



Design exploration Seminar Project Report

ZERO - VR EXPLORATION

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M.des in Animation and Film Design

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DES

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IDC School of Design
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IIT Bombay

Approval Sheet

The Design exploration Seminar project entitled “ZERO - VR Exploration” by **Nidhi Chauhan, Roll Number 216340003**, is approved in partial fulfillment of the requirement for the ‘Master of Design’ in the Animation and Film Design at Industrial Design Center, Indian Institute of Technology, Bombay.



Project Guide : Jayesh Pillai

Date : Spring Semester

Declaration

I declare that this project report submission contains my own ideas and work, and if any pre-existing idea or work has been included, the original author(s) have been adequately cited and referenced.

I also declare that I have adhered to all the principles of academic honesty and integrity and have not misinterpreted, fabricated or falsified any idea, data, or fact source in my submission.

I understand that any violation of the above will be cause for disciplinary action by the institute and may evoke penal action from the sources.

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Acknowledgments

ZERO has been brought to fruition through a deep and heartfelt commitment, not only from myself but also with the affection and support of numerous others. I am profoundly thankful to the individuals who have played a pivotal role in making this journey possible, and I would like to extend special recognition to my esteemed mentors: Prof. Sumant Rao, Prof. Abhishek Verma, and Prof. Jayesh Pillai. Learning from them has been an immensely enjoyable experience, and their guidance has empowered me to grow with confidence. Their unwavering enthusiasm for this project has been infectious, reigniting my own fervor and dedication.

I am filled with immense gratitude towards many other individuals, especially my fellow classmates at Studio 113. Their unwavering support has surpassed all expectations, and their companionship during the late nights spent in the studio has breathed life into my energy throughout the project.

I owe an immeasurable debt of gratitude to my beloved son, Shivansh, who constantly resides in my thoughts and remains deeply cherished in my heart. It is through our shared experiences that I have learned the importance of care, love, and resilience, not only for oneself but also for those around us—the very essence upon which this profound film is built. At various junctures, we have served as each other's wellspring of inspiration and motivation.

As always, I am profoundly indebted to my parents for their unwavering support, providing me with a comforting sanctuary when rest was all I needed, and for always soothing my nerves, alleviating my anxieties, and addressing my concerns. They are my unwavering source of strength, and no words can adequately express the depth of my love for them.

Lastly, I would like to express my profound gratitude to every individual who has witnessed my film at its various stages of development. Each chuckle, smile, and word of encouragement has fueled my unwavering dedication to this project, reaffirming the significance of my endeavors. I hope that the audience for my film continues to expand, and I sincerely wish that they embrace this labor of love with kindness and genuine appreciation.

Table of Contents

1. Idea
2. Key requirements summary
3. Concept Summary
4. Target Audience/ Market Analysis
5. Game setting/Story
6. Gameplay System
7. Core gameplay
8. Art Design
9. User Interface Design for the target platform
10. Requirement Analysis
11. Game Overview
12. First Test
13. Final Game and APK build
14. Thank you for your time

Idea

In this ambitious game design concept, the immersive world of virtual reality serves as the medium to bring to life the rich narrative of Kalki, a revered figure in Hindu mythology. Drawing inspiration from the ancient Indian scriptures, the game intricately weaves together the elements of nature to create a breathtaking and awe-inspiring experience.

The first element, earth, forms the foundation of the game's virtual realm. Players would find themselves immersed in a meticulously crafted landscape, with sprawling terrains, lush forests, and majestic mountains. The attention to detail would be paramount, ensuring that every step taken feels grounded and authentic.

Next, the element of water would come into play, manifesting in the form of stunning rivers, serene lakes, and cascading waterfalls. The fluidity of the VR environment would be enhanced, allowing players to interact with water-based puzzles, navigate through treacherous currents, and witness the sheer beauty of aquatic life.

The element of fire would add intensity and excitement to the gameplay. Volcanic landscapes, erupting geysers, and flaming obstacles would challenge players, urging them to strategize and adapt. Harnessing the power of fire could unlock new abilities or act as a source of light in dark and mysterious caverns.

Air, the fourth element, would breathe life into the virtual world. Dynamic weather systems, swirling gusts of wind, and floating islands would provide a sense of freedom and exploration. Players might soar through the skies on the back of mythical creatures or solve puzzles that require mastering the control of air currents.

Finally, the element of ether, or space, would transcend physical boundaries, introducing players to otherworldly dimensions and celestial realms. The game would incorporate ethereal landscapes, surreal architecture, and mind-bending puzzles that challenge perception and logic.

Throughout the game, the captivating storyline of Kalki would unfold, weaving together myth and legend. Players would embark on an epic quest, embodying the chosen one, as they navigate the diverse environments, encounter mythical creatures, and face formidable adversaries.

The fusion of VR technology, the enchanting tale of Kalki, and the integration of the five elements of nature would create an unparalleled gaming experience. It would transport players into a realm where mythology comes alive, allowing them to become part of an ancient prophecy and embark on a transformative journey that tests their courage, intellect, and understanding of the natural world.

Final Output : APK File

ZERO - APK file shared based on requirement. For more information visit nidhichauhan.net

Key requirements summary

Design

Based on 5 elements of nature: earth, air, fire, space, and water, Players have new locomotion to explore these areas with the targeted collectible in order to open new gates.

Technology

Head mounted VR game developed in Unity Game engine and tested on Oculus Quest 2.

People

18+ age is preferable according to the tolerance capacity of the swing motion.

Timeframe

It will take more than 2 yrs to build a complete game. In 4 months I was able to finish 1 level. (DES - 15 NOV to 15 March)

Concept Summary

Title

Zero - Beyond nothing

Gameplay Hook

USPs / hooks: Swing motion like a spider, different environment, level of difficulty to reach the door, collectibles.

Genre

Adventure, RPG

Theme

5 world levels of earth, water, fire, air, and space. Every level consists of tasks which lead to the gate or portal to the next level.

Platform

Virtual Reality in order to experience a different world via playing game tasks.

Target Audience/ Market Analysis

Target Audience and expected ESRB (entertainment software rating board) rating / PEGI (pan European game information) rating 7 and 18+ age preferable according to the tolerance capacity of the swing motion.

Game setting/Story

Player is on a journey to conquer powers of 5 elements of Nature.

- Player starts the game by following instructions and audio of Kalki's story.
- There are 5 locations named Earth , water, fire,air and space. --
- Player has a Gurus who guides him on his journey and how to defeat demons.
- The player gets from one location to the next .
- The ending is that the player has to defeat the Demon and the player will become Kalki, savior of the Kingdom.

Gameplay System

Main Game View :

With the backstory of going through other worlds of Earth,water,- fire and air....Now the player is in the SPACE world. This world consists of floating land in the galaxy.

Core gameplay

- Player enters into the introductory world, going through a tiny world of 4 elements and can interact with it.
 - Player asks to put one ball into the last space world in order to enter the main game level.
 - Here the player asks to collect gems so that he can get the path to the end portal.
 - But the land has holes and if a player doesn't take the right step he can fall down and die soon.
 - Character has a web shooter which lets the player swing so that the player can go through the asteroids in space.
 - Player reaches where he has to swing through asteroids in order to land on the area of the demon.
 - Demon stops the player from going near the center of the space world.
 - Player defeats the demon and is able to enter into the center.
- Game ends with information about Kalki's story.

Rules and Mechanics

Gameplay modes

The game features different gameplay modes that enhance the overall experience and provide players with diverse challenges and objectives. The introductory level serves as a starting point, introducing players to the mechanics and controls of the game. Here, they will navigate through carefully designed sample worlds, gradually familiarizing themselves with the gameplay elements and the interaction with the five elements of nature.

Once players have acclimated to the mechanics, they progress to the space level, which acts as the central focus of the game. In this level, players embark on a captivating journey through celestial realms and otherworldly landscapes. Their primary objective is to collect special items or artifacts scattered throughout the space world. These collectibles not only serve as markers of progress but also enhance the player's speed and grant them the ability to perform a dynamic swinging motion, adding a thrilling element to the gameplay.

As players explore the space level, they encounter challenging puzzles, formidable adversaries, and breathtaking environments that test their skills and strategic thinking. The immersive nature of the virtual reality medium intensifies the sensation of soaring through the cosmos, evoking a sense of wonder and adventure.

Upon completing the space level, players can progress to the exit level, which serves as the culmination of their journey. Here, they face their ultimate challenge, overcoming intricate obstacles and engaging in a climactic confrontation with the game's final antagonist. Success in this level signifies the fulfillment of the prophecy and the completion of the game's storyline.

The diverse gameplay modes in the game, including the introductory level, the space level, and the exit level, offer players a progressive and engaging experience. Each level presents unique objectives, mechanics, and challenges, ensuring that players are consistently engaged and rewarded for their efforts. The combination of a well-crafted narrative, intricate puzzles, and the utilization of the five elements of nature guarantees an immersive and unforgettable gaming experience.

Visual Direction

Under the guidance of Prof. Sumant Rao, the visual direction of the game takes inspiration from an intriguing amalgamation of ancient Indian historical art and a futuristic art style. This unique fusion creates a visually captivating world that seamlessly blends elements from the past with a touch of modernity. The visuals aim to immerse players in a rich and vibrant environment, where they can explore the depths of mythology while experiencing a sense of awe and wonder.

Environment Description:

The game's environment draws inspiration from various historical periods in India, with a focus on the Maurya and Chola dynasties. The Maurya era brings forth majestic architecture, intricate carvings, and sprawling landscapes, while the Chola dynasty showcases the grandeur of temple architecture and the vibrant colors of the region. Additionally, the visual direction takes cues from the futuristic aesthetic of the Black Panther's Wakanda, incorporating advanced technology and sleek designs into the game's world. The result is a harmonious blend of ancient Indian heritage and cutting-edge futuristic elements, offering players a visually stunning and culturally rich experience.

Game Characters:

The game features a cast of characters that embodies the essence of the narrative. The protagonist, Kalki, stands at the forefront, representing the chosen one destined to fulfill the prophecy. Alongside Kalki, players encounter companions named Ripu and Vira, who provide support and aid on the epic journey.

Each character is meticulously designed, showcasing a balance between their mythological roots and contemporary stylings. Their appearances reflect a visual synergy between ancient Indian aesthetics and a futuristic aesthetic, adding depth and intrigue to their visual portrayal.

Audio Direction:

The audio direction of the game plays a crucial role in enhancing the immersive experience. The ambient audio combines elements of traditional Indian sounds with a touch of space-themed audio, creating a unique atmosphere that transports players into the mythical world. Additionally, the character swing and collection sounds amplify the excitement and satisfaction of gameplay, complementing the visual elements. Finally, the narration voice adds depth and emotion to the storyline, guiding players through the epic tale of Kalki with a captivating and engaging voice performance.

Overall, the visual direction of the game blends ancient Indian historical art with a futuristic art style, resulting in a visually stunning and culturally diverse experience. The environment reflects the grandeur of the Maurya and Chola dynasties, along with elements of futuristic technology reminiscent of Black Panther's Wakanda. The game characters embody the narrative while maintaining a harmonious balance between mythological roots and contemporary design. The audio direction enriches the immersive experience, combining ambient audio, character sounds, and narration voice to create a captivating audio landscape. Together, these elements create a game world that is both visually captivating and emotionally resonant.

User Interface Design for the target platform:

In-game UI Design:

The game incorporates an intuitive and immersive user interface design that enhances the gameplay experience. When the game begins, players are greeted with interactive user visuals (UV) that guide them through the initial stages, ensuring a smooth transition into the game world. Additionally, UV indicators are strategically placed for collectibles, providing players with visual cues and feedback on their progress. Furthermore, UV elements are utilized during narration sequences, offering a seamless blend of storytelling and gameplay.

Out of Game UI Design:

The user interface design extends beyond the in-game experience, providing a comprehensive interface for players outside of the game itself. The controller design is carefully crafted to maximize player comfort and efficiency. In Level 1, the middle finger is utilized for teleportation, allowing players to navigate the virtual world effortlessly. The index finger serves as a general selection tool, providing easy access to various in-game actions. The thumb gismo is dedicated to walking and turning, offering a natural and intuitive control scheme. As players progress to the space level, hand interactions become more prominent, and the index finger takes on the role of a web shooter, enabling players to engage in dynamic and exciting interactions within the game world.

The user interface design for the target platform is thoughtfully designed to provide players with a seamless and engaging experience. The in-game UI elements, such as interactive UVs, collectible indicators, and narration visuals, contribute to the overall immersion and enjoyment of the game. The out-of-game UI design focuses on creating a controller layout that optimizes player control and comfort, incorporating intuitive gestures and finger interactions that enhance gameplay mechanics and provide a seamless transition between different levels and gameplay scenarios.

Requirement Analysis

Technical Hardware

For the development of our virtual reality (VR) project, we will require specific technical hardware to ensure smooth and efficient operation. The primary device for experiencing the VR content will be the Oculus Quest 2, a standalone VR headset known for its immersive capabilities and user-friendly interface. Additionally, a capable Gaming PC or Laptop will be needed to handle the resource-intensive tasks associated with VR development. The PC should ideally be equipped with a solid-state drive (SSD) with approximately 20GB of RAM and a spacious 2TB storage capacity to accommodate the project files and assets. To ensure optimal performance, an i7 processor or equivalent will be recommended.

To bring our virtual reality project to life, a range of software tools will be necessary. The development process will rely on Unity 3D, a powerful and popular game engine that offers a comprehensive set of tools and features for VR development. Additionally, applications like Blender will be useful for creating and editing 3D models, while Visual Studio will facilitate the coding and scripting aspects of the project. Software such as Photoshop and Illustrator will be essential for creating and editing 2D assets, and ZBrush can be utilized for detailed sculpting and texturing tasks. These software tools will form the foundation of our development pipeline, enabling us to create a captivating and immersive virtual reality experience.

By carefully considering and fulfilling these hardware and software requirements, we can ensure a solid foundation for our VR project, enabling us to deliver a high-quality and engaging experience to our users.

Game Overview

Game Objective:

In this adventure game, the player takes on the role of a character exploring a fascinating world. The main objective is to master the art of swinging and move like a spider to collect essential gems or items required to unlock the gate leading to the next level. However, players must exercise caution as they navigate through the environment, as there are treacherous holes that can result in the player's demise.

Genre:

The game falls under the adventure genre, offering players an immersive experience as they embark on a journey of discovery and skill development.

The Big Idea:

The game's central concept revolves around the five elements of nature: earth, air, fire, space, and water. Players will have the opportunity to explore each of these elemental areas using a unique locomotion system. Their goal will be to find and collect specific items within each area, which will enable them to unlock new gates and progress further in the game.

Target Audience and Expected Rating:

The game is designed to appeal to a broad target audience, particularly those who enjoy adventure games and have an interest in the natural elements. The preferred age range for players is 7 and above, with an ESRB (Entertainment Software Rating Board) rating or PEGI (Pan European Game Information) rating. However, the swing motion mechanics in the game may be better suited for players aged 18 and above, taking into consideration their tolerance for such movements.

USPs / Hooks:

The game offers several unique selling points (USPs) and hooks to captivate players. The primary USP is the swing motion mechanic, allowing players to experience the exhilaration of swinging through the game's environments, reminiscent of a spider's movements. The diverse environments, each representing one of the five elements, provide a visually stunning and engaging experience. Additionally, the game incorporates varying levels of difficulty to reach the ultimate goal, as well as collectibles to add an element of exploration and achievement.

Platform:

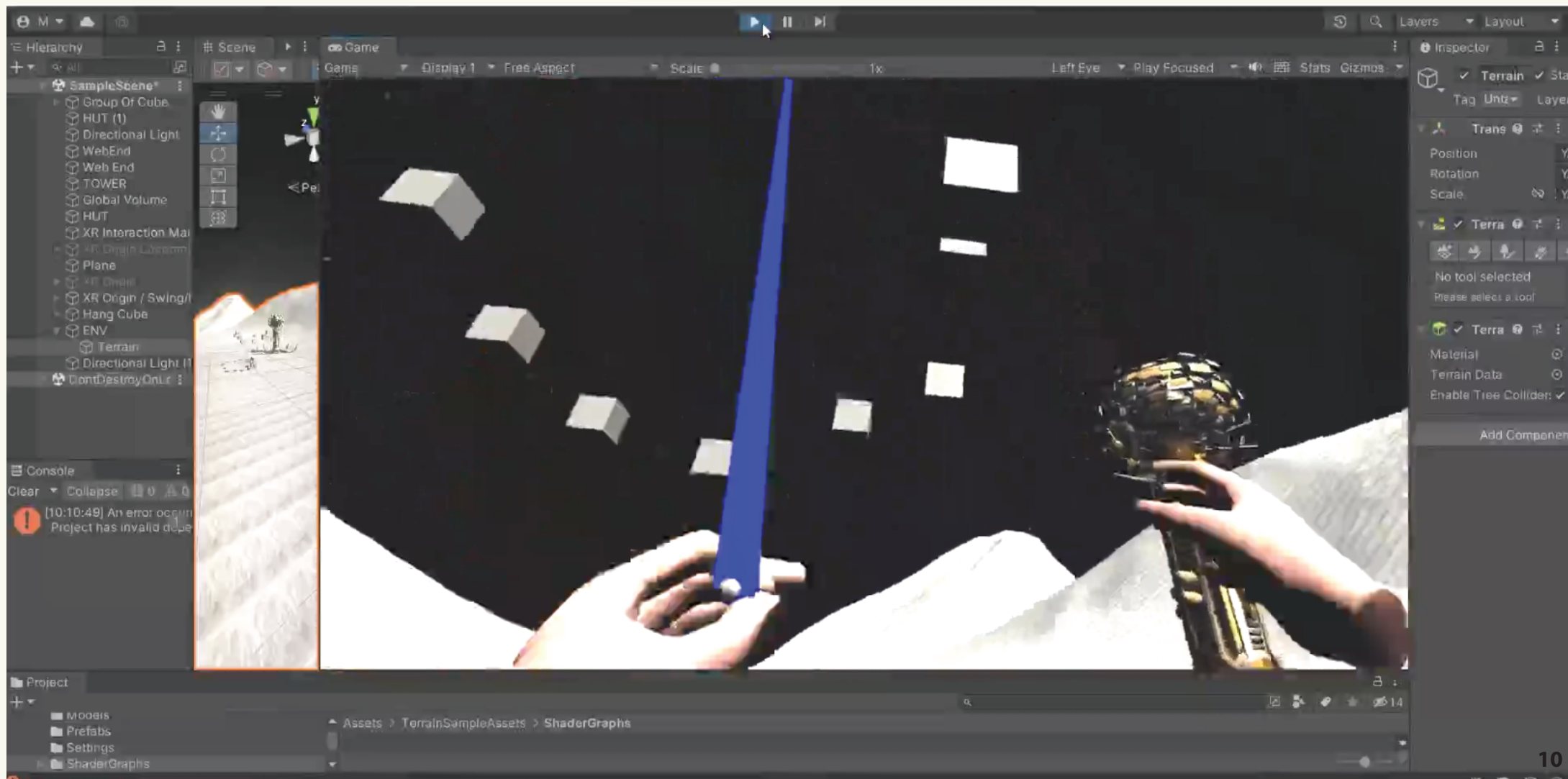
The game is specifically developed for the VR platform, Oculus Quest 2, leveraging its capabilities to provide an immersive and interactive experience for players.

Context of Gameplay:

The gameplay will involve players exploring different environments representing the five elements of nature. They will navigate through these areas using the unique swing motion mechanic, collecting specific items required to open new gates and progress to the next level. Players must also remain cautious of the hazardous holes that pose a threat to their progress. The game's overall context revolves around skillfully mastering the swing motion, solving puzzles, and strategically collecting items within a visually captivating virtual reality world.

First Test of VR Game

The initial test of our virtual reality game is an exciting milestone in the development process. In this test, players will have the opportunity to explore the immersive world we have created and experience the unique mechanics of swinging like a spider. The objective of this test is to evaluate the functionality of the swing motion mechanic and its integration within the game environment. Players will be tasked with collecting a set number of gems or items scattered throughout the level to open the gate leading to the next stage. They must also navigate carefully, avoiding the dangerous holes that can result in their failure. By conducting this test, we aim to gather valuable feedback on the overall gameplay experience, including the responsiveness and intuitiveness of the swinging mechanics, the level of challenge, and the visual and auditory elements. This feedback will enable us to fine-tune and refine the game, ensuring a captivating and enjoyable experience for players as they embark on their swinging adventure.



Final Game and APK Build

After an extensive development and testing phase, we are thrilled to announce the completion of our virtual reality game. The final game is a culmination of creative design, technical expertise, and player feedback, resulting in an immersive and thrilling experience for all players.

In the final version of the game, players will embark on a captivating journey through a world where they learn the art of swinging and navigate challenging environments as if they were spiders. The game features a variety of levels, each representing one of the five elements of nature: earth, air, fire, space, and water. Within these levels, players must collect gems or items that are crucial to unlocking the gate leading to the next stage. They must exercise caution, as perilous holes can bring about their untimely demise.

The swinging mechanics have been fine-tuned to provide players with a seamless and exhilarating experience. They will have the opportunity to navigate the environments, swinging from one point to another, just like a spider. This locomotion system adds a unique layer of immersion and excitement to the gameplay, making the journey truly memorable.

To ensure compatibility and accessibility, we have created an APK build of the game for the VR platform, specifically tailored for the Oculus Quest 2. The APK build allows players to easily install and experience the game on their VR devices, bringing them closer to the world we have meticulously crafted.

We are confident that the final game, with its captivating gameplay, stunning visuals, and challenging levels, will provide an unforgettable adventure for players of all ages. We are excited to share our creation with the world and look forward to the enthusiastic response from players as they swing their way through the game's immersive world.

Additionally, we had the opportunity to showcase our game at the Design Degree Show held at IDC, IIT Bombay. The event provided a platform for us to present our creation to a diverse audience of design enthusiasts, industry professionals, and fellow students. The game garnered significant attention and positive feedback, further validating the efforts we put into its development. The Design Degree Show served as a valuable opportunity for us to gather insights, engage with players, and receive firsthand reactions, ultimately enhancing the overall quality and user experience of the game. We are grateful for the opportunity to have been part of such an esteemed event and for the invaluable feedback received from the attendees.

Thank You For Your Time

In conclusion, I would like to express my sincere gratitude for the opportunity to work on this virtual reality game and to prepare this report. The development process has been an exciting and challenging journey, and I am proud of the final result I have achieved. I would like to extend my appreciation to all the team members who have supported me throughout this project.

I am also thankful to the players and individuals who participated in the testing and provided valuable feedback that helped me refine the game and enhance the user experience. Your insights and suggestions have been instrumental in shaping the final product.

Additionally, I would like to express my gratitude to the Design Degree Show at IDC, IIT Bombay, for giving me the opportunity to showcase my game to a wider audience. The positive response and feedback received from attendees have been immensely valuable in validating my efforts and motivating me to further improve my game.

I am proud of the accomplishment I have achieved with this virtual reality game and the journey I have undertaken. Thank you once again to everyone involved in this project, and I look forward to future opportunities to create and innovate in the realm of virtual reality gaming.