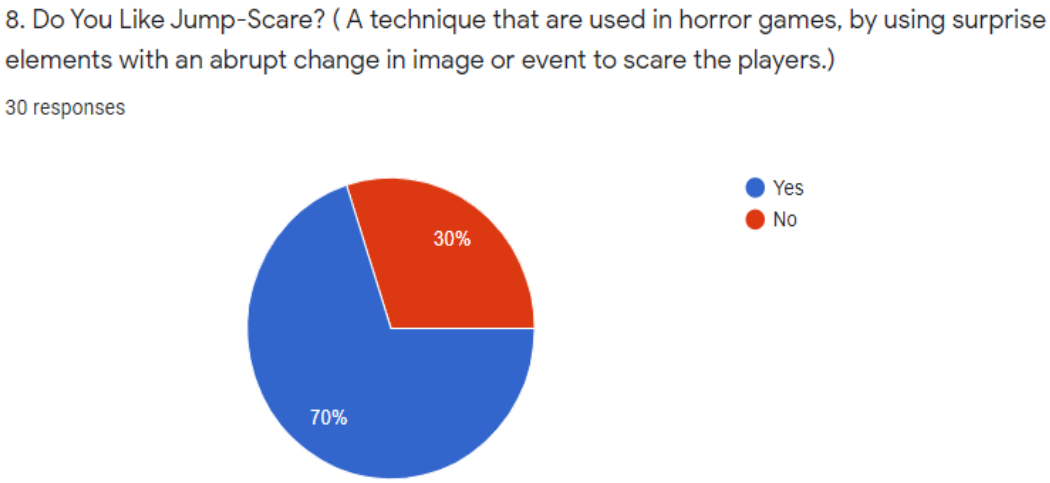


Figure 6.8: Result of Question 8

Figure 6.8 shows 21 out of 30 respondents (70%) like jump-scare element while the other 9 respondents (30%) say otherwise.

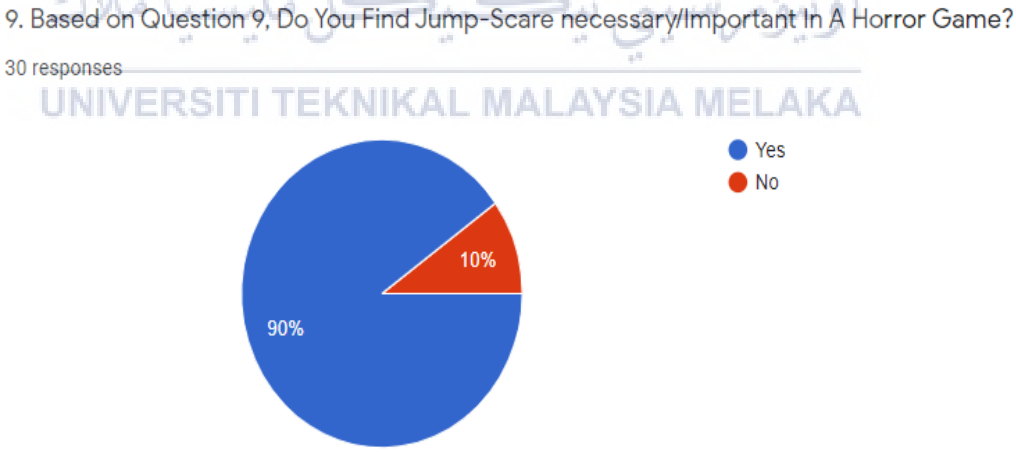


Figure 6.9: Result of Question 9

There are 27 respondents (90%) who finds that jump-scare is necessary and important in a horror game while only 3 respondents (10%) did not find it necessary.

6.4.2 Post-Survey

This section focusses on gathering data on respondent experience after they play the game. In addition to that, this questionnaire is separated into part A, part B and part C. Part A focus on the overall player experience after completing the game while part B focused on the gameplay experience that player encountered in the game. On the other hand, part C dictates the player overall satisfaction and feedback based on what they have experienced. This final questionnaire gathered data on respondent preference after they play the game and their feedback based on what they have experienced.

6.4.2.1 Part A

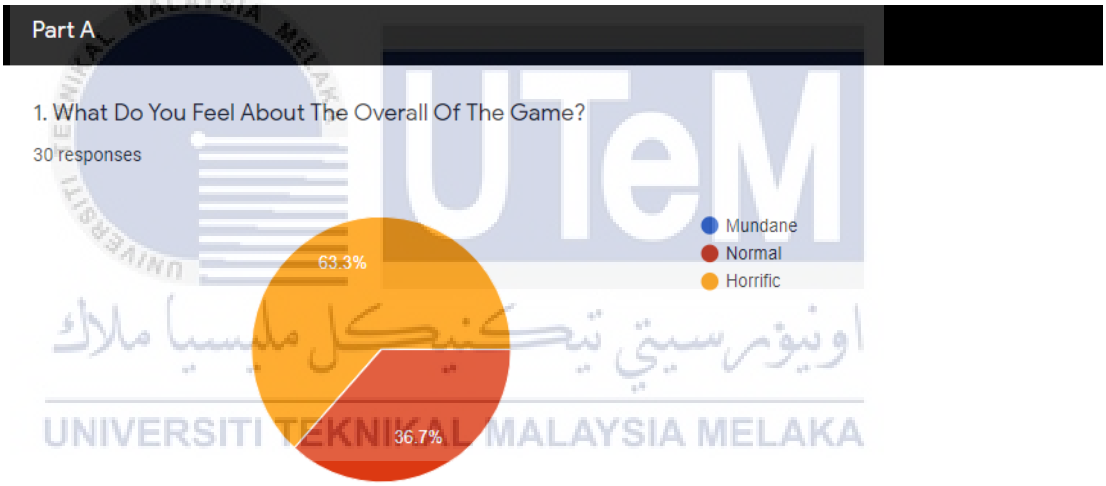


Figure 6.10: Result of Question 1 Part A

Figure 6.10 shows 19 out of 30 respondents (63.3%) finds the game horrific while the other 11 respondents (36.7%) say otherwise.

