

PROJECT-Z: THE BEGINNING

BY

Asif Iqbal
ID: 191-15-2750
AND

Ahsan Habib
ID: 191-15-2768

This Report Presented in Partial Fulfillment and Requirements for The
“Project-Z: The Beginning” Final Year Project.

Supervised By

Naznin Sultana
Associate Professor
Department of CSE
Daffodil International University

Co-Supervised By

Md. Mahfujur Rahman
Senior Lecturer
Department of CSE
Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

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APPROVAL

This Project titled “**Project-Z: The Beginning**”, submitted by “Asif Iqbal” and “Ahsan Habib” to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfilment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on “04-02-2023”

BOARD OF EXAMINERS

Chairman

Dr. Touhid Bhuiyan

Professor and Head

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University



Internal Examiner

Dr. S. M. Aminul Haque

Associate Professor and Associate Head

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University



Internal Examiner

Dewan Mamun Raza

Senior Lecturer

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University



External Examiner

Dr. Shamim H Ripon

Professor

Department of Computer Science and Engineering
East West University

DECLARATION

We hereby declare that this project has been done by us under the supervision of **Naznin Sultana, Associate Professor, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

Supervised by:



Naznin Sultana
Associate Professor
Department of CSE
Daffodil International University

Co-Supervised by:

Md. Mahfujur Rahman
Senior Lecturer
Department of CSE
Daffodil International University

Submitted by:



Asif Iqbal
ID: 191-15-2750
Department of CSE
Daffodil International University



Ahsan Habib
ID: 191-15-2768
Department of CSE
Daffodil International University

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ABSTRACT

Project-Z: The Beginning is a first-person survival game set inside a haunted house overrun by zombies. The player will navigate the dangers of the house and solve its mysteries to escape alive. The game features various rooms with puzzles and challenges to overcome. To survive, the player must use his wits and cunning to find clues and solve puzzles that will unlock new areas of the house. He will need to explore every nook and cranny of the house, searching for objects and clues to help him progress. The game also features some guards that will try to stop the player from escaping. The player will need to hide to defend themselves against the guard. Players have to use their resources wisely and think on their feet. The player will need to uncover the mystery of what caused the zombie outbreak and find a way to escape. The game features stunning graphics and immersive gameplay, thanks to the power of Unreal Engine 5. The game is designed in 3D, with detailed environments and realistic physics. The player of "Project-Z: The Beginning" will uncover the dark secrets of the house and the tragedy that occurred with its former occupants. With immersive gameplay, intense action, and a deep, atmospheric story, Project-Z: The Beginning is a must-play for fans of survival games.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

As a game developer, creating a successful survival game requires a strong understanding of game design, mechanics, and player psychology. This report describes the process involved in making a 3D survival game Project-Z: The Beginning with Unreal Engine.[1] This game is built for the Microsoft Windows platform. This report aims to provide a comprehensive overview of the key considerations for developing a 3D game and best practices for developers looking to create their own survival game.

1.2 Game Objective

- To design the game levels that will be simple but beautiful.
- To make a User-Friendly Interface that will be pleasant to look at.
- To create a game that is designed to evoke fear and tension in the player
- To provide a challenging and immersive gameplay experience that tests the player's skills and resilience
- To design gameplay that is tense and suspenseful, with a high risk of death and limited resources.
- To add good sound effects to players, enemies, weapons, and other objects like doors.

1.3 Motivation

Video games are not just any computer software made to benefit users' daily lives. The market size of video games is increasing day by day. The project aims to design and implement a survival horror video game using the Unreal engine and visual scripting called Blueprints, which utilizes a faster programming option via drag-and-drop. The project includes a complete level of the game with documentation. The level will include

everything that should be available in a horror video game like the Outlast. It contains various kinds of soundtracks, enemies, weapons other objects like doors. The game will be a single-player horror game. This project aims to create an easy-to-use, pick-up-and-play game that can be played by all ages as long as they have a desktop computer or a laptop pc. As stated above, there are more gamers playing video games every day, meaning a larger potential market. I think a game is a perfect project to prove us as CSE students.

1.4 Game Overview

The game begins with a scene of five friends traveling. In the middle of the road, they face some issues with their car. They found a haunted house near the road. After entering the house, the game starts. The game features various rooms with puzzles and challenges to overcome. To survive, the player must use his wits and cunning to find clues and solve puzzles that will unlock new areas of the house. He will need to explore every nook and cranny of the house, searching for objects and clues to help him progress. This game is single-player-based.

The player's primary goal is to hide from the guard and survive. There are various kinds of the guard with different health and damage. He can only go further if he clears the current mission that he can enter and exit. If the player completes the current mission, he gains knowledge and goes to the next mission. player must navigate the dangers of the house and solve its mysteries to escape alive. The game features stunning graphics and immersive gameplay, thanks to the power of Unreal Engine 5.

1.5 Target Audience

3D games are trendy, especially on computer devices. The target audience of a survival horror game is typically players who enjoy being scared and who enjoy a challenge. The game comes with a 17+ age rating. These games often have a darker, more ominous tone and may feature mystery and supernatural elements. They are designed to be immersive and to make the player feel as though they are in danger, which can be particularly appealing to players who enjoy being on the edge of their seats. These games also appeal

to players who enjoy puzzles and problem-solving, as they often require the player to think critically to survive. Overall, the target audience for a survival horror game is typically players looking for a thrilling and suspenseful gaming experience.

1.6 Project Management

Game project management involves planning, organizing, and overseeing a video game's development. We follow Some specific tasks to complete the game project that's are:

- Developing project schedules and time
- Assigning tasks to team members and ensuring he has the resources to complete this game project
- Tracking project progress and identifying any issues that may arise
- Communicating with team members and supervisor keeps them informed of the project's status
- Managing time and ensuring that any issues are addressed on time
- Overseeing the quality assurance process to ensure the final product meets the required standards

CHAPTER 2

BACKGROUND

2.1 Related Work

Project-Z: The Beginning is a survival horror game that shares similarities with games like Outlast, Gone Home, and The Evil Within. Like these games, Project-Z: The Beginning puts players in a tense and immersive environment where they must navigate challenges and overcome obstacles to survive. However, Project-Z: The Beginning differentiates itself from these other games with its unique storyline, character development, and gameplay mechanics. Players will be transported to a world filled with danger and mystery as they try to uncover the secrets of Project Z and Fight for their lives against terrifying foes. With its high-quality graphics, intense gameplay, and rich narrative, Project-Z: The Beginning aims to be a standout title in the survival horror genre.

2.2 Comparative Analysis

Comparative analysis about this game

- **Gameplay:** Project-Z: The Beginning includes survival horror elements such as puzzle-solving, resource management, and stealth mechanics for avoiding or distracting enemies.
- **Story and setting:** Project-Z: The Beginning has a unique storyline set in a futuristic world, with players uncovering the mysteries of the Project-Z organization. This setting offers a broader range of enemies and challenges than traditional horror settings.
- **Graphics:** Project-Z: The Beginning features high-quality graphics, including detailed character models, realistic lighting and particle effects, and immersive environments.

2.3 Scope of the Problem

The scope of the problem for making Project-Z: The Beginning

- Game design: Developing a cohesive gameplay experience that combines survival horror elements.
- Art and graphics: Creating high-quality character models, environments, and visual effects that bring the game world to life and create a sense of immersion for players.
- Programming: Implementing gameplay mechanics, AI for enemies and other characters, and other technical elements of the game.
- Testing and debugging: Ensuring the game is stable and free of bugs and provides a smooth and enjoyable experience for players.

2.4 Challenges

Some potential challenges for making this game

- Time and budget constraints: Developing this game is time-consuming, and we may need to work within certain limits regarding your available time
- Technical challenges: There may be technical difficulties in implementing gameplay mechanics, AI, and other game features. Debugging and fixing these issues can be time-consuming and require high-level programming expertise.
- Creative challenges: Coming up with new and innovative gameplay ideas and developing a compelling narrative can be difficult and require a lot of brainstorming and iteration.
- Collaboration: we are working as a team, and coordinating the efforts of multiple people can be challenging and may require good communication and project management skills.
- Marketing and promotion: Building anticipation for the game and reaching out to potential players can be time-consuming and require effective marketing and promotion strategies.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 System Requirement

System requirements are the hardware and software components that must be present for a given system to function properly. To run this game, we recommend a system configuration which is given below.

Hardware

Here are the minimum hardware requirements.

1	Processor	Ryzen3 / Intel core i3
2	Processor Speed	3.00 GHz or higher
3	Hard Disk Space	5GB (min)
4	Memory	8GB (min)
5	Graphics Memory	Min 4 GB Recommended

Table 1: Hardware Requirement

Software

Here are the software requirements.

1	Operating System	Windows
2	Version	Windows 7, 10, 11
4	Backend Framework	.NET Framework / Microsoft Visual C++
5	Direct X	DirectX 11

Table 2: Software Requirement

3.2 Operating System

Project-Z: The Beginning game compatible with Microsoft Windows. However, it is recommended that players use Windows 10 or Windows 11 in order to get the best possible gameplay experience.

While the game may run on Windows 8, players using this operating system may encounter technical issues or performance problems that could impact their enjoyment of the game. Therefore, in order to provide the smoothest and most enjoyable gameplay experience, it is recommended that players use Windows 10 or Windows 11.

3.3 Tools requirement

We used some tools to make Project-Z: The Beginning; the tools are

Game engine: Unreal Engine 5.0.3

Image editor: Adobe Photoshop CC 2021

Visual Scripting system: Blueprint

Programming language: C++

Audio editor: Audacity 3.2.3

3d modelling: Blender

Video editor: Adobe premiere pro

Character creation: MetaHuman Creator

Here is a short description of some tools which we use to make this game

- Unreal Engine 5 is a state-of-the-art game engine developed by Epic Games. It is known for its high-quality graphics, visual effects, and robust game development toolset. Unreal Engine 5 was used to create the stunning environments and characters of Project-Z: The Beginning and to implement gameplay mechanics and other game features.
- Metahuman Creator is a tool developed by Epic Games for creating highly realistic and expressive human characters. It allows developers to quickly and easily create detailed, lifelike characters with various facial.
- Blueprint is a visual scripting tool included with Unreal Engine. It allows developers to create gameplay logic and interactivity without the need to write traditional code.

3.4 Design Requirements

Here are some design requirements for this project

- Graphics: The game features high-quality graphics, including detailed character models, realistic lighting and particle effects, and immersive environments.
- Sound design: The game has a dynamic and immersive sound design, including ambient effects, music, and voice acting.
- Controls: The game has intuitive and responsive controls, allowing players to easily navigate the game world and interact with objects and enemies.
- Overall, the design of this game should focus on creating a tense and immersive gameplay experience with a rich and engaging storyline, high-quality graphics, and intuitive controls.

CHAPTER 4

DESIGN SPECIFICATION

4.1 System Design

In this section, we will describe game system design. Game system design refers to designing the systems and mechanics that make up a video game. It involves creating the rules and systems that govern the game world and the player's interactions.

Game system design involves several different tasks and activities, such as:

- Defining the game's mechanics and rules
- Designing the game's systems, such as its user interface, progression, and economy
- Creating the game's systems and mechanics using programming languages and tools
- Balancing and testing the game's systems to ensure they are fun, fair, and challenging
- Iterating on and refining the game's systems based on feedback and playtesting

Game system design is a crucial part of game development and can significantly impact the player experience. It involves making design decisions that balance gameplay mechanics, player progression, and the game's overall challenge and enjoyment.

4.2 Game Mechanics

Project – Z: The Beginning has the following gameplay mechanics.

- Player can walk, run and look around.
- Player updates the animation when walking, running or when idle.
- Player has a flashlight which is used to see in the dark.
- Player has an inventory system to store picked up items.
- Player can pick up health, flashlight batteries, and master keys to unlock doors.
- Player can interact with the world such as open doors, close doors, turning on the generator etc.

4.3 Game Character, Enemy Character and Other Object

This is one of the fascinating chapters because it is filled with vibrant figures. The main character, adversaries, non-player characters, and lastly, other items like the game floor, window, and other objects are all covered in this chapter.

4.3.1 Game character

These images are the three main game characters which are named Asif Iqbal, Fahim, and Ahsan Habib.[2]



Figure 4.1: Asif Iqbal



Figure 4.2: Fahim



Figure 4.3: Ahsan Habib

4.3.2 Main Character

The main character is a character that the player can control, this game features multiple characters but the main character is Ahsan Habib.



Figure 4.4: Ahsan Habib Full Image

4.3.3 Character Overview

Here is a short description of all game characters

Character 1: Ahsan Habib

Gender: Male

Age: 24

Height: 5.6-foot

Character Rank: Main character

Character 2: Asif Iqbal

Gender: Male

Age: 23

Height: 5.4 foot

Character Rank: Sub-character

Character 3: Shahriar Fahim

Gender: Male

Age: 25

Height: 5.6 Foot

Character Rank: Sub-character

4.3.4 NPC and Enemy Character

An NPC (Non-Player Character) is a character in a video game or role-playing game controlled by the game's AI (Artificial Intelligence) rather than by a player. NPCs are typically used to provide background information, give the player quests, or sell items.

An enemy character is a character in a game who is opposed to the player and whom the player must defeat to progress. Enemy characters are often NPCs and are typically controlled by the game's AI.[3]



Figure 4.5: Guard



Figure 4.6: Zombie

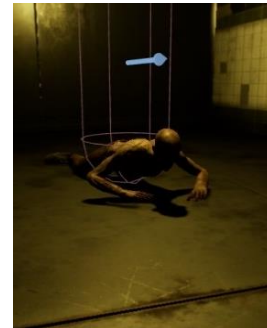


Figure 4.7: Zombie

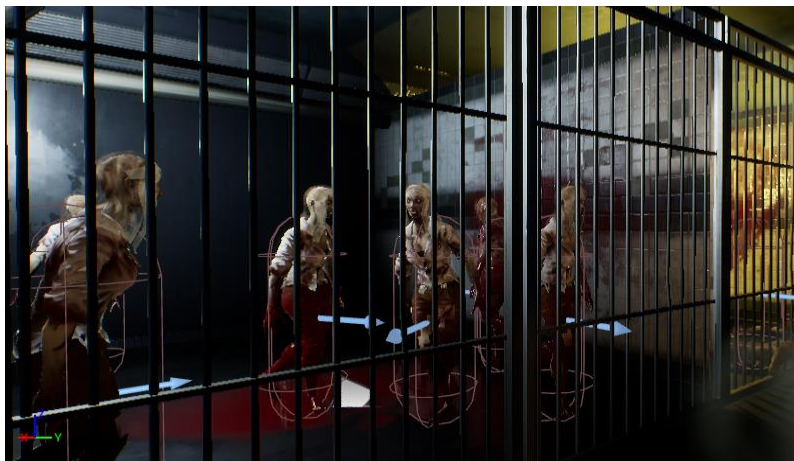


Figure 4.8: Zombie Inside Cell

4.3.5 Guard

Guard is one of the essential enemy characters in this game. In a game, an enemy character, a guard, is responsible for protecting a specific area or NPC and will attack the player if they try to enter or harm the protected NPC. [4] In addition, the guard enemy character has specific behaviors or tactics that they use in order to try to defeat the player, such as patrolling an area, calling for backup, or using weapons or abilities to attack the player. Therefore, the player needs to use strategy and skill to defeat the guard's enemy character and progress in the game.

4.3.6 Zombie

In this game, a zombie enemy character is typically detention inside a jail room. The player does not need to Fight and defeat zombie enemies as part of the game's story or gameplay. Zombies are often depicted as slow and clumsy, but they may also have special abilities or attacks that make them more formidable. Alternatively, the player may need stealth or other strategies to avoid or evade the zombies.

4.4 Game Menu and Graphics Setting

After entering the game, the game menu will appear. The player can switch to a new game, resume, settings, and quit. Player can also select his customized graphics settings in settings menu.

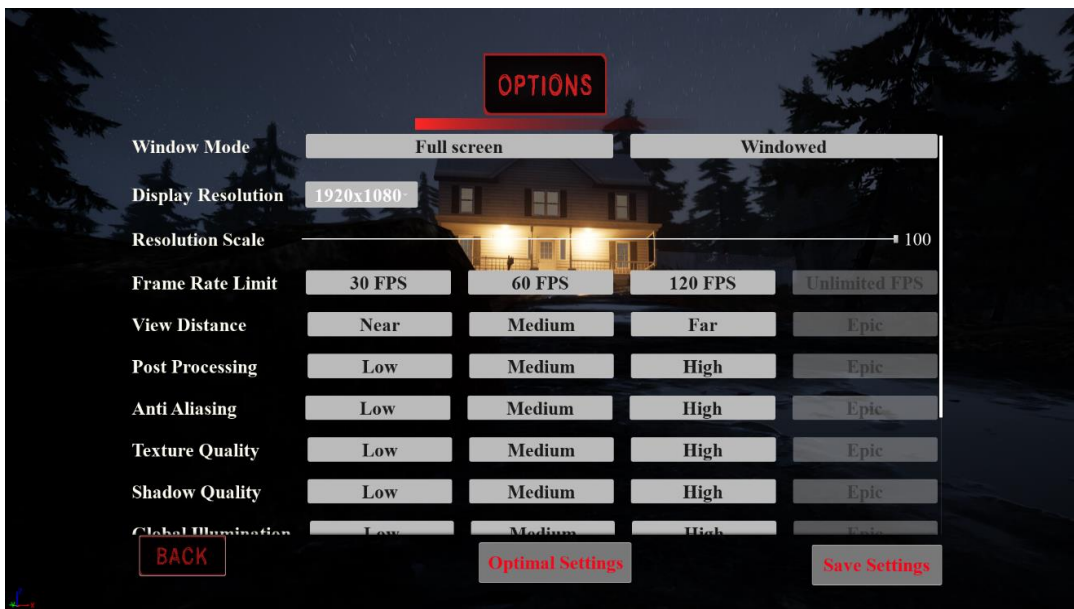


Figure 4.9: Game menu and graphics setting

4.5 Inventory

In video games, inventory is a list of items that a player can collect, use, and manage during the course of the game. This game includes keys, batteries, and health inside the inventory.



Figure 4.10: Inventory

4.6 Health, Battery and Stamina Progress Bar

A progress bar is a graphical representation of the progress of a task. In this game, the progress bar indicates health, battery, and stamina.

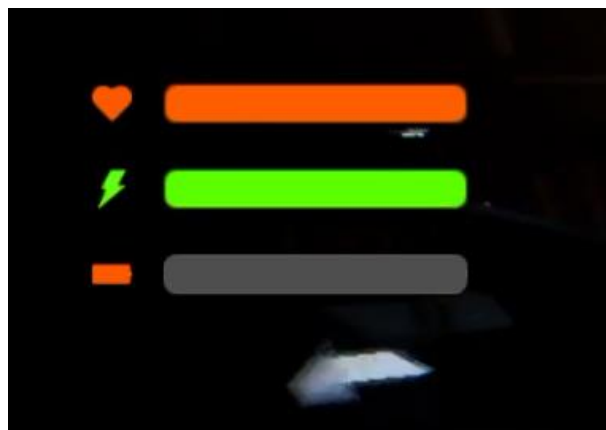


Figure 4.11: Progress Bar

4.7 Keyframe Animation

Keyframe animation is the process of creating a smooth transition between two or more images or frames. It involves setting keyframes at specific points in a video or animation, which establish the parameters of a given shot.[5] Between the keyframes, the computer automatically generates the frames in between. This allows for smoother transitions between frames, creating a more fluid animation.[6]



Figure 4.12: Keyframe Animation

4.8 Game Notes

Game player will find some notes while he explores the house. These notes include hints, tips, and other information that can help a player progress through the game.

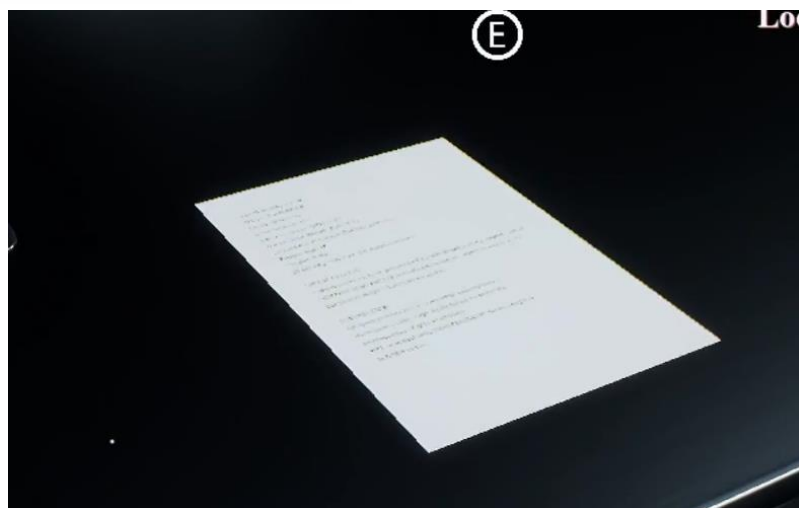
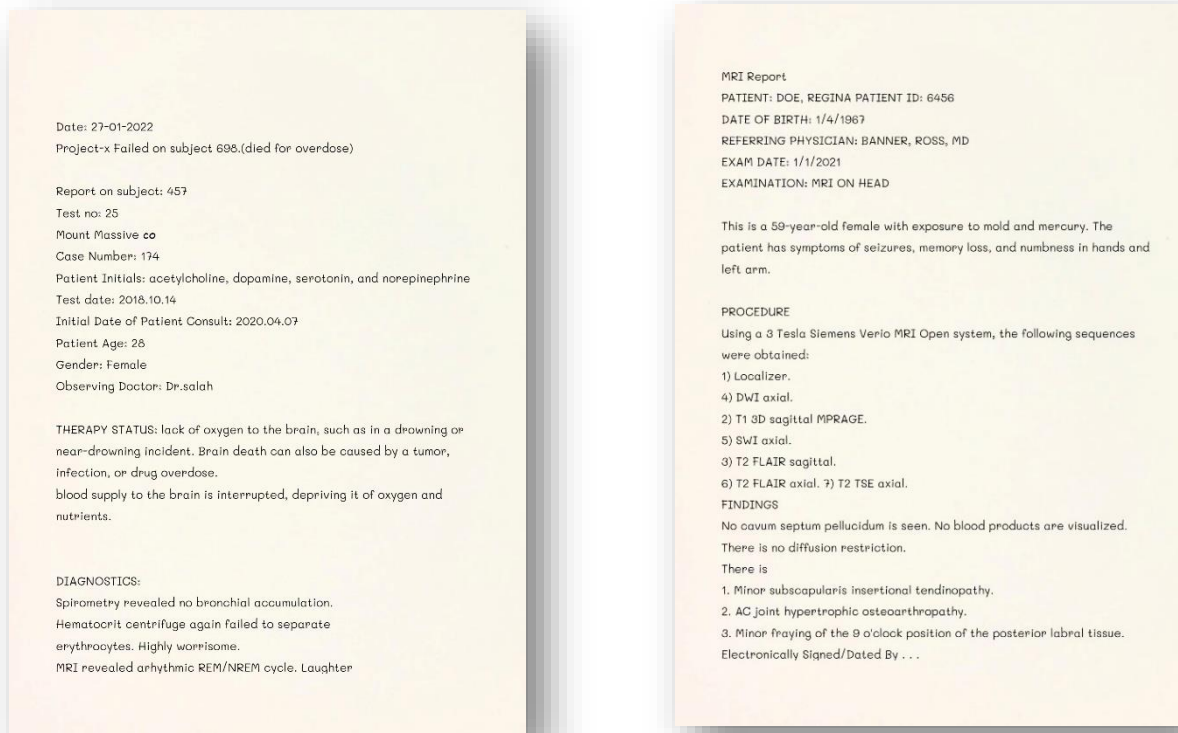


Figure 4.13: Game Note

4.9 Level Design

For level, we use unreal engine 5. A game level is a discrete location or area within a game that is typically self-contained and has a specific objective or goal for the player to achieve. Level design can encompass a wide range of elements, such as the layout and geography of the level.

4.9.1 Full Game Map Layout

The map layout is the arrangement of objects, and features, within a game.[7] It includes the placement of pathways, buildings, resources, and other elements that make up the game environment. It determines how players interact with the game world and how they move through it.



Figure 4.14: Full Game Map Layout

4.9.2 Inside House Level Design

These picture shows the structural level design of the inside of the house.

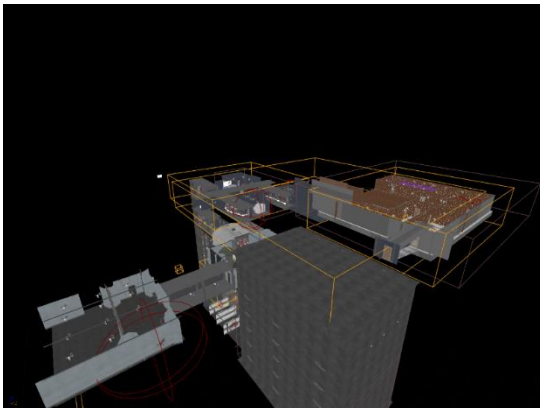
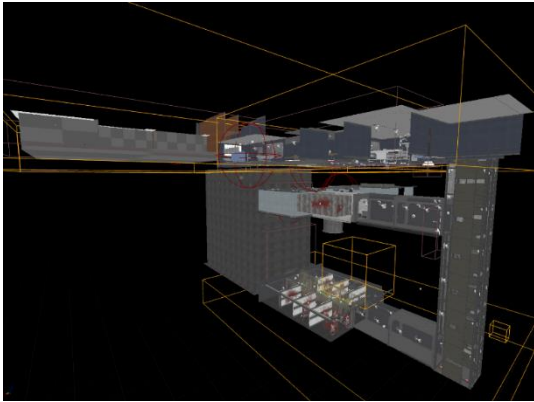


Figure 4. 15: Inside House Level Design

4.9.3 Inside House Interior

Here are some pictures of inside house hallway, locker room, and zombie cell.

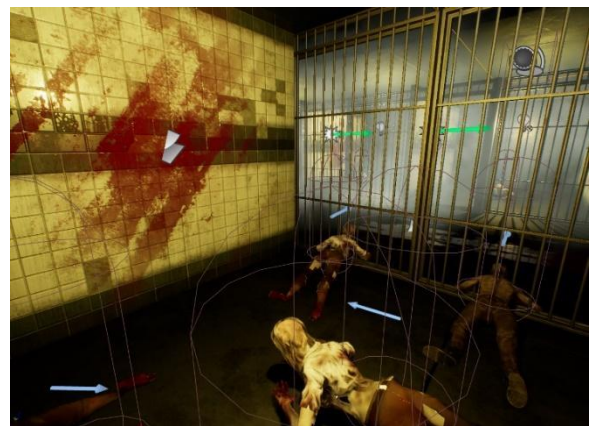


Figure 4.16: Inside House Snapshot

4.9.4 Inside House Interior

Here are some pictures of inside house doctor room, hallway, and operation room.



Figure 4.17: Inside House Snapshot

4.9.5 Generator Room and Computer Room

The generator room is a room on level -1. After turning on the generator the full floor will be lightened. Then game player can explore computer room.

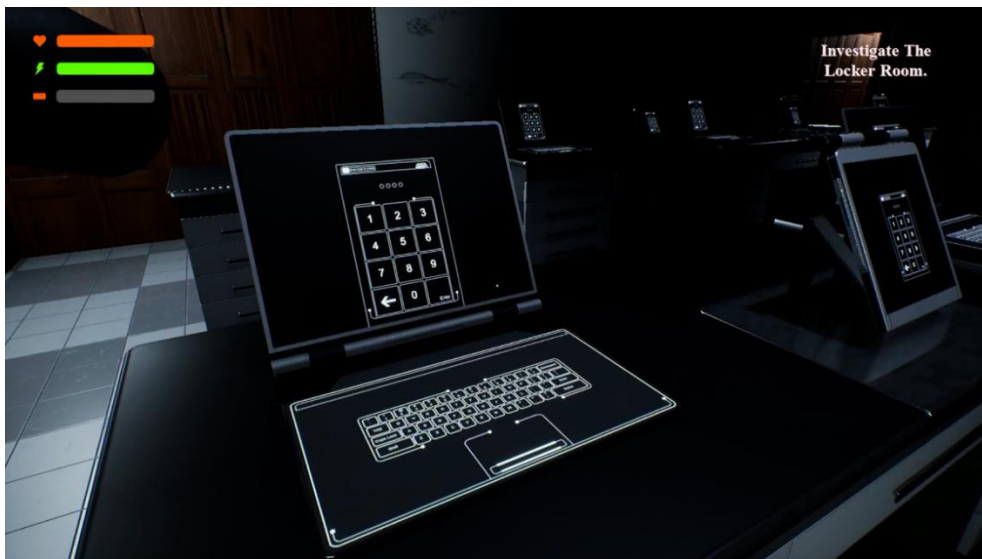


Figure 4.18: Generator Room and Computer Room

4.9.6 Outside Environment

These picture shows house view from outside and road view.



Figure 4.19: Outside Environment Snapshot

CHAPTER 5

IMPLEMENTATION AND TESTING

Game implementation, which I briefly covered in chapter 1, is the study of how to make a game functional by establishing game rules, game mechanics, and gameplay. Now, I'll go over these topics in more detail. With the resources I already have, I'll also go into further detail on what I did to make the game more enjoyable rather than merely visually appealing. This is a crucial aspect of game design since even if we create a fancy game with excellent graphics, the user will only be drawn in by it if the game's interface is well thought out.

5.1 Game Mission and Cinematic

There are some missions and cinematics in this game. Once the player completes the first mission, he will automatically move to the next mission. Otherwise, the next mission will start. In addition, there is some cinematics which will improve the gameplay experience.

5.1.1 Game Mission

- Find people inside house
- Investigating in the basement
- Turn on the generator
- Complete investigation in -1 floor
- Investigate the locker room
- Observe the place and be aware of the guards
- Restart the generator
- Explore hallway
- Maintenance room

5.1.2 Cinematics

- Journey inside car
- Talking after a car crashing
- Check the house
- Checkup stairs
- Goodnight
- Find friend
- Get out

5.2 Game Loading Structure

Here is the game loading structure.

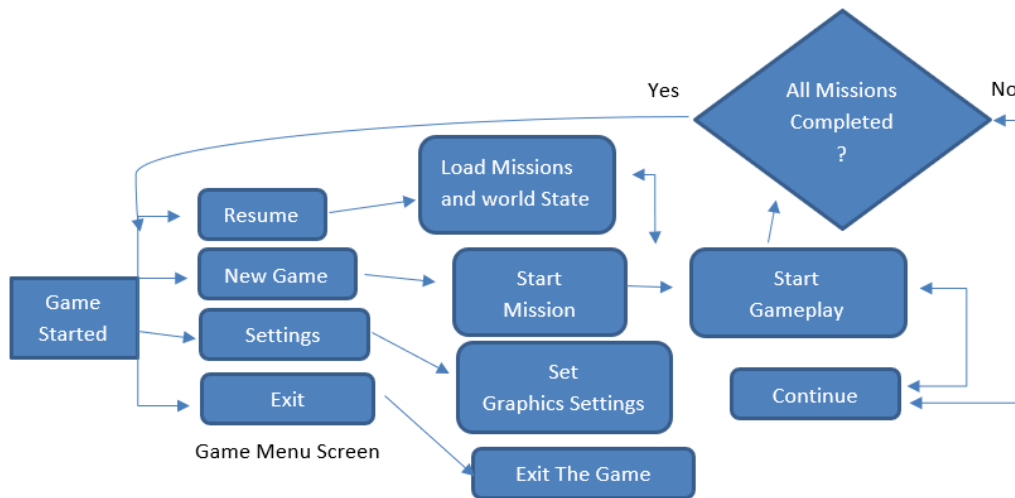


Figure 5.1: Game Loading Structure

To build this game, we have used unreal engine 5. It is the most robust game engine in the industry available today. Now, we will be talking about how unreal engine load up its

system. When an unreal game is launched, first it loads up the engine's internal modules which has been packaged with the game, then it loads the game necessary files, levels and classes for the game to operate. The necessary game classes are following in order.

- Game instance class: high-level game manager system for the instanced game.
- Game mode: the game mode points to the player character class, player controller class, spectator class and game state class.

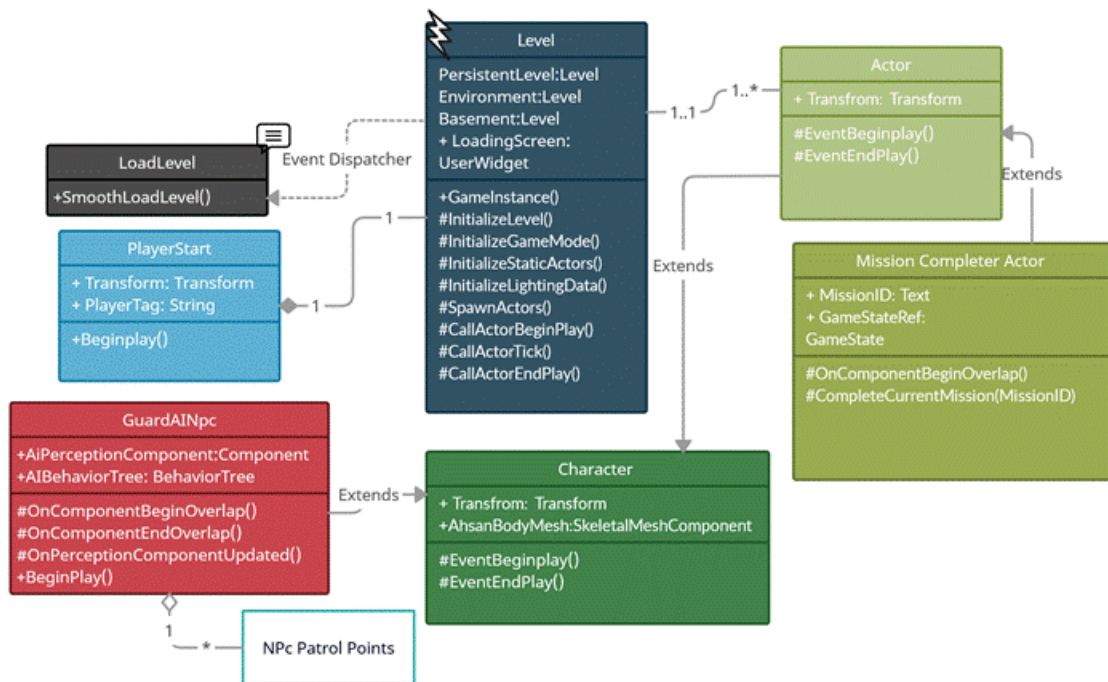


Figure 5.2: Loading System of Project-Z: The Beginning

5.3 Game Class

Class in game development is a type of data structure used to define a set of attributes, methods, and behaviors for a game object. It is the blueprint for creating game objects that share the same properties. A class can be used to define game characters, levels, weapons, and other game elements.

5.3.1 Game Instance Class

Game instance is one of the major classes. We have set up our own game instance class to track and our game's system. The game instance class is always loaded in the background and that is how it tracks all the progression of our game. We have setup our save game functionalities in the game instance class so that we can call those functions easily from any blueprint. We made our save game function in our game instance because it is always loaded, means, save game will not be interrupt when there will be a level transfer, or any unreal background running task.

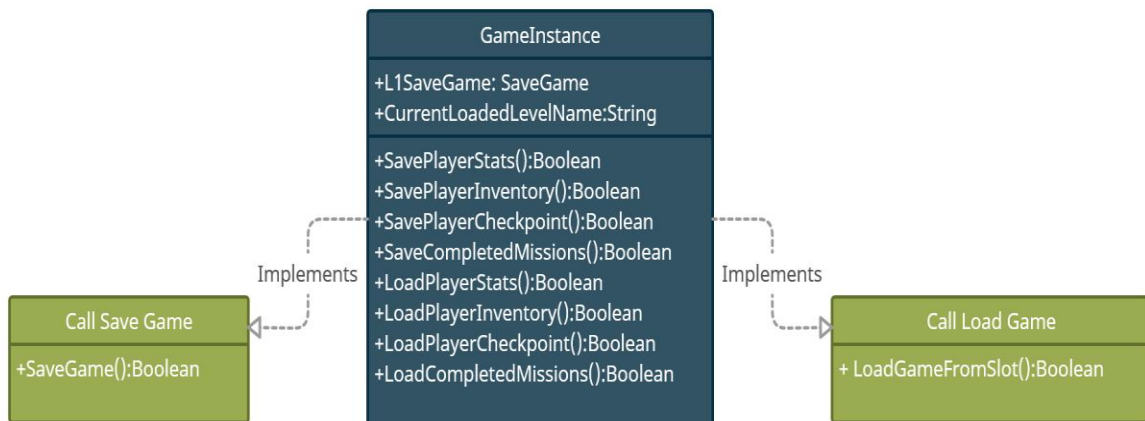


Figure 5.3: Game Instance Class

5.3.2 Game Mode Class

The game mode class tracks the following classes. The following figure is a reference viewer from unreal engine 5.

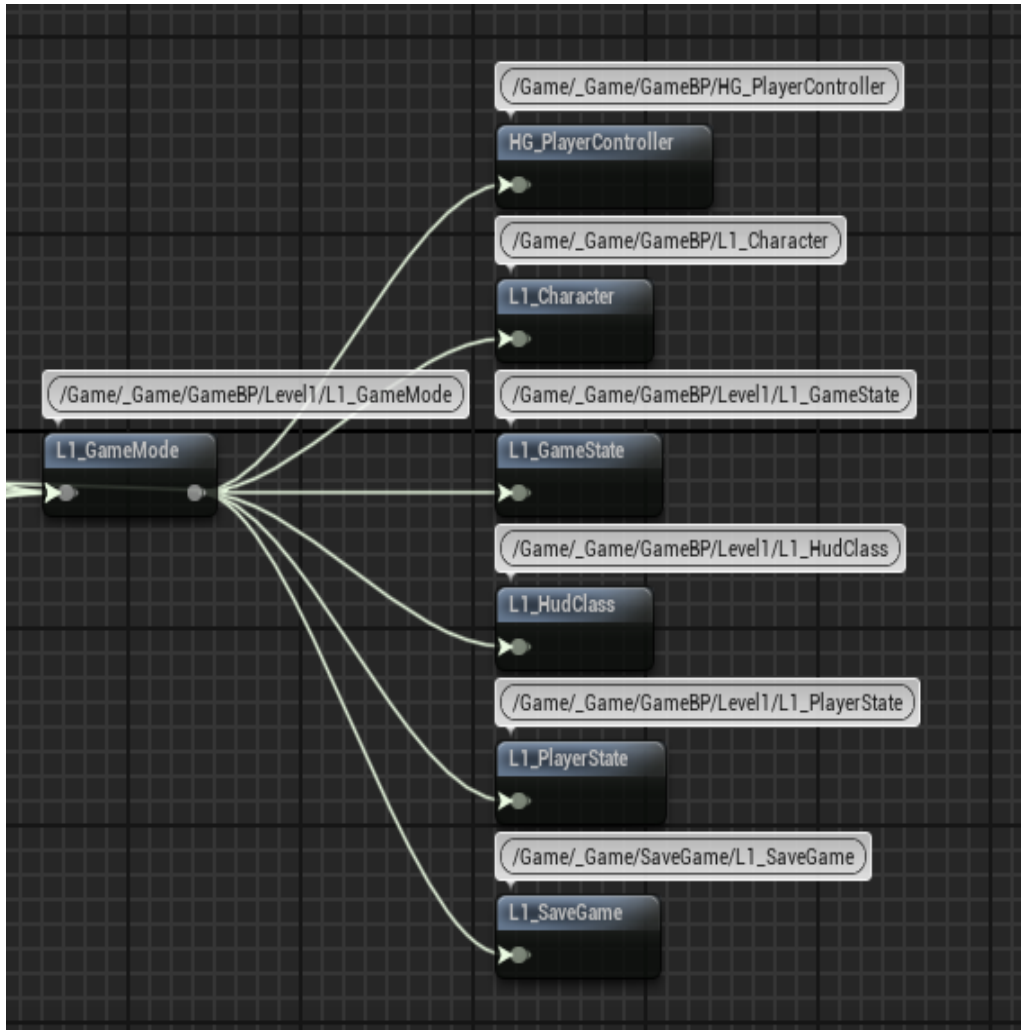


Figure 5.4: Reference Viewer from UE5

5.3.3 UML Diagram of Game Mode Class

Here is the UML class diagram of game mode.

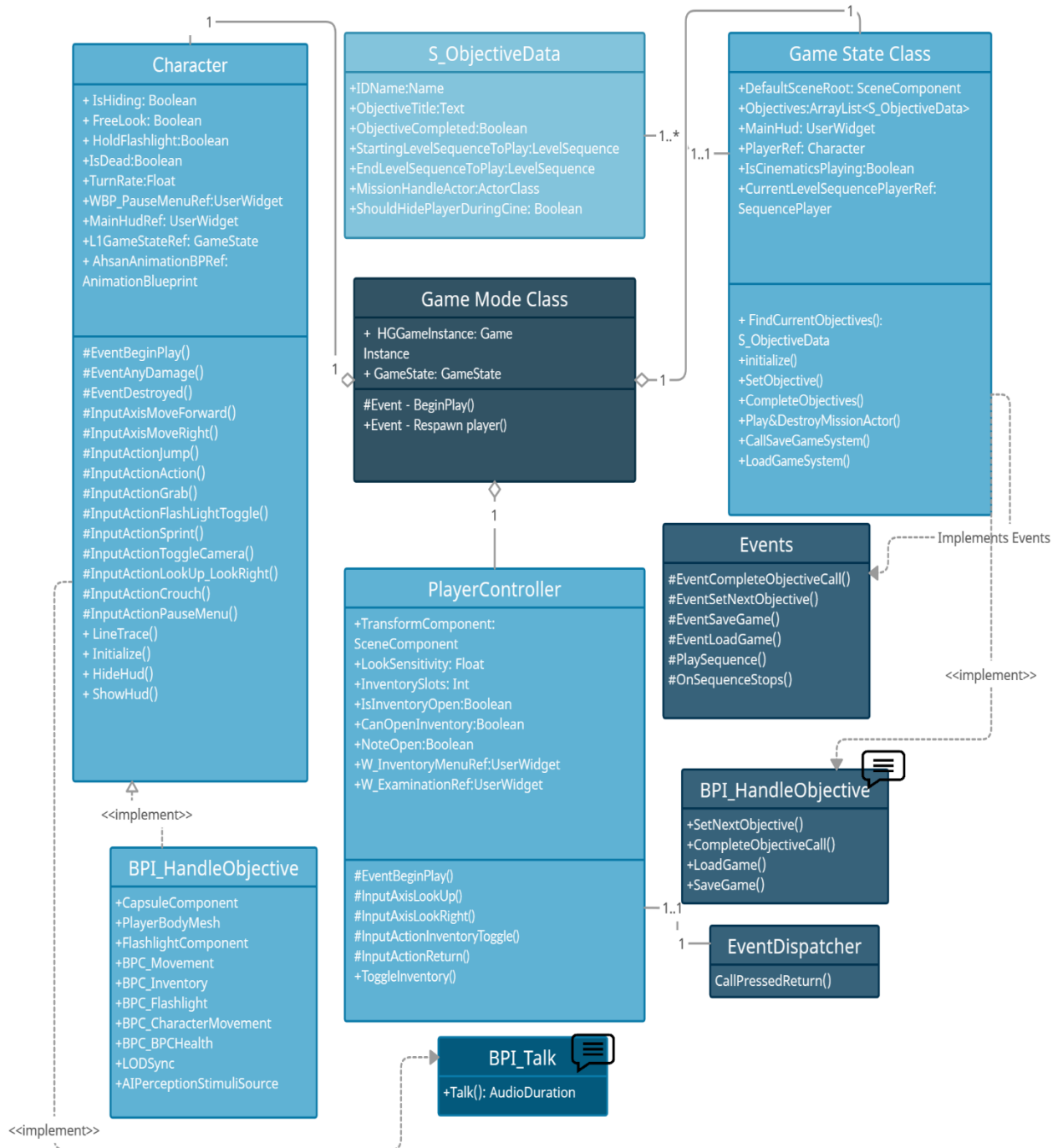


Figure 5.5: UML Class Diagram of Game Mode

Every unreal game has a game mode class either it is single player game or multiplayer. Although the game mode class is mainly used for multiplayer games, but it is also necessary for single player / offline games. The game mode spawns the classes associated with it or linked with it. The classes which game mode tracks are defined below.

5.3.4 Player Character Class:

The Character Class Defines which Character the player will play. It brings the following questions.

- How player will control the character?
- Does the character have any skeletal mesh or a body?
- Does The Skeletal Mesh or the body has movement animations?

Now, to answer these questions we need to know about certain things. These are defined below.

5.3.5 Input Mappings

Input mappings means physical keyboard bindings or inputs. It basically tells the game engine that which keyboard key was pressed and when it is released.

5.3.6 Skeletal Mesh

A skeletal mesh is a character body which can be animated in the level world. It is mainly like human skeleton, skeleton helps us to move, walk, run etc. Just like human skeleton, a skeletal mesh works the same way. It can be animated in the level / game world (idle, walk, run, crouch etc.).

We have input mappings in our game. We have two types of input mappings in unreal.

5.3.7 Action Mappings

Action Mapping are the once which are not called every frame. It means It will only call those input mappings when it is pressed or released. Here is Our game’s Action mapping.

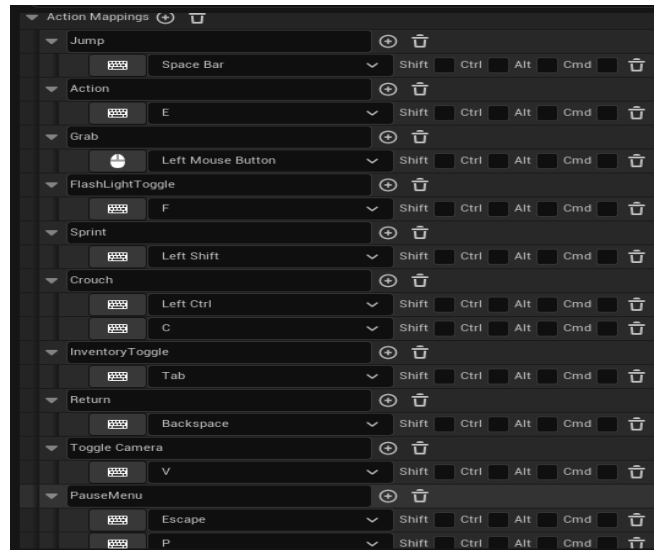


Figure 5.6: Action Mappings of Project-Z The beginning

5.3.8 Axis Mappings

Axis mappings are the one’s which are called every frame, determining if it pressed or not pressed every second.

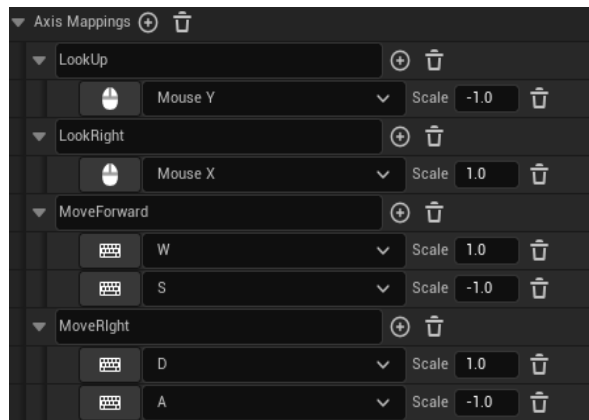


Figure 5.7: Axis Mappings

5.3.9 Game State Class

- Game State Class Tracks Player progression. It
- Tracks All the Player missions
- Plays Starting Cinematic shots of every mission,
- Plays ending cinematic shots of every mission,
- Spawns Mission Objective Controller actor classes.
- Provides Functionality to Complete a mission and save it by calling Functions from the Game instance.
- Updates the Current Mission in The Screen, by updating objective widget reference.

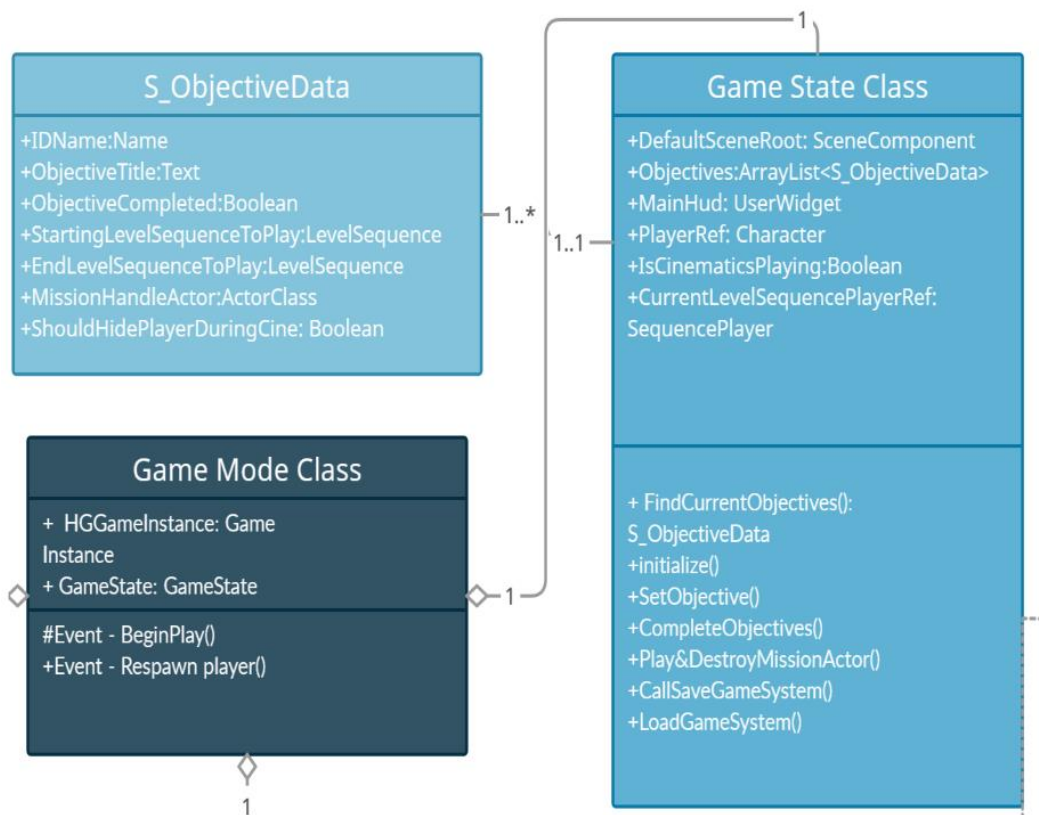


Figure 5.8: Game State Class

5.3.10 Player Controller Class

Our player controller class defines how the player is be controlled. It controls if the player can open “inventory” or not. Basically, it can toggle inventory open / close and it can control the player look inputs. For example, looking up, looking down, looking right etc.

5.3.11 Save Game Class

Unreal engine has a save game class which we have extended to create our own save game functionality. Our save game functionality saves the following things.

- It saves the player checkpoint / last location where player was at.
- It saves player stats (health, battery levels).
- It saves mission objectives.
- It saves inventory items (items that are in the inventory).
- It saves all the necessary level information (names, floors etc.)
- It saves all the NPC’S last location
- It saves all the destroyed actors in the level.

5.4 Class References

In object-oriented programming, a class is a blueprint or template for creating objects. A class defines the properties and behaviors that objects of that class will have. This class reference represents the communication between classes and objects.

5.4.1 Class References of Game Mode Structure

Here are the class references of game mode structure.

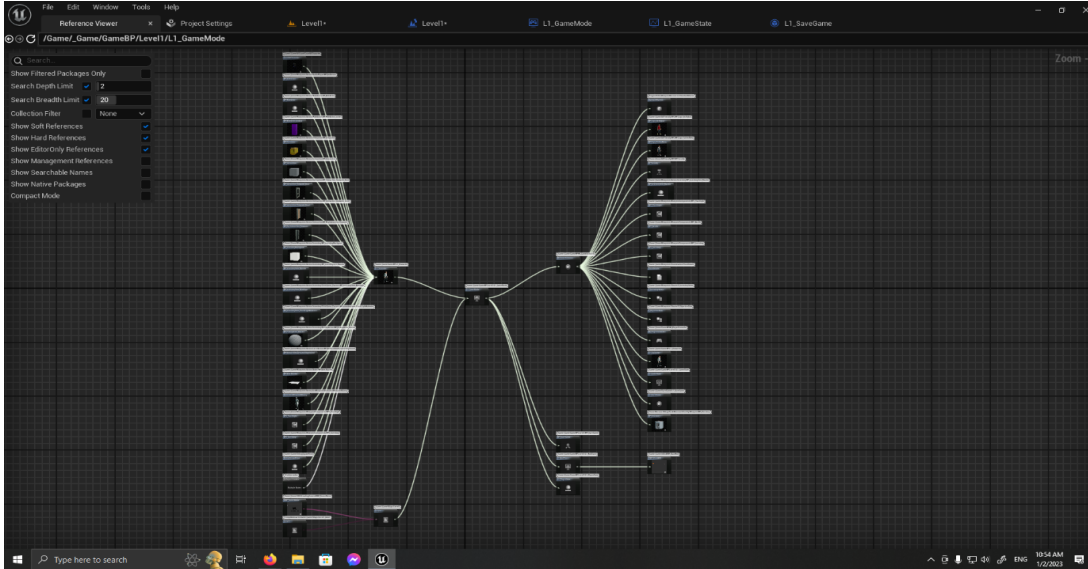


Figure 5.9: Game Mode Structure

5.4.2 Class References of Guard AI Character

This picture shows class reference of guard ai character.

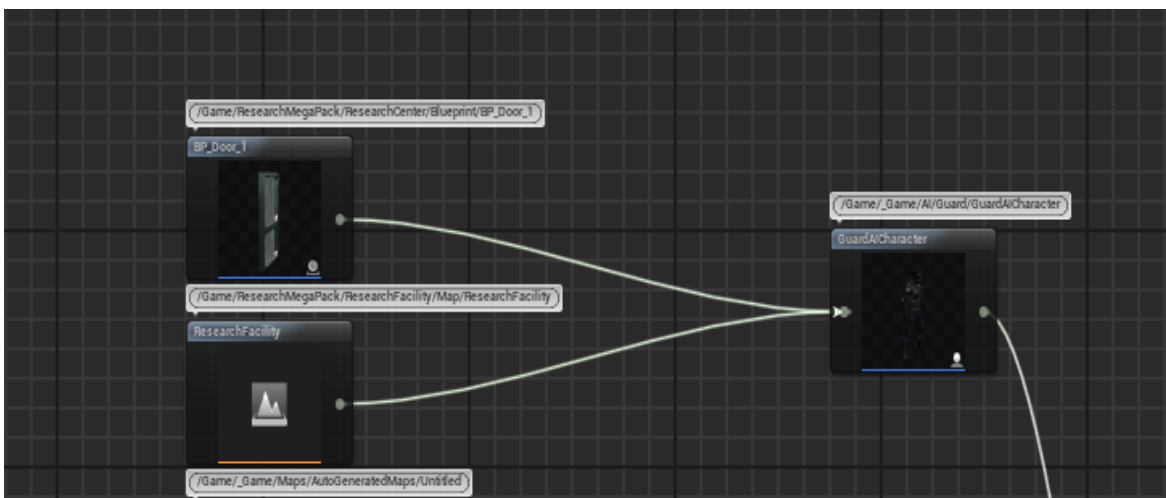


Figure 5.10: Guard AI Character

5.4.3 Class References of Hide Actor and Generator

Here is the class references of hide actor and generator.

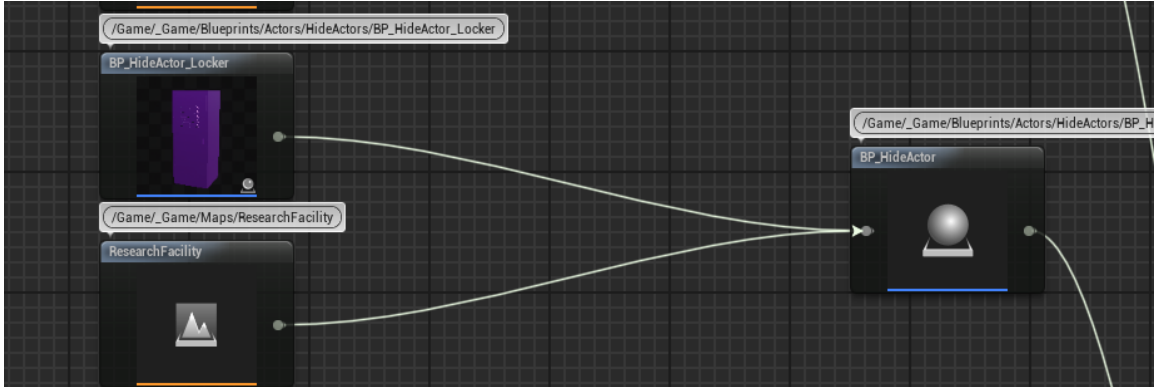


Figure 5.11: Hide Actor Class Diagram

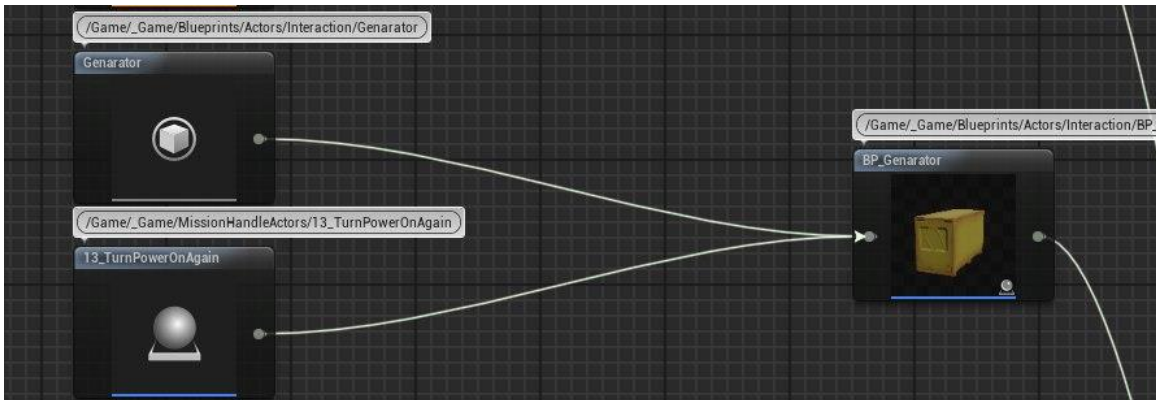


Figure 5.12: Generator Class Diagram

5.4.4 Blueprint Interaction

This picture shows blueprint interaction of interaction door, light switch, outwards door and some others.

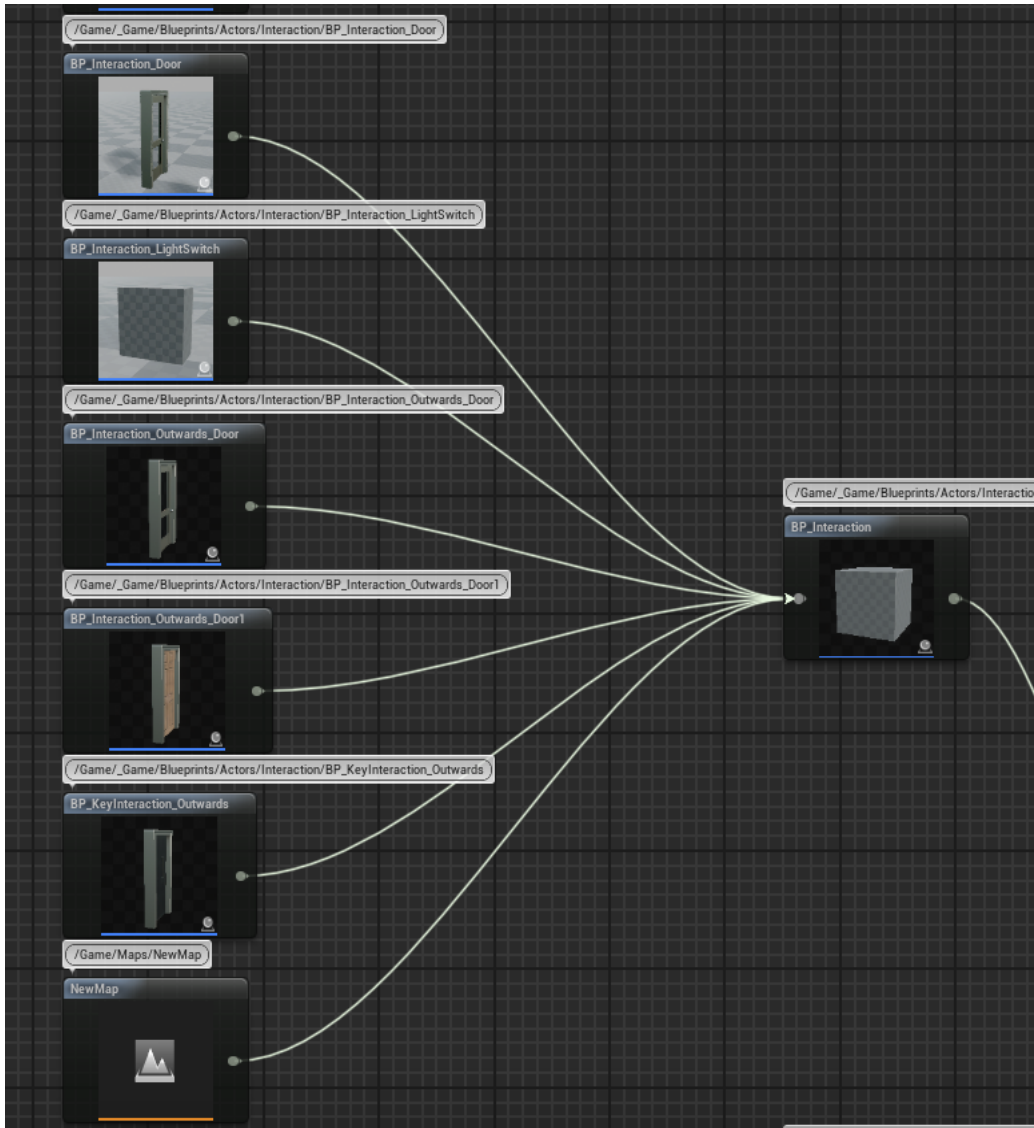


Figure 5.13: BP Interaction

5.4.5 Inventory Item Master Inheritance Structure

This picture shows inventory item master inheritance structure.

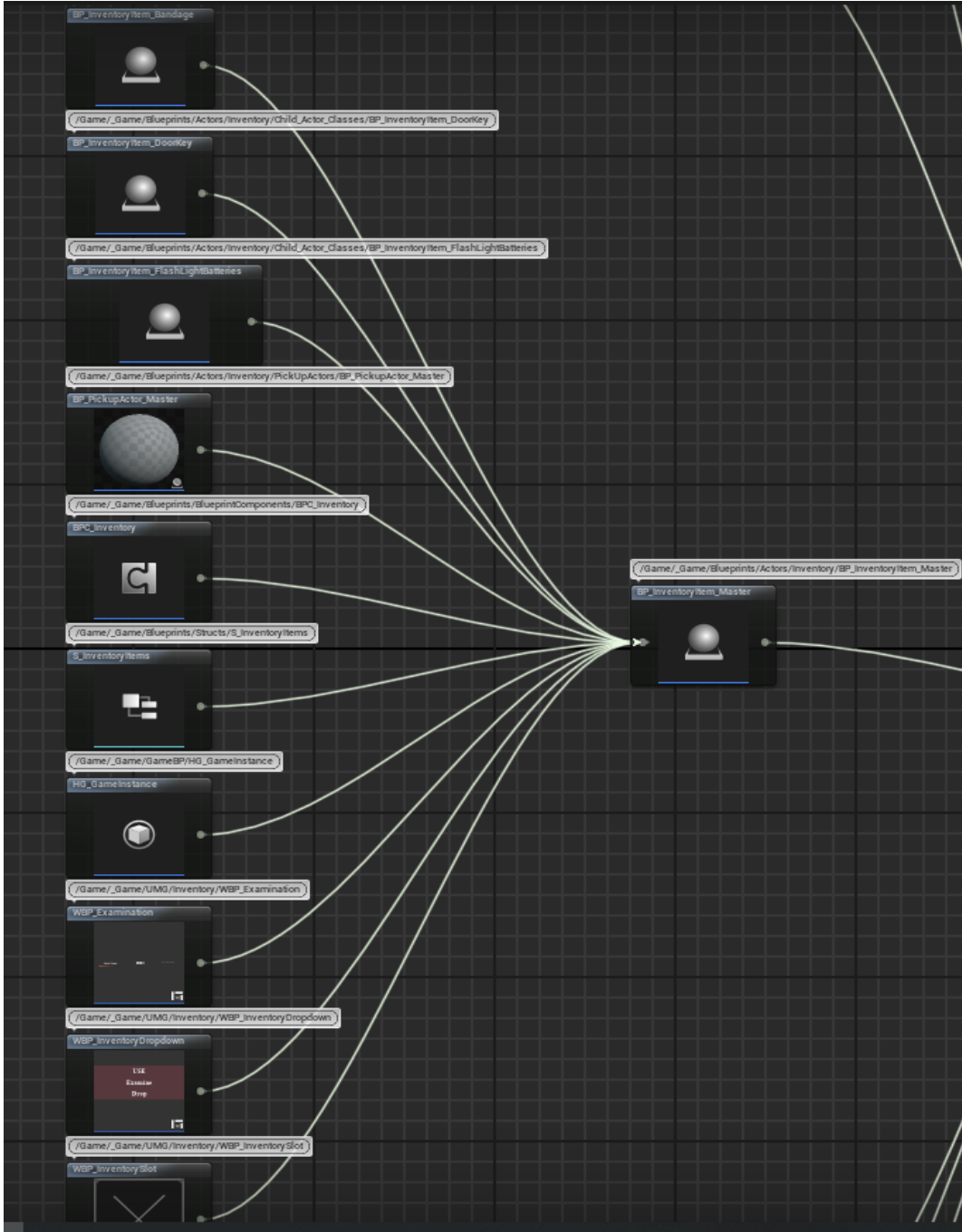


Figure 5.14: Inventory Item Master Inheritance Structure

5.4.6 Note and Progress Bar Reference

Here are the images of note and progress bar reference.

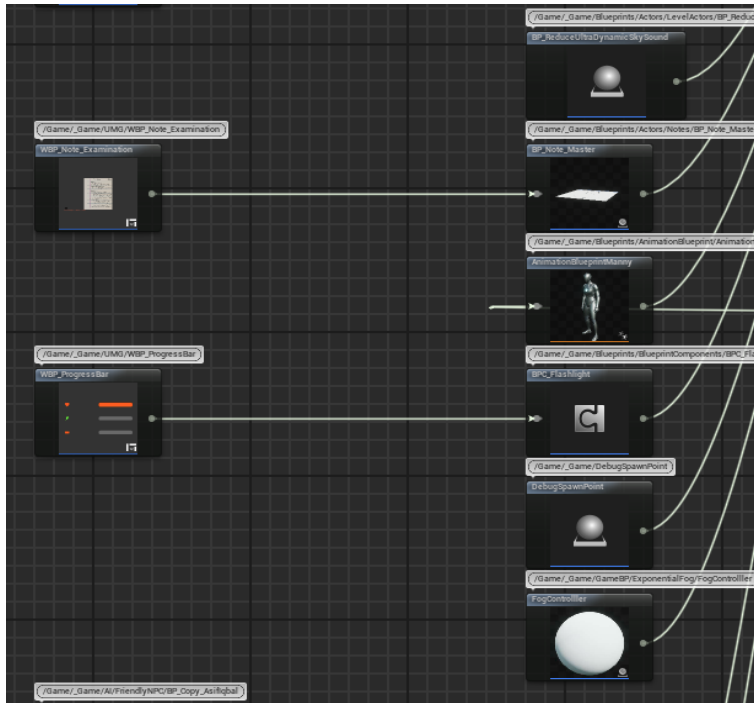


Figure 5.15: Note and Progress Bar BP

5.4.7 Level 1 References

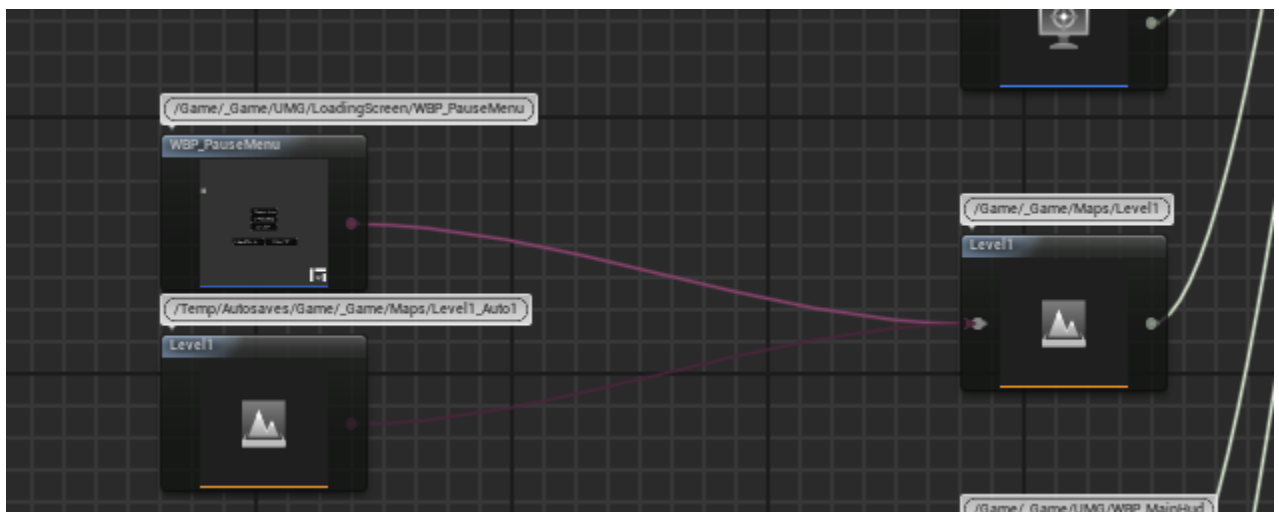


Figure 5.16: Level 1 References

5.4.8 Asif Blueprint References

Here are the class references of character Asif.

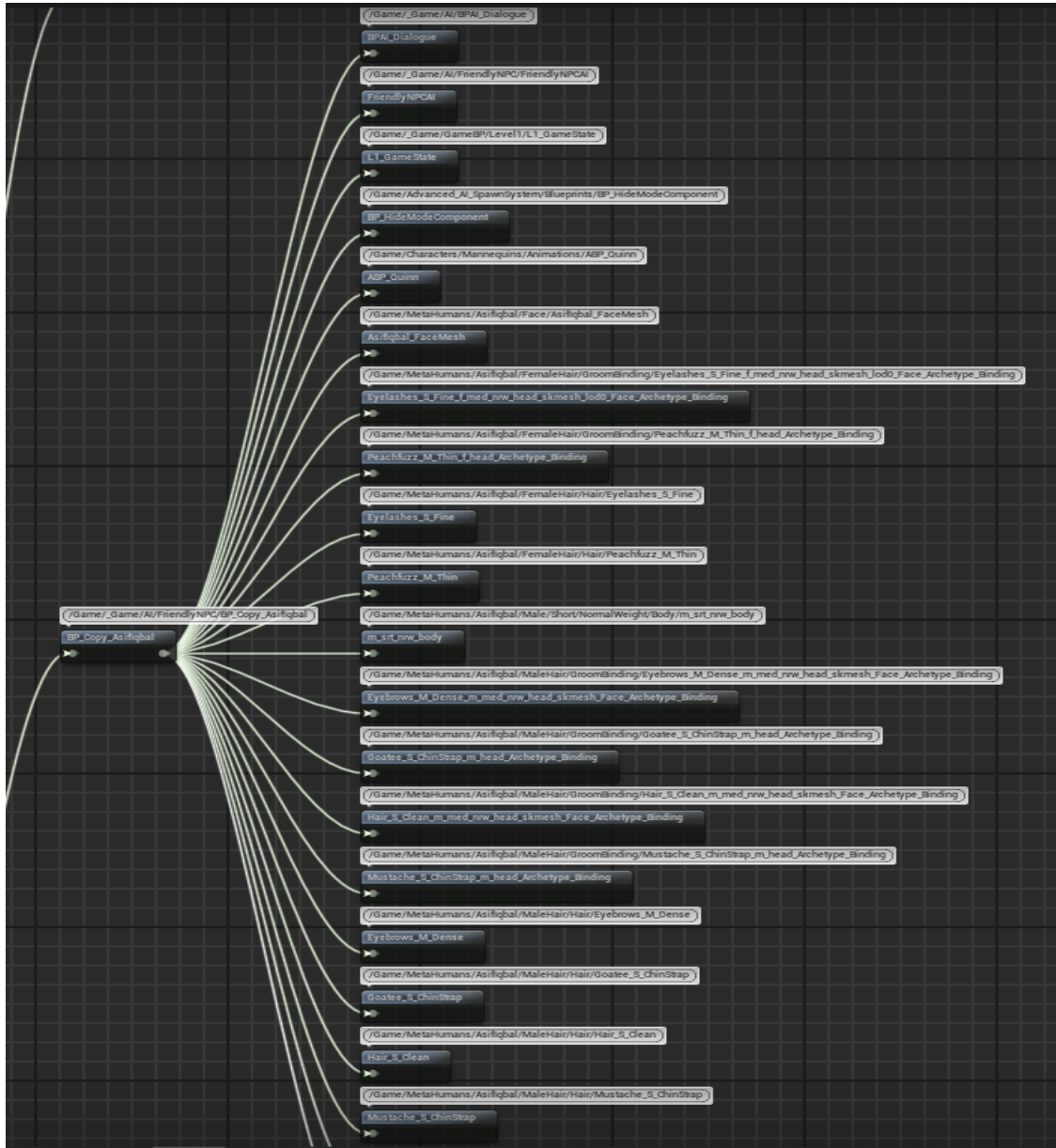


Figure 5.17: Asif Blueprint References

5.4.9 Fahim Blueprint References

Here are the class references of character Fahim.

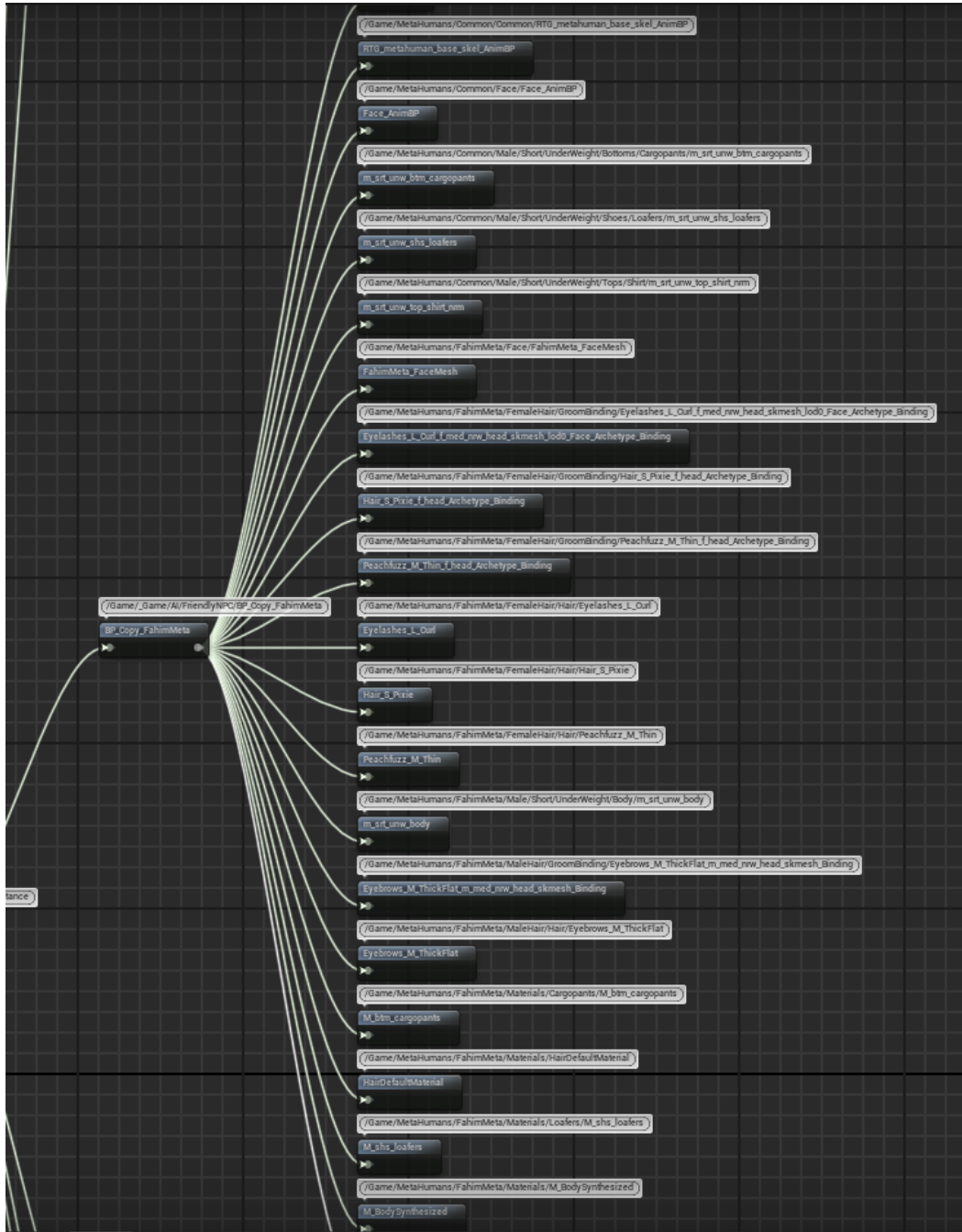


Figure 5.18: Fahim Blueprint References

5.4.10 Inventory References and Hud References Blueprint

Here are the class references of inventory system.

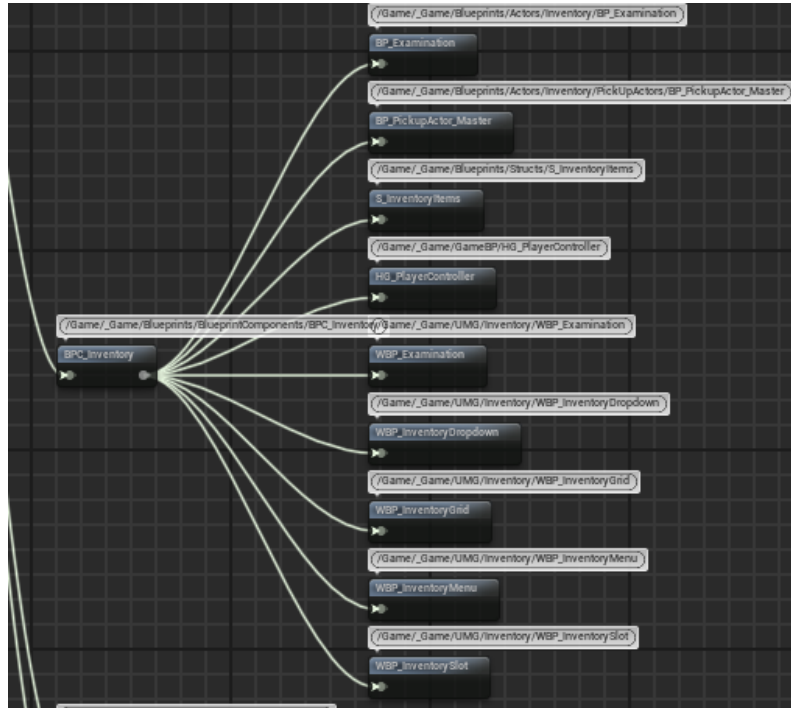


Figure 5.19: Inventory References Blueprint

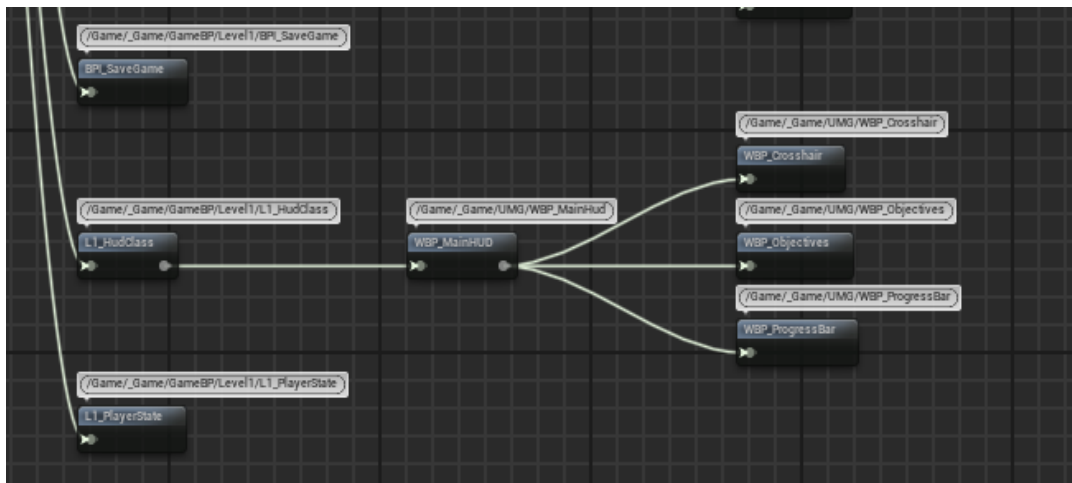


Figure 5.20: Main Hud References

5.5 Gameplay

We write a full game script and gameplay. Here is the short brief of the gameplay

আসিফ: কিরে আহসান তুই কই।
আহসানঃ এইত আইসা পরসি বন্ধু আর ২ মিনিট।
আসিফঃ তারাতারি আয় বেটা গাড়ি নিয়া বইসা আছি, ৮ ঘন্টার জানি।
আহসানঃ হ হ বন্ধু সরি। এইত আইসা পরসি।
আসিফঃ আচ্ছা শোন, ফাহিম কই?
আহসান: তুই জানিস না ও সব সময় লেট করে, আছে হয়তো কোথাও পথে। কল দে তুই ওরে একটা।

Calling Fahim.....
আসিফ ফাহিম কে কল দিচ্ছে

আসিফ: কিরে তুই কোথায় আমরা তো বসে আছি।

ফাহিম: চলে আসছি প্রায় আর ১০ মিনিট লাগবে।

আসিফ: এত দেরি লাগে কেন তর ??! আচ্ছা দ্রুত আয়।
ফাহিমঃ আসতেসি আসতেসি।

Full Gameplay Link:

https://docs.google.com/document/d/1BhvFAguaVGyY2BFnoY_UDWhwKjK-PdGgyFZ3eieO6Dk/edit?usp=sharing

5.6 Character Blueprint Code

This image shows game character background blueprint code

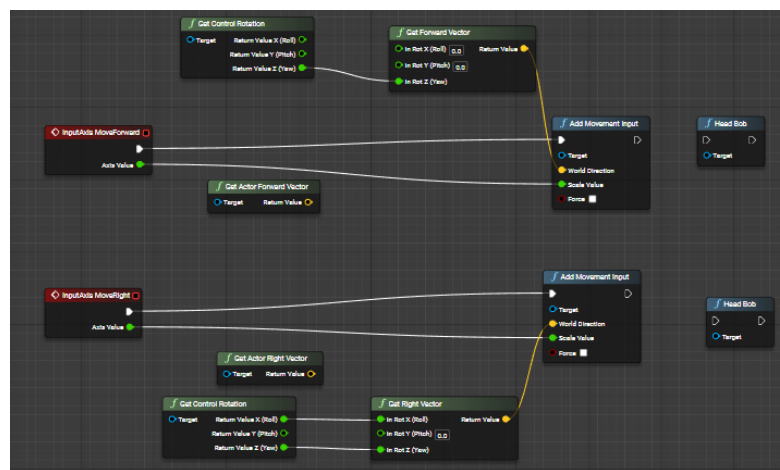


Figure 5.21: Character Blueprint Code

5.7 Game State Blueprint Code

This image shows game state blueprint code.

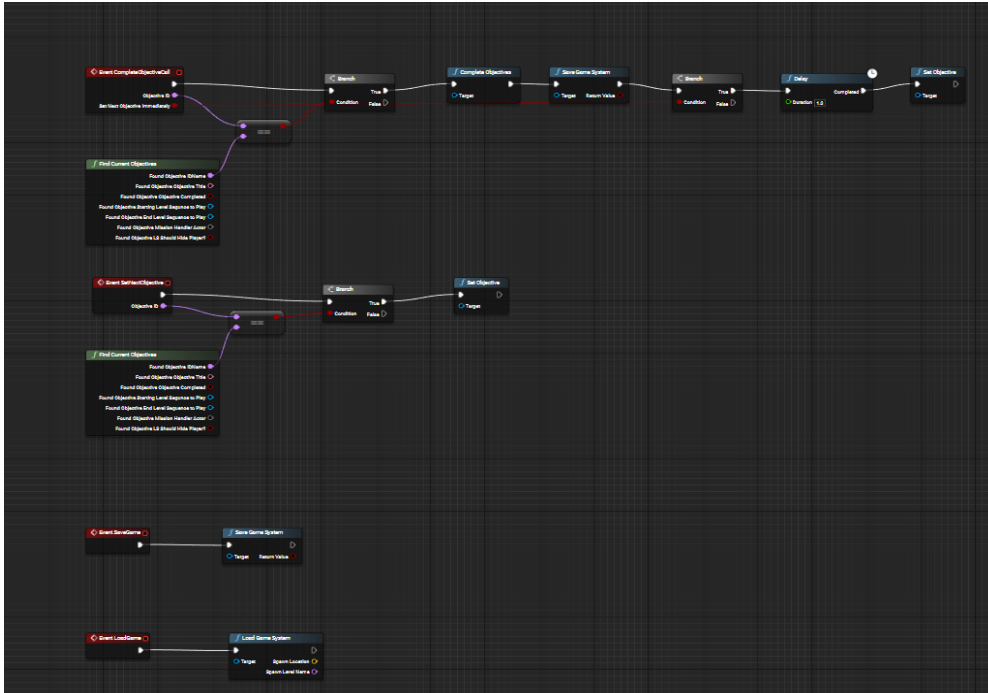


Figure 5.22: Game State Blueprint Code

5.8 HG Player Controller Blueprint

This image shows HG player controller blueprint code.

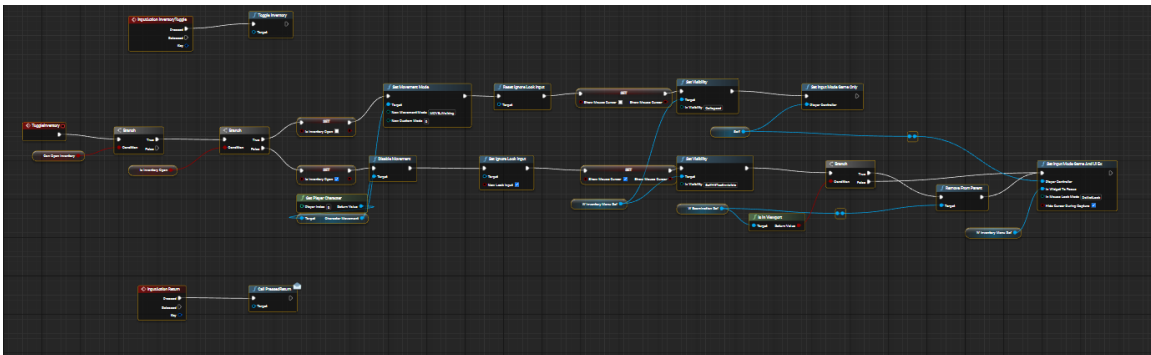


Figure 5.23: HG Player Controller Blueprint

5.9 Game Audio

There are many copyrights free sound track available in internet. We use some copyright free audio for this project. All of the audio are copyright free and free of cost. [13-22]

Name	Music Category	Description
Come play with me	Background music	Play during gameplay
Creeping horror	Background music	Play during gameplay
Day of chaos	Background music	Play during gameplay
Radio static	Background music	Play during gameplay
Suspenseful tension	Background music	Play during gameplay
walk	On action	When walking
Door opens	On action	When open the door
Tire screech	Background music	Play during gameplay
Unseen horror	Background music	Play during gameplay
Tv glitch	Background music	Play during gameplay
Tire glitch	On action	Before crushing car
Accident	On action	When car crush

Table 3: Game Audio

5.10 Voice Artist

- Ahsan Habib
- Asif Iqbal
- Shahriar Fahim

5.11 Testing

There are several different types of testing that we performed on our game including:

- **Functionality testing:** This involves testing the basic functionality of the game, including making sure that all gameplay mechanics and features are working as intended.
- **Compatibility testing:** This involves testing the game on a variety of different hardware and software configurations to ensure that it runs smoothly on a wide range of systems.
- **Performance testing:** This involves testing the game's performance and stability under various conditions, such as different hardware configurations and in-game scenarios.

5.12 Gameplay Test Result

After making this game we test this in many computers. Here is the example of one of them. In this computer we got average 61 frame per second after 1 hour of gameplay.

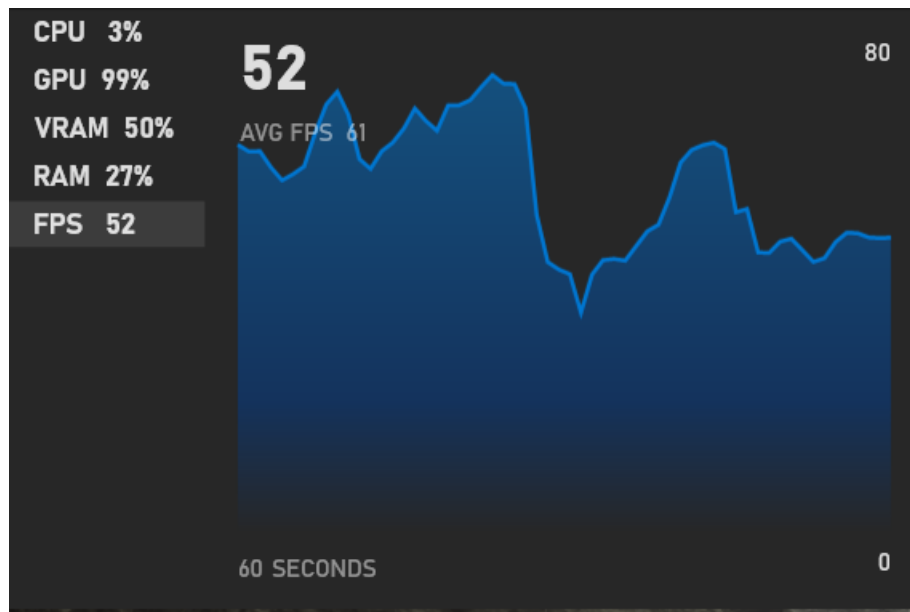


Figure 5.24: Gameplay Test Result

CHAPTER 6

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact on Society

This game has positive and negative impacts on society, depending on its content and usage.

On the positive side, video games can be a fun and enjoyable form of entertainment that can provide people with a sense of accomplishment and social connections. In addition, many video games promote problem-solving skills and can be used as educational tools.

On the negative side, some people may develop unhealthy habits, such as spending too much time playing video games or neglecting other important aspects of their lives.

6.2 Impact on Environment

Video games continue to impact the environment through the production, disposal, and energy use of the hardware and media used to play them.

In terms of energy use, video games require significant processing power and can use electricity, especially when played online or on high-end gaming systems. But this game is not too power-hungry.

This game can also have positive environmental impacts. For example, using these games as entertainment can reduce people's need to engage in activities with more direct environmental impacts, such as travel or other leisure activities.

6.3 Sustainability Plan

Project-Z: The Beginning primarily uses computer hard drives as resources; there are no server fees.

It will only consume internet data to load promotional ads and check for updates.

For the pc game players, it is ultimately free to play game; the only potential reason is that it may consume internet data even though it is an offline game. There is no ad in this game right now, but in the future, the game will contain many promotional ads. We are now focusing on game publicity rather than earning money.

Near future, we will add some premium features like player skins, health, in-app purchase and many others.

From this point of view, this game project is sustainable.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Conclusion and Limitations

Working with the game "Project-Z: the beginning" is not a familiar experience. We usually work with mini game development, different markup languages etc. We adopt these things through video tutorials, text tutorials, the internet and learning materials given by the tools. It's a matter of hard work. 3D models and animations: we make 3D models and animations for characters. To run this kind of software we need a powerful computing system. Music and sound effects: A game's audio can significantly enhance its atmosphere and immersion. We need music tracks and sound effects for various actions and events in our game. which is very time-consuming. Scripting: our game has some level of interactivity and logic, which is implemented using a scripting language like blueprint for building this game, we used Unreal Engine, which is very resource hungry. Hardware requirements: 3D games can be resource-intensive, so we need a high-configuration system with a decent GPU and ram.

7.2 Future Scope and Possibility of This Project

This game is made for windows PC at present. There are many scopes available for the improvement of this game, including the addition of other functionalities. Some of the future plans of this application could be:

- Make an Android version
- Level Extension
- Improve Graphical Representation
- Introduce new game features
- Introduce new environments and scenes

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- [15] Background Music, available at: <https://www.youtube.com/watch?v=7fQ32LJths8> last accessed on 11-11-2022 at 7:00 PM.
- [16] Day of Chaos Background Music, available at: <https://soundcloud.com/kevin-9-1/day-of-chaos> last accessed on 27-09-2022 at 08:00 PM.
- [17] Suspenseful Background Music, available at: https://www.youtube.com/watch?v=1HG_I0BF6RM last accessed on 22-10-2022 at 11:00 PM.
- [18] Tv Glitch Sound, available at: <https://pixabay.com/sound-effects/search/static/> last accessed on 22-10-2022 at 10:00 PM.
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Project-Z: The Beginning

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