



P3 Project Report

## ZERO - THE LEGEND OF KALKI

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**IIT Bombay**

## 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. The film has undeniably flourished due to their invaluable contributions.

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.

I must also extend my heartfelt appreciation to the jury panel for their invaluable advice throughout the semester, with special gratitude to Prof. Swati Agarwal, whose keen attention during the music development stage led to an unexpected yet treasured direction for the film. Additionally, I am grateful to IDC for providing the necessary infrastructure, particularly the Sr. Animation classroom, which has become an additional haven for me over the past months. The comfort and familiarity of that space have made the countless hours spent working on the film considerably more manageable.

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.

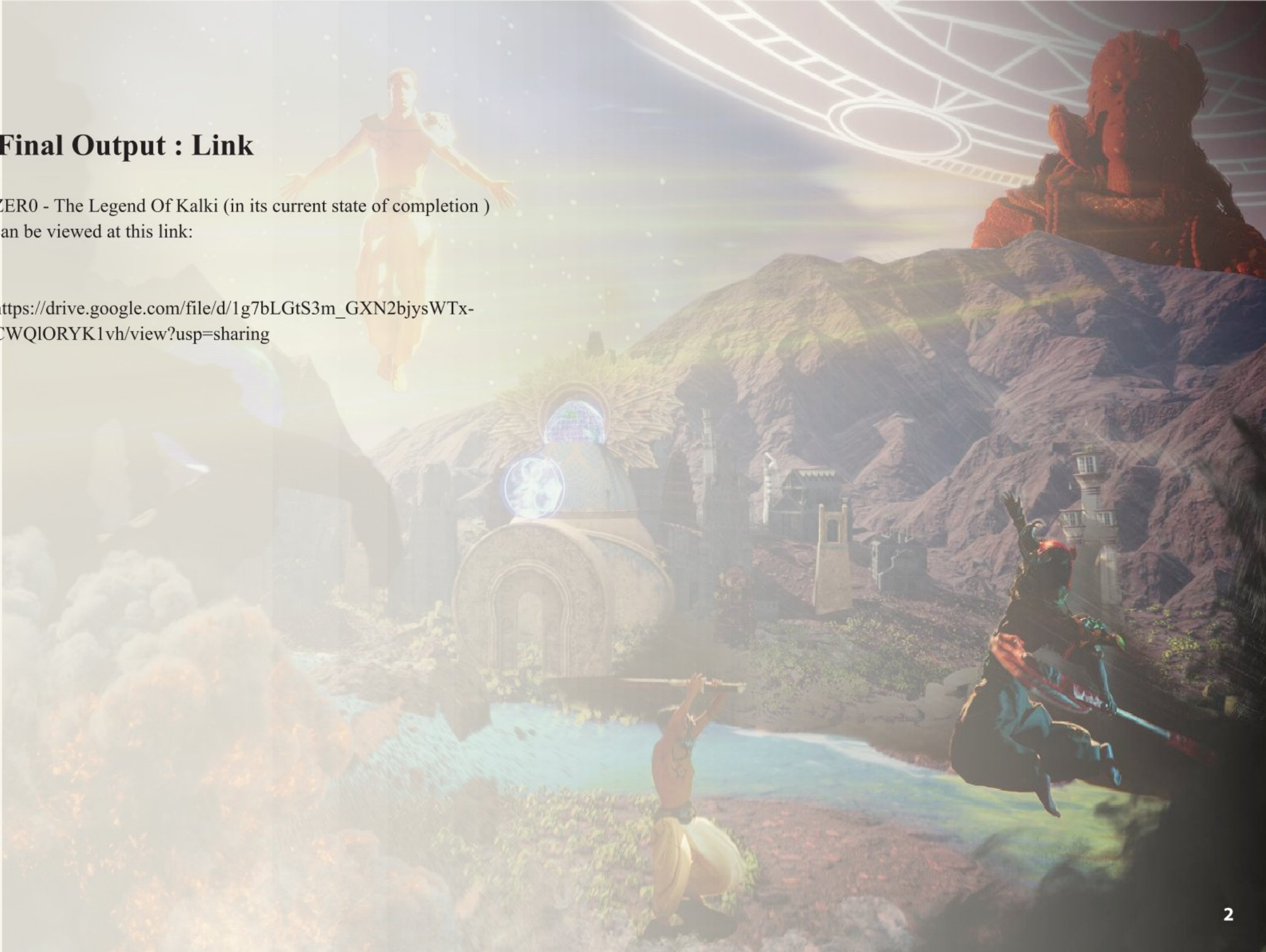
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## Final Output : Link

ZER0 - The Legend Of Kalki (in its current state of completion )  
can be viewed at this link:

[https://drive.google.com/file/d/1g7bLGtS3m\\_GXN2bjysWTx-CWQIORYK1vh/view?usp=sharing](https://drive.google.com/file/d/1g7bLGtS3m_GXN2bjysWTx-CWQIORYK1vh/view?usp=sharing)



## **Introduction : Opening Accomplishment**

The notion of the five elements serves as the foundation for my concept. These elements hold significant importance in both ancient and contemporary philosophical and spiritual beliefs, representing the fundamental constituents that shape the universe and all living beings. Kalki, a prophesied future incarnation of the Hindu deity Vishnu, plays a central role in this narrative. Foretold to emerge during the culmination of the present Kali Yuga (age of darkness and ignorance), Kalki is destined to inaugurate a new era characterized by righteousness and virtue. Hindu scriptures, such as the Puranas and the Bhagavata Purana, extensively describe the arrival of Kalki.

According to the prophecies, Kalki will arrive on a white horse, wielding a blazing sword, with the purpose of vanquishing evil and restoring harmony to the world. Possessing divine qualities and extraordinary powers, he will establish a period of peace and prosperity known as Satya Yuga.

The concept of Kalki holds great significance in Hinduism, particularly within the Vaishnavism tradition, representing hope and the ultimate triumph of good over evil. Furthermore, the concept of Kalki can also be interpreted as an allegory for the internal struggle between good and evil within each individual.

It was my aspiration to weave a story around these profound ideas, while also allowing the viewers to actively engage. Hence, I conceived the idea of creating a game, albeit constrained by time, resulting in the decision to encapsulate my vision within a game trailer.

## Inspirations

अथासौ युगसन्ध्यायां दस्युप्रायेषु राजसु ।  
जनता वषिणुयशसो नाम्ना कल्करिजगत्पतिः॥१.३.२५॥

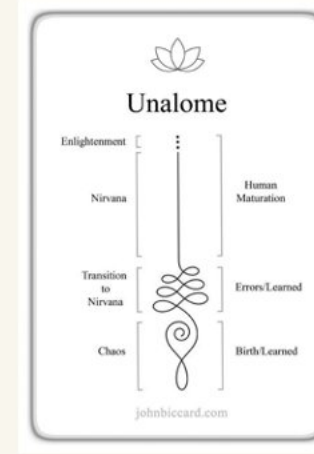
Athaasau Yuga-Sandhyaayaam Dasyu-Praayessu Raajasu |  
Janitaa Vissnu-Yashaso Naamnaa Kalkir-Jagat-Patih ||1.3.25||

Meaning:

- 1: Then, at that conjunction of the two Yugas (Kali and Satya), when the persons in the Ruling positions will almost always become Dasyus (Plunderers),
- 2: The Lord of the World will take birth from Vishnu Yasha and be of name Kalki.

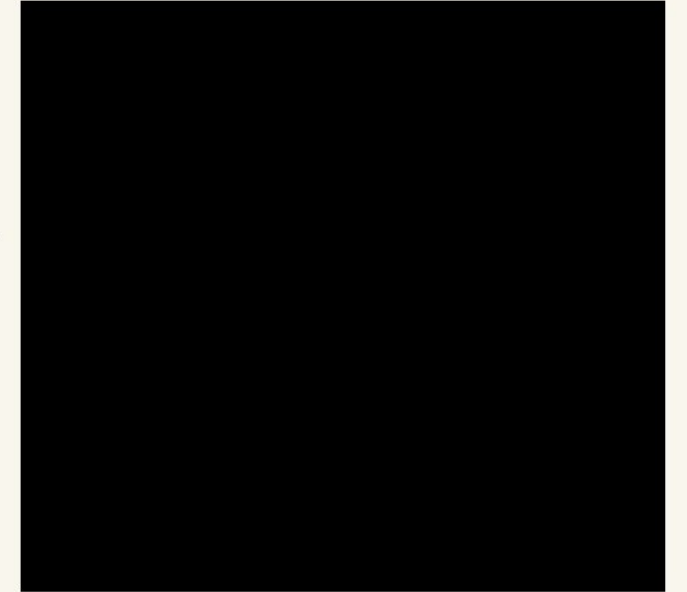
My exploration of Sanskrit roots and the source of my inspiration began with studying slokas. Delving into the depths of slokas, I discovered their profound meanings and found them to be a significant source of inspiration.

As someone with a designer mindset, I naturally gravitated towards exploring meaningful symbols as another avenue of inspiration.

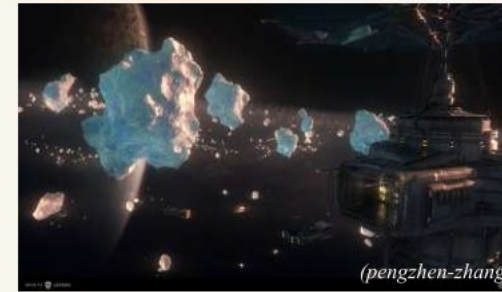
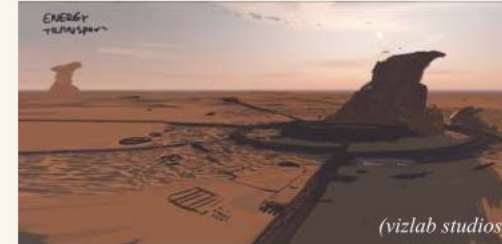
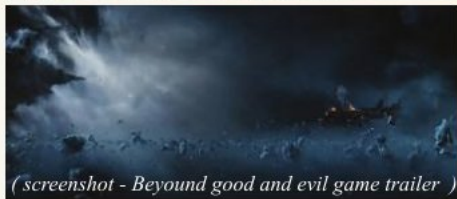


( images found on pinterest )

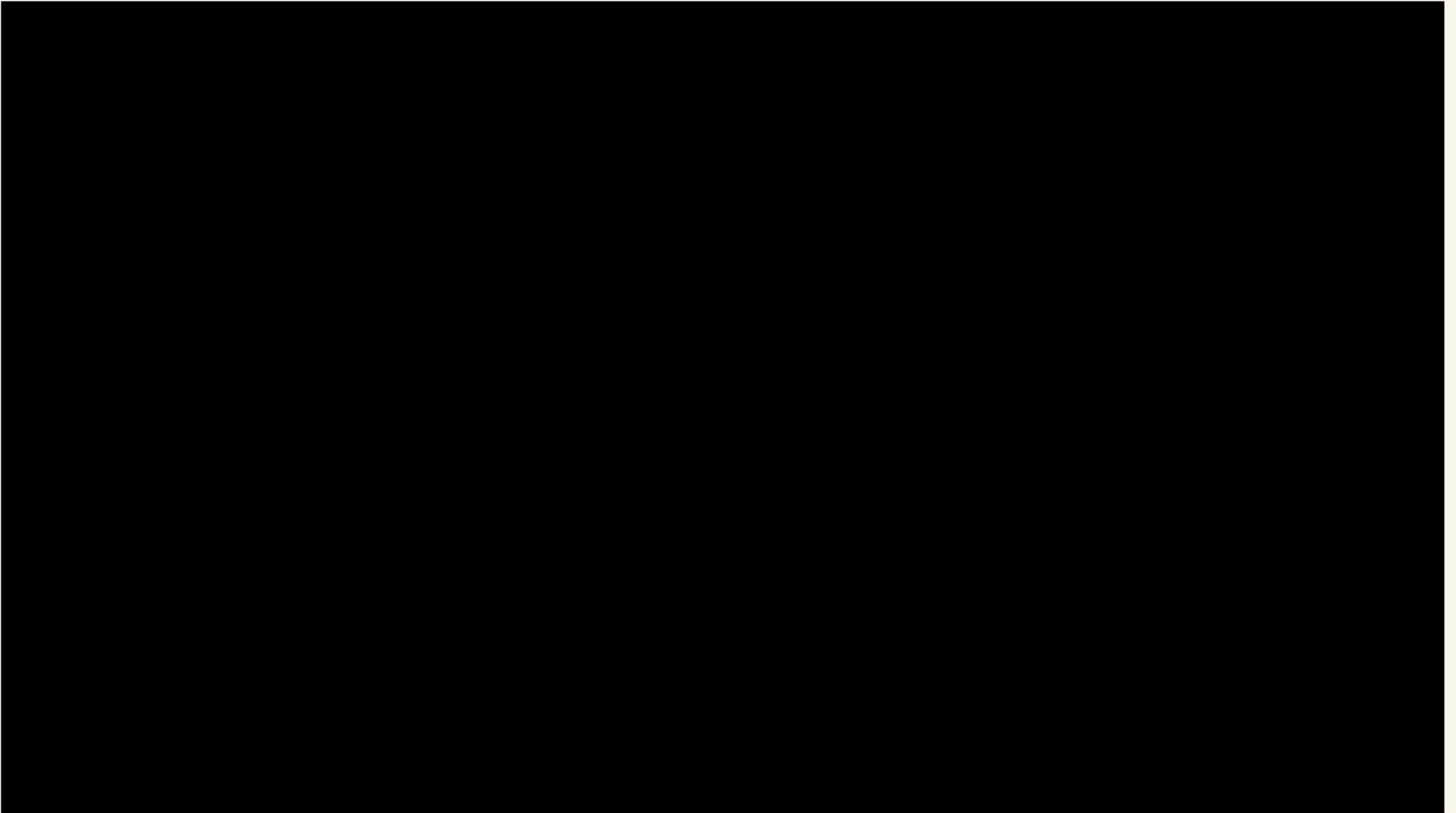
Above are a few images that feature the Prophecy symbol associated with Kalki, igniting the spark for ideating captivating stories.



( Result after iterations )



Netgeo, Artstation, studio work, books, and a multitude of other sources are the fount of inspiration that I tap into. They launch me on a thrilling roller coaster voyage, where I immerse myself in the mesmerizing realm of animation, absorbing captivating visuals along the way.



**Development Process**



## 2. Story Ideas

Following an open discussion with my guide regarding my game trailer idea, I was assigned the initial project task: crafting a series of captivating stories in just 3 lines. These stories had the potential to be transformed into immersive cinematic game trailers that aligned with the project brief. Although I began slowly, my creativity gained momentum, facilitating a smooth flow of ideas and thoughts. This exercise not only prompted a notable shift in my approach but also underscored the inherent power of storytelling through concise yet impactful words. Furthermore, my guide encouraged me to conceptualize game stages based on the storylines, paving the way for their integration into the actual game development process.

The Story ideas are as below:

1. King Dhanananda destroyed the mysterious box in Magadha, causing havoc in Nature. Protector Chandra assumes responsibility to restore balance by venturing into the five elemental worlds. He seeks to merge their powers as the only solution to quell the destruction.
2. Daiva, from Samarthya, embarks on a noble quest: conquering the five elements of Nature. Fueled by the need to restore balance amidst widespread destruction, Daiva fearlessly ventures into the unknown. Each step and challenge draw Daiva closer to harmonizing the forces of nature. With unwavering determination, Daiva's journey exemplifies resilience and the pursuit of equilibrium.
3. King Mahant's destruction of a precious box causes the collapse of Samarthya kingdom. Daiva, with their unwavering spirit, is summoned by Varishtha to conquer the box's power. After rigorous training and conquering the five elements, Daiva battles the evil spirit Madhi, restoring energy to the box and saving Samarthya from destruction.

4. During the waning days of Kalyuga, King Dharma is held captive by the demon Ripu. Kalki, the warrior's son, trains to conquer the five elements, except space. Challenged by Ripu, Kalki defeats five heads and triumphs by embracing his father's teachings, gaining the power of space, and liberating King Dharma, leading to the dawn of Navayuga.

5. In the Kingdom of Mahant, a mysterious box contains the energy of 5 elements and the demon Madhi, bringing happiness. However, a greedy assistant opens the box, unleashing Madhi and wreaking havoc. Daiva, the King's best warrior, journeys to gain the power of 4 elements. Despite an initial struggle, Daiva fails to defeat Madhi. On the brink of death, Daiva attains the power of space, subdues Madhi, and seals the box anew.