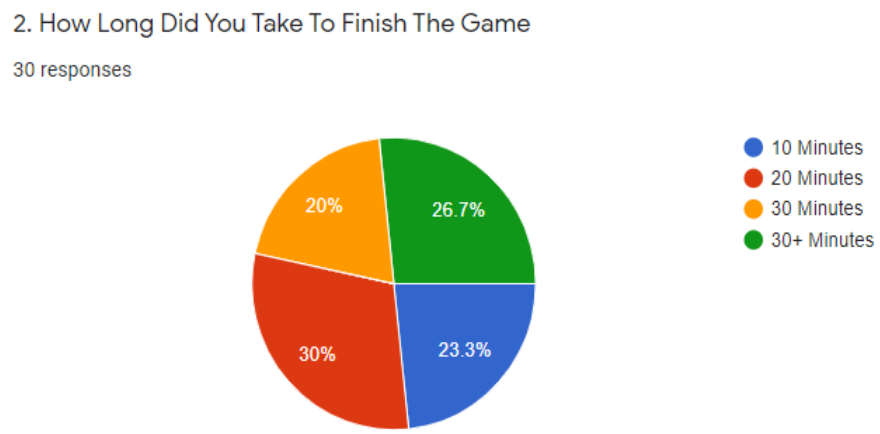


Figure 6.11: Result of Question 2 Part A

Figure 6.11 shows majority of the respondents which is 9 (30%) took around 20 minutes to finish the game. 8 respondent (26.7) took more than 30 minutes while 7 respondents (23.3%) took only 10 minutes. Only 6 respondents (20%) took 30 minutes to finish the game.

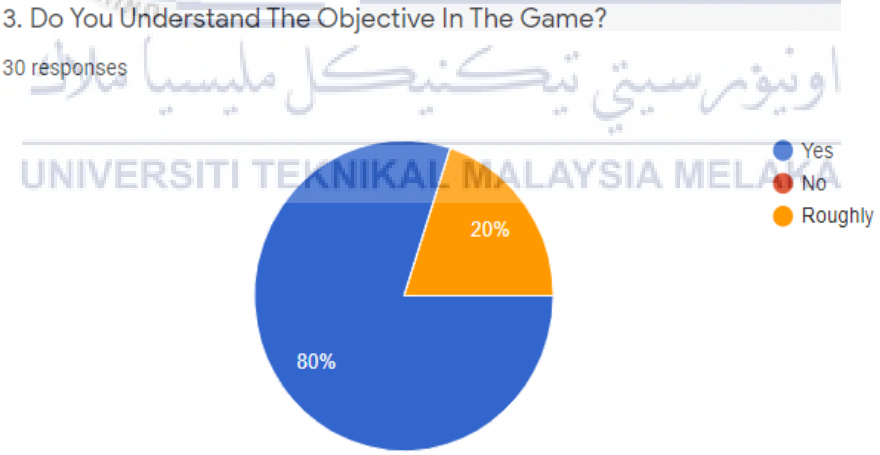


Figure 6.12: Result of Question 3 Part A

Figure 6.12 shows 24 respondents (80%) understand the objective in the game while the other 6 respondents (20%) get the rough idea.

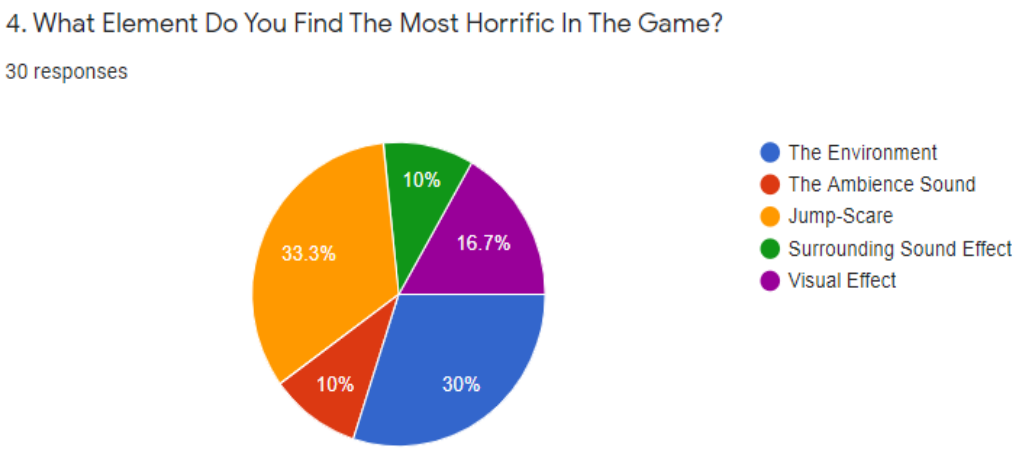


Figure 6.13: Result of Question 4 Part A

Figure 6.13 tells that 10 respondents (33.3%) find jump-scare the most horrific while 9 respondents (30%) find the environment the most horrific. 5 respondents (16.7%) find visual effect is the most horrific element in the game while 3 respondents (10%) each find the ambience sound and visual effect the most horrific element.

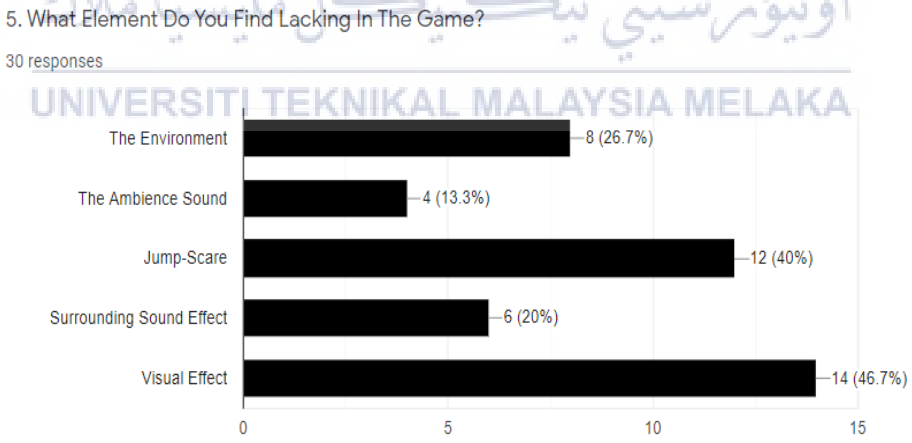


Figure 6.14: Result of Question 5 Part A

Although figure 6.13 shows that most respondent finds jumps-scare the most horrific element in the game, it sits on the second place by 12 respondents (40%) for the most lacking element in the game in Figure 6.14. The highest goes to the visual

effect where 14 (46.7%) finds it lacks in the game. 8 respondents (26.7%) and 6 respondents (20%) find the environment and surrounding sound effect lack the horror element respectively. Finally, only 4 respondents (13.3%) found the ambience sound as a lacking element in the game.

6.4.2.2 Part B

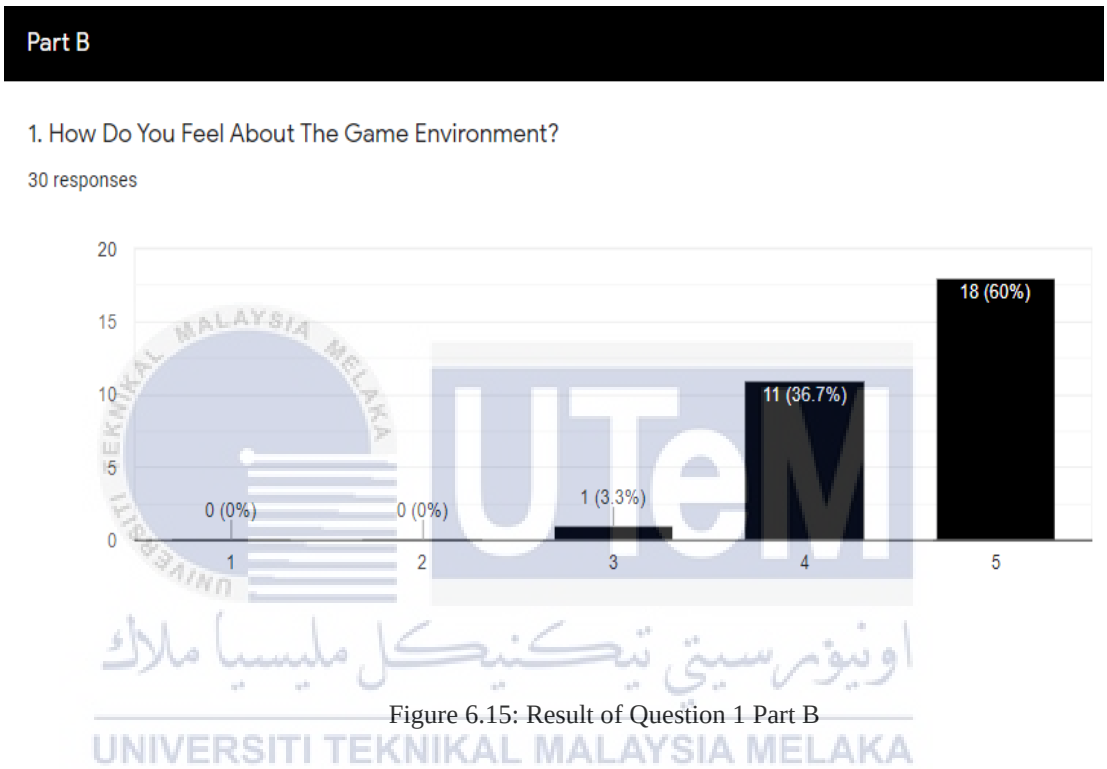


Figure 6.15: Result of Question 1 Part B

Figure 6.15 shows that 18 respondents (60%) gave the highest score of 5 while 11 respondents (36.7%) gave the score of 4. Only 1 respondent (3.3%) gave the score of 3. This means that majority of the respondents feels that the environment is excellent thus contributing to the horror element.

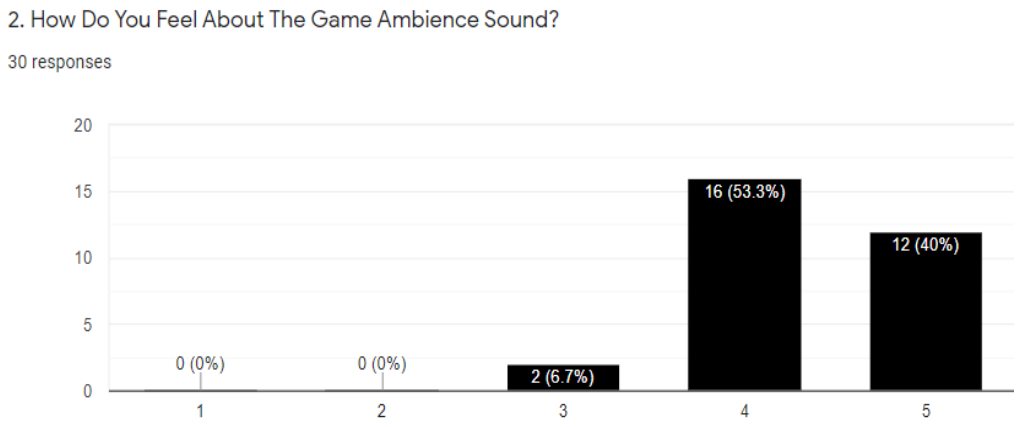


Figure 6.16: Result of Question 2 Part B

Out of 30 respondents, 2 respondents (6.7%) gave the ambience sound a score of 3 while the highest score of 4 was given by 16 respondents (53.3%). A total of 12 respondents (40%) gave a perfect score of 5. Based on the result , researcher feels that most respondent was satisfy with the game ambience sound.

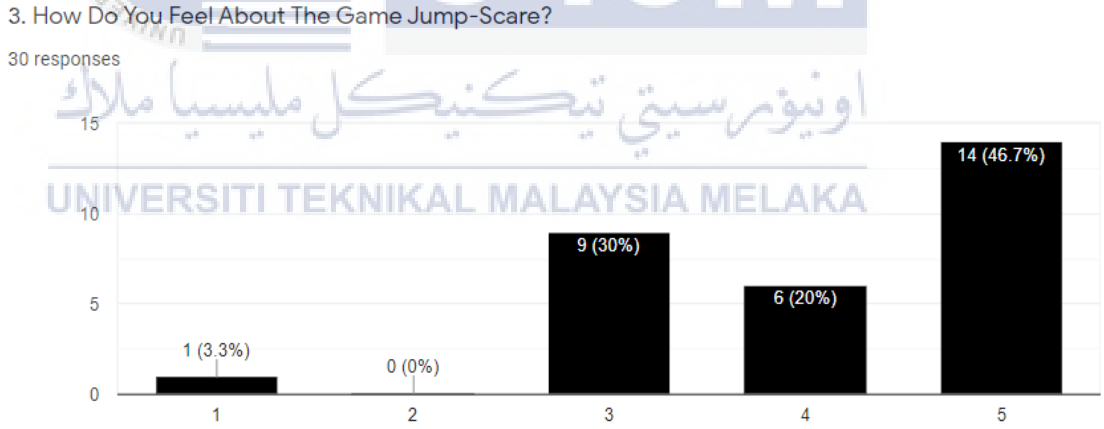


Figure 6.17: Result of Question 3 Part B

Figure 6.17 shows an almost balanced score out of the 30 respondents. Only 1 respondent (3.3%) gave the jump-scare a score of 1 while 9 respondents (30%) gave the score of 3. In addition, 6 respondents (20%) and 14 respondents (46.7%) give the score of 4 and 5 respectively. Thus, it shows that the overall respondents have a mixed feeling on the jump-scare. While only 1 respondent gave the least score, it shows that the jump-scare is not taken well by some of the respondents.

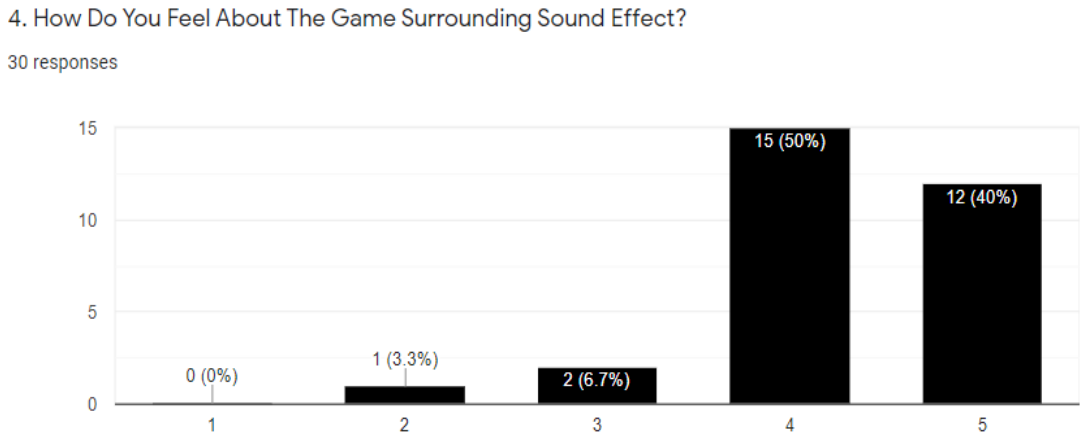


Figure 6.18: Result of Question 4 Part B

Figure 6.18 shows the highest score is 4 given by 15 respondents (50%) while score of 5 was given by 12 respondents (40%). A single respondent (3.3%) gave a score of 2 whereas 2 respondents (5.7%) gave a score of 3.

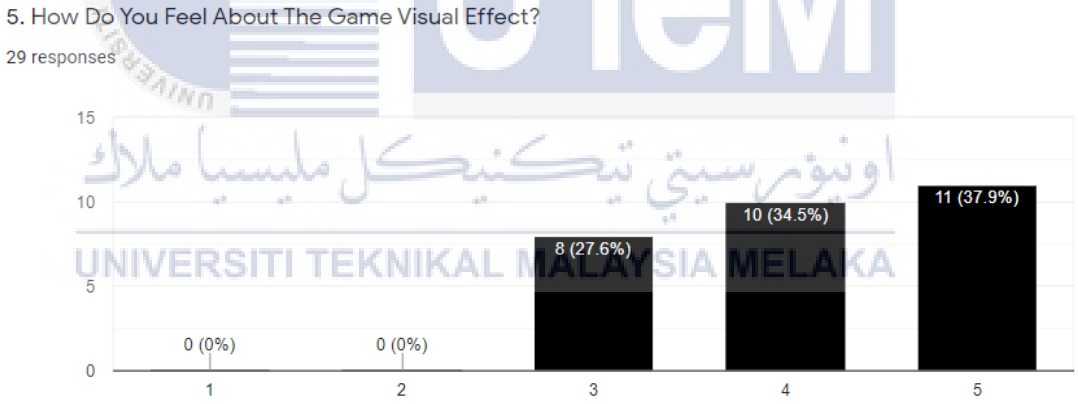


Figure 6.19: Result of Question 5 Part B

In Figure 6.19, the visual effect was given as 5, 4 and 3 by 11 respondents (37.9%), 10 respondents (34.5%) and 8 respondents (27.6) respectively. This result

shows that all the respondents find the visual effects appealing because no respondent gave a below from half score.

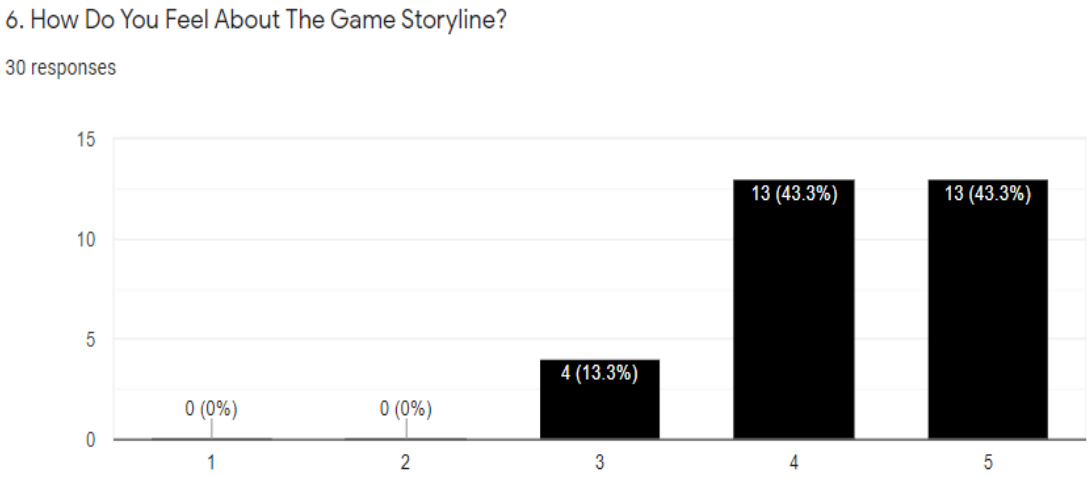


Figure 6.20: Result of Question 6 Part B

In Figure 6.20, the storyline receives a balanced score between 4 and 5 from 13 respondents (43.3%) On the other hand, 4 respondents (13.3%) gave a score of 3.

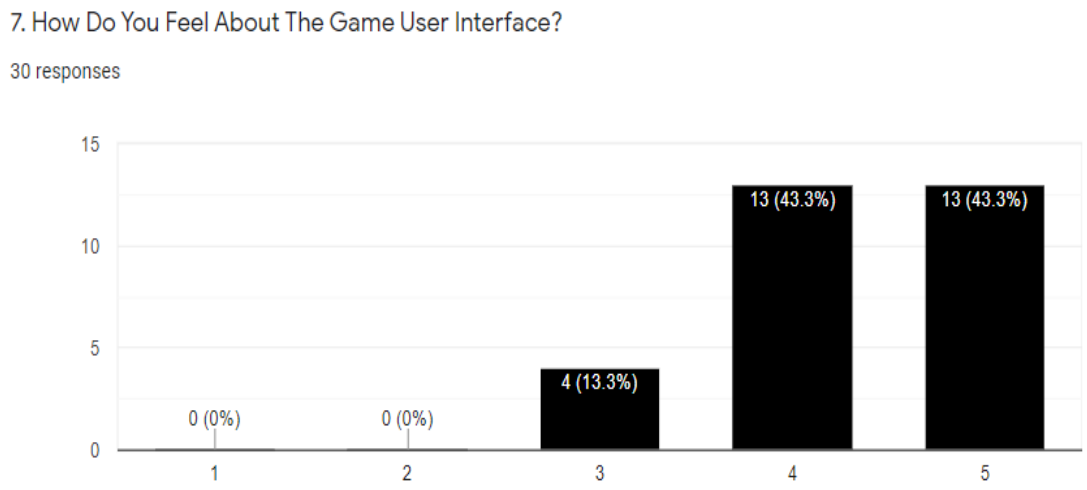


Figure 6.21: Result of Question 7 Part B

Figure 6.21 has the same score as previous figure.

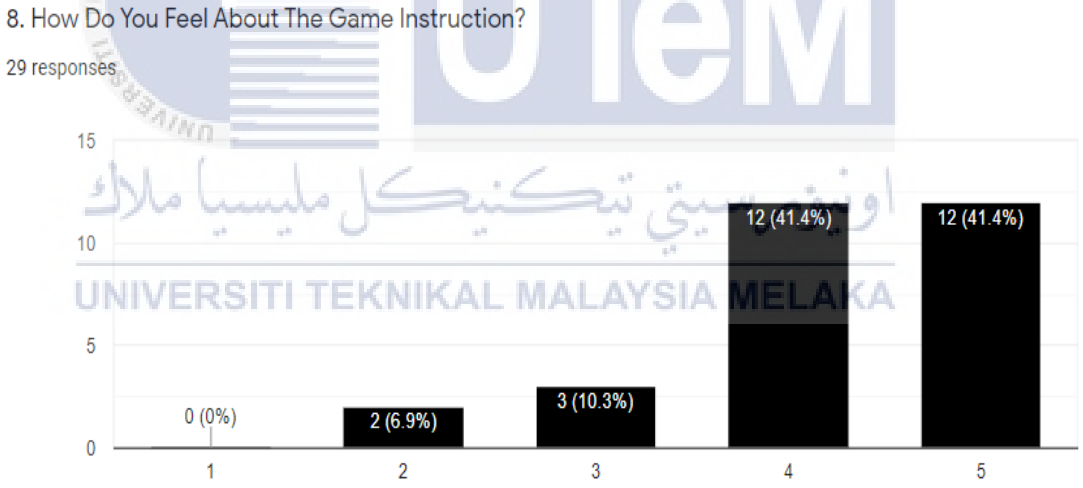


Figure 6.22: Result of Question 8 Part B

Figure 6.22 shows a respondent of 2 (6.9%) and 3 (10.3%) gave a score of 2 and 3 respectively while the same 12 respondents (41.4%) gave a score of 4 and 5.

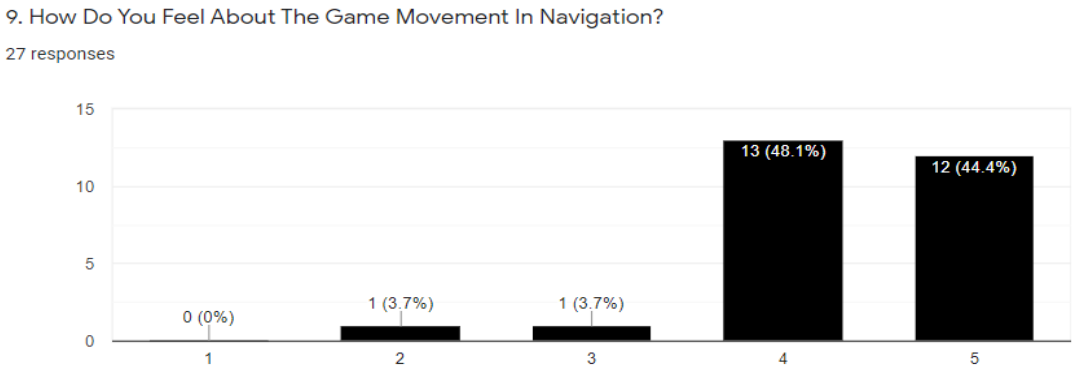


Figure 6.23: Result of Question 9 Part B

In Figure 6.23, a total number of 12 respondents (44.4%) gave the highest score of 5 while 13 respondents (48.1%) gave score of 4. Each single respondents (3.7%) gave a score of 2 and 3.

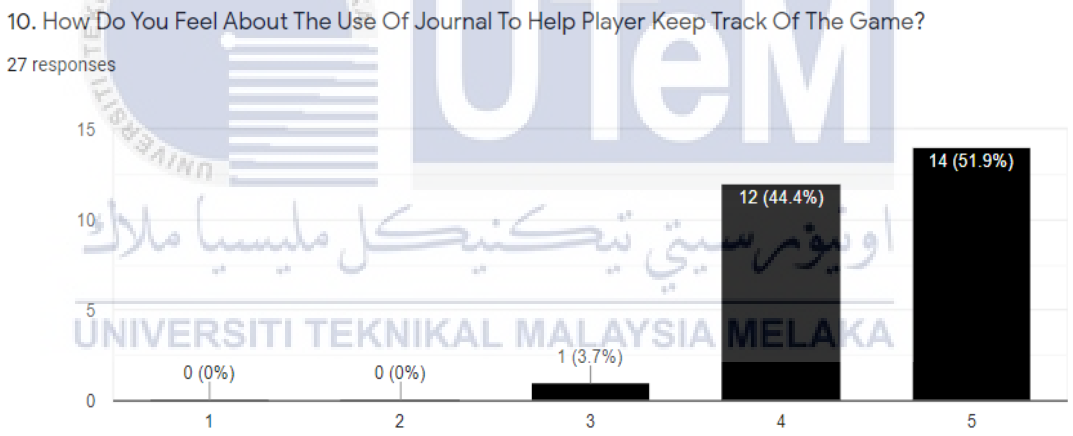


Figure 6.24: Result of Question 10 Part B

Figure 6.24 show that 14 respondent (51.9%) gave a score of 5. Meanwhile, a score of 4 was given by 12 respondents (44.4%) and only a single respondents (3.7%) gave a score of 3. In conclusion, majority of the respondents feel that the journal is a convenience source in keeping player track in the game. This can be seen by the result in Figure 6.24 that show almost all of the respondent gave a score of 4 and 5.

6.4.2.2.1 Narrative, Audio Aesthetics, and Visual Aesthetics

Table 6.6: Narrative, Audio Aesthetics, and Visual Aesthetics Mean

Narratives, Audio Aesthetics, and Visual Aesthetics	**Mean**
How Do You Feel About the Game Environment	4.6
How Do You Feel About the Game Ambience Sound	4.3
How Do You Feel About the Game Jump-Scare	4.0
How Do You Feel About the Game Surrounding Sound Effect	4.3
How Do You Feel About the Game Visual Effect	4.0
How Do You Feel About the Game Storyline	4.3
How Do You Feel About the Game User Interface	4.3
How Do You Feel About the Game Instruction	4.0
How Do You Feel About the Game Movement in Navigation	3.9
How Do You Feel About the Use of Journal to Help Player Keep Track of the Game	4.0

6.4.2.3 Part C

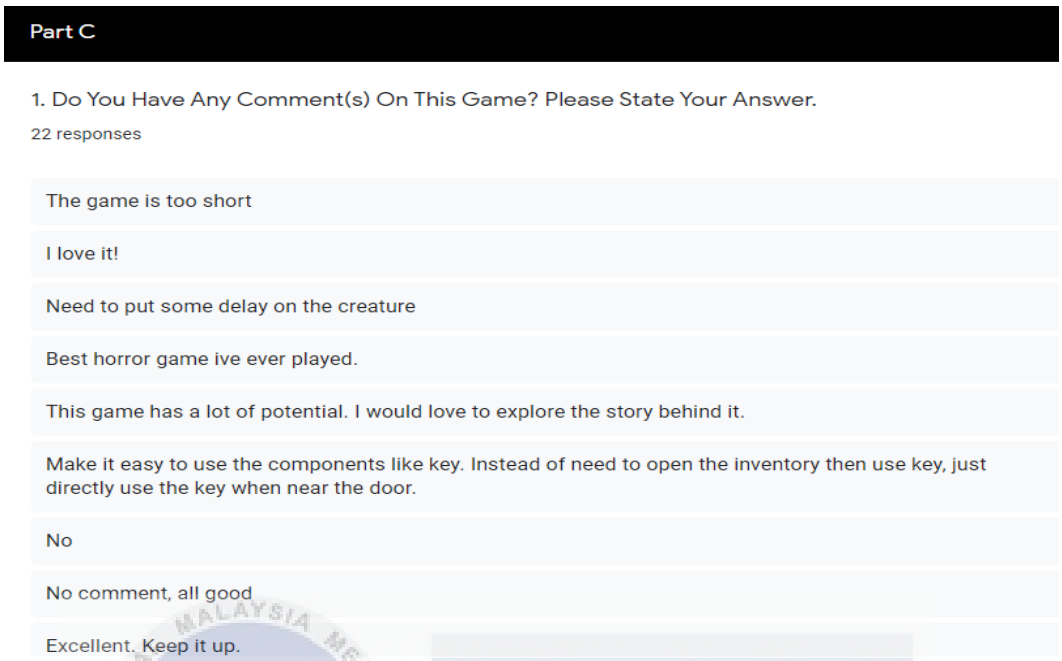


Figure 6.25: Result of Question 1 Part C

Figure 6.25 shows the comment of majority respondents. Based on researchers view, almost all the comment is positive and shows that all the respondents enjoy the game. In addition to that, some comments indicates that the game is too short which can be interpreted in a positive way.

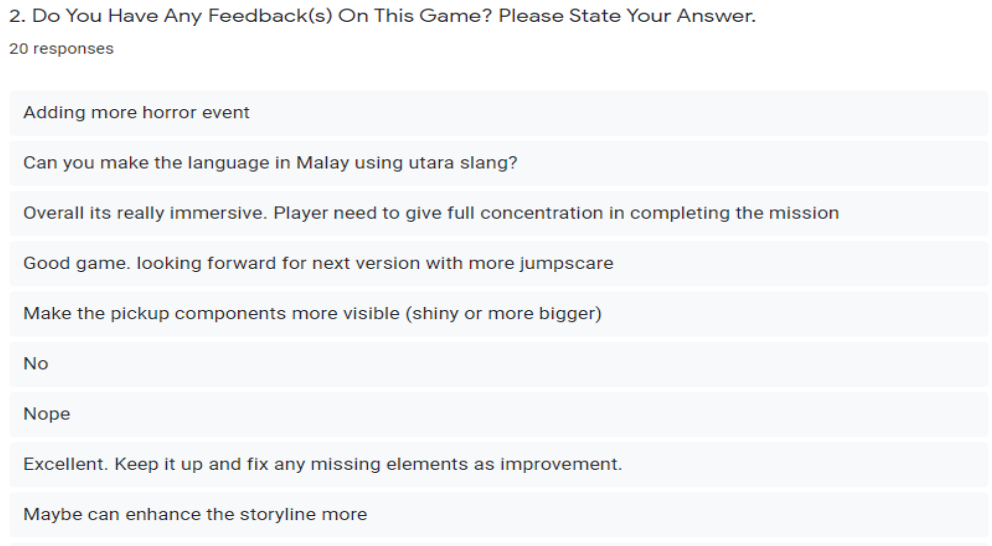


Figure 6.26: Result of Question 2 Part C

Figure 6.26 reveals majority of the respondents gave feedback on the game. All the feedback can be use as a further improvement that will enhance the horror experience.

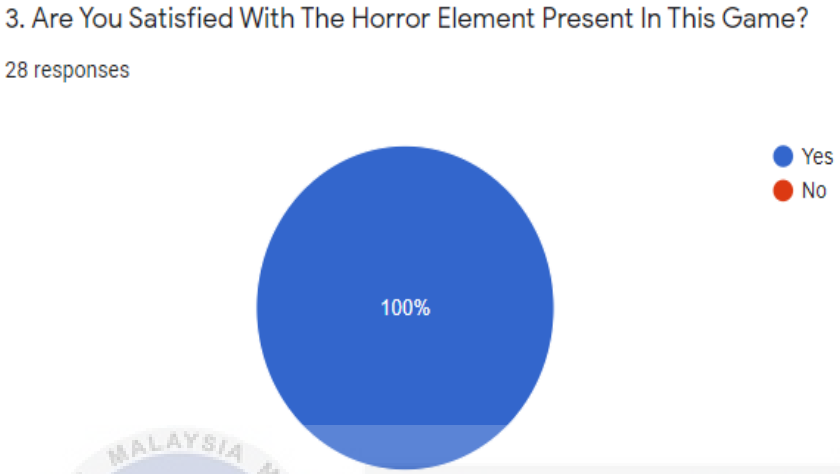


Figure 6.27: Result of Question 3 Part C

Figure 6.27 shows all the respondents are satisfied with the horror elements they experience in the game.

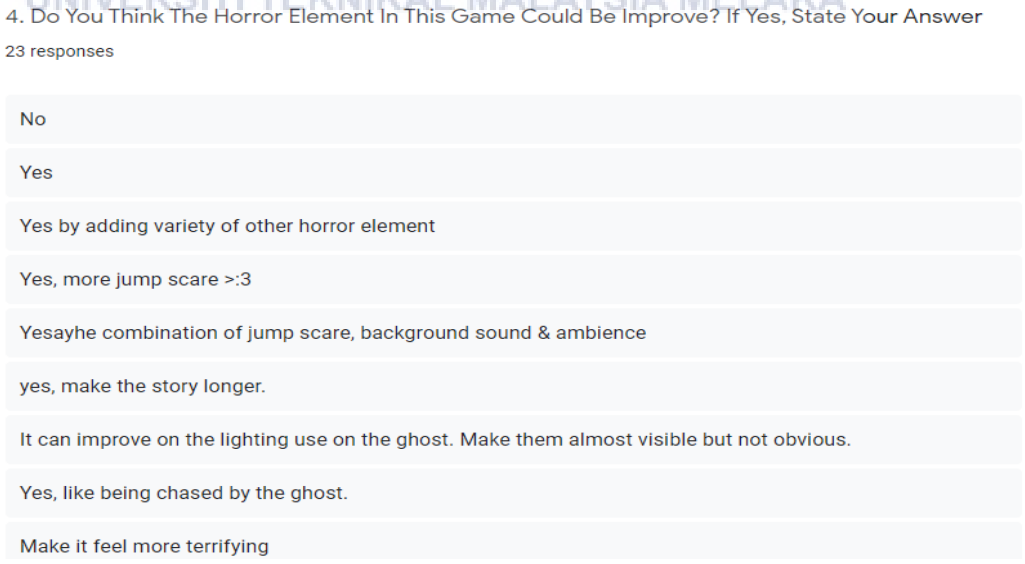


Figure 6.28: Result of Question 4 Part C

Figure 6.28 shows majority of the respondents feel that the game could be improve further by adding certain element. As an example, the elements that could be added in the game is by increasing the amount of jump-scare while adding a new level.

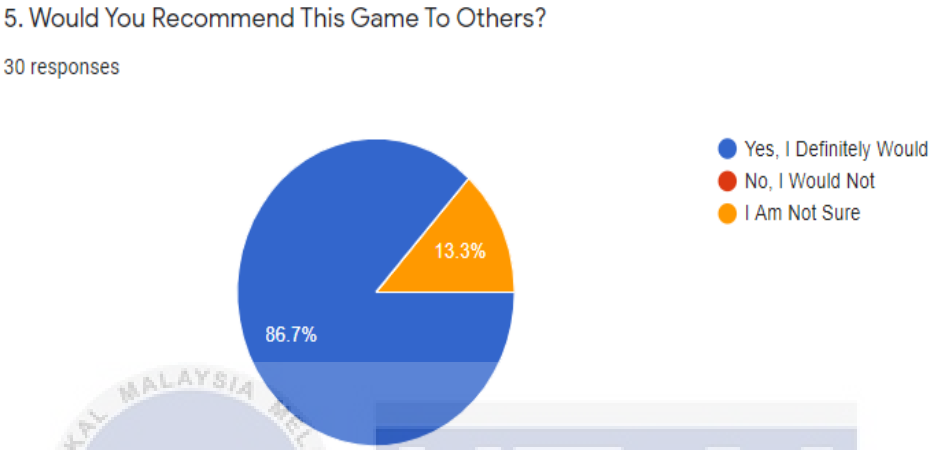


Figure 6.29: Result of Question 5 Part C

Figure 6.29 shows the positivity received by this game where 26 respondents (86.7%) would like to recommend this game to others while only 4 respondents (13.3%) are not sure.

6.5 Conclusion

As a conclusion, this chapter emphasis on the results of the research in which 30 respondents were gathered among family members, friends, and strangers to complete a pre and post survey and did a play testing on the game. There was a total of 30 respondents that participate and the result shows that majority of them finds the game horrific and has a strong horror element.

CHAPTER 7

7.0 PROJECT CONCLUSION

7.1 Observation on Weakness and Strength

Throughout this whole project, the strength and weakness were found in the previous chapter where 30 respondents were gathered to fill in a pre and post survey and play testing the game. One of the strengths of this project was the and horrific environment that player can explore that are filled strong yet short jump-scare. The combination of this both elements successfully create an enjoyable adrenaline rush experience for horror game lover. In addition to that, the realistic graphics also contribute to the strength of this game as player get to experience a horror game genre with a next gen graphical performance. This game was heavily inspired by a demo version of a game called "P.T." that was never out in the market but succeed in providing horror genre with something fresh and never seen before horror elements.

On the other hand, based on the respondent's feedback and self-observation, the weakness of this game is that it lacks visual effects that could be combined with other horror elements to create a better horror experience. Lacking a horror element in these criteria hinders the player horror experience as lack of visual effects tend to lead to mundane surrounding. In addition, most respondents feel that this game is too short as most of them only took 20 minutes to finish the game. The lack of game time and game level contributes to the weakness of this game that could be improve in the future. On the technical aspect, some of the respondent feels that this game does not provide enough information on the objectives. Furthermore, it lacks tutorial that tells player what need to be done while in the game.

7.2 Proposition for Improvement

Based on all the feedbacks and data gathered, there will be lots of improvement that could be considered as a future improvement to this game. The improvement that could be made covers all aspect of the game such as the gameplay experience, game mechanics and the technical part.

First and foremost, one major improvement that could be include in the future is by adding a new level in this game. Adding a new level could further enhance the

overall experience such as by including more jump-scare event, a new environment, more visual effects, and more game time.

Secondly, the technical aspect of the game could also be improvised further. One of the improvements that could be made is by including more indicator in the game that will highlight the objectives. Other than that, more tutorial could also be included on how to play the game.

Finally, minor improvement such as adding a new survival element in the game. These elements can further enhance the existing horror element in the game. For example, a limited amount of resource such as batteries for the torchlight could be included in every level as this will dictate the urgency of time in exploring the environment.

7.3 Contribution

This project could potentially contribute to other horror game genre in terms of its horror element. In addition to that, by knowing the perfect balance between a combination of horror elements, could potentially made a horror game better. Even outside of the gaming industry, this project could also inspire the film world in creating a perfect horror element in their films that could deliver a wonderful horror experience to the viewers.

7.4 Conclusion

Finally, this project has been one of the most enjoyable yet toughest to develop. Although the game is not yet perfect, but researcher's aim to study the effectiveness of a horror element in a psychological horror game has been achieved. A strong will of dedication and responsibility will lead this game to a perfect state in the future with lots of improvement and adjustment in mind. Hopefully this game can be one of the horror games that delivers the best horror experience to the players.

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APPENDICES

APPENDIX A: QUESTIONNAIRE

Questionnaire

Hi and welcome to this pre-game survey. First of all, I would like to thank you in advance for volunteering to play my PSM game. So, below is the information about my game.

RESEARCH AIM: THE STUDY OF HORROR ELEMENTS IN FPS GAME
GAME TITLE: S.I.T.I. (SINK IN TERROR INSIDE)
GENRE: FIRST PERSON PSYCHOLOGICAL HORROR

This research aim is to study the horror elements inside a horror game in order to deliver a psychological horror experience to the player. The expected outcome of this game is to deliver an immersive horror game with various successful integrated horror element.

Part 1 : Pre Survey

No	Question	Answer
1	Gender	Male Female
2	Age	
3	Have You Ever Play Any Horror Game Before?	Yes No Other
4	What Type of Horror Game Did You Play Before?	Survival Horror Action Horror Psychological Horror First Person Horror Multiplayer Horror Other
5	What Horror Game Did You Play Before	Resident Evil Outlast The Evil Within Silent Hill Dead Space Other
6	How Long Did You Play Spend Playing Horror Games?	Less Than A Hour 1 - 2 Hours 3 – 4 Hours 5+ Hours
7	What Element That You Find Horrific in A Horror Genre	The Environment The Ambience Sound

		Jump-Scare Surrounding Sound The Visual Effect
8	8. Do You Like Jump-Scare? (A technique that are used in horror games, by using surprise elements with an abrupt change in image or event to scare the players.)	Yes No
9	9. Based on Question 9, Do You Find Jump-Scare necessary/Important in A Horror Game?	Yes No Other

Part 2 : Post Survey

No	Question	Answer
	Gender	Male Female
	Age	
Part A		
1	What Do You Feel About the Overall of The Game?	Mundane Normal Horrific
2	How Long Did You Take to Finish the Game	10 Minutes 20 Minutes 30 Minutes 30+Minutes
3	Do You Understand the Objective In The Game?	Yes No Roughly
4	What Element That You Find Horrific In A Horror Genre	The Environment The Ambience Sound Jump-Scare Surrounding Sound The Visual Effect
5	What Element Do You Find Lacking in The Game?	The Environment The Ambience Sound Jump-Scare Surrounding Sound The Visual Effect

No	Question	Answer

Part B		
1.Horrible 2. Bad 3. Neutral 4. Good 5. Excellent		
1	How Do You Feel About the Game Environment?	
2	How Do You Feel About the Game Ambience Sound?	
3	How Do You Feel About the Game Jump-Scare?	
4	How Do You Feel About the Game Surrounding Sound Effect?	
5	How Do You Feel About the Game Visual Effect?	
6	How Do You Feel About the Game Storyline?	
7	How Do You Feel About the Game User Interface?	
8	How Do You Feel About the Game Instruction?	
9	How Do You Feel About the Game Movement in Navigation?	
10	How Do You Feel About the Use Of Journal To Help Player Keep Track Of The Game?	

Part C		
1	1. Do You Have Any Comment(s) On This Game? Please State Your Answer.	
2	Do You Have Any Feedback(s) On This Game? Please State Your Answer.	
3	Are You Satisfied with the Horror Element Present In This Game?	

4	Do You Think the Horror Element in This Game Could Be Improve? If Yes, State Your Answer	
5	Would You Recommend This Game to Others?	

Feedback

2. Do You Have Any Feedback(s) On This Game? Please State Your Answer.

20 responses

- Adding more horror event
- Can you make the language in Malay using utara slang?
- Overall its really immersive. Player need to give full concentration in completing the mission
- Good game. looking forward for next version with more jumpscare
- Make the pickup components more visible (shiny or more bigger)
- No
- Nope
- Excellent. Keep it up and fix any missing elements as improvement.
- Maybe can enhance the storyline more