6. Long ago, a mighty king was guarded by a formidable demon. The king's son underwent rigorous training to acquire the power of the five elements and rescue his father. With great success, the young warrior defeated the demon, freeing the king and bringing salvation to their people.

7. Legend foretells that the one who unites the five elements shall reign, but previous attempts have faltered. Arya, driven to vanquish a Space demon plaguing her town, diligently pursues the elements. Journeying through Earth, Wind, Fire, and Water temples, she acquires their powers. Despite initial struggle, the collective prayers of many empower Arya to conquer the six-headed demon, safeguarding her town.

8. Master Sohm, the renowned Earth deity, battles demons from various realms to maintain balance on Earth. When a space demon invades, overpowering the master and wreaking havoc, his reluctant son, driven by vengeance, steps forward. Recalling his father's teachings and harnessing the merged power of four elements, the son confronts the demon, receiving guidance from his father's spirit and emerging victorious.

There are many more.....

### 3. Final Story

#### One Liner :

The demon Ripu usurped the throne and initiated the Kali Yuga by imprisoning King Dharma. However, as per the prophecy, he was eventually defeated by a young boy who bore a specific birthmark.

#### 3 Liner :

King Dharma's reign brought joy to the people of Kali Yuga, but their happiness ended with Ripu's attack, taking the king captive. The Great Guru reminded the people that the chosen savior would arise among them, and Kalki was secretly trained to face Ripu. Kalki discovered space energy, defeated Ripu with the power of space, and became the savior of Navayuga.

As Kalyuga approaches its end, King Dharma is imprisoned by the ruling demon Ripu. Guru Prithvi discovers a marked individual named Kalki, foretold as the chosen one in a prophecy. Attacked by Ripu, Kalki taps into the elemental powers of Earth, Water, Fire, and Air, guided by various gurus. However, Guru Prithvi warns Kalki to seek his own power. After an initial defeat, Kalki embarks on a search and discovers a sacred place with a statue of Shiva. Through meditation, Kalki finds his answer and is bestowed with the power of space by Shiva. In the final battle, Kalki utilizes his newfound space power, defeating Ripu, who merges into the vastness of space. With his space power, Kalki ushers in the era of Navayuga.

#### Script

(Opening shot of fight)

Like he has destroyed our kingdom, our people, our king  
Ripu is intent on destroying the entire world.

The Prophecy has chosen you  
Are you ready ?

Remember Under our training,  
you have mastered the powers of  
Earth  
Water  
Fire  
Air  
Besides these  
You have to master Space on your own to defeat Ripu

(Kalki mastering Space and conquer Ripu )  
And the world will breathe again into Navayuga‘

## Cinematic Game trailer stages :

### ACT 1:

In an electrifying clash, Kalki confronts the formidable Ripu.

### ACT 2:

Exploring the devastating aftermath of Ripu's actions on King Dharma's kingdom and its people, along with the revelation of the prophecy and the significance of the icon on Kalki's chest. Returning to the battlefield, Ripu launches an unrelenting assault, fueling Kalki's curiosity and determination. Drawing upon the Earth stone under Guru Prithvi's training, the Water Rings under Guru Toyam's guidance, the Fire Chakra bestowed by Guru Jwala, and the Binding ornamented ring from Guru Pawan, Kalki wields a formidable weapon. However, despite employing the weapon against Ripu, Kalki fails to defeat him and suffers a severe defeat.

### ACT 3:

In a trance-like state, Kalki finds himself in a sacred realm where he encounters a statue of Shiva. Seeking guidance, he fervently implores Shiva, who awakens and bestows upon Kalki the power of space. Revitalized by this newfound power, Kalki rises and triumphs over Ripu, causing Ripu to merge into the boundless expanse of space. As an additional revelation, a celestial horse emerges, unveiling the legendary status of Kalki and heralding the advent of Navayuga, the dawn of a new era. Nevertheless, the journey is far from complete, as the world stands poised at the threshold of this transformative phase.

## 4. Game Play Stages

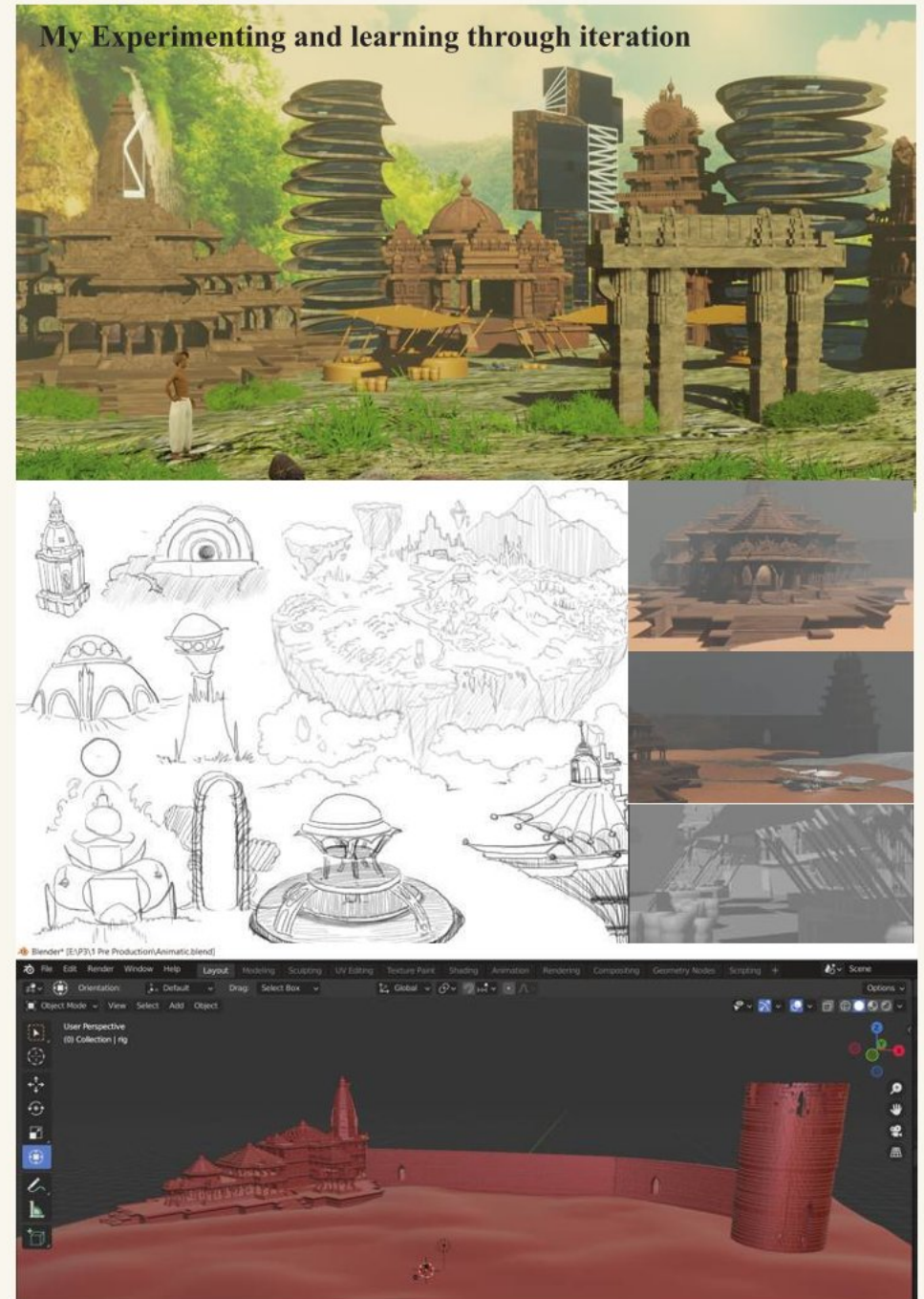
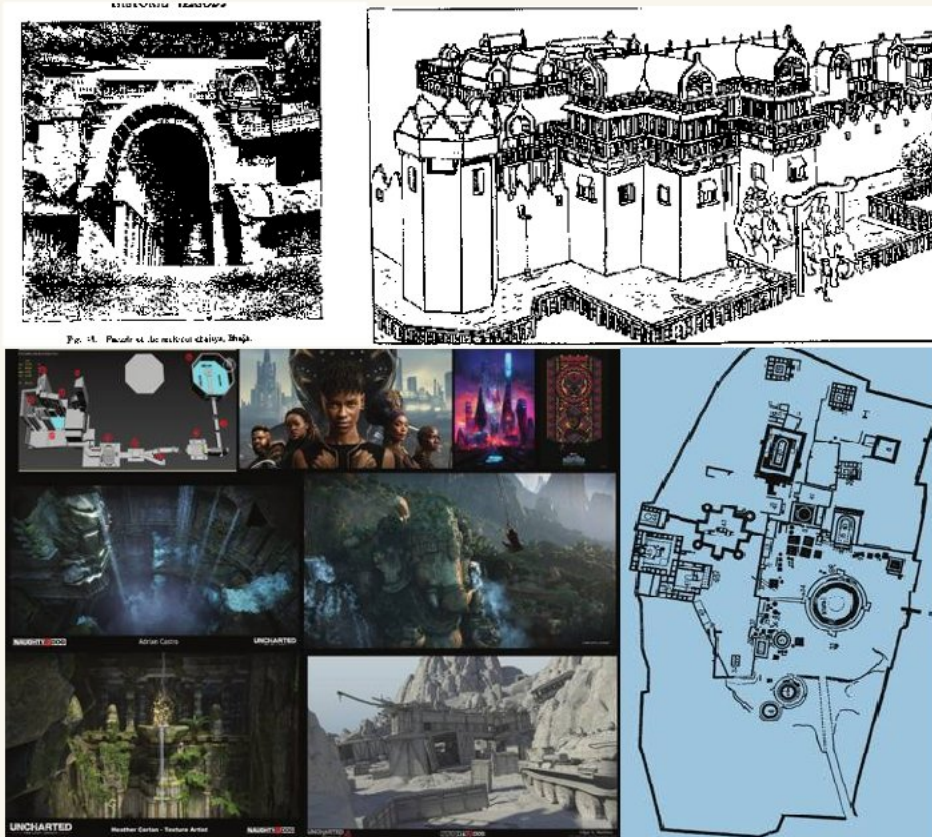
Sr.	Story	Game Play	Game Play	Rules
1	King Dharma ruling Kingdom of Kalyuga	Entering into the Gateway of Kalyuga and going through the view of the kingdom around the player.	Intro	Every level consists of collectible and one task for bonus but the player has to maintain his blood level.
2	Demon Ripu came through the body of corrupted people.	From the player's right side view Ripu comes by passing through people.	Intro	Different food items and plants will help him to increase blood level.
3	Ripu Captures the King Dharma by sealing his eyes.	Player sees Dharma's eye sealed by the evil energy.	Intro	Players ask to place an energy ball at the statue of
4	Kings best warrior saw this and decided not to react but to make his son able to defeat.	Dharma in front of the kingdom putting a crown on his head and we see and hear the person next to the viewer ,the warrior, talking about his son. Pop up Uv massage to follow a warrior.	Moving towards 1st level.	At every training stage a warrior will come and guide him.
5	Finding a marked person. Chosen sole according to prophecy.	Gates entered the village area and a. Player asks to find marked person	Level 1 instruction.	Player find in mirror that he/she himself is chosen sole and get name Kalki.
6	Earth world. Player as a kalki asks to find guru Prithvi	Player is into Earth Level. Throwing stones, Gathering energy of flowers, animals by giving them food and make them as his collection of living beings ( bonus if he make any animal as friend )	Level 1	
7	Water energy. Guru Toyam introduced himself to kalki.	In the water world a player asks to dive deep and gain points by collecting sea cells, sea plants. Bonus if the player can ride on big fish.	Level 2	
8	Fire energy. Guru Jewala kalki finds after fulfilling water energy	A Player asks to gather earth energy by dragging and merging different moving chakras at center chakra.	Level 3	
9	Air energy. Guru Pawan with storms comes to Kalki.	A player asks to gather the energy of earth . water, fire which makes him reach at air level. Bonus if able to fly on an eagle kinda big bird.	Level 4	
10.	Space energy	He asks to set a stone in the air and through which he is supposed to swing, But he can't.	Level 5	
11	Ripu came forward and asked for a fight. And with his evil energy Dragged kalki to his world	Kalki in a ground of Ripu. It's a space world. It's a barren land where kalki might die if he falls down. He followed a path through gems. He gathers all 4 energy and this time able to swing on asteroids. Through this he reaches a point where he lands in Ripu's area.	Level 6	

12	Ripu started to fight with his different personality.	Player going through the route and notices something is coming towards him. It's Ripu's evil personality. He fights with one and moves forward.	Level 6	
13	kalki defeat 5 personality except one	Player fought with 4 different Ripus and reached the center of Ripu's world.	Level 6	
14	Ripu with his Maya energy is able defeat Kalki but Kalki is still alive.	Ripu through his maya energy makes kalki fall under the center pithole.		Words of worrier heard by kalki and he did what he said through which he get energy ball
15	Kalki put space energy to center area and made Ripu energy less	A player asks to put an energy ball at the center of Ripu's world. So that that ball gets active	Level 6	
16	Kalki defeats Ripu	Player asks to throw ripu from the world in space. He also asks to get into an energy space ball so that he gets back to the kingdom and his father.	End scene/leve	
17	King dharma starts Navayuga with kalki	Players ask to hoist the flag of Navayuga.	End	miro

This is my first attempt at creating a VR game to explore the five elements of nature and delve into the roots. I'm learning coding in C# language within Unity and also working on a GDD (Game Design Document) to allow for future expansion of this idea. The table shown here represents my efforts to think more broadly and unlock the doors of imagination. I am grateful to Prof. Sumant Rao for guiding me through this enriching experience.

## 5. Initial Concept

Despite my attempts, I was unable to successfully merge Indian culture with futuristic technology in creating my own world.



Drawing from a book named Archological survey of Ancient India, diverse game screenshots, and an extensive array of references, these curated images capture influences from my exploration of ancient Indian structures and gameplay in titles such as Uncharted: The Lost Legacy, The Last of Us, Assassin's Creed, along with my in-depth study of movies like Wakanda and Marvel films for added inspiration.

## Concept developing for VR Game.....

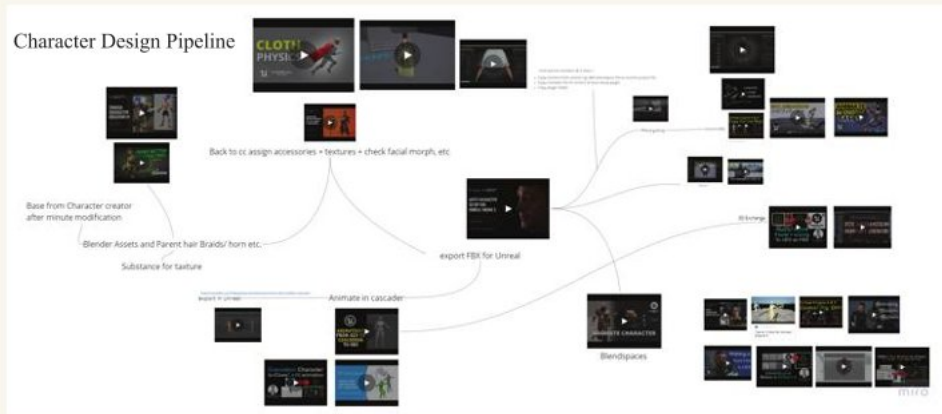


After thoroughly exploring and developing my concept idea from initial sketches on paper to working with Blender and VR, I began the process of translating my concept into the Unreal Engine. This allowed me to further explore the potential and possibilities of my idea.



## 6. Solving Problems: Driving Technical Growth

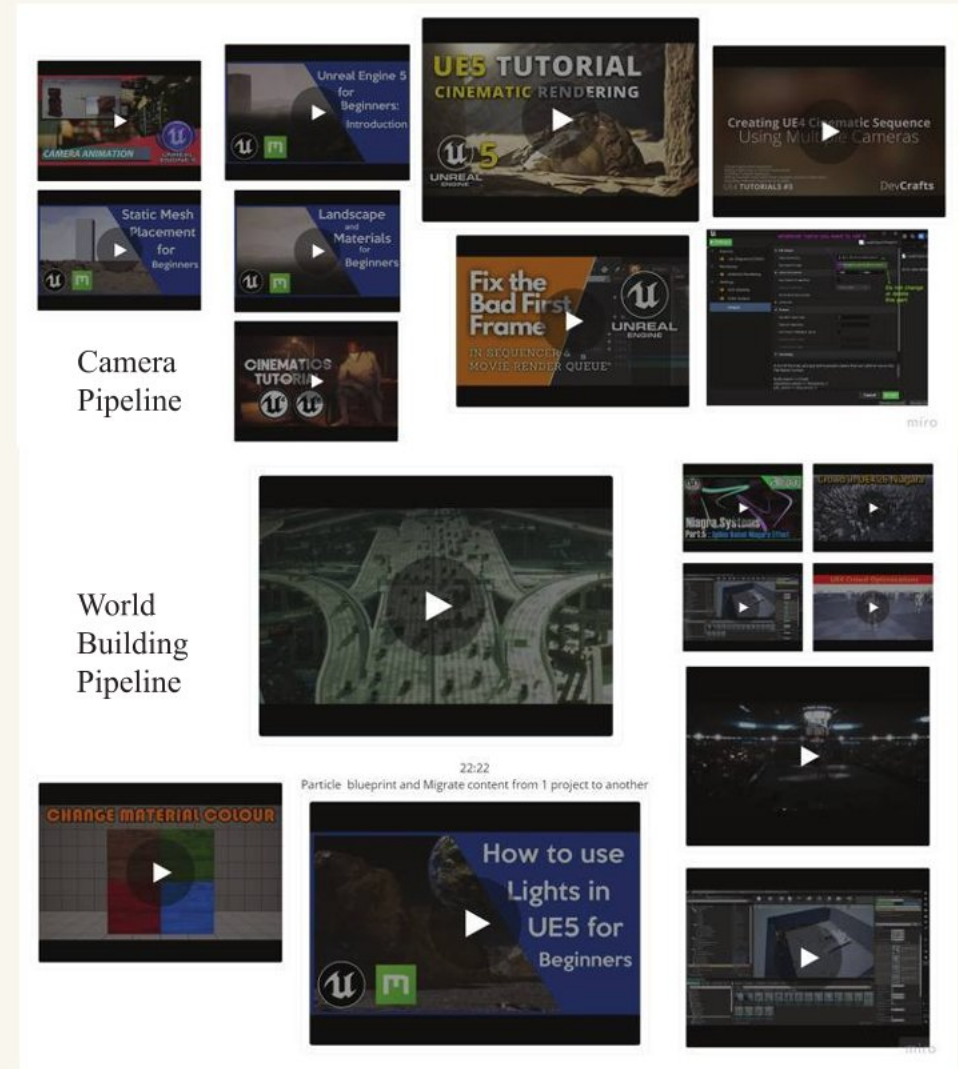
After successfully tackling C# in Unity for VR game development, an exciting opportunity arose to work with Unreal Engine. However, I encountered a new set of technical challenges in the form of integrating my assets with the correct materials and animations.



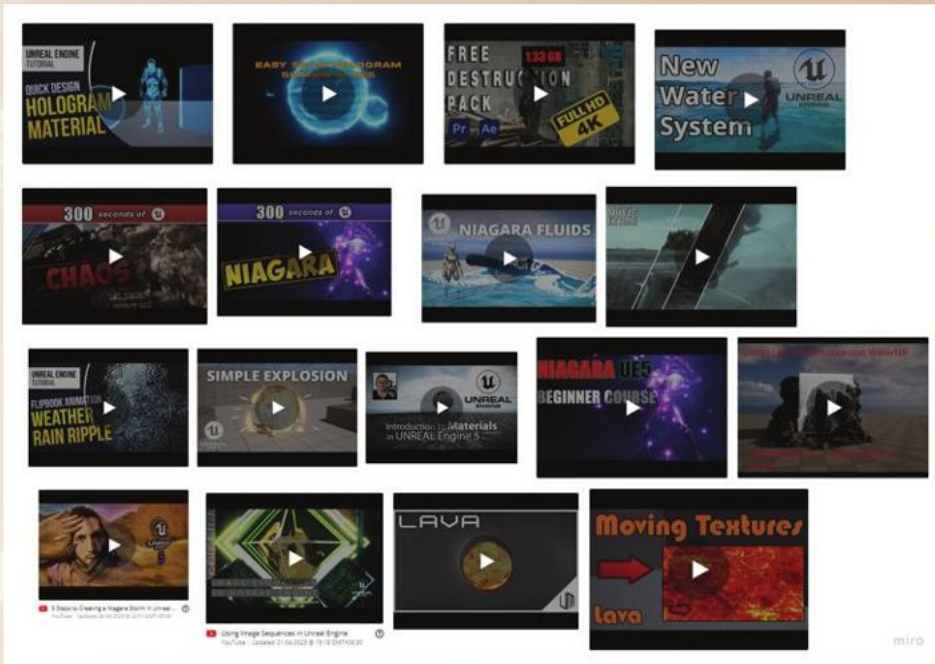
Initially, I faced challenges with character import and export during my transition to Unreal Engine. With prior knowledge of optimized 3D workflows, I sought a seamless method for working between different software. Guided by Prof. Sumant Rao, I acquired licensed versions of Character Creator and iClone, enabling me to optimize meshes and customize Blender assets. However, I also needed to address rigging and animation based on the Unreal Engine rig. Utilizing the Character 3D Exchange, I ensured accurate bone placement.

But that was only halfway. Creating a Control Rig in Unreal Engine required a comprehensive understanding of bones and blueprint mapping. To simplify the process, I developed my own pipeline: Blender to Character Creator to iClone to 3D Exchange, before importing into Unreal Engine. This customized pipeline streamlines the character creation workflow.

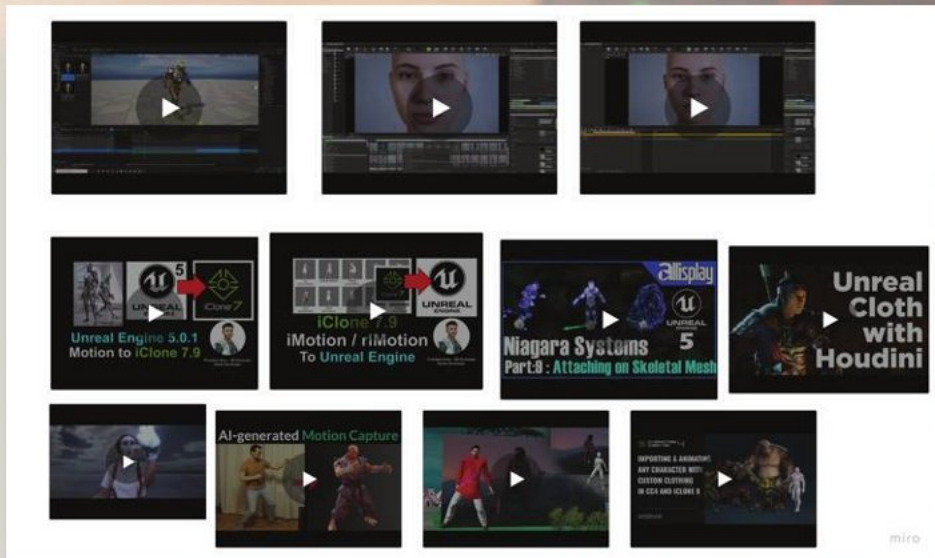
In this manner, I developed a comprehensive pipeline for camera and world building. The camera pipeline demanded a deep understanding of various lenses and their impact on rendering adjustments and frame rates. As for world building, it involved thorough exploration of Quixel Bridge assets and making strategic decisions on effectively incorporating custom models while maintaining a balance between quality and the use of free assets.



## Visual Effects Pipeline



## Character and Crowd Animation





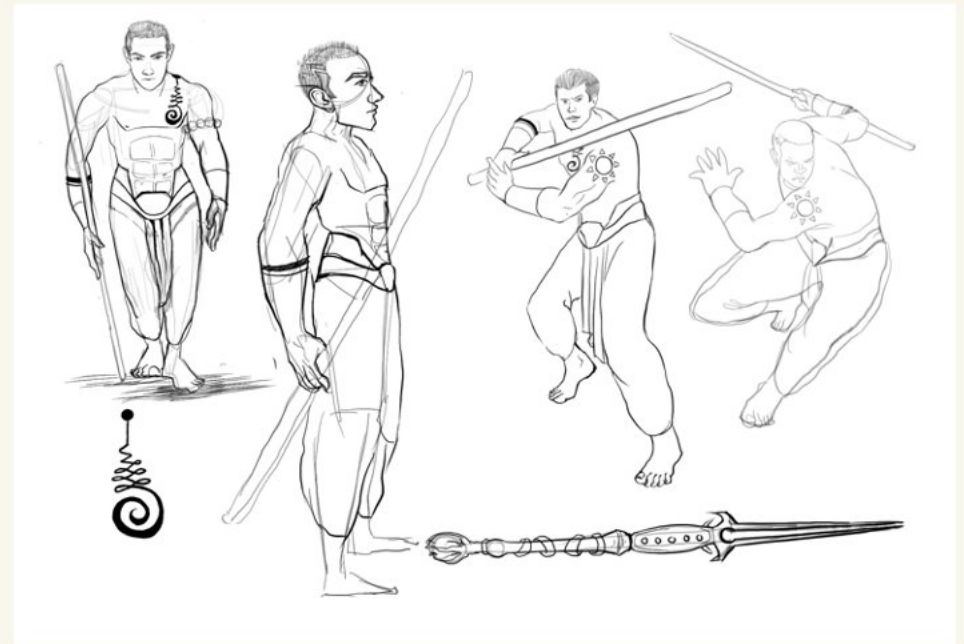


After iterating on the character and incorporating it into storyboards, it looked appealing. However, it lacked game-friendly attributes and was primarily Indian in nature. The sketches below represent the iterations made to create the final characters with a balance of both Indian influences and game-friendly characteristics.

Ripu - Antagonist



Kalki - Protagonist



Gurus



# KALKI

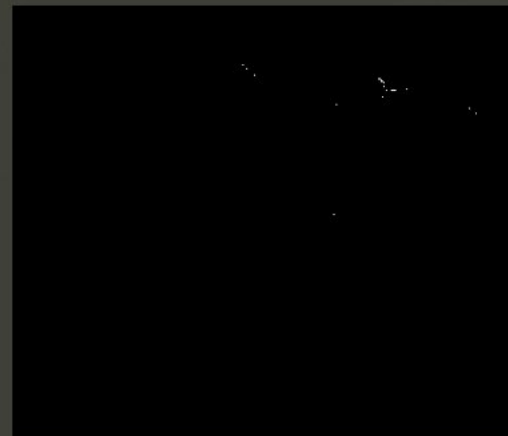


In his young adulthood Kalki, accepting his soul identity, grows stronger yet remains innocent. His red hair sets him apart, especially in his battle against Ripu. "Zero" marks the start of a game series, progressing from this concept.



# RIPU

The antagonist possesses four powerful energy abilities, making him unmatched in strength. However, I wanted to portray this power through Ripu's eyes. He appears ordinary but with subtle gaming characteristics that hint at his status as a formidable adversary. After numerous experiments, I have arrived at the final output that effectively captures this essence. I made efforts to modify every aspect within my reach.





# GURU PRITHVI

Guru Prithvi possesses a strong and robust physique, which reflects his ability to harness the energy of the earth. The green gems embedded in his headband symbolize the color of the earth, and I also ensured that his eye color resembled this shade. To depict his connection to the earth's power, I incorporated a hexagon tattoo as a visual representation. Additionally, I dressed him in a leather dhoti and a red cloth with a belt, emphasizing his resilient and formidable nature. His heavy neck lace further serves as a symbol of his connection with royalty, reinforcing his regal stature and authority.



# GURU TOYAM

Guru Toyam embodies water's essence with intricate design choices, symbolizing its fluidity. Materials resembling flowing water were carefully chosen for his jewelry, tattoo, and dhoti. His graceful demeanor and elegant headgear further emphasize his connection to water, showcasing more than just masculine strength. This holistic approach beautifully captures Guru Toyam's profound relationship with the element.



# GURU JWALA

Guru Jwala, a female character, is depicted with a fiery and energetic disposition rather than traditional feminine traits. To convey her dynamic nature, I designed her attire using tough, iron-like materials and adorned her with a tattoo of fire. In place of feminine makeup, I opted for elegant red lines, symbolizing her passion and intensity. The addition of a red stone accentuates her underlying anger. This portrayal captures Guru Jwala's powerful presence and embodies the essence of fire in her appearance.



## GURU PAWAN

Guru Pawan possesses the ability to control air energy, which is reflected in his appearance. His hair resembles the aftermath of a powerful storm, wild and untamed. To symbolize his mastery over windy obstacles, he wears an upper bronze armband that acts as a defense. A tattoo depicting the flow of air runs parallel to these elements. These intricately crafted details are complemented by his choice of a gray dhoti, adding another layer to the portrayal, reminiscent of the dusty metaphors associated with air. Together, these elements create a vivid depiction of Guru Pawan's affinity with air energy.



# KING DHARMA

King Dharma, known for his unwavering governance and adherence to rules, emanates an unmistakable regal presence. His face, etched with pride and marked by the traces of countless challenges, reflects the burdens he has borne throughout his reign. Despite his awareness of the prophecy, King Dharma unwaveringly maintains his faith in the guru and holds onto hope for divine grace. These essential characteristics have been thoughtfully integrated into his depiction, capturing the depth and complexity of his character.



# CROWD

To create the crowd scene, it is essential to have characters with an Indian appearance that can be generated dynamically. I have thoroughly examined the blueprint for character spawning, but it is crucial for my crowd characters to react at specific moments within the scene. While I have designed numerous characters, only a select few will be visible on camera. The creative decisions regarding attire such as saree, dhoti, and paghdi are essential to maintain authenticity and enrich the overall creative vision of the scene.

In addition, I have carefully designed the crowd to encompass a diverse range of ages, sizes, and skin tones, ensuring a comprehensive representation of the entire spectrum of a real-life crowd.



# SHIVA

Shiva, often regarded as the destroyer, plays a pivotal role in the story of Kalki. In Chapter Zero, I wanted Shiva to serve as a significant milestone, representing the gateway to an imaginary world. Furthermore, Kalki not only requires Shiva's assistance but also relies on the support of the subsequent seven Chieanchivies, as outlined in the foundational aspects of the narrative.

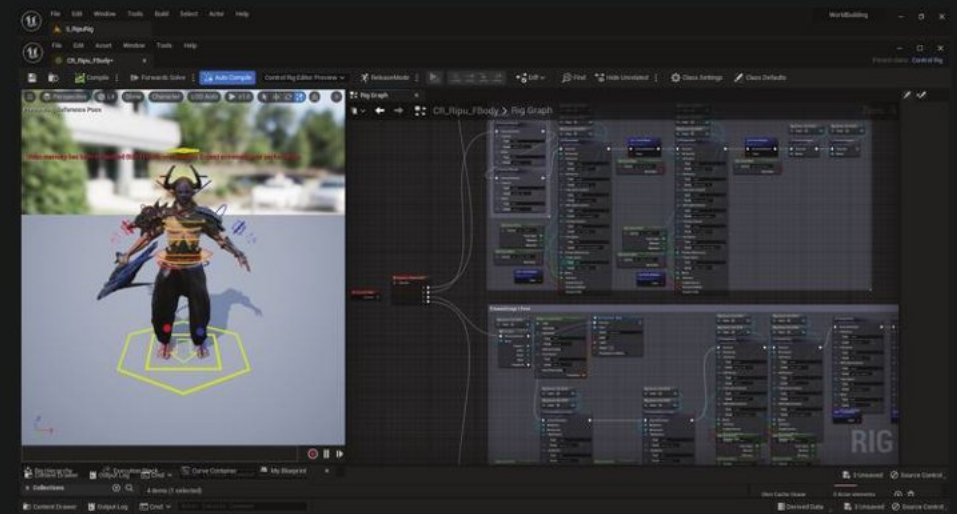
Indeed, that is precisely why I chose to depict Shiva in a fully colored version, utilizing a mud texture to capture the visual imagery that people commonly associate with the deity.

The tattoo on Shiva is a fusion of the traditional Tripunda symbol and contemporary yet folk-inspired geometric patterns.



## 8. Technical Resolution

The journey began in Blender, where I initiated the process of crafting my own mesh and constructing a rig. Although I attempted to enhance my workflow using addons, the desired outcome remained elusive.



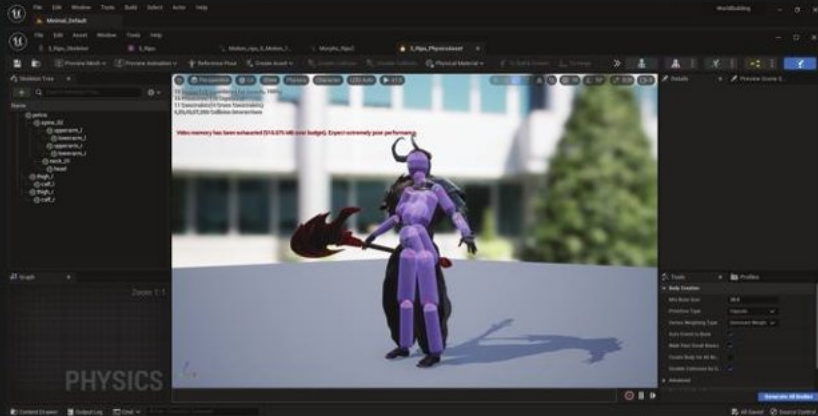
Despite creating a control rig, the results fell short of my expectations. Consequently, I transitioned to Unreal Engine, only to find that the skeleton provided by the character creator was incompatible with Unreal Engine's standard mannequin bone structure. To overcome this obstacle, I proceeded to retarget the mannequin skeleton to match my character, but achieving precise results proved challenging. Ultimately, I resolved to develop my own blueprint in order to construct a customized control rig.



ABP - Animation Blue Print



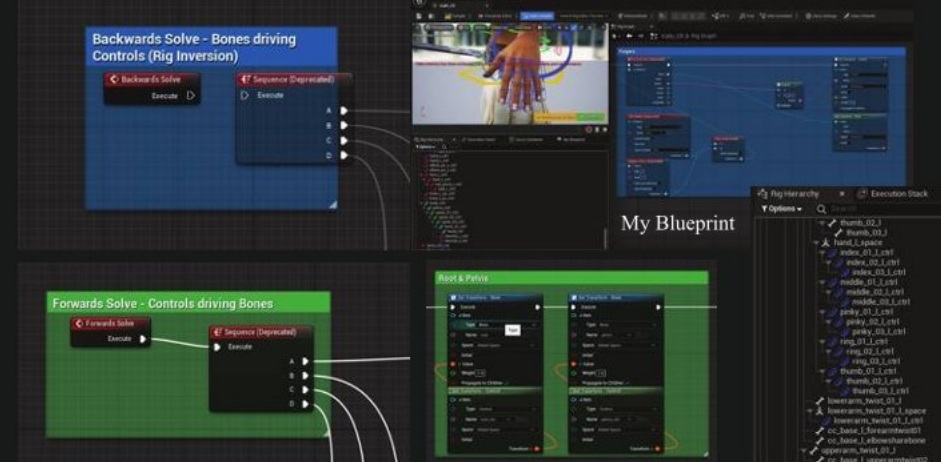
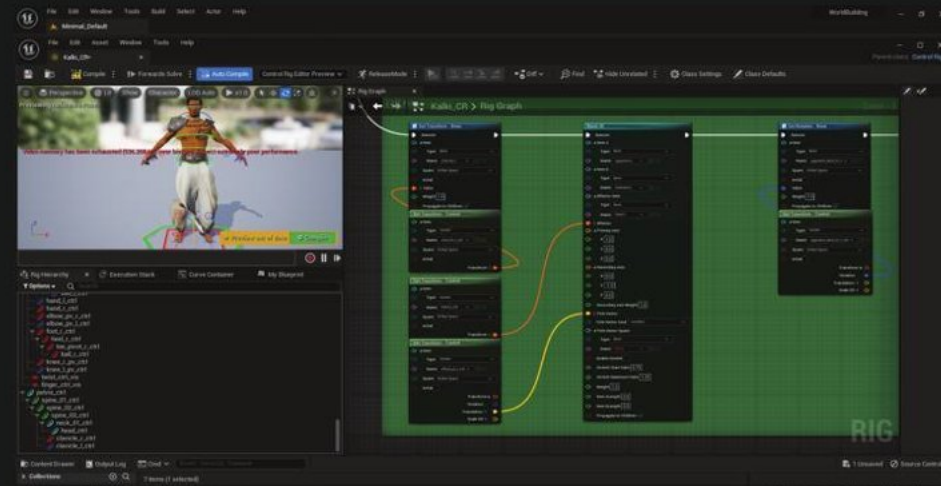
Physics Body



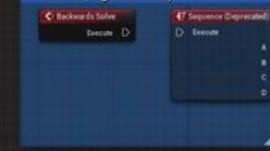
Asset Creation for Cloth simulation



Voilà, I have accomplished it.



Backwards Solve - Bones driving Controls (Rig Inversion)



Forwards Solve - Controls driving Bones



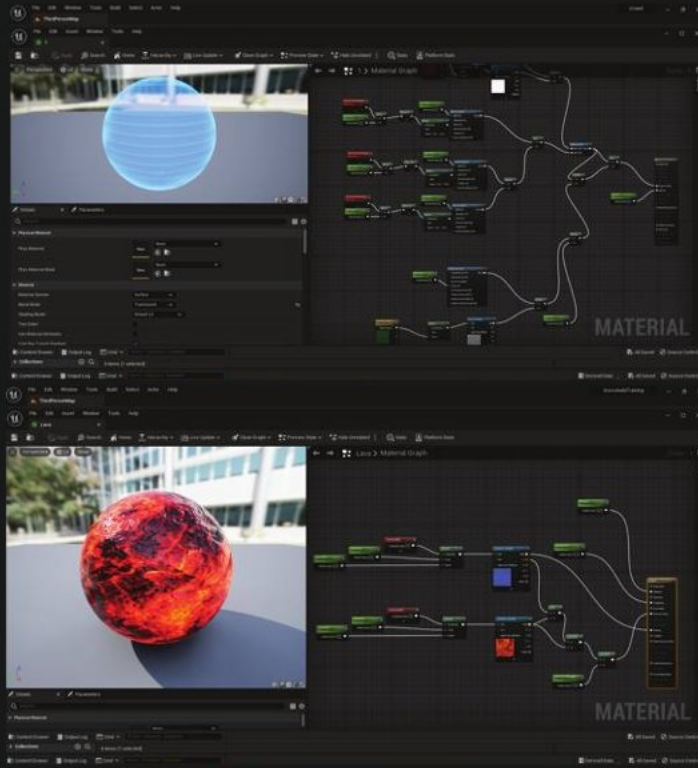
My Blueprint



Root & Pelvis



I created various materials within Unreal Engine, including hologram effects, dynamic lava textures, and transparent materials.



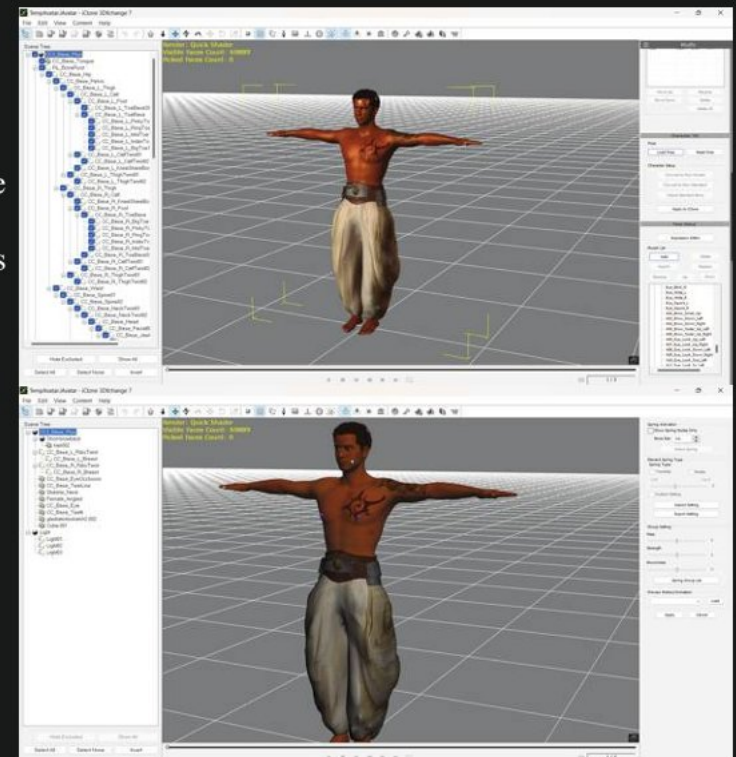
Working with character creation tools, weight painting, and importing models from Blender requires both time and a thorough understanding of the process.



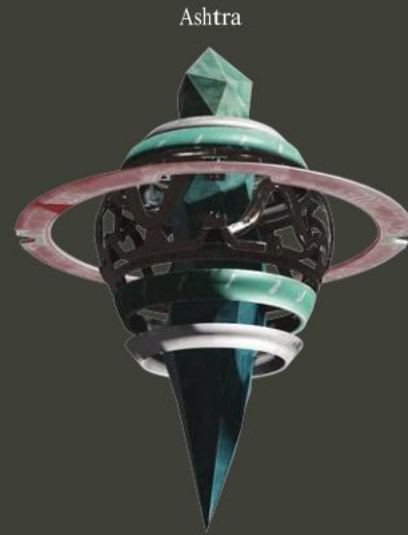
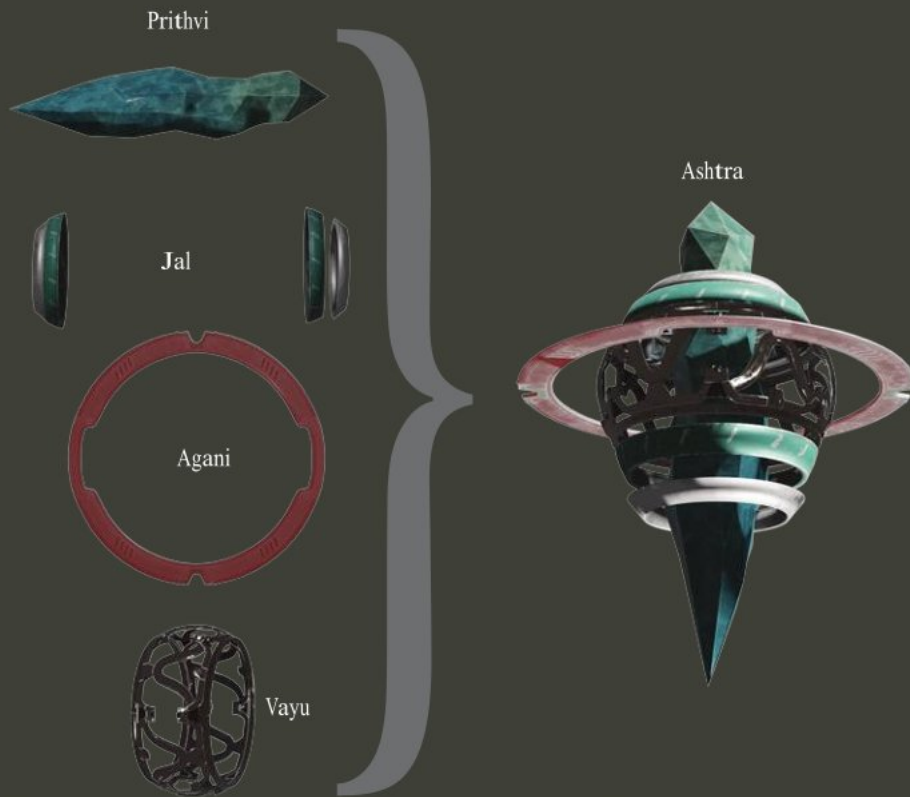
I-Clone offers animation features, but mastering specific movements, like eye animation, required multiple attempts and learning from failures.



Working with 3D Exchange is relatively straightforward, but its real value lies in its ability to retarget bones to match the structure of Unreal Engine.



## 9. Weapon Design



There are five elements known as earth, water, fire, air, and space. In order to access the energies of these elements, a portal is opened by four enlightened gurus. However, only the soul prophesied as Kalki has the capability to make this possible. The earth stone possesses a moving texture that reflects life on Earth, while the water element is characterized by three rings that demonstrate rhythmic movement and control over bodies of water. The fire element resembles Vishnu's divine Chakra, and the air weapon is composed of a shiny articulated ring. When combined, these elements form a powerful astra that can defeat the formidable Ripu.

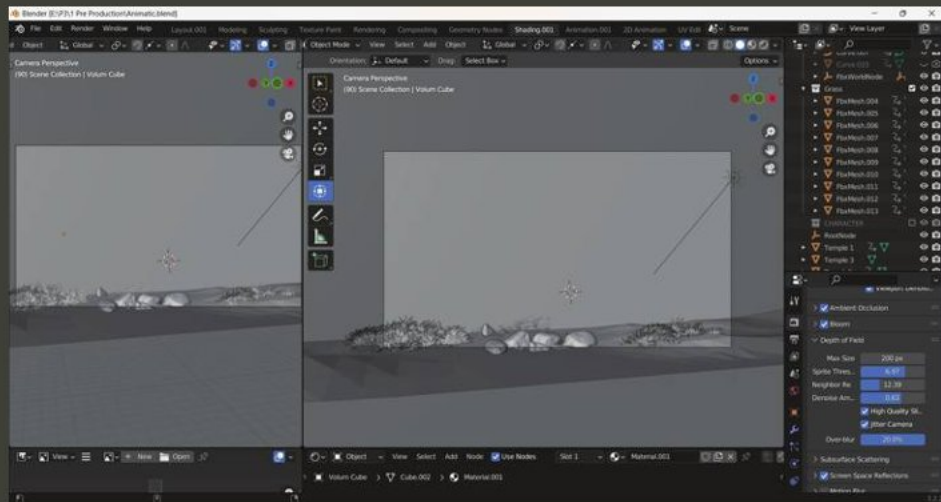




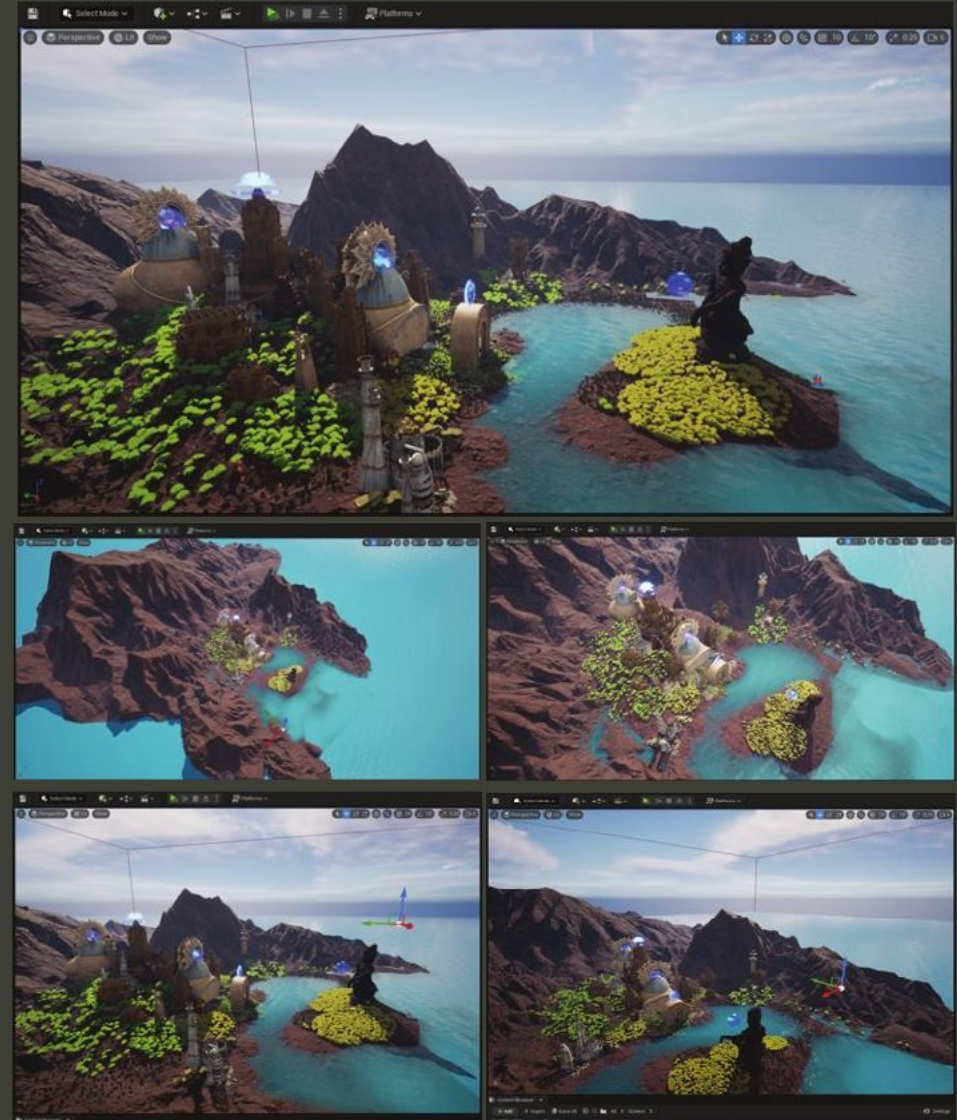
Considering the concept of a futuristic world with holograms and advanced technology, I opted for a sword that features a luminous head and incorporates a subtle sci-fi mechanism.

# 10. Environment Design

I have explored seven different environments within Unreal Engine, utilizing Quick Cell technology and collaborating with my models. The goal was to create immersive and captivating environments that enable camera movement and offer creative opportunities for animation and art direction.



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# FIGHT ENVIRONMENT

Starting with a conventional building structure, my goal was to merge sci-fi and Indian historical architecture seamlessly. Guided by professors, I explored Unreal Engine and designed my first environment. It became the backdrop for an intense fight scene, featuring a dynamic transition from land to space and back.



# EARTH ENERGY WORLD

Different Gurus possess knowledge about distinct areas where various energy sources can be found. The Earth's energy, for instance, is concentrated in an area enclosed by a railing adorned with statues. This particular location is abundant with blooming flowers, and I have actively participated in the remarkable phenomenon of trees in motion.

The Earth is abundant with plants and luminous stones, which initially made the file size heavy. However, thanks to an optimized modeling technique, this world is now efficiently rendered. I've experienced more than ten instances of file crashes, prompting me to start over repeatedly. It taught me the importance of having a suitable model and employing intelligent strategies to manage both the model and environmental details.



# WATER ENERGY WORLD

In the aquatic realm, my primary focus was on the portal and mastering camera motion control to incorporate captivating effects in post-production.



# KINGDOM

I have explored seven different environments within Unreal Engine, utilizing Quick Cell technology and collaborating with my models. The goal was to create immersive and captivating environments that enable camera movement and offer creative opportunities for animation and art direction.



## KING'S PALACE

Here I prioritized texture optimization and mapping for low-polygon models, aiming for exceptional results. Exploring platforms like Sketchfab and CG free models, I learned from creators worldwide, gathering insights on crafting detailed yet efficient models.



## FIRE WORLD

In my fiery realm known as the Fire world, I embarked on an exploration of the magnificent Niagara system. My aim was to meticulously craft an environment that would immerse visitors in the intense heat and the unmistakable presence of stones surrounding them. With a keen eye for detail, I tweaked the blueprint in Unreal Engine to ensure I achieved the desired outcome. Additionally, I experimented with applying a dynamic lava texture to create the illusion of flowing molten rock, adding an extra layer of realism to the experience.



# DAIVA WORLD

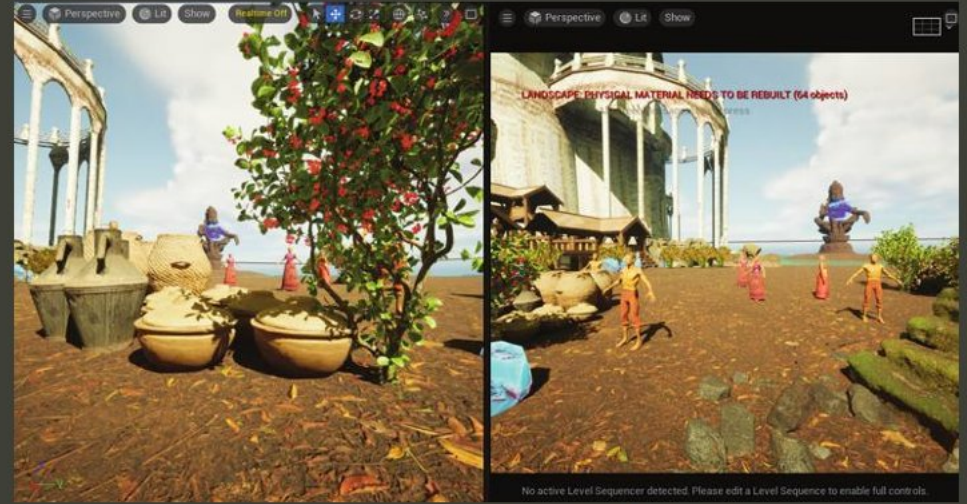
In the realm of Daiva world, Lord Shiva, the destroyer, embarked on a deep meditation known as tapasya. It was during this time that the soul of Kalki, while on his death bed, found its way to this divine realm. Deliberately crafted, Daiva world showcases captivating features such as cascading waterfalls, flourishing lands adorned with exquisite flowers, and symbolic lotus blossoms. The presence of icy mountains adds a touch of sublime beauty to the surroundings. This world is meticulously designed to provide an immersive experience of both divinity and a refreshing cold breeze, as Kalki imparts his teachings to Shiva, seeking to unlock the depths of his cosmic energy.

This world harmoniously blends intricate mandalas, a mud-textured statue of Lord Shiva, and his divine essence, merging seamlessly with the ethereal light and dynamic HDR1 maps. The maps dynamically adapt to captured emotions, enriching the visuals with depth and richness. The result is a mesmerizing portrayal of Shiva as the supreme deity, immersed in a breathtaking ambiance that profoundly resonates with viewers.



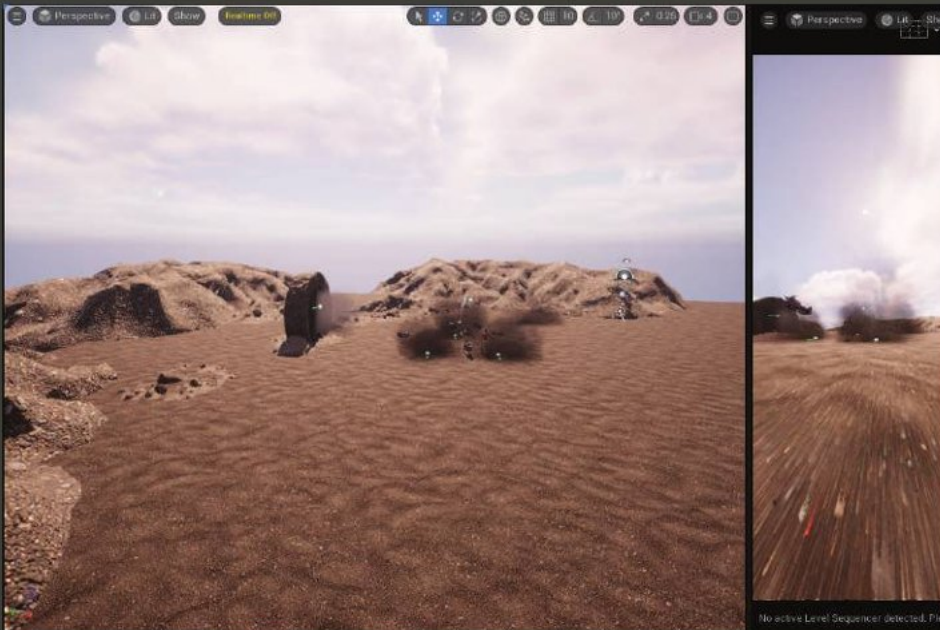
# STREET

"Street in the Kingdom" offers a profound exploration of a bustling street, meticulously adorned with various shops and an awe-inspiring holographic representation of Earth, symbolizing the Kingdom as the heart of the world.



# AIR WORLD

The atmosphere of Air World consists of tornadoes created through the Niagara system and Blender particle animation. Additionally, the sandy terrain moves gradually to enhance the air's dynamic force. Furthermore, the portal incorporates air effects into its design.



# LAST WEAPON

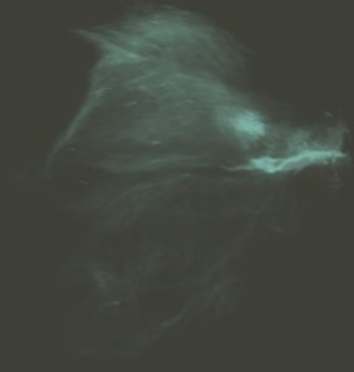
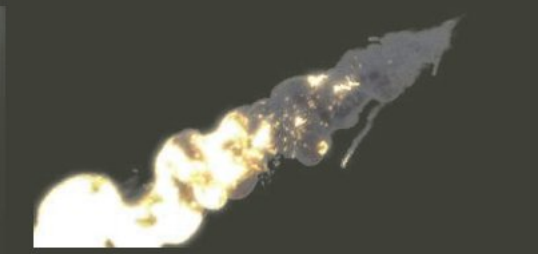
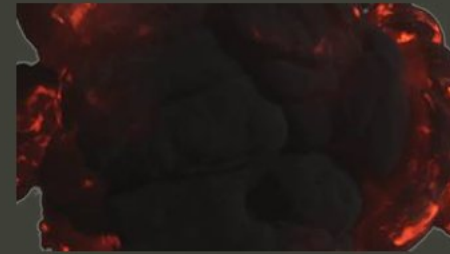
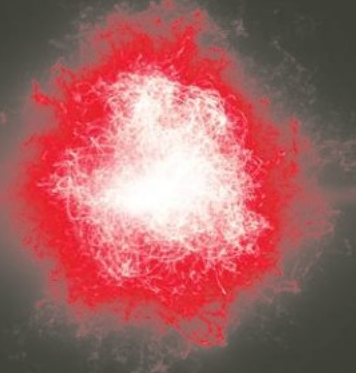
The final weapon world features a barren landscape devoid of any other structures, purposely emphasizing dramatic elements. However, the focus lies on exploring light sources and observing the movement of the Targa texture map to create a captivating visual experience.

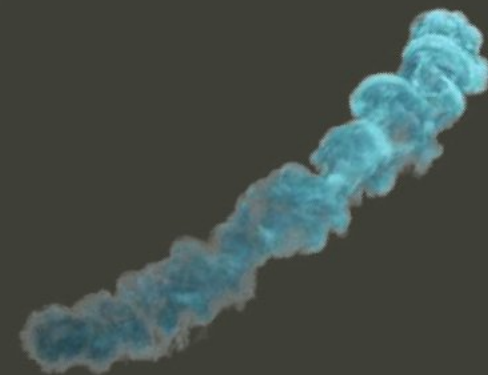
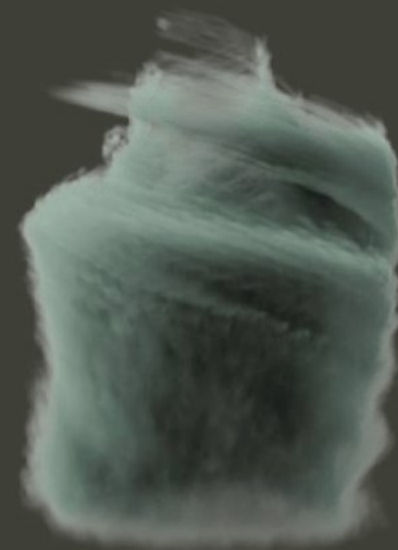
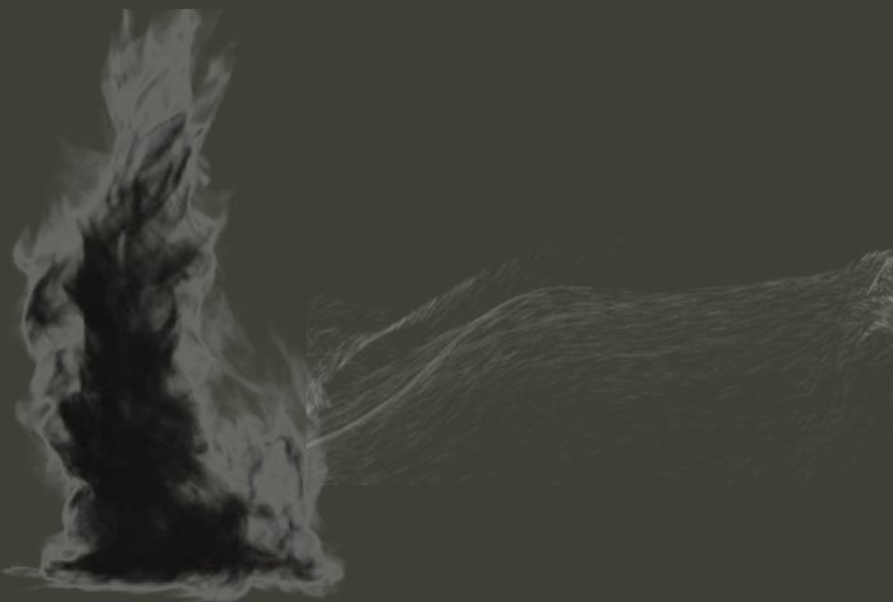
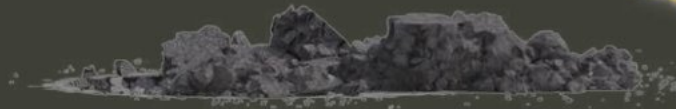


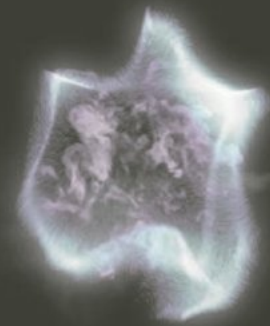
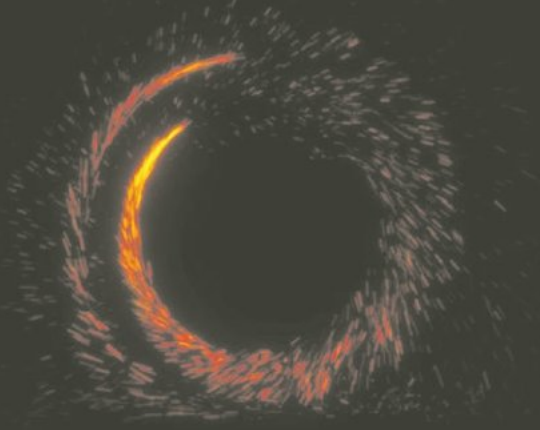
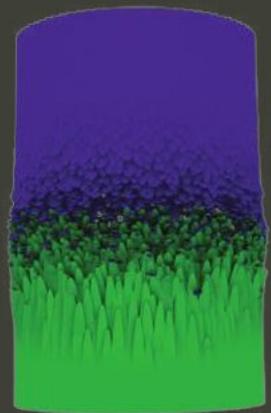
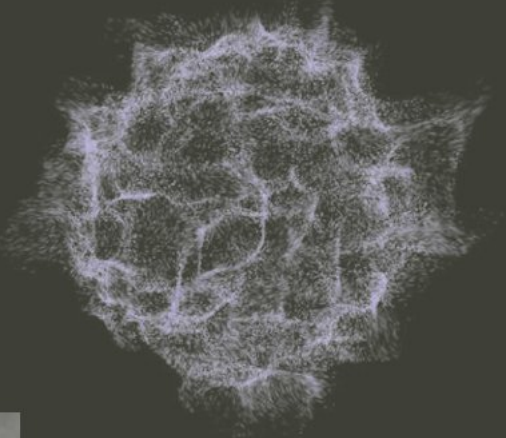
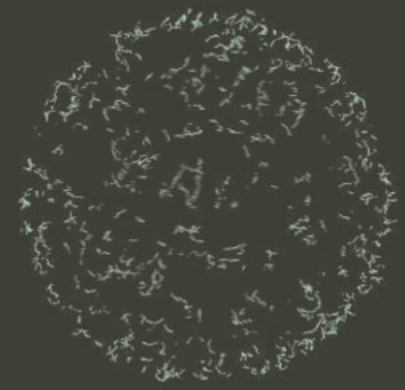
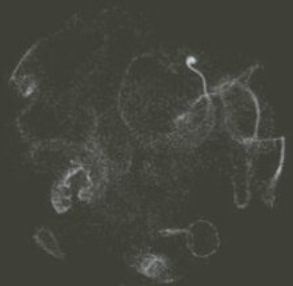
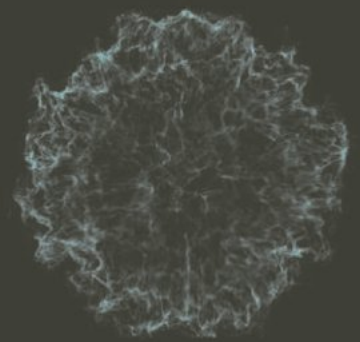
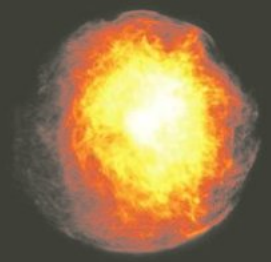
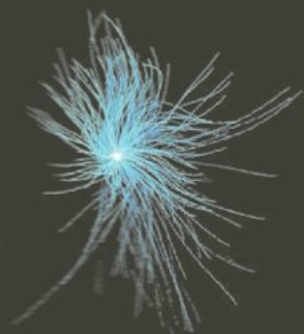
## 11. Visual Effects

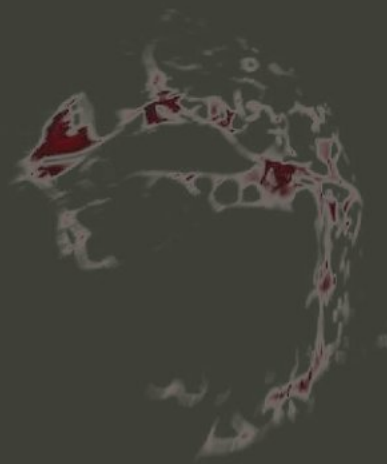
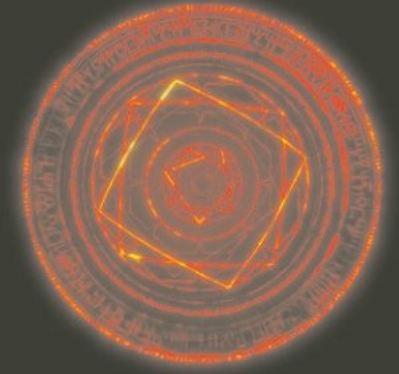
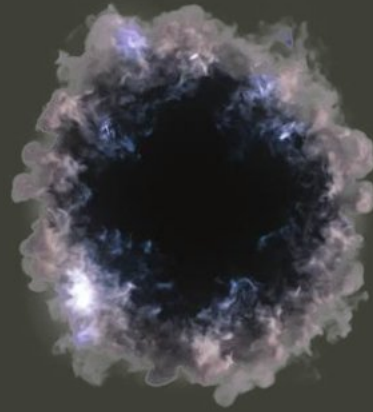
In the beginning, I encountered difficulties when integrating diverse visual effects into the cutscenes of my cinematic game using the Niagara system in Unreal Engine. Nevertheless, I eventually discovered an alternative method whereby I generated the effects in Blender and subsequently merged the resulting PNG sequences during the post-production phase. Moreover, I employed stock effects and successfully implemented them in both Blender and Unreal Engine.

Here are the images comprising a PNG sequence that showcases the various effects I have explored.



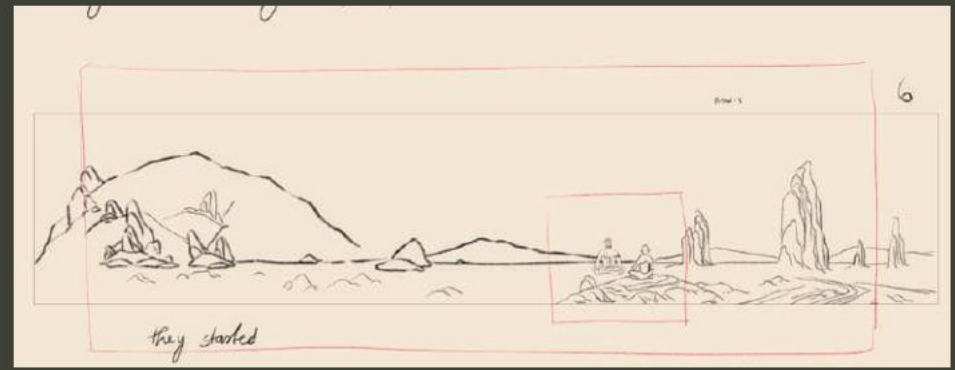
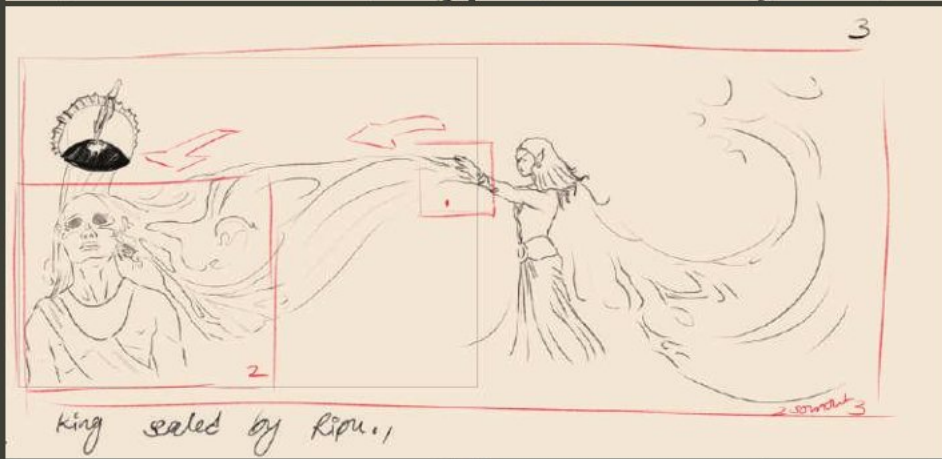


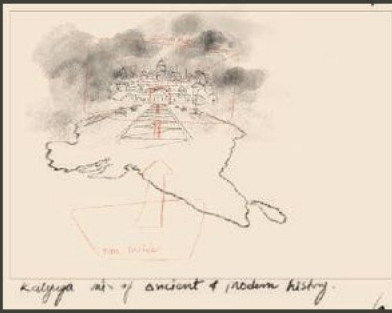




# 12. Story Board

One of the storyboards that was initially rejected ended up serving as the foundation for the final storyboard.

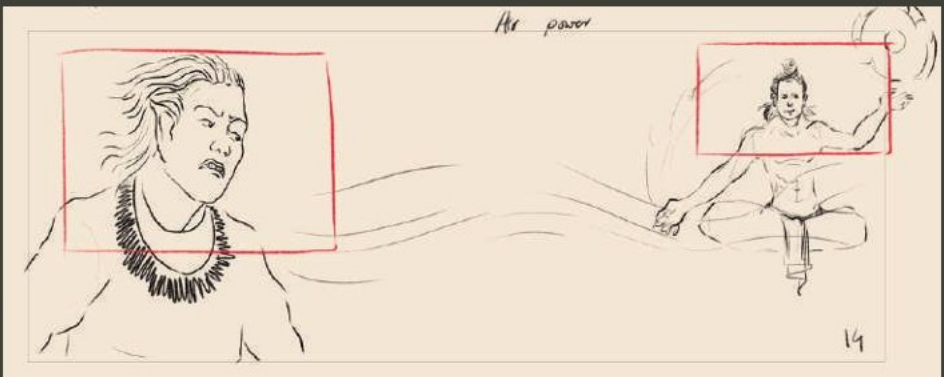




Kalyuga bit of ancient & modern history.

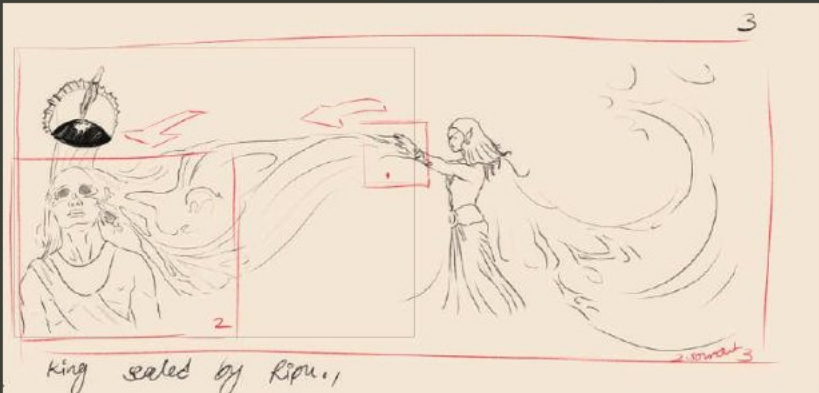


Kalyuga about to end & King abhama trying to help



Air power

14



king sealed by Ripu.,

3



the tree is a symbol of life



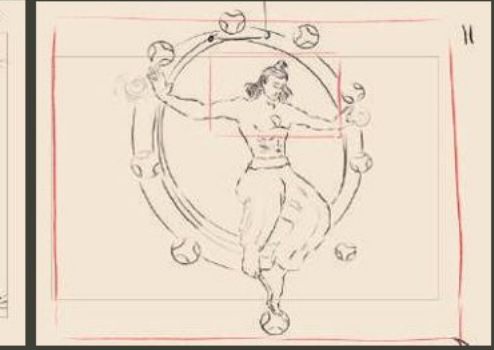
Ripu started ruling Kalyuga



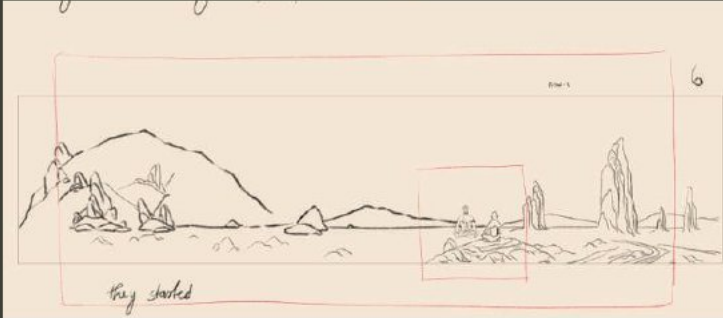
king's warrior get's to know about this



water power



11



they started

6



fire power

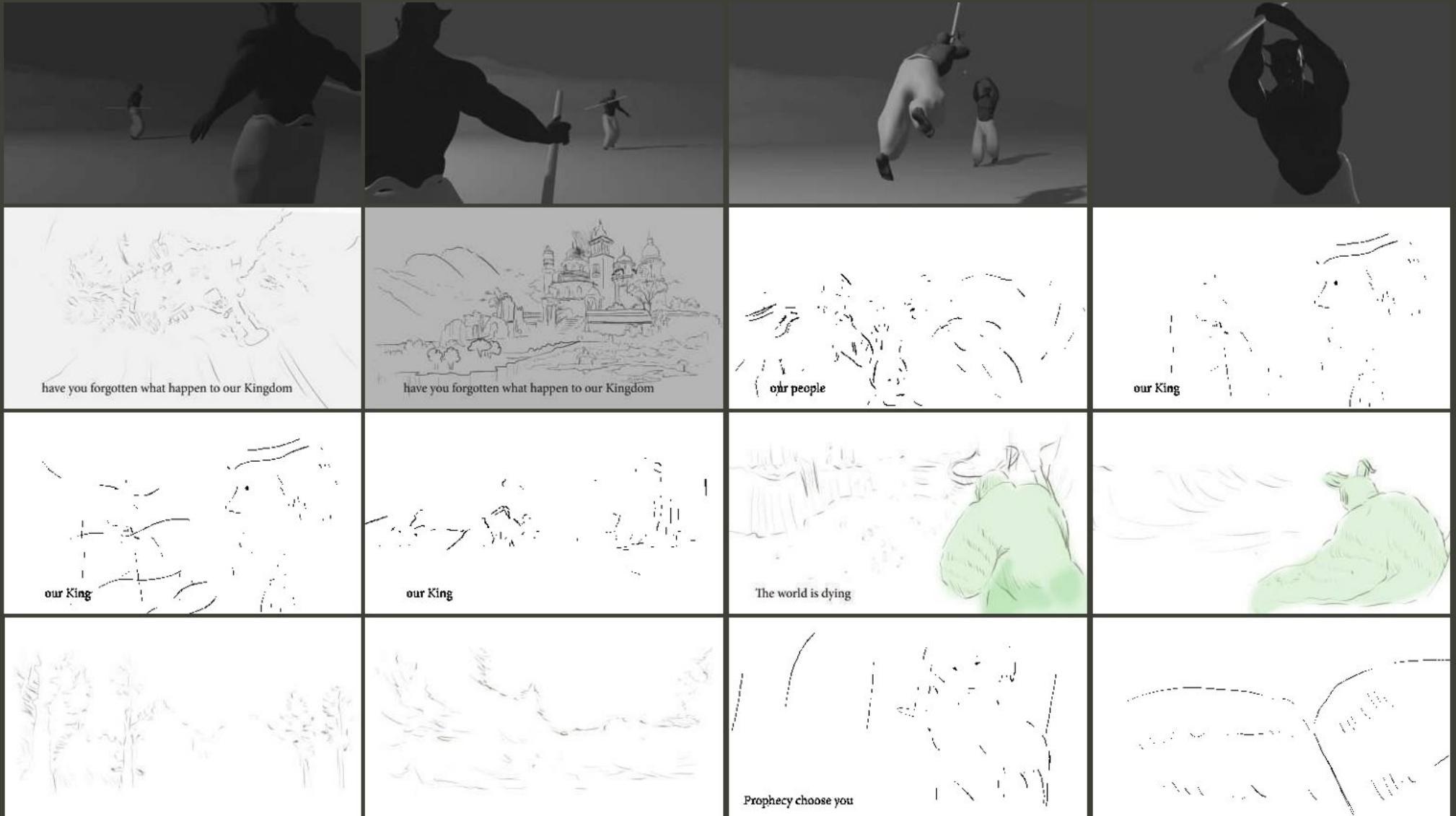


can able to go some ways



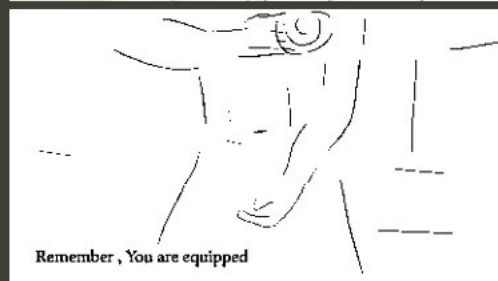
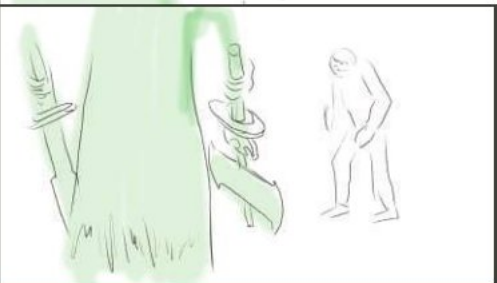
# FINAL STORYBOARD

The final storyboard was completed after going through approximately 9 or 10 iterations of various story ideas. However, it proved challenging to create a narrative that captured the essence of a game trailer while also being suitable as a cut scene within the game.

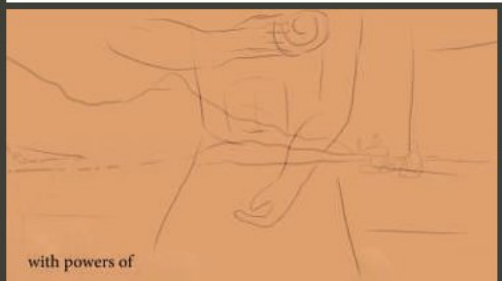




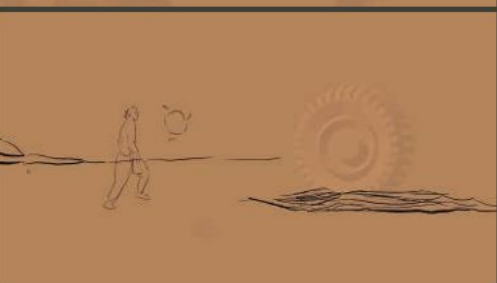
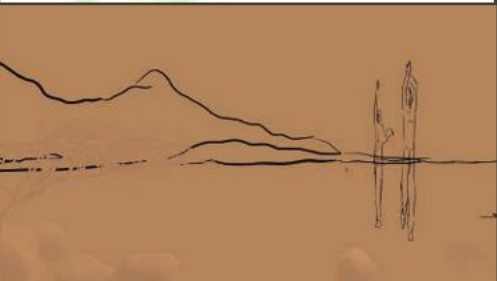
kalki

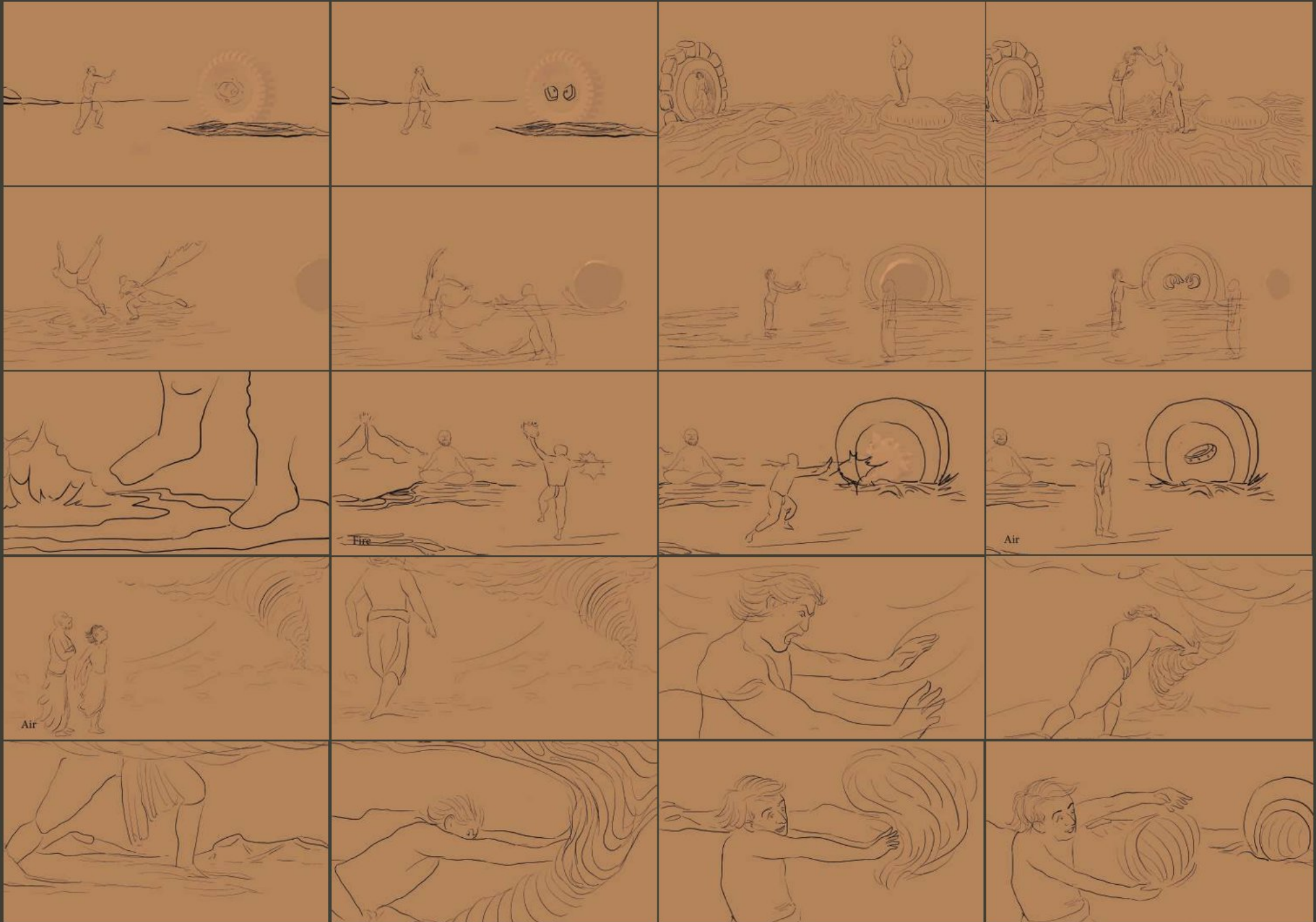


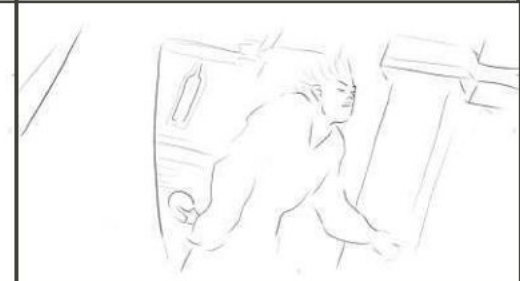
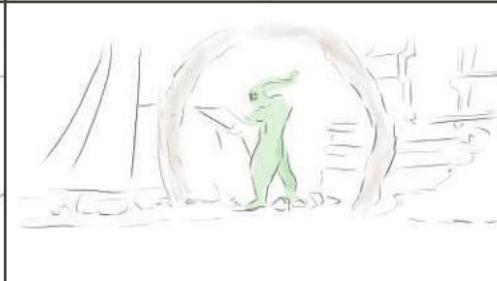
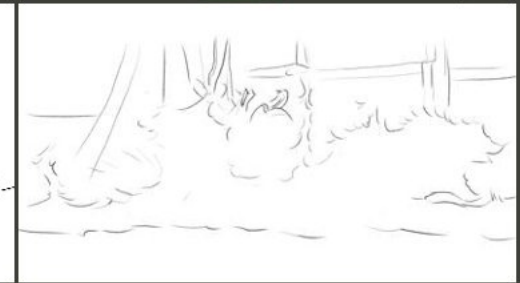
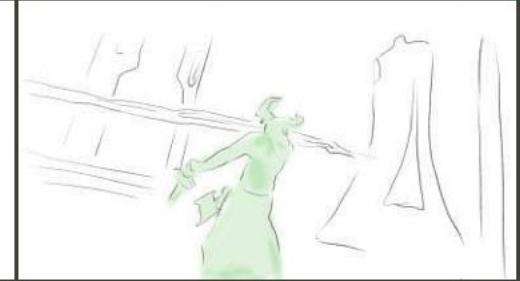
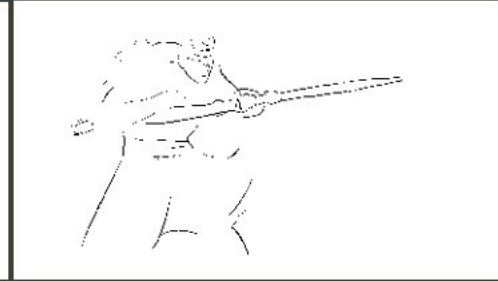
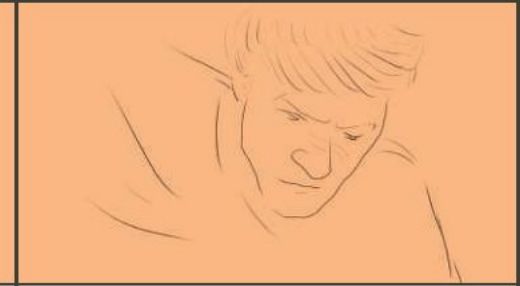
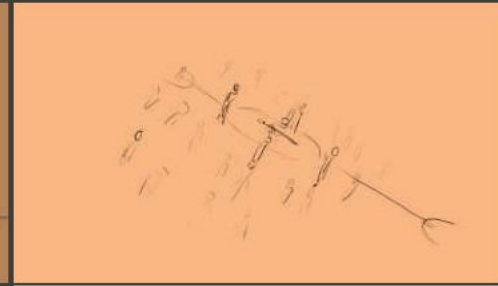
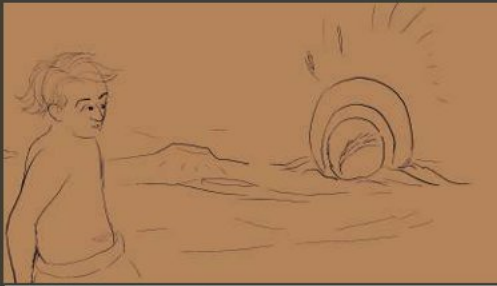
Remember, You are equipped

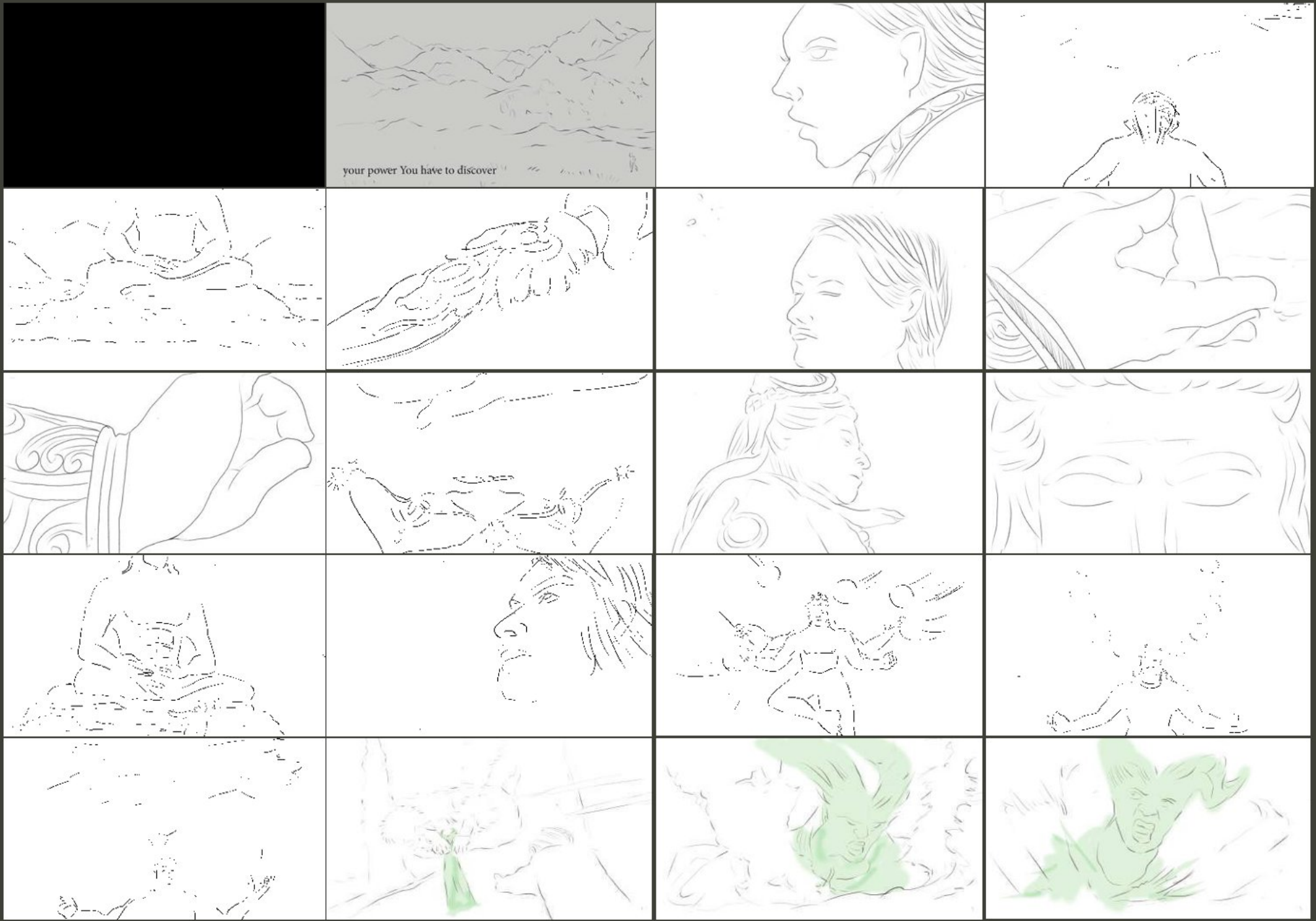


with powers of





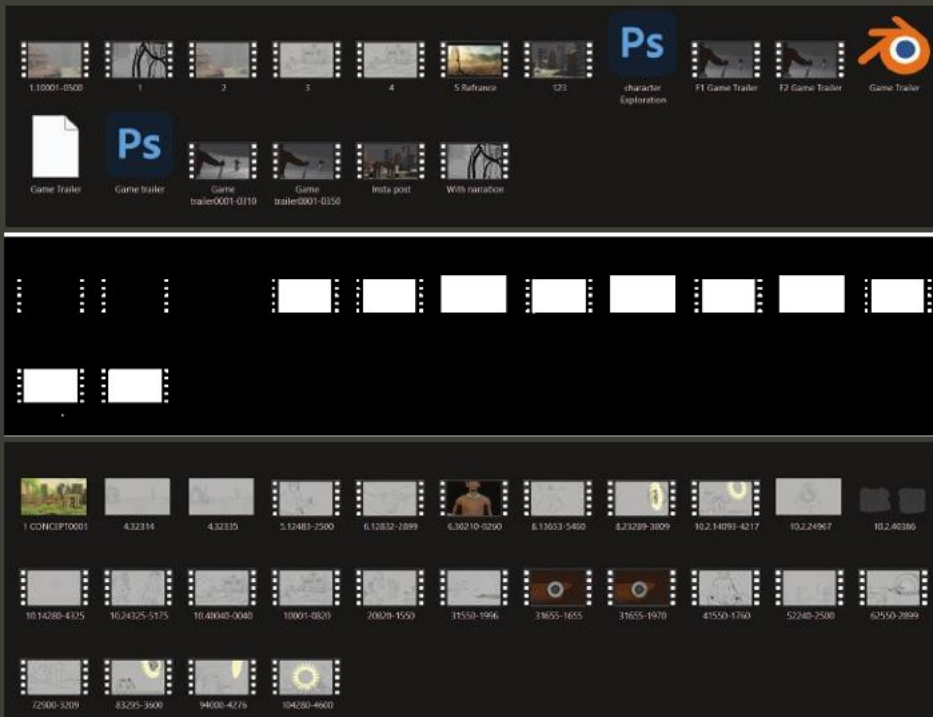






Credit

## 14. Animatic



Following numerous iterations and engaging in discussions with IDC students, faculty members, and game industry professionals through platforms like Instagram, WhatsApp, and LinkedIn, I feel good to present the final animatic, showcased below.

Link



## 14. Sound Design

The journey of sound design commenced by exploring various instruments and capturing the sounds of different elements in nature such as water, air, and fire. Throughout this process, I had the opportunity to delve into the world of Uttar Bharatiya classical singing, thanks to my parents. This exposure to classical music inspired me to contemplate the blending of classical instruments with the emotions being conveyed.

I was fortunate to have a classmate with a captivating voice that perfectly matched the resonant and profound tone I sought for my narrator's voice-over. Although the antagonist doesn't have any dialogue, the roar and growling performed by him are remarkably captivating.

I collaborated with Deepak Mallya, a talented classical singer pursuing a Ph.D. at IIT, to bring the sloka to life. Through personal adaptation, I aligned the sloka with my story and recorded a demo, enhancing the intuitive nature of the process. I would like to express my sincere appreciation to Anurag Soni for their invaluable assistance in composing the music for this sloka.

Special thanks are also due to Professor Swati Agarwal, who recommended the captivating yellow tune royalty music that perfectly captured the fusion of Indian and game-like elements in the background. To further enrich the overall audio experience, I incorporated complimentary soundtracks from Mixkit and Pixabay.

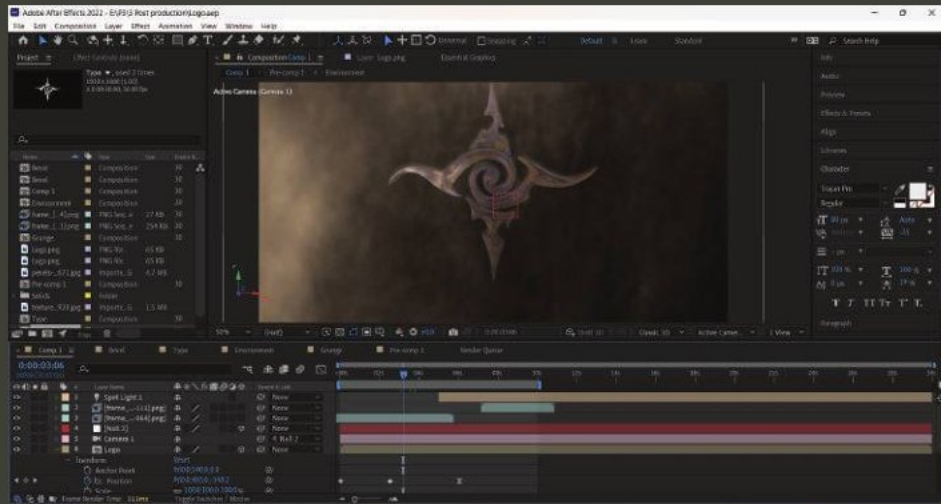


YellowTunes

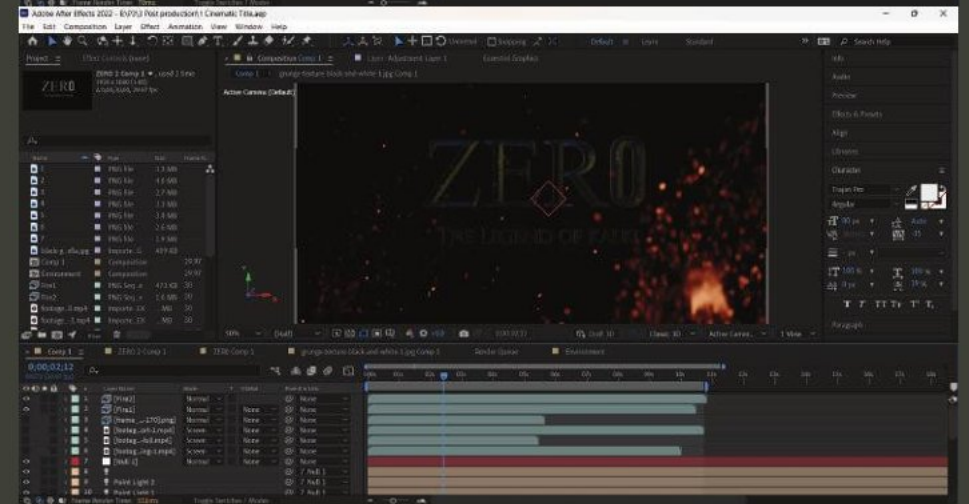


# 15. Logo, Title and Credit

In order to establish a visual identity for my game idea, I began creating a logo and ultimately settled on an icon. I animated and added depth to this icon using After Effects, going through approximately 3 to 4 iterations to achieve the desired result.

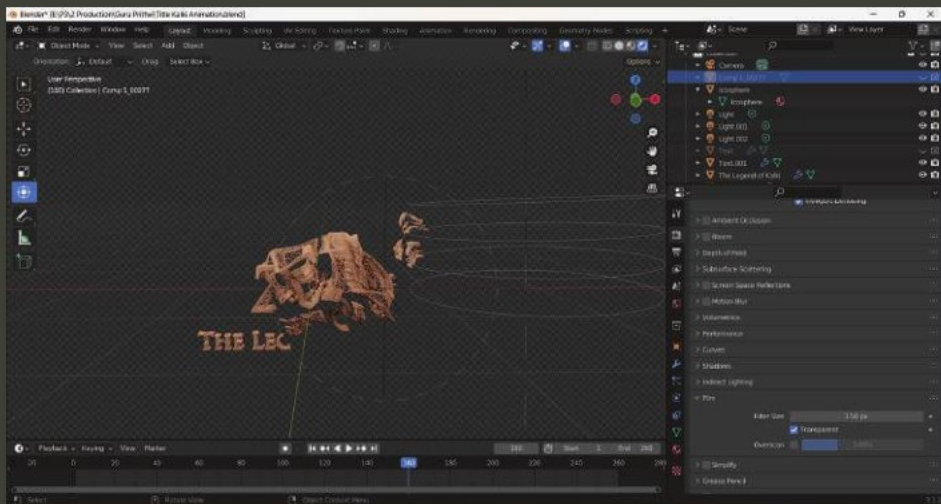
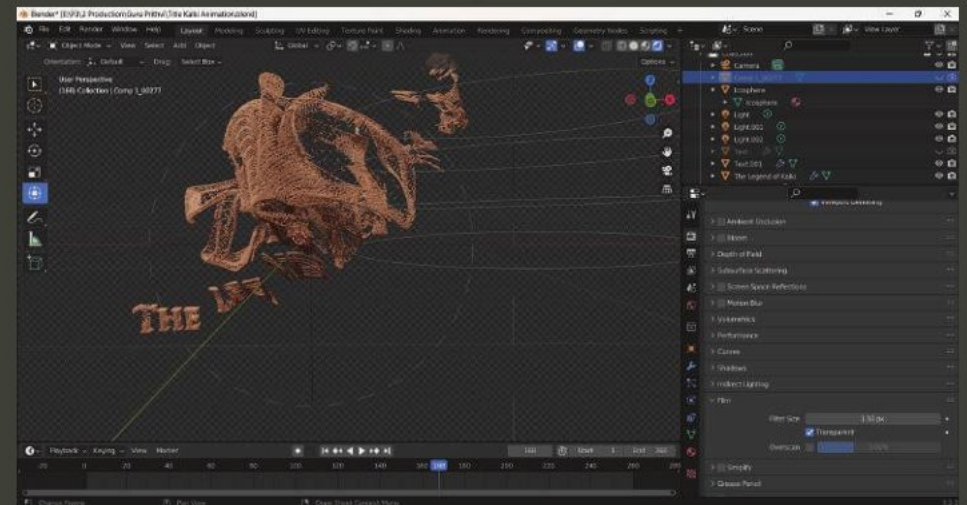
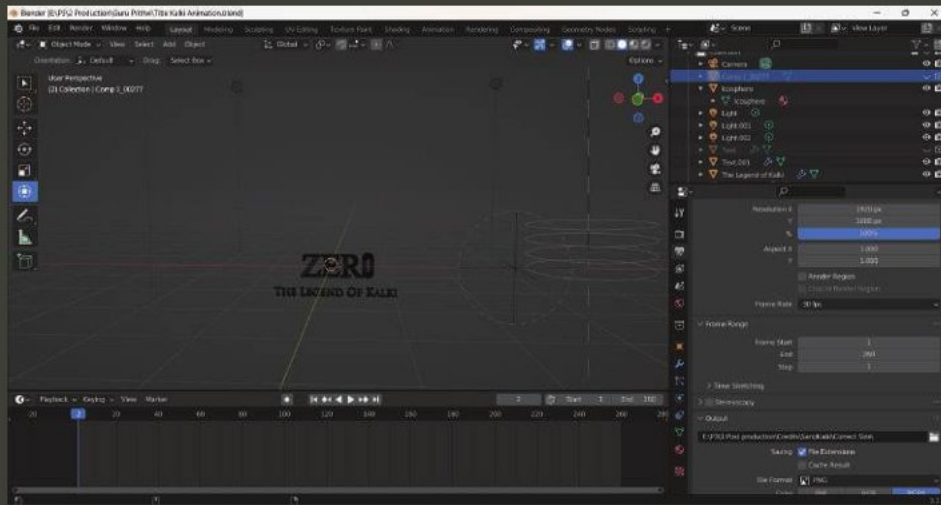


My goal is to design a title animation that exudes a metallic appearance with a touch of grunge, while also ensuring legibility. To achieve this, I incorporated a numerical zero instead of the letter O in the title name "Zer0."

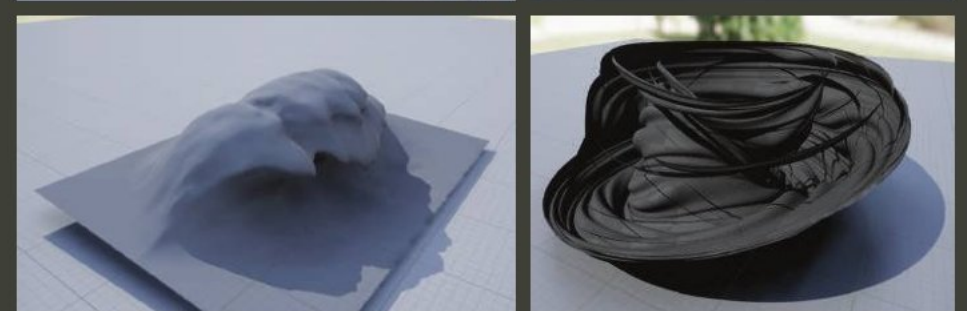


## Credit Title Animation:

Among the various visual effects, there is a distinctive particle effect that aims to replicate the characteristics of sand. To achieve this, I utilized an icosphere particle simulation in Blender 3D and implemented two separate wind sources. This approach allowed me to capture the fragile nature often associated with sand.

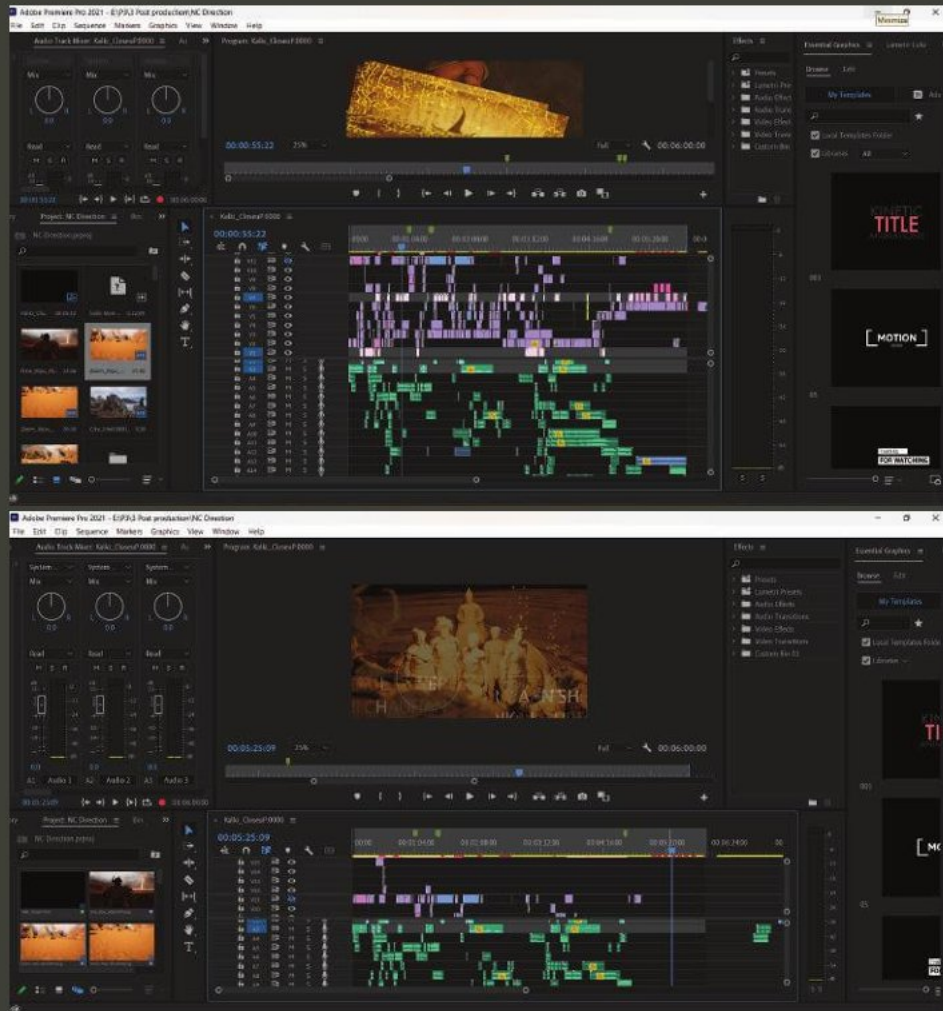


During the credit sequence, all the characters are depicted in static poses. In this particular scene, I aimed to experiment with static meshes, focusing on water meshes for exploration. Additionally, I ventured into creating a 4D revolt mesh, further pushing the boundaries of visual creativity.



# 16. Compositing

I developed a workflow ritual where I would ideate the night before. The following day, I would animate, iterate, and complete the final shot animation, utilizing character creation in iClone, 3D Exchange, and Unreal Engine. I would set up the rendering overnight and complete the compositing the next morning. I repeated this process multiple times, going through several rounds of compositing.



# Epiphany

I would like to express a significant realization I had while engaging in the learning by doing approach. Throughout this process, there were days when I would begin my day as early as 6 am and spend my time until 3 am in IDC Studio 113, working on the computer. While this routine was undoubtedly challenging, I managed to maintain it by prioritizing my health through activities such as 30 minutes of yoga and exercise.

This is a voyage encompassing art, movement, and the life of animated characters, while also involving the process of unraveling layers of uncertainty through question-solving. I firmly believe that a substantial amount of effort is required for this undertaking. Our professor dedicated considerable time to instructing us on the allocation and division of work based on time.

I acquired the skill of seeking assistance, particularly when it comes to my tendency to refrain from eating when I am alone. I have learned to proactively reach out to others and request their company to share a meal together. I developed the ability to efficiently manage a 3/4 system approach, where I dedicated one workstation to rendering, another to animating, one for texturing, and one for reference. It was truly captivating to witness the seamless synchronization of all these systems, resulting in a stunning final output. I gained the knowledge of adapting and enduring in a chilly environment, akin to living in the Arctic, when I had a friend who insisted on running two air conditioners simultaneously in a single room, set to a frosty 25 degrees Celsius.

It has been a remarkable journey where I traversed the path guided by my mentors, while simultaneously engaging in discussions with my classmates and making independent decisions. We had constructive debates, deliberating on what elements to remove, identifying aspects that seemed trivial, and exploring different approaches and perspectives regarding my film.

I ensured that my peers, known as "genzees," also provided feedback on my work, and fortunately, I completed my tasks well in advance, allowing me to engage in discussions and make improvements more than 10 to 15 times. Additionally, I pitched my ideas and work to game industries, further expanding my learning experience. Throughout this process, I realized that comments and critiques always play a vital role in guiding decision-making and fostering improvement.

In essence, my journey was immensely fulfilling as I collaborated with others and embraced fresh ideas, particularly when supported by valuable resources and guidance akin to that of a guru.

# Refrances

## Articles-

<https://industrialscripts.com/fantasy-genre/>

[https://en.wikipedia.org/wiki/Folklore\\_of\\_India](https://en.wikipedia.org/wiki/Folklore_of_India)

## Videos-

1. Assassin's creed

[https://www.youtube.com/watch?v=xzCEdSKMkdU&ab\\_channel=Ubisoft](https://www.youtube.com/watch?v=xzCEdSKMkdU&ab_channel=Ubisoft)

[https://www.youtube.com/watch?v=ssrNcwxALS4&ab\\_channel=IGN](https://www.youtube.com/watch?v=ssrNcwxALS4&ab_channel=IGN)

[https://www.youtube.com/watch?v=cK4iAjzAoas&ab\\_channel=DigicPictures](https://www.youtube.com/watch?v=cK4iAjzAoas&ab_channel=DigicPictures)

[https://www.youtube.com/watch?v=PP8js5jFTv0&ab\\_channel=GameSelect](https://www.youtube.com/watch?v=PP8js5jFTv0&ab_channel=GameSelect)

<https://indianculture.gov.in/intangible-cultural-heritage/performing-arts/gondhal>

[https://www.youtube.com/watch?v=d1Zxt28ff-E&ab\\_channel=Ueber-Brands](https://www.youtube.com/watch?v=d1Zxt28ff-E&ab_channel=Ueber-Brands)

<https://www.youtube.com/watch?v=8ZEcMOMdXvs>

## Books and other Resources

<https://www.indianculture.gov.in/ebooks/history-fine-arts-india-and-west>

<https://www.vishwasmudagal.com/download-sample-chapter-last-avatar/>

<https://www.indianculture.gov.in/flipbook/52953>

<https://www.indianculture.gov.in/ebooks/history-fine-arts-india-and-west>

<https://www.youtube.com/watch?v=8ZEcMOMdXvs>

New filmmaking tools for Unity - Mini Tutorial - YouTube

[https://www.youtube.com/watch?v=9tjYz6Ab0oc&ab\\_channel=Brackeys](https://www.youtube.com/watch?v=9tjYz6Ab0oc&ab_channel=Brackeys)

<https://www.youtube.com/watch?v=7Jn4WGjMSGY&list=RD-b0lWsC9DNYU&index=5>

I have explored numerous reference links, but consolidating them into a cohesive chain can be challenging